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# GARDENERS' CHRONICLE

## AGRICULTURAL GAZETTE

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THE  
GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE

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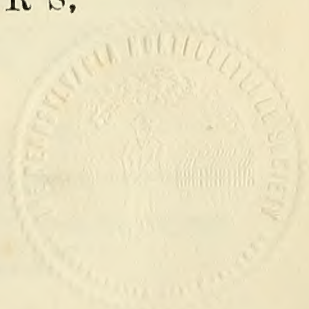
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# THE GARDENERS' CHRONICLE

## AND

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SATURDAY, JANUARY 1.

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Both are black spines, very handsome, fruit measuring from 24 to 28 inches; a free setter and abundant bearer, always growing a uniform size from stem to point; carries with it a good bloom; colour fine dark green, and free from ribs or shrivels; as Cucumbers for competition they are not yet equalled; both have been exhibited at the first Cucumber shows in England and elsewhere, where they have always been successful. Phenomena is the hardest long Cucumber, growing with less heat than any other of its length. Sold in packets 2s. 6d. each, warranted good sound Seeds; Lord Keynon's Favourite winter Cucumber, 2s. 6d. per packet. Penny postage stamps to the amount will suffice for payment.—**EDWARD TILLY**, Nurseryman and Seedsman, 14, Abbey Church Yard, Bath.

### GREAT BARGAINS IN ROSES.—This being the

proper time for planting, **WILLIAM WILLSON**, of the Rose Nursery, Whitby, having entered on the Stock of his late lamented father, begs a share of public patronage, and trusts that from the very low prices at which he offers them, all in want of a good collection will not allow such a chance to pass away. The following is the manner he proposes to offer them, namely, .00 fine varieties (not small plants in pots that will disappoint), but all strong healthy plants from the ground, at 3s., containing such as *Giant des Batailles*, *White Moss*, *Mossy Debut*, *Bath Moss*, *Fortune's Yellow*, *Vicomtesse de Cazes*, *Elise Sauvage*, *Cloth of Gold*, *Phaloe*, *Fortune's Carnation*, *Devonensis*, *Moss Lant*, *Paul Ricaut*, &c. &c. Also 200 fine varieties for 5s., containing the above varieties with others of the finest character. Also 12 varieties of the finest Yellow Roses known, strong plants, 12s., or 24 varieties for 1l. In addition to the above, W. W. begs to offer the following superb seedlings not yet out:

"**MISS CHAPMAN** (Hybrid Perpetual).—A soft rosy crimson, 5s. (See *Gardeners' Chronicle*, July 17th, 1852.) This is a magnificent flower, full, smooth, fragrant, and large.—(From William Jesse.)

**THE UNIQUE SWEET BRIAR.**—This is a Sweet Briar as perfect in shape as a Damask Rose—5s. (See also *Gardeners' Chronicle*, July 17th, 1852.) Unique Briar is a large-sized full flower, of a true rose pink colour.

**LOUISA MILNER** (a true ever-bloomer).—Colour and form of our old favourite *Laura Davoust*—5s. Many of the above Roses are worked on the Victoria Stock.

Fine strong plants of the ever-blooming China, suitable for decorating shrubberies and plantations at 15s. per 100.

Post-office orders payable as above.

### POTATOES.—The importance of cultivating those

sorts of Potatoes which, from their vigorous habit of growth are least subject to disease, has induced us for several years (ever since the first general development of the disease) to make many experiments as to the sorts most desirable, and the cultivation most suitable. We now present the following list of sorts as the least liable to disease, being all very early, and of vigorous habit.

Per Peck, or Stone of 14 lbs.	
Early Ten-week, forwardest known.....	4s. 0d.
Soden's Early Oxford, the very best early round.....	3 0
British Queen, prolific, second early.....	2 6
Jackson's Golden Dwarf, very suitable for forcing.....	3 0
Early Ash-leaf Kidney, a well-known early sort.....	2 6
Fifty-fold Kidney, a most extraordinary cropper, and good mealy Potato.....	3 6
Red Ash-leaf Kidney, very productive, mealy, and keeps well till the next summer.....	3 0
Chesterman's Seedling, one of the greatest improvements, from propagation by seed.....	2 6
Dr. Nelson's Favourite, a Potato of superior quality, presented to us by the Rev. J. Nelson, D.D., certainly one of the very best.....	3 0

The above Prices are for Cash payment.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**WANTED**, some good HOTHOUSE GRAPES, to cut during the ensuing month, for which a liberal price will be given, if good.—Address, prepaid, to M. T. Ollivier of this Paper.

**RHUBARB.**—3000 Roots of the finest Victoria, Albert, and Lincoln Rhubarb for sale. Parties desirous of cultivating this valuable plant will find this a first-rate opportunity for providing themselves with rare and superior stock roots. For price, which will be moderate, apply to Mr. W. HANFORD, at the Cottage, New Cross, Surrey, adjoining the Brighton and Croydon Railway Station, at New Cross, London.



**GEANT DES BATAILLES ROSE.**  
**R. B. BIRCHAM**, The Rosary, Hedenham, Bungay, Suffolk, respectfully states that he has a surplus stock of upwards of Two Thousand of the above splendid Rose, on stands from 18 inches to 3 feet stems. Also a large quantity of Dwarf, upon the Manetti Stock, which he begs to offer at per dozen, or per hundred, at half the usual prices, in order to effect a clearance. Early application is desirable.—Jan. 1.

**AMERICAN NURSERY.**  
**GEORGE BAKER**, Windesham, near Bagshot, Surrey, Exhibitor of American Plants at the Royal Botanic Gardens, Regent's Park, begs to inform the nobility and public that he has published a Descriptive CATALOGUE of AMERICAN PLANTS, Conifers, Roses, Ornamental Shrubs, &c. &c., and may be obtained by enclosing two postage stamps. Near Staines Station, Windsor Branch, South-Western Railway.

**INGRAM'S HYBRID WHITE SPINE CUCUMBER.**  
PRICE FOR THREE GOOD PLUMP SEEDS, 2s. 6d., POST FREE.  
**GEORGE WHEELER**, NURSERYMAN, &c., Warminster, Wilts, having purchased the entire stock of the above most valuable Cucumber, which, after much care and attention in hybridising, Mr. Ingram was so fortunate as to raise, it is now, for the first time, offered to the public, on condition that G. W. receives by the end of January the names of a sufficient number of Subscribers, to insure him from probable loss in the speculation; he will then be prepared to send it out in the first week in February, otherwise it will be necessary to keep it in for another season.

It is the general opinion of the numerous persons, viz., gentlemen's gardeners, amateur and other Cucumber growers, who saw it growing all through the last season, that it is the most prolific long Cucumber ever grown. The crop in Mr. Ingram's cold pits, which depended for heat on the sun's rays alone, was most abundant, of excellent quality, and called forth general admiration. It is equally well adapted for early forcing, for the general crop, and excellent for the trellis system of culture. The skin is very thin, its fine green colour is retained long after the fruit is become too old for the table or exhibition, without showing the least tint of yellow; the flesh is particularly solid, crisp, and good flavoured. This variety has the singular property of showing fruit on the old parts of the vines, often below all the foliage and lateral shoots, and bringing such fruit to perfection. At the horticultural shows held in Birmingham and its vicinity, Mr. Ingram exhibited this Hybrid White Spine for several successive seasons without failing in any instance of obtaining the first prize.

The seed G. W. offers has been grown under his own superintendence, far from any other Cucumber, consequently may be relied on as true and genuine; he therefore recommends it with the greatest confidence. G. W. hopes to receive the names of subscribers without delay, and that the list may be soon so far filled as to enable him to send out the seed by the middle of January, instead of February, which he would be happy to do.

G. W. has, as usual, a good stock of fine Bulbs of the following kinds of TIGRIDA, or TIGER FLOWER.

T. WHEELERI, yellow, richly spotted centre, with scarlet sepals, a superb variety, 3s. per dozen.

T. CONCHIFLORA, yellow ground, finely spotted, 3s. per doz.

T. PAVONIA, 2s. per dozen.

For cash post free. The usual discount to the Trade by the 100. A large quantity of good and strong transplanted Thorn Plants on hand. Prices on application.—Warminster, Jan. 1.

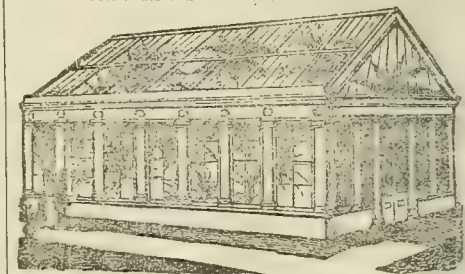


**HORTICULTURAL BUILDING AND HEATING BY HOT WATER.**  
TUBULAR BOILERS OF ALL SIZES, WARRANTED THE MOST EFFICIENT.  
**J. WEEKS AND CO.,** King's Road, Chelsea, HOthouse Builders.

Horticulture in all its branches upon the most improved principles. These Boilers are very powerful, durable, and economical. The fire warranted to last 15 hours without attention. The Furnace Bars are Hollow Tubes through which the return water passes before entering the upper part of the Boiler, thereby causing a very rapid circulation, and producing double the effect from the same quantity of fuel.

J. WEEKS & Co., King's Road, Chelsea, CHALLENGE the whole world to make a Boiler that will produce anything like the same effect, with the same quantity of Fuel in a given time. It is one of those Boilers that warms the water of their Victoria Regia Tank, which contains Twenty Thousand Gallons, and also Heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel. Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.

**HORTICULTURAL BUILDING AND HEATING BY HOT WATER.**  
AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON**, Danvers Street, Chelsea London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

**IRON HURDLES.**  
**STEPHENSON AND PEILL**, 61, Gracechurch Street, London; and 17, New Park Street, Southwark, Manufacturers of every description of Iron Fencing, beg to call the attention of Noblemen and Gentlemen to their present prices of HURDLES—for Sheep, 6 feet long, 3 feet high, with 5 bars, at 4s. 3d.; and for Cattle, 6 feet long, 3 feet 3 inches high, with 5 bars, at 4s. 9d. each.

**Messrs. Charles Cantor & Co. of Calcutta.**  
**1852.**  
**LIST OF ORCHIDEOUS PLANTS INDIGENOUS TO ASSAM**  
AND THE NEIGHBOURING HILLS OF KHASYA, BOOTAN, &c.

No.	NAMES.	Size and Colour of Flower.	Habit.	No.	NAMES.	Size and Colour of Flower.	Habit.
1*	Microstylis Wallichii?	Small, pea green	Ter.	94*	Phaius albus	Large, white, rosy scented	Do.
2	Oberonia indoliola	Minute, yellowish	Epi.	95*	Aputaria senilis	Largish, rose and green	Ter.
3	sp.	"	Do.	96*	A. latifolia	"	Do.
4	Liparis sp.	Small, yellow	Do.	97*	Eulophia virens	Large, green and white	Do.
5	sp.	"	Do.	98*	sp.	" dull yellow & brown	Do.
6*	sp.	Largish, green yellow	Ter.	99*	sp.	" deep purple	Do.
7*	sp.	Small, deep purple	Epi.	100*	sp.	" green and yellow	Do.
8*	Otocilius fuscus	" yellowish brown	Do.	101*	sp.	" purplish green	Do.
9	albus	" white and white	Do.	102	Vanda teres	Very large, rosy purple	Epi.
10	Pholidota imbricata	" white	Do.	103*	" cristata	Largish, greenish, white, and purple	Do.
11*	" undulata	"	Do.	104*	" multiflora	" white and rose	Do.
12*	" articulata	"	Do.	105*	" corulea	Very large, deep blue	Do.
13*	sp.	" and yellow	Do.	106*	sp.	Largish, dull purple	Do.
14*	sp.	"	Do.	107*	sp.	" and green	Do.
15	Cecilygne flavida	" yellow	Do.	108*	sp.	" yellow and brown	Do.
16	" undulata	Largish, white	Do.	109*	Camarotis purpurea	Small, yellow and purple	Do.
17*	" fimbriata?	" and brown	Do.	110	Micropera pallida	" pale yellow	Do.
18*	" uniflora	" and lateridous	Do.	111	Saccolabium micranthum	Small, rosy	Epi.
19*	barbata	" white	Do.	112	" retum	Largish, lively spotted	Do.
20*	paracox?	"	Do.	113	" papillosum	Small, pale yellow & pur.	Do.
21*	maculata	Large, white, yellow, & rose	Do.	114*	" Calceolare	" pale do. and rose	Do.
22*	Wallichiana	" pale yellow and deep orange	Do.	115*	sp. like do.	" pale do. and rose	Do.
23*	ocellata	"	Do.	116	" carofolium	" rosy	Do.
24*	Gardneriana	" white and yellow	Epi.	117*	" dasypogon	" green and purple	Do.
25	" cristata	" streaked with bright yellow	Ter.	118*	" appendiculatum	" yellow	Do.
26	sp.	Small, brown and yellow	Epi.	119*	sp.	" rosy and deep purple	Do.
27*	" flava?	Large, yellow and brown	Do.	120*	Sarcandrus sp.	"	Do.
28	sp.	Small, brown and yellow	Do.	121*	sp.	Small, rosy	Do.
29*	sp.	" white and brown	Do.	122*	sp.	" white and yellow	Do.
30	sp.	" pale yellow	Do.	123*	sp.	"	Do.
31*	sp.	" white (pretty)	Do.	124*	sp.	"	Do.
32*	sp.	Largish, pale cinnamon	Epi.	125*	sp.	" rosy red	Do.
33*	Bolbophyllum leopardi	Large, yellow spotted with purple	Do.	126	Aerides affine	Large, rosy purple	Do.
34	" umbellatum	Largish, dull yellow	Do.	127	" odoratum	" sweet-scented	Do.
35*	Khayasaum	Small, greenish	Do.	128	sp.	"	Do.
36*	sp.	Largish, bright yellow	Do.	129*	sp.	" large, like affine, and very sweet-scented	Do.
37*	sp.	Small, white, fragrant	Do.	130	Agrostophyllum Khayasaum	Small, white	Do.
38*	sp.	" dull purple	Do.	131*	Xiphosium acuminatum	Large, white	Do.
39	sp.	"	Do.	132	Acaathophyllum sp.	" dull purple	Ter.
40	sp.	"	Do.	133*	sp.	" white, streaked	Do.
41*	Cirrhopetalum sp.	Small, greenish, fragrant	Do.	134*	Cymbidium giganteum	Very large, yell. and brown	Do.
42	sp.	" dull purple	Do.	135	" pendulum	Large, dull yell. and purple	Do.
43*	sp.	Large, brown and yellow	Do.	136	" aloifolium	"	Do.
44*	sp.	Largish, dull purple	Do.	137*	" eburceum	Very large, white	Do.
45*	sp.	"	Do.	138	" inconspicuum	Small, brown	Do.
46*	Tricosina suavis	Large, white, purple & yell.	Do.	139	Cymbidium longipetalum	Largish, green and purple	Ter.
47*	Eria flava	Largish, dull yell. & brown	Do.	140*	" cyrifolium	"	Do.
48	Eria sp.	Largish, white & streaked with brown	Epi.	141*	sp.	" large, fragrant, yellow	Epi.
49	" densiflora	" tinged with yellow	Do.	142*	sp.	" brownish purple	Do.
50	" ferruginea	" ferruginous	Do.	143*	sp.	" Very large, white	Do.
51	" paniculata	Small, spotted with purple	Do.	144*	sp.	" Large, white and brown	Do.
52*	sp.	Largish, white	Do.	145*	sp.	" green and dull purple	Ter.
53*	sp.	" & dull purple	Do.	146*	? Phalaenopsis, sp.	Large, yellow and reddish brown	Epi.
54*	sp.	"	Do.	147	Euphorbia pygmaea	Minute, yellow	Do.
55*	sp.	"	Do.	148	Geodorum dilatatum	Large, white, purple, and yellow	Do.
56	Aporum anceps	Small, white	Do.	149*	sp.	" deep rosy purple and white	Do.
57	" cuspidatum	"	Do.	150*	Platanthera sp.	Large, white	Do.
58	sp.	"	Do.	151*	Peristylis sp.	Largish, white, sweet-scented	Do.
59	sp.?	Largish, white, yellow, and brown	Do.	152	Habenaria hamigera?	Small, green	Do.
60	Dendrobium Pterardi	Large, pink and yellow	Do.	153	sp.	"	Do.
61*	" heterocarpum	" yell. and br. fragrant	Do.	154	sp.	" greenish yellow	Do.
62	Chrysanthum	" lively yell. and brown	Do.	155*	sp.	" white	Do.
63*	Paxtoni	" orange and brown	Do.	156*	sp.	" Large, white	Do.
64*	sp. like do.	"	Do.	157*	Pogonia Joliana	Small, rosy white	Do.
65*	formosum	Very large, white and yell. fragrant	Do.	158*	sp.	Largish, green	Do.
66*	" longicornu	Large, white and orange	Do.	159*	sp.	Small, purple	Do.
67	" calceolus	Very dark yellow, rose, and purple	Do.	160*	Cyrtosia sp.	Largish, golden yellow	Do.
68*	" sulcatum	Large, yellow and purple	Do.	161*	Spiranthes sp.	Small, white	Do.
69	Jenkinsii	" lively yellow	Do.	162*	Zeuxis sulcata	"	Do.
70	" carulescens	" deep lively purple	Do.	163*	Amactochilus burghii	" rosy white	Do.
71	" n. bile	" white rosy purple	Do.	164*	sp.	" white	Do.
72*	Gibsonii	" yellow and brown	Do.	165*	Cypripedium venustum	Large, green and purple	Do.
73*	stuposum	Small, white	Do.	166*	" insignis	" red and yellow	Do.
74*	Cambridgeanaum	Largish, lively yell. and br. transparent	Do.	167*	Calanthe densiflora	" lively yellow	Do.
75*	" like do., various	" deep lively purple	Do.	168*	sp.	Small, brown and yellow	Do.
76*	Devonianum	" pale rose and purple	Do.	169*	sp.	Large, white and green	Do.
77*	Dalmanianum	" rose, white, and purple	Do.	170*	sp.	" and yellow	Do.
78*	" multicaulis	" white and purple	Do.	171*	sp.	" dull purple	Do.
79	Griffithii	" pale yell. and orange	Do.	172	Goodyera sp.	Small white	Do.
80*	" Farmeri	" lively	Do.	173	sp.	"	Do.
81*	" densiflorum pallid.	" white and orange	Do.	174	sp.	" dull purple	Do.
82*	" do. roseum	" pale rose and orange	Do.	175*	Ophrys sp.	Largish, rosy purple	Do.
83*	" intermedium	" pale yellow & brown	Do.	176*	sp.	" green and purple	Do.
84	sp.	" lively orange	Do.	177*	Anthogonium sp.	" rosy	Do.
85*	sp.	" yellow & brown	Do.	178*	Bonatea sp.	Small, green	Do.
86*	sp.	" yellow, pink, and br.	Do.				
87*	sp.	" pink and yellow	Do.				
88*	sp.	"	Do.				
89*	Spithoglottis pubescens	Largish, yellow and purple	Ter.				
90	Arundina bambusifolia	Large, pale rose and lively purple	Do.				
91*	Phaius grandifolius	" white, brown, & pur.	Do.				
92	" Waichii	"	Do.				
93*	" maculata	" rosy scented	Do.				

Plants not marked are common. Ditto marked with an asterisk are considered rare. Ditto marked with two asterisks are considered very rare. The charges for a box of 4 cubic feet measurement, containing an equal selection of the three kinds, will be 5l. or 60 Rupees, deliverable at Calcutta. When Plants which are rare or very rare are required, the charges will be according to the kind taken; for the rare 1 r. 8s. a Plant; for the very rare, 2 rupees a Plant. When very large plants are directed to be sent, no extra charge will be made. When new Plants not included in the list are sent, a separate charge will be made. When two boxes or more are taken a discount of 10 per cent. will be allowed. Plants can also be sent in glass cases, on the Warden plan, measuring 2 feet 6 inches in length, 2 feet breadth, and 2 feet 7 inches in height, for which an extra charge of 20 rupees will be made. Glass covers can also be supplied for the other boxes, at an extra charge of 10 rupees. Applications to be made to Messrs. CHARLES CANTOR & CO., in Calcutta. ASSAM, August 1, 1852.



## GREAT WESTERN, GREAT NORTHERN, SOUTH-WESTERN, AND SOUTH-EASTERN SEED ESTABLISHMENT, READING, BERKS, For Supplying SUTTON'S HOME-GROWN SEEDS to all parts of the United Kingdom.

THE GARDEN AND FARM SEEDS grown in Berkshire and the Southern Counties having obtained great celebrity and gained us a very extensive connection in almost every county in the United Kingdom, we have made such arrangements with Messrs. PICKFORD & Co. (who have Offices on most of the great lines of Railways), as will enable us to **DELIVER OUR GOODS FREE OF CARRIAGE**, as under:—

Parcels of Seeds not less than 10s. value are delivered free to any Station or Town on the Great Western, South-Western, and South-Eastern Railways; and Packages of Two Pounds value and upwards, to any Station or Town on either of the following Railways, most of which converge at Reading:—

Great Northern North Western Bristol and Exeter Bristol and Birmingham	South Devon South Wales Eastern Counties Eastern Union	Great Western South-Western South-Eastern.
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Having carried on business in Berkshire for upwards of 40 years, during which time we have introduced some of the finest sorts of Peas, Broccolies, Lettuces, &c., yet known, we are annually receiving a large increase of orders, entirely through the recommendations of our customers. Trusting to a continuance of such recommendations, we are determined to maintain the superiority of our Seeds.

Our New Seeds are now arranged for delivery. The samples are fine, but as some kinds are rather short in stock, EARLY ORDERS ARE PARTICULARLY REQUESTED, and will have the preference of scarce sorts.

N.B. We are extensive growers of Mangold, Turnip, and other Agricultural Seeds.

Address, **JOHN SUTTON & SONS, Seed Growers, Reading, Berks.**

### CHRYSANTHEMUMS.

**G. TAYLOR** informs the Public that he is ready to receive orders for Plants of all the varieties named in his Treatise, published last season, at 12s. per dozen, and of nine approved new ones, let out in 1852, for 12s. Also twelve new Pompons for 12s.

In consequence of his having had many applications for that work, he has issued a Second Edition, containing the names of the select varieties let out in 1852, copies of which he will forward by post upon the receipt of 14 postage stamps. As a proof of the success of his mode of culture, he begs to state that he exhibited at Stoke Newington this season a selection of 24 blooms, gaining the first prize (a handsome silver cup).

GEORGE TAYLOR, Park Street, Stoke Newington.

### TO THE SEED TRADE AND OTHERS.

**W. J. EPPS** begs to offer the following Seeds, which have been selected from the best stocks in the country, and grown under his own superintendence; they are very true and excellent samples, and at very moderate prices, which may be had on application.

**PEAS.**  
Burrbridge's Eclipse  
Warner's Emperor  
Knight's tall white Marrow  
" dwarf do. do.  
" green do.  
British Queen  
Hairs' dwarf green Mammoth

**BEANS.**  
Windsor (very fine)  
Beet, crimson (very superior)

**BROCCOLI.**  
Early white  
Late " "  
Adams' "  
Brimstone or Portsmouth  
Wilcox  
Imperial  
Late white dwarf Russian  
Purple Sprouting  
Dwarf Danish  
Chappel's Cream  
Knight's Protecting  
Seed Establishment, Maidstone, Kent.

### CABBAGE.

Battersea  
Shilling's Queen  
Enfield Market  
Best selected  
East Ham  
Imperial  
Red Dutch  
Kohl Rabi  
White Carrot (fine stock)

### CELERY.

White Solid  
Red Solid  
Coles' Dwarf Red  
Bath Cos Lettuce  
Long Red Wurzel  
Yellow Globe

### TURNIPS.

Skirving's Swede  
Purple Top Swede  
Green Top Swede (finest stock possible)  
Purple Top Scotch  
Green Top Scotch

### NEW SHRUBBY CALCEOLARIAS, CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

**J. WEEKS** and **CO., CHELSEA**, have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all Shrubby they are perpetually in flower; and from the great variety and brilliancy of their colours, they are invaluable for the conservatory or bedding-out.

J. WEEKS & Co., King's Road, Chelsea, London.

**SUPERB HOLLYHOCK SEED.**—Well ripened Seed, warranted to be saved exclusively from Comet, Elegans, Obscura, Mr. C. Baron, Penelope, Rosa grandiflora, Meteor, Walden Gem, Magnus Bonum, Spectabilis, Safranrot, Delicata, Euchariss, Picta, Queen, Bicolor, Dido, Charles Turner, Formosa, Hebe, Model of Perfection, Rosa Alba, Sulphurea Perfecta, White Perfection, Blue Beard, Mulberry Superb, Snowball, and Queen of England.

A good mixture of the above, in packets containing UPWARDS of 200 SEEDS, will be forwarded post free, upon the receipt of 2s. 6d. worth of postage stamps, by R. B. BICHAM, Hedenham Rosery, Bungay, Suffolk.

### NEW SEEDS—GROWTH OF 1852. THE WESTERN SEED ESTABLISHMENT.

**WILLIAM E. RENDLE** and **CO., SEED MERCHANTS**, Plymouth, have much pleasure in stating that they have this season a fine and well-selected Stock of all kinds of KITCHEN GARDEN and FLOWER SEEDS in the best possible condition, harvested by themselves and by Growers of high reputation.

In consequence of the unfavourable weather for ripening seeds during the past autumn, the stocks of some sorts of seeds are very small, and the prices in the trade consequently much higher, yet we shall not make any corresponding advance, but supply all kinds of Kitchen Garden and Flower Seeds on the same terms as last year.

Our NEW SEED CATALOGUE is NOW READY, and can be had in exchange for one penny stamp. It contains prices of every article, and will be found very useful to all who have Gardens.

### COLLECTIONS OF GARDEN SEEDS.

Our Collections have given the greatest satisfaction to all who have received them; and we have the greater confidence in highly recommending them. They are supplied on the following terms:

No. 1. Complete Collection for a large garden for one £ s. d.	
year's supply, including 20 quarts of Peas, 11 quarts of Beans, 14 ounces of Onion, eight sorts of Cabbages, seven sorts of Broccoli, seven sorts of Lettuce, and full quantities of Beet, Brussels Sprouts, Carrot, Savoy, Cauliflower, Leek, Celery, Spinach, Radish, Turnips, Herbs, Cucumber, Melon, Endive, and other useful vegetables, for	... 2 10 0
No. 2. Complete Collection in smaller quantities	... 1 10 0
No. 3. do. do. do.	... 1 0 0
No. 4. do. do. do.	... 0 12 6

The full quantities sent in each Collection are stated in the PRICE CURRENT.

RENDLE'S PRICE CURRENT and GARDEN DIRECTORY.—A few Copies of this useful work still remain on hand. A Copy will be sent free by post in exchange for six penny stamps.

All orders for Seeds above 2l. (excepting heavy articles, as Grain, Tares, Clover, &c.), will be delivered Free of Carriage to any Station on the following Railways:—

Great Western	Bristol and Exeter
Bristol and Birmingham	South-Western
Southampton and Dorchester	South Devon,
Or to any Market Town in Devon and Cornwall, or to Cork, Dublin, and Belfast by Steamers.	

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ESTABLISHED 1786.

## The Gardeners' Chronicle.

SATURDAY, JANUARY 1, 1853.

### MEETINGS FOR THE ENSUING WEEK.

MONDAY, Jan. 1	3 Entomological	8 P.M.
TUESDAY, —	4 Pathological	8 P.M.
WEDNESDAY, —	5 Geological	8 P.M.
THURSDAY, —	6 Zoological	8 P.M.
FRIDAY, —	7 Royal	8 P.M.
SATURDAY, —	8 Botanical	8 P.M.
	9 Medical	8 P.M.

THE old dispute about RED HAMBURG GRAPES has suddenly revived, in consequence of some fruit bearing that name at one of the Horticultural Society's Meetings having been pronounced to be badly coloured Black Hamburgs. Mr. TAYLOR, by whom the Grapes in question were supplied, speaks in a very positive manner concerning the great distinction between Red and Black, maintaining that

under no circumstances could the Red Grapes which he produced have had a better colour. Nevertheless, he is certainly mistaken. There is no such variety as the Red Hamburg Grape; that has been settled conclusively years ago, however inconvenient some growers may find the discovery.

The Black Hamburg Grape is understood to be of German origin. It is described by JEAN HERMAN KNOOP under the name of "*Franckenthal. Vitis germanica, uva peranpla, acinis rotundis, majoribus ex rubro nigricantibus.*" It is generally known on the continent as the Frankenthal, from a place of that name on the Rhine, in Bavaria. But it has more than 30 other names, according to Mr. THOMPSON, of which the following is a tolerable sample:—Warner's Black Hamburg, Warner's Red Hamburg, Purple Hamburg, Red Hamburg, Brown Hamburg, Dutch Hamburg, Valentine's, Hampton Court, Gibraltar, Black Gibraltar, Black Portugal (of some), Black Teneriffe, Salisbury Violet, Victoria, Admiral, Frankendale, Frankenthaler, Gros Noir, Trollinger, Blue Trollinger, Pale-wooded Trollinger, Troller, Welscher, Schwarzwelscher, Fleisch Traube, Hudler, Mohrendutte, Malvasier (of some), Languedoc, Schwarzer Gutedel (of some), Gelbholziger Trollinger, Weissholziger Trollinger, Schwarzbauer Trollinger, Bocksaugen Bonmerer, Lugiana Nera. We dare say champions may be found to maintain the distinctness of all the three-and-thirty, although it is certain they are all alike.

While the identification of fruits was going on in the garden of the Horticultural Society, the following experiment was tried:—Plants received under the names of Black, Brown, and Red Hamburg were planted, side by side, in a curvilinear Vinery. On all three the fruit was equally black, and in every respect alike. The Black Hamburg, in the same Vinery, continued to produce black fruit, and a plant from it did the same for some years in another Vinery, but then began to yield red fruit, although as well exposed to light as ever. This proved that the red and brown may turn black, and the black may turn red; and under these circumstances we should like to know what permanent distinction can be pointed out.

If this were a mere dispute about names we should leave it to repose in the limbo of popular errors, to which it has been long ago consigned by experienced gardeners. But it is not so; it is a question of real importance; for if a gardener who cannot colour his Grapes is to be at liberty to say they are Red Hamburgs, and therefore incapable of becoming black, he is very conveniently relieved from the consequences of want of skill, and there will be no incitement to do better. Not that we would ascribe, under all circumstances whatever, want of colour to want of skill; on the contrary we freely and unreservedly admit that want of colour may be sometimes owing to causes against which no skill can guard, inasmuch as we are still unable to point out every condition, or combination of conditions, which may possibly lead to the redness in question.

Some of the causes of Grapes not colouring are unquestionable. Such are a cold soil and a warm atmosphere, smothered roots, a wet border, exhaustion produced by previous heavy cropping, bleeding, insufficient light, accidents to the foliage, unwholesome matters in the soil, and want of sufficient air. Each of these separately, or in combination with some other may produce the result; and thus a Red Hamburg Grape may remain what is called an "indisputable proof" of the existence of such a variety until the conditions change, and then its true nature is revealed.

It would be a satisfaction to learn whether, in Vine countries, where the plants occupy warm land, and are freely exposed to light and air, this redness occurs; of course we do not mean from want of ripeness in consequence of a bad summer, but from other causes. If it is known in the fine districts of France and Spain, it will be a proof that causes must be occasionally at work different from any yet suspected; but if it is unknown there, our enquiries will at once be confined within very narrow limits.

In the meanwhile we invite attention to one or two excellent practical letters in another column.

THE statement lately made by us respecting the results of the cultivation practised at LOIS-WEDDON (see p. 788, 1852), has produced some inquiries, to which we take the present opportunity of giving a short answer. In the first place, it has been nowhere stated that the four acres of arable land there mentioned were all cropped with Turnips; on the contrary, Mr. SMITH himself has said (p. 707) that he has only one acre in Turnips. In the next place, LOIS-WEDDON is a place of easy access, and we have reason to know that every facility is there given on the spot for the verification of any published statement that has been made concerning its pro-

### NEW SEEDS FOR 1853. SUTTON'S COLLECTION OF GARDEN SEEDS, which are still unrivalled, may now be obtained in any part of the United Kingdom direct from the Growers, John Sutton and Sons, Reading, Berks.

J. S. & Sons being extensive growers of Seeds, are enabled to offer peculiar advantages to purchasers, both as to quality and prices, and as they retain exclusively in their own possession the choice sorts which they have selected during the many years they have been in business, they feel confident that their Collections of Seeds are as superior in quality as they are greater in quantity than any others yet offered.

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From Barlow Rectory, near Linton, Nov. 15, 1852.

"Nothing could be better than the whole of your last year's supply of seeds."

From Withycombe Rectory, Taunton, Nov. 15, 1852.

"I was so much pleased with the selection of seeds sent by you, that I recommended two of my friends to take parcels from you."

From Darnhall, Edlington, July 27, 1852.

"Lord E. begs to enclose Messrs. Sutton & Sons a cheque for the amount of their account. The seeds have given great satisfaction."

From Mr. William Grant, Gardener, Hernand, Micalder, Sept. 27, 1852.

"The family here will continue taking their Seeds from you, as they never had such fine vegetables. I have taken several prizes at the Horticultural Shows with them; they are very much admired."

From Mr. William Moore, Gardener, the Rectory, Stoke, October 1, 1852.

"I never had (previous to yours last year) a lot of Seeds which have all turned out so satisfactory."

From Whitehill Personage, Stroud, March 26, 1852.

"I am more than satisfied with the assortment of Seeds you made me, and with the quantity which you sent; and I consider that I have done better by leaving the choice to you than selecting for myself."

From the Hon. S. R. C., Grove House, Tooting, March 22, 1852.

"Your seeds I ought to be very exceedingly good. Indeed, I think it but just to you to bear my humble testimony to your liberal and honest mode of conducting your business."

From Brecon, Nov. 6, 1852.

"I beg to offer you my commendations of the Seeds you sent me the two last seasons; nothing could be more true or better."

From Brecon, Merion, Glasgown, Nov. 15, 1852.

"The seeds received last season turned out admirably, all being of first-rate quality."

The seeds above alluded to are SUTTON'S COMPLETE COLLECTIONS for one year's supply, the prices of which are the same as heretofore, viz. No. 1, 2, 10s.; No. 2, 12, 10s.; No. 3, 14, 10s.; and No. 4, 12s. 6d., but any of the Seeds may be purchased separately if the whole assortment is not required; and they are delivered carriage free by Rail or other mode in the printed particulars of the sorts, quantities, and prices, at the end of each collection, which may be sent post free, in a turn for one penny stamp.

For sorts and quantities contained in "Sutton's Collection," J. S. & Sons earnestly recommend all purchasers of Garden Seeds to send for their List; and with respect to the superior quality of their Seed they have much pleasure in referring to the unsolicited encomiums offered by hundreds of Gardeners, Noblemen, Clergymen, and others who have purchased these Collections in past seasons, a few of which they here present.



duce, provided inquirers are really in earnest; men should therefore judge for themselves, with their own eyes, not with ours. We particularly recommend a correspondent at Kettering to adopt this method. A ride of 30 miles, at this time of the year, will not be very fatiguing, and he will learn more in half-an-hour on the spot than it is possible for us to tell him. Among other things he will discover that it is quite easy to get seven quarters of Beans off half an acre of land, and a heavy crop of Mangold Wurzel into the bargain.

For ourselves, we have made up our mind to avoid all discussion concerning Mr. SMITH's cultivation. We shall continue to publish whatever facts we may be able to ascertain with reference to it, and with these we must beg our friends to be satisfied. The practical inferences to be deduced from the Lois-Weedon results, all can draw for themselves, with the exception of such as relate to general principles, concerning which we shall probably offer some observations from time to time.

#### GARDENIA FORTUNI.

Among the different species now in cultivation of this highly fragrant and favourite genus, none perhaps possesses more especial claims on our notice than this fine plant. Its beautiful double flowers, measuring from three to four inches across, of the purest white, embosomed in its fine glossy foliage, are exceedingly attractive, each blossom forming, as it were, a bouquet in itself. This species is one of rapid growth; and under good management, large bushy specimens may be obtained in a comparatively short time. Unlike the other double-flowering kinds, it blooms once only in each season; but as it continues for some time in flower, a few succession-plants will suffice to prolong the blooming period through a considerable portion of the summer.

The propagation of this plant is most easily effected by cuttings of half-ripened shoots of the young wood taken off with a heel, cut smoothly over, and inserted in silver sand in a well-drained pot, and afterwards plunged in a gentle bottom-heat, and covered with a bell-glass; five or six weeks will generally suffice for their becoming well rooted, when they may be potted off singly into 4-inch pots, and again placed in heat. Supposing the cuttings to have been taken in June or July, the young plants, when well established, may receive a second moderate shift, and be continued in growing heat, as before; care should, however, be taken not to keep them growing too late in the season, as that prevents the ripening of the wood before the dark days of November come on. When the plants cease growing, they should be removed to a cooler situation for the winter. A temperature of 45° to 50° will suffice during their period of rest, at which time water should be sparingly but judiciously given them when required.

Presuming plants have by this means been provided, or a young healthy stock obtained from the nursery about the beginning of March, the best should be selected and plunged in a gentle bottom-heat, in a temperature of from 60° to 65°, to start them into growth; when this commences they should, if in good health, receive a liberal shift—say from a 5-inch to a 9-inch pot, care being taken to remove any impure soil, and to gently disentangle the matted roots, without destroying the ball more than is necessary. After repotting, the plants should be plunged as before, and encouraged into vigorous growth. With the increase of solar heat at this season, a free use of the syringe should be resorted to on all favourable occasions, using water of the temperature of the house or pit in which the plants are placed; during bright sunshine a slight shading should be provided, any indications of flower-buds removed, and the points of the stronger shoots topped, to preserve a dwarf bushy habit. When requisite, a second shift should be given into 13-inch pots; and afterwards the treatment continued as before. With due attention to air, water, stopping, and tying out the branches, fine compact plants will be obtained. A little observation will show the cultivator how far stopping will be beneficially consistent with the due production of flower-buds; when this is secured, the plants may be gradually hardened and wintered as before.

If the plants are required in bloom at an early period of the following summer, say May, they should be placed in heat by the early part of February, or later, as may be required; when the blooms begin to expand, the plants may be removed to a warm part of the greenhouse or conservatory. After the flowers are exhausted, the shoots may be pruned back to a well-placed joint, and the plants removed to a close situation in heat, until the buds have broken freely. At this time they will require repotting. If the pots are well filled with healthy roots, a larger shift may be given. The required size must, however, now be determined by the convenience or inclination of the cultivator; but I may state, that *G. Fortunei* is a free-rooting plant, and the flowers are usually larger and more abundantly produced when allowed plenty of pot-room; if want of space does not allow of large pots being used, the ball of soil should be considerably reduced, and the plants repotted in the same-sized pots; in this way they may be kept in vigorous health for some years; and when eventually overgrown or unhealthy, they may be replaced with some of their young and now vigorous progeny.

I find this *Gardenia* to luxuriate in a compost of equal

parts of fibrous hazelly loam and peat soil, broken up in a rough state, adding a sufficiency of sharp sand to preserve porosity in the soil. With the above a liberal supply of charcoal, broken to half-inch size, is mixed; this acts as a fertiliser, and assists in keeping the soil in an open, healthy condition. Any more stimulating matter I prefer applying in a liquid state during the season of growth, when a watering twice a week with clear manure-water is highly beneficial. Should that tiresome pest the mealy bug make its appearance, no time should be lost in its extirpation. This is most successfully accomplished by taking the plants outside the house, and, after laying the pots on one side, well syringing the foliage with water at 150°; by repeating this after an interval of a few days, the insects will be destroyed without injury to the foliage, or impairing the health of the plants, which should be carefully shaded for a few days after each operation. *Alpha.*

#### CURIOUS INSTANCES OF THE FORMATION OF ROOTS.

THE little fact recorded at p. 51 of the *Chronicle* for last year, respecting the emission of roots from the stalk of a Celery leaf that had been injured, reminds me of two or three instances that I have witnessed of roots being formed under very peculiar circumstances; and believing them to be of rare occurrence, I venture to send you the following particulars relating to them, which may probably prove interesting to such of your readers as are engaged in studying the various anomalies of vegetable development.



SPANISH CHESTNUT which had thrown out roots under the bark 10 feet above the ground.

The first case was that of a Spanish Chestnut between 90 and 100 years old, and of considerable size, which was cut down here in 1849. With the exception of its foliage, which always had a yellowish, sickly tinge, there was scarcely anything else about it that indicated decay. Its trunk seemed perfectly sound, and the young shoots it annually made, appeared to be pretty strong and healthy. No sooner, however, had the workmen commenced cutting, than it was discovered that for 10 feet high, as much as two-thirds of the bark round the trunk was dead and reduced to a mere shell. On removing this thin covering, the sap-wood was found to have become a mass of decayed vegetable matter, through which a complete network of roots passed to the ground, and extended themselves for a considerable distance from the main stem. Some of these roots were about the size of an ordinary walking-stick. On tracing them to their source, they were observed to spring from the edge of the healthy portion of the tree, immediately above the part that had been injured and gone to decay; and as only a few of the larger ones reached the ground, the whole of the nourishment conveyed by the others to the tree, must have been derived from the gradual decomposition of its own sap-wood.

The second case was no less remarkable than the one just noticed. It was that of a Cornish Elm, blown down by a storm in the spring of 1850. At the height of 40 feet the trunk divided into two main stems, and formed a compact, erect, bushy head, from 25 to 30 feet high. Owing, no doubt, to some of the heavy gales that are frequently experienced in this locality, these stems had been separated, and were

found split for several feet from the fork down into the trunk. The occasional movement of the head prevented adhesion taking place, and each stem had, therefore, made an effort to repair the damage it had sustained. Around the edges of the fracture, various layers of new bark were deposited—more particularly at the upper edge, from which the wound was covered to the depth of about a foot. All this, however, only tended to increase the injury, as it was found that from the new bark numerous roots had issued, some of which measured an inch in diameter, and descended into the cleft portion of the tree, where they formed a complete wedge-shaped mass, that in a few years would have been the means of disfiguring or, perhaps, depriving the tree altogether of its head, if it had not been accidentally blown down. Considering the height from the ground at which these roots were emitted, and that they had no other support than what they derived from the particles of matter occasionally washed down into the crevice by heavy rains, it can hardly be supposed that they contributed very much to the growth of the tree; but the fact of their having been produced in such a situation, and lived for so many years, as their size and appearance lead us to infer they must have done, furnishes us with a striking example of the great power which heat and moisture exercise on vegetation in a climate like that of Cornwall, where the temperature is mild, and the degree of humidity excessive.

The third instance is on a much smaller scale than the two preceding; but it will probably be regarded as more curious than either. It was supplied by a plant of *Episcia bicolor* that happened to have one of its leaves injured by an accident, which cut the midrib and a portion of the leaf on both sides of it. After a certain time the wound healed, the part next the base of the leaf remaining of the same thickness as before the injury, while the edge of the outer portion gradually thickened, and developed a small bud close to the midrib, from which a number of minute fibrous roots issued, and eventually a stem and leaves, as represented in the accompanying sketch. For several months the perfect plant continued to exist in this state, with no other nourishment than what the portion of the leaf on which it grew, and the air of a warm, damp, hothouse afforded it. As the plant increased in size, the old leaf gradually became exhausted, and perished altogether as soon as the young leaves gained the ascendancy and deprived it of the scanty means that had previously supported it.



LEAF OF *EPISCIA BICOLOR*, which had its mid-rib cut across by accident, and formed a young plant at the part that had been injured.

Those who are familiar with the practice of striking plants from leaves will probably not be surprised at this instance of the rooting of part of a leaf, as it is precisely similar to what takes place when the leaves of *Gesnera* and *Gloxinia* are employed for the purpose of increasing them; but in that case certain conditions are necessary to keep up the vital energies of the leaves, and stimulate them to form roots. Here, however, there was nothing of the kind, and on this account I thought it worthy of notice, not only as a singular freak of Nature, but as a remarkable proof of the vitality which some leaves possess, when circumstances favour its development. *Wm. B. Booth.*

#### THE APHELEXIS.

SHORTLY after the introduction of this plant it became, and has continued ever since, a general favourite; and before the modern improvements in the management and forcing of winter flowers, its blooms were held in high estimation for the formation of permanent bouquets. For this purpose the flowers were cut as soon as they began to expand, and hung up to dry for a few days in a warm room; they were then put away in



drawers or boxes, to be used as occasion required during the winter. If this had been carefully done, they would retain apparently their original freshness and beauty for many years. Introduced into this country at a period when large collections of plants were more esteemed than the select and well-grown specimens of individual beauty now so highly prized, it suffered from the general management of the period; and the wonder is that many, very many of the plants of early introduction continued to exist in the country. In my early days surprise was excited by the report that such a plant had flowered, and further stimulated by hearing that some other one had formed its flower buds. Young men in those days had to travel for their information; there were no gardening periodicals to convey instruction, and to illumine the intellectual path of the youthful aspirant—there were no exhibitions, so well calculated to dispel prejudice and undermine the props of vanity and self-esteem,—hence inexperienced and credulous youths were frequently imposed upon by the cunning folks of the profession.

Although the *Aphelexis* was well known, and was in many collections, it was some time before it made its appearance at the Chiswick exhibitions. Mr. Bruce, gardener to B. Miller, Esq., of Collier's Wood, Mitcham, was the first to exhibit it. I well remember the effect it produced; as the day advanced the sun shone out with great brilliancy, arousing into action his hidden and secret influence over terrestrial vegetation; the petals of the *Aphelexis* began imperceptibly to expand, until at length a miniature sun was fully displayed, an object of great beauty; henceforth it became an established favourite with exhibitors, and is now cultivated with all the care that skill and experience can bestow. This plant is well adapted for those exhibitors who purchase specimens simply with a view to obtain prizes at exhibitions, where such are offered of sufficient value to pay for transuission. It continues a long time in bloom, and as it expands its blossoms only when the sun shines, it consequently suffers little from carriage.

To the lover of flowers who may only have a greenhouse, this plant undoubtedly is a treasure. The soil best adapted for its growth is good heath mould, with a sufficient portion of silver-sand to admit the passage of water freely through it. During the winter it should be placed in a light airy situation in the greenhouse, and water should be given in sufficient quantity to keep the roots in an active state. As the spring advances the flower stems will begin to lengthen and the flower buds become conspicuous, and the plant, even at this stage of its growth, has a very interesting appearance. As the flower-buds advance to maturity, and before they are expanded, a portion may be cut off for future nosegays; another portion may be cut as the blossoms begin to expand, and so in its various stages of bloom, so that variety, even from the same plant, may be obtained. When all the flowers have at length been cut, the plant may be shifted into a larger pot; but previously to this, if it is at all suspected that the ball of earth is too dry in the interior, let the pot be immersed to the rim in a tub of water of the same temperature as the house in which the plant is grown for 10 or 12 hours, and afterwards the plant may remain in the pot for four or five days; this will ensure a proper moisture to the mass of roots before shifting. After the plant is shifted, it may at once be placed out of doors; and as these plants are natives of sunny climes, so it is essentially necessary that they be gradually exposed to the healthy and invigorating influence of the direct rays of the sun, with the precaution of shading the sides of the pot. They should be protected from storms and a continuance of cold rains; but the genial warm shower, and the refreshing dew, are of great advantage, until the chill of autumn gives warning to re-house the plants. *Tassell.*

### Home Correspondence.

*Red Hamburg Grapes.*—I did not see the Red Hamburg Grapes shown by "Mr. John Taylor, jun., but not Esquire," at the Horticultural Society's meeting on the 7th ult., which he assures your reporter are as distinct from the Black Hamburg as is the complexion of a "bullet-headed flaxen-haired Saxon," from a dark-haired son of Italy or Spain. That a similar difference of complexion may have existed between the Grapes he exhibited, and well-coloured Black Hamburg Grapes, I am not inclined to dispute; but I hope he will excuse me for suspecting that the identical Vine which ripened the red Grapes in question, might under favourable circumstances produce well-coloured Black Hamburg Grapes. At least I beg to assure him that I have known Vines which deservedly rejoiced in the appellation of "Red Hamburgs," induced to do as politicians sometimes even do, "change their colour," and produce well-coloured Black Hamburgs. The circumstance of a Vine trained on the back wall of the same house bringing forth well-coloured fruit, does not prove it to be a distinct variety from the one which produces red fruit. The roots of the two plants may possibly act under dissimilar influences. The roots of that on the back wall must necessarily be inside the house, while the roots of the other may be partially or altogether in the outside border, which border may in some respect be defective. I have never found Vines trained on the back wall and under the shade of those trained to the roof, suffer materially from that circumstance, a certain amount of shade from foliage is essential to the colouring of the fruit; and many gardeners will, I doubt not, admit that they have cut their best coloured Grapes

from Vines trained to the back wall. *Zephyrus.*—Many others besides Mr. Taylor are of opinion that the names Black, Red, or Brown Hamburg, represent perfectly distinct varieties; and that in consequence of classing them as one, fruit of a black colour is expected from a sort that naturally produces red. I am aware that the Hamburg Grapes may be not black, and yet ripened so as to be excellent as regards flavour. I will even go to say, that I have found what would have been looked upon as Red Hamburg Grapes, more sugary than any black-coloured Hamburg I ever tasted. I have been long aware that Black Hamburg and Red Hamburg would be very convenient distinctions, yet I could not retain them consistently with the evidence I possessed to the contrary. Some of the best gardeners in the country have coloured their Hamburgs well with ordinary care; but sometimes, with all their skill, they have failed in doing so; and this, in my opinion, is a proof that the distinction has no real existence. *R. Thompson.*—I do not think there is a Red Hamburg Grape. There is a Vine in a large house here, which, judging from appearance, is about 30 years old, and which I was informed was a Red Hamburg. The first season I took charge of this house was in June, 1850, when the Grapes were just finished being thinned, and when fit to cut they were not quite so black as I could have wished, but certainly they were not red. The following year and this they were as black as any Hamburgs I ever saw. The men here tell me they never saw a black Grape on the Vine before. I should like Mr. Taylor to strike eyes from his Red Hamburg, in the forthcoming spring, and inarch (when the "shoots" of both are quite green, and say from a foot to 18 inches long), on his Black Hamburg, as near the bottom as practicable; and if, on the following season, he gets red Grapes on the Vine so inarched, and black Grapes on the parent Vine, I will allow my confidence to be shaken. *R. Massey, Kirby Hall, Borobridge, Yorkshire.*

*Mildew.*—Sulphur, as is well known, is perhaps the most effectual remedy for this, if applied the moment the fungus makes its appearance; but it cannot be applied in a dry state so effectually as when mixed with water, and put on by means of a syringe. I have tried it in various ways, but not until recently to my satisfaction. Having procured a given quantity of sulphur, say one pound, add to it two gallons of water; the sulphur should, however, be first made with a little water into a paste, as otherwise I find it difficult to mix it with the water. The whole should then be boiled, frequently stirring to keep it from seething at the bottom; and used at a temperature of 140°, applying it with some force by means of a syringe. Employed in this way I have been able to rid my plants effectually of a pest which, of late years, has committed such havoc not only in this country but also on the continent. *J. S.*

*Durability of Larch.*—I have heard of late several debates upon the durability of Larch, as compared with other kinds of timber, and I should feel obliged if any of your correspondents would kindly favour me with the results of their experience in the matter. In his "Encyclopedia of Agriculture" Loudon says:—"The Riga timber and American White Pine are about one-fifth part less strong than the Larch. The Larch is superior to the Oak in stiffness, in strength, and in resistance, or the power of resisting a body in motion; and it is inferior to Memel, or Riga timber, in stiffness only. The Larch tree, while growing, may be uprooted by wind, but it seldom breaks over by the stem, either by wind or a weight of snow lodging on its branches. The durability of the timber, in every stage of its growth, is superior to every other, even to Oak itself. When speaking of all the above properties as belonging to the Larch, it is always to be understood to be grown in an alpine region on dry soil; in low rich soils the wood is of a very inferior character." The same author also gives us the results of experiments tried by M. Hartig, an eminent German professor of foresting. Small posts of Lime tree, black American Birch, Alder, and trembling Poplar, inserted in the soil, decayed in three years; the common Willow, Horse Chestnut, and Platanus, in four years; the purple Beech, and the common Birch, in five years; the Elm, the Hornbeam, the Ash, and the Lombardy Poplar, in seven years; the Acacia, the Oak, the Scotch Pine, the Weymouth Pine, and the Spruce Fir, at the end of seven years were only decayed a little to the depth of a quarter of an inch; the Larch, the common Juniper, the Virginian Juniper, and the Arbor-vitæ, were, at the end of the same period, untouched by decay. Thin boards of the same woods decayed in the following order: Platanus, Horse Chestnut, Lime tree, Poplar, Birch, purple Beech, Hornbeam, Alder, Ash, the Maple, the Spruce Fir, the Scotch Pine, the Elm, the Weymouth Pine, the Acacia, the Oak, and the Larch. It thus appears that the Larch, whether as posts with the bark on, or sawn up into boards, is by far the most durable of our timber trees. Last year I had an opportunity of seeing three gates, standing within 50 yards of each other, two of which were Memel, and the other Larch; the Memel gates had hung about 20 years, and by the time I saw them, were completely done; the Larch one had been erected about 17 years, and was as fresh as when it was first made. I may also state that the Memel gates were well coated with paint, while the Larch gate had only been once coated with coal-tar, which had nearly all worn off, exposing the bare wood to all the changes of the atmosphere; the outside of the wood was of a greyish colour, and when the knife was applied to it, it was found to be very hard, and of a

reddish colour when cut. I have also seen Larch rails, cut to three inches by seven-eighths of an inch, at the end of 20 years, as fresh as when put up. *A. Patterson, Maristown.*

*Eau de Lessive.*—The preparation of this, as explained by your correspondent at p. 774, 1852, and repeated in your leading article at p. 820, of the same year, is the practice of almost all washerwomen in Italy, and particularly in the Two Sicilies; and if the French washerwomen add fresh burnt lime to the wood-ashes, it is simply to convert the sub-carbonate of potash which they (wood-ashes) contain, into caustic potash, so that this alkali might have a greater affinity to the greasy matters which the dirty linen contains, forming a chemical combination (soap). You say you fear that the lessive remedy will have little value in vineyards, if the wash-tub only is to be its source, for no such quantity can be thus obtained as a vineyard would require. Now, with your permission, I beg to offer a suggestion—viz., the quantity of potash in a lessive tub of the usual size could hardly exceed half an ounce, I mean of solid potash—why then not use the potash that comes from North America under the name of pearl-ash? It is not only cheaper than what we can make, but much purer than the "lie." Again, if potash has a good effect on Vines, why not soda as well? Has any one tried this latter alkali? It is worth a trial, for it costs less by one half than potash. *Physiologist.*

*Syrian Fruits, &c.*—In Neal's "Eight Years in Syria," the author gives a brief, but pleasant account of the late Mr. Barker's delicious retreat at Suedia, in which he alludes to a few of the fruits cultivated by that gentleman; among them he names "the rare Playquemenia, which even in the coldest season yields its fresh and inviting fruit to vary the insipid flavour of preserves." What is this fruit, and has it been introduced into England? He also speaks of "China Quinces double the size of an ostrich egg, and teeming with rich and delightful perfume." If this species is not in England, would it not be worth Mr. Fortune's while to inquire for it when once again in China. I trust his mission will be, in every way, a successful one, and that many horticultural novelties will be the result. The curious fingered Citron would be worth sending home, as it is lost at present to our gardens. A Myrtle tree is also noticed by Mr. Neal, as ornamenting Mr. Barker's garden, large and umbrageous, and bearing white berries, of which the natives are extremely fond, and consider them a delicious fruit—what is it? A curious old horticultural work has recently come under my notice, called "Eden, or a Complete Body of Gardening," published in 1757; in it are figured a very hardy, showy, early spring plant, "The Apennine Adonis," and a double "yellow Crocus"—are these things known? *A Devonian.* [The Plaqueminier (so spelt) is the name given by the French to the *Diospyros Lotus*, whose fruit is held in little esteem. The Adonis is well known, and is hardly distinct from the common *A. vernalis*.]

*The Golden Pippin Apple.*—At p. 791 of last year's volume, it is related that on the 7th December, there were exhibited "beautiful examples of the true old Golden Pippin. These had been trained on an east wall, from which fine healthy crops are annually gathered; while from standards of this variety in the same garden, the fruit is cankered and bad; surely going far to prove that instead of the Golden Pippin wearing out, as some imagine, the fact is, it is really too tender for our climate." On this point, recollections so far back as above 70 years would, on the contrary, seem to indicate that the true Golden Pippin is really a worn out variety; for some 70 years ago Golden Pippins were sold by the bushel in Covent-garden market. They were in equal plenty with the old Pearmain, and old Nonpareil. If recollection fails not, the usual price at that time for all these sorts varied from 4s. to 5s. a bushel, whilst less esteemed varieties were from 2s. 6d. to 3s. or 4s. The Golden Pippin was then a very common dessert Apple; it was the kind chosen for stewing as a supper dish, though never used for puddings. This abundance seems to prove that at that time the Golden Pippin was cultivated as a standard tree. I remember well, that the usual supply of this fruit failed almost suddenly; and that the scarcity of this variety in our markets was attributed to the Empress of Russia, who having taken a fancy for it, her agents had bought up all that was for sale at the enormous price of a guinea a bushel. However this might have been, the Golden Pippin never was again plentiful. Soon afterwards, some trees of the kind in my father's orchard at Pimlico became cankered, and ceased to bear fruit; but in one favoured spot on the south coast, the soil being a deep, rich loam, on a gravelly bottom, standard trees of the sort continued healthy, and bearing abundantly, to my knowledge down at least to the year 1815. *B.*

*Turnip Growing.*—That Swedes in rows at intervals of 5 feet will be a remunerative crop, Mr. Smith's experiment, referred to at p. 788 of your last volume, sufficiently proves; and that the crop of the preceding year, of 27 tons, with 240 bushels of early Potatoes in the intervals, was a crop that any or all of the cavillers at the system adopted by Mr. S. would be quite happy to produce is tolerably self-evident. Still I am inclined to think the results attained on a somewhat different system on my own little piece of land quite as satisfactory. The land in question was sadly out of condition three years since, and not much better than a swamp. I examined it, ploughed the rank sward in, took a crop of Oats; the following year a crop of Potatoes dug in with soot and salt and guano—a



light dressing of either; and after the Potatoes were removed, I threw it into broad ridges with 13-inch forks. These ridges were dragged down in the spring with a one-horse scarifier, which, with the harrows, were employed upon it again, at intervals, about three times each. A moderate dressing of manure was then put into ridges drawn at 32 inches apart, and the seed dropped upon superphosphate of lime compost dibbled in at 12 inches apart. Nearly 2 cwt. to the acre of superphosphate was thus applied. Now for the result. Early in September the tops of these Swedes reached nearly to my hips; and on drawing them, from a piece 10 yards wide and 95 yards long, I led away 12 one-horse loads well piled. Many of these Turnips were 28 to 30 inches in girth; the largest I weighed was 15 lbs., and scores weighed 13 and 14 lbs. each. I can only guess the weight of Turnips my cart holds. I think little less than 12 cwt. Some of my poorer neighbours are very willing to pay me 5s. and even 6s. for such a load as I have described, and take it as a favour to be allowed to buy at that rate; so that I think my estimate cannot be excessive. At that rate I have 36 tons to the acre. I had also in rows, at similar distances, and on a similarly made estimate, 35 tons of Mangold to the acre; and in another part of the field, though not good Carrot land, some of the largest and handsomest Carrots I ever saw, several of them 16, 18, and even 20 inches long and 12 inches in circumference, and many weighing 3 lbs. each; the crop, as to quantity, being very good. 4.

**Mushrooms.**—A "Constant Reader" says he got no Mushrooms from a bed, after being spawned seven weeks. Last year I made a bed in a shed, under exactly similar circumstances to those mentioned by your correspondent. The bed was spawned on the 7th November, and the first dish of Mushrooms was gathered on the 17th January (ten weeks and one day), and from which bed I cut bushels of Mushrooms. *R. Mussey, Kirby Hall, Boro-bridge, Yorkshire.*

**Destructive Birds.**—Objections are often raised against thin sowing and growing of corn in cottage gardens, allotments, &c., on account of the ravages of birds. We confess that not only corn, but crops of other seeds are frequently reduced one half, and the other half injured so as to render them unmarketable, simply through the instrumentality of linets, chaffinches, sparrows, &c. It often happens that one half of corn grown on small plots is totally destroyed by them. A small field of Oats, under our notice, for three weeks during the late wet harvest, was obliged to be left at the mercy of at least 1000 sparrows, which we venture to assert destroyed one quarter of the entire crop. The greatest part of what corn is left for pigs and for gleaners is devoured before they can have a chance of shocking or picking it up. On the whole this is a sad waste and loss, and cannot be afforded in these free trade times. A farmer writing from Australia to his brother, says: "We have no destructive birds here as in England, and our corn may be safely left abroad two months after it is cut, without fear of birds and wet." But why not avoid the evil here in some degree by destroying them? which is easily effected in winter by shooting, and poisoned corn or seeds, &c. Such means are resorted to for the destruction of rats, mice, and other vermin, when they become a pest, and why not destructive birds? Hawks, which were destined to destroy small birds to a limited extent, are now nearly extinct in most localities. Gamekeepers and sportsmen, with a view of protecting game (which, by the bye is equally destructive), have destroyed nearly all the hawks, at the expense of gardeners and farmers; hence we have now recourse to growing some of our seeds near a wood, where here and there a solitary hawk strews the small birds right and left. Imagine one hawk to destroy only one small bird each day, and that where there used to be 10 birds of prey, there is now only one! Boys, too, are not allowed to ramble the fields bird's-nesting as formerly, and various other reasons might be assigned for the overabundance of destructive birds. "Sparrow clubs," so called, are established in some localities, each member being subject to a forfeit if he does not produce a certain number of destructive birds' heads or tails. Such meetings are well meant, but their proceedings are not sufficiently known. Perhaps now the subject is broached, some one connected with such associations will second it. Some question whether the good they do does not more than counterbalance the evil; we think not. Rooks often do good, but they make sad havoc sometimes; they are, however, more easily seen and chased away. We are informed there was an act in the Statute Book, which compelled the churchwardens of a parish to pay so much a head or dozen for destructive birds, rats, mice, foxes, &c., to whoever might produce them. Was it ever repealed? *Hardy and Son, Maldon.*

## Societies.

**CALEDONIAN HORTICULTURAL.**—Excerpt from minutes of meeting of the Council held 23d December, 1852. The Secretary read the following report respecting Mr. McGlashen's transplanting apparatus:—The committee beg to report that they have had opportunities of seeing the practical working of the apparatus in its various forms, and that they were satisfied that Mr. McGlashen has introduced a decided improvement in the method of transplanting. That this patent apparatus is simple

in principle and in construction, that it is expeditious in its working, and thus saves much time and labour, and that it raises plants out of the ground with a large adherent ball of earth, so that they can be successfully transplanted, and may be conveyed to any distance in safety. That the apparatus in its various forms is applicable to all departments of gardening, to trees, shrubs, herbaceous plants, florists' flowers, and kitchen vegetables. The committee, from personal observation, beg to report most favourably on Mr. McGlashen's invention, and they have no hesitation in recommending the apparatus strongly to the attention of all who are engaged in horticultural and foresting operations. They would, moreover, suggest that the Caledonian Horticultural Society should testify their approbation of Mr. McGlashen's exertions, by awarding to him a first class Certificate of Merit. The Council approved of the above report, and directed a copy to be sent to Mr. McGlashen.

## Notices of Books, &c.

*Ward on the growth of Plants in closely glazed Cases* (12mo, Van Voorst), has, we are glad to see, reached a second edition, which, owing to the very improved and extended form it has now taken, renders the first edition obsolete. We need not say how valuable the author's invention has proved to be in carrying plants safely over long voyages; nor what a comfort or pleasure to many the little window gardens formed in accordance with its principles have proved. The present edition is embellished with several clever woodcuts, some of which are from no meaner a pencil than that of Mr. E. W. Cooke. The following letter from Mr. Deane, of Clapham, speaks for itself, and forms the best commentary upon the subject before us:—

"When Suminsky's work on the development of Ferns first came into my hands, a strong desire to repeat his observations led me to seek for seedlings where they were most likely to be found, namely, in my own Fern case, at Kew, and other conservatories; but I soon found such sources were unsatisfactory, for although I could obtain abundance of plants in which the organs of reproduction (?) described by him were clearly discernible, yet I could rarely find the moving ciliated bodies said to perform such an important part in their development. There were, too, differences evidently specific that I could not comprehend, and which were a bar to anything like correct observation. It was therefore obvious, if the investigation were to be followed up successfully, that some means must be devised for raising an unlimited supply of any desired species. The usual method of sowing Fern seed, by scattering it over damp, sandy mould, is very uncertain, for the mould itself will frequently contain the seeds of other species; and even if the crop of plants come true to the sowing, it is difficult properly to separate sand and other extraneous matter from the young frond previously to placing it under the microscope, without danger of injuring its delicate structure. My plan, therefore, was to procure some soft, porous, potter's ware material that should readily imbibe and retain moisture upon which to sow the seed desired to be raised. While searching for such material I met with a peculiarly fine and soft sandstone, admirably adapted for the purpose. This I prepared by breaking it into pieces of from one to two inches square, and less than one inch thick, afterwards rendering the faces parallel and smooth by rubbing them on a flat stone. The reason for thus adjusting the size and smoothness of the pieces was simply to facilitate their being placed for observation on the stage of a microscope. Before sowing the seeds on these prepared pieces they were baked in an oven to destroy any organic life that might be lurking about them. They were then piled in dishes, moistened with distilled water, and covered with bell-glasses, preparatory to receiving the seed. The seed to be sown was obtained from a recently gathered frond laid fruiting side down, between two sheets of white paper, on the top of which was laid a book or piece of board to keep them in place. In the course of three or four days the seed was discharged from the capsules, and removed to the damp stone by turning the stone down upon it, of course taking care that the seed did not lie too thickly. In about 60 hours germination had commenced, and thenceforth daily progressed into maturity. In this way I have raised several species of ferns without a failure; abundant means being thus afforded for observing their development from the commencement of germination up to the perfect plant.

"I have been repeatedly told by those who have attempted to raise Ferns from seed, that I might sow what I pleased, but something I did not want would spring up. Most likely such had been the experience of my informants, although the reason for it was not obvious. My experiments proved the contrary, and demonstrated most unequivocally, that, by observing the requisite conditions, any species may be raised, if the seed sown be fresh and fully matured.

"This principle of raising Ferns is applicable to several important purposes besides that of the facility it affords for observing and studying the laws of their development. In the first place many kinds now rare and valuable, or even unknown in this country, from the difficulty of bringing them home, even with the protection of your glazed cases, might be introduced with facility by sowing the seeds in the country where they grow, on some suitable material, whether sandstone, Bath brick, tile, wood, bark, or even charcoal—

and bark suggests itself in the case of such as are parasitic in their habits—and enclosing them in a small glass case, a case so much smaller than would be required for full-grown plants, that it might be a cabin companion for a long voyage. Secondly, it is frequently desirable, even in this country, to raise particular species with some greater degree of certainty than, from various ill-understood causes, is generally found practicable. Again, experiments on this principle may be tried in a great variety of ways until the true habits of obscure species are accurately determined. Some Ferns are impatient of removal; such may be raised from seed on suitable pieces of stone or wood, and afterwards introduced into pots, or crevices in walls and rockwork prepared to receive them.

"I conceive that a Ward's case, artistically filled with such admirable sandstone as my experiments have been made upon, but which I am sorry not to be able to tell you the source of, might be judiciously sown with seeds of small moisture-loving Ferns, and form one of the most exquisite of drawing-room or cottage conservatories, and which, in its gradual progress to maturity would delight the eye, expand the understanding, and warm the heart in love and gratitude towards the author of that portion of creation which is truly the most beautiful, as well as most essential to our healthy and happy existence on earth—I mean the vegetable kingdom.

"No kind of vegetation that I am acquainted with has ever struck me with such wonder, admiration, and delight, as the little crops of Ferns raised as you have seen them, and as I have now endeavoured to show you how to raise; and nothing would please me better than to see others deriving similar enjoyment from this simple and accessible source. Any one who makes a garden of this kind under a bell-glass, must observe that the material on which the seed is sown is so porous that the requisite amount of moisture will pass to the top by capillary action when applied to the bottom of it. Also, that with an abundance of light, the sun must not shine directly upon it."

*Lawson's Synopsis of the Vegetable Productions of Scotland.* Small 4to. Lawson and Co. Edinburgh.

No one has yet forgotten the admirable exhibition of Scotch raw materials produced in the Crystal Palace by Messrs. Lawson and Co. It was the pride of ourselves and the admiration of foreigners. All of importance in rural economy that the soil of the most northern of the three kingdoms is capable of producing was there gathered together with unexampled industry, and exhibited with rare skill and taste. The collection itself has now been acquired for the museum at Kew, where it has found a permanent resting-place; and the work before us, a thick volume of between 500 and 600 pages, explains in much detail its multifarious contents. We believe there is nowhere to be found so complete an account of agricultural and horticultural varieties, or so good a description of their respective peculiarities. Of Wheat alone 179 varieties are thoroughly well distinguished, and so of other things. Messrs. Lawson's work is not therefore a mere museum catalogue, but a volume to be placed on the shelves of the library among dictionaries and other valuable works of reference.

*Hardy's Treatise on the Potato* (Hardy, Maldon) is a sixpenny pamphlet describing the practice of experienced and successful cultivators.

*Dr. McCormac's Moral-Sanatory Economy* (12mo, Longmans) is a most earnest appeal to all classes of society to join in improving the moral as well as physical atmosphere in which we dwell. Philanthropists will read it with pleasure, and the indifferent with advantage. We may not agree in all the author's opinions—we may even think that a fervid imagination has occasionally led him to overstate his case, but this is the natural error of a writer thoroughly in earnest, and will be readily forgiven for the sake of the spirit which breathes in every page of the little shilling volume before us.

*Rivers's Orchard House* (2d edition, Longmans) is a reprint of a well-known and very useful little treatise, with the addition of the author's experience collected in 1852.

*Walpers's Annales Botanices Systematicæ* (Vol. III., Part 5) includes the index of Vols. II. and III., as far as Asparagus.

*Johnston's Elements of Agricultural Chemistry and Geology* (the sixth edition, Blackwoods) is now before the reader in the form of a compact duodecimo of 410 pages, enriched with many new facts, and much valuable new matter. The work is, we need not say, indispensable to all intelligent cultivators. The author recommends the student to master in the first instance his *Catechism of Agricultural Chemistry*, &c.; then to proceed to these *Elements*, and to conclude with the perusal of his more elaborate *Lectures*.

*The Dory and the Veld, or Six Months in Natal.* By Charles Barter, Esq. (12mo., Orr and Co.), is a volume that will suit intending emigrants. "We have no doubt that it tells the truth concerning a valuable colony, of which people in general know little. The author touches upon the causes of the Kaffir war, and strikes with no light hand at the practices of the missionaries, to which he, in common with so many others, entertain no doubt that we owe in a great measure that lamentable infliction. Perhaps typographical accuracy was not to be expected in a work of this sort; at all events it has nothing to boast of in that respect.

*The Emigrant.* By Sir Francis B. Head. (Murray's



Railway Reading.)—Everything written by Sir Francis Head is interesting and instructive, as well as amusing. The volume before us, as far as it paints the social state of Canada, and describes the stirring events connected with the raid executed some years since by Canadian rebels, with the help of scamps and vagabonds from the American border, is very far from being the least entertaining. We recommend it as an acceptable Christmas present, as well as a companion in a carpet-bag. By way of showing that it is something more than clever talk, we extract the following memorandum about ice, which may now be considered a seasonable subject:—

"I have often been amused at observing how imperfectly the theory of ice is, practically speaking, understood in England. People talk of its being 'as hot as fire,' and 'as cold as ice,' just as if the temperature of each were a fixed quantity, whereas there are as many temperatures of fire, and as many temperatures of ice, as there are climates on the face of the globe. The heat of 'boiling water' is a fixed quantity, and any attempt to make water hotter than 'boiling' only creates steam, which flies off from the top exactly as fast as, and exactly in the proportion to, the amount of heat, be it great or small, that is applied at the bottom. Now, for want of half a moment's reflection, people in England are very prone to believe that water cannot be made colder than ice; and, accordingly, if a good-humoured man succeeds in filling his icehouse, he feels satisfied that his ice is as good as any other man's ice; in short, that ice is ice, and that there is no use in anybody attempting to deny it. But the truth is, that the temperature of 32° Fahr., that at which water freezes, is only the commencement of an operation that is almost infinite; for after its congelation water is as competent to continue to receive cold as it was when it was fluid. The application of cold to a block of ice does not therefore, as in the case of heat applied beneath boiling water, cause what is added at one end to fly out at the other, but, on the contrary, the extra cold is added to and retained by the mass, and thus the temperature of the ice falls with the temperature of the air, until in Lower Canada it occasionally sinks to 40° below zero, or to 72° below the temperature of ice just congealed. It is evident, therefore, that if two icehouses were to be filled, the one with the former, say Canada ice, and the other with the latter, say English ice, the difference between the quantity of cold stored up in each would be as appreciable as the difference between a cellar full of gold and a cellar full of copper; in short, the intrinsic value of ice, like that of metals, depends on the investigation of an assayer—that is to say, a cubic foot of Lower Canada ice is infinitely more valuable, or, in other words, it contains infinitely more cold, than a cubic foot of Upper Canada ice, which again contains more cold than a cubic foot of Wenham ice, which contains infinitely more cold than a cubic foot of English ice; and thus, although each of these four cubic feet of ice has precisely the same shape, they each, as summer approaches, diminish in value, that is to say, they each gradually lose a portion of their cold, until, long before the Lower Canada ice has melted, the English ice has been converted into luke-warm water."

Having said thus much we will venture to hint that the volume might be advantageously curtailed by the omission of some part at least of Sir Francis Head's defence of his government in Canada, which belongs to history rather than to social colonial questions.

### Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN. —The night before our inspection of the garden on this occasion (26th Dec.), the neighbourhood of London was visited by a violent storm of wind and rain, which did considerable damage, blowing in the end of a cottage on Acton Green, laying some trees prostrate and dismembering others, &c. We are glad, however, to state that the Society's garden sustained but little harm. Mr. Ewing's glass wall withstood the shock remarkably well, the only damage being three or four panes blown out, which had been either put in or re-adjusted some time after the wall was up, and just before the wet weather came on, so that the putty in all the instances had not set, but was almost as soft as when the panes were put in. As the wall was fully exposed to the violence of the storm, some idea of the power glass walls have in resisting such occurrences will therefore be obtained. In the Arboretum, a fine tall Thuja orientalis was blown over; but, with that exception, all the other Conifers, and most of the trees and shrubs, remain unhurt. The Nepal Berberry (*B. nepalensis*), planted out on a little rock-work, in the angle made by two walls close to the glass houses, has not lost a leaf, but it was certainly somewhat sheltered; nevertheless its fine foliage seems to be able to withstand more wind than was anticipated, without being torn off. It appears to like its present situation well, and as yet it has not suffered from the effects of severe weather. Although the heavy rains which have so long been experienced have somewhat abated during the past week, yet, as might be expected, the garden is still very wet, and out-door operations are necessarily much impeded; otherwise the terracing the side of the Rhododendron basin opposite the orchestra, and other alterations, which have been settled upon, would be proceeded with. It is, however, satisfactory to find the state of the garden so very good, considering the great quantity of rain that has fallen, in some cases actually filling up the hothouse stake-holes, whose drainage is ordered to be examined, and put in repair.

The heating of the pits belonging to the kitchen garden department (in which we observed Chicory, Rhubarb, Seakale, and early Potatoes), is, we understand, also about to be improved. At present it is confined to the bottom of the pit, with cavities at the sides to permit the warmth to ascend to the surface; but this arrangement is found to be imperfect, and a plan is in contemplation to put them in the position of all well constructed pits, which now afford separate command of top and bottom heat.

Few things are in flower in the houses beyond what were mentioned in our last report. We, however, remarked *Lopezia macrophylla*, or as it is sometimes called *Jehlia fuchsoides*, a rather promising plant, received from Messrs. Rinz, of Frankfurt, in April last. It is a soft, smooth, pale-green shrub, with a fleshy tuberous root, like some *Fuchsias*. The leaves are deeply veined, and have something of the appearance of those of a Hornbeam. The flowers stand on long slender stalks, singly in the axils of the leaves, and are as large as those of a *Fuchsia globosa*, and of a very deep rose colour, which pervades every part except the anther, which is blue; it is rather coarse in foliage and habit; but it will, nevertheless, prove an acquisition to the greenhouse, and it bids fair to be a good winter flowering plant. We may also direct attention to two varieties of *Billbergia bifrons*, received from M. de Jonghe, of Brussels, which have not been noticed before. These plants have the foliage of a *Pitcairnia* more than a *Billbergia*. The flowers are in oblong heads; in one plant brilliant fiery red and very handsome, in another greenish yellow. They are dry stove plants, requiring the same treatment and soil as *Tillandsias*, or others of the Bromeliaceous order, with plenty of moisture during the growing season. If potted together, so as to force the spikes to intermingle, the two varieties should produce a very gay effect. The flowers will keep six weeks in a sitting-room without wholly losing their beauty. An *Osbeckia*, a plant requiring nearly the same treatment as a *Justicia*, has also blossomed in one of the stoves; it is a showy kind, and will make a good winter flowering plant. The Orchids potted in coke-dust still continue to thrive; and a trial has been made with guano-water for this tribe of plants, which seem to succeed all the better for its application. The full extent of its effect, however, has yet to be proved.

In consequence of the unseasonably mild weather, the buds of the fruit trees in the orchard are swelling fast—in some instances, perhaps, too fast. At present, however, there is every appearance of a good crop next season, and the long heavy rains having thoroughly wetted the soil (which is very deep in the orchard and on gravel) about the roots of the trees, the latter will be in a better position than they were last year to mature it in perfection. Owing to the failure of the best blossoms, fruit generally has been much out of character this year, and Pears are fit for table now that under ordinary circumstances should not be ripe for two months to come. As regards the latter, we may mention that the Soldat Labourer proves to be the same as the Beurré d'Aremberg or Orpheline d'Enghien, as it is called in some collections.

In the kitchen garden we observed some nice white flowered Batavian Endive, a kind with fine thick fleshy leaves that blanch as white as ivory. We also remarked some heading curled Kale or hearing Borecole, a sort that resembles Scotch Kale; but whose inner leaves form themselves into a heart like a Cabbage. A Borecole with variegated foliage likewise deserves notice, on account of its not only being useful as food but also for garnishing.

### FLORICULTURE.

LEADING FLOWERS OF 1852.—On looking back to the past year, one cannot fail to discover much that is intimately connected with the welfare of floriculture for the year which this day commences. We shall therefore give a short resumé of such matters pertaining to the pursuit as may tend to point out what progress has been made, in order that our skill may be directed to the more easy attainment of that for which all should strive—viz., improvement. Let us begin with the Camellia. Under this head, Countess of Ellesmere and Martini are both valuable acquisitions to their respective classes; the former is white with delicate rose stripes, full, symmetrical, and of average size; the latter is perhaps the nearest approach to scarlet of any Camellia hitherto raised, and it is not wanting in other good properties. Gloire de Paris must likewise claim attention, as must also *Mathotiana*, the latter being remarkable for its large size: let us hope that this year some society may be induced to hold a Camellia show; so beautiful a flower deserves one. An annual display would at least cause the trade to stage the novelties of the season, a point itself of much interest. Among Auriculas (always slow "to move on"), Sir J. Moore (Lightbody) is a first-rate acquisition, and will doubtless be sought for by all growers who value excellence. Amongst the latest introductions the Lancashire Hero takes a foremost place. We wish, also, to see the Polyanthus in better keeping, a spring flower which few excel in cheerfulness of character and brilliancy of colour; the latest novelty of any merit is Kingfisher (Addis); this is a variety doubly welcome, as it is distinct from any in cultivation, and it possesses high quality when compared with such a coarse flowering sort as George the 4th. It is small, certainly, nevertheless it is worth a dozen

of the variety just mentioned. Both the Auricula and Polyanthus may be said to have their head quarters in Lancashire, and it is from there we must look for improved varieties; let us therefore not be disappointed. J. E.

THE CHINESE PRIMROSE (*Primula sinensis*).—This is a common plant, yet perhaps hardly so much prized, or so well cultivated, as it deserves to be; for though wanting the gaiety and variety of colour of the Pelargonium and other popular favourites, it is, when well grown, certainly handsome; but its principal value is derived from its blooming in winter, when flowers are scarce; and few are so useful for decorating the drawing-room or conservatory at that season, either singly or in combination with other winter-flowering or forced plants. It requires the simplest treatment; and perhaps the following account of a successful method of cultivation may be found useful to amateurs or others who have not hitherto paid much attention to it. Seeds may be sown in succession in May, June, and July, to furnish a supply throughout the winter and spring. Let them be sown in light sandy soil, and placed in a moderate hot-bed frame, or an ordinary greenhouse would do; as soon as the plants are large enough, prick off into other pots or pans as many as are required, and place them near the glass, to prevent them from becoming drawn; which, at any stage of their progress, would greatly injure them. As soon as they are fit, pot them singly into thumb-pots, giving increased air; when established, they may be placed in a cold frame, kept at first rather close, afterwards give more air, and shift progressively until they are in pots of the required size; 6-inch pots will generally be found large enough, except for specimen plants, which may be put into an 8 or 10-inch size. The soil must be gradually increased in strength, until it is composed of equal parts loam, peat, and leaf-mould, mixed with a little sand and fine charcoal. The pots must be carefully drained, as the plants require liberal supplies of water. They may remain in the frame until the approach of frost, and may then be removed to the greenhouse. Those of the first sowing will be in flower by the beginning of October, the second by Christmas: those of the third or July sowing should be wintered in 5-inch pots; any premature flower-stems they may show pinched out, and be finally shifted in the beginning of February. As there may be danger of the collars of the plants being affected by damp during dull weather in winter, they may occasionally be supplied with water from below. In this way, and by giving abundance of light, air, and water, handsome plants, with richly coloured flowers, may be produced; which, mixed with a few common things, such as Cyclamen persicum, Tree Violets, Lily of the Valley, Crocuses, Snowdrops, and Winter Aconites, all of easy cultivation, would make a basket at this season fit for any drawing-room. W. E.

AURICULAS: H. G. H., Dover. Your letter has been forwarded to the proper quarter.

CATALOGUE received from Messrs. Fraser, Lea Bridge Road, Leyton, Essex: Schedule of the County of Gloucester and Cheltenham Horticultural Society, for 1853, at hand. Show days, May 17, June 14, July 12, September 7; also the Scottish Florist and Horticultural Journal for January.

CHRYSANTHEMUMS: A. B. As the bloom dies off you may cut down the stems, which will have broken from the bottom, and will furnish sufficient increase for your own growing.

CINERARIAS: G. Whether in pits or houses, look well to keeping down insects; give them plenty of air and sufficient room to prevent them from drawing. If large plants are wanted, see that they don't get pot-bound at this time, but repot as soon as they require it.

POLYANTHUS: E. If in pots a cold frame is best for them. They like more moisture than Auriculas, and as much air as you can give them. Examine those in beds or borders to see that slugs are not injuring the heart of the plants; and clean them of dead foliage or leaves of trees that may have accumulated around them.

ROSES: L. K. Let them alone for a time, the buds starting on your unpruned trees will not materially injure their blooming. On pruning, cut back to two, three, or four eyes, any time towards the end of February, or early in March; as a rule, the more vigorous the growth the less shortening is needed, while those of delicate habit must be kept close at home, even to a single eye if that can be trusted; at most leave two, and if both break, then remove or disbud the one which may seem inclined to grow in the most awkward position.

### Miscellaneous.

Melons in St. Michael's.—Melons, water and other kinds, are abundant during the summer and autumn months. The manner of cultivating them is as follows:—The ground is deeply trenched in April, after which holes are dug 2 feet deep and 8 feet apart, the rows being the same distance; some rich manure is thrown into the holes and mixed with the soil. In this state they remain for a week or ten days, the manure and soil being stirred up two or three times during this interval. Two or three inches of soil are then spread over the mixture, and the seeds sown; a kind of basin is formed to protect the young plants from strong winds, which often blow in the end of April and beginning of May. As the plants grow they are thinned out, and the earth round them is drawn up and pressed firmly about the neck and roots of the plants that remain after thinning. This operation is performed two or three times, after which, with the exception of spreading out the shoots and cleaning, they are left to themselves. The varieties of Melon grown are "legion;" every one leaving the island on a visit returns with some new kind, which is generally sown along with the old sorts. In fact, so numerous are the plots of Melon-ground that it would be impossible to prevent intermixture of the sorts taking place. I adopted the English method of stopping the shoots, and was more successful than my neighbours. The Water Melon must be allowed to run like a Vegetable Marrow, or no success will



attend its cultivation. The heaviest Melon I produced was a kind of Beechwood, weighing 11 lbs., and of delicious flavour; the heaviest Water Melon 22 lbs. The latter variety is a universal favourite with the Portuguese, serving as food, at the same time quenching their thirst, and furnishing a wash for their faces. Cucumbers grow successfully treated in the same manner. Wallace, in *Journal of Hort. Society*.

**Experimental Researches upon the Temperature of Reptiles.** By M. Aug. Duméril.—From these experiments it appears that frogs have a proper temperature, superior to that of the water they inhabit. When this water has a temperature of 59° to 64° Fah., the difference in their favour was in no case less than 0.54° Fah. or more than 1.26° Fah. But when transported into much cooler water, this difference became much greater; thus the temperature of the frogs remained at 47.48° Fah., when the water in which they were immersed was only at 45.5° Fah. The raniform Batrachia therefore display a certain power of resistance to cold. M. Duméril has observed that this power was maintained as long as the temperature of the water was kept above the freezing-point, more especially when the cooling was not sudden; but when the temperature of the surrounding medium was reduced below this point, the frogs became congealed; this, however, did not always cause the death of the animals submitted to experiment. Thus the author has several times been able to revive frogs which were in a complete state of rigidity, and the internal temperature of which was fully 1° below the freezing-point, by placing them in contact, first with melting ice, and then with water becoming gradually less and less cold. Serpents have a proper temperature, which scarcely exceeds that of the medium which they inhabit. But in order to place this fact beyond all chance of error, it is necessary only to observe these reptiles at a period when neither digestion nor the change of skin is going on; the latter producing a diminution of temperature varying from 0.45° to 1.8° Fah., the operation of digestion, on the other hand, augmenting the temperature from 3.6° to 7.2° Fah. M. Duméril has also proved that serpents offer less resistance to increased heat than the frogs; this is owing to the scaly covering of the former, which almost entirely prevents the cutaneous evaporation which takes place with so much facility through the naked skin of the Batrachians. *Comptes Rendus*, May 31, 1852, p. 837. *Annals and Magazine of Natural History*.

**Cement for Stone Ware.**—Gelatin is allowed to swell in cold water, the jelly warmed, and so much recently-slacked lime added as requisite to render the mass sufficiently thick for the purpose. A thin coating of this cement is spread while warm over the gently-heated surfaces of fracture of the articles, and let dry under a strong pressure. What oozes out is removed directly with a moist rag. *Chemical Gazette*.

## Calendar of Operations.

(For the ensuing week.)

### PLANT DEPARTMENT.

As frosty weather may now, at any time, be expected, a good supply of dry litter, Fern, or other materials should be in readiness, for extra covering, when required. The principal work in this department will consist in keeping the houses and their inmates scrupulously clean. Moderate fires and ventilation, with frequent washing of stove plants, will be necessary. The conservatory and show houses should now be getting gay with Camellias and forced plants, which will take the place of the Chrysanthemums, now over. Keep up a regular succession of plants to bloom through the spring, by bringing forward the stock of forcing plants as wanted. Roses, both dwarfs and standards, Honey-suckles, scarlet Thorns, hybrid Rhododendrons, and Azaleas, with a host of other things, will enable you, in addition to the usual occupants of the houses, to make a brilliant show through the spring. Hyacinths, Narcissus, Tulips, Lily of the Valley, and other plants of the above class, must be duly forwarded as wanted. Hard-wooded plants will require a dry pure atmosphere to guard against mildew and damp.

### FORCING DEPARTMENT.

**VINERY.**—Considerable care will be necessary in maintaining a proper atmosphere for Vines now breaking. The great evil to guard against is too much moisture; and the other, the want of proper ventilation; for neither can the Vine, nor any other hard-wooded plant, form a healthy leaf in an atmosphere saturated with vapour, and deprived of circulation. It should, therefore, be the object of the cultivator, at this season, to keep the air in the house moderately moist and in motion. There are but few houses in which this cannot be done by a little contriving. The outside border should be carefully watched, and a heat not much exceeding 70° should be aimed at. In severe weather be content with adding fresh material to the surface rather than disturb the whole. Snow and heavy rain should be excluded by canvas well tarred, or thatching, with the above instructions. Let the temperature range from 58° or 60° by night to 65° by day, allowing an additional rise of 8° or 10° in sunshine. Succession Vineries should be pruned and dressed, as the crops are cleared off, and everything got in readiness to start them as required. **LATE VINERIES.**—When Grapes are still uncut they must be kept perfectly dry and well aired, looking over the

bunches occasionally to remove decayed berries. Prepare cuttings of the kinds you wish to propagate at this season. **PINERIES.**—At this season, in most places, Pines are in great demand; and accordingly fruit-ripening will require a dryish heat, and as much light and air as can be given; those advancing may have more moisture, but the other conditions are essential to their well-doing. The bottom heat must be kept steady, but the plants not disturbed; a temperature ranging from 60 to 85 (the latter by sun heat only), will enable you to bring them on to perfection, if you have light in proportion; if not, reduce the temperature accordingly. The first crop for the season should now be showing fruit; these should have a dry temperature, until after flowering, and great attention paid, that they have no check at the root. Keep all the later fruiting stock and the successions in a dry, steady temperature, which may run from 58° to 70° **PEACH HOUSES.**—Where the early Peach house was begun last month the buds will now be swelling; a genial heat must be kept up, not exceeding 40° or 45° by night, according to their forwardness, and 60° by day. Syringe them every morning, but on frosty evenings let the steaming of the heating apparatus suffice. Get the second house in order by pruning and tying in the wood. The shoots of some varieties of the Peach are often deficient of leaf buds, and it is better to wait till they break before shortening them, otherwise the fruit becomes abortive for want of a leader. Keep the outside borders protected from frost and snow, by some preventive material. If Cherries are wished particularly early, a few may now be commenced in a low temperature. Figs may now be started very gently, having previously been thinned out, and dressed; if in tubs, or pots, a soaking of liquid manure should be given them. Plunge the first crop of Strawberries in a mild bottom-heat; the best kinds for the early crop are Keens and the Alice Maude. When the truss of bloom appears, remove them to a light house to bloom. Protect the remaining stock from frost and heavy rains. The "Queens" are very tender, and are injured by either.

### FLOWER GARDEN AND SHRUBBERY.

If flowers are required to occupy those beds in the spring which are afterwards devoted to the usual bedding-out plants, they will have been planted; and such being the case, some choice things now coming up may require a slight protection. Saw-dust, leaf-mould, or old tan, may be put over such things as the best Anemones, Scillas, Hyacinths, and Tulips, covering the surface afterwards to resemble the other beds. Keep the beds cleanly raked, and the edging and Grass in good order. Deciduous trees and shrubs may now be thinned out, and pruned, if such is required; but evergreens should not be touched for the present.

### FLORISTS' FLOWERS.

Thoroughly go over every department previous to the severe weather we may now expect setting in. If the late hurricanes have damaged the glass in the frames, let them be immediately repaired, "drip" being one of the worst enemies florists' flowers have to contend with at this season of the year. It is advisable to remove precocious blooms, both of the Auricula and Polyanthus; they do the plants no good. Protect Tulips from excessive frost, by hooping the bed over, and covering with mats. Collect and turn compost; when convenient there should always be a stock well sweetened kept under cover, to be ready at a moment's notice.

### HARDY FRUIT GARDEN.

The general pruning and training of wall trees and espaliers may be proceeded with. Peaches, Nectarines, Figs, and Apricots are, however, better left for some time yet. We advise Gooseberries and Currants to be planted in rows 5 feet apart, and trained as low espaliers, as the most eligible mode of growing them. These fruits may now have the necessary pruning. Take advantage of frosty weather, should it occur, to wheel manure to such fruit quarters as require assistance.

### KITCHEN GARDEN.

The manuring and trenching of vacant ground should be proceeded with if the weather should become dry and frosty, at which times the formation of new borders should be attended to; and all descriptions of work, requiring the removal of earth. Clean plots of ground immediately the crops are off; as the refuse, if left, only affords shelter to vermin. In mild weather the vegetable quarters would be much benefited by a dressing of salt and hot lime, repeated in two or three times; this, by killing the present stock of slugs, will save much after trouble. Stir between all planted crops when the ground has dried a little, such as Cabbage Lettuce, Peas, &c. A successful crop of Peas and Beans may soon be planted, the former in a dry sandy plot. We always sow our own in an open field for the early crop, and never stick them; but this applies only to certain localities. A small crop of Early Horn Carrot and short-top Radish may also soon be sown on a warm border, covering them with litter till they come up. Sow in a frame a little Cauliflower, Lettuce, Parsley, &c., for transplanting to a warm border in April, to succeed the autumn-sown plants. Give air at all opportunities to Radishes, Carrots, and plants, protected in frames. Keep up successions of Seakale, Asparagus, and Rhubarb, and make sowings of Cucumber and Melons for the spring crops. Cucumbers in a bearing state will require a higher temperature, say 70° to 85°; keep the shoots thin, and allow them all the advantage of sun heat. The bottom heat must nearly approach that of the house.

## STATE OF THE WEATHER NEAR LONDON, For the week ending Dec. 30, 1852, as observed at the Horticultural Gardens, Chiswick.

Dec.	Month's age.	BAROMETER.		TEMPERATURE.					Wind	Rain.
		Max.	Min.	Of the Air.			Of the Earth			
				Max.	Min.	Mean	1 foot 2 feet deep.			
Thurs. ..	23	29.788	29.724	50	37	43.5	44	44	S.E.	.08
Friday. ..	24	29.799	29.735	56	48	52.0	44	44	S.W.	.09
Satur. ....	25	29.736	29.659	52	41	46.5	46	45	W.	.00
Sunday ..	26	29.700	29.581	53	45	50.0	45	45	S.W.	.29
Monday ..	27	29.396	29.032	54	39	45.0	47	46	S.W.	.60
Tues. ....	28	29.799	29.525	54	26	40.0	45	45	S.W.	.00
Wed. ....	29	29.677	29.654	54	47	50.5	43	44	S.W.	.02
Thurs. ....	30	29.046	29.754	52	38	45.0	45	44	S.W.	.00
Average ..		29.740	29.598	53.4	39.7	46.5	45.0	44.7		.43

Dec. 23—Cloudy; uniformly overcast.  
24—Rain; drizzly; overcast and windy at night.  
25—Exceedingly fine; overcast; boisterous at night.  
26—Partly overcast at day; very fine; boisterous, with rain; quite a hurricane in the night.  
27—Boisterous; white clouds, and sun occasionally; clear at night.  
28—Fine; clear and fine; slight frost at night.  
29—Fine; overcast; slight rain at night.  
30—Overcast; fine; clear and fine.  
Mean temperature of the week 94 deg. above the average.

## STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Jan. 8, 1853.

Jan.	Average Temperature.	Average Highest Temperature.	Average Lowest Temperature.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.					
							N.	N.E.	E.	S.E.	S.	S.W.
Sunday	41.6	52.2	37.4	9	0.21 in.	3	1	5	6	2	6	6
Mon	42.3	51.5	36.7	15	0.35	1	2	5	3	4	2	7
Tues.	42.1	51.2	36.7	10	0.40	6	2	5	3	1	9	3
Wed.	41.0	50.4	35.7	10	0.40	2	6	3	4	2	7	3
Thurs.	41.3	50.3	35.8	9	0.40	3	3	7	3	1	9	1
Friday	40.8	50.9	34.9	9	0.31	3	3	7	3	1	9	1
Satur.	38.8	50.4	34.6	7	0.26	3	3	7	3	1	9	1

The highest temperature during the above period occurred on the 6th and 7th, 1845—therm. 54 deg.; and the lowest on the 7th and 8th, 1841—therm. 6 deg.

## Notices to Correspondents.

**CEDAR NUTS.** *M.D.* Cedars do not produce Nuts. The writer probably meant *Cembra* Nuts. They are furnished by a Pine-tree called *Pinus Cembra*, concerning which *Kasthofer* tells us that the seeds or Nuts have so hard a shell as to render them difficult to crack, so that the operation is a winter's evening amusement among Swiss children, who show a skill in it which vies with that of a squirrel. In Siberia these *Cembra* Nuts are produced in immense quantities, and form a large part of the food of the peasantry.

**CUCUMBERS AND MELONS.** *D.* You had better have your span-roofed house in two compartments, and grow your Melons in the warmest end. The two cannot be grown well together on account of the difference of treatment they require. The mode of heating will answer for both.

**GREENHOUSES.** *G.W.H.* We are of opinion that it is of no practical importance whether span or ridge and furrow roofs are used for greenhouses. It is more a question of taste than of practical gardening, unless large areas have to be covered, and then ridge and furrow becomes indispensable.

**JASMINUM NUDEM.** *G.O.L.* We should not prune it at all; its graceful shoots take care of themselves, and owe half their beauty to their length. If it is really occupying too much room, then shorten its branches after the flowers are over.

**NAMES OF PLANTS.** *An Amateur.* We know no such plant as *Lilium cruentum*. *A.Z.* *Benthamia fragrans*; the fruit is worthless, except for ornament. *S.* *Thunbergia coccinea*. *M.* *Chionanthus virginicus*; the Fringe tree. *A. Novae.* *Savin.*—*J. White.* 1. *Lelia autumnalis*; 2. *L. furfuracea*.—*W.S.* *Scopolendrium officinarum*, common Hart's-tongue. *S.*—*J.N.* *Lelia anceps*; *Solanum pseudo-capsicum*.—*Ignoramus.* *Tussilago fragrans*.

**NETTING.** *J.T.* Such netting we should not buy at all. It is much too slight, and though probably low priced, much too dear at any price. Get good netting, and let it be tanned. As to the labels, they are very brittle, and can only be employed where much care is taken of them. That you sent was smashed to pieces.

**POTATOES.** *Masham.* You have missed the point. Planting Potatoes in spent tan is a very different practice from planting them in soil into which rotten tan has been dug. There is no analogy between the cases.

**STAINING TIMBER.** *A Subscriber.* This is done while the tree is growing, by a method proposed by Dr. Boucherie, and fully explained in our volume for 1841. It has been little practised in this country.

**THE SEASON.** We have to thank several correspondents for lists of plants now in flower, owing to the mildness of the season; but as they are the necessary result of a temperature which has for several weeks been from 5° to 9° above the average, we do not think the publication of such lists would be of public advantage.

**TRANSPLANTING.** *G.P.* We entirely adhere to our opinion that the best time for removing large evergreens of all kinds is September or October; and we advise you to adopt that season. Nevertheless, with very great care and constant syringing they may be moved with certainty in the spring. We should not cut the Hollies till they begin to break the year after their removal.

**VINEYARDS.** *Noah.* We should think there would be no difficulty; but you should consult some Champagne merchant, such as Mr. Stapleton, of King Street, Regent Street, who can advise you usefully. We are not acquainted with the usages of the proprietors.

**WIND-GAUGE.** *H.D.C.* There are various kinds of instruments for indicating the force of the wind; and of these Osler's self-registering anemometer is perhaps the most perfect; but its complicated machinery requires to be connected with clock-work. Lind's wind-gauge is very simple; it is a glass tube bent like a U, with a slightly projecting wide mouth, opening horizontally at the top of one of the legs; and this opening is always kept towards the wind, by a common vane. Water is poured in till it reaches a certain elevation in both legs. The force of the wind depresses the water in the one leg, and forces it up into the other. The sum of the depression in the one, and elevation in the other, is the height of a column of water which the wind is capable of sustaining at the time.

**MISC.** *J.S.H.* Your question respecting *Rhododendrons* was answered as follows at p. 791, of our last year's volume. "They may be pruned any time during winter; but as good a time as any is just after they have done flowering." As regards a Pinetum for Himalayan Conifers, the aspect is not material. Your flat land, consisting of a loam of medium quality on gravel near a river side, will answer perfectly. The only point of importance is good drainage, which under the circumstances you name, we expect is complete. We had no means of knowing that your letter was not intended for publication.

**ERRATUM.**—In Messrs. Stuart and Mein's advertisement, "Paradise Pea," p. 519, December 25, for Knightsbridge read Roxburghshire.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**THE LONDON MANURE COMPANY** offers on the best terms WHEAT MANURE for Autumn Sowing, Linseed, Rape Cakes, Peruvian Guano, Urate, Superphosphate of Lime, and every other Artificial Manure. Also a quantity of Salt, the refuse of ammonia and saltpetre makers, considerably more valuable than the ordinary agricultural salt.

EDWARD PURSER, Sec., Bridge Street, Blackfriars, London.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton 7 0 0  
Superphosphate of Lime ... .. 7 0 0  
Sulphuric Acid and Coprolites... .. 5 0 0

Office, 68, King William Street, City, London.  
N.B. Peruvian Guano, guaranteed to contain 10 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

## SEWAGE CHARCOAL MANURE.

**PEAT CHARCOAL**, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenny.

Mr. JOHN ANNETT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

## ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

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THE NEXT SESSION will Open on FRIDAY, February 4th, and the Lectures begin on the following Tuesday.  
Students are admitted either as Boarders or as Out-Students. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as agricultural education.

Prospectuses and information can be had on application to the Principal.

## COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, Kennington, near London.

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Sir John V. Buller, Bart., M.P.  
Sir Ralph Lopes, Bart., M.P.  
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A Subscriber of 10s. will be entitled to Five Tickets of Admission (not transferable) available for both days. A Single Ticket 2s. 6d. The Holders of Tickets only will be admitted the First Day, from 1 to 4 o'clock. The Exhibition will be opened on the morning of the Second Day from 8 to 10 o'clock on payment of 6d., and from 10 to 3 o'clock at 1s., when it will finally close.

N.B. PRIZE LISTS may be obtained from the Secretaries, to whom all communications and Specimens must be addressed, at No. 13, STRAND, TORQUAY, Postage and Carriage paid, and an enclosure of Postage Stamps where an answer is required.

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A. PAUL, } Hon. Secretaries.  
J. C. STARK, }

Torquay, Jan. 1.

**THE GREAT METROPOLITAN EXHIBITION OF POULTRY, PIGEONS, AND RABBITS**, will take place in the spacious galleries of the BAZAAR, Baker Street, and King Street, on the 11th, 12th, 13th, and 14th of January. Admission, first day, January 11th, 5s.; Children under twelve, 2s. 6d. Wednesday, Thursday, and Friday, 1s. each. Open from daylight till ten in the evening.

## The Agricultural Gazette.

SATURDAY, JANUARY 1, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.  
THURSDAY, Jan. 6—Agricultural Imp. Society of Ireland.  
THURSDAY, — 13—Agricultural Imp. Society of Ireland.  
WEDNESDAY, — 19—Highland and Agricultural Society.

THERE are few observant persons of the present day who do not, either to others or to themselves, frequently remark upon the extraordinary developments (to use the popular phrase) which the existing age has the privilege of witnessing. Were it not that it is necessary to be on one's guard against the proneness of each generation in turn to an indulgence in this same belief, we should most of us announce it in much more confident terms than we actually do. History chastens the reflection, and admonishes its cautious indulgence, however deeply we may feel the conviction that it never before was so truly just and appropriate; and compels us rather to a practical review of the grounds on which the claim may in our own case be based, than leads us to hope that the frequency or popularity of the assertion will afford a guarantee to ourselves or others of its absolute truth.

Yet we do believe it: and the conviction is irresistible. We see around us discoveries which make the discoveries of past ages in the same field, —take the 'gold-field' for instance,—appear almost childish. We see an advance in the field of science, but especially in its practical application to the common purposes of daily use, carried out upon a scale whose simplest every-day realities make the very dreams of learned philosophers and learned societies of bygone centuries,—whom the mass of mankind regarded as half-crazed by wild and speculative theories,—appear feeble even in conception. Whatever may be the case with regard to the moral or political utopias of the past, it is certain that the utopias of science we may laugh at, not for the extravagance, but the poverty, of their ideas. If our age is sometimes reproached as utilitarian and over-practical, it is at least its apology that it has brought within the sphere of utility and practice what the vaunted poetry of the past never included within the meaning of the words. Indeed that same poetry of character so lavishly accorded to by-gone times, is apt to be little more than a delusion of the present; like the halo of the Saint which is seldom worn till a few centuries after death.

The first day of the New Year, if it bring any reflection at all to a man in reference to his secular pursuits, whatever they may be, can scarcely fail to send a stray thought or two in this channel. For even if his own calling may not be among the foremost in progress or discovery, nor the most alive to its own intrinsic advancement, yet no power on earth can isolate or hedge it out from the influences which surround it on every side, or confer on it a stationary position amid the diorama of cotemporary events. If the interests of Agriculture have just challenged in vain the special ingenuity and favour

of a CHANCELLOR of the EXCHEQUER, at home; yet on the other hand, nothing can isolate it from an inevitable sympathy in the guano question of the Lobos islands far away on the coast of Peru, or the new market of consumers opened up, and increasing every day amongst the gold-digging settlers of California and Australia. If Free-trade, or rather—we beg pardon—if 'unrestricted competition,' inundate it with corn imported from without, the equivalent that must be sent from the Looms, and Furnaces, and Mines, and Factories, and Warehouses, of busy England, to pay for every foreign bushel, opens up an Eldorado of well employed consumers from within, whose capacity of swallow for the animal as well as vegetable produce of the farm, can only be gauged by comparing the amount of labour and of wages which it takes to export seventy-four millions' worth of British ware in 1851, against forty-eight millions' worth in 1846. "This was sometime a paradox, but now the time hath given it proof."

But the progress of surrounding events has gradually infused another element into the working problem of agricultural experience in the present day, and one which has not yet received the attention which its further development will command. Whoever will take the trouble of tracing up the prices of corn in this country from the beginning of this century to within the last few years, will find a return "small by degrees and beautifully less" in the value of a quarter of Wheat, throughout, in spite of all that legislation could do to prevent it, from the average of about ninety shillings a quarter (and touching the astounding price of double that sum during certain weeks of war and scarcity) through every phase of alternation and decline down to fifty shillings for the same article. What meantime was the history of Rents?

The answer to this question, differing only by slight variations of place and circumstance, is everywhere sufficiently identical to disclose a curious view of the business of farming, as it has been known to the memory and experience of this generation. It is difficult to conceive how that profit has been made, or how that business has thriven, which has had to struggle, front and rear at once, between falling prices and rising rents. Few of its friends or champions, in or out of Parliament, seem ever to have adverted to this fact, nor have its Free-trade 'opponents' made use of the advantage which the argument seemed to hold out to them, namely, that the comparative steadiness and equality of prices which the broader area of unrestricted resort to all markets insures, places the Farmer henceforward in a position which few living cultivators of the soil of Great Britain have ever known before—the position of firm and certain knowledge of the price of his grain. The figure may be low, or at least may appear so, but at any rate the ground is sure. It no longer slips from under his feet year after year, after his arrangement with his Landlord has been made. A Lease may now be given, and taken, with something like security that its benefit or danger to the grantee will not turn upon the ticklish point of an annually decreasing parliamentary majority. The price of Corn is now the World's price; this is something: the foot that is on the spade can work the better, when the other foot is firmly planted.

But the settlement of one question is often the opening of another. There is a complicate sequence in things that have been the long-continued subjects of legislation, which throws up as many heads as the Hydra. The sense of security no sooner becomes familiar to the one side of the farmer's business than it makes him more conscious than ever of his wants and weakness on the other. Freed from the eccentricities of the market his attention reverts more forcibly to the land, and certain eccentricities that still lie uncured and unnoticed there.

In the great majority of cases the Tenant farmer desirous of joining his landlord in extensive improvement, discovers for the first time that the acres he is employed upon, and the will which he consults, are mysteriously fettered by some invisible agency which curbs the springs of enterprise. The idea begins to suggest itself that the objection which of all others might with most truth have been taken against free trade in corn was precisely the one that was with the most unaccountable timidity reserved, namely, that the land itself was not free. It was not free from the conveyancer; it was not free from the family-lawyer; and it was not free from the mortgage.

But what clenched the gripe of this triple plague, was, that it was not free from that mischievous evil, which the absence of everything implied in the term Commercial Experience on the part of its owners was sure to nourish, namely, the timidity of Ignorance.

It is ignorance which supposes that land cannot,



by the constitution of nature, be bought and sold without a fine of from five to thirty per cent. upon its value to obtain a safe 'title.' It is ignorance which supposes that an owner of land is the only owner who cannot manage his own business without an annual tribute to his lawyer; and it is ignorance which supposes that an owner of land is richer, or more respected, for being tied to the unsaleable proprietorship of mortgages paying four per cent. while the land is paying two and a half.

The experience of Conveyancers' offices and the Courts of Law and Equity goes uniformly to show that mortgages are like cancers upon landed property. They always increase. For one that is paid off, in any given generation, five are doubled. But as it is with bad habits, every one individually intends and expects, at his own time and option, to master the habit; while every one knows that, in the immense aggregate of human experience, the habit masters the individual. So with settlements of land. Through family-pride and other causes, not one owner in a hundred has the resolution to cut out the ulcerous part, 'and live the better with the other half.' The eldest son comes of age: the old entail is cut off, and a new one plastered on, over a widened sore. The debts of the father are visited upon the son, and the increased mortgage is henceforward a part of 'the inheritance,' as inalienable as the unburthened residue which would really be his, were the encumbered portion wholesomely got rid of. But the gangrene is not allowed to exfoliate. The bandage of red tape, and the parchment plaster, agglutinate the dead to the living structure, and the whole estate henceforward suffers from the insolvency of a part.

How can it do otherwise? If the young squire had been taught to look the matter in the face, and make a vulgar balance-sheet, he would see that he is perpetually paying out of his income a running deficit of from one and a half to two per cent. upon every mortgaged acre of his property. The sound part is thus mulcted to support the unsound; and he can the less afford to improve that which is *bonâ fide* his own, with which he might be happy 'were t'other dear charmer away.'

This is but the antecedent pathology, the premonitory history of that wholesale land-surgery, or butchery, an 'Encumbered Estates Act.' We may blame Irish landlordism, absenteeism, extravagance and folly; but as long as human nature, Irish or English, retains its existing tendencies, extravagance will always be encouraged by large ostensible acreages however burthened, and folly will always lead fond parents to tie up mortgaged with unmortgaged land into settlement, in the confidence that eldest sons will make a fortune, or marry one, to pay them off with. It is idle to blame what is individually universal, and hopelessly innate in visionary humanity. The thing to blame is the law that countersigns such a system, clenching the links of a lengthening chain of inherited penury on one hand, and mischievously intercepting the flow of public capital into the best, safest, and most patriotic of all investments, on the other.

Let entails and settlements of 'property' be as long and as strong as they may, entails of no-property, entails of dead loss, settlements of 'two and a half minus four' ought to vitiate themselves; mere arithmetic alone, without discourse of reason, cries out against the settlement of mortgaged land, *quoad* the extent of the mortgage. Such an improvement of the law, far from being adverse to the interests of heirs in tail and remainder-men, would be the greatest of all benefactions to them, to the public, and to the interests of agricultural tenants, who must hope in vain for assistance in their investments upon a soil underlain by this impermeable substratum of 'settled' barrenness, that chills and cramps the hand to which they look for justice and encouragement. The point we have selected is but a single one, out of many,—the longest, perhaps, of the shadows cast before, by the great Land Question of a coming day. C. W. H.

It will be in the recollection of some of our readers that a few weeks ago we took occasion, from the publication of the inventory of the cultivation, by the outgoing tenant, of — farm, Hampshire, to animadvert on that system of valuing tenant-rights which takes account of the means that have been employed and of the expenses that have been incurred rather than of the results in which these means and expenses have terminated, and on which alone of course the incoming tenant enters. It is obvious that so long as an outgoing tenant's claim is permitted by custom to include a fixed charge for every operation of husbandry he may choose to perform in the cultivation of his last year's crops—these operations may be performed anyhow, and without regard either to the necessities of the case or the interests of the next occupier: and a list of the

operations in connection with the crops on a certain farm in Hampshire having been furnished to us, as they had no doubt been furnished by the outgoing tenant himself to the valuer who was employed, we considered that its publication would add force to a criticism which would nevertheless have firmly stood on *a priori* grounds alone, as being manifestly sound and resting with perfect security on the obvious tendencies of things.

It seems that this article (see page 761, 1852) was recognised in the locality to which it refers; and in particular that the very respectable valuer who was employed in the case has been annoyed by the criticism which it conveyed. We therefore refer to it again for the purpose of assuring him that our remarks referred simply to the system of cultivation and the custom of valuation which appears to prevail in that locality; and not in the least to the fairness or merits of the particular valuation in question. In fact they did not allude to the valuation but to the inventory on which it was founded. That the former was perfectly just and the latter perfectly truthful we make no manner of doubt—in fact both have proved perfectly satisfactory to the only parties interested in the matter. But that both indicate a faulty system of cultivation and a faulty relationship between outgoing and incoming tenants of land we are ready nevertheless to maintain.

#### THE YEAR'S EXPERIENCE.

ENTHUSIASTS in agriculture are apt to ride their hobbies so fast and so far, that those who are incited to follow them by their counsel and example are sometimes in great danger of breaking their necks occasionally; therefore it is desirable to check their headlong career—to show that caution is requisite, and that the course is not so safe, nor success so certain, as they have been led to imagine. Hasty conclusions, and the over-eager enforcement of any favourite crotchet, are very mischievous to the cause of agriculture by attempting to prove too much. They are like 'vaulting ambition, which o'erleaps itself and falls on t'other side.' They induce a general suspicion of inaccuracy, and a distrust of all experiments. There seems to be a want of honesty in suppressing all instances of failure; and it produces the same disagreeable effect upon the mind as when the lights of a picture are exhibited without its shadows. It is not true to Nature. On the present occasion, then, I propose to put on the break, and to produce some instances in which the experience of this year has contradicted several theories of agricultural improvement. Indeed it is scarcely a matter of choice; for whatever titles to eulogy this year may have in other respects, it has certainly not been a season of experimental prosperity.

1. Then it is but fair to begin with contradicting a conclusion of my own—a conclusion to which I was led by last year's experiments. Having tried a variety of chemical manures, and found them all attended with loss, except peat charcoal saturated with night-soil, I concluded that there was something in that form of manure particularly suitable to the needs of our chalky soils, and that it only remained to discover in what proportion it should be applied. I tried it, therefore, in the proportions of 1, 2, 3, 4, and 5 cwt. per acre. Each quantity had a double trial, in one of which the manure was applied in March, and in the other in April, and each pair of experiments was compared with the produce of the adjacent soil. They may all be considered as a failure; for though it is true that where the 3 cwt. were employed there was an apparent profit, yet it was not obtained in a satisfactory way. It appeared to succeed, not because it was the golden mean between too little and too much, but because the natural produce with which it was compared happened to be lower than in the other instances; and if I had been contented with a single comparison in the other parts of the field, the profit would have been converted into a loss.

2. It is commonly supposed that though when land is in very high condition, and has reached its acme of fertility, the addition of any manure can only do harm; yet that in poor land a deficient crop must be improved and augmented by the addition of any good manure. Nevertheless, I have found that in a field of Barley the natural produce of which did not exceed 27 bushels, though it had been well cultivated, and sheep had been folded upon it, no improvement was visible from the application of 1 cwt. of guano in one part, 1½ cwt. of phosphate of ammonia in another, 104 lbs. of sulphate of potash in another, and 4 cwt. of charcoal and night-soil in another; neither can it be said that the action of the manure was wasted in producing straw, except in the case of the phosphate of ammonia, which added 8 trusses to the produce of straw, but diminished the weight of the bushel by 4 lbs. It is not to be taken for granted that such is the specific effect of that manure in general; for, in another case, it not only increased the corn by 10 bushels per acre and the straw by 11 trusses, but also added half a pound to the weight of the bushel. But how are we to account for the Barley deriving no benefit from these top-dressings? When I speak of benefit, I mean remuneration; for it is not beneficial to employ a manure which does not pay for its employment, although some slight effect may be produced by it. Upon any hypothesis, the materials of vegetation and fertility were supplied. If the organic

manures were needed, there was plenty of carbon and nitrogen; and if the inorganic, there was sulphuric acid, and phosphoric acid, and potash. Soda and chlorine could scarcely be deficient in a country where the spray of the sea, borne by a south-west wind, deposited salt very sensibly on the lips, and destroyed the foliage of the trees exposed to it, while the natural soil contains abundance of silica, iron, lime, and magnesia. The fault may have been in the texture of the soil, or in the climate, or in the mode in which the chemical combinations were presented to the roots of the plants; but the theory that you have only to furnish the ingredients, and leave nature to combine them for herself, manifestly fails.

3. There is another error near akin to this—an error which I have combated in former communications, and which consists in cramming the earth with manure of one sort or other as much as considerations of expense will permit, under the impression that you cannot be too liberal in this way, and that the more you bestow upon it, the more you will reap from it. Now, it is true that a sufficiency of manure must be given, not for a single season only, but usually for a whole rotation of crops; and when we speak of land being "in good heart," or "in good condition," we mean that it contains enough of the elements of fertility to sustain the intermediate crops, till the season comes round for renewing them; and, therefore, if all that can be said were, that the use of increased quantities produces no additional effect upon the crop of Wheat, it might be urged in their behalf that the inactive surplus remains dormant in the soil for future use, and that the calculation of expense should be spread over the whole rotation. But that is not all. The excess causes an actual diminution in the crop. Thus, 1½ cwt. of phosphate of ammonia raised the number of bushels from 38½ to 40, but 1 cwt. raised them from 37 to 41, together with 31 additional trusses of straw; and ¾ cwt. raised them to 42, with 33 additional trusses; and so, out of 12 experiments with sulphate of potash, in proportions varying from 26 lbs. up to 1½ cwt., that with the 26 was far the most successful. I do not give the details of these experiments, because the season was so peculiarly unfavourable, that it introduced the greatest irregularity into the results. In a field of very shallow soil, the portions of ground selected for comparison with those that were manured, instead of showing the slight differences that might be expected, varied in their produce from 16 to 40 bushels per acre. The most probable cause of this is the violent gale which swept over the country before the harvest; and this brings me to another delusion that has been industriously propagated of late—that shelter is a thing entirely to be disregarded in agriculture, and hence the exterminating war which has been waged against trees and hedges. I will not now dwell on the inconsistency of those who house their animals in denying shelter to those which are not, and cannot be housed, for I am concerned now only with vegetable life; and surely they have had a serious warning this year of the mischief that may be done by laying a country bare. They grudge every inch of ground that is injured by the roots of trees, and make great lamentations over the few bushels of corn which are lost in that way; but they wholly forget the less obvious, but not less certain compensations which they make in other ways, and are quite unprepared for the extensive loss inflicted by high winds. It is not too much to say that some farmers have lost several hundred pounds by the corn shaken out this year; and though no screens can be sufficient entirely to protect it from such violence, yet whatever tends to break the force of the wind must in the same degree diminish the damage done by it. What is the statement of M. Arago, as quoted in the *Gardeners' Chronicle* of Dec. 4?—"The wind exerts on plants direct action, often very injurious, and which should be carefully distinguished from the climatic action; it is for shelter against this direct action that curtains of wood are particularly useful." And what is the practice which experience has shown to be absolutely necessary in the Azores? "Before the Orange trees can be planted (in St. Michael's), a high wall must be built, and *Pittosporum undulatum* planted around and across, to break the force of the wind. The quintas are from 1 to 60 acres; much of the fine effect that might be expected in a large Orange garden is destroyed by the quantity of shelters that intersect the gardens." (Wallace, in the *H. S. Journal*, p. 7.) Will it be said that this applies to Oranges, and not to corn? The intelligent farmers of the north know better, who are much exposed to what they call a shake wind, and to which they ascribe much more injury inflicted upon their harvests than to any other accident of climate. Another serious evil arising from this denudation of farms, on clay soils, if it were carried out to the extent recommended by some persons, would be the want of fuel to burn their clay; the value of this improvement begins now to be better understood, and the practice of it much more common. I will mention two cases which show how much and how permanently it improves the character of the soil: three years ago part of a field was prepared for Swedes by burning the clay without being manured; this year it was in Wheat, and produced 46½ bushels of corn, which is one and a half more than that which was not burned, and gave 9 trusses more of straw besides. On land which was prepared in the same way in 1850; it yielded not only 5 trusses of straw more than that which was strongly manured, but more corn by 5 bushels, and heavier by 3 lbs. a bushel.

5. Another practice, which is very sedulously incul-



ated, and the value of which is deemed such a point of incontrovertible wisdom, that it is almost a sin to doubt it, is that of thin sowing. To sow more than a bushel of Wheat is represented to be a foolish and culpable waste of human food. By a mistake in the execution of my directions, I am not in a situation to show what are the effects of observing this maximum on our soils, except by an unavoidable inference; but 5, 6, 7, and 8 pecks were tried; 5 produced 32 bushels of corn and 85 trusses of straw; 6 and 7 were somewhat better, but 8 produced, in one instance, 36 bushels and 97 trusses; and in another, 46 bushels and 140 trusses. I suppose no one will contend that if the quantity of seed had been diminished by a whole bushel to the favourite maximum, the same amount would have been produced; in fact, if the recommendation of very thin-seeding were based on any sound principle, apart from the questions of soil and cultivation, which may be equally good or bad, whether the seed be thick or thin, it would seem to follow that, *ceteris paribus*, the thinnest crop must show the fullest ears, and the most vigorous plants; which, however, experience tells us, is for the most part very far indeed from the truth; it is a case in which a well-known paradox and its answer might be well parodied thus—

*Paradox.* My crop is great, because it is so small.  
*Reply.* Then 'twould be greater, were it none at all.

It is possible indeed that plants may stand so close together as to cease to be very prolific; but it much more often happens that a thickly sown crop becomes a thin one before the spring; and then what would it have been if only half the quantity had been sown? If it appear too thick at that season of the year it can easily be rendered thinner by the hoes; but if it be too thin, the remedy is not so easy. There is indeed a remedy, which I have used with great success in garden experiments, but on a large scale it might be too expensive to divide a great many of the stronger roots, and to transplant each separate portion would require a strong force of skilful labourers; but since skill is rising in demand every year, and mere brute force subsiding, the time may come when it will not be found impossible. For the last nine years it has enabled me year after year to obtain as much produce from tailing Wheat used for seed as from the best grain, without it the ground would have exhibited a melancholy specimen of thin sowing in perfection; for, as half the seeds never vegetated at all, most of the plants that did were called into requisition to supply the deficiency; and at harvest it was difficult to distinguish the good from the bad, and sometimes the bad had the superiority. In the same way on a portion of ground devoted to an experiment with phosphate of soda, from one of those unaccountable accidents which must always be the terror of thin seeders, the vacancies in spring threatened utter disappointment, but they were filled up by transplantation from the plants that grew, and the crop was nearly as good as any of those which had prospered from the first. It may be worth mentioning that the same system having been adopted every year since the experiments commenced nine years ago of growing Wheat immediately on the same soil, the weight of the straw produced this year on 32 rods, 5 of which received no manure of any description, and the rest no farm-yard manure during the whole period, fell short only by 12 lbs. of the weight produced in the first year. I say nothing of the corn, for the reason already given; because the ordinary laws of production have been so much disturbed this year by climatic accidents; but the successive failure of one of the chemical manures employed lately cannot be so excused; and furnishes me with another caution to those who know its general utility. The repeated application of sulphate of ammonia seems to generate the orange-coloured fungus, and the contrast of its action now with its eminent utility at the commencement of these experiments, suggests the possibility that too much sulphur may have been accumulated in the soil by the decomposition of the acid; for I have ascertained by previous experiments that a small amount of powdered sulphur mixed with the soil is injurious to vegetation.

Lastly, the same consideration deters me from laying much stress upon another warning, on which, otherwise, I should be disposed to insist more. Liquid manure is reckoned of so much value that some persons are incurring great expenses to enable them to apply it to the land, and I have never doubted of its efficacy; but this year trials have been unfavourable in four instances; the drainings from the stables laid on Grass, in the proportion of 280 gallons, diluted with an equal quantity of water, and neutralised by 56 lbs. of sulphuric acid, have failed to pay the cost, which is estimated at 13s. 9d. per acre; and yet the farm-yard drainings, not requiring more than 40 lbs. of the acid to neutralise the ammonia, gave an increased value to the crop of about 12s. Such disappointments as those which I have enumerated, difference the expenditure of capital on agriculture from that which is employed in manufactures. *L. Vernon Harcourt, West Dean.*

## ROYAL AGRICULTURAL COLLEGE.

SESSIONAL EXAMINATION.—NATURAL PHILOSOPHY AND GENERAL CHEMISTRY.

NOTES.

1. What are the means commonly employed for ascertaining the amount of watery vapour in the atmosphere?

2. Mention the more important physical properties of the atmosphere.

3. Give a short description of the barometer, and briefly state the practical applications made of this instrument.

4. What is the reason that wet, undrained soils, are always cold?

5. Under what circumstances is the formation of dew greatest, and why is no dew deposited on cloudy nights?

6. What is the weight in pounds of a dry block of Fir wood, containing 50 cubic feet, the specific gravity of the wood being 0.47 and 1 cubic foot of water weighing 62½ lbs.

7. State the reasons why the study of agricultural chemistry will but slightly benefit the agricultural student, if it has not been preceded by the study of pure or theoretical chemistry.

8. What are the essential characters which distinguish a chemical compound from a mere mechanical mixture?

9. Prove by illustration, that the knowledge of the doctrine of chemical equivalents is of great practical utility to the farmer.

10. What are the general properties of acids and of basic substances?

CIRENCESTER, December 13, 1852.

ANSWERS BY R. L. FELL.

No. 1. The amount of watery vapour contained in the atmosphere may be ascertained by passing a certain amount over chloride of calcium, as in the drying apparatus; also by placing a certain sized bell-jar over sulphuric acid. But it is most generally done by instruments made for the purpose, as Mason's wet bulb thermometer, and Daniel's hydrometer, which both depend upon evaporation, and, as a consequence, the production of cold. In Mason's the bulb is covered with a piece of muslin, kept constantly wet by a capillary connexion with a jar of water. If the air be dry evaporation goes on quickly, and reduces the temperature in the thermometer attached; the heat of atmosphere, which also influences evaporation, is noted by another thermometer, and by the difference and by means of tables, the amount of moisture is calculated. Daniel's hydrometer has one bulb, filled partially with ether, the other with ethereal vapour; here a thermometer is attached, and another to show temperature of air is fixed to leg of instrument, ether is poured upon the empty bulb, which is surrounded by a piece of rag; evaporation produces cold, the ethereal vapour is condensed in the bulb, and the ether from the other end begins to pass over to fill the space; cold is produced, which is marked by the thermometer. The difference between the thermometer on leg, and that connected with bulb, gives the dew point, and shows the amount of vapour in atmosphere. Pieces of hair, &c., have been used as hygroscopes, as they contract in dry and elongate in wet or moist atmosphere.

2. The atmosphere is made of nitrogen  $\frac{4}{5}$ , oxygen  $\frac{1}{5}$ , and is a mixture of the two gases. The air is material, it offers resistance to bodies moving in it; it is impenetrable, that is, like all other bodies, it has to be displaced before any other substance can occupy the same place; it possesses weight, as is seen by exhausting a bottle and again filling it with air—difference of weight between them is weight of air; possessing weight it exercises pressure on the surface of the earth equal to 15 lbs. per square inch; it is elastic and compressible, as seen in air-gun. These are some of more important physical properties.

3. The barometer is an instrument depending for its operation upon atmospheric pressure. It consists of a glass tube filled with mercury, which has been previously freed from air; the tube is filled, and inserted into a vessel filled with mercury, the mercury falls in tube until the column contained in it equals pressure of atmosphere on the mercury at base. Mercury is used because it has a high specific gravity; a short tube comparatively being thus required, and it is exceedingly sensitive of pressure—of atmospheric change. The tube thus inserted is placed in the necessary case, and along its edge is a receiver, graduated so as to show the least change in the tube of the mercury. The barometer then is useful, since it shows atmospheric change by its sudden rise or fall, points to altered state of atmosphere, and forewarns us of storms, &c., which to the farmer is of the highest importance: many a time by its warning it saves his crops or prevents him exposing his crops during harvest to the coming storm; it is also used to show the altitude of mountains, &c., the pressure of atmosphere being less as the elevation is attained.

4. The reason why wet soils are cold is that, first, the rays of sun are prevented penetrating soil; second, that the air cannot enter and give off its heat to the soil; and thirdly, on account of the evaporation of the moisture, which absorbs or renders latent the heat, which, instead of entering the soil, is carried off by converting the water into vapour.

5. The formation of dew is greatest when the day has been exceedingly warm, and the air become heated, since at an elevated temperature more water is held in suspension; the soil too becomes heated; during the night, then, when the temperature falls, if clear, the soil by radiation gives off its heat and becomes cooled down lower than the air; the air being no longer so warm cannot hold so much moisture in suspension, therefore the dew under such circumstances is deposited. The reason no dew is deposited during cloudy nights is that the heat given out by radiation from the earth is again refracted from the clouds, and thus the soil is maintained at a higher temperature than the air.

6.  $S = s \times v \times x$ .

$S$  = weight.

$s$  = specific gravity = 47.

$v$  = 62½ lbs. cubic foot.

$x$  = number of feet.

$S = .47 \times 62.5 \text{ lbs.} \times 50$ .

$= 1493.75 \text{ lbs.}$

7. The two departments of chemistry, theoretical and practical, have an intimate relation with one another; so much so, that it is perfectly impossible to understand the changes that take place in substances under certain circumstances without understanding its chemical composition and the relation that the constituents of the substance bear to one another. How could the phenomena, of which every branch of agriculture is

made up, be explained without a knowledge of theoretical chemistry? How could the conversion of corn and cake into muscle and fat be explained? How could the principle implicated in respiration and other processes of the animal economy be understood? How could the action of manures upon soils and crops and crops upon soils be explained without theoretical chemistry? Indeed, there is not one step in chemistry that can be made without a knowledge of the principles of the science. A man can no more understand agricultural chemistry, or explain the phenomena he meets with upon his farm or in every-day life, without having studied theoretical chemistry, than a surgeon can treat a patient without a knowledge of anatomy, so intimately are the two bound up together.

8. A chemical compound possesses fixed proportions; it is formed by the union of two or more substances; by which union their characteristic properties are lost and a new substance possessing new properties is the result. The characteristics of the components are no longer perceptible, and heat is (generally) evolved during the formation of the compound. The substance thus formed cannot be separated again unless by chemical means. In a mixture where no heat is evolved no new substance is formed, the characteristics of the substances are distinguishable; no fixed proportion is required, and the substances can be easily separated by mechanical means.

9. The practical good attendant upon the knowledge of the doctrine of equivalents is considerable, for it is only by that means that the farmer or chemist can know how much value a substance possesses, what is its exact composition, and what weight of each substance it contains. It is by these means that the quantity of sulphuric acid required to convert bone phosphate into biphosphate is ascertained; it is by these means that the amount of sulphuric acid ( $\text{SO}_3$ ), required to fix ammonia ( $\text{N H}_4 \text{O}$ ), is known. Take for instance the amount required of sulphuric acid to fix 1 lb. of carbonate of ammonia ( $\text{N H}_4 \text{O C O}_3$ ), in gas liquor or in liquid manure.

$\text{SO}_3 = 40$	$\text{C O}_3 = 22$	Then as 48 : 40 = 1 : $\text{SO}_3$ required
$\text{N H}_4 \text{O} = 26$	$\text{N H}_4 \text{O} = 26$	6 : 5 = 1
66	48	1
		6) 5000 (
		825 lbs. $\text{SO}_3$ required.

10. Acids for the most part are made up of a metalloids in combination with oxygen or hydrogen; in oxygen acids, the acid is generally in excess—in hydrogen acids equal equivalents obtain, *i. e.*, one of each. Acids possess a sharp acid taste and combine with bases to form salts. Such acids as are weak at a low temperature are strongest at a high one. They colour mostly, if soluble, blue litmus red. Basic substances are the union of oxygen with a metal, and where base is in excess: thus manganese with oxygen forms both basic, neutral, and acid oxides, depending upon amount of oxygen in combination with metal; if soluble they possess a soapy feel and taste, colour red litmus blue, and combine with acids forming salts.

## Home Correspondence.

*Stoppage of Drains.*—I beg to thank you for your notice of my communication respecting the Mangold roots, and without further apology shall proceed to give you the results of subsequent examination. I have taken up the whole of the main drain laid with 5-inch to 3-inch pipes, and a considerable number of the minor drains, all of which I have found to be completely or partially choked up with the roots in almost a continuous rope, in some cases requiring very great force to disengage it from the pipes, having grown into and completely filled up the joints as well as the bore of the pipes. I have tried every means I could devise to clear the pipes without taking each one up, but without effect. At first Mr. Paget's plan seemed likely to answer, but we soon found that some points offered so much resistance to the wire that no force could clear the obstruction away, so solid and compact have the roots become. I am now taking the pipes completely up, and am relaying them, and a very disheartening process it is, you may well imagine; but I see no other remedy. I fully concur with Mr. Paget in his theory, that the constant run of water through the pipes has been the cause of all the mischief, as I do not find anything like the same amount of mischief where the subsoil is clay, the amount of obstruction seeming to increase directly with the gravel in the subsoil, gradually diminishing as the clay appears. There is a footpath directly across the field, and under this we have found no roots, while the main drain, which ran right across the rows of Mangold, was almost full; in no case did the rows grow over a drain. Had it not been for Crosskill's portable railway I never could have got the Mangolds off the ground. *J. C. Sherrard, Kinnerley, Reigate.*

*Tanks.*—There are few articles of ordinary consumption that more effectively promote the comfort of a domestic establishment than does a liberal supply of pure rain-water. Without minutely entering upon a chemical investigation of this apparently bland and simple fluid, it will not be irrelevant to observe, that it contains small quantities of certain ingredients which are foreign to a chemically pure water, one of which, and the most essential, is atmospheric carbonate of ammonia—a mild sub-alkali upon which mainly depends the peculiar softness of rain-water. In London, and elsewhere, where pit-coal is burnt, this water is apt to be contaminated with soot; but from that, and other

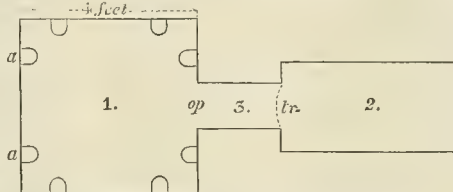


impurities, it can be freed by a process soon to be described. Wherever rain-water can be obtained pure, or be easily rendered so, it is water in the best form. To the farmer and the gardener it is almost indispensable; for, by the latter in especial, his plants can scarcely be maintained in health without it. The housewife and laundress are more indebted, perhaps, to it for their immediate comfort than any other person, because of its softness, and the facility which it affords to the many useful purposes to which they devote it. Spring and river waters contain a greater or less portion of chalk in solution—or, to speak more correctly, of carbonate of lime dissolved by double the quantity of carbonic acid, which renders them hard, and decomposes the soap employed in washing, and preventing, in a great degree, the formation of a proper lather. We now arrive at the principal object of this article, which is to direct the reader's attention to a method of collecting and preserving a large stock of fine and purified rain-water. Reservoirs or tanks for rain-water frequently are of a cylindrical form, but the one which the writer possessed at St. Peter's, in the Isle of Thanet, was a square of great capacity, covered over with broad paving-stones, in which an opening or man-hole was made for the occasional cleaning of the bottom. This tank received all the water that fell upon the roofs of the house and offices. In Berkshire another recipient was constructed in the form of an oil-jar bulging at the shoulder, contracting above and toward the bottom. This was secured at the top by a trap-door adapted to a square grooved frame, and hinged, so as to be opened and closed by a ring. Reservoirs of the usual cylindrical form, resembling a small well, are sunk to the depth required, and ought to be constructed with the best nine-inch brickwork in Parker's cement; but good mortar made of two or three parts of finely sifted sea-coal ashes, and one part of thoroughly burnt limestone, may do very well, provided the brickwork be coated with three-quarters of an inch of the aforesaid cement mixed with a due proportion of sea-sand or sharp river ballast. In making the small tank above named, two great mistakes were committed, which it is a duty to acknowledge by way of caution to others. It had been suggested that half bricks would suffice, provided they were carefully bedded in ash-made mortar, and cemented when the work became sufficiently dry. The excavation was about 8 feet deep, dished at the bottom, in order to facilitate the deposition and occasional removal of sediment. This tank received, by means of zinc pipe and gutters, all the rain of the roofs. It acted perfectly for several years, but at length lost water. Soon after it had thus become necessary to examine the internal surface, a curious phenomenon presented itself in the form of a black fibrous mass, which, when drawn up from the water and laid out at its length, represented, without exaggeration, a long black horsetail. On examining the coating it was found that a rootlet of a Laurel had passed through a brick vent and the internal cement, which had become cracked. It is an acknowledged fact, that if a very minute vegetable fibre enter a volume of water, it produces a vast development of rootlets, its own point of entrance being scarcely discernible. But to avoid further digression, we must insist upon the effectual building and cementation of the tank in the first instance, and thus, with due attention, tanks capable of holding from 500 to 5000 gallons may be safely constructed. Rain-water has a smoky flavour, and is, moreover, tainted by impurities from the roofs; from these, however, it can, in a great degree, be purified by the following process. Put into an 18-gallon barrel, furnished with a false bottom pierced with many holes, and raised about 2 inches above the other, 4 inches of clean gravel pebbles; then above these 6 inches of bruised charcoal, a 10 or 12-inch stratum of coarse river or sea sand, and lastly a few inches of the gravel pebbles. Cover the cask with coarse canvass, or cheese-cloth, secured by one of the hoops. The rain-water is first conducted through the main zinc or wood pipe, and falls upon the canvass; it then passes through the filtering and purifying layers, and thence into the tank from a tap let into the filter between its two bottoms, or by other convenient tubing. Under ordinary circumstances nine-tenths of the rain-water are wasted; but by the plan suggested a large portion of it can be saved and rendered available for every domestic purpose. *J. J. Agricultural Statistics.*—It seems to me that there could be no difficulty in Government procuring a yearly average of grain, on every farm, after harvest, by means of the immense idle staff of excise officers with which this part of the kingdom, and I presume every other part, is supplied. Many of them are connected with agriculture by birth, or otherwise; and even those bred within sound of Bow bells could very soon get wide enough awake to see that a farmer did not impose on them, by over or under estimating the produce of his corn-stalks. I know, I and most farmers, as soon as we have threshed a stack of each sort of grain, can tell what the rest will give, almost to a bushel. It would cost Government nothing, and would be of benefit to every person, as steady prices. *J. Mackenzie, M.D., Eileanach, Inverness.*

*Inventory of Tillage, &c.,—Farm, Hampshire.*—As the inventory and valuation of tillage, seeds, Saint-foin, roots, &c., which appeared in the *Agricultural Gazette* of the 27th of November, was given by me, I beg to say it was intended to show the ruinous system of Turnip cultivation adopted by the outgoing tenant of that farm, and not meant, as taken by some parties, to cast a reflection on the character of the valuer. The

valuation has given perfect satisfaction to all parties. The inventory was not made by the valuer, but by the outgoing tenant, and put into the valuer's hands for his direction and guidance, the number of fields, the quantity of acres, the ploughings and harrowings which each field received, were given by the former. The valuer had nothing to do either in making the inventory of tillage or in directing the cultivation of the root crop, both of which were the doings of the outgoing tenant. *J. Morton.*

*The Rabbit.*—It will breed at six months old, producing several broods—say six or seven in a year, and generally of five, six, or even seven young ones in each litter. The naturalist, Pennant, says,—"Rabbits will breed seven times a year, and bring eight young ones each time. On a supposition that this happens regularly during four years, their numbers will amount to 1,274,340." There still exist large and extensive warrens and preserves, though their number and extent have of late years been diminished, particularly in the now richly agricultural district of Lincolnshire, where the once-famed silver-haired variety formerly abounded. But not to dwell uselessly upon general facts, and to come at once to the main object now in view, it will suffice to state, that the habits of the wild-rabbit in burrowing and bringing forth its young in holes which it makes in the earth, have suggested an artificial method of rearing it, which has been successfully adopted in certain districts, and particularly in those where the subsoil consists of solid chalk-rock. The rearing of rabbits in hutches, as is practised by the public dealers, is attended with much trouble and loss, when attempted in the domestic homestead; but without insisting upon the superiority (as a delicacy) of the wild-rabbit over the one raised in the foul and limited space of the common hutch, there can be little doubt that a mode of treatment which combines freedom of exercise and a conformity with the natural habits of the animal, must be attended with decided advantages. In the Isle of Thanet, on the east coast of Kent, the writer witnessed and superintended, on his own property, the method which he now proceeds cursorily to describe, and the annexed diagram will



tend to define the limits of the spaces required.—No. 1 represents a pit 4 feet on each side of the square.—2 is an oblong, 4 feet long and about 2 feet broad. Both are dug to the depth of six feet, perfectly level at the bottom and sides, the latter so much wider than the wooden curbs, as to admit of a facing of 4 inch brickwork in cement, excepting the spaces to admit of about six arched openings (as marked) of dimensions sufficient for the free passage of the largest rabbit. 2 is the feeding department. 3 is only an arched passage, tunnelled at the ground level of the bottom of the two pits, about a foot wide and broad, to serve as a communication between the pits. This is also bricked and arched, but is not seen at top. A covering of oil-cloth is added to the curb of each pit, and the cloth extends over the frame several inches beyond the curb, in order to prevent the entry of the heaviest rain. At the place *op*, the arched passage is always open, and so it is also at the other extremity marked *tr*, excepting only when any of the rabbits are to be taken. Dryness is essential to the prosperity of this animal; therefore the soil should not only be dry naturally, but must be protected above, and kept secure at the sides and bottoms of the pit by the best brickwork. From what has been stated, it will be understood that a sound chalky or sandstone rock forms by far the most appropriate medium for the warren, which the rabbits burrow into, and excavate according to their own requirements. Four does and a buck may be reckoned a good breeding stock; and something of the kind was found when the writer purchased the property in the Isle of Thanet. The experience of about 2½ years proved the correctness of the facts thus stated; and little more remains to be said on the availability of a practice, which, while it secures the rabbits, preserves somewhat of their wild nature. The variety generally introduced by the Thanet people was the one called brown: the hardy silver-haired would be desirable if it could be procured. Sometimes a black rabbit was produced among the young ones of a litter. In feeding twice a day the Cabbage leaves and Carrot tops of the garden were thrown into the feeding-pit, always free from wet, but not particularly air-dried or contracted by exposure. Some coarse pollard and a few Oats mixed were let down in a trough attached to a long handle. The opening (*tr*) was fitted with a trap-door, working freely in grooves, and furnished with a string and loop to keep it up. To this a much longer string was tied, and made to act perpendicularly, when any were to be taken; previously to which a meal or two was omitted. The simple machinery being then adapted, hunger induced a rush to seize the green food thrown down, and after waiting a few minutes it rarely happened that a sufficient number was not secured by the fall of the trap to admit of a proper selection for table use. Some cautions suggest themselves. No useless trappings must be indulged in; the man who holds the

long string must not be seen. The passage should always be open at other times, and the covering screen kept on constantly, unless some operation be going on. *J. T.*

## Societies.

**FYLDE.**—The annual meeting of this Society was lately held at Poulton. Alexander's draining plough was exhibited by T. R. W. Ffrance, Esq., and which (as will be seen from the particulars following), appears calculated to effect a very considerable saving in labour. This plough was first brought into operation in December, 1840. Draining is most advantageously effected by using two such ploughs—a leader and follower—the first taking out a depth of 16 to 18 inches, with a width of 17 inches at top and 7 inches at bottom. The second or finishing plough takes out the remaining depth of 8 to 10 inches, giving to the cut a width of 5 inches only at the bottom, and without producing any change in the surface width. The earthy matters lifted in this second operation are laid on the surface, on that side of the cut opposite to where the products of the first furrow had been laid, and the cut is thus finished, with the exception of the cleaner or scoop being passed along the bottom before the tiles or drain stones are laid on. The weight of each plough is about 5 cwt., and the price 9*l.*; but with the additional mouldboard and mounting for making the second cut, a single plough amounts to about 11*l.* The cost of working this implement is described to us as under:—

Fourteen horses, at 3 <i>s.</i> per day	...	...	...	£	s.	d.
Eleven men, at 2 <i>s.</i> per day	...	...	...	1	2	0
Wear and tear, and interest of capital on prime cost per day	...	...	...	0	8	0
				£	12	0

At the above cost this plough will open drains over 18 statute acres per day, 20 inches deep and 22 feet apart, consequently opening about 1800 rods of 7 yards per day, and at a cost of less than one halfpenny per rod; thus saving, in ordinary soils and under ordinary circumstances, about 2*d.* per rod, or 15*s.* 10*d.* per statute acre, as well as having the advantage of getting drains speedily executed. In this estimate, 3*s.* per day is charged for each horse, which is considered an outside price. At the season when most draining is performed, horses to the farmer are not of so much value, and where farmers will club together and assist each other, the draining might be without charging for horses at all, because those horses have to be kept on the farm, and if no other horse-labour is neglected, the expense of horses for the draining plough is virtually nothing; the same capital is already embarked in horses, and the same keep required. At the dinner which followed, Mr. Elleston expressed himself highly gratified by having that day witnessed the very excellent performance of an agricultural implement calculated to economise labour—namely, the draining plough exhibited by Mr. Ffrance. The cost of using this implement, he was told, would not be more than a halfpenny per rod—a very important consideration, inasmuch as draining was the foundation of all improvements, and labour was increasing in value.—The Chairman, Mr. Giles Thornber, then rose to propose the toast of the evening. He said he should be extremely glad to hear from the judges that the stock of the district was improving, and also their opinion as to the best course to pursue to go on improving; what bull they would recommend for their short-horned cows, consistent with the climate, and what would conduce most to milk and feeding. There was a great deal said at the Royal North Lancashire Society's meeting at Preston in disparagement of long-horned cows. He had fed scores of them, and he thought that the long-horned cow was brought to greater perfection generally amongst farmers than the short-horned cow had ever been. In times past, he could have gone to Garstang or any other fair, and have bought 10 or 20 long-horned cows all well bred; now it was a difficult task to find half that number of short-horns well bred, many of them being very inferior animals. It was important that they should endeavour to improve their breed of stock. If they sold their cattle at 3 years old, a well-bred cow by a good bull would be worth from 50*s.* to 60*s.* more than a rough cow of the same age. He would pass by many of the fundamental principles of farming. He would not touch upon drainage nor many of the other requisites for the successful cultivation of the land; but he would just mention one system of change. Every old farmer at present knew the system of change he (the Chairman) proposed to recommend; and yet, though it was so well known, it was necessary to recommend it over and over again, for it frequently happened that people were unwilling to adopt what was best. When Wheat was selling at 3*l.* and 4*l.* per windle, he, amongst many others, was desirous of having a crop every year. Now, he was quite sure, that with the improved implements they had got, and with the great knowledge that had been attained in farming, they might do with very little bare fallow, provided the land was first well drained. Only think what an advantage that would be. The plan he proposed would keep the land in heart every year; it would never lose its heart, but would always have sufficient strength to produce the crop applied to it, and to go on continuously. His plan was this—Oats, Turnips, Beans, Wheat, and Clover. His Turnips he would till with guano. He would till his Beans with manure in such proportions as would produce a good crop, and keep the land in heart. He would then lay it



down with Wheat and with either red or white Clover; if red, he would mow it at once; if white, he would let it remain two or three years. Then he would begin with cropping again. Now, he was satisfied that by working the Beans and Turnips well, this course would keep the land in good condition perpetually, and also keep it clean. If his hearers were as fond of money as he was when Wheat was 3*l*. or 4*l*. per ewing, he was sure they would exert themselves in self-defence, and they might rely upon it that the system he proposed would be found to answer generally. This very year he had seen some wet Wheat land ploughed up, and so much bare furrow left, and the ridges formed so perpendicularly, that he was sure a sixth or seventh part of the whole land was lost; nay, the additional Wheat that would have been produced, if the land had been laid flat, would have defrayed the entire cost of draining it in the best manner. The Chairman urged the agriculturists to persevere in the course of improvement, and expressed a hope that the plough and the spindle might flourish together, and concluded by proposing "Success to the Fylde Agricultural Society."

### Farm Memoranda.

MR. ABRAHAM FAIRCLOUGH, WINSTANLEY, NEAR WIGAN.—*Inspector's Report.*—This farm contains 111 acres, the greatest part being a black light soil upon hard red sand and blue clay, part thin clay soil upon a tenacious clay, and a small portion upon a "brashey" stone subsoil. This year the cropping is disposed as follows: Clover and seeds, mown, of one, two, and three years' lying, 33 a.; pasture land, 53 a.; Wheat after Potatoes, 13 a.; ditto after Turnips, 3 a.; ditto, after Beans, 1 a.; ditto after Grass cut for hay, 2 a.; total Wheat, 20 a.; Oats after leys, 14 a.; ditto after Wheat, 12 a.; total Oats, 27 a.; Vetches, 1 a.; Potatoes, 16 a.; Turnips, 3 a.; Mangold Wurzel, 1 a.; orchards, gardens, homesteads, roads, &c., 2 a.; total, 111 acres. The rotation adopted is—1st, Oats after Clover; 2d, Potatoes, Turnips, and Mangold Wurzel; 3d, Wheat; 4th, Oats laid down with Clover and other seeds; 5th, Seeds mown once, and a second crop either mown or fed off, according to circumstances. The stock kept consists of 7 farm horses, 5 dairy cows, 3 heifers, 1 rearing calf, 8 beasts to fatten, and 20 pigs; total 44 head. In summer the horses are kept upon Grass, with a little Bean-meal and cut hay, and in winter upon Beans and Turnips. Cows pastured in summer, and in winter fed upon cut steamed hay, Turnips, Potatoes, Mangold Wurzel, and Oatmeal when in milk; and hay and Turnips when out of milk. Beasts fed upon Turnips, Linseed, and Oatmeal; and the pigs are fattened upon steamed Potatoes, India meal, and Oatmeal. About 200 tons of manure is made annually and applied to green crops, the liquid manure being conveyed upon the pasture land by an open drain. About 300 tons of horse and cowdung are purchased at Wigan (a distance of 4½ miles), at 6*s*. 6*d*. per ton, exclusive of carting, and 400 tons of night soil, at 1*s*. per ton. Cow and horse-dung applied to green crops, and night-soil applied to Clover and Wheat. Five tons of best guano, at 9*l*. 10*s*. per ton, is applied to Grass, Potatoes, Turnips, and Mangold. 50,000 yards of drains have been cut at claimant's own expense, landlord finding materials (nearly all stone, part being tiles), at a depth of from 2½ feet to 5 feet. He has filled up nine old pits and one large brook at a cost of 30*l*. Soughed and filled up all the ditches, made 29 fields into 11, and planted several new fences. The above improvements have been done at claimant's own expense, with the exception above stated, within the last 15 or 20 years. This claimant holds his farm on a yearly tenure, and has occupied it 40 years. Formerly it was two distinct and separate farms, each having a farm-house and outbuildings. The one part is situated half a mile from the other. It lies in a wet climate, rather high situation, but is within a few miles of a good market town. One portion of it has an eastern aspect, and the other is nearly level, but is sheltered on the west by high ground. The whole Potato crop was, when inspected, the most vigorous looking crop we have seen for years, and the cleanest. Turnips were clean, but rather coarse; the head ridges around these crops were well cleaned. Wheat a fair average crop, well fed, and very even throughout; the land tolerably clean. Of the Oats, three-fourths were a light crop, and rather deficient in cleanliness. Clover (2d crop), a fair average, some parts being good, others light. Pastures and meadows in fair condition. The roads, gates, and posts in proper order; houses and outbuildings, yards, &c., in fair order, but not particularly good. The farm has been remodelled some years ago, by the eradication of old fences, and the planting of new ones, which are now good and healthy, having evidently received every attention. The expenditure in permanent improvements has been very considerable, but none of it has been incurred during the last three years. *Report of the Agricultural Society of Manchester and Liverpool.*

THE GIFT-HALL DAIRY OF CHEESE.—Gift-hall is a farm in Winmarleigh, North Lancashire, which the proprietor has in his own hands. Cheese-making is a prominent part of farming upon his estate in that district; the dairies of some of his tenants are celebrated, and obtain good prices, while others are sold at inferior rates. Mr. W. Patten, M.P., residing near the borders of Cheshire, and hearing of certain Cheshire farmers getting high prices for the London market, felt desirous to solve the problem, whether the quality of

cheese depended on the land or on the maker; and if on the latter, whether as good cheese might not be made in Lancashire as Cheshire. He proceeded with the experiment in every way, so as to give a fair and unbiassed result. He purchased 53 cows; and having to buy them off hand, of various breeds, they cannot be considered so select a stock as if he had been farming two or three years. Some calved in January, some in February, some in March, and others later. The first cheese was made on the 18th of April, and up to the 20th of October, there were 320 cheeses made. These have not been weighed, but Mr. Patten has no doubt but they will fully average 50 lbs. each. There are some that weigh as much as 70 lbs.; but when they are weighed we will give the exact weight. Of course, in estimating the weight of the whole dairy, we shall have the "later makes" to add to them. At the estimate of 50 lbs. each, the quantity up to the above date will be 6 tons 13 cwt. 1 qr. and 10 lbs., calculating 120 lbs. to the cwt. No cream was taken off to make butter; but the "whey butter" has all been kept, and of this there are either six or seven mugs, supposed to average about 60 lbs. each. We will hereafter give the exact weight of this, and the price it sells for. This celebrated dairy was sold this week to a respectable factor residing at Warrington, and who has a connection with the London market, and the dairy is intended to be forwarded to London. The price is 63*s*. taking all together, including the spring cheese, which are never so good as the others, but not including the "back ends," which of course are also inferior and not ready. The celebrity of this dairy is owing entirely to the dairymaid, Mrs. Dutton, who formerly lived with Mr. Hixley, of Cheshire. Being always noted for making a choice dairy, Mr. Patten engaged her to come to Gift-hall, on purpose to conduct the experiment. The cheese-factor at Warrington had formerly bought Mr. Hixley's dairy when Mrs. Dutton made it, which probably led to the present purchase at Gift-hall. The above are the facts of the case; and we shall be glad to hear of the other farmers on Mr. Patten's estate, or in other parts of Lancashire, being able to equal this experiment. But to prevent disappointment, and to present the matter in a true light, we think a few words of explanation may be useful. And, first, there are certain dairies both in Cheshire and Lancashire that acquire a value by mere fame, whilst many others, equally good, cannot command near the same price. Second, the London market, for what is considered a first-rate article, requires a peculiar make, which is not easy to secure; but when a dairy happens to be exactly the thing, unusually large prices are generally obtained. We do not think that the best Cheshire cheese are at all superior to the best Lancashire; but still, fashion or fancy has given them superiority in the London market. And it is this fashion or fancy that has added so large an artificial value to double Gloucester and Stilton above their real merit. To show that it is not the mere fact of a dairy being of the Cheshire make that will command a large price, we may name that, while here and there a dairy in Cheshire was fetching as much as the Gift-hall dairy, and some considerably more, the general run of prices at the last Chester fair was from 42*s*. to 53*s*., and not a single dairy commanded the prices above named. It is proper that farmers should know that it is not by making Cheshire cheese merely that they will get higher prices, but by making that peculiar quality that suits the London market. *Preston Guardian.*

### Review.

*The Elements of Land Valuation, with copious Instructions as to the Qualification and Duties of Valuers, pp. 90. By John Lanktree, Land Agent. James McGlashan, Dublin.*

THIS is a very tersely written and comprehensive treatise. It treats of the modes and principles by which land valuation in Ireland has heretofore been regulated, of the qualifications necessary for competent valuation, of the practice of land valuation, and lastly of the subject matter to be valued—soils and their produce. It concludes with a series of useful tables of use in valuation, more especially in Ireland. The work is especially intended for the assistance of land valuers in Ireland, and we think that the intention and plan of the author, as stated in the following extract from his preface, are well and usefully developed in the volume which it introduces:—

"It would be difficult to overrate the importance to Ireland of having its land valuations properly executed. The island contains in all 20,808,271 statute acres, and the whole of this, with the exception of 650,000 acres, now covered with water, or occupied as towns, is in the hands of the farming population—subjected to the operation of tillage, or occupied as pasture. The population directly employed in agriculture was, by the census of 1841, 5,406,743; add to this, the landed proprietors, and their staff of dependents; the merchants trading in agricultural produce; the tradesmen employed throughout the country as smiths, carpenters, &c.; and the total number of individuals then actually dependent on land for their support, was not less than 6,000,000. If the census of 1851 reduce this number by nearly 2,000,000, still the land remains; and the population yet lingering upon it is very large, every individual of which may be said to be

personally interested in the work of land valuation. That no treatise on land valuation should have ever been published in Ireland for general circulation, seems strange, considering the great importance of the subject; but the want of one was formerly less felt than at present, because excessive competition for land generally secured to the landlords the full value of the soil. Many circumstances, however, at present combine to awaken attention to the subject: the Potato blight of 1846; the abolition of protective duties on farm produce; the opening of our ports to unfettered commerce with corn-producing countries, where rents are unknown and taxes nominal; the extraordinary diminution of our rural population by famine and emigration; the consequent increase of waste farms; and the radical changes in the proprietary, effected by the operation of the Encumbered Estates Court. Previous standards of value do not now apply, and competition no longer exists to correct the estimates of the inexperienced. Even for fiscal purposes, successive governments seem to have considered existing valuations unsatisfactory, and have laid before the House of Commons various bills to regulate the whole subject. An attempt, therefore, at present, to render some assistance to those who are interested in ascertaining the correct value of land, seems to be necessary, and the more particularly, as the market rates for agricultural produce, within the last four years, exhibit so little fluctuation, that an average scale of prices may now safely be assumed as a basis for constructing tables of value. How far the present work may supply the desideratum, the public must judge."

### POULTRY.

We hope the time is far distant when the healthy competition and friendly rivalry of past years shall degenerate into hostility and hot partizanship. If the improvement of the different breeds be the object in view, nothing will accomplish it so much as an "entente cordiale" between all parties.

As yet, many of those interested in poultry know little of the difficulties attending the onset of a show. A suitable building must be found, an attractive prize list must be put forth, every accommodation must be provided for the public at the cost of a few individuals. Where it is a small local affair, involving little cost, some of these considerations may be abandoned, but where all the amateurs of the United Kingdom are invited to compete—where the expenses incurred for the comfort of the public and the well-doing of the fowls amount almost to prodigality, as in the case of the Birmingham and Midland Counties Exhibition, no reasonable man can object to arrangements necessary for the interests of all concerned.

We make these remarks owing to the statements that have gone forth that some of the principal breeders object to the period during which the fowls are kept at Bingley Hall. We are sure if the committee perceived they were wrong in any of their arrangements, they would require no remonstrance to induce them to alter; but so long as the public approves their arrangements by supporting them, they cannot do better than continue. Let figures speak. In Spanish there was an increase of 11 pens, in Dorking an increase of 25, in Cochins of 21, in game of 37, in gold-spangled Hamburgs of 10, in silver-spangled Hamburgs of 12, in Polands of 27, in gold-laced bantams of 15. These, we believe, include all the principal breeds. Anxious to give, as far as we can, an impartial account, we must state that in the Malays—notoriously a fallen class—there was a decrease of 25 pens. This was the only diminution, except in pigeons. Geese and ducks both increased. The extra class was abolished, because room cannot be found for it, owing to the growing entries of the more useful breeds. Competitors have yet something to learn; and some would-be authorities object to the practice of allowing chickens to compete in the adult classes. They entirely forget the wording of the prize list: "For the best cock and three hens of any age." He who exhibits chickens against adults does so at his own risk; but if encouragement be of any import, it should be afforded to him who brings his fowls to early maturity. When the subject is thoroughly understood it will be found that this is the secret of profit.

Ask those who supply the metropolis from Kent, Surrey, and Sussex, and they will tell you the difference in value between fowls ready for the table in May or September amounts to nearly 50 per cent. Judges in a class like this have not to do with what fowls will be, but what they are, and we are not aware any other rule has ever been acted upon.

We assert, without fear of contradiction, the late show was never equalled. Improvement has made gigantic strides in every class, except, perhaps, in Cochins; Spanish, Dorking, pencilled and spangled Hamburgs, and Bantams, were perfect. But the Polands exhibited the most astonishing progress, and the silver-spangled without ruffs were truly beautiful.

There is no better evidence of the importance of this show than the fact that 1636*l*. 15*s*. 6*d*. were taken for poultry. A few years since such a sum would have been laughed at as impossible. The first pen of Cochins China fowls which ever took a medal for unusual merit, belonged to Mr. Punched, of Blount's Hall, Haverhill, Suffolk. They were sold for 8 guineas, then an unusual price. Now it is not very uncommon for a pen of four birds to realise 40 guineas. The Birmingham and Mid



land Counties Exhibition has been the sole cause of this; it was the first poultry show on a large scale, and it was the first place where an inducement was held out for amateurs to improve their breeds, and enter into friendly rivalry and competition.

As soon as a prize is taken in the teeth of the competition to be met there, the strain is acknowledged a good one, and the fortunate owner is beset with applications for birds of the same breed, at a large price.

The Spanish breed come first under notice, and it may be said, without fear of contradiction, such a display was never before seen. Twenty-one pens of adult birds entered into competition. The three successful pens were valued by their owners at 205l.\* We believe one pen was carried off, spite of 50 guineas being put upon it as a sure guardian. Next came chickens of the same breed. Thirty-two pens entered the lists. Dorkings in all their varieties next claimed attention. Old and young, double and single combed were there in force. A remark may be made in reference to this class, which properly belongs to most of those exhibited, that the necessity of merit to secure a prize appears now to be so fully understood, that inferior pens are no longer sent. It may be truly said many of these birds were perfect, and the judges regretted they had not more prizes to give where they were so richly deserved. One hundred and twenty-three pens of coloured Dorkings were exhibited in the different classes. This really useful breed is making progress, and more of them were sold than of any others.

The lovers of Cochon China fowls were treated to a fine display of these birds; but if there were anywhere a falling off, it was in this class, not in numbers, but in quality. There were 208 pens, but the competition was not so close as last year, nor do we think there was any pen equal to that belonging to Mr. Andrews, of Dorchester, which took first medal and prize in 1851. Mr. Sturgeon's hens were of great weight; and Mr. Cattell exhibited a young cock of uncommon merit, for which he refused 25 guineas.

We would call the attention of exhibitors of these fowls, of all colours, to the note appended by the judges to the prize list, respecting the tails of the cocks. It is most important, and attention to it will prevent much trouble to them and disappointment to competitors.

The Malays are a falling class, unless some one comes to the rescue. The entries were few, and three of the prizes were withheld.

It was different with the game fowls. Words can hardly express the beauty of this class as represented by eight divisions. The lover of courage, and bold deportment, of symmetry, of faultless plumage; of black, white, duck-wing, black breasted red, piles of every description, greys, blues, and brassy-winged, was here at home, and could have spent the whole period of the exhibition in contemplating them. Divided pens and bleeding crowns sufficiently proved they possessed the pugnacious properties held in such esteem by our forefathers. Here were 164 pens, which took 38 prizes and commendations, for which we refer to the published list.

The next classes were the Hamburgs, pencilled and spangled, gold and silver. These beautiful and symmetrical birds were the admiration of all visitors, and the improvement in them, as compared with former years, was manifest. To those who can keep two distinct breeds we strongly recommend these good, hardy little birds and universal favourites. They cost little and produce much.

Polands next appeared in all their varieties, and never was progress more marked; gold and silver, bearded and plain, and black with white top-knots, contributed to form an unequalled exhibition of 68 pens.

In other distinct breeds Lady Guernsey took a well-deserved prize for a pen of beautiful cuckoo-fowls; Mr. Vivian for some very handsome white polands; Mr. Fairlie for black, and Mr. T. B. Wright, for cuckoo Cochon Chinas. The silk fowls of Mr. Barlow were the best we have seen for many years; and if ugliness be admirable, Mr. Bullock's Friesland birds were unique; Mr. Taylor's Andalusian were very good. These all gained prizes.

The bantams were exceedingly handsome, and the judges wished for more prizes. There has not probably been such competition in this class since the days of the bantam clubs. The geese were numerous, but not so heavy as last year; we hail their increasing numbers, for these birds do not hold their rightful place in public estimation. The Aylesbury ducks were excellent, and the whole class was commended. The show of turkeys was beautiful, and the birds were heavy. The weights of the prize cocks varied from 20 to 22½ lbs. each. The stock of Dorkings, exhibited by the Hon. and Rev. S. W. Lawley, would have altered the prize lists in that class very much, had not that gentleman acted as one of the judges.

5584 catalogues were sold at 1s. each; thus making the receipts of this most successful exhibition, exclusive of subscriptions, to be as follows:—

Admission Money	1842 19 0
Catalogues	279 4 0
Poultry Sales	1636 15 6

£3758 18 6

Judges: the Hon. and Rev. S. W. Lawley, for Essex near York; the Rev. R. Pullen, Rectory, Kirby Wiske, near Thirsk; G. J. Andrews, Esq., Dorchester; Mr. John Baily, Mount Street, London.

\* The prize list was given at p. 812, in our last volume.

### Notices to Correspondents.

**CARROTS: F.H.S.** We have given Carrots to farm-horses almost *ad lib.* without their receiving any harm—but they were worked hard. Half a cwt. a day to a large-framed horse will certainly do no harm, i.e. when the animals have not hitherto been feeding exclusively on dry food, in which case it may be advisable to give the Carrots gradually. Carrots are good for cows; cut them as Swedes, and give as many per diem—three quarters of a cwt. or even one cwt. is not too much. One of Oats may be equal to eight of Carrots. We have given them to pigs, steamed and mashed up with Barley-meal. It is not considered a heating food; it is somewhat of a diuretic.

**CHAFF-CUTTER: J. Mackenzie, M.D.** Messrs. Ransome and May, of Ipswich, patented certain improvements in the feed apparatus of chaff-cutters, by which loose straw thrown into the box was combed out into parallelism by successive feed-wheels of increasing velocity before it reached the cutters. But we have not seen the invention in operation. Messrs. Richmond, of Salford, make a chaff-cutter which is peculiarly good in its feed apparatus.

**CANICRY: E.H.G.** Cut the roots into dice of half an inch cube; dry them in a kiln, where they will be 36 hours before being thoroughly dry; roast them just as coffee is roasted, and until it is of a deep red or puce-colour, then grind and mix with coffee.

**DRAINS: H.H.H.** Four feet deep, 3 feet apart. They can be dug for from 4d. to 6d. per rod.

**EWE: A.B.** The retention may arise from a variety of causes, but most probably from the pressure of the womb on the neck of the bladder. Quietness and soothing treatment should be adopted. By all means avoid resin and other diuretics, but give half a drachm of tincture of opium in gruel. *W. C. S.*

**LIQUID MANURE: An Enquirer.** "A good recipe" will include all possible soluble substances having fertilising powers, and will direct you to add as much water as you can cheaply convey to the land; that is to say, you may mix up any quantity of guano, ground Rape-cake, dung without straw, &c., and stir it all up in any quantity of water—the more the better—so as that a quantity of manure, equal to three or four cwt. of guano, or eight or ten cwt. of Rape-cake, shall be distributed in a diluted form over an acre of land.

**POULTRY: S.** The white scurf is a cutaneous disorder; it is relieved by any emollient. Compound sulphur ointment is good. If this is not to be had, goose-grease, or any other that has neither flour nor salt in it will do. It arises from fever, and is generally the result of confinement and lack of Grass or other green food. —*J. R. Boston.* I should not by any means advise you to pinion your fowls, because cutting the wing feathers will answer the purpose. If at any future time you wished to sell your stock, it would be a great detriment if they were pinioned; but if pulled, the feathers will always grow in six weeks, if cut it is only necessary to do it twice a year. —*J. W.* Make your perches wider; take a Fir-pole, 14 inches in circumference, saw it in half, and let the round side be uppermost. It should be quite firm, that the birds may rest without making any effort to steady themselves. *J. Baily, Mount Street.*

**SPRING WHEAT: W. Powell.** The best sort of white Wheat for spring sowing is the Talavera, which was selected some years ago by Col. Le Couteur, of Jersey. It is noted for its stiff straw and long ear, on which the florets containing the grain are remarkably far apart. We do not know where you can get seed. We know of no red Wheat specially adapted for spring sowing—unless the April Wheat, which is almost red, be so called.

**THE LENGTH OF TIME DURING WHICH A COW CAN GO WITH CALF: J.P.** It is by no means uncommon for cows to go with calf six days over 40 weeks. Indeed M. Tessier, a Frenchman, found from his observations amongst 1131 cows, that the longest period was 321 days, and the shortest 240 days. *W. C. S.*

### Markets.

#### COVENT GARDEN, JAN. 1.

The weather still continuing favourable, trade has been pretty brisk. Vegetables are good and plentiful. Pears and Hothouse Grapes are insufficient for the demand; the former consist of Beurré Rance, Ne Plus Meuris, and Old Colmar. Apples are as yet plentiful. Among them are nice samples of the American Newtown Pippin, and we also observed Lady Apples very fine, at from 1s 6d to 2s per dozen. Cob and other Nuts are realising fair prices. Both Seakale and Rhubarb are now tolerably plentiful. Potatoes have not altered in value since our last report. Mushrooms are scarce. Cut flowers consist of Heaths, Primulas, Early Tulips, Roses, Mignonette, and Camellias.

#### FRUIT.

Pine-apples, per lb, 4s to 8s  
Grapes, hothouse, do, 8s to 10s  
Pomegranates, each, 2d to 4d  
Apples, dessert, p. bush, 6s to 10s  
Kitchen, do, 5s to 8s  
Pears, per doz, 1s 6d to 4s  
— per half sieve, 5s to 7s  
Lemons, per doz, 1s to 2s

#### VEGETABLES.

Cabbages, per doz, 6d to 1s  
Brussels Sprouts, per hf. sieve, 1s to 2s  
Cauliflowers, per doz, 2s to 3s  
Greens, per doz, 1s to 2s  
French Beans, per 100, 3s  
Potatoes, per ton, 85s to 140s  
— per cwt, 5s to 9s  
— per bush, 2s 6d to 4s 6d  
Turnips, per doz, 1s to 1s 9d  
Cucumbers, each, 1s to 3s  
Celery, per bundle, 9d to 1s 3d  
Carrots, per doz, 2s 6d to 4s  
Spinach, per sieve, 1s to 2s  
Onions, per bunch, 2d to 4d  
— Spanish, p. doz, 1s 3d to 3s  
Beet, per doz, 1s to 1s 6d  
Leeks, per bunch, 1d to 2d  
Shallots, per lb, 6d to 8d

Oranges, per doz, 1s to 2s  
— per 100, 6s to 10s  
Almonds, per peck, 5s  
— sweet, per lb, 2s to 3s  
Nuts, Bavelon, per bush, 20s  
Cobs, 100s  
— Spanish, do, 16s to 18s  
Chestnuts, p. bush, 8s to 20s.

#### HOPS.—BOROUGH MARKET, DEC. 31.

Messrs. Pattenden and Smith, Hop Factors, report that the market for Hops is very quiet, but prices are fully maintained. The stock on hand is very limited, and it is expected that ultimately prices must go much higher.

#### WOOL.

**BRADFORD, THURSDAY, DEC 23.**—There is very little change either in the quantity offering, or the disposition to buy, as prices rule too high to induce extended purchases. Noils and brokes are in good request, and scarce at high prices.

**YARNS.**—Yarns are anxiously inquired after, and the prospect is in favour of higher prices for January contracts.

**PIECES.**—Manufacturers complain most loudly of the bad position they occupy; everything is dearer to buy, and the price of goods is not commensurate.

#### HAY.—Per Load of 36 Trusses.

##### SMITHFIELD, DEC. 30.

Prime Meadow Hay	78s to 84s	Clover	...	...	88s to 100s
Inferior do.	...	Second cut	...	...	70 88
Rowen	...	Straw	...	...	27 30
New Hay	...				

E. J. DAVIS.

#### CUMBERLAND MARKET, DEC. 30.

Prime Meadow Hay	78s to 86s	Inferior Clover	...	70s to 86s
Inferior do.	...	New do.	...	...
New Hay	...	Straw	...	28 32
Old Clover	...			

JOSHUA BAKER.

#### WHITECHAPEL, DEC. 30.

Fine old Hay	...	Old Clover	...	90s to 100s
Inferior do.	...	Inferior do.	...	70 84
New Hay	...	New Clover	...	...
Straw	...	Inferior do.	...	...

#### SMITHFIELD.—MONDAY, DEC. 27.

This may be termed a holiday market; we have a short supply, and only few customers. Prices for all descriptions of stock are about the same as of late. Our Foreign supply consists of 398 Beasts; 1180 Sheep; and 180 Calves. From Scotland there are 370 Beasts.

Per st. of 8 lbs.—s d s d	Per st. of 14 lbs.—s d s d
Best Scots, Herefords, &c.	Best Long-wools
Best Short-horns	Do. Shorn
2d quality Beasts	Ewes & 2d quality
Best Downs and Half-breds	Do. Shorn
Do. Shorn	Lambs
Beasts, 2271; Sheep and Lambs, 9500	Calves
	Pigs

#### FRIDAY, DEC. 31.

The supply of Beasts is small, but fully adequate to the demand. Monday's quotations are realised for all kinds. We have about an average supply of Sheep for the time of year. Trade is brisk for them, and in some instances rather more money is obtained. Good Calves are scarce and dear. Our Foreign supply consists of 32 Beasts; 760 Sheep; and 142 Calves. The number of Milch Cows is 95.

Per st. of 8 lbs.—s d s d	Per st. of 14 lbs.—s d s d
Best Scots, Herefords, &c.	Best Long-wools
Best Short-horns	Do. Shorn
2d quality Beasts	Ewes & 2d quality
Best Downs and Half-breds	Do. Shorn
Do. Shorn	Lambs
Beasts, 677; Sheep and Lambs, 3050	Calves
	Pigs

#### MARK LANE.

**MONDAY, DEC. 27.**—The supply of Wheat from Essex and Kent this morning was small; the quality a good deal affected by the weather, millers not being free buyers, the prices of this day were barely supported. The demand for Foreign was quite of a retail character, and in the sales made full prices were obtained. —Barley is a slow sale at late rates. —Beans and Peas are unaltered in value. —The Oat trade is slow at last week's prices. —In Flour there is but little doing.

Wheat, Essex, Kent, & Suffolk	White	Red	...
— fine selected runs	ditto	...	...
— Talavera	...	...	...
— Norfolk	...	...	...
— Foreign	...	...	...
Barley, grind, & distil, 26s to 28s	Chev.	...	...
— Foreign, grinding and distilling	...	...	...
Oats, Essex, and Suffolk	...	...	...
— Scotch and Lincolnshire	Potato	...	...
— Irish	Potato	...	...
— Foreign	Poland and Brew	...	...
Rye	...	...	...
Rye-meal, foreign	...	...	...
Beans, Mazagan	...	...	...
— Pigeon	...	...	...
— Foreign	...	...	...
Peas, white, Essex and Kent	Boilers	...	...
— Maple	...	...	...
Maize	...	...	...
Flour, best marks delivered	per sack	...	...
— Suffolk	...	...	...
— Foreign	per barrel	...	...

#### ARRIVALS IN THE PORT OF LONDON LAST WEEK.

Flour	Wheat	Barley	Malt	Oats	Beans	Peas
12229 sks	...	...	...	...	...	...
— 5860 brls	...	...	...	...	...	...
English	3892	7976	6409	1215	572	607
Irish	...	...	...	2300	...	...
Foreign	13431	6210	...	14782	...	305

**FRIDAY.**—The arrivals of Grain, both English and Foreign, have been small this week; to-day's market was very thinly attended; there was, however, an evident disposition to purchase Foreign Wheat where it could be obtained at any concession on late rates, but the extreme firmness of holders restricted business. English was barely as saleable as on Monday, though not cheaper.—For Spring Corn of all descriptions there has been but a limited sale, and prices remain unaltered.—The Flour trade is quiet.—Floating cargoes of Wheat meet a fair inquiry at prices lately current.

#### ARRIVALS THIS WEEK.

Wheat	Barley	Oats	Flour
Qrs.	Qrs.	Qrs.	Qrs.
English	1840	760	530
Irish	...	...	3420 sacks
Foreign	7780	4490	4270

#### IMPERIAL AVERAGES.

Wheat	Barley	Oats	Rye	Beans	Peas
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Nov. 20	40 0	30 6	18 9	29 9	35 6
— 27	40 5	30 7	18 6	27 1	35 2
Dec. —	41 2	30 0	18 5	30 11	35 5
— 11	42 1	29 9	18 7	26 11	35 4
— 18	43 10	29 9	18 5	26 11	34 6
— 25	45 11	29 9	18 6	29 4	34 11
Aggreg. Aver.	42 3	30 1	18 6	28 11	35 2

Duties on Foreign Grain 1s. per qr.  
FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Nov. 20.	Nov. 27.	Dec. 4.	Dec. 11.	Dec. 18.	Dec. 25.
45s 11d	...	...	...	...	...	...
43 10	...	...	...	...	...	...
42 1	...	...	...	...	...	...
41 2	...	...	...	...	...	...
40 5	...	...	...	...	...	...
40 0	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, DEC. 28.**—There have been good arrivals of Wheat and Flour from the United States this week, but otherwise the imports have been on a small scale. Business since last Tuesday has been limited of every article in the grain trade, as is usually the case at this holiday season of the year. Prices have not undergone any change of moment. The attendance of millers and dealers at our Corn Exchange this morning was small, and there was slight disposition towards business. The quotations of last Tuesday, generally, may be repeated. The weather has a more settled aspect.—**FRIDAY, DEC. 24.**—The attendance at the Corn Exchange this morning was very slender, and the business passing in any article of the grain trade quite limited, with prices nominally quoted as on Tuesday. The weather continues wet, and no satisfactory work can be performed upon the canal.



## GLASS.

## JAMES PHILLIPS AND CO.,

AGENTS FOR THE SALE OF

## HARTLEY'S PATENT ROUGH PLATE GLASS, FOR CONSERVATORIES AND GREENHOUSES, CROWN GLASS FOR DWELLINGS, ETC.

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## HORTICULTURAL GLASS.

Packed in crates, containing about 300 feet, and in Sheets about 40 inches long by 30 inches wide.

13 oz. to the foot	...	...	...	0s. 2½d.
16 oz. "	...	...	...	0 2½
21 oz. "	...	...	...	0 4

Packed in Boxes of 100 feet.

6 by 4 or 6 by 4½	...	13s. 0d.	7 by 5 or 7 by 5½	...	£0 15 0
8 by 6 or 8 by 6½	...	17s. 6d.	9 by 7 or 10 by 8	...	1 0 0

## CROWN GLASS.—In 100 feet boxes.

6 by 4 or 6 by 4½	...	11s. 6d.	7 by 5 or 7 by 5½	...	12s. 6d.
8 by 6 or 8 by 6½	...	13s. 6d.	9 by 7 or 10 by 8	...	15s. 0d.

Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments.

## FERN SHADES AND DISHES.

## HORTICULTURAL GLASS

OF EVERY DESCRIPTION.

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HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 100 feet.
From 6 by 4	Under 6 by 4	at 1½d.	is £0 12 6
7 " 5	7 " 5	2d.	0 16 8
8 " 6	8 " 6	2½d.	0 18 9
10 " 8	10 " 8	3d.	1 0 10
12 " 10	12 " 10	3½d.	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3. d. per square foot, according to size.

21 oz. " 3 d. to 5d. " " "

26 oz. " 3½d. to 7d. " " "

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These Walls can, when desired, be made wide enough for a person to enter, by which they become elegant hothouses on the best principle. Existing walls covered with Glass and Iron.

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 Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 2 10 0  
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Cut to size. Squares not above 40 inches long.

16 oz. ...	...	...	per foot 0s. 2½d. to 0s. 3½d.
21 oz. ...	...	...	0 3½ to 0 5
28 oz. ...	...	...	0 5 to 0 8

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Seconds ...	5 17 0	C.C. ...	2 12 0
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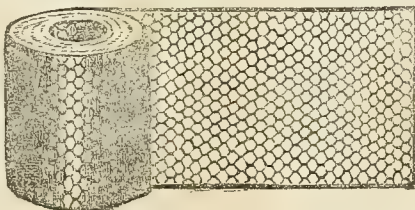
6 by 4 or 6 by 4½	...	10s. 6d.	7 by 5 or 7 by 5½	...	12s. 0d.
8 by 6 or 8 by 6½	...	13s. 6d.	9 by 7 or 10 by 8	...	15s. 0d.

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2-inch " extra strong "	12 "	9 "
1½-inch " light "	8 "	6 "
1½-inch " strong "	10 "	8 "
1½-inch " extra strong "	14 "	11 "

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## RAY SOCIETY.

## REPORT OF THE COUNCIL OF THE RAY SOCIETY, Read at the NINTH ANNIVERSARY MEETING, HELD at BELFAST, SEPTEMBER 4, 1852.

PROFESSOR OWEN, D.C.L., F.R.S., in the Chair.

In presenting the NINTH ANNUAL REPORT of the RAY SOCIETY, the Council would congratulate its Members, that amidst the increase of other societies having a similar object in view, they still obtain that amount of support which enables them to carry on their labours with efficiency and success. Although, amongst so large a body, a considerable number are necessarily lost to the Society through death and other causes every year, yet they have to report an increase in the number of Members during the past year. In 1851 the number was 739; at present they are 746: the number who have withdrawn and died are 83; the numbers added, 40. At the same time, the Council would urge upon the present Members the advantage that would accrue to themselves by their obtaining additional Subscribers, and thus increasing the funds of the Society. The Council have the conviction, that there are still a large number of persons in this country who have both the means and the desire to patronise Natural History Science, who have not had the Ray Society brought under their notice, and who would willingly subscribe, not only for the sake of the books published, but that they might assist in the great scientific objects the Society has in view.

Since the publication of the last Report, in July, 1851, the following works have been distributed to the Members:—

Alder and Hancock, Monograph of the "Nudibranchiate Mollusca." Part V. With 15 plates.

Leighton, Monograph of the "British Angiocarpous Lichens." With 30 coloured plates.

At the present time there are being distributed to the Members:—

Vol. I. of Darwin's Monograph of the "Family of Cirripedia."

Vol. III. of the "Bibliography of Geology and Zoology."

By Professor Agassiz and Mr. Strickland.

The Council hope to be able to publish, in addition to the last work, the Sixth and remaining Part of the great work of Messrs. Alder & Hancock, on the "Nudibranchiate Mollusca," for the year 1852. They are also glad to be able to announce that, by increasing considerably the size of the last two volumes of the "Bibliography," they will be enabled to finish this work in four volumes. The fourth and last volume of this complete and valuable Bibliography will be published for the year 1854.

For the year 1853, the Council proposes to produce a Volume of Essays and Papers on Zoology and Botany, which will comprise:—

1. A Report on the present state of our knowledge of the Structure of the Insecta and Crustacea. By Professor Erichson; translated by A. H. Halliday, Esq.

2. A Paper on Hermaphroditism in the Animal Kingdom. By Professor Steenstrup; translated by George Busk, Esq.

3. A Monograph of the family Diatomaceae. By Professor Meneghini; translated by J. Johnston, Esq. And other Papers.

The Second work for the year 1853 will be the Second Volume of Mr. Darwin's work on the Cirripedia, with about 20 plates.

In addition to the works announced in previous Reports, the Council have pleasure in stating, that they have made arrangements with Dr. Carpenter and Professor Williamson for the production of a joint work on the Foraminifera. This work will comprise two parts, the first of which will contain a general history of all that is at present known of the structure, functions, and systematic relations of recent and extinct Foraminifera, by Dr. Carpenter and Professor Williamson; and a Monograph of all the recent British species of this family, with plates of all the species, by Professor Williamson.

The Council have received a communication from the Rev. Mr. Leighton on the subject of publishing another volume on the Lichens of Great Britain, and which, with the former volume published by the Society, will constitute part of a complete Monograph of the British Lichens.

The Council have also under their consideration the question of publishing a translation of Hoffmeister's work on the Germination, Development, and Frustration of the Higher Cryptogamia.

Before concluding, the Council would allude to the complaints that are often made of the publication of the works so long after the subscriptions for the year have become due. They feel that those who pay their subscriptions punctually in advance have reason to complain; and they would especially call the attention of the Members to the fact, that they have no funds to meet the expenses of the Society but the subscriptions of the current year, paid in advance. At the present moment they are owing them, upon this and past years, the sum of 657*l.*—a sum equaling, within 12*l.*, the whole annual income of the Society.

During the past year the Council have appointed Dr. G. Johnston and Dr. Lankester, Secretaries, and J. S. Bowerbank, Esq., Treasurer, to the Society.

Abstract of Treasurer's Account from June, 1851, to May, 1852.

INCOME.		EXPENDITURE.	
By balance in Treas- urer's hands ...	£ s. d. 199 6 4	Drawing, colouring, and printing plates	£ s. d. 369 19 10
Subscriptions paid from June, 1851, to May, 1852 ...	604 16 0	Printing letterpress	57 15 0
		Stationery, postage, and advertisements	115 14 2
		Collector ...	12 3 8
		Bookbinding ...	2 10 2
		Books ...	100 0 0
		Editing ...	5 3 6
		Balance in hand	86 11 6
	£804 2 4		£804 2 4

Auditors—JAMES TENNANT, W. FERGUSON.

Moved by PRINCE BONAPARTE, seconded by C. W. Dilke, Esq.:—That the Report now read be adopted, and printed for distribution amongst the members of the Society.

Moved by LORD ENNISKILLIN, seconded by G. HYNDMAN, Esq.:—That the thanks of this Meeting be given to the President, Council, Treasurer, Secretaries, and Local Secretaries, for their services during the past year.

Moved by the Rev. PROFESSOR W. HICKES, seconded by PROFESSOR DICKIE:—

That the following Gentlemen be requested to act as a Council for the ensuing year:

Professor D. T. Ansted, M.A. F.R.S.F.L.S.	A. Henfrey, F.R.S. F.L.S.
Charles C. Babington, Esq., M.A. F.R.S. F.L.S.	Rev. Leonard Jenyns, M.A. F.L.S.
Robert Ball, Esq., LL.D. M.R.L.A., Sec. R.Z.S.I.	G. Johnston, M.D. LL.D. F.R.C.S.E.
Professor Bell, Sec. R.Z.S.I.	E. Lankester, M.D. LL.D. F.R.S. F.L.S.
J. S. Bowerbank, F.R.S. F.L.S. George Busk, Esq., F.R.S. F.L.S.	George Newport, Esq., F.R.S. F.L.S.
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Sir, P. de M. G. Egerton, Bart. M.P. F.R.S.	Robert Patterson, Esq., Fr. Nat. Hist. Sec., Bel.
Professor Edward Forbes, F.R.S. F.L.S.	Professor John Phillips, F.R.S. Prident J. Selby, Esq., F.L.S.
Professor Goodsir, M.D. F.R.S.	W. Spence, Esq., F.R.S. F.L.S.
Sir, W. Jardine, Bart., F.R.S.E. F.L.S.	Hugh E. Strickland, Esq., M.A. F.R.S. F.G.S.
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various disorders acquired in early life. In its pages will be  
found the causes which lead to their occurrence, the symptoms  
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THE EDITOR.—SATURDAY, JANUARY 1, 1853.







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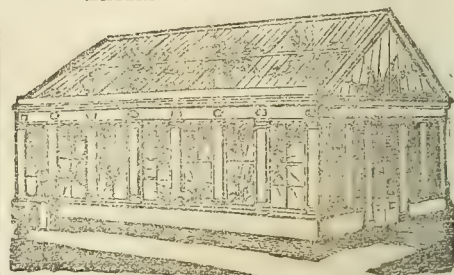
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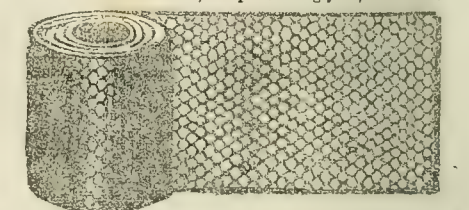
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## AGRICULTURAL, KITCHEN GARDEN, &amp; FLOWER SEEDS.

THE GROWTH OF 1852.

GARAWAY, MAYES, AND CO., beg to inform their Friends and the Public that they are now prepared to execute any orders for the above, selected from stocks of the first quality. From their long experience and transactions with the most celebrated growers in the country they have, regardless of cost, obtained the very best articles under their original names. They have many high testimonials of the superiority of their Kitchen Garden and Flower Seeds; the latter are principally grown by themselves. Their Lawn and Pasture Grass Seeds they can with confidence recommend. All Seeds thoroughly proved before leaving the establishment.

G. M. & Co. have to offer the following new and approved kinds:—

Per quart—s. d.	Per packet—s. d.
Peas, Beck's Gem ... 1 6	Celery, Cole's Superb Red 0 6
" Hairs' new dwarf ... 1 0	" Crystal White, new
" Mammoth ... 1 0	" and very fine ... 2 6
" Middleton green ... 1 0	" Imperial Pink ... 0 6
" Marrow ... 1 0	" White ... 0 6
" November Prolific 5 0	Cucumber, Victory of Bath 1 0
" Sangster's No. 1 ... 2 6	" Lord Kenyon's
	" Favourite ... 1 0
Per packet.	" Cuthill's Black Spine 1 0
Broccoli, Dilcock's Bride,	" Kelway's Victory ... 1 0
fine new White ... 2 6	" Victory of Bath ... 1 0
Broccoli, Walcheren, true 0 6	" Melon, Bromham Hall ... 1 0
" Wilrose, true ... 0 6	" Camerton Court ... 1 0
" Higlicers, the finest	
late white grown 1 0	

Per quart—s. d.	Per packet—s. d.
Superb Hollyhock, saved from the very best named sorts ... 1 0	
" ditto, fine double, in sorts separately ... 1 0	
" Calceolaria ditto ditto ditto ... 1 0	
" Cineraria ditto ditto ditto ... 1 0	

Imported German Stocks and Asters.  
Large collections of Fruit and Forest Trees, Ornamental Shrubs and Conifers, extending over 50 acres of ground. Hot-house and Greenhouse Plants, Orchidea, and Florist Flowers extensively grown. Catalogues of which will be forwarded immediately on application. Seeds made up in collections, from 10s. 6d., 20s., 30s., to 50s. each.

Durham Down Nurseries, Bristol, Jan. 8.—Established, 1786.

## SUPERIOR NEW CELERY.—SUTTON'S SOLID WHITE; very sweet, large, and solid, decidedly the finest White Celery, and has had many prizes awarded in various parts of the kingdom. (See testimonials below.)

SUTTON'S SUPERB PINK; delicious Walnut flavour, large, solid, and very crisp.

From Mr. Perry, Gardener to E. Wells, Esq.

"Wallingford, November 29, 1852.

"I cannot speak too highly of your Celery; it surpasses others, under the same treatment, in quickness of growth and solidity. I had sticks weighing between 6 lbs. and 7 lbs., free from mould and roots, the first week in September."

From Mr. Butler, Gardener to R. Mangles, Esq.

"Sunninghill, November 8, 1852.

"The Celery in particular was very fine. The like was never seen here before."

From James Kingsford, Esq.

"Sydenham, November 5, 1852.

"My gardener gained the Prize at Sydenham Show for your Solid White Celery."

The above superior sorts of Celery may be had, post free, at one shilling per packet. They are both included in each of our complete collections.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## NEW SEEDS—GROWTH OF 1852. THE WESTERN SEED ESTABLISHMENT.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, have much pleasure in stating that they have this season a fine and well-selected Stock of all kinds of KITCHEN GARDEN and FLOWER SEEDS in the best possible condition, harvested by themselves and by Growers of high reputation.

In consequence of the unfavourable weather for ripening seeds during the past autumn, the stocks of some sorts of seeds are very small, and the prices in the trade consequently much higher, yet we shall not make any corresponding advance, but supply all kinds of Kitchen Garden and Flower Seeds on the same terms as last year.

Our NEW SEED CATALOGUE is NOW READY, and can be had in exchange for one penny stamp. It contains prices of every article, and will be found very useful to all who have Gardens.

## COLLECTIONS OF GARDEN SEEDS.

Our Collections have given the greatest satisfaction to all who have received them; and we have the greater confidence in highly recommending them. They are supplied on the following terms:

No. 1. Complete Collection for a large garden for one £ s. d.	
year's supply, including 20 quarts of Peas, 11 quarts of Beans, 14 ounces of Onion, eight sorts of Cabbages, seven sorts of Broccoli, seven sorts of Lettuce, and full quantities of Beet, Brussels Sprouts, Carrot, Savoy, Cauliflower, Leek, Celery, Spinach, Radish, Turnips, Herbs, Cucumber, Melon, Endive, and other useful vegetables for ...	2 10 0
No. 2. Complete Collection in smaller quantities ...	1 10 0
No. 3. do. do. ...	1 0 0
No. 4. do. do. ...	0 12 6

The full quantities sent in each Collection are stated in the PRICE CURRENT.

READER'S PRICE CURRENT AND GARDEN DIRECTORY.—A few Copies of this useful work still remain on hand. A Copy will be sent free by post in exchange for six penny stamps.

All orders for Seeds above 2l. (excepting heavy articles, as Grain, Turnips, Clover, &c.), will be delivered Free of Carriage to any Station on the following Railways:—

Great Western ... Bristol and Exeter  
Bristol and Birmingham ... South-Western  
Southampton and Dorchester ... South Devon,  
Or to any Market Town in Devon and Cornwall, or to Cork, Dublin, and Belfast by Steamers.

The Terminus and principal Station on the South Devon Railway is close to our Union Road Establishment, so that we now enjoy direct Railway Communication to all the principal Towns in England, Scotland, and Wales. Our Premises are also within five minutes' walk of the Great Western Docks, from whence steamers are continually running to Cork, Dublin, Belfast, Glasgow, London, Falmouth, and most of the principal Ports in the Kingdom.

The Cape, Australian, and Chinese Mail Packets leave this Post every fortnight.

All Goods not thoroughly approved of immediately exchanged; and it is particularly requested that any deficiency in quantities, or want of uniformity, be immediately communicated to us.

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.  
ESTABLISHED 1790.

## ROSES.

ROSES extending over 10 acres of ground may be selected by purchasers from 15s. to 20s. per dozen, comprising all the leading varieties; dwarf do., 6s. to 12s. per doz. Fine varieties, in pots fit for forcing, 12s. to 15s. per doz. CAMELLIAS, well set with flower-buds, 30s. per doz., and upwards. ERICAS, leading varieties, 12s. to 15s.; fine specimens fit for exhibition in 11-inch pots. A large stock of DIELYTRA SPECTABILIS. Fine trained Peaches, Nectarines, and Apricots, 5s. each. Plums, Pears, Apples, and Cherries, 3s. 6d. each; and every description of Nursery Stock. Catalogues can be had on receipt of two postage stamps.

G. CLARKE, Streatham Place Nursery, Brixton Hill, near London.

## The Gardeners' Chronicle.

SATURDAY, JANUARY 8, 1853.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, Jan. 10	Law Amendment ... 8 P.M.
	British Architects ... 8 P.M.
	Geographical ... 8 P.M.
	Siro Egyptian ... 8 P.M.
	Civil Engineers ... 8 P.M.
	Medical and Chirurgical ... 8 P.M.
	Zoological ... 9 P.M.
	Royal Soc. of Literature ... 8 P.M.
	Literary Fund ... 8 P.M.
	Society of Arts ... 8 P.M.
	Graphic ... 8 P.M.
	Ethnological ... 8 P.M.
	Pharmaceutical ... 8 P.M.
	National Antiquarian ... 8 P.M.
THURSDAY, — 13	Antiquarian ... 8 P.M.
FRIDAY, — 14	Royal ... 8 P.M.
SATURDAY, — 15	Astronomical ... 8 P.M.
	Medical ... 8 P.M.

ALTHOUGH we are not believers in those LUNAR INFLUENCES by which Mr. FRANCOIS MOORE, gentleman, and other sages, have contrived to make a comfortable living, we are by no means prepared to assert that the brilliant nights of even our own cloudy skies are without their action upon plants. No one, indeed, who has studied the marvellous power exercised upon the vital forces of vegetation by even the weakest daylight, would, we think, be prepared to deny the possibility, or to question the probability, of light of any kind, however derived, possessing some analogous action. We know, indeed, that flowers, Crocuses for example, which are firmly closed in darkness, will expand in the presence of a lighted Argand lamp.

That the moon has a great mechanical effect upon our globe is undisputed. Of this, we need not say that the perpetually alternate ebbing and flowing of the tide affords the most evident proof. From the elevation of the waters of the ocean, chiefly caused by the moon's influence, some idea may be formed of the almost incalculable power which she exerts. At a certain hour the tide is at its lowest ebb; in little more than 12 hours from that time the ocean rises, say 10 feet. Calculating for only one square mile of that ocean, it will be found that in these few hours, and in that comparatively small area, upwards of eight hundred thousand tons weight of water have been raised 10 feet.

But whilst the effects of the moon are admitted to be immensely powerful in this respect, the influence of her light, except as regards illumination, has been often considered by scientific men as inappreciable; and the proverbs to the contrary, current among the unlearned, have been accordingly estimated as popular errors.

It has, however, been at last demonstrated that the moon's rays are very far from powerless. We learn from a note by M. ZANTEDESCHI (*Comptes Rendus*, October, 1852), that these rays do affect vegetation. This philosopher states that, "the influence, physical, chemical, and physiological, of the moon's light, which has hitherto been the object of so much research and speculation amongst scientific and agricultural writers, has been recently investigated by him in consequence of his having had occasion to give a historical summary of the works on the subject. In the course of his inquiries he found it necessary to clear many doubtful points, in doing which his attention was forcibly arrested by the movements exercised in mere moonlight, under certain circumstances, by the organs of plants; and this led him to make the whole subject a serious and profound study."

His observations were commenced in 1847, in the Botanic Garden at Venice; they were continued in 1848 in the Botanic Garden at Florence, and at Padua in 1850, 1851, and 1852. In the whole series of his experiments M. ZANTEDESCHI always remarked certain motions in plants having a delicate organisation as soon as they were brought under the influence of the lunar rays. In those experiments the rays were always diffused, being neither concentrated by lens nor mirror. Such movements could not be obtained by the action of heat, in whatever way thermal influences were applied. It was in vain to elevate or depress the temperature: in the absence of moonlight the phenomena in question could not be elicited.

The plants on which M. ZANTEDESCHI principally experimented were *Mimosa ciliata*, *Mimosa pudica*, and *Desmodium gyrans*. He always took great care to determine exactly the position of the leafstalks and leaflets of the plants after they had been exposed

to the open air, and before they were directly illuminated by the lunar rays. He thus avoided any causes of error which might have arisen from the imperceptible motion of the air, or from a slight change of temperature; and he satisfied himself fully that the effects observed did result entirely from the action of the rays of light from the moon. Without entering into minute details, it is sufficient to say that the results were ascertained when the temperature of the air was 70° Fahr.; and when SAUSSURE'S hygrometer indicated a medium state of humidity. Under such conditions, the leafstalks of *Mimosa ciliata* were raised half a centimetre, (presento un erezione ne' suoi peduncoli di mezzo centimetro), or about  $\frac{1}{16}$  of an inch; those of the *Mimosa pudica* were raised one inch and two-tenths; whilst the leaflets of *Desmodium gyrans* exhibited distinct vibrations.

It was thus demonstrated that moonlight has the power, *per se*, of awakening the Sensitive Plant, and consequently that it possesses an influence of some kind on vegetation. It is true that the influence was very feeble, compared with that of the sun; but the action, such as it is, is left beyond further question. This being so, and lunar influence upon vegetation being thus rescued from the limbo of mere moonshine, the great question remains to answer; what is the practical value of the fact? At present we do not know, but we may possibly learn; and upon that point we would invite discussion. For ourselves we shall only remark that since the Almighty provided nothing in vain, this lunar influence may have a value that we ought not to neglect. In the open air, in the region governed by the farmer, such an inquiry may have no interest, for no one can interfere with the action of the moon any more than with that of the sun. But in gardens it is otherwise: and it will immediately occur to any one that possibly the screens which are drawn down over hothouses at night, to prevent loss of heat by radiation, may produce some unappreciated injury by cutting off the rays of the moon, which Nature intended to fall upon plants as much as the rays of the sun.

THE Belgian Government has issued a Royal Commission for the purpose of collecting and publishing all existing information concerning the qualities of fruits and their cultivation. The old kinds still deserving preservation are to be described, as well as the numerous varieties of modern origin; the names by which they are known are to be reconciled and reduced to a common standard; and the best sorts are to be illustrated by figures. This measure, which the Agricultural Congress of Belgium has for four years recommended, is confided to eight gentlemen of the country, and to certain corresponding members, among whom Mr. RIVERS, of Sawbridgeworth, and Mr. ROBERT THOMPSON, of Chiswick, represent Great Britain.

The work will appear in parts, each containing four coloured plates, and the necessary letter-press. Ordinary sets are to be charged 24 francs, and fine paper copies 36 francs a-year; the first part is advertised for the beginning of the present year.

The Commission announces that no statement whatever will be made, the truth of which is not ascertained, and which shall not have been justified by experience. The errors which ignorance, *charlatanerie*, or private interests have rendered current will be rigorously exposed. Every writer is to sign his own article; but no article is to be admitted which shall not have been specially discussed by the Commission. The points to be elucidated with each variety will be the best mode of culture, whether as standard, pyramid, or against walls; the bearing, vigour, good quality, and keeping; the soil best suited to each, and the settlement (*épuration*) of the synonyms. None but the finest kinds will be figured; that the Commission guarantees.

Thus we see that a final settlement of that jargon among fruit-growers which leads to so much imposture and confusion, and which so far as this country is concerned was effected single-handed, many years ago, by Mr. THOMPSON, acting under the orders of the Horticultural Society, has been found worthy the notice of a European Sovereign. Let us hope that so much collective wisdom as is embodied in the Belgian Commission, will produce a result worthy of the unusually high position to which KING LEOPOLD has raised it.

## THE BED MOOSHK PLANT.—No. I.

THIS, which is a member of the Willow tribe, yields highly aromatic and fragrant flowers, the plant of which is well known in Lahore under the name of "Bed Mooskh," and is described by Oriental medical authors under the appellation of "Khilof Bulkuce."

About a year or two subsequent to the conquest of the lovely valley of Kashmir, by the force of the late Maharaja Runjeet Sing, in anno Heojree 1235, its then



Governor Sirdar Huree Chund, amongst other things sent a number of "Sheeshaws" of the "Ur-ee-Bed-Mooshk," as a present to the Maharaja; the fragrance of the distilled liquid, with the high encomiums that were lavished on its real or supposed virtues, attracted the Maharaja's attention, and he naturally became anxious to have the trees introduced into Lahore. Sirdar Huree Chund, on being apprised of the Maharaja's intentions, at the proper season, sent down a number of the cuttings of the tree from Kashmir (where the plant is indigenous) with persons that knew well the habits and modes of cultivating the plant. On their arrival at Lahore, the people were ordered to select a suitable site for plantation, in the vicinity of Lahore. The vast tract of the low Khadur land, which lies between the river Ravee and its nullah was approved of by the judges as being most favourable for the growth and thriving of this justly esteemed plant; especially on account of that piece of land retaining moisture and humidity throughout the several seasons of the year. The cuttings were planted, and then the Maharaja bestowed them on the agriculturists, upon condition that the latter were to take care and preserve the plants, and that the produce (the flowers) were only to be sold to royalty.

The only and the best season for cutting, and thereby increasing the individual numbers, is just after their flowering; each of the cuttings should be about a cubit in length, precaution being taken that every one of the cuttings have their tops above and their lower ends beneath, and the same care should be particularly observed when putting in the cuttings. About two-thirds of each of them should be covered under ground, and the remaining one-third exposed to the air. They are to be planted in beds at about the distance of a square span from each other, the bed itself having numerous conduits for free irrigation. After a time, varying from one to two years, and in no case it should exceed three, the young plants should be removed from their present beds, and planted separately at about the distance of three square yards from each other. The only care necessary to be observed, when putting in the cuttings, is that the soil is moist and humid; manure is required, but not indispensably, when the cuttings are put in for the first time; and last of all the young as well as the aged plants are to be constantly kept well watered. The objects of planting the members apart from each other are twofold; first, that the individuals may increase in size and branches, and thereby increase their produce; and secondly, that when collecting the flowers, no difficulty may be experienced; as the boughs and stems are invariably bent down to reach the flowers. The tree grows to a height varying from 12 to 18 feet. A single "Kunal" of land holds, on an average, from 20 to 25 trees, and the produce of the whole in the season varies from two to three maunds of the flower.

The plants flower in the month of Phagoon, i. e. between the end of January and the beginning of February. Early in the morning the flowers are commenced to be plucked, and they should be detached as gently as possible, for any degree of rough handling causes them to emit an unpleasant vegetable smell; they are to be kept in baskets of capacious size, and ere the sun reaches the meridian they should be subjected to distillation. The flowering season generally lasts from 15 to 25 days at the utmost. Besides Lahore, this exotic has been naturalised in several other localities, viz., Umritsar, near Baba Nanuk ka Dera, in Deenanagar, as also in the villages called Sanea Sughee, Nainsook, and Shahdara; all of which, from their proximity to the rivers, are favourable spots.

During Maharaja Runjeet Singh's time, who was the sole and whole monopoliser of this inestimable flower, the price varied from 14 to 25 rupees a maund; but most of the Sirdars and Amerees of the Durbar used to purchase it privately even to 40 rupees per maund. Since the downfall of the Sikh dynasty, the prices have got low, and last year they varied from eight to ten rupees. *Tunnee Khan, in Proceedings of Agri-Horticultural Society of the Punjab.*

#### UNDERWOODS.

THE proper management of underwoods affects a tenant's interest in a great degree, and is always of great importance to a landlord's. The following remarks are intended to apply only to underwoods in Hop growing districts, where there is a good demand for Hop-poles, rendering the underwood of more value here than in most other localities. Of all descriptions of landed property woodlands are generally the most neglected, and the worst managed. A want of knowledge of the proper method to effect their improvement must be admitted as one cause; and, perhaps, the great obstacle in the way of improvement is the large outlay of money required in some cases at the commencement, and the long period that must elapse before any return is received.

Newly planted woods in the first stages of their growth require as much care and cultivation as a young orchard or fruit plantation, to secure an early return of money expended—the great point to be attained. If we plant as is frequently, indeed generally done, in a mass of weeds and Grass, and give no after cultivation, the growth of the plants must necessarily be very slow; and we shall then only obtain, at the end of 30 or 40 years, that quantity of produce which by proper culture we might have made the land produce in 10 or 12. In some other cases, we observe every thing has been properly effected until after planting, when the land is left to its own resources, and no pruning given to the

plants, nor cultivation given to the land; the natural effect of this subsequent bad management is to retard the growth of the plants several years; on the other hand, had a little pruning been bestowed on the plants that required it, by taking off some of the lateral shoots, the land forked over, prong-hoed, flat-hoed, or horse-hoed, as the case might require, the wood would then have been earlier fit to cut and the produce been larger.

There are several means adopted to improve natural or common underwoods, dependent on the number of stocks of the best sorts of wood that are dispersed through them. If these are numerous, layers from them will be sufficient; if few of the best sorts are found the inferior stocks are grubbed, and the spaces filled with strong Ash or Chestnut plants, together with layers from the best stocks.

When underwoods are composed wholly, or nearly so, of the inferior sorts, it will be ultimately most advantageous to grub the whole extent of land, and replant with Ash or Chestnut and Larch. With reference to this plan the two following calculations are given of the expenses of grubbing natural underwoods and replanting with Ash or Chestnut; and with Ash or Chestnut with the addition of Larch. The outgoings are stated as the average on various descriptions of land. In some cases they might amount to more, in others less and the value of the crop of underwood ought to equal the estimate from the cultivation directed to be given to the land.

*First calculation of the expenses of grubbing an acre of common underwood and replanting with Ash or Chestnut, together with the annual expenses until the wood has attained the requisite size for Hop-poles, which, on the average, would be 12 years, with an estimate of the probable crop of poles, and their value.*

	£	s.	d.
Trenching, 18 inches deep, at 6d. per rod, the value of the roots covering all expenses of trenching above this sum	4	0	0
Manure, farm-yard or artificial	1	10	0
2722 Ash or Chestnut plants from 3 to 4 feet high, planted 4 feet apart each way, at 3s. per 100	4	1	0
Carriage from nursery, at 3d. per 100	0	6	9
Setting out the land and small sticks	0	4	0
Digging holes and planting, 6d. per 100	0	13	6
8166 2 years seedling Larch plants, at 3s. per 1000	1	4	3
Planting 8166 Larch plants 2 feet apart between the rows of Ash or Chestnut, and one plant between the Ash or Chestnut plants in the rows, giving a square of 4 feet for each plant of Ash or Chestnut, and Larch, at 2d. per 100	0	13	8
Hoeing and weeding during the summer	0	10	0
Rent, rates, and tithe	0	15	0
Interest on 122, at 5 per cent.	0	12	0
1st year	12	9	9
Prong-hoeing the land	0	8	0
Horse and hand-hoeing twice	0	9	6
Rent, &c.	0	15	0
Interest on 131. 10s.	0	13	6
2d year	14	15	9
Prong-hoeing the land	0	8	0
Hand-hoeing twice	0	10	0
Rent, &c.	0	15	0
Interest on 151.	0	15	0
3d year	17	3	9
Hoeing off weeds twice	0	4	0
Rent, &c.	0	15	0
Interest on 171.	0	17	0
4th year	18	19	9
Hoeing off weeds	0	2	0
Rent, &c.	0	15	0
Interest on 191.	0	19	0
5th year	20	15	9
Weeding	0	1	0
Rent, &c.	0	15	0
Interest on 201. 15s.	1	0	9
6th year	22	12	6
Rent, &c.	0	15	0
Interest on 221. 10s.	1	2	6
7th year	24	10	0
Rent, &c.	0	15	0
Interest on 241. 10s.	1	4	6
8th year	26	9	6
Rent, &c.	0	15	0
Interest on 261. 10s.	1	6	6
9th year	28	11	0
Rent, &c.	0	15	0
Interest on 281. 10s.	1	8	6
10th year	30	14	6
Rent, &c.	0	15	0
Interest on 301. 15s.	1	10	9
11th year	33	0	3
Rent, &c.	0	15	0
Interest on 331.	1	13	0
12th year	235	8	3

*Note.*—The amount of interest each year is not calculated at the exact sum, but is sufficiently accurate for the purpose.

Estimate of the crop of poles and their value; each stock ought to produce 2 poles, the number per acre would then amount to 5444, and their description and value might be as under, in the wood:—

	£	s.	d.
1000—12 feet poles, at 25s. per 100	12	10	0
3000—12 do. do. 15s. "	22	10	0
1400—10 do. do. 8s. "	5	12	0
Expenses	40	12	0
Profit per acre	5	8	3

The capital and interest are repaid at the expiration of 12 years, and, in addition, a profit of 5l. 2s. 9d. per acre is obtained, being equal to an annual profit of 9s. per acre, which is probably more than the wood in its natural state would have yielded. The value of the faggots, &c., is supposed to cover the expense of cutting the wood.

*Second Cutting.*—During the first 3 or 4 years of the second period of 12 years, some prong-hoeing, flat-hoeing, or hand weeding might be necessary. This

expense may be stated at 2l. per acre, which at compound interest for 12 years would amount to about 3l. 10s. To this sum add the annual charges of rent, tithe, and rates, 15s. per acre—equal to 11l. 19s. 4½d., say 12l.—making the total expenses 15l. 10s. for the 12 years.

Estimate of the crop of poles and their value; each stock may be calculated on as producing 3 poles at the second cutting, giving 8166 poles to the acre:—

	£	s.	d.
2000—14 feet poles, at 25s. per 100	25	0	0
5000—12 do. do. 15s. "	37	10	0
1000—10 do. do. 8s. "	4	0	0
Expenses	266	10	9
Profit per acre	251	0	9

Or at the rate of 4l. 5s. per acre annual profit, after the expiration of 12 years from the time of planting.

*Second Calculation.*—Ash or Chestnut, with Larch:—

	£	s.	d.
Trenching, 18 inches deep, at 6d. per rod, the value of the roots covering all expenses of trenching above this sum	4	0	0
Manure—farm-yard or artificial	1	10	0
2722 Ash or Chestnut plants, from 3 to 4 feet high, planted 4 feet apart each way, at 3s. per 100	4	1	0
Carriage from nursery, 3d. per 100	0	6	9
Setting out the land and small sticks	0	4	0
Digging holes and planting, 6d. per 100	0	13	6
8166 2 years seedling Larch plants, at 3s. per 1000	1	4	3
Planting 8166 Larch plants 2 feet apart between the rows of Ash or Chestnut, and one plant between the Ash or Chestnut plants in the rows, giving a square of 4 feet for each plant of Ash or Chestnut, and Larch, at 2d. per 100	0	13	8
Hoeing and weeding during the summer	0	10	0
Rent, rates, and tithe	0	15	0
Interest on 122, at 5 per cent.	0	12	0

First year's expenses

Supposing the subsequent expenses the same in amount as in the first calculation, they would be at the expiration of the 12th year about 40l.

Estimate of the crop of poles and their value:—

	£	s.	d.
2722—Ash or Chestnut plants, producing	20	5	0
2700—12 feet poles, at 25s. per 100	20	5	0
8166—Larch plants, producing—			
1000—14 feet poles, at 25s. per 100	14	0	0
5000—12 do. do. 15s. "	45	0	0
2000—10 do. do. 8s. "	8	0	0
10,888 = 10,700	287	5	0
Expenses	40	0	0

Profit per acre

Or 3l. 3s. per acre annual profit, after repaying the capital and interest. The faggots, stakes, &c., are supposed to cover the expense of cutting the wood.

The profit on the first cutting of a plantation without Larch is 5l. 2s. 9d. per acre, and, with the addition of Larch, 47l. 5s. per acre; giving a balance of profit in favour of planting Larch with Ash or Chestnut of 42l. 2s. 3d. per acre. The value of the second cutting would, in all probability, equal that in the first calculation; the stock of the Larch dying after the pole is cut, leaving space for three or four shoots of the Ash or Chestnut to grow into poles.

It will often be advisable to head off the Ash or Chestnut plants to within 3 or 4 inches of the ground when Larch is planted between them; this will depend on the strength of each sort of plants, and quality of the soil. The Larch may overtop the Ash or Chestnut, and vice versa. The Chestnut, however, will frequently make greater progress than the Larch, materially checking its growth. Plants of each sort should be selected of that strength which is likely to maintain a uniform growth, so that one sort does not overtop and injure the other.

Some persons may object to planting two-years seedling Larch plants in their permanent situation; they will, however, grow as rapidly there as in nursery, provided the land is in a proper state to receive them, and afterwards well cultivated with the hoe. They will attain the requisite height and size in 12 years, except on very poor soils. If nursery plants of Larch are purchased, instead of seedlings, 2 or 3 feet high, at 10s. or 15s. per 1000, this would add 3l. per acre to the first outlay, and amount to about 5l. at compound interest at the time of cutting the wood; in this case a larger number of the most valuable poles ought to be obtained, in order to cover the additional expense of the larger plants, and to leave also a greater profit.

When a considerable extent of land is to be planted annually, the best and most economical way of proceeding is to purchase seedling Larch plants at 1s. 9d. or 2s. per 1000, and plant them in nursery until wanted, and to sow the seeds of Ash and Chestnut in nursery.

The results arrived at in the foregoing calculations may appear too favourable; they are not, however, beyond what may be reasonably expected to be realised by carrying out the cultivation recommended, nor what have actually been obtained.

The expenses attending other ways of improving underwoods cannot be accurately given, being dependent on the number of stocks of the inferior sorts of wood grubbed, and, consequently, on the number of Ash or Chestnut plants to be purchased to fill the spaces made by the old stocks being removed. But the expense of planting 100 plants may be very nearly calculated; for example, digging the holes and planting 100 plants will cost 1s. on land easily worked, and 1s. 6d. or 2s. on stiff or stony land. Ash or Chestnut plants, two years seedlings, may be purchased for 5s. per 1000, or 6d. per 100; but older and higher plants, such as are alone proper for filling up underwoods, will cost from 3s. to 3s. 6d. per 100; if younger or shorter plants were planted they would be overshadowed by the surrounding underwood, and the greater number would perish in the course of three or four years. In filling up a small portion of underwood it will be most economical to pur-



chase the plants, but when a considerable extent is to be improved annually, it will then be advisable, as before remarked, to sow the seeds of Ash and Chestnut and raise plants in nursery at home, and purchase seedling Larch plants at 1s. 9d. or 2s. per 1000, and plant these in nursery. The best land, beyond the shade of trees or buildings, should be selected for the nursery, and not an out-of-the-way corner under high trees. Ultimate success depends in a very great degree on nursery treatment. Unless strong and healthy plants are chosen for filling up underwoods, a great length of time must elapse before they attain a paying growth. Too much manure, cultivation, and care, can hardly be bestowed on the nursery. A man will dig the ground, and plant 2000 Larch plants in the nursery in one day, on good working land; expense, 1d. per 100.

An acre will contain 87,231 seedling Larch plants, planted in rows 12 inches apart, and 6 inches in the rows. This number, at 6d. per 100, would amount to 21l. 16s. per acre, and allowing the plants to remain in the nursery three years, would be equal to an annual return of 7l. 2s. per acre, a sufficient sum to cover all expenses and leave a profit. One acre of underwood may require in filling up 800 Ash or Chestnut plants and 800 Larch plants. The cost may be calculated as below.

With Purchased Plants.	£	s.	d.
Digging 1600 holes and planting, 1s. per 100	...	...	0 16 0
800 Ash or Chestnut plants, at 3s. per 100	...	...	1 4 0
800 Larch plants, 3 feet high, 1s. 3d. ditto	...	...	0 10 0
Carriage from nursery and laying out, 2d. per 100	...	...	0 2 8

£2 12 8

With Plants raised in a Nursery at Home.	£	s.	d.
Digging 1600 holes and planting, 1s. per 100	...	...	0 16 0
800 Ash or Chestnut plants, at 1s. ditto	...	...	0 8 0
800 Larch plants, at 6d. ditto	...	...	0 4 0

£1 8 0

A difference in favour of raising plants in a nursery at home of 1l. 4s. 8d. per acre for this number of 1600 plants to the acre. By the first calculation the expense per 100 plants is 3s. 3½d.; by the second, 1s. 9d. To these items something must be added for making the holes for the plants, when strong, stony, or rocky land is the subject of calculation.

In filling up the vacant spaces in underwoods, without grubbing any of the old stocks, the holes for the plants should be made a few weeks before planting, and the plants put in during the month of November, if practicable.

In whatever way the improvement of underwood is attempted, success depends entirely on the manner in which it is carried out. Strong plants put into the ground early in the season, with proper attention, and without their roots having been exposed to the air several days before planting, the land cleared of all weeds which would deprive the plants of their food, will always succeed; weakly or stunted plants, planted late, carelessly put into the ground, with the roots of Grasses and weeds surrounding their own, thus depriving them of food when most they require it, can never succeed in any reasonable time.

The value of the roots will frequently cover the expense of grubbing underwoods. There are instances of a portion of natural or common underwood having been grubbed and replanted with Ash or Chestnut—that portion remaining in its primitive state being dear at 5s. per acre to rent, while the replanted part is cheap at 50s., thus increasing the rental of the land ten times, or ten hundred per cent. Many hundreds of acres of poor underwood are susceptible of improvement to this extent.

On a first consideration of the facility of improving and consequent great increased value of underwoods, it would appear extraordinary that a greater extent of these woods should not be under a process of improvement that would repay the capital employed at the expiration of 12 or 14 years, together with a good interest on it; and at and from that period the land increased probably ten times in annual value.

There are, no doubt, some underwoods which from their local situation, or barrenness of the soil, are not susceptible of much improvement; the greater number, however, are, and to the full extent of the foregoing statements.

About 45,000 acres are under Hop cultivation in the Kingdom at the present time; each acre on an average is supposed to require annually 800 new poles, consequently 36,000,000 new poles must be provided annually. Some Hop growers think this estimate too high, others believe it approximates very nearly to the truth.

If the number of poles that each acre of underwood produces when cut is estimated at 3000 on an average, taking the plantations and common underwoods together; then 12,000 acres must be cut each year to supply the number of 36,000,000; and if the number of poles cut per acre, on an average, is estimated at 2000, which is, perhaps, nearer the truth, then 18,000 acres must be cut each year. Some experienced persons believe that even 2000 poles per acre is too high an average; if so, 24,000 acres or more of underwood must be cut each year to supply the Hop growers with poles. *W. C. Bully, Ightham, near Sevenoaks.*

#### THE CORREA.

WELL-GROWN specimens of the better varieties of this genus are exceedingly useful for winter flowering, and amply reward the attention of the cultivator by a two months' display of highly-coloured blossoms at a season when every bloom is acceptable. Propagation may be effected either by means of cuttings or by grafting. The latter method is probably the more difficult for amateurs; and as any of the varieties thrive very well on their own roots, there is no necessity for resorting to grafting.

Those who choose to do so, however, should have well-established plants of *C. alba* or some other vigorous growing variety in readiness to use as a stock. For cuttings select short jointed firm pieces of young wood, and insert them in well drained pots filled with sandy peat, covered with half an inch of silver sand. Cover the cuttings after watering with a bell glass, and afford them a very gentle bottom heat. Cuttings planted in October and kept through the winter in a temperature of about 50°, will be ready to pot singly early in spring; and as it is sometimes difficult to obtain cuttings sufficiently early in summer to get them rooted and well established in small pots previous to winter, autumn is probably the best season for amateurs to put them in. The commencement of growth will indicate when they are fit for "potting off." Use rich fibry peat broken up very small, mixed with one-fourth sharp silver-sand, and be careful to have it in proper condition for use when wanted. After potting, place them in a close, moist, rather warm situation, to encourage active growth, but admit air on all favourable occasions as soon as the plants are fairly established and growing freely. Plants potted off in spring, and kept growing, will require a shift early in summer, but this will be best ascertained by occasionally examining the state of the roots. Never allow young specimens of hard-wooded plants to suffer for want of pot-room, and never shift unless the ball is full of healthy roots.

About the middle of October remove the plants to the warm end of a greenhouse, where they may remain for the winter, and they should be rather sparingly supplied with water, giving only sufficient to maintain the soil in a healthy state. As early in spring as convenient remove them to a moist growing temperature of about 50° at night, and ranging 10° or 15° higher with solar heat. With abundance of pot room, light, and air, a moist atmosphere, and a careful supply of water to the soil, the plants will make very rapid progress during the summer, and by the end of the growing season will be handsome, moderate-sized specimens. Remove them to an airy part of the greenhouse, or to any rather dry, light, airy situation elsewhere, in time to get the wood well ripened previous to the gloomy days of November. If it is desirable to have plants in flower by Christmas it will be necessary to place them in a rather close warm situation, say, where the night temperature averages 45°, but this should not be done until the young wood is well matured by exposure to air, &c. While in flower give a liberal supply of water, and guard against injury to the blossoms from damp, by watering early in the day, and giving air afterwards, so as to dry the floors, &c., before night. A temperature of about 45° should be maintained while the plants are in flower. Unless very large examples are wished for in the shortest possible time, there will be no necessity for growing the plants in heat after they have attained the size which well-managed specimens will be by the end of the second season. After flowering shorten any straggling shoot, regulate the form of the plants, and place them in an airy part of the greenhouse or cold pit till the weather will admit of their being safely set out of doors. But avoid sudden exposure to bright sunshine and drying winds, especially such plants as may have fairly started into growth, or previously occupied a rather shady place—indeed it is seldom safe to remove growing plants from even a cool greenhouse—and place them in a situation fully exposed to sun and wind; and amateurs had better avoid this by placing their plants in a shady situation for a fortnight before arranging them on the plant ground. Shifting should be performed about a month before removing the plants to the open air, or deferred till about the middle of June, as repotting immediately before or after the removal of the plants would be attended with danger. Give a liberal supply of water to the soil during the growing season, and sprinkle the plants with the syringe on the evenings of bright days.

The most suitable soil for the Correa is three parts of good rich fibry peat and one part light sandy turfy loam, with a liberal admixture of sharp silver sand. The soil should be carefully broken up into small pieces, rejecting all but the best, and well intermixed with the sand, and a sprinkling of clean potsherds broken rather small, or lumps of charcoal, will be useful in securing perfect drainage. In potting make the soil rather firm about the old ball, and be careful to have the latter and soil in a properly moist state when the operation is performed. *Alpha.*

#### Home Correspondence.

*Wine Cork Insect.*—We find the following remarks by W. Atkinson, Esq., F.L.S., in the new part of the Transactions of the Entomological Society, published since the article on this insect appeared in our pages. "In my opinion, in addition to cutting close and sealing the corks, the wine should be rebinned, perfectly free from sawdust, at the same time carefully removing the sawdust from the cellar; for, in the sawdust, the caterpillar no doubt changes into the chrysalis and the moth lays its eggs. It is through this medium, I feel certain, that the mischief is transmitted from the wine merchant's cellars. It appears to me that the insect cannot possibly be imported in the cork, as has been suggested, after it has undergone the process of firing, and sometimes, I believe, of boiling, and also the cutting into corks. The very act of driving a cork into a bottle would certainly crush any eggs, in which state only would the insects be in the corks; and I should think it unlikely that the moth is furnished with the means of peno-

trating the cork to deposit its eggs therein." We may observe, in reference to the last paragraph, that the eggs are doubtless introduced by the female moth into any crevices in the cork, or even between the cork and inside of the neck of the bottle, by means of the ovipositor, which is extremely delicate and telescope-like in its structure, and thus capable of being extended to a considerable depth into the cork.—Our correspondent, Mr. G. S. Wintle, of Gloucester, has also favoured us with the following note. "The best preventive I have found out for the pest is to get rid of all old sawdust in the cellar, and well stop up all the holes, and whitewash the cellar and bins two or three times. My bins which I have done in that way two years ago are free from the grub, although it is still found in my cellar." *J. O. W.*

*Curious Formation of Roots above ground.*—One of the stems of a large Laburnum, which had sprung up into two about 2 feet from the ground, was torn a short time ago from its companion; and, to my surprise, I found that large roots had grown between the fissure, which must have been begun many years since, and have gradually increased in size. These roots I first supposed to belong to an Ivy plant, for the larger ones had been separated some time from the upper lip of the fissure, from which they had originally sprung, by its continued increase, and had firmly fixed themselves in the ground. But I found that they were really Laburnum roots, and was led to find the place from which they had been torn by finding other smaller roots still growing out of the torn trunk, and making their way down the fissure into the earth. And I dare say many have observed the contrary operation of a main root becoming a trunk, which I saw well exemplified the other day in a wood of Fir trees. Some of these trees stood on the side of a quarry, and all the earth on one side and partially under them had been taken away, and finding themselves without sufficient nourishment and support, had sent down one or sometimes two roots into the earth beneath, and these from that exposure had become, to all outward appearance, exactly like the main stem; so here were trees which had one set of roots running into the surface soil on one side of their stem, under which was formed a new stem or stems, which formed new roots in the soil below. These are interesting facts to young observers, though, no doubt, such are well known to old hands; yet, I conclude that the notice of them in your columns is not intended so much to found the claim of novelty, as to make them known in a wider circle, to encourage renewed observation, and to lead to new inductions from facts which, though seemingly similar, may yet afford a new clue to their true character, and increase the knowledge of the laws of cultivation. *Vigilar.*

*Rain in Ireland.*—The following is the quantity that fell here last year:—January, 5.26; Feb., 1.86; March, 2.32; April, .86; May, 3.85; June, 6.57; July, .78; August, 3.68; Sept., 2.37; Oct., 3.44; Nov., 3.87 (1851, .86); Dec., 7.26; Total, 47.12. A friend of mine informs me that the average here is from 33 to 34 inches. A few years since 43 inches fell. *S. Waterford.*

*January 1. Flowers of 1853, in Lancashire.*—In flower: Single blue Russian Violets, Géant de Batailles Rose, Pyrus japonica (freely), Cupressus Goveniana, and Filberts. In leaf: Honeysuckles, Spiraea prunifolia fl.-pl., Tree Pæonies, and Roses. Buds large, as in March: Gooseberry, Currant, and Sycamore. Flower buds, as in March: Azaleas, Tree Pæonies, and Box Christen Fondant Pear. *R. A. H., Warrington.*—As a proof of the mildness of the season, I may mention that we took up and potted, on the 29th ult., a dozen and a half of seedling scarlet Geraniums from a bed which was filled this year with plants of Tom Thumb. I never before remember to have seen Geranium seeds vegetate in the open air at any season of the year. *J. G. Nelson, Winterton Rectory, Great Yarmouth.*

*Cedar Tree.*—Will some of your correspondents kindly tell me, whether they ever knew an old Cedar tree, whose top had been broken off, to push out fresh shoots so as to form another leader. *Old Subscriber.*

*Asparagus Forcing.*—I have been much astonished in watching the Covent Garden reports to find scarcely any mention of Asparagus up to Christmas, whilst we have had it constantly from the middle of November. With Parliament sitting, and the Christmas festivities at hand, surely there must have existed a demand for such a dainty esculent. There was some account of a little "sprue" having appeared about Christmas, but why sprue? why not good Asparagus? At the Regent Street meeting in December, a little imported grass, it appears, was exhibited by Mr. Lewis Solomon, at which period I had just finished cutting my first frame. This is really not very reputable for the great metropolis, and must convey a very indifferent idea of the London forcing gardens to our continental neighbours. I do not know how they manage these things now about London; but in my younger days it was a custom to force only worn-out beds. Now, this is poor policy indeed, as I have shown years ago in your pages. To be sure, beds will become worn out, and the roots are too good to throw away; they may be made to produce the "sprue" as they term it; but to rely on such for the production of first-rate Asparagus is absurd. My practice is to grow it specially for forcing; the roots I am now forcing are five years old, and of course in their prime; and I shall cut this week (now January 4th) about 300 of as fine heads as may be seen in the London greengrocer's shop in the end of May. My worthy employer is particularly fond of this vegetable, and



I flatter myself I shall be able to furnish him with at least three dishes, weekly, until the open ground Asparagus appears. As for making a fuss about the loss of roots, this is nonsense; what loss is there when not a root is purchased, and one shilling's worth of seed annually supplies all this Asparagus? Besides, observe its immense utility as a preparer for other crops, as forming one of the chief features in a good rotation. Deep trenching is of necessity involved in its culture, and by early breaking up there is not that enormous accumulation of manurial matters in a given spot, that occurs with the old bed system. My Celery in 6 feet beds, prepares annually for the Asparagus, the Celery is trenched out, and the ground left in a sharp ridge, and no other preparation but levelling down is needed for the Asparagus. I may here observe that Seakale, too, has been plentiful here since the middle of November.

R. Errington, Oulton Park.

**Pruning Roses.**—I have been reading with great satisfaction some short hints on the management of the Rose in your columns. One thing I do recommend, owing to the extraordinary season we have experienced, that all Rose growers should desist from pruning until after a frost, let it come when it may. If you cut now, the eyes that are most backward, or at present apparently dormant, will vegetate and be cut off, and perhaps kill your plant altogether. If you permit the frost to kill down to where the wood of last year's shoot is ripened, you can then cut, and have some knowledge as to where your bloom and buds may be safe. G. R. R.

**Jasminum multiflorum.**—This beautiful Jasmine is certainly a great acquisition to the flower-garden, inasmuch as it produces its cheerful bright yellow flowers during autumn and winter, and continues blooming for several months in succession. It is also very useful for cutting for bouquets, and the "sprigs" will last in water a long time. It may be grown in any common light soil, and no one fond of a garden ought to be without it, for it does not take up much room. It is best planted against a wall, and kept trained. It is a free-growing plant when it gets established, and is quite hardy. We have a specimen at this place, which has been planted about five years. It is against a south wall about 10 feet high, and it is covered with charming yellow flowers from bottom to top. It has been in this condition from the beginning of November, and it appears likely to continue so for a long time to come. When grown in this way it is a truly splendid object. The way we have treated it is as follows:—It was planted out in the spring and kept trained against the wall during summer, giving it a good supply of water at the roots. It made a good growth, and bloomed the same year. After flowering it was pruned, cutting the side-shoots to one or two eyes, and keeping the leading shoots trained up the wall till they attained the height that was wanted. It has been pruned every year since. Of course it should not be cut in summer, for it blossoms on the young wood, and the longer the shoots the more bloom you get. It is easily increased by cuttings or layers. In the former case take part-ripened wood and place it in a pot in light soil and sand mixed together, afterwards put them in a warm frame till they are rooted, and then pot them afresh in small pots. Set them in the frame again till they are rooted, then move them to a cooler place till spring, when they may be turned out against a wall and treated as is recommended above. B. S. Williams, Huddersdon, Herts.

**Cork Tree and Pinus Seeds.**—I should feel obliged if any of your correspondents could inform me where I could purchase acorns of the Cork tree (*Quercus Suber*) and seeds of the *Pinus Pinsapo* and *Pinus insignis*. J. M. Freeland, Chichester.

**Mushrooms.**—Two correspondents have lately complained about the length of time their Mushrooms have been in making their appearance after the beds have been spawned. I spawned a bed the last week in August, and I never gathered a Mushroom from it until the week before Christmas, but since that time the bed has done remarkably well. I find that Mushrooms are very much longer in making their appearance after the beds are spawned this season than usual, which I attribute to the wetness of the summer, the spawn not having thoroughly worked. E. Bennett, Perdiswell.

**Soldat Labourer Pear.**—I see in a late notice of the Horticultural Society's Garden, that Mr. Thompson decides "that Soldat Labourer proves the same Pear as Beurré d'Aremberg." I remember Mr. T. telling me some years since he thought it would prove so. I hesitate to doubt such an authority, but as I have just come to an opposite conclusion, I give my reasons, from my Pear book. "Soldat Labourer, a juicy nice Pear, like Beurré d'Aremberg in its juiciness, but not so good in flavour. It is a rounder Pear than Beurré d'Aremberg, and came this year into eating order just as Beurré d'Aremberg went out. On December 20th." I may add that I have now abundance of Soldat Labourer in excellent condition; but the Beurré d'Aremberg have long since decayed. With me, the Soldat is also a much greater bearer than Beurré d'Aremberg. Both are from Mr. Rivers's, and on Quince-stalks. W. D. F.

**Spurious Guanos.**—That guano is very different in appearance as well as composition, is a well-known fact; for its chemical composition is according to age and comparative purity, and the country from whence it is taken. Its value as a manure is so great, that unprincipled dealers have every temptation, as well as facilities, to impose a spurious article upon the public. As to the mode of detecting a genuine guano, I see no

reason to deviate from the plan which I proposed in this journal some nine years ago; but I would add that the microscope presents a very ready means of detection. Most chemists are agreed upon this, and may be considered a fair average, as regards the quality of the various salts and other ingredients, which constitute a genuine guano. But my object in writing is to give a little of my experience as to the base means which are sometimes resorted to, to effect the sale of guano. Some time ago a guano-agent, from Liverpool, made his appearance at Derby, and offered a guano for sale highly recommended by a well-known chemist of Liverpool. A gentleman of this town, who was in want of a large quantity, sent it to me for analysis. As regards colour, smell, and consistency, it certainly presented a good appearance, but analysis soon discovered the cheat. It was adulterated to the extent of 85 per cent., and with the most worthless substances. I sent my report, accompanied by a very strong opinion as to the nature of the transaction. Well! When the agent was informed of my opinion, he was wroth, and inveighed greatly against my incapacity. On the strength of this, I immediately wrote to the Liverpool chemist, inclosing a sample of the guano, my analysis, and a copy of what was said to be his. By return of post I received a very polite note, informing me of the fact that he had never analysed such guano before, and that he had never heard or seen anything of the party! Now, what I wish to impress upon your readers is this, that this very agent not only made use of another chemist's name and reputation to vend his guano here, but actually sold it out of Derby under my name. It should teach gardeners and farmers never to buy guano except of most respectable and well-established tradespeople. Within the last month I have had two "genuine guanos" to analyse. The following analysis will indicate the spuriousness of the samples. No. 1. Very dark-looking powder, very moist, with little appearance of genuineness, except the smell. It consisted of, in 100 parts,

Water	18.80
Carbonate of ammonia	0.90
Chloride of ammonium	0.35
Sulphate of ammonia	0.43
Urate and oxalate of ammonia	Trace.
Organic matters	9.96
Quartz	2.55
Common salt	29.50
Subphosphate of lime	9.04
Bi-sulphate of soda	20.72
Chloride of calcium	3.61
Sulphate of iron	2.35
Sulphate of lime	0.83
	99.64

No. 2. Lighter coloured, and less damp; in fact, more genuine looking, and did, in fact, contain more genuine guano. I should say about 10 per cent.; but it also contained 50 per cent. of common salt, 15 per cent. of water, 5 per cent. of quartz, and only 12 per cent. of subphosphate of lime. I need not give further particulars, or make any further comment. Facts like these speak for themselves, and should be borne in mind by intending purchasers of guano. Albert J. Bernays, F.C.S., Chemical Laboratory, Derby.

## Societies.

**MICROSCOPICAL, Dec. 29.**—G. JACKSON, Esq., in the chair. Mr. Highley, jun., Mr. Barlow, Professor Pohl, Mr. W. Adams, Mr. W. Crozier, and Mr. E. Truman, were elected members. A paper was read by Mr. Busk on the Structure of the Starch Granule. After pointing out the views that had been held by previous writers, the author stated that the starch grains were regarded either as vesicles or composed of laminae. The latter view was that which was held by Schleiden, and the latest authorities on the subject. Liewenhoeck was one of the earliest observers who regarded the starch grain as possessing a vesicular character. Raspail's view of a membrane enclosing the starch was not tenable; but from the action of reagents upon the starch, the author believed that their vesicular character was demonstrable. The best form of starch for examination was the West India or Tous les Mois. In this substance the grains of starch presented the appearance of a nucleus surrounded by laminae; if the grains were heated, or pure sulphuric acid added to them, then they lost their laminated character, and assumed the form of a flat, irregular bag or vesicle, very much larger than the size of the grain. Mr. C. Brook exhibited—1st. An arm adapted to the compound microscope in such a way that object glasses of different focal distance could be used, without the trouble of screwing and unscrewing. 2nd. A portable stand which could be carried in the pocket, adapted for examining objects by a common pocket lens.

## Reviews.

**Ireland considered as a Field for Investment or Residence.** By W. B. Webster, Esq. Dublin: Hodges and Smith. 12mo, pp. 123.

This is a plea for Ireland, fairly put and deserving perusal. That Ireland is just now the best known field for the investment of capital is so generally admitted, that it would seem idle to question the opinion. When land, as fine as any in England, may be had for from 12 to 20 years' purchase, that must be a very formidable drawback which deters the capitalist from acquiring it, with all the advantage to boot, of a parliamentary title. That drawback is, we need not say, an alleged insecurity of life, coupled with ecclesiastical

inconveniences, which are, no doubt, regarded in a much more serious light, but to which we shall not further allude. With regard to personal insecurity and some peculiarities usually charged against the Irish labourer, Mr. Webster produces the following letter from Mr. Eastwood, a very intelligent Englishman long settled in Ireland:—

"Adragoole, Clifden, Connemara, July 27, 1852.

"My dear Sir,—However difficult I may find it to comply with your request, and give you full information on the value of investments in Ireland, from my own experience, yet I feel great pleasure in doing so, as well as the limits of a letter will allow. From my own observations and experience I attribute a great deal of the unwillingness Englishmen have to settling in Ireland to two doubts, which, like nursery rhymes, have fixed themselves on their minds. The first is a doubt as to the security of life and property; the second is a doubt as to Pat's applicability to either mental or physical labour. Now, both these doubts have no more substance or foundation than the fictions chronicled in the nursery rhymes, and yet, I believe, they take as deep root, and will prove as hard to eradicate. I own that I entertained these doubts myself before I came over to Ireland; but a short acquaintance with the people soon convinced me that I had injured them in thought, and satisfied me that a contrary opinion could only exist where great ignorance of the Irish character remained. I am not afraid of being contradicted by any Englishman who has gained a character, and settled in this country, when I say, that life and property are fully as safe, if not more so, than in England. The Irish peasants know well how to distinguish between friends and foes. It may and will take some time before the new settler can remove the caution and distrust which experience on their part has sadly imposed. But they are quick to observe, and ready to follow an example, and when that is fairly placed before them, without any notice being taken of their unjust fears and doubts, both will soon vanish, and you retain the Irish labourer a docile and tractable servant ever after.

"I commenced work in this country early in the year 1846, and being looked upon, I suppose, as a *rara avis*, I had constant applicants for work at all times in the day.

"The labour there consisted in digging up land, running deep and wide dykes for carrying off water, throwing down old walls, breaking up the stones for drains and fences, uprooting large stumps of trees, and turning the course of a river which interfered greatly with my designs. With so many operations on hand at the same time, I was enabled to pay particular attention to that most difficult attainment in the workmaster—a proper mechanical distribution of the labour. There is a way of managing a task when, from the division and shifting of labour, the men sometimes are ignorant of the object to be gained till it is almost accomplished, and then they see the motives which guided all the changes throughout the work, and if correct (for they can judge them), the management receives all the credit it deserves. I knew much depended on the character I might gain for judgment of the men I employed, and consequently paid every attention to the economy of their labour. The wages in the country were from 7d. to 8d. a day for men, and from 3d. to 6d. a day for boys and women. I commenced by giving 10d. a day to the men; but in this I was wrong. I soon found I was inflicting an injury on farmers in the neighbourhood; and in the then condition of the peasantry I discovered that they thought me foolish for doing so, and actually were less inclined to work. I therefore adopted the amount of wages in the country. I often had as many as 300 labourers. I paid them regularly every Saturday night. I was with them the whole day; and whenever I found any reason whatever to dismiss a man, I paid him his wages and sent him off out of the field, and probably his place was immediately taken by some one of the many who would wait from morning till night expecting to come in for such a reversion. I was very strict, but then I tried to be very just; and, after some time, I found great satisfaction with the labour I obtained. This subject of labour is so well understood in this country, that, to any one about here reading this, it would sound very like a person in Newcastle telling another resident that it was a coal district. I would wish to be believed; but how can I expect to be, when so many other authorities are discredited? Nevertheless, the man who works well in England and America can also work well, and will, in his own country, when he is well handled and fairly induced. The Midland and Great Western Railway in Ireland is the work of Irish hands; and I myself can bear testimony, from slight observation, to the very great efficiency, from the highest to the lowest labour employed in its construction. The extensive works, under Government, of the Loughs Mask and Corrib are at present engaging a great number of hands. Those, therefore, to whom the uncertainty of the value of Irish labour is an impediment to their taking land in the country, can easily come over, and judge for themselves. If they have any knowledge of what labour means, they will soon make up their minds on the subject."

We believe this to be "the truth, the whole truth and nothing but the truth," and therefore deserving very serious attention.

Upon the subject of the priesthood, Mr. Webster abstains from making any remark; he probably thinks that the evils, if any, belonging to it, will be best cured by improving the comfort and intelligence of the rural population, an opinion in which we entirely concur.



## FLORICULTURE.

FLOWERS of 1852.—It may be interesting to know that the Polyanthus has at last found a home in the south; one or two of our principal metropolitan florists have just added it to their collections, so that there need be no fear of its soon becoming as great a favourite with us as it is in the north. Our wish expressed last week is therefore in a fair way to be realised; for not only will the examples of this charming spring flower be well grown, but further interest will soon be created. Seedling raisers will have a market for their novelties, and in fact the Polyanthus may in this one step lay claim to that care it has so long stood in want of in and around our metropolis. As a guide to purchasers, we may mention that the following are the names of a few of the best varieties, viz.:—Alexander (Pearson), Bang Europe (Nicholson), Beauty of England (Maud), Defiance (Fletcher), Exile (Crowshaw), Earl of Lincoln (Hufton), George the Fourth (Buck), King (Nicholson), King Fisher (Addis), Lord J. Russell (Clegg), Princess Royal (Colliers), and Royal Sovereign (Gibbons). Let us now turn to the Cineraria, which is truly a "flower for the million," not the least point of merit about it being its adaptability for blooming from the dark and dreary days of December, even up to the merry month of May. As regards seedlings, last season was no less prolific than its predecessors, but it was certainly less progressive; the flowers submitted to us for inspection were not only numerous but overwhelming; and what most to be regretted was, that many were so worthless as not to repay the pains and expense that had been wasted in connexion with their packing and transit; even a careful comparison with existing varieties would have told a tale that of itself would have prevented the certain disappointment consequent on an adverse opinion too frequently to be found in our Notices to Correspondents. We must admit, however, that some possessing much merit were also submitted to our notice. The best named sorts of last season were Purity (Dobson), a white self; Julia (Lochner), white, very faintly tipped with light purple; Rosalind (E. G. Henderson), white, narrowly margined with bluish purple; Star of Peckham (Ivery), an improvement on Hammersmith Beauty, on account of its increased size and denser colours; Lord Stamford (E. G. Henderson), white tipped, purplish lilac; Picturata (E. G. Henderson), white tipped, rosy purple; Conqueror of Europe (Hodge); Beauty of Hamilton Terrace (Roshier), King of the Blues (Keynes); Loveliness (E. G. Henderson), colours blue and white; Marguerite d'Anjou (ditto), crimson; Prince Arthur (ditto), shaded crimson; also Charles Dickens and Kate Kearney. At least 500 seedling Cinerarias were submitted to us for opinion last spring. We wish we could state as much in regard to other subjects, many of which are so slow to "move on" that we really get tired year after year beholding the same faces; this assuredly does not apply to the Cineraria.

POT CULTURE OF THE VERBENA.—This mode of managing this popular flower is not so much followed here as it is in the North. This is to be regretted; for "to have trusses of first-rate quality the protection of glass is necessary." Its habit of continuous blooming and brilliant colours also render it preferable to many of the tender annuals at present placed in plant-houses during summer, when their principal occupants are in the open air. The following is Mr. McDonald's plan of growing the Verbena in pots, at Drummond Castle. It is taken from the "Scottish Florist," a promising new monthly periodical, which is to be carried on by Mr. Sivewright, of Cargilfield, near Edinburgh:—

"To have good plants, select in April healthy cuttings of the present year's growth, which will soon root with a little bottom heat. When rooted, pot off into 4-inch pots, and replace them where they previously were for a few days, when they may be removed to a cool frame to be gradually hardened. Then shift into 6 or 7-inch pots, and place them where they are to bloom. Water at this stage may be given by syringing them in the evening; and as they get established in their pots more water will be required. Rain-water is preferable, but whether it is spring or rain, let it be well exposed to the atmosphere, and take care to have it of the same temperature as the house the plants are in. As soon as they commence to grow freely, pinch out the tops of the leading shoots. When the lateral eyes have broken sufficiently, thin them out to five or six; as soon as they require support, let them be tied to neat stakes at a proper distance, so that light and air may act on every leaf. If early blooms are not wanted, it will strengthen them very much if they are divested of all trusses as soon as such appear, until the plants get a little advanced. Weak manure-water, free from all sediment, may be given once a week, and when the pots get full of roots, twice a week, which will greatly invigorate them. Decaying trusses should be cut off as soon as the pips begin to drop, and the plants be frequently turned round. When Aphides make their appearance, recourse must be had to fumigation with tobacco immediately. A calm evening is best suited for this operation, and two gentle smokings on successive evenings will be found the most effectual. Should mildew make its appearance, dust the affected parts with flowers of sulphur the moment the least speck is observed. The soil used for Verbenas is equal parts of turfy loam, leaf-mould, and cow dung (the latter rotted to a black mould), with a small portion of fine river sand, used as rough as the potting will permit. By the above mode I have grown about 150 pots

annually for a number of years back, from which we have cut a great supply of fine flowers, from July to the end of October."

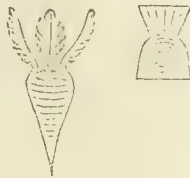
MIDLAND HORTICULTURAL SOCIETY, DERBY. The sixth annual report lies before us, in which we are glad to find that the Society has no liabilities. This result has not been brought about by offering limited prizes, for we read that these have been increased 33 per cent. as compared with previous years. We find that 1100 admissions have been issued to subscribers during the past season, but that 24 were not used. We learn that the Society is anxious to hold its shows next season in the Derby Arboretum, and that the Committee is in treaty with the authorities about the matter.

CATALOGUES received from Mr. Keynes, of Salisbury, and from Mr. Bragg, of the Star Nursery, Slough.

POLYANTHUSES: *Inquirer*. Do not break the main blooming stem; rather let the few blooms flower out; if the plant be strong, in due season it will again throw up another truss, or what is perhaps likely, many trusses.

## Miscellaneous.

Preparation of Roots for Seed.—The natives prepare all roots (as Turnips, Radishes, Carrots, &c.) for seed as follows—I have seen allusion to the practice in some of our best modern horticultural works; according to Lindley's theory it must be a good plan of strengthening the seed-vessels and maturing their latent fecundity; just before the root throws out its centre tuft (or flower stem) it is taken up, and so much cut off, leaving about one-third of its own natural proportion to perform the work of re-production; lateral fibres are soon thrown out, the juices which would have gone downwards are thrown into the crown, and there tend to the nourishment of the parent stem, instead of being dissipated below in a multitude of offsets. Such is my view of its usefulness. I have always prepared seeds of certain descriptions in this manner, and found them generally of larger size than if left to themselves and chance. Last season I kept a few Radishes untouched for the sake of comparison, and the result occurred as above described. The Koormees (or field cultivators of our provinces) say that it prevents degeneracy,—that it is not absolutely necessary to treat choice kinds so the first season, but that the second demands it, and so on alternately. *Lieut. Lowther, in Proceedings of the Agri-Horticultural Society of the Punjab.*



Coccidæ of the Olive, Orange, Lemon, and Rose-bay. By M. Robineau-Desvoidy.—The author proceeded to the south of France with the view of ascertaining the cause of a malady which had long been prevalent on the above trees in that part of the country, and which it was supposed had made its appearance in the central and northern departments. The disease, called *morfee* by the Italians, *fumagine* in the north of France, consists in a thick black crust, which covers the trunks, branches, &c., of trees, sometimes over a considerable extent of country. The trees become arrested in their growth, languid, and barren. According to historical accounts, this disease has not appeared more than a century. It is said to have first occurred near Rome, and thence to have spread through the whole of Italy, and lastly into France. It every year makes fresh progress, and no means have yet been found to arrest it. The Italians are not agreed as to whether this disease be a special malady, or merely the result of the attacks of the Coccidæ. The author supports the latter opinion, stating that the disease never occurs except upon trees attacked by those insects. Of these he says that the Coccus adonidum, a native of Senegal, attacks especially the Citron and Lemon trees; the Coccus hesperidum, a native of America and Africa, prefers the Orange, Rose-bay, and Peach trees; the Coccus adonidum, native of the Indian Archipelago, attacks the Lauraceous trees; the Coccus oleæ commits the greatest ravages upon the Olive trees, but also attacks the Oranges and a number of other trees; it is the most destructive of all. Rich, moist, well-cultivated localities are most favourable to the development of these insects, and it is in these that they commit the greatest ravages. *Comptes Rendus, 2 Août, 1852, p. 183 in the Annals of Natural History.*

Mexican Oaks.—Alexander von Humboldt has placed the lower limits of the Oaks on the eastern coast of Mexico at 400 toises, or 2400 feet; an assertion which proves how precarious it is to draw general conclusions from inadequate data. Since Humboldt, during his journey in Mexico, became acquainted with the state of vegetation on the eastern slope of the Cordilleras, by one single route only (from Jalapa to Vera Cruz), his statement should, in justice, be applied exclusively to that line, and not be extended beyond; for then it will be found correct. And yet has this Humboldtian view of the lowest limit of the Mexican Oaks, on the east side of the Cordilleras, been repeatedly quoted as an undoubted fact, which it cannot be, unless expressly limited in the manner which we have indicated; because both north and south of that line Oak-forests are met with, down to the very coast in the department or state of Vera Cruz. It is *Q. oleoides* which thus extends to the very coast; a handsome, not very large tree, growing in clumps, and forming small groves on the savannas, rarely small forests. These savanna-groves possess much picturesque beauty, by breaking the monotony of the extensive Grass plains. The tree has shining leathery leaves; the stem and branches are mostly covered by masses of parasites with magnificent flowers, such as Orchideæ, Tillandsiæ, Piperæ, Viscæ,

and Loranthi. Among the first we may name the splendid Schomburgkia tibiciana, many fine Epidendras, Oncidia, Maxillarie, &c.; while the known grey-bearded Tillandsia usneoides hangs down from the branches and wafts its delicate fibres to the winds. As it rises imperceptibly from the shore, the country produces, at an elevation of 2-3000 feet, an increased number of Oak species: small trees, with stiff, mostly woolly leaves, forming small open forests on the low ridges or margins of the deep volcanic ravines, which intersect the east coast. They disappear in low situations, fertilised by the soil which has been washed down, and also in the barraukas or ravines, where, with a want of light, there exists likewise too great moisture. As characterising this belt we may name *Q. petiolaris*, *tomentosa*, and *affinis*. The Oaks at an elevation of 3000 feet become loftier and more stately; they form dense forests, and increase considerably in the number of species. Here the heat becomes already more temperate (17° C. mean temperature), and the fall of rain is great; the climate is the finest one can desire. It is concerning this portion of the region of Oaks that the opinion prevails, that, on reaching it, there is security against the yellow fever, black vomit, and typhus, which prevail on the coast. This opinion, though correct and founded on experience, admits of being extended much further than the inhabitants suppose; for it applies also to those parts of the coast which are occupied by the above-mentioned low species of Oaks; these grow only in localities where there is a brisk change of air, a free outlet of moisture, and where no accumulation of putrescent vegetable matter can take place. The heat here, though very great, exercises no deleterious influence on the health. I have never heard the herdmen, who constitute the scanty population of the savannas, where the coast Oaks are produced, speak of those diseases; and I have nowhere been myself in better health than there. The principal species which distinguish this region are, *Q. Jalapensis*, one of the largest of Mexican Oaks, with smooth, toothed leaves; *Q. Alamo*, a stupendous tree with large, coriaceous leaves, woolly and white underneath; *Q. polymorpha*, a small crooked species with woolly, grey leaves; *Q. Mexicana*, with lanceolate, willow-like leaves; *Q. Ghiesbreghtii*, a very fine tree, having smooth, entire leaves; besides several undescribed species. They are ornamented by a crowd of parasites: climbing Aroidæ embrace and partly conceal the stems with their large, fleshy, and shining foliage; Philodendras hang down from the branches in festoons; while large tufts of fine-flowered Orchideæ (*Lælie*, *Epidendras*, *Odontoglossa*, *Mormodes*, *Stanhopææ*, *Trichopiliæ*, and many others), several variegated Tillandsiæ, with other Aunus-like plants and also *Ficus* and herbaceous *Piperæ*, cover the surface of the trees, and perform the same office as Mosses and Lichens do in our forests. Under the shade of the Oaks grow *Chamaeliræ*; and on their roots remarkable parasites are found, such as the scarlet *Monotropa coccinea*, and *Conopholis sylvatica*, which answer to our *Orobanche*. A variety of woody twiners connect the stems and render the forests impenetrable; such as *Banisteria*, *Paullinia*, *Serjania*, thorny *Sarsaparillas*, and climbing *Rubi*. The wild Vine surmounts the tops of the trees, and there intermingles its countless pendulous clusters of glaucous-blue grapes with the acorns.\*—*Liebmänn, in Hooker's Journal.*

Preparation of Liquid Glue. By M. S. Dumoulin.—All chemists are aware that when a solution of glue (gelatine) is heated and cooled several times in contact with the air, it loses the property of forming a jelly. M. Gmelin observed, that a solution of isinglass, enclosed in a sealed glass tube and kept in a state of ebullition on the water-bath for several days, presented the same phenomenon, that is to say, the glue remained fluid, and did not form a jelly. The change thus produced is one of the problems most difficult of solution in organic chemistry. It may be supposed, however, that, in the alteration which the glue undergoes, the oxygen of the air or of the water plays a principal part; what leads me to think this, is the effect produced upon glue by a small quantity of nitric acid. It is well known, that by treating gelatine with an excess of this acid, it is converted by heat into malic and oxalic acids, fatty matter, tannin, &c. But it is not thus when this glue is treated with its weight of water and with a small quantity of nitric acid; by this means a glue is obtained which preserves nearly all its primitive qualities, but which has no longer the power of forming a jelly. Upon this process, which I communicated, is founded the Parisian manufacture of the glue which is sold in France under the title of "*colle liquide et inaltérable*." This glue being very convenient for cabinet-makers, joiners, pasteboard-workers, toy-makers, and others, as it is applied cold, I think it my duty, in order to increase its manufacture, to publish the process. It consists in taking 1 kilogram. of glue, and dissolving it in 1 litre of water, in a glazed pot over a gentle fire, or, what is better, in the water-bath, stirring it from time to time. When all the glue is melted, 200 grms. of nitric acid (spec. grav. 1.32) are to be poured in, in small quantities at a time. This addition produces an effervescence, owing to the disengagement of hyponitrous acid. When all the acid is added, the vessel is to be taken from the fire, and left to cool. I have kept the glue, thus prepared, in an open vessel during more than two years, without its undergoing any change. It is very conve-

\* On felling a large Oak, which was to an unusual extent overgrown by a wild Vine, sixteen large baskets of Grapes were gathered, yielding 180 bottles of juice, which was made into an excellent vinegar.



nient in chemical operations; I use it with advantage in my laboratory for the preservation of various gases, by covering strips of linen with it. *Comptes Rendus*, Sept. 27, 1852, p. 444; *Chemical Gazette*.

*Vegetables in St. Michael's.*—Vegetables can be had at every season. Asparagus is much superior to that at home; the whole stalk is tender and sweet. Seakale was rather difficult to force. Peas could be had from Christmas till June; French Beans every month in the year. Walcheren Cauliflower was the only one that did well; it is a real prize, producing fine heads winter and summer. All kinds of Cabbages succeeded well, and salads of every description can be grown. *Wallace, in Journal of Hort. Society.*

### Calendar of Operations.

(For the ensuing week.)

#### GENERAL REMARKS.

THE wet state of the ground will retard the progress of many out-door operations, and advantage should accordingly be taken to forward everything which can be done under cover, and which will expedite the regular spring work when the busy time arrives. Garden-seats, chairs, labels, &c., may now be painted. Labels and crooks for pegging down plants, flower-sticks, &c., made, and a variety of other jobs forwarded to save time hereafter. Composts for the different requirements of gardening should be prepared when the weather is dry, and a sufficient quantity of the various loams, manures, &c., wheeled under cover for potting purposes, unless previously done. We prefer these latter kept separate till wanted for use, to mixing them before hand. Blocks and Orchid baskets should likewise be got ready for the potting season; in addition to the above, there are many other things which may be forwarded with much advantage during the present unfavourable weather.

#### PLANT DEPARTMENT.

As fires to some extent will be necessary in all plant houses, to dry up damp and promote a healthier atmosphere, the temperature should be kept down by abundant ventilation, to keep plants from starting into a fresh growth, which it will be desirable to prevent for the present. Remove such stove plants as have been blooming in the conservatory and show house, and are getting past their best, into a drier house, to mature their wood. Where young plants of the above are propagated yearly, all beyond what are wanted to supply a stock of cuttings should be thrown away at once. In whatever description of house Orange trees and other large greenhouse plants are wintered, it should be ventilated sufficiently to promote a gentle circulation through the house at all times when the weather is mild. We are now alluding to such Orange trees, &c., as are placed out-of-doors during the summer, and which should be kept in as dormant a state as possible in winter. No water need be given unless the soil in the tubs or pots becomes exceedingly dry, and then only in small quantities, and in a tepid state. Pelargoniums, Cinerarias, Calceolarias, and other soft-wooded greenhouse plants will require abundance of light. Plants of the above requiring a shift may be repotted at once in dry rich compost; place the plants thin on the stage, and keep down Aphides by fumigating on their first appearance. This class of plants require to be kept growing gently, and the house should not be permitted to fall below 45° at night; plunge in bottom-heat, to start the tubers, a few pots each of the different kinds of Achimenes, Gloxinias, and Gesneras, preparatory to repotting them.

#### FORCING DEPARTMENT.

**EARLY VINERY.**—When the shoots are sufficiently advanced in length their points should be pinched off, leaving a clear joint above the bunch; tie them to their proper position cautiously, as the breaking of a shoot will interfere with the symmetry of the plant; the moisture should be gradually reduced as the leaves grow (see last Calendar). The succession house must be brought forward gently, the mildness of the weather will have rendered fires necessary by day only; keep the heating apparatus frequently sprinkled, and the Vines syringed, to promote the regular swelling of the buds. In pruning the Vines, reserve a sufficient number of the best ripened eyes of the different kinds for propagating; they should be kept in sand or dry earth till wanted. **PEACH-HOUSE.**—As the bloom in the early house expands let the syringe be withheld, and the general moisture of the house reduced; admit air at all opportunities, moderately, to effect a gentle current through the house. As Peaches cannot be preserved for any great length of time after they are ripe, the succession-house should be brought forward so as to keep up a continuous supply, unless contrary reasons exist. A month may be considered the average duration for a good-sized Peach-house, planted with kinds ripening in succession to last. Figs, keep moist by frequent dampings; and allow a slight increase of temperature as the buds swell. Cherries, if started, must be worked on slowly. Strawberries plunged in leaves, should only be kept in a very low heat, or the roots suffer when removed to the shelves of the forcing-house; expose those showing bloom to the greatest amount of light you can command; stop green fly by fumigating the moment it makes its appearance; protect the stock of Strawberries out of doors from frost and heavy rains.

#### FORCING GROUND.

Seakale, Rhubarb, and Asparagus should be brought forward according as the demand is likely to be for each; give air each fine day to the latter; in cutting Kale leave the side buds at the base of the central one, they will furnish a second crop; keep up successional sowings of French Beans. Every spare shelf in the Pineries and forcing-houses should be occupied with this favourite vegetable; we prefer three plants in an 8-inch pot, growing them in light, rich soil. Beds should be made up for Cucumbers and Melons, if they are grown in pits or frames a mixture of dung and leaves will be found preferable to dung alone; keep the young plants near the glass, in a good heat, and allow them liberal quantities of air, to promote a stocky growth. Sow for a second crop seeds of the most approved kinds. Attend to the requirements of Cucumbers in bearing by surfacing with light turfy loam, and watering them occasionally with liquid manure.

#### FLORISTS' FLOWERS.

We were supposed to have taken our Dahlias up quite soon enough, in fact when others were in bloom. We now say that the same roots are in a pit, heated by hot-water, in order to ensure an abundant supply of cuttings for propagation. Of course amateurs will not be "so fast" as we are, still they must observe that they will not be too soon if they wish to propagate extensively. Tulips on early planted beds are "peeping." Hoop them, and cover with mats whenever frost is apparent; more damage is done just now than many amateurs are aware of. We have looked over our collection of Carnations and Picotees, and find that they required much cleaning. Several of our friends, who are decidedly first-rate growers, were in the same predicament with us; they have gone through their plants, giving them a thorough cleansing. To others of our friends we would say by all means, "go and do likewise."

#### KITCHEN GARDEN.

To the cottager his plot of vegetable ground is of the greatest consequence, as furnishing him with an important part of his food, no less interesting is it to the amateur, often ambitious to excel his neighbour in the earliest Cabbage and Potatoes, or the largest Cauliflowers and Celery; while to the regular gardener, having a number of individuals to provide with a daily supply of vegetables, in season and out of season, the successful cultivation of the kitchen garden is at all times of importance to his reputation. We shall therefore endeavour to be as explicit and comprehensive in our directions for this department as the brief space allowed for our notes will permit. Trench vacant ground when the soil is heavy, leave it in ridges for the atmosphere to act on as large a surface as possible. Should frost occur wheel dung and compost wherever required. **PEAS.**—Draw a little earth to the windward of those above ground. On warm sandy soils sow a second crop of Emperors and Warwick, half of each, for a succession. Beans, earth up as above. Plant a row or two more in a sheltered spot of the green or white Long-pods and Mazgans. To young plants of Lettuce and Cauliflowers under glass give air daily, dust occasionally with soot to keep off slugs, and promote growth. Underground Onions, plant in rich soil, and mulch slightly with rotten dung. Sow a second crop of early scarlet Horn Carrots in a sheltered spot and on light soil; a sprinkling of Short-top Radish may be mixed with them. Cover with dry litter till the seeds come up. A frame should be sown with the above over a gentle bottom-heat, if not done last month. Protect tender plants, should frost occur, by litter or branches of evergreens.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending Jan. 6, 1853, as observed at the Horticultural Gardens, Chiswick.

Dec. and Jan.	Moon's Age.	BAROMETER.		TEMPERATURE.						Wind.	Rain.
				Of the Air.			Of the Earth.				
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.			
Friday . . . 31	20	30.119	30.071	50	44	47.0	45	44	S.	0.	
Satur. . . . 1	21	30.039	29.989	52	47	49.5	45	44	S. W.	.03	
Sunday . . . 2	22	29.863	29.791	51	44	47.5	44	44	S. W.	.18	
Monday . . . 3	23	29.798	29.663	49	39	39.5	45	45	W.	.10	
Tuesday . . . 4	24	29.657	29.463	52	38	45.0	45	45	S. W.	.12	
Wed. . . . . 5	25	29.716	29.629	52	39	41.0	45	44	S. W.	.01	
Thurs. . . . 6	26	29.656	29.481	49	32	40.5	44	44	S. W.	.16	
Average . .		29.833	29.701	50.7	37.7	44.2	45.0	44.3		.5	

Dec. 31—Fine; very fine; cloudy.  
 Jan. 1—Densely overcast; cloudy; overcast.  
 2—Rain; overcast; slight showers; mostly overcast.  
 3—Rain; fine; clear; slight frost at night.  
 4—Boisterous; with rain.  
 5—Fine; exceedingly fine in forenoon; cloudy; showers; clear.  
 6—Fine; cloudy and boisterous; showers; hail shower; clear at night.  
 Mean temperature of the week 73 deg. above the average.

#### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Jan. 8, 1853.

Jan.	Average Temperature.	Average Lowest Temperature.	Average Highest Temperature.	Mo. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9	19.2	31.1	35.1	8	0.20 in.	1	6	3	3	7	6	3	1
Mon. 10	41.1	30.2	36.1	12	0.40	1	6	3	4	4	4	4	1
Tues. 11	40.7	30.5	35.3	15	0.33	3	4	3	1	5	7	5	2
Wed. 12	41.3	30.7	36.0	13	0.76	1	3	1	1	6	6	6	1
Thurs. 13	42.5	33.5	38.0	15	0.59	4	4	2	4	5	5	3	1
Friday 14	42.9	31.2	36.7	14	0.80	4	4	3	5	5	5	1	3
Satur. 15	41.3	30.7	36.0	9	0.24	4	4	3	5	5	5	4	3

The highest temperature during the above period occurred on the 14th, 1849; 16th, 1844 and 1852—therm. 56 deg.; and the lowest on the 14th, 1833—therm. 4 deg.

	MONTHLY DEPTH OF RAIN in inches and hundred parts of an inch, which fall at Chiswick in the years 1841 till 1852 inclusive.											
	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.
Annual amount {	30.97	22.31	25.48	21.34	23.33	27.71	16.25	28.84	22.51	18.28	20.79	32.64
January ..	Ins.	1.06	1.38	2.25	2.97	2.85	1.31	1.16	1.73	1.43	3.07	2.72
February ..	0.76	1.32	2.35	2.27	0.93	1.47	0.94	3.12	2.52	0.95	0.90	1.06
March ..	1.32	1.51	0.47	2.44	1.35	1.92	0.41	3.05	0.85	0.13	3.57	0.25
April ..	1.58	1.71	1.62	0.33	0.95	3.83	0.92	3.06	2.21	1.79	1.65	0.62
May ..	2.16	1.73	5.26	0.25	2.80	1.35	1.50	0.28	3.53	1.84	0.74	1.74
June ..	2.45	1.58	1.62	0.57	1.36	0.50	1.31	3.20	0.31	1.40	1.33	4.69
July ..	3.56	1.51	1.67	2.10	2.31	1.78	2.79	2.21	2.82	2.68	3.80	2.27
August ..	2.69	2.51	3.28	1.84	2.79	4.50	1.50	4.70	1.60	0.97	2.03	3.71
September ..	3.71	3.39	0.98	1.31	1.77	1.76	1.66	2.20	2.49	2.36	0.42	3.64
October ..	4.61	1.71	4.19	4.13	1.39	5.54	1.75	2.93	2.18	1.55	2.01	3.57
November ..	3.41	4.47	3.13	3.06	2.61	1.43	2.26	0.90	1.32	2.03	0.55	6.30
December ..	2.12	0.76	0.58	0.39	2.11	1.21	1.81	2.03	1.28	1.15	0.62	1.97

#### Notices to Correspondents.

**APPLES:** *X F Z.* Few of the many seedling Apples which you sent are worthy of cultivation. No. 7 is large, and somewhat resembles a Bedfordshire Foundling; it may prove a good kitchen Apple; No. 11 is a Nonpareil breed, flattish, tolerably rich; Nos. 13 and 21 deserve further trial.

**ARABUS UNEDO:** *J W.* I raise it from seeds in the same way as you would Rhododendrons.

**CHERRY TOMATO:** *J W.* It will be found to succeed perfectly under the treatment usually given to other Tomatoes.

**CUCUMBERS:** *J B.* We know nothing about Chamberlain's Ridge Cucumber; the fact of a letter having been written in favour of it from Manchester by a person who does not live at the address he gives, is, in our minds, conclusive as to the true value of the sort.

**EDUCATION:** *P M.* *O W.* &c. We must take the question raised by the "Travellers' Devil" into our own hands, and that very soon.

**GLASS:** *W R.* Rough plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass.

**GOOSEBERRIES:** *M J T.* The Red Warrington, Melling's Crown Bob, and Leigh's Rifleman, are amongst the best flavoured large red Gooseberries, and Leigh's Rifleman suits the London market well. Keens' Seedling Warrington is a good early red. The London Companion and Wonderful are tolerably good, considering their very large size. Cook's White Eagle is a good white, but not equal to Woodward's Whitesmith. The latter has an upright growth; that of the others is spreading and pendulous.

**INSECTS:** *Z R.* The aphides on the Peach are doubtless the young of the well known Aphis Persica, which has been developed at this unusual season in consequence of the extreme mildness of the weather. *W.*

**MARKET GARDENING:** *An Inquirer.* We strongly advise you not to invest your money in a business you do not thoroughly understand. Every year shows the certain ruin of those who become market gardeners, without having been brought up to the employment. Even gentlemen's gardeners do not succeed. Books will no more teach it than they will teach carpentry, shoe-making, or printing. A man must be brought up to it. If you are resolved to try your experiment, then you had better study our weekly Calendar, or those of previous years, which are all written by the most skilful practical gardeners in England.

**MULBERRIES:** *George.* You had better let your *Morus macleodii* take its chance, rather than prune it now. But it will be probably killed, if we have any hard frost, unless you protect it carefully by mats and straw.

**NAMES OF FRUITS:** *J D.* 1, Court of Wick; 9, Court pendu Plat; 11, Sweeney Nonpareil; 12, Hollandbury; 14, Hughes's Golden Pippin; 15, New Golden Pippin; 16, London Pippin; 20, Blenheim Pippin; 21, Flat Nonpareil; 25, French Crab; 26, Yorkshire Greening; 2, Glout Morceau; 3, Knight's False Monarch, and should be immediately cut down for grafting; 34, Beurre Diep.

**NAMES OF PLANTS:** *J M.* *Gymnogramma leptophylla*, Kaulf., an annual Fern, native of the south of Europe, Madeira, &c. If you gathered it growing truly wild, then it is a new plant to the flora of Britain. Please let us know the particular condition as to the nature of its habitat and if there was much of it. *S.* *X Y Z.* The name *Hymenocallis* is to be found in Sweet's Catalogue, published in 1839, and in others published at a later date, and in Loudon's *Hortus*, p. 591; what the cross reference at that page may mean we are unable to explain. Mr. Loudon's Index being much too cleverly done to be intelligible. The genus is a separation from *Pancratium*.—*Robert Sim.* *Berberis Lycium*.—*H D.* In such a state your plant cannot be certainly named; it is probably either *Torilis Anthriscus*, or *Anthriscus vulgaris*.—*W M Davidson.* *Clivia nobilis.* Orchids out of flower cannot be named.

**RAIN GAUGE:** *Shem.* The depth of rain in the rain gauge, at Chiswick, is registered at 8 A.M.

**TIMBER:** *A Sub.* Larch, like other trees, should be felled in the winter, or at all events after the leaves have fallen. If trees are allowed to stand till the spring, for the sake of the bark, that is a money question which you can answer better than we can. If you save your bark, you spoil your timber; if you save your timber, you lose your bark.

**TREE PRUNING:** *W L.* It is the same everywhere. In consequence of this extraordinary mild season, Tree Pruners are making strong shoots with flower buds, all of which will be destroyed by the frost, unless they are protected. On no account cut off the new shoots, but cover the plants with glass, or wooden shutters, or with straw screens made by fixing stakes in a circle, drawing them to a point over the top of the plants, and interlacing straw till near the point, which should be furnished with a movable straw cap, much as cottagers use over their beehives. That cap should be taken off every fine day and replaced at night.

**MISC.** *Bedale.* The subscription to the *Gardeners' Chronicle* payable in advance, is 25s. per annum.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

## MANURES.—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—

Turnip Manure	... ..	per ton	£7 0 0
Superphosphate of Lime	... ..	"	7 0 0
Sulphuric Acid and Coprolites...	... ..	"	5 0 0

Office, 69, King William Street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

## SEWAGE CHARCOAL MANURE.

PEAT CHARCOAL, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenny.

Mr. JOHN ANNETT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

PERUVIAN GUANO, guaranteed, the genuine importation of Messrs. A. GIBBS & SONS, 9l. 10s. per ton, or, in quantities of five tons and upwards, 9l. 5s. per ton in dock. A constant supply of LINSEED and RAPE CAKE.

EDWARD PURSER, Secretary.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

## WINTON'S PARKES'S CELEBRATED STEEL

DIGGING FORKS AND TOOLS are universally approved of. They facilitate labour 20 per cent. They have received the Silver Medal at Lewes, Dublin, Galway, Sheffield, and other places. Anthony's Patent American Churn has received the prize at every one of the numerous agricultural meetings where it has been shown. The Royal Agricultural Journal, p. 41, says, "This form of churn is the best for churning sweet cream, and will undoubtedly produce butter from milk or cream, in any form, in much less time than any churn that has yet been introduced." Pumps for manure and watering gardens. Mr. Mechi has one working admirably. These pumps are cheap, durable, and effective. Gutta percha tubing, bands for machinery, hose for pumps, and an assortment of prize and the best farm implements. Price catalogues sent on application.—BRUGESS & KEY, 103, Newgate Street, London, agents for McCormick's American Reaper.

## THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.

HENRY KER SEYMOUR, Esq., M.P., Chairman.  
SIR JOHN SHELLEY, Bart., M.P., Deputy Chairman.

Empowered by Act of Parliament to execute all works of Drainage (including Outfalls through adjoining Estates), to erect Farm-buildings, and to carry out every kind of permanent improvement upon Estates, under settlement or disability, to provide the money, or to enable the landowner to employ his own capital and execute the works under the superintendence of the Company, the amount of the outlay and the attendant expenses being charged upon the property by way of annuity, extinguishing the debt at the rate of 6l. per cent. for Farm-buildings, and 5l. per cent. for Drainage, Roads, and other Improvements.

W. CLYFORD, Secretary.

Offices, 52, Parliament Street, London.

## THE BIRMINGHAM CATTLE AND POULTRY

SHOW.—The Annual General Meeting of Subscribers, convened by Advertisement, was held at Dec's Royal Hotel, Temple Row, Birmingham, on Thursday, the 16th day of December, 1852, the Right Hon. Lord CALTHORPE, the President, in the Chair; when the following Noblemen and Gentlemen were unanimously elected the Council of the Society for the year ensuing, namely:—

President—The Right Honourable EARL HOWE.

Vice-President—The Mayor of BIRMINGHAM.

The Right Hon. Lord Calthorpe  
The Right Hon. Earl Aylesford  
The Right Hon. Earl Darlington  
The Right Hon. Viscount Hill  
The Right Hon. Lord Lyttelton  
The Right Hon. Lord Hatherton  
The Right Hon. Lord Leigh  
The Right Hon. Viscount Lewisham, M.P.  
The Right Hon. Lord Guernsey, M.P.  
The Right Hon. Lord Brooke, M.P.  
The Hon. Frederick Calthorpe  
Sir George Cuthbert, Bart.  
Sir William Edmund Cradock Hartopp, Bart.  
Sir G. R. Phillips, Bart.  
C. N. Newdegate, Esq., M.P.  
Richard Spooner, Esq., M.P.  
G. F. Muntz, Esq., M.P.  
W. Scholefield, Esq., M.P.  
Captain Dilke, R.N.  
C. M. Caldwell, Esq.  
Baron D. Webster, Esq.

John Murray, Jun., Secretary.

Offices of the Society—No. 2, Insurance Buildings, Union Passage, Birmingham.

## TORQUAY POULTRY EXHIBITION.—

The above EXHIBITION will be held, by permission of Sir L. V. PALK, Bart., in the MARKET PLACE, TORQUAY, on WEDNESDAY and THURSDAY, the 19th and 20th of January, under the patronage of—

Sir John Y. Buller, Bart., M.P.  
Sir Ralph Lopes, Bart., M.P.  
Sir Walter P. Carey, Bart.  
Vice-Admiral Sir J. Louis, Bart.  
L. Palk, Esq.

R. S. S. Cary, Esq.  
C. H. Mallock, Esq.  
I. K. Brunel, Esq.  
J. Belfield, Esq.

A Subscriber of 10s. will be entitled to Five Tickets of Admission (not transferable) available for both days. A Single Ticket 2s. 6d. The Holders of Tickets will only be admitted the First Day, from 1 to 4 o'clock. The Exhibition will be opened on the morning of the Second Day from 8 to 10 o'clock on payment of 6d., and from 10 to 3 o'clock at 1s., when it will finally close.

N.B. PRIZE LISTS may be obtained from the Secretaries, to whom all communications and Specimens must be addressed, at No. 13, STRAND, TORQUAY, Postage and Carriage paid, and an enclosure of Postage Stamps where an answer is required.

Prizes to the amount of 65l. will be offered, the greater portion open to all Competitors, including an extra Premium of 5l. for the best Pen of any description of Poultry.

A. PAUL, } Hon. Secretaries.  
J. C. STARK, }

The period for entries has been extended to the 10th of January, the exhibition having been postponed in consequence of the alteration in the Great Metropolitan.

Torquay, Jan. 8.

## THE GREAT METROPOLITAN EXHIBITION

OF POULTRY, PIGEONS, AND RABBITS, will take place in the spacious galleries of the BAZAAR, Baker Street, and King Street, on the 11th, 12th, 13th, and 14th of January. Admission, first day, January 11th, 5s.; Children under twelve, 2s. 6d. Wednesday, Thursday, and Friday, 1s. each. Open from daylight till ten in the evening.

## The Agricultural Gazette.

SATURDAY, JANUARY 8, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Jan. 13—Agricultural Imp. Society of Ireland.  
WEDNESDAY, — 19—Highland and Agricultural Society.  
THURSDAY, — 20—Agricultural Imp. Society of Ireland.

The editor of the *Agricultural Gazette* will feel much obliged to any of its readers who will be kind enough to furnish information towards the formation of a glossary of the local names of WEEDS. The completion of a dictionary of agricultural provincialisms for Messrs. BLACKIE'S "Cyclopedia of Agriculture," which is still deficient in this particular, is the immediate object of this request; but as the subject is interesting to agricultural readers generally, any contributions to this end that may be obtained through the readers of the *Agricultural Gazette*, or by other means which have been put in operation, will appear in these columns in the first instance. There are two other classes of provincialisms on which information will also be gladly received—namely, the local names of diseases of sheep, cattle, &c.; and the actual dimensions, in standard terms, of the local measures, weights, &c., whether used in the market or the field, and whether of length, surface, or content.

There can be little doubt that a dictionary of agricultural provincialisms, embracing these and other terms, would be of material service to the readers of our local agricultural literature, the lessons of which are often obscure, if they do not positively mislead, in consequence of the merely local terms in which they are frequently couched.

The feeding and management of FAT STOCK immediately prior to being slaughtered, is a subject quite as interesting to the farmer as to the butcher; for if the whole weight which left the feeding-box were placed in the scales, the former would be a gainer by the difference between this weight and that of the carcass when slaughtered—the actual weight which the latter now pays for. There are two very important practical questions involved in this subject. The one relates to the daily amount of waste which takes place under the various modes of management during marketing from the time stock leaves home until led to the slaughter-house; and the other relates to the quantity and quality of food which ought to be consumed during that period.

What, for instance, is the daily waste upon an ox of 100 imperial stones, carcass weight, when sent to the metropolis, between the time it leaves home until slaughtered, and what the quantity and quality of food which such an ox ought to consume, and the treatment it should otherwise receive, so as to maintain it at this weight undeteriorated in quality? The amount of daily waste will depend very much upon the constitution of the animal, the state of the weather, the food and treatment prior to leaving home, as well as upon the food and treatment between home and the shambles, consequently, from the diversity of constitution, food, and treatment, there may scarcely be two animals in Smithfield of this weight, whose daily waste is equal. A five-year-old Highlander or Galloway, for instance, accustomed to exercise, exposure, and inferior food, may lose little more, comparatively speaking, than the ordinary daily waste in the straw yard, prior to leaving home; and this to a certain amount may be repaired by the quantity of hay consumed—a species of food somewhat better than many of this class are yet accustomed to at home;

while on the other hand, the quickly-grown short-horn or Hereford, accustomed to better food and treatment, and which has attained to this weight by the time it has completed its second year, will be in a very different position, for at this age their bones will be comparatively green, their hoofs soft and tender, and their whole system in an artificial state, demanding treatment very different from that which they generally receive. In two examples of this kind the latter may lose weight at the rate of 2 imperial stones daily, while the former may not exceed 1. And differences almost as great may exist in this respect between individuals of any one breed. Some short-horns, for instance, of the best symmetry, are very active and hardy, and easily satisfied as to quality of food; and, therefore, the daily waste upon them may not be the half of what it is in others of the same breed possessing inferior constitution; and the same will be found true of Herefords, Devons, Galloways, &c.

The food and treatment of the ox between the stall and the shambles is a more complex question, being surrounded with many more difficulties, than that of daily waste. As a general rule it may be laid down that the ox should receive the same species of food after it leaves home, until within 12 hours of being slaughtered, that it has been accustomed to; and that where Turnips, oilcake, &c., are given—articles which affect the quality of the butcher-meat when slaughtered—these should be changed before leaving home, and others, such as bruised Oats or other corn, substituted in their place; also that treatment after leaving home should be as similar to treatment before it as possible.

The rationale of this practice is sufficiently obvious. It is that which is endeavoured to be carried out at all our great cattle shows, and the difficulty there experienced is to get cattle to consume a sufficiency of food. Pampered nature overloaded with fat, ever active to meet the exigencies of her situation, feels rather disposed to throw off the burden than maintain it at so overpowering a weight, and the same laws will regulate her conduct between the feeding-box of the farmer and the slaughter-house of the butcher. The progress lately made amongst farmers in the art of feeding, both as regards food and household accommodation, and the early maturity of breeds, and the change in our commercial policy affording an ample supply of cheap corn to butchers, enable both parties to adopt the best policy which science and experience can dictate. And they should endeavour to act in accordance with one another's interest; for if the farmer, for instance, feeds his ox on the full allowance of Turnips and oilcake up to the hour it leaves for market, as is too frequently the case, it may often be impossible for the drover, salesman, and butcher, to introduce the necessary change so as to present to the public butcher-meat undeteriorated in quality. For a few days, for instance, before the ox leaves home it should be fed purposely with the view of improving the quality of its flesh; for it is a well-known fact that Turnips, oilcake, and several other articles contain elements which, being readily absorbed into the system, tend to deteriorate the quality of the meat.

Again, the ox should be slaughtered fasting, but not suffering from the cravings of hunger. For when the food is not worked up into the system it affects the quality of the blood, and when hunger is felt the whole nervous system is affected, producing an even greater deterioration of quality in the meat. In practice the safest course to steer will be to slaughter in the morning, giving the ox on the previous evening a somewhat light or spare supper—one requiring little mastication and easily digested, such as a handful or two of Oatmeal along with its drink.

The usual and almost only food given to fat stock in the metropolis and other large towns prior to slaughtering is hay—the whole mode of treatment being that of the fourteenth century. The improvements of modern times have made no progress in this quarter; and it is even humiliating to think how far the practice of many farmers tallies with such an antiquated system. Given, 100 stones of live butcher-meat manufactured from Turnips, oilcake, straw, and hay, for instance: throw down a handful of hay in some dirty confined yard, or corner of a field, to the over-fatigued ox, pampered at home with the above dainties prepared in various ways; and you are supposed to do all that in you lies towards the economical conversion of the living animal into butcher-meat.

We have been led to make these remarks from our reporter's account of the sales, weight, and character of some of the stock lately exhibited at the Smithfield Club Show, from which it will be seen that a daily waste has taken place of about 2 imperial stones on the various animals examined, and that in other respects the quantity and quality have also been influenced under all the superior manage-



ment bestowed upon stock in Baker Street, and subsequently to the time, when they are slaughtered. This being the case, what must the daily waste be under the ordinary system of Smithfield and our other large markets?

THE exceedingly wet season which we have been experiencing will render the choice of SPRING WHEATS a matter of greater interest than usual.

The Talavera Wheat, introduced by Colonel LE COUTEUR, is believed to be the best sort for spring sowing. We have grown it with many others, and have found it ripen early in comparison with them. It is also productive, and the grain is of good quality. We extract the following account of this variety from the 1st Vol. of the English Agricultural Society's Journal, where it is described by Colonel LE COUTEUR:—

"The cultivation of the two fields destined for this Wheat and the Whittington had been similar throughout the course, with a view to ascertain the result on the crop of Wheat. This was sown on the 3d of February, 1838, at the rate of nearly 3 bushels to the acre in drills, on land dressed in the same manner as the contiguous field had been for the Whittington; the land in both may be said to be alike, the best description of light, rich, loamy soil. The seed being large, a greater quantity of it was allowed than usual. It is to be noticed, that in another field the seed was put in as late as the 21st February, and that it ripened equally well and early.

"Hardihood and power to withstand severe winters.—This Wheat has succeeded in the North of Scotland, and is sufficiently hardy to withstand the winter in its grassy state, but it is otherwise more valuable as a spring crop: without doubt it may be sown as late as the first week in February, in all the milder parts of England, with the prospect of reaping as good an average crop from it as from any other Wheat, but with a certainty of obtaining more flour than from most. A celebrated Scotch agriculturist wrote of it on the 12th of September last—'Talavera is nearly ripe, but such has been the untowardness of the season, I do not expect any other Wheat to make any return.' This testimony is in favour of its early habits and hardihood also. It is what the French have long sought for—both a winter and a spring Wheat.

"Early maturity and severance of crop.—The Wheat appeared in 25 days, on the 1st of March; it was in bloom on the 30th June, and was chopped on the 17th of August, a week sooner than the Whittington, which was sown nearly a month before it.

"Tendency to degenerate and liabilities to disease.—There is no tendency to degenerate observable in this Wheat, as far as the experience of five or six years goes; nor from its early habits is it at all likely to become intermixed by fecundation from other varieties, though sown about the same period, as it will, in such cases, flower a fortnight or three weeks before them. It is not more liable to disease than ordinary white Wheats, and affords a very fine, clear white straw; it is indeed one of the Italian bonnet-making varieties. There is, however, one disadvantage in it, which is, that the ear is so heavy that it is apt to break down, though not break off, when swept by a gale about the period of ripening; but it has a countervailing good quality, of ripening the grain equally well though bent down; as is the case with spring Wheats, which ripen their seed well though quite laid, which with winter Wheats is doubtful. Another peculiarity is the tenacity of the chaff to the ear, more remaining on it after passing through the threshing-machine than any other variety I am acquainted with.

"Amount of produce in grain, chaff, and straw, and the relative quantities of flour and offal.—The amount of produce in grain was 52 imperial bushels to the acre; the grain is so large that it tells in the measure; the sample very beautiful, as a bushel of it, which will be produced at the Oxford meeting will show—uniform, clear, and thin-skinned. Hence the weight in grain, at 61 lbs. the bushel, was 3172 lbs., the weight of chaff 282 lbs., and of straw 5480 lbs. The quantity of flour obtained was 2485 lbs., the quantity of pollard 38 lbs., and of bran or offal 588 lbs."

The Talavera Wheat is less liable to mildew than some other sorts. It is a stiff and generally clean-strawed sort—which is a point of some importance in a variety to be used for spring sowing; as there can be little doubt that spring sown crops are more liable to mildew than such as are sown before winter.

In the case of a series of experiments on Wheats by Mr. MORTON, which are also described in Vol. I. of the Agricultural Journal, the following is the order of ripening in which 16 varieties were placed. They were all sown on Nov. 1: Hunter's, Talavera,

Hereford White, Ten-rowed Prolific, Thickset Suffolk, Hickling's Prolific, White Taunton, Silver Drop, Scotch White, Golden Drop, a red Wheat, Red Cone, Old Red Lammas, Egyptian Cone, Blue Cone. From this it appears that the Cone Wheats were the latest, and that the Red Wheats were generally later than the White.

Hunter's, which in this case equalled the Talavera, will, we imagine, be more easily procured for seed. It is a well known Scotch Wheat.

We may mention in connection with this subject that we have sown Hopetoun's Wheat on the 14th of March, and reaped a good crop early in September.

#### ROYAL AGRICULTURAL COLLEGE. SESSIONAL EXAMINATION.—INORGANIC CHEMISTRY.

1. Give a short account of the characteristic properties of the different kinds of natural waters, such as rain-water, sea-water, spring-water, &c.
2. Mention the composition and the more important properties of carbonic acid.
3. How do you determine the amount of phosphoric acid in a soil?
4. How do you distinguish salts of potash from soda-salts?
5. What are the states in which lime is found in nature, and in what forms is it used in agriculture?
6. What is the action of quicklime on land?
7. Mention the composition and properties of ammonia, and state under what circumstances ammonia is produced.
8. Name some refuse manuring matters which owe their fertilising properties chiefly to the ammonia which they contain.
9. What is the general composition of agricultural clays, and on which of their constituents do their fertilising properties depend?
10. How do you proceed in discovering arsenic with which an animal has been poisoned?

CIRENCESTER, December 13, 1852.

No. 1. Of all natural water, rain is the most pure. Rising into the atmosphere as vapour, and again falling as rain on becoming condensed, is a natural process of distillation; it contains the impurities of the atmosphere, as, for instance, during thunderstorms, nitric acid is formed, and the ammonia existing in the air is brought down as nitrate of ammonia by the rain as it falls. So rain, by analysis, is proved to contain ammonia; besides these, small quantities of carbonic acid, light carburetted hydrogen, and phosphuretted hydrogen, indeed all the elements arising from putrefaction may occur in rain-water. Next in purity is water that flows through silicious beds; it contains chiefly as impurities silicates of potash and soda, and oxide of iron, and perhaps a little lime, as bicarbonate. Hard water, that is, springs which rise in limestone beds, contain much lime in solution, alkalies and phosphoric acid in small quantities, silica, sulphate and carbonate of iron, and the above may contain small quantities of organic matter in solution as well as some organic acid. Sea-water contains chloride of sodium as a chief ingredient, sulphate of potash and soda, and chloride of magnesia, which renders salt deliquescent, bromine, iodine, chlorine, and other impurities, carried into it by rivers and streams from the land. Mineral waters are even more impure, and contain minerals in solution. Iron, salts, and traces of iodine are found in the saline springs of Cheltenham. Hard water curdles soap with the fatty acids, of which it forms insoluble compounds, and if much lime is present on boiling  $\text{CO}_2$  is expelled, and the bicarbonate is reduced to simple carbonate, and is deposited, as on the bottom of a kettle for instance.

2. Carbonic acid =  $\text{CO}_2$ . It occurs in combination with lime, as limestone, and forms one of the constituents of shells, which are carbonate of lime, &c. It occurs in the animal kingdom, in bones in small quantities, and also in plants.  $\text{CO}_2$  is a heavy gas, and may be collected by displacement. It is characterised by its affinity for lime, by which it is distinguished, by being poured over lime-water, when the insoluble or neutral carbonate is formed, and falls as a white precipitate. It effervesces on addition of a stronger acid; being itself weak, it is readily driven out. It is a poisonous gas, and on account of its density collects in cellars, caverns, &c., rendering these places exceedingly dangerous to approach. It is also distinguished by extinguishing a light; if, therefore, a candle will not burn in an atmosphere containing  $\text{CO}_2$ , it should not be entered. It is rendered innocuous by throwing in quicklime, which fixes it. One of the most important properties is its production in the decay of organic matter. In soils it plays many important parts. It alters the mechanical condition of the soil (this is one reason why long dung acts so beneficially on clays). It breaks up the minerals, producing important chemical changes, and water containing it in solution is a solvent for many matters, which would, but for  $\text{CO}_2$ , remain insoluble, and of no use to vegetation, amongst which may be mentioned phosphorus and salts of lime, &c.

3. Phosphoric acid =  $\text{P O}_5$ , in a soil is determined by burning the soil to destroy organic matter, having driven off water previously at  $212^\circ$ . The ash thus obtained is digested with hydrochloric acid, and evaporated to dryness; a slight quantity more hydrochloric acid is added to dissolve salts of lime, and the soil which remains insoluble is separated. The iron in solution is removed by making it peroxide by adding a few drops of nitric acid, and then adding ammonia. The precipitate is iron, phosphoric acid, and alumina: collect and re-dissolve in hydrochloric acid, add tartaric acid to keep iron in solution, and precipitate by addition of ammoniacal sulphate of magnesia. Collect after 24 hours, when the phosphoric acid will have become deposited

as minute crystals, dry and weigh, and calculated as phosphate of magnesia.

4. Salts of potash run to liquid on exposure to the air. Soda salts become more dry. Potash salts are more soluble than soda salts, and do not crackle on heating as some soda salts. Potash salts are distinguished further by a precipitate with bichloride of platinum in concentrated solution (having proved the absence first of metals and alkaline earths), and by tartaric acid, with which they are insoluble in excess. Soda does not give these reactions; indeed, after proving the absence of every other substance, a residuum remaining is soda. Soda salts are characterised by a yellow flame in the blowpipe. Potash gives a bluish flame, and the salts deliquesce, whilst soda salts effloresce on heating.

5. Lime occurs in the mineral kingdom in limestone and chalk as carbonate, where it is found in large mountain ranges; as sulphate it is also found, and as phosphate (mineral) in America and Spain. In soils, too, it occurs as silicate. In the animal kingdom it is found as phosphate, forming the chief constituent of the skeleton; in small quantities, too, as carbonate, as in shells, &c. It is contained, too, as phosphate in the vegetable kingdom, and in Clovers and leguminous plants it is largely contained. Lime in agriculture is used principally as quicklime (oxide of calcium) and as superphosphate. Lime is also applied to soils with much benefit, as in marls—as gravel to bog land it is largely applied in Ireland; as refuse of gas-works, too, and as different kinds of shells, oysters, &c., it is applied near the sea-coast.

6. Lime acts caustically upon land, decomposing the vegetable matters it contains; it unites with and neutralises the acids, as in peat soils (ulmic and humic acids). It decomposes the mineral matters, and furnishes directly food for plants. In some soils it alters their mechanical properties, making clays more open and friable, and in light soils it has a tendency to make them more compact.

7. Ammonia is formed by the union of hydrogen and nitrogen, just as they are being liberated from their combinations. It is prepared by nitre and iron-filings—the one setting free nitrogen, and the other hydrogen. Ammonia =  $\text{NH}_3$  or  $\text{N H}_3 \text{O}$ . It is produced when all animal and vegetable matters containing nitrogen undergo putrefaction, except in presence of any strong base, when nitric acid is formed, as in composts with quicklime. It is also freed from urea as carbonate, on exposure to air and moisture. Ammonia is a volatile alkali, and it volatilises on heat being applied; it is a pungent smelling gas, and dissolves readily in water; it may be recognised by heating a substance containing it with quicklime, and holding over it red litmus wet with water, or by a rod dipped in hydrochloric acid, when white fumes will appear. It does not combine with anhydrous acid. It possesses a soapy feel, and in many of its characteristics it resembles potash and soda. It has a highly forcing effect upon vegetation. In composts, for its nitrogen, it is largely applied to the soil.

8. Blood, animal matter generally, shoddy, refuse of knife-handle manufacturers, as horn-parings, shavings, soot, &c., indeed all refuse matters which do not contain phosphoric acid or alkalies, owe more or less their chief value as fertilisers to ammonia.

9. Clays are made up principally of alumina and silicates: for agricultural purposes the more free the ingredients, or the greater admixture with other substances, so much the better. A clay contains upwards of 50 per cent. of silicate of alumina, and not more than 5 per cent. of lime; it contains, too, small quantities of organic matters, alkalies, and metallic oxides, iron, and undecomposed minerals, felspar, &c. The fertilising constituents of clay are—phosphoric acid, alkalies, vegetable matters, silicates (soluble), sulphuric acid, and lime.

10. Take the contents of the stomach or intestines to be examined, and add water and hydrochloric acid; boil, and add a little chloride of potassium, when chlorine is liberated, and the organic matter destroyed. So soon as completely destroyed, filter and evaporate the filtrate to small bulk; to one part pass through sulphuretted hydrogen for 48 hours. If black precipitate appears, collect and redissolve in hydrochloric acid; test for lead, by sulphate or chlorate of potassium; for copper, by ferrocyanide of potassium; for mercury, with iodide of potassium; for arsenic, by acetate of lead, or sulphate of copper and ammonia. Put another portion in hydrogen apparatus, and if it colours porcelain black when lighted, arsenic is present. Arsenic may be detected with destroying the organic matters. Add hydrochloric acid, and boil for half an hour; filter, and put into filtrate a piece of metallic copper, when it will, if arsenic is present, assume the appearance of tin or lead; if this coating be scraped off and dissolved in hydrochloric acid it will give the reactions of arsenic.

#### THE FAT STOCK SHOWN AT THE LAST MEETING OF THE SMITHFIELD CLUB.

THE following account of butcher-meat purchased from the late exhibition of the Smithfield Club is intended to show the carcase weights of those animals we have been able to examine after being slaughtered, as subsequently enumerated, and how far these correspond with our measurements given in a former report. It will thus elucidate the daily waste of the system between the periods when the measurements were made, viz., on the evening of the private view, and that of slaughtering, under the management to which the animals were subject—a topic now exciting a lively



interest in the minds of the generality of feeders—one to which special reference has oftener than once been made of late in the columns of the *Gazette*. It will show how far the quality of the meat when slaughtered upholds the opinion formerly expressed in harmony with the awards of the judges, and how far the general opinion was sound, that the quality of the meat was this year very much improved—there being a better mixture and proportion of fat and muscle than usual. And, lastly, it will show some of the many short-comings still experienced as a barrier in the road to perfection, with the view of devising means for their removal—not only in the science and practice of breeding and feeding, but also in the butcher trade; thus advancing the interests of the farmer and butcher equally in the march of improvement—interests inseparably connected together under the present live stock system; for so long as butchers buy live animals, both the quantity and quality of the meat are in a great measure dependent upon their management prior to slaughtering, so that both parties are equally interested in the progress which the other is making in his particular field of labour. The progress, for instance, which the farmer is making in the art of feeding demands a corresponding step on the part of the butcher. For the purpose of acquiring the information here involved, we last week visited some 30 of the shops of butchers who made purchases—a mission of no ordinary importance and responsibility, demanding more time and opportunity for examination than the shops of metropolitan butchers present on a Christmas week, before satisfactory conclusions can be arrived at; for, although we visited individual shops several times, particular parts were disposed of in the interval, which we were anxious to examine more minutely, such as rumps, loins, &c., because these differed from each other in different animals, while, in some cases, a very superficial glance and handle of the four quarters was all that was got, the whole being sold off before our return; consequently, we have confined our observations to those of a general character, rather than the details of the several parts. On the other hand it is but just to premise in passing that the most superficial glance and handle of the four quarters on the stall of the butcher is infinitely more satisfactory than was the examination of them when alive in the Bazaar; for the latter belongs to the practice of “buying a pig in a sack,” a practice repudiated in all ages. The only practical course to arrive at a satisfactory conclusion relative to which of two sacks contains the best pig, is obviously to open both—a course which we would suggest being adopted by the Smithfield Club on future occasions—one which recommends itself equally to breeders, feeders, butchers, and the public. Had the whole of the animals whose carcasses we have examined been fed in the Bazaar until they had recovered from the fatigue and excitement of the Show, slaughtered adjoining, the carcasses then cut up and weighed, the different parts separately, and exhibited in one exhibition room, the task of examination would have been comparatively speaking an easy one, productive of more satisfactory results; but, scattered over the four quarters of this huge and overgrown metropolis, from Wandsworth to Holloway, the obstacles to be encountered, to say nothing of the “puffing” of a Christmas week, may be more easily conceived than expressed. The food of prize animals has been given in a former report, and therefore in noticing the meat of these, reference will be made to the same, to save repetition; and that of a few only of the non-prize animals will be stated when necessary. The order of the breeds formerly noticed will be preserved.

## DEVONS.

We have examined eight of this breed—viz., second prize, class 1, and first prize, class 2, bred and exhibited by the Earl of Leicester, and bought by Mr. Collingwood, Lamb's Conduit Street; both animals lived equally well; the former weighing 108 stones 2 lbs. beef and 13 stones 2 lbs. fat, is finely grained, but rather defective of fat; while the latter, weighing 129 stones 5 lbs. beef, 16 stones 2 lbs. fat, is somewhat in the opposite extreme, but the quality of the fat good. We have also seen Mr. Fouracre's 4 years and 8 months old ox, bought by Mr. White, Marylebone; and Mr. Farthing's 4 years and 10 months old ox, bought by Mr. Game, Cannon Street (weight not given), both of which, although inferior to the first prize, class 2, in which they stood in the bazaar, turned out equal to the expectations of the purchasers. Mr. Tucker's 4 years and 7 months old ox, bought by Mr. Stockly, Notting Hill, measured the day before slaughtered 110 stones, and rather exceeded it when cut up, quality rather superior. Mr. Gibbs' 4 years old save one month, bought by Mr. King, Paddington, also turned out well, and weighed 164 stones beef and 25 stones fat. Mr. Farthing's second prize heifer, class 3, bought by Mr. Cook, Clapham Road, and weighing 134 stones beef and 21 stones fat, turns out satisfactorily. Mr. Bond's first prize, class 4, bought by Mr. King, Paddington Street, and weighing 159 stones beef and 22 stones fat, falls short of the last. “(First prize Devon, class 1, bought by Mr. Copeland, Windsor, weighs 114 stones 4 lbs. beef and 18 stones 1 lb. fat; second prize, class 2, bought by Mr. Nutcliff, Mayfair, 130 stones beef and 19 stones 7 lbs. fat; Prince Albert's Devon weighs 132 stones 4 lbs. beef and 20 stones 5 lbs. fat; first prize, class 3, 129 stones beef and 20 stones fat; and second prize, class 4, 143 stones 3 lbs. beef and 13 stones 1 lb. fat.)”\*

\* The part within brackets is taken from a report in the *Mark Lane Express*.

## HEREFORDS.

Of this breed we have examined nine, viz., Prince Albert's first prize young steer, bought by Mr. Orris, King Street Terrace, New North Road, weighing 148 stones 6 lbs. beef; this animal turns out the best of any of the Herefords we have seen as to quality. Mr. Carwardine's ox of the same class, bought by Mr. Sheppard, Holloway, and weighing 140 stones beef and 14 stones fat, is not a great way behind Mr. Heath's ox of the same class, weighing 157½ stones beef and 20½ stones fat, turned out nearly equal to the above as to clearness of colour and mixture of fat and muscle, but retained a soft and immature handle. Mr. Maydwell's first prize ox, weighing 184½ stones beef and 21½ stones fat, bought by Mr. Bannister, Threadneedle Street, and looked upon by some as the finest ox in the yard, did not come quite up to expectation. The organisation of muscle and the disposition and proportion of the fat was certainly superior to that in the case of Prince Albert's, or any of the other Herefords, thus showing no want of breeding; but the animal, from some cause or other, did not “die” very well, and the want of corn in the food was evidently against him in competition with Mr. Stratton's short-horn. The question, therefore, of the Herefords *versus* the short-horns, is not yet settled, a fair trial of food for next year remaining open. In class 6 Mr. Randall, London Road, killed a fine Hereford (Gurney's) 3½ years old, weighing 203½ stones beef and 26 stones fat; also Mr. Stimpson, Wandsworth, the Earl of Radnor's, weighing 170 stones beef. In the same class Mr. Collingwood, Bishop's Road, Paddington, had Mr. Greenaway's, weighing 148 stones beef and 18 stones fat; and of the same gentleman from the Birmingham show 158 stones, but too fat, and rather inferior as to quality generally. Mr. Randall got the gold medal cow, which weighs 162½ stones beef and 20½ stones fat; quality fine, but not beyond what we expected as to colour and firmness. Mr. Sanders, Marylebone, got Mr. Hicks' fine black cow, which cuts up well, and weighs about 187 stones. “(Mr. Stephen, Oxford, got the second prize Hereford, class 6, weighing 158 stones beef and 24½ stones fat; and also Mr. Druce's ox, 165 stones; second prize, class 7, weighs 127 stones beef and 16 stones fat.)”

## SHORT-HORNS.

Of this most valuable breed, we have only seen five examples, viz., second prize, class 10, bought by Mr. White, Marylebone, the weight of which was not ascertained. The quality of fat was finer, the mixture of fat and muscle being superior; Mr. Swithen Horn, of Camden Town, killed the Earl of Hardwicke's fine ox, and also Mr. Goodman's heifer. Mr. Watling Marchmont Street, got Mr. Gillett's 4½ year old ox, bred by himself, and fed on hay, Barley-meal, Wheat and Oatmeal, and oil-cake. This ox turned out well, and weighed 184½ stones beef and 24 stones fat. Mr. Randall, got Mr. Gooch's three year old second prize cow, which turned out fine, weighing 176½ stones beef, and 24 stones fat. This was superior meat, maintaining a fair competition with Gurney's Hereford ox on the same stall. Mr. Stratton's first prize ox, class 9, weighing 165 stones beef and 20 stones fat; Mr. Tucker's second prize, class 11, bought by Mr. Justice, Crown Court, Pall Mall, 174 stones beef and 16 stones fat; Mr. Newbutt's heifer, 177 stones beef and 25½ stones fat; Lord Feversham's heifer, 157½ stones beef and 18 stones fat; and Mr. Carrington's short-horned cow.

(To be concluded next week.)

FARM OF ENTERKINE, NEAR TARBOLTON  
THE PROPERTY OF AND FARMED BY MR. BELL.

October 21, 1852.—Visited this gentleman to see his arrangements for irrigating with liquid manure. His farm consists of about 130 acres; but he has only as yet laid a pipe into one field, which was done last winter, being desirous of proceeding cautiously, and feeling his way, as it were, before extending the system over his whole farm. The field in which the experiment was tried, during the past summer, contained Italian Rye-grass, sown in Spring, and contains about 9 acres. In the middle of it, there is a hydrant, to which there is a gutta-percha hose attached for distributing the liquid. Mr. Bell has a large water-wheel for driving his threshing machine, and with this wheel he works two suction and force pumps, to draw the liquid manure from his tanks, and force it up into the distributing pipe. There are proper channels from his byres, feeding-sheds, and stables to the tanks, which are of a circular shape, and built of brick. Mr. Bell finds that the Rye-grass, when properly irrigated, grows with such rapidity as to admit of being cut six times during the summer and autumn. Immediately after each cutting, the manure is poured over the ground, at the rate of about 3000 gallons per Scotch acre, diluted with three or four times its quantity in water. On asking Mr. Bell what quantity of stock was required to afford this supply, I learned that he has a dairy of 25 cows, besides a number of cattle; but no sheep. These, however, are not enough to supply what is required, especially as he does not at present allow the solid dung to enter the tanks. This he keeps to mix with ashes, in order to be applied to his root crops. The quantity of liquid given by a milch cow, Mr. Bell states to be about 2½ gallons daily, or about 450 gallons in six months, which, when diluted with water, makes rather more than 2000 gallons, or about 10,000 gallons for five cows—which five cows he has found can be supported by one acre of the Grass throughout six months. But as there are six cuttings of the Grass and six manurings, 60,000 gallons are

required in the course of the season—and to make up this quantity, Mr. Bell mixes in his tanks Peruvian guano at the rate of 1 cwt. to 3000 gallons; so that for each acre of Grass, he has to apply about 16 cwt. of guano—in addition to what comes from the courtyard. The cost of this manuring can be easily calculated, and the following is the statement which Mr. Bell gave to me of his returns per acre, as compared with the returns obtained from pasturing in the ordinary way. He said that on ordinary Rye-grass and Clover, two Scotch acres are required to keep one cow feeding on it during summer and autumn. Her produce in butter, cheese, and milk, may be estimated at 4*l.*, which gives, therefore, a return of 2*l.* per acre—under that system of management. On the other hand, two acres of Italian Rye-grass cut and manured six times, will support 10 cows, whose produce at 4*l.* each, will be 40*l.*

Now deduct from this, the cost of 16 cwt. of	£ s. d.
guano, viz. —	7 12 0
Expense of cutting Grass for 10 cows daily, at	
1s. 6d., viz., for 180 days	13 10 0
Interest on capital	4 0 0
	£25 2 0
	40 0 0
	£14 18 0

being a return of 7*l.* 9s. per acre instead of 2*l.*. But this is not all. Some account must be had of the solid manure of the cows, which the field gets, when it is pastured in the ordinary way, and which by this system is not applied to the Rye-grass, but appropriated to other crops. The value of this solid Manure, Mr. Bell estimates at 7s. or 8s. for each cow during six months, which seems a moderate estimate; and if this view be correct, the return under the former system would be only 1*l.* 16s. 6d., and under the latter 8*l.* 7s. 9d. per Scotch acre, showing a difference of 6*l.* 11s. 3d. per acre in favour of the irrigation system. In these calculations it is assumed, that under both systems the cows give exactly the same quantity of milk, whereas it has been found that stall-fed cows give a larger quantity of milk than when pasturing in the open field. The result of Mr. Bell's experiment has been to satisfy him of the profitableness of liquid manuring; and he means to extend the system over his whole farm. I may add, that in distributing the liquid over the land, Mr. Bell does not follow the plan, recommended by some, of throwing it into the air, so as to make it descend in the form of a shower. He considers that much of the ammonia is thereby lost. He causes the orifice of the distributing pipe to be held close to the ground. Mr. Horne's Report to the East of Berwickshire Farmers' Club.

## Home Correspondence.

Depth of Drains.—In your *Gazette* of the 18th inst., p. 810, H. C. Selby “endeavours to place the question of under-draining in its true light,” and in doing so he begins by stating that, “to ascertain the efficient depth of drains is of the greatest importance” (this, no man will venture to gainsay), and that no practical man will doubt but that, at not more than 33 feet apart, 3 feet is a “sufficient depth for all agricultural purposes.” This last assertion I would very much question; for it is now a well authenticated fact, that the roots of our corn and other crops descend 4, and even 5 feet, when favourably circumstanced, in quest of food; that the deeper the roots are enabled to penetrate, the more healthy and luxuriant is the growth of the crop; that they will not penetrate a soil saturated with moisture; and that whenever the roots reach such a soil, vegetation is immediately checked, and a failure, to a certain extent, is the inevitable result. Such facts at once point out to us that, where the subsoil will at all allow, the deeper the drains are, they will be the more efficient, and the more likely to realise the anticipations of the enterprising improver. Mr. S. goes on to say that when the “point of saturation commences near the surface, shallow drains are the most effective.” Now, to put in drains just to this “point of saturation” would, I conceive, be no remedy at all; doing so would do nothing more than keep it where Nature had placed it, and no man could call that improvement. I would, generally speaking, make my drains much deeper, and by doing so would undoubtedly, to the same degree that I deepened my drains, remove the “point of saturation” from the surface, which would be one point gained—in fact, the main end to be aimed at in all drainage operations. If his hypothesis be true, that it is in its ascent and not in its descent that water enters the drains, the deep drains would, in proportion to their depth, have an advantage over the shallow ones. In illustration of this I will just take the barrel as instanced by Mr. S., with a drain-pipe in the bung-hole, out at which the water will flow when once the mould, with which the barrel is filled, is saturated to the level of the pipe. But insert a pipe below the bung-hole, or near the bottom of the barrel, and the former will be of no use, as all the water will be carried away by the latter; and thus by deep drains the land would, by the rains falling on and penetrating through it, be to a greater depth cleansed of all noxious qualities, and fitted for the reception and nourishment of any crop that might be put upon it. “Capillary attraction,” he says, “commences from the point of saturation or level of the drains, and is supposed to extend 18 inches or more above it.” Now, take 18 inches from 3 feet, the depth stated by Mr. S. as “sufficient for all agricultural purposes,” and we are left with only 18 inches of dried soil immediately above the tile. The water as we recede from the drain will, by capillary attraction, gradually



rise, forming something like the arc of an ellipse, with the distance of the drains one from another for its major axis; and if their depth be 3 feet, and their distance apart 33 feet, the supposed elliptical are will, in all likelihood, rise till half its minor axis is identical with the depth of the drains, or in other words, till the water rise to the surface. The system of shallow draining (for such I must call it), with a maximum depth and distance of 3 and 33 feet, recommended by Mr. S. Will, in my opinion, notwithstanding the desire to "place the question in its true light," fall miserably short of the requirements of the age in which we live; for I am convinced that 3 feet drains, even at a considerably less distance asunder than 33 feet, will very inefficiently drain any land; and that that depth is totally "insufficient for any agricultural purpose." As different districts have their own local peculiarities of soil and subsoil, it is impossible to lay down any general or empirical rule for the proper depth or distance of drains; but for safety and efficiency I consider that no drain should, if at all practicable, be less than 4 feet deep, with a medium distance apart of 25 feet. I say 25 feet apart because, from my own observation, I am persuaded that in draining land a great error is very often committed by putting in 4 feet drains too far apart. It seems to be the received opinion of many practical men, that distance is quite a secondary and immaterial point; that if they get their drains to a specific depth they need give themselves no concern about the distance apart. This, however, is a very great mistake indeed, as drains at any depth may be rendered comparatively valueless by putting them on too far asunder. *J. R. A.*

**Landlord Right.**—The world rings with the outcry of tenant-right, as far as Ireland is concerned, but one hears nothing of it relative to England. I confess I should be astonished if we did. I reside in a midland county, and without pretending to compete with a Mechi in arousing the stagnant energies of either landlords or their tenants, I do claim to be able on inspection to say if land is well, or ill, or, if I may use the well-known phrase, middlingly farmed. I maintain broadly that landlord-right is more called for than tenant-right, in certain midland counties. I can point out tracts of land occupied by respectable men, under kind and benevolent proprietors, where, during this extraordinary season, acres upon acres are allowed to remain water-logged, because the tenants will not clear the mouths of drains by scouring out the ditches; where valuable flocks of sheep are suffered to range indiscriminately on low meadows, up to their bellies in mud and water; where second hedges, composed of spreading thorns, are allowed to establish themselves on the bank parallel to the actual one, and encroach on the department of the plough or the scythe; where enormous quantities of stable-dung are carted away to the vicinity of some water-course, into which the last two or three months' rain has washed no small portion of its virtue; where valuable and productive orchards, reared by the landlord, know of no care on the part of the tenant beyond having their produce hammered off their branches once a year with long poles. You will say, "Have you no agreement?" Yes, I have, but how enforce it? You will say again, "Are these mere tenants from year to year?" Yes, I say again. You say, "How soft you must be to suffer such things when you hold the remedy in your own hands." Give your advice; these are bad times for getting rid of old tenants. It is a pity the county court cannot furnish redress. In the meantime rest assured that, in Worcestershire and Herefordshire, where one tenant is victimised, there are 20 landlords damaged by slovenly tenants. *An Enquirer.*

**Shallow v. Deep Draining.**—You gave insertion to a letter of mine in July last, on the subject of "Draining Clay Lands Deep or Shallow." Both are to be seen now complete. The shallow and close dry the surface the quickest; but the deep will, I think, answer the best by warming the subsoil. They, both deep and shallow, run after heavy rains most copiously—the pipe full—the shallow are dry in 24 hours, the deep are continually running this wet season. In both cases the plan pointed out in your last was followed, viz., the turning the soil tumpy-turvy on refilling, by putting the turf sod and top soil next the tile, and the clay on the surface. No one, however, will at first sight believe your correspondent's theory, that the water rises from the bottom to the pipe, and does not soak from the surface downwards to the pipe; because, immediately after rain the pipes run full, and the superficial observer naturally concludes it is the actual rain that has just fallen that he sees pouring away from the pipe; if it is not, how does the scientific man account for the water running out, immediately after heavy rain, being discoloured, and that which oozes out many days after rain, being colourless and beautifully clear and soft? *Simplex.*

**Do Deep Drains run sooner after Rain than Shallow ones?**—As far as the "barrel" theory goes to illustrate the case, there is no more similarity in it than there is between a Lilliputian and a Brobdignagian. But take a barrel and fill it with soil, and make the soil at the bottom as firm and compact as the subsoil naturally is, and the top-soil accordingly; then pour the water over it, and you will find that the bung-hole will run before the bottom. As shallow drains are never placed immediately over deep ones, two barrels ought to be used, one 3 feet deep, the other 4 feet, and filled with the same soil, and the same quantity of water poured over both barrels, the result will be evident. *W. H. S.*

**Sheep in Boots.**—In your Paper a few weeks since I observed a paragraph headed as above. It ran thus: "As the late," continued rain, and consequently wet

pastures, may be productive of great loss of sheep to farmers, from foot-rot, it may be of use to suggest some kind of boots for the sheep, cast in gutta percha, which could be confined by an elastic band or tie at the top," &c., and signed "An Occasional Reader." I beg, therefore, to refer your correspondent and readers generally to the patent gutta percha goloshe, the invention of Messrs. Jones & Co., of Sheffield, and manufactured by the Gutta Percha Company, City Road, London. I have been informed that it entirely cures the foot-rot in sheep, and the materials employed being impervious to moisture, keeps the feet dry and warm upon cold, wet, or damp land. At the last meeting of the Yorkshire Agricultural Society held at Sheffield, the judges highly commended the invention. *Editor of the Agricultural Magazine.*

**Remarks on the Year's Experience.**—I think Mr. Harcourt, in his very sensible letter, which appeared in your last week's impression, has pressed one point a little unfairly against the "agricultural enthusiasts." He seems to think they have a fixed antipathy to the genus tree. Now I profess myself to be an enthusiast on the subject of farming, and yet I never heard of this antipathy, this "rooted" dislike. It is not to trees, but to hedgerow trees that they object. Who ever heard of the go-ahead agriculturists of the present day objecting to plantations? I never did, nor has, I should think, Mr. Harcourt. Even Mr. Mechi will admit that they are necessary, not merely as shelter for crops, but as supplying the requisite material for the necessary repairs on a farm. Their objection to trees in a hedgerow is founded on the following, as it seems to me, unanswerable considerations: 1st, that they take up more room in a hedgerow than they do in a plantation (I mean that 20 trees along a hedge will extract the goodness from a larger space of ground than 20 trees in a plantation), and yet do not themselves do so well. 2. That they not only spoil herbage, and break ploughs, but cause a considerable expense by keeping up rails on each side of them, where the hedge dies in consequence of their drippings. 3. That they have a tendency to stop up drains with their roots. I have not mentioned the shelter small plantations afford to game, which even the most zealous farmer may like to have, because Mr. H. would probably not admit the plea; but even he will admit that belts of plantation on the hills, and small plantations dotted about the country (in pastures chiefly), would shelter its crops as well or better than any amount of hedgerow timber. *W. F.*—If anyone is so profoundly ignorant of the common principles that pervade all agricultural undertakings, he ought to, and, as a result which nature has ordained, will suffer the penalties of their infringement. Many in the higher sphere of life are particularly loquacious about their concerns, and are apt at times to rebel, in experiments of a trivial but costly nature, which they attempt to surround with an halo of significance, when virtually the aggregate of their effusions is no more or less than an *ignis-fatuus*. There are sufficient precedents to show that the real and ultimate "distrusts of all experiments" arise from the too meagre supply of the special manures required by plants to develop growth and fructification; in short, from "hasty conclusions in attempting to prove too much;" and not from a cursory thought as to the nature of the previous cropping, and what were the principal constituents which had been removed from the soil, and not replaced during that period. If no improvement results in certain localities from the application of guano, night-soil, &c., to the soil, I can only say that other districts must be peculiarly favoured in those respects, or otherwise we import unadulterated guano and consume more nitrogenised food. If there is one who considers the banishment of trees and hedge-rows a "delusion," there are three who consider their annihilation a considerable advantage. It is well known that the wind exerts a beneficial influence as well as an injurious action on plants; and if the "climatic winds," during the past season threshed the corn at or near West Dean, that part of the kingdom must be very unpropitiously situated. [It is well known to most people that the north of England suffered enormously by this cause during last harvest.] It is effectual drainage and aeration which the stiff land requires, coupled with judicious manuring and cropping, and not ignition and incineration; but if anyone persist in their ideas of destroying the organic part of the soil, in the absence of trees and hedges, they can surely employ coal as their agent, quite as advantageously as the burners of bricks. Again, it is stated that the efficacy of liquid manure has proved unfavourable. I find that if it is not diluted with twice its volume of water, it will exert too luxuriant an influence on the corn crops, even when applied at the rate of 230 gallons (of pure liquid) per acre, independent of the addition of a neutralising agent. *Richard Burniston, Henley-on-Thames.*

### Foreign Correspondence.

**THE CROPS IN CALIFORNIA.**—Our American cousins never yet shrunk from the task of praising themselves or anything pertaining to them; and the monstrous vegetable productions of California were duly emblazoned for the especial edification of "the universal world." Will you permit me to help Jonathan to a little more praise for his honesty, which, by some accident or other, appeared in the *Alta California* newspaper of yesterday, in the shape of an article on the crops, which I will enclose herewith. In a word, the valleys and plains are the hope of agriculture here. The soil on them is evidently diluvial, and the very

small proportionals of silex, lime, and of carbonaceous matter is evidenced in the weak straw, and in the small size of the heads of corn. The cattle feed and thrive amazingly on the wild Lupin. Perhaps this will be found to be one of the best crops for cold, heavy land in England, as the crop proves well in the cattle. *W. E. Gill, San Francisco, California, Oct. 13, 1852.*

**The Crops in Napa and Sonoma Valleys.**—*The Grain Yield.*—Harvest is over, and few of our farmers can say that the crop has not fallen far, very far short of their expectations. In many cases the crop of this year, in ground cultivated the last year, has fallen 30 per cent below last year's yield. This cannot be accounted for on the ground that the virgin yield is greatest; but probably is wholly attributable to the fact of the late rains being very light, especially on the far side of the valley. This is particularly the case in Napa and Sonoma counties. Very large farms in these sections yield this year but 20 bushels to the acre, in some cases as low as 15; and this, too, where a portion of the crop was early planted. Still, it is not to be denied that some farms in that section have given an average of 50 bushels to the acre this year; but on those same farms the average was 67 bushels last year. There are some instances of the yield exceeding this—even as high as 100 bushels per acre; but it is certain the Napa county crop will not average over 33 bushels to the acre, and the Sonoma crop not over 25. In the Sonoma Valley the crop is also short, which is the more unfortunate as the supplies of seed Barley have been heretofore drawn from those counties, the Barley from other and older sections of the country being more mixed with Mustard and other weeds. In consequence of this demand for seed, much of the produce of these valleys will be kept back from the market; a large portion will be used this season in the Santa Rosas, Bodega and Russian River Valleys, so that the main supplies of the native crop will reach us from this side of the bay and below. The Wheat crop has been generally good, though the heavy fogs in the spring have in some cases produced rust. The demand of this year will be chiefly for seed, although the few mills in the country are night and day at work; but being few in number, of small power, they afford little more than a supply of flour for their immediate locality. Still, those who have intention of Wheat growing the coming season, should remember this demand is gradually lessening the supply, and enhancing the price of seed Wheat. Already superior lots have been disposed of at rates far beyond the present market rate, and the disappointments of those who relied on the Oregon seed the past year, will cause a greater demand for the California growth this season. From the Valley of San José and those further south, no authentic intelligence has reached us with regard to the yield or condition of the crops. It is believed, however, that the former will equal those of Napa and Sonoma, in proportion to the number of acres cultivated.

### Societies.

**HIGHLAND AND AGRICULTURAL.**—At the last monthly meeting of this Society the subject discussed was "The Proper Period and Best Form in which to Apply Manure." Mr. Russell, Kilwhiss, Fifeshire, said [his remarks we have been forced greatly to abridge]—I well remember the feelings which arose in my mind on the first perusal of a passage in Liebig's "Chemistry of Agriculture," where that illustrious individual, in impressing upon us the wastefulness of some of our practices, made the startling statement, that in every pound of liquid manure which we allowed to evaporate, we lost a pound of Wheat. This assertion indicated that as in nature there was no destruction of matter, the same amount of ammonia which the liquid contained would yield an amount of Wheat corresponding to the quantity of nitrogenous matter in that grain; that is to say, if the liquid held a pound of ammonia in solution this ought to raise a bushel of Wheat, because this quantity of Wheat will only yield, on analysis, a pound of ammonia. For my part, I know of no facts that can be relied on, which would lead us to suppose that the Wheat plant will not, under certain favourable circumstances, actually yield results even beyond those stated by Liebig. But how far does theory and practice agree on this point; Mr. Hudson, of Castleacre, lately declared that, in his experience, it took 3 cwt. of Peruvian guano to produce 6 bushels of Wheat. What an immense loss of fertilising materials have we here—a cwt. of guano yields about 20 lbs. of ammonia, but 2 bushels of Wheat only yield about 2 lbs. of ammonia. You will thus observe that a very wide discordance exists between the theoretical quantities of the chemist and the practical results of the agriculturist. I believe that we shall find in unprofitable forms of manures, and in improper periods of applying manures, some, but not all of those elements which occasion such a wide disagreement between the exciting revelations of Giessen and the very sober results at Castleacre. I think we often rely too much on the bare chemical qualities of manures, and forget the physiological requirements of plants, under the very artificial conditions we place them. There can be little doubt that Peruvian guano is the cheapest source of ammonia that we possess. But it is by no means a legitimate inference to say that it is the cheapest manure for all crops, even though the soil possessed all the mineral constituents which they required for their growth. You are all aware that, in the instance of



cereals, guano is used with indifferent success. If it had been otherwise, guano would have been employed by British farmers for grain crops much more extensively than it is. I believe it is but a very small proportion of the gross quantity imported that is directly applied for white crops. This is more strictly true of the eastern counties of England, for in Scotland a considerable quantity is used, more particularly for spring-sown crops. It is very clear, if Mr. Hudson had not a cheaper source of manure than guano, he could not grow Wheat. The only solution of this matter is, that guano is not the most profitable form in which ammonia may be presented to these crops. This cannot be said to be owing to any peculiarity of organisation in these plants, but rather to external conditions. We have every reason to believe one pound of ammonia in a manure of one form may be more efficacious for a crop than three or four in another. This will even be the case with the same crops grown on the same soils, but under different circumstances. For example, guano is by far the best and cheapest light manure for Turnips on good loams abounding in those mineral matters which that crop requires. But guano does not do for the early grown Turnips of the market-gardener, and superphosphate of lime is entirely useless. In the rapid growing Turnips of our fields, manure in such a concentrated form as guano is quickly assimilated by the vigour of vegetation, and little waste occurs; but in the languid powers of vegetation in the colder weather of the opening year, you must dilute the food with carbonaceous matter which allows the active principle to be presented to the roots in the most inviting and effectual form. Here you see that the chemical considerations are intersected by other elements which come into play. The requirements of the Turnip in the instances we have cited are as diverse as the demands of any two plants of the most opposite natures which you cultivate in your rotation. In these facts, account for them as you may, we may obtain a resting-place whence we may view a great many agricultural facts of a like nature, which show that we must not always rate the value of manures for all crops, simply by the ammonia standard, even when the mineral matters are abundant. You are all acquainted with many facts which demonstrate the truth of this remark. When you manure your fallow Wheat in autumn with other than farm-yard manure, you will generally find it more profitable to apply Rape-cake than guano, although the ammonia in the one manure will cost you almost double the money that it does in the other. Inferior guano will often be attended with greater benefit than the same weights of Peruvian, because the latter is found to be too soluble, even on clay soils for Wheat, and it is by far too quickening at a season when it weakens the plant by encouraging growth, the bad effects of which are experienced in spring. Woollen rags and bone shavings are excellent manures for Wheat from the quality of slowly yielding up their substance. On the other hand, since the introduction of guano, Rape-cake has been little used for Turnips, as guano is found to be much the more preferable manure. No doubt, if we could have obtained the ammonia as cheaply in Rape-cake, we would have preferred it to guano, as there would have been much less waste on all soils, especially on light lands, where the permanency of this manure is experienced for years, even after it has passed through the stomachs of animals. Indeed, even the immediate action of guano is considerably modified on light lands, because it is found to be rather too concentrated a manure, particularly for the Swede, whose period of growth extends over a longer space than the common varieties of Turnip. On this class of soils, we do not obtain a corresponding increase either in stems or bulbs by increasing the quantity of guano, beyond a very reasonable dose. I have found, if this rule is not observed, our efforts to increase the crop are about as ineffectual as the attempt to pour a quart of liquid into a pint bottle. On these soils, however, we can raise much larger crops by rich farm-yard manure driven at once out of the boxes without being fermented, and starting the crop with a little artificial manure. Excellent Swedes and other Turnips, however, can be grown with guano alone on deep loams or clays, but on light lands this does not hold so truly. This difference in the required form of the manure, according to the mechanical nature of the soil, which can be very distinctly traced in our green crops, is seen in large enough characters in the case of Wheat. It does not pay to manure this crop on light soils with guano, unless in very sparing quantities. The Wheat plant on light soils must obtain its ammonia in a very diluted or carbonaceous form. I have experience that on certain light lands my Wheat crops are sometimes better after a well-manured crop when the Turnips are all driven off the land, than when the crop has been raised with light manures, and all ate on the ground. A little rich manure in a less soluble form is often more efficacious on light lands than a larger quantity in a more soluble state. Barley and Oats can, therefore, be raised by more evanescent manures than Wheat, and these grains can thus be grown where you have no stable foundation of fertility. Has it not been partly through a misinterpretation of the demands of Wheat that the idea of its being so exhausting a nature has arisen? That Wheat does require more ammonia to grow it than late-sown Barley is evident, but Wheat is more particular as to its form than spring grains, and it cannot exhaust or reduce the soil so much as these can do. Wheat requires a fertility incorporated and ingrained with the soil, the effect of constantly sustained

efforts. To me it appears as plain as any proposition in Euclid that the good condition of land would be much better maintained by excluding the growth of Oats and Barley than of Wheat, and I have no hesitation in stating that the cultivation of Wheat will one day be regarded rather as a test of fertility than a dreaded means of exhaustion. In Scotland the practice, I think, is rather to aim at enhancing the value of our Turnip crop by the very moderate use of feeding substances. I am not inclined to condemn the English system of giving greater quantities of cake to stock than we do, even though they have Peruvian guano and other fertilisers at command. It must be borne in mind that the Lincolnshire farmers dress their much larger extent of green crops as liberally as we do in Fife—the extra feeding stuffs are given over and above all this—they have one-fourth or more of their land, be it good or bad, in Wheat every year—they cannot fall back on two years pasture so well as we do. The practices are by no means of modern date. A young Scotch farmer who made a tour through Norfolk in 1776, whose MS. journal has chanced to fall into my hands, viewed these costly practices with astonishment. At that time the farmers were feeding 40 or 50 head of cattle in their yards with straw and cake, and Barley-meal, at an expense of 7s. 6d. per week, when the prices of Wheat and meat were lower than they are now. Hundreds of keen practical men still follow a modification of the same system. An intimate acquaintance of my own who farms on the light lands of the eastern counties may be taken as an instance. He is one who attends very closely to his business, and is no theorist but rather a despatcher of all such. I find him spending 1000l. to 1200l. a year on purchased food, on an extent of land not greater than what I occupy, and managing to have his balance on the right side, as his carefully kept accounts testify, where mutton, beef, and pork, Wheat, and Barley, are all the products. I would not dictate to him, although I might hint that some of his practices are attended with a little waste. He writes me—“In testing the manure of very highly fed beasts with those that feed upon roots and straw only, I find so much difference in favour of the former, both as regards the first effects, and its almost permanent effect, that I really do not know what per centage of the cost of the extra food ought to be charged to the manure. When I find real practical men differing so much on this matter, it is no marvel to me if a theorist gets up and tells us we do not know our business, for if we cannot answer such questions without a doubt, we ought not to try to farm. Here, I believe that most of the graziers consider that if a fat beast pays for his artificial food he does well, and that the manure left is worth the Turnips consumed.” The other branch of our subject, “the time of applying manure,” is as important as the form of manure. Indeed, the defects of form can often be remedied by regulating the time of application. A common sense view of the subject would suggest that soluble manures should not be applied, unless the crops were in a rapidly growing condition, otherwise the rains might wash it away. You are all aware that Professor Way has lately made some very important discoveries in regard to the power which certain soils possess of fixing and retaining manures. A valuable addition has, undoubtedly, been made to our knowledge of the constituents of soils. Experiments in the laboratory would almost indicate that all manures are quite safe when applied to clay soils, as the rains have not the power of washing them out. No doubt these indications are so far borne out in practice by the more permanent effects of all manures on clays than on sands. If this property, however, of clay soils was as strictly true as has been contended, our views in regard to the forms of manures would be altogether erroneous on clay soils, because the most soluble manures would be as safe in combination with the mineral matters as they would be in the carbonaceous matrix of vegetable substances. But I am afraid this supposed property of clays has already been carried much too far, inasmuch as it appears to be opposed by many well recognised maxims in practical agriculture. Would any of you, on the faith of this principle, commit, at the present moment, sulphate of ammonia to your Grasses, or nitrate of soda to your Wheats, however rich your land might be in argillaceous matter? In all the excellent papers on Grasses at one of the monthly meetings, only spring dressings of soluble manures were recommended. It is not in consequence of the waste which occurs in winter applications of liquid manure, that so very few farmers have persevered in driving it out to the fields after having made tanks and erected pumps. It was always found that liquid manure had very little effect when applied in winter; it was only the spring applications that brought out its virtues. How comfortable do we feel when we can resort to the box system and drive it all out in the solid state. I think practice will bear us out, when we say that soluble manures will be more economically used on all soils at the growing seasons. As a strong instance of the truth of this rule, I was lately told by my only neighbour, who has persevered for many years in driving out the drainings of his yards, that the effects of this powerful manure were much greater when applied to the young layers of Clover in September or October, than in January or February. The applications of the earlier period produced a strong development of roots, which, no doubt, store up the nourishment in reserve for future use, but the later ones seem to escape through the soil, when the suspended action of vegetation cannot take them up. And, further, upon

what other ground than this rule can the fact be accounted for, that tank after tank has been dug on the clay farm of Myremill, to contain the accumulated drainings of months? In fact, the extraordinary results of this modern system of irrigation are apparently hinged on catching the period of growth; and since this essential point of success has so little been attended to, can we wonder at the very discordant statements in regard to the effects of liquid manure? When we have once got land in good condition, the produce of Wheat can often be economically increased by spring dressings of nitrate of soda—when the proper time of application is observed, the extreme solubility of this manure becomes one of its effective qualities. The Norfolk farmers find it more advantageous to apply it, mixed with salt, to their Wheats, at two dressings—one in March, the other in April. Too much taken into the plant at once is not found to be attended with so good results as when the quantity is regulated to the development of the plant. As guano takes more rain to dissolve it than nitrates, it is not so sure a manure for spring application. It is certainly a question which admits of some doubt, whether guano should be applied in autumn to our Wheat, or in spring. In late sown Wheat, the greater number of experiments seem in favour of sowing the guano with the seed. Mr. Blaikie, the eminent conductor of the Holkham experiments, informed me that Rape-cake should not be drilled along with the seed in the autumn-sown Wheat, as it prematurely stimulated the young plants. It was found that drilling the manure between or across the rows of Wheat produced much greater effects, and I think these results will readily harmonise with many practical maxims which prevail amongst us. In later sowings of Wheat, however, such as in December, January, and onwards, my own experience is decidedly in favour of drilling with the seed, for less seed will do, and there is then no untimely development of the plant; on the contrary it takes it all to promote vigour at that season. For some years I have applied all the guano, which I have used for white crops, by simply mixing it with the seed and as much dry material as will cause this mixture to fall freely out of the cups of the common English corn drill; so far as our experience has gone, this is attended with a great saving of manure. For spring sown Wheat, this mode of application is exceedingly advantageous, as it almost ensures a good, equal, full plant in spring; and we all know that the success of this crop is not a little dependent on a good start, and 1 cwt. of guano put in with the seed will often accomplish this as effectually as double the quantity sown broadcast. We had occasion to observe a good illustration of this last season on a field of Barley, which was very early sown. Over the greater part of the field the guano was drilled along with the seed, and here the active effects of this manure soon became visible, and contrasted very strikingly with the part where the guano was sown broadcast, and the crop maintained a superiority throughout. In this way we can often compensate incipient vegetation for a better prepared soil, as a small supply of food close at hand will give strength to the roots to push their way and sooner obtain the nourishment diffused more sparingly through the body of the soil, and thus, in cold dry seasons, the concentrated food will act the part of an artificial atmosphere, when the natural air is harsh and unkindly. I cannot conclude, however, without alluding to the modern system of irrigation, which has now been in operation for some years in Ayrshire, and is already transferred to our own, as well as other counties. The practical difficulties in carrying out this system are neither few nor small. There can be no doubt, however, that it is the most economical way in which manure can be applied to crops. Of all forms the liquid is the most perfect, and here we have the proper periods of applying manure in our own hands. The effects of this combination have already been attended with astonishing results on Grasses and green crops. In our moist climate this system may prove too good for cereals, unless, perhaps, for the grosser habits of the Oat. I am sure we are all much indebted to those who, through individual enterprise, are testing the profitability of what appears so rational in theory.

### Review.

*On the present state of the Law of Settlement and Removal of Paupers in Scotland.* By W. P. Alison, M.D. Pp. 16. Dublin. Hodges and Smith.

In a late notice of Mr. Pashley's work on "Pauperism and the Poor-laws" the attention of our readers was called to the evils which resulted from the law of settlement and removal as administered in this country. In the little pamphlet, of which the title is given above, some facts relating to the Scotch Poor-law and its working are given, and they tend to show that the evils of removing paupers to the place in which they may be legally settled are not peculiar to England. By the Scotch law it seems that a foreigner, that is an Irishman or an Englishman, who lives in any one parish in Scotland for five years without seeking parochial relief, acquires a right to be relieved by that parish in case of future need; should he, however, live and maintain his family in one parish for any time short of five years, he acquires no such right, but upon applying for relief becomes liable to be, and often is, removed to the place of his legal settlement, perhaps some hundreds of miles from the place where he has been accustomed to obtain work. Moreover, by the Scotch



law these five years are reckoned immediately preceding the time at which relief is applied for, so that if a person having lived without relief for many years in one parish removes into an adjoining parish and is there relieved, he loses any claim he might have had upon the former parish. To see how this works it is only necessary to peruse the case of Bernard Devine, mentioned by Dr. Alison, and the facts of which are shortly as follows.

Bernard Devine, aged 38, an Irishman, had inhabited Scotland for 25 years, had been employed seven years at the Clyde iron works, and had subsequently lived 10 years in Edinburgh. He had a family of four children, from 5 to 15 years of age; twice only, and then in consequence of the illness of his family, had he received parochial relief, but by law he thereby forfeited his claim to aid, on account of his previous residence in Scotland. In 1851 one of his daughters was found begging, and Bernard was thereupon committed to gaol for 10 days. On being set at liberty he was so ill that he was received into the infirmary. In February he left it relieved, but with the memorandum in the books that he had disease of the heart and large vessels of the chest. In March, 1852, although he had then given Scotland the benefit of his labour for 25 years, yet on the ground that during his illness his wife had obtained parochial relief for herself and family, it was determined that he with her and them should be sent back to Ireland, and the medical officer of the poorhouse certified that this might safely be done. Bernard, with his wife and two younger children, were accordingly removed to Belfast; but the two elder children, both daughters, and the eldest only 15 years of age, were left behind at Edinburgh. No sooner had Bernard arrived at Belfast than he determined to return to his children at Edinburgh, and after considerable difficulty he was once more with his whole family in that city, where he soon afterwards died. Previous to his death his wife, not daring to apply for parochial relief, was for some time in gaol on account of one of her children having been detected begging.

This example shows how the law of settlement and removal works, and it is, therefore, not very surprising that it should be thought ill adapted to the state of modern society. Dr. Alison agrees with Mr. Pashley in the opinion, that the whole law of settlement and removal should be repealed, and that the poor should be relieved wherever they may be at the time when assistance is required; but not in the opinion that "the power of removing Scotch and Irish paupers might properly be retained after the abolition of removals from one parish of England or Wales to another." The plan proposed by Mr. Pashley, to be substituted for the existing system of levying poor-rates and of affording relief is, with the exception just mentioned, entirely approved of by Dr. Alison in his present pamphlet, which is, well deserving the attention of those interested in these matters.

### Miscellaneous.

Wheat Crop (Expenses).—	£	s.	d.
Rent .....	1	0	0
Tithe, poor, and other rates .....	0	0	0
One ploughing .....	0	7	0
Two harrowings and one rolling .....	0	2	6
1½ bushel of seed .....	0	7	6
Two horse hoeings .....	0	2	0
One hand hoeing .....	0	3	6
Weeding .....	0	2	6
Cutting (with bagging hooks) .....	0	9	0
Carting and stacking .....	0	3	6
Thatching .....	0	1	6
Taking in and threshing and dressing five quarters .....	0	10	0
Carting five quarters to market, at 8d. .....	0	3	4

£5 2 4

The rent is 36s. landlord's measure, which is 40s. on the actual available average. *Mr. Mechi's Second Paper.*

*Agricultural Balance-sheet.*—In accordance with my promise of a three years' average produce of 40 acres arable land adjoining my estate, I forward a statement of the second year's result, which in these times of agricultural depression is rather cheering; it is true I have the assistance of an able bailiff in Mr. James Knox, and in being contiguous to a large market town, advantages not possessed by isolated agriculturists; yet if an amateur in these critical times can show a profit, surely the intelligent farmer who devotes his whole time and energies need not despair in realising a fair and legitimate return. The land, though highly tithed and rated, is extremely good, and might be made still more productive. The portion of the produce not sold, but applied to my private use, I put at the lowest market price of the day. My prediction has been completely fulfilled, and our free trade ministry cannot, by any means, raise the price of produce or give relief to any extent to the landholder, and it now behoves us in this age of progress to call upon all who are interested in agriculture to exert themselves, and instead of cherishing the delusive hope of any legislative assistance, to call in the aid of science, and by his superior skill the British farmer need not fear competition with the whole world.

Produce of 40 Acres for the Second Year.

1851.	£	s.	d.
Valuation of crops growing May 10th, 1851, from former account .....	154	0	0
Year's rent as before, 40s. per acre .....	80	0	0
Tithe, poor-rate, taxes, &c., 18s. .....	36	0	0
Wages for three men for the year, including hoeing, cutting, threshing, &c. .....	78	1	0
Wear and tear of implements, original cost 90% .....	4	10	0
Keep of two horses, 24s. .....	63	8	0
Farrier's bill .....	6	10	0
Seeds for crops .....	32	12	0
150 loads manure, cost 6s. per load .....	37	10	0
Profit on the year .....	82	18	0

£574 9 0

1851.	£	s.	d.
2 acres Tares, 80s. ....	8	0	0
8 acres Potatoes, 60 tons; 31 sold at 60s. ....	93	0	0
And 29 ditto for pigs, 20s. ....	29	0	0
7 acres Barley, 25 quarters, 26s. ....	36	8	0
13 loads straw, 25s. ....	16	5	0
3 acres Oats, 20 quarters ....	21	0	0
8 loads straw, 20s. ....	8	0	0
2 acres white Turnips, 60s. ....	6	0	0
2 ditto Swedes, 22 tons, 20s. ....	22	0	0
14 acres Wheat, 49 quarters, 40s. ....	98	0	0
43 loads straw, 22s. ....	47	6	0
4 acres Beans, 16½ quarters, 26s. ....	20	10	0
Bean straw .....	5	0	0
Feed for pigs and poultry, stubble for sheep, &c. ....	—	—	—
Valuation of growing crops May 10th, 1852, consisting of Wheat, Barley, Peas, Beans, Tares, and Potatoes 161 0 0	161	0	0

£574 9 0

—John Laurie, Marshall's, Dec. 8th, 1852, in *Chelmsford Chronicle*.

### Notices to Correspondents.

**BREWERS' GRAINS:** *Anon.* They are good food for milk cows, and will be better than Linseed, so far as taste of milk is concerned. Perhaps some of our correspondents will state their experience in their use.—All sorts of dung should be mixed up together; peat charcoal will be a useful addition.—It is of no use to sow anything now. Wait till March and then you may sow spring Vetches.

**BUCKWHEAT:** *J. C. O.* You must buy it of corn-dealers, and get it ground for yourself.

**DEVONSHIRE BUTTER:** *J. B.* asks if our correspondent V. W. P. Hoblyn, St. Columb, will be kind enough to describe in detail this mode of making butter.

**DRAINING:** *X. Y. Z.* It is very likely in the case of your small field, with so open a subsoil, that tapping the subsoil in two places, as you propose, will drain the land. But if the soil is poor sand, you must not expect that mere drainage will all at once alter the mind of the cattle as to the quality of the herbage.—We can give no explanation of the policy of "feeding swine on cinders!"

**GAS-WHEAT:** *W. M.* It is exceedingly variable in quality. The ammonia in it varying from 20 to 40 lbs. in the 100 gallons. Apply 150 gallons diluted to 400 or 500 gallons with water per acre. If you have not a water-cart make a compost with earth. Apply it to Grass lands.

**MANURES, &c.:** *A Young Farmer.* Wood ashes are a good manure generally. They are most suited for green crops, as Turnips, Grass, Clover. Apply in compost with the manure 4 or 5 cwt. per acre. Spring Wheats may be sown till mid-March, and there is an April Wheat.

**MOSS:** *Constant Subscriber.* Harrow it well, and give it a liming. It is said that gas water applied tends to the disappearance of moss from Grass lands.

**MR. RULAN:** *A Subscriber.* Most of Mr. Rham's agricultural writings are comprised in the Dictionary of the Farm, C. Knight & Co., Ludgate Hill.

**WEIGHING MACHINES:** *Ploughman.* We do not know Chadbury Farm, but will inquire about it.—About four mills apply to Mr. Ferrabee, Phoenix Iron Works, Stroud; about weighing machines to James & Co., Whitechapel Road, London.

**WEIGHTS OF POULTRY:** *R.* We will do what we can.

## Markets.

### COVENT GARDEN, JAN. 8.

Wet weather having again set in, trade has been in consequence less brisk. Vegetables are good and plentiful. Peas and Hothouse Grapes are insufficient for the demand; the former consist of Beurre Rance, Ne Plus Meuris, and Easter Beurre. Apples are as yet plentiful; among them are nice samples of the American Newtown Pippin, and we also observed Lady Apples very fine, at from 1s 6d to 2s per dozen. Cob and other Nuts are realising fair prices. Both Seakale and Rhubarb are now tolerably abundant. But good Asparagus has not yet become plentiful. Potatoes have not altered in value since our last report. Mushrooms are scarce. Cut flowers consist of Heaths, Primulas, Early Tulips, Roses, Mignonette, and Camellias.

### FRUIT.

Pine-apples, per lb., 4s to 8s  
Grapes, hothouse, do., 8s to 10s  
Pomegranates, each, 2s to 4d  
Asparagus, per bunch, 6s to 10s  
— Kitchen, do., 6s to 8s  
Apples, per doz., 1s 6d to 4s  
Lemons, per doz., 1s to 2s

### VEGETABLES.

Cabbages, per doz., 6d to 1s  
Brussels Sprouts, per hf. sieve, 1s to 2s  
Broccoli, per doz., 2s to 3s  
Greens, per doz., 1s to 2s  
French Beans, per 100, 3s  
Asparagus, per bunch, 6s to 10s  
Seakale, per bskt., 1s 6d to 2s 6d  
Rhubarb, per bundle, 9d to 1s 6d  
Potatoes, per ton, 85s to 140s  
— per cwt., 5s to 9s  
— per bush., 2s 6d to 4s 6d  
Turnips, per doz., 1s to 1s 9d  
Cucumbers, each, 1s to 3s  
Celery, per bundle, 9d to 1s 3d  
Carrots, per doz., 2s 6d to 4s  
Spinach, per sieve, 1s to 2s  
Onions, per bunch, 2d to 4d  
— Spanish, p. doz., 1s 3d to 3s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 1d to 2d  
Shallots, per lb., 6d to 8d  
Garlic, per lb., 6d to 8d  
Lettuce, Cab., per score, 9d to 6d  
— Cos, per score, 9d to 1s  
Radishes, per doz., 8d to 1s  
Endive, per score, 1s to 1s 6d  
Small Salads, p. pun, 2d to 3d  
Horse Radish, p. bundle, 1s to 3s  
Mushrooms, p. pot., 1s to 1s 6d  
Sorrel, per hf. sieve, 6d to 1s  
Artichokes, per doz., 4s to 6s  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. doz. bunches, 2s to 3s  
Mint, green, per bunch, 4d to 6d  
Basil, per bunch, 3d  
Marjoram, do., 2d to 3d  
Watercresses, p. 12 bun, 4d to 6d

### WOOL.

BRADFORD, THURSDAY, JAN. 6.—Our market at present presents an unusual degree of animation, consequent upon large purchases being made by brokers for shipment to the West, also by the staplers selling one to another, either to complete engagements entered into, or on speculation. Be this as it may, prices are now sought by the country dealers quite out of all bounds; and the buyers for actual consumption feel their position a difficult one, especially when they have to supply old contracts for yarns. Noils and brokes continue active, but do not command prices equal to long wools.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, JAN. 6.	£	s.	d.
Prime Meadow Hay 78s to 84s	78	0	0
Inferior do. ....	65	7	4
Rownen .....	55	6	5
New Hay .....	—	—	—

E. J. DAVIS.

CUMBERLAND MARKET, JAN. 6.

Prime Meadow Hay 78s to 86s	Inferior Clover	£	s.	d.
Inferior do. ....	New do. ....	70	8	4s
New Hay .....	Straw .....	28	3	3s
Old Clover .....	—	95	100	—

JOSHUA BAKER.

WHITECHAPEL, JAN. 6.

Fine old Hay .....	Old Clover .....	£	s.	d.
Inferior do. ....	Inferior do. ....	55	70	80
New Hay .....	New Clover .....	—	—	—
Straw .....	Inferior do. ....	25	28	—

### SMITHFIELD.—MONDAY, JAN. 8.

The supply of Beasts is good, both as regards numbers and quality. Trade is tolerably brisk for them at fully late prices. The number of Sheep is smaller than might have been expected; best qualities are freely disposed of, and in some instances at a small advance. Good Calves continue to be scarce and dear. Our Foreign supply consists of 360 Beasts; 1720 Sheep; and 151 Calves. From Scotland 650 Beasts; and 1700 from the Northern and Midland Counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ....	Best Long-wools... 4 4 to 4 6
Do. Shorn ....	Do. Shorn .... 0 0 to 0 0
Best Short-horns 3 8 to 4 0	Ewes & 2d quality 3 8 to 4 0
2d quality Beasts 2 10 to 3 4	Do. Shorn .... 0 0 to 0 0
Best Downs and Half-breeds ....	Lambs .... 0 0 to 0 0
Do. Shorn ....	Calves .... 4 0 to 4 10
Do. Shorn ....	Pigs .... 3 8 to 4 8
Beasts, 4264; Sheep and Lambs, 21,690; Calves, 181; Pigs, 205.	

### FRIDAY, JAN. 7.

There is only a small supply of Beasts, consequently prices remain about the same as on Monday, but trade is very dull. We have an average supply of Sheep; the unfavourable state of the weather causes a slack attendance of buyers; notwithstanding, choice descriptions are freely disposed of, but inferior kinds are not in demand. Good Calves are not plentiful, and therefore maintain late rates. Our Foreign supply consists of 101 Beasts; 570 Sheep; and 185 Calves. From Norfolk and Suffolk, 100 Beasts; from the Northern and Midland Counties, 200; Milk Cows, 90.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ....	Best Long-wools... 4 4 to 4 6
Do. Shorn ....	Do. Shorn .... 0 0 to 0 0
Best Short-horns 3 8 to 3 10	Ewes & 2d quality 3 8 to 4 0
2d quality Beasts 2 8 to 3 4	Do. Shorn .... 0 0 to 0 0
Best Downs and Half-breeds ....	Lambs .... 0 0 to 0 0
Do. Shorn ....	Calves .... 3 8 to 4 10
Do. Shorn ....	Pigs .... 3 6 to 4 8
Beasts, 654; Sheep and Lambs, 3840; Calves, 265; Pigs, 140.	

### MARK LANE.

MONDAY, JAN. 3.—The supply of Wheat from Essex and Kent this morning was moderate, and the condition very bad, excepting a few dry samples which were taken at last week's prices; it was offered at a decline of 1s. to 2s. per quarter, but the stands were not cleared. There was some inquiry for Foreign, but the business transacted was not large, and we observe no alteration in prices. At the close of last week, sales to the extent of 60,000 quarters of Wheat for shipment to the end of July were made from the Black Sea and Azof ports, at 42s. to 45s. 6d. per qr. cost, freight, and insurance.—Barley meets a good inquiry, and the finest parcels of Malt bring rather more money.—The Bean trade is slow, without alteration in prices.—Peas remain as last quoted.—The arrivals of Oats being small, holders are very firm.—Flour is neglected.

### PER IMPERIAL QUARTER.

Wheat, Essex, Kent, & Suffolk	s. s.	Red	s. s.
— fine selected runs .....	44—56	Red	40—46
— Talavera .....	45—60	Red	46—52
— Norfolk .....	54—60	Red	—
— Foreign .....	38—58	—	—
Barley, grind. & distil., 25s to 38s	26—34	Malt	27—30
— Foreign, grinding and distilling .....	26—30	Malt	30—33
Oats, Essex, and Suffolk .....	18—21	—	—
— Scotch and Lincolnshire .....	23—25	Feed	17—23
— Irish .....	21—23	Feed	19—20
— Foreign .....	19—22	Feed	16—20
Rye .....	23—32	Foreign	—
Rye-meal, foreign .....	38—35	—	—
Beans, Mazagan .....	31s to 33s	Tick	33—35
— Pigeon .....	39—41	Longpod	30—34
— Foreign .....	32—37	Egyptian	32—34
Peas, white, Essex and Kent .....	38—41	Suffolk	40—42
— Maple .....	32s to 35s	Grey	30—31
Maize .....	38—48	Yellow	—
Flour, best marks delivered .....	38—48	—	—
— Suffolk .....	23—38	Norfolk	—
— Foreign .....	24—28	Per sack	—

### ARRIVALS IN THE PORT OF LONDON LAST WEEK.

Wheat.	Barley.	Malt.	Oats.	Beans.	Peas.
Flour 12521 bks	—	—	—	—	—
— 3823 sbs	—	—	—	—	—
English .....	2449	1090	920	53	232
Irish .....	—	60	40	6100	—
Foreign .....	9258	4489	—	4688	4508

FRIDAY.—The arrivals of Grain and Flour this week have been small. We observe no alteration in the value of English Wheat, but Foreign is more inquired after, and commands our extreme quotations. The same applies to Foreign Flour.—Barley is fully as dear as on Monday, and fine qualities are scarce.—Beans and Peas are unaltered in value.—The trade for Oats is slow, but holders are firm.—There has been rather less doing in floating cargoes of Wheat during the week, and prices are unaltered.

### ARRIVALS THIS WEEK.

Wheat.	Barley.	Oats.	Flour.
English .....	2730	4470	50
Irish .....	—	—	2340 sacks
Foreign .....	5020	—	7010 bbls

### IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Nov. 27 .....	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Dec. 4 .....	40 5	30 7	18 6	27 1	35 2	32 3
— 11 .....	41 2	30 0	18 5	30 11	35 5	32 8
— 18 .....	42 1	29 9	18 7	28 11	35 4	34 10
— 25 .....	43 10	29 9	18 5	29 2	34 6	32 0
Jan. 1 .....	46 7	29 8	18 9	29 7	35 0	32 9
Aggr. Aver. ....	43 4	29 11	18 6	28 10	35 1	32 4

Duties on Foreign Grain 1s. per qr.

### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Nov. 27.	Dec. 4.	Dec. 11.	Dec. 18.	Dec. 25.	Jan. 1.
46s 7d	...	...	...	...	...	...
45 11	...	...	...	...	...	...
43 10	...	...	...	...	...	...
42 1	...	...	...	...	...	...
41 2	...	...	...	...	...	...
40 5	...	...	...	...	...	...

LIVERPOOL, TUESDAY, JAN. 4.—The business passing during the week has been moderate, and prices have but slightly varied. There was a slender attendance of millers and dealers at our Corn Exchange this morning. Oats and Oatmeal were each rather easier to purchase. No change in the value of any other article. On the whole the business of the day was rather in favour of buyers.—FRIDAY, Dec. 31.—The arrivals from Ireland and coastwise, since Tuesday, have been small. The trade has been quiet, but prices of all articles have been tolerably well maintained. At this day's market there was only a small attendance of buyers. Wheat met with a retail sale at about 1d. per 70 lbs. decline on Tuesday's prices, for parcels on the quay. Oats and Oatmeal were in very limited request at late rates. Barley, Beans, and Peas, were held for full prices, which interfered with sales. Indian Corn was hardly inquired for, and floating cargoes might have been bought on easier terms.







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**MR. WILLIAM LLOYD** has received instructions from the Assignees of the Estate of Mr. John Patterson, a Bankrupt, to offer for Sale by Auction upon the premises at the Horticultural Grounds in Atherstone (close to the Atherstone Railway Station), on WEDNESDAY, the 26th day of January, 1852, at 11 o'clock in the forenoon, in one or more Lots, and subject to such conditions as shall be then produced, a large Propagating or Cucumber House, well heated by Hot Water or Air Flues, glazed, and in good working order, and measuring 107 feet in length, by 34 feet in width; an unglazed Peach-house, measuring 119 feet in length, by 34 feet in width. A glazed Vinery, with five Workmen's Cottages and Packing Shed, and Store-room underneath, measuring 121 feet in length, by 21 feet in width, well stocked with Vines; all of which have been lately erected. And also the entire stock of Vines, Geraniums, Fuchsias, Strawberry, Pine, Cucumber, and Kidney Bean Plants; Peach Trees; Seed Potatoes. A large quantity of Hothouse Glass, Flower Pots, Garden Tools, &c., &c.  
 The premises on which the horticultural erections are situated have been leased from the Atherstone School Governors for the term of 21 years, which lease they are willing to re-grant to any person purchasing the entirety of the buildings thereon. As to which, and for further particulars, apply to Messrs. BAXTER & SON, Solicitors, Atherstone; Mr. C. CHURISTIE, Official Assignee, Birmingham; or the Auctioneer, Atherstone, Warwickshire.

**TO GENTLEMEN, CONTRACTORS, PLANTERS, AND OTHERS.**

**MR. JOHN WILLMER** will sell by Auction, on TUESDAY, February 1, and two following days, the whole of the remaining portion of the STOCK of the SUNBURY NURSERY. Full particulars in a future Advertisement.

**TO POULTRY FANCIERS.**  
**PERIODICAL SALES BY AUCTION.**

**MR. J. C. STEVENS** begs to announce that he will hold Sales by Auction of FANCY POULTRY, on the First and Third TUESDAY in every month during the season, at his Great Room, 38, King Street, Covent Garden. Parties desiring to have Birds included in the Catalogue are requested to make their Entries at least one week prior to each sale.

**DAYS OF SALE.**  

TUESDAY, JANUARY 18th	TUESDAY	APRIL 5th
" FEBRUARY 1st	"	" MAY 19th
" " 15th	"	" MAY 3d
" MARCH 1st	"	" MAY 17th
" " 15th	"	" JUNE 7th

 TUESDAY, JUNE 21st.  
 38, King Street, Covent Garden, London.—January 8.

**FANCY POULTRY.**

**MR. J. C. STEVENS** begs to announce that he will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on MONDAY, January 10, at 12 o'clock precisely, 150 LOTS, all from the same yard, and belonging to an Amateur who has paid liberal prices. They consist of Cochins China, from Sturgeon's, Punched's, Andrews', and other strains; the five-clawed Shanghai breed, imported by the owner; Spanish, Poland, and Dorking, Muscovy, Rouen, and other Ducks, &c., many of which are of great beauty, and all to be sold without reservation.—May be viewed on the morning of sale; and Catalogues had by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

**COCHIN CHINA CHICKENS.**—A few pairs of light-coloured Birds, heavily feathered to the toes, at 20s. and 25s. per pair.—Address THOMAS PAGE, Chatteris, Cambridgeshire.

**TO NOBLEMEN, GENTLEMEN, AND PLANTERS.**

**TO BE DISPOSED OF, 300 LIME TREES,** growing on the Clumber Estate, Worksop, Notts. These Trees will average 12 feet in height, and 3 inches in diameter three feet from the ground, and have nicely-formed heads. They form part of a young avenue, and are growing in poor soil; they would be very desirable Trees to any one planting to give immediate effect.—Any further particulars may be obtained by applying to Mr. SPARY, Clumber, Worksop, Notts.—January 8.

**TO BE LET, at Lady-burton next, a FARM, in South Derbyshire, near Burton-on-Trent, consisting of 448 acres of Arable, Pasture, and Meadow Land.**—For particulars and order to view the premises, apply, by letter, to Mr. JAMES RIDGWAY, 169, Piccadilly, London.

**G REAVES FOR PIG-FEEDING.**  
 29 PER TON.  
 TAYLOR & PEARS, 5, George Yard, Lombard Street, London.

**CHEAP FUEL FOR CONSERVATORIES.**

**COKE**—the same as used in the Royal, and in the largest Conservatories round London, put into a Barge in quantities of not less than 20 chaldrons, at 7s. per chaldron, at the Phoenix Gas Works, Bankside, Southwark, and at the upper Surrey side of the Bridge Foot, Vauxhall.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to the Editor.—SATURDAY JANUARY 8, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 3.—1853.]

SATURDAY, JANUARY 15.

[PRICE 6d.]

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## HORTICULTURAL SOCIETY OF LONDON.—

At the Meeting, in Regent Street, at 2 o'clock, p.m., January 13, the objects of SPECIAL EXHIBITION may be the best collection of HARDY WINTER FLOWERING PLANTS (cut flowers admissible); ENGLISH GRAPES; the best and most varied SALAD.

## GARDENERS' ROYAL BENEVOLENT INSTITUTION.—

NOTICE is hereby given that the ANNUAL GENERAL MEETING of the Members of this Society will be held on Wednesday next, the 19th inst., at the Horticultural Society's Rooms, No. 21, Regent Street, for the purpose of receiving the Accounts of the Charity for the past year, and electing Officers for the ensuing year. The Chair to be taken at one o'clock precisely. By order, E. R. CUTLER, Secretary. 97, Farringdon Street.

## CHOICE SEEDS AND PLANTS.

BASS AND BROWN'S NEW SEED AND PLANT LIST is now complete, and may be had free for three penny stamps. The Autumn Catalogue also applied for three penny stamps, in which will be found Select and Descriptive Lists of Roses, and most of the Hardy descriptions of Plants. The cost of Catalogues forwarded may be deducted from orders. Seed and Horticultural Establishment, Sudbury, Suffolk.

## CORNWELL'S VICTORIA RASPBERRY.—

Canes of the above to be had of GEORGE CO. WELLS, Market Gardener, Barnet, at 15s. per 100; the usual allowance to the trade. Post Office orders made payable at Barnet. N.B. A quantity of strong Currants and Gooseberries.—Barnet, Jan. 15.

## IRELAND.

Improvements can be advantageously supplied with genuine new SEEDS of MANGOLD WURZEL, BELGIAN CARROT, TURNIP, BEET; GRASS SEEDS, &c., by Messrs. SUTTON & SONS, Seed Growers, Reading, Berks., who have for several years had the honour of supplying some of the largest Agriculturists near Enniskillen, Portlannington, Bandon, and other parts of Ireland. The seven Model Farms established by the Irish Church Mission in the West of Ireland were also furnished last year with Agricultural Seeds by Messrs. SUTTON and SONS.

## SEED TRADE.

J. G. WAITE'S CATALOGUE OF VEGETABLE AND FLOWER SEEDS is now ready, and can be had on application. Seed Establishment, 181, High Holborn, London.

J. AND J. FRASER, NURSERYMEN, Lea Bridge Road, Essex, beg respectfully to call attention to their splendid stock of SPECIMEN STOVE and GREENHOUSE PLANTS, ERICAS, and AZALEAS, for exhibition, which they have to offer at moderate prices.

## SUPERB HOLLYHOCK SEED.—

Well ripened Seed, warranted to be saved exclusively from Comet, Elegans, Obscura, Mr. C. Baron, Penelope, Rosa grandiflora, Meteor, Walden Gem, Magnum Bonum, Spectabilis, Solferino, Delicata, Eucharis, Picta, Queen, Bicolor, Dido, Charles Turner, Formosa, Hebe, Model of Perfection, Rosa Alba, Sulphurea Perfecta, White Perfection, Blue Beard, Mulberry Superb, Snowball, and Queen of England.

A good mixture of the above, in packets containing UPWARDS of 200 SEEDS, will be forwarded post free, upon the receipt of 2s. 6d. worth of postage stamps, by R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk.

## TWO YEARS TRANSPLANTED NATIVE

SCOTCH FIRS, COMMON and TYROLESE LARCHES.—The Subscribers have a large stock of the above, which they can recommend as superior in quality, and which are well worth the notice of the trade, or those gentlemen intending to plant. Purchasers can be supplied either from their Brechin Establishment or here. Their priced Catalogues of Forest Ornamental Trees, Shrubs, Fruits, and Roses, are now ready, and will be forwarded on application. DICKSON & TURNBULL, Perth Nurseries, N. B., January 15.

## THE EARLIEST PEA IN CULTIVATION.

### "FAIRHEAD'S EARLY CHAMPION."

THE raiser and grower of the above variety positively asserts that he procured all the new varieties of early Peas that came out last season, and had them sowed side by side with his "Early Champion," and which beat all the others in point of earliness; and from his experience in horticultural affairs he considers it the best earliest pea in cultivation. The pods are large and long, which is a great desideratum in early Peas; in the way of that renowned variety "Warner's Emperor," only much earlier. Price 2s. 6d. per quart, to be had of the undersigned, who have the stock exclusively, and which being limited can only be supplied in single quarts. CLARKE & CO., Seedsmen, 85, High Street, Borough.

## NEW SEEDS FOR 1853.

SUTTON'S COLLECTIONS OF GARDEN SEEDS, which are still unrivalled, may now be obtained in any part of the United Kingdom direct from the Growers, John Sutton and Sons, Reading, Berks.

J. S. & SONS being extensive Growers of Seeds, are enabled to offer peculiar advantages to purchasers, both as to quality and prices, and as they retain exclusively in their own possession the choice sorts which they have selected during the many years they have been in business, they feel confident that their Collections of Seeds are as superior in quality as they are greater in quantity than any others yet offered.

For sorts and quantities contained in "Sutton's Collections," J. S. & Sons earnestly recommend all purchasers of Garden Seeds to send for their List; and with respect to the superior quality of their Seed, they have much pleasure in referring to the unsolicited encomiums offered by hundreds of Gardeners, Noblemen, Clergymen, and others who have purchased these Collections in past seasons, a few of which they here present.

From Barlow Rectory, near Linton, Nov. 15, 1852.

"Nothing could be better than the whole of your last year's supply of seeds."

From Withycombe Rectory, Taunton, Nov. 15, 1852.

"I was so much pleased with the selection of seeds sent by you, that I recommended two of my friends to take parcels from you."

From Darnhall, Eddleston, July 27, 1852.

"Lord E. begs to enclose Messrs. Sutton & Sons a cheque for the amount of their account. The seeds have given great satisfaction."

From Mr. William Grant, Gardener, Hermand, Midcalder, Sept. 27, 1852.

"The family here will continue taking their Seeds from you, as they never had such fine vegetables. I have taken several prizes at the Horticultural Shows with them; they are very much admired."

From Mr. William Moore, Gardener, the Rectory, Stoke, October 7, 1852.

"I never had (previous to yours last year) a lot of Seeds which have all turned out so satisfactory."

From Whiteshill Parsonage, Stroud, March 26, 1852.

"I am more than satisfied with the assortment of Seeds you made me, and with the quantity which you sent; and I consider that I have done better by leaving the choice to you than selecting for myself."

From the Hon. S. R. C. Grove House, Tooting, March 22, 1852.

"Your seeds I ought to say are exceedingly good. Indeed, I think it but just to you to bear my best testimony to your liberal and honest mode of conducting your business."

From Brecon, Nov. 6, 1852.

"I beg to offer you my commendations of the Seeds you sent me the two last seasons; nothing could be more true or better."

From Brome Mearns, Glasgow, Nov. 15, 1852.

"The Seeds received last season turned out admirably, all being of first-rate quality."

The Seeds above alluded to are Sutton's Complete Collections for one year's supply, the prices of which are the same as heretofore, viz., No. 1, 2l. 10s.; No. 2, 1l. 10s.; No. 3, 1l. 1s.; and No. 4, 12s. 6d.; but any of the Seeds may be purchased separately if the whole Collection is not required; and they are delivered Carriage Free by Rail, as stated in the printed particulars of the sorts, quantities, and prices of the Seeds contained in each Collection, which may be had, post free, in return for one penny stamp. Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## RANDALL'S PROLIFIC RHUBARB.—

This article is the best of its kind. The stock limited. Year old plants 24s. per dozen; to be had of E. RANDALL, Loughborough Gardens, Brixton, Surrey; J. CUTHILL, Denmark Hill, Camberwell; and the principal Seedsmen in London. Allowance to the trade. Post Office orders made payable on Camberwell Green.

## CHOICE HARDY AND SHOWY FLOWER—

SEEDS.—POST FREE. s. d.

The best sorts of Imported Asters, Zinnias, Stocks, Larkspurs, Marigolds, Phloxes, &c., in complete collections, for a large Garden ... 1 1 0  
Ditto, in smaller quantities, equally choice ... 0 10 6  
Ditto, for a small garden ... 0 7 6  
Hardy sorts only will be sent if the preferred. Instructions for cultivation will accompany the Seeds.

JOHN SUTTON & SONS, Reading, Berks.

## RENDLE'S NEW SEED CATALOGUE is now

ready, and can be had in exchange for one postage stamp. It contains the prices of every article, and should be in the possession of all who have gardens, whether large or small.

Apply to WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

ESTABLISHED MORE THAN HALF A CENTURY.

## CAREY TYSO, FLORIST AND SEEDSMAN, Walling-

ford, Berks, begs to offer the following choice assortments:

\* RANUNCULUSES, 100 superb named vars., 40s. to £4 0 0

\* DOUBLE ANEMONES, 100 splendid named sorts ... 8s., 15s., to 1 0 0

\* CARNATIONS and PICOTEES, 25 select sorts ... 24s. to 1 10 0

\* CHOICE RANUNCULUSES, ANEMONES, and PANSY Seeds ... 35s. to 3 0 0

\* IMPORTED FLOWER SEEDS: Asters, Stocks, Larkspurs, Salpiglossis, Balsams, Zinnias, &c., per named assortment ... 0 2 6

C. Tyso's descriptive priced CATALOGUE for 1853 may be had for two postage stamps; Treatise on "RANUNCULUS," for eight stamps; and Treatise on "ANEMONE," for four stamps. \* These articles can be forwarded per Post.

## NEW GARDEN SEEDS—GROWTH OF 1852.

WILLIAM EDGUMBE RENDLE AND CO., SEED MERCHANTS, Plymouth, have made arrangements to deliver all Orders above £2, Free of Carriage, by Steamers to the following sea-ports:—

LONDON	SOUTHAMPTON
LIVERPOOL	PORTSMOUTH
DUBLIN	FALMOUTH,
BELFAST	AND
LIMERICK	PENZANCE.

Steamers are continually running from the Great Western Docks (within a short distance of our Union Road Establishment), to the above-named ports.

All Seed Orders above £2 will also be delivered Free of Carriage to any Station on the following Railways:—

GREAT WESTERN	SOUTHAMPTON AND
BRISTOL AND BIRMINGHAM	DORCHESTER
BRISTOL AND EXETER	SOUTH WESTERN
	SOUTH DEVON.

Priced Catalogues of all kinds of Seeds can be had on application in exchange for one penny stamp.

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

ESTABLISHED 1786.

## NOTICE.

GEORGE AUSTEN, of Ponthgwidien, Truro, Cornwall, begs to inform his friends, the public, and Melon growers generally, that he has disposed of the whole stock of Seed of his "INCOMPARABLE" Green Flesh Melon (which was exhibited at the London, Truro, and other Exhibitions, and obtained First Prize), to Mr. EDWARD TILLEY, NURSERYMAN, SEEDSMAN, and FLORIST, 14, Abbey Churchyard, Bath, and respectfully refers them to him for Seed, or any particulars connected therewith.

## SUPERB NEW MELON.

### AUSTEN'S "INCOMPARABLE" GREEN-FLESH

is now offered to the notice of the public, and all persons connected with the cultivation of Melons, by EDWARD TILLEY, who has purchased the whole of the seed of this splendid fruit of Mr. Austen, of Truro, Cornwall, and who during the last two years obtained numerous prizes for the same, at the London and other exhibitions, together with many private acknowledgments of its superiority from first-rate judges. Further particulars respecting it will be given in the next paper. Packets of good sound Seeds 2s. 6d.; larger ditto, of 15 seeds, 5s. Penny postage stamps to the amount will suffice for payment.—EDWARD TILLEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

## THE SCARLET SALPICLOT, SALPICLOSS & COCCINEA.

ARTHUR HENDERSON & CO. have the honour

of offering to their friends and customers the seed of this new and beautiful annual. It differs from other Salpiclots most materially in colour, which is here of a clear vivid tender scarlet, charmingly relieved by short veins of a deeper colour. As a garden plant it possesses high claims to distinction, for there are few annuals that equal it. The whole of the seed of this valuable annual has been purchased by A. Henderson & Co., of the celebrated Mr. Burridge, of Colchester, to whom the horticultural world are already indebted for many new and choice seeds; and A. Henderson & Co. will be prepared immediately to send out packets of the seed at 2s. 6d. each.

N.B. This beautiful annual will be found figured in the December number of Sir Joseph Paxton's and Dr. Lindley's "Flower Garden."—Pine Apple Place, Edgeware Road, London.

## PETER LAWSON AND SON'S PRICE LISTS OF

SEEDS, FOREST, FRUIT, and ROSE TREES, are now ready, and may be had on application, or free by post from the Agent, J. C. SOMMERS, 159, Fenchurch Street, London.

## LILIAM LANCIFOLIUM, RANUNCULUSES, AND ANEMONES.

### HENRY GROOM, CLAPHAM RISE, near LONDON,

by Appointment, FLORIST to HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to recommend to the attention of the nobility, gentry, and amateurs, his extensive assortment of the above FLOWERS, which, from the large stock he possesses, he can supply at very moderate prices. His Catalogue will be forwarded by post on application.

## JUDSON'S RICHMOND VILLA BLACK

### HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure

of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine, at 7s. 6d. and 10s. 6d. each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25, 1851.

Pine Apple Place, London.—Jan. 15.

## NEW MELON—THE GOLDEN QUEEN.—

Packets containing Seeds will be sent to all applicants on receipt of postage stamps to the amount of 2s. 6d.—Apply to JOHN TULLY, Gardener, Friend's Retreat, York.

## YUCCA FILAMENTOSA FOL. VAR.—Gentlemen

having good Plants to spare of the above variegated YUCCA, may hear of a purchaser by addressing particulars and prices to C. V. G., at Messrs. G. RAHN & CO.'S, 52, Mark Lane, London.

## TO PINE GROWERS.

WANTED, A QUANTITY OF GOOD PINES, about 2 lbs. weight and upwards; also other choice Garden Produce.—Apply to GEORGE TAYLOR, Fruit Salesman, St. John's Market, Liverpool.

## TO NURSERYMEN.

WANTED, Ten Thousand strong, thrifty, maiden, BLACKTHORN QUICK, suitable for permanent planting.—Communications (free), to be addressed to Mr. CHARLES CLARK, Great Totham Hall, near Witham, Essex.



**THE TWO FINEST CUCUMBERS IN CULTIVATION** ARE "CAPTIVATION" AND "PHENOMENA."—Both are black spines, very handsome, fruit measuring from 24 to 28 inches; a free setter and abundant bearer, always growing a uniform size from stem to point; carries with it a good bloom; colour fine dark green, and free from ribs or shrivels; as Cucumbers for competition they are not yet equalled; both have been exhibited at the first Cucumber shows in England and elsewhere, where they have always been successful. Phenomena is the hardiest long Cucumber, growing with less heat than any other of its length. Sold in packets 2s. 6d. each, warranted good sound Seeds; Lord Keynon's Favourite winter Cucumber, 2s. 6d. per packet. Penny postage stamps to the amount will suffice for payment.—Edward Tiley, Nurserymen and Seedsman, 14, Abbey Church Yard, Bath.

**DOUBLE ITALIAN TUBEROSE ROOTS, 4s.** per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. CORBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

#### AMERICAN NURSERY.

**GEORGE BAKER**, Windlesham, near Bagshot, Surrey, Exhibitor of American Plants at the Royal Botanic Gardens, Regent's Park, begs to inform the nobility and public that he has published a Descriptive CATALOGUE of AMERICAN PLANTS, Conifers, Roses, Ornamental Shrubs, &c. &c., and may be obtained by enclosing two postage stamps. Near Staines Station, Windsor Branch, South-Western Railway.

#### NEW WHITE BROCCOLI—"DILCOCK'S BRIDE."

**BAINBRIDGE** and **HEWISON** beg to announce that they have purchased of Mr. Dilcock the entire stock of the above, which is a Broccoli of the highest merit, surpassing every other (even the far-famed "Mammoth") as the following will testify. It has been sold in the York market at 1s. per head.

"York Horticultural Society, June 18, 1852."

"In reply to your enquiries I find 'Dilcock's Bride Broccoli' was awarded first and third prizes 1850; first, second, and third, 1851; and first, second, and third in the present year. It ought to be grown by every gentleman's gardener, especially where any are grown for competition. Market gardeners also will find it to their profit to possess it.—Yours truly,

R. DEARNEY, Hon. Secretary."

The seed can be procured wholesale of themselves at York; or of Messrs. Noble, Cooper, and Bolton, 152, Fleet Street, London; or Messrs. Charlwood and Cummins, Covent Garden, London; and retail of all the principal seedsmen throughout the country, in sealed packets containing 1300 seeds at 2s. 6d. each.—Hope Nursery, York.

**THE GREEN-GAGE MELON.**—The raiser of this superb variety of Melon begs to intimate that the following Nurserymen are now prepared to supply seeds of it:—Messrs. Knight & Perry, King's Road, Chelsea; Messrs. Henderson, Pine Apple Place, London; Mr. Stark, 1 Hope Street, Edinburgh; Mr. Cutbush, Barnet (Herts); Mr. Gaines, Battersea, London; Messrs. Lane & Son, Great Berkhamstead (Herts); Messrs. Paul & Son, Cheshunt (Herts).

Mr. Maroon, the Editor of the *Gardener's Journal*, after speaking of the excellence of other fruits exhibited at the Royal Botanic Society's Exhibition of June 9th, makes the following remarks regarding this Melon in his leading article of June 12th, 1852:—"The green-fleshed Melon, which gained the first prize, was one of the best we ever tasted."

#### GREAT SALE OF ORNAMENTAL PLANTS AND FOREST TREES.

**THE TRUSTEE ON THE SEQUESTERED ESTATE OF THOMAS LANG**, Nurseryman, Kilmarnock, has instructions to sell off, within a limited time, the whole of his large and varied Stock of Forest and Ornamental Trees, Shrubs, Evergreens, Greenhouse Plants, &c.

The Stock has been pronounced, by the most competent judges, to be complete and in most excellent order, and it will be offered at very low prices.

The rate of carriage, per luggage train, on large lots, from Kilmarnock to London, is now only 40s. per ton.

The following are the quantities of some leading articles:—  
Larch, transplanted, very fine ... 230,000  
Scotch Fir, transplanted, very fine ... 170,000  
Thorn, transplanted, very fine ... 250,000  
Beech, transplanted, very fine ... 70,000  
Portugal Laurel, twice transplanted ... 10,000  
Apple-trees, a very select assortment ... 2,500  
Pear-trees, a first-rate selection ... 1,000  
Trained Fruit-trees, very healthy and fine ... 1,000  
Gooseberries, all the leading sorts ... 10,000

#### BEAUTIFUL NEW WEEPING WILLOW.

The Trustee is prepared to send out good Plants of *Salix caprea pendula*, or Kilmarnock Weeping Willow. This Willow being indigenous, is quite hardy, and is the most pendulous of all Weeping Trees cultivated in this country. It has large broad glossy leaves, which, in spring, are preceded by a profusion of gold-coloured catkins, rendering it at that season a most singular and beautiful ornament to the pleasure ground.

Furnished Plants ... 3s. 6d. each.  
Grafted on tall stems ... 10s. 6d. "

Furnished Plants may also be procured from the following nurserymen:—T. Rivers, Sawbridgeworth; W. Wood & Sons, Maresfield; A. Paul & Sons, Cheshunt; Dicksons & Co., Edinburgh; R. M. Stark, Edinburgh; Dickson and Turnbull, Perth; Rowden Brothers, Inverness; Austin and Maclean, Glasgow; H. Walker, Londonderry; R. Pennessy and Son, Waterford.

Communications to be addressed to Mr. JOHN DICKIE (of Alex. Forbids & Co., Seedsmen), Kilmarnock, Trustee on the Estate; and a list may be had on application.

Kilmarnock, Jan. 15, 1853.

#### COLE'S SUPERB CRYSTAL WHITE CELERY.

**WM. COLE**, Dartford, Kent, begs to inform his friends and the public that he is ready to send out a new White Celery, which he has every confidence in recommending as being decidedly superior to his Superb Dwarf Red, sent out, with universal satisfaction, three years back. The Crystal White is a dwarf kind, rarely exceeding (under the best management) 18 inches in height; it is very solid, crisp, and fine flavoured, and if sown at the same time as the red variety, will come into use a month earlier, and continue good a month later. It has been seen by some of the first gardeners in the country, and pronounced to be a superior article. It may be obtained of W. C., as above, or from the following agents, at 2s. 6d. per packet, free by post:—

London: Messrs. Hurst and M'Mullen, Leadenhall Street; Messrs. Dawe, Cottrell, and Benham, Moorgate Street; Messrs. Munier & Co., 60, Strand; Mr. Duncan Hairs, St. Martin's Lane, Charing Cross; Mr. Denyer, Gracechurch Street; Messrs. A. Henderson & Co., Pine Apple Place—Messrs. Garway, Mayes, & Co., Bristol; Mr. Bunyard, Maidstone; Mr. Turner, Slough; Messrs. Downie and Laird, Edinburgh; Messrs. F. and J. Dickson, Chester; Messrs. T. and J. Dickson, Manchester; Messrs. J. and J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Veitch and Son, Exeter; Messrs. Finney & Co., Gateshead; Mr. A. Pontey, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Messrs. Lumcombe, Pince, & Co., Exeter.

## GLASS.

### JAMES PHILLIPS AND CO.,

#### GLASS MERCHANTS.

**HARTLEY'S PATENT ROUGH PLATE GLASS, FOR CONSERVATORIES AND GREENHOUSES, CROWN GLASS FOR DWELLINGS, ETC.**

116, BISHOPSGATE STREET, WITHOUT, LONDON.

**HORTICULTURAL GLASS.**  
Packed in crates, containing about 300 feet, and in Sheets about 40 inches long by 30 inches wide.

13 oz. to the foot	...	...	...	0s. 2½d.
16 oz. "	...	...	...	0 2½
21 oz. "	...	...	...	0 4

Packed in Boxes of 100 feet.  
6 by 4 or 6½ by 4½ ... 13s. 0d. 7 by 5 or 7½ by 5½ ... £0 15 0  
8 by 6 or 8½ by 6½ ... 17s. 6d. 9 by 7 or 10 by 8 ... 1 0 0

Cut to size. Squares not above 40 inches long.  
16 oz. ... per foot 0s. 2½d. to 0s. 3½d.  
21 oz. ... " 0 3½ to 0 5  
26 oz. ... " 0 5 to 0 8

Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental and Coloured, as well as every description of Window Glass now manufactured.

#### GLASS SHADES, ROUND, OVAL, AND SQUARE, FOR CLOCKS AND ORNAMENTS.

**CROWN WINDOW GLASS.**—In crates of 18 tables.  
Best ... £6 15s. 0d. Fourths ... £3 3s. 0d.  
Seconds ... 5 17 0 C.C. ... 2 12 0  
Thirds ... 4 16 0 Coarse ... 2 6 0

Double Crown the same price per crate, packed in 12 tables. Subject to the usual discount for cash.—Squares cut to order.

**CROWN GLASS.**—In 100 feet boxes.  
6 by 4 or 6½ by 4½ ... 11s. 6d. 7 by 5 or 7½ by 5½ ... 12s. 6d.  
8 by 6 or 8½ by 6½ ... 13s. 6d. 9 by 7 or 10 by 8 ... 15s. 0d.

**HARTLEY'S ROUGH PLATE.**—In boxes of 50 feet each.  
6 by 4 or 6½ by 4½ ... 10s. 6d. 7 by 5 or 7½ by 5½ ... 12s. 0d.  
8 by 6 or 8½ by 6½ ... 13s. 6d. 9 by 7 or 10 by 8 ... 15s. 0d.

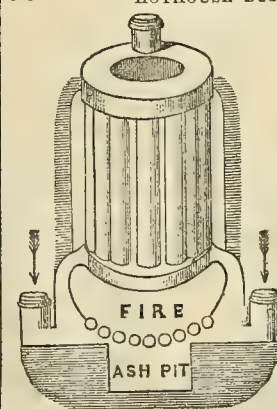
Plate Glass, Patent Plate, Plain, Ornamental and Coloured, as well as every description of Window Glass now manufactured.



#### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

TUBULAR BOILERS OF ALL SIZES, WARRANTED THE MOST EFFICIENT.

**J. WEEKS AND CO., KING'S ROAD, CHELSEA, HOTHOUSE BUILDERS.**

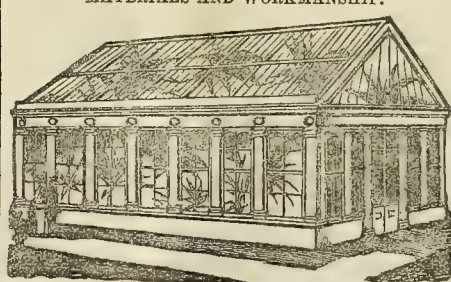


warms the water of their Victoria Regia Tank, which contains Twenty Thousand Gallons, and also Heats several large Forcing-houses and ranges of Pits, with a small consumption of fuel.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. **J. WEEKS & Co., King's Road, Chelsea, London.**

#### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON, Danvers Street, Chelsea,**

London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

#### WATERPROOF PATHS.—Those who would enjoy

their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, **J. B. WHITE & BROTHERS, Millbank Street, Westminster.**

#### HORTICULTURAL GLASS

OF EVERY DESCRIPTION.

#### THOMAS MILLINGTON'S WAREHOUSE,

87, BISHOPSGATE STREET WITHOUT,

LONDON.

#### GLASS FOR CONSERVATORIES, ETC.

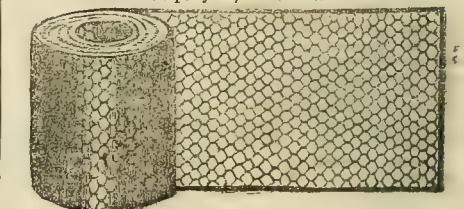
**HETLEY AND CO.** supply 16-oz. SHEET GLASS of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES AND SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

#### GALVANISED WIRE GAME NETTING.—

7d. per yard, 2 feet wide.



	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	" 9 "	6½ "
2-inch " extra strong "	" 12 "	9 "
1½-inch " light "	" 8 "	6 "
1½-inch " strong "	" 10 "	8 "
1½-inch " extra strong "	" 14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by **BARBARD & BISHOP**, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

#### CUCUMBER AND MELON BOXES

and LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes, ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1d. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in being the counties in England.—**JAS. WATTS, Hothouse Builder, Clarendon Place, Old Kent Road, London.**

#### THE COMFORT OF A FIXED WATER-CLOSET

for £1.—Places in gardens converted into comfortable water-closets by the PATENT HERMETICALLY-SEALED PAN, with its self-acting water-trap valve, entirely preventing the return of effluvia. Price 17. Any carpenter can fix it in two hours. Indispensable for health in case of cholera. Also Patent Hermetically-sealed Inodorious Commodes for the sick room, price 11. 4s., 2l. 6s., and 3l. A prospectus with engravings forwarded by enclosing a postage stamp, at FIFE & Co's, 26, Tavistock Street, Covent Garden, London.

#### THE WET WEATHER.

**BERDOE'S VENTILATING WATERPROOF LIGHT OVER COATS** are the best, and perfectly unobjectionable protection, as they effectually resist any amount of rain, without confining perspiration, the fatal objection to all other waterproofs, as so many have found to their cost, all air-tight materials being utterly unfit and dangerous for clothing. These garments are thoroughly respectable, and adapted for general use at all times, equally as for rainy weather. Price 4s. Waterproof Over Coats, Capes, &c., of every description, one of the largest stocks in London for Selection. Also the Patent Reversible Fur Beaver Over Coats, &c.

W. BERDOE, 36, New Bond Street, and 63, Cornhill (only).

#### SHIRTS.—FORD'S EUREKA SHIRTS are not

sold by any hosiers or drapers, and can therefore be obtained only at 38, Poultry. Gentlemen in the country or abroad, ordering through their agents, are requested to observe on the interior of the collar-band the stamp—"Ford's Eureka Shirts, 38, Poultry"—without which none are genuine. They are made in two qualities, the first of which is 40s. the half-dozen, and the second quality 30s. the half-dozen. Gentlemen who are desirous of purchasing shirts in the very best manner in which they can be made, are solicited to inspect these, the most unique and only perfect-fitting shirts. List of prices, and instructions for measurement, post free.—**RICHARD FORD, 38, Poultry, London.**



## TO PURCHASERS OF SEEDS.

**SUTTON'S PRICED CATALOGUE OF ALL THE BEST SORTS OF SEEDS IN CULTIVATION**, contains the particulars of the sorts and quantities contained in "Sutton's Complete Collections for One Year's Supply," and should be seen by all who intend purchasing seeds. The prices of the Collections are the same as last year, viz., 2s. 10s., 1l. 10s., 1l. 1s., and 13s. 6d.—Address, JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

**ARTHUR HENDERSON and Co.** beg leave to inform their patrons and friends that their stock of Vegetable and Flower Seeds (containing many choice and new kinds) is now ready for sending out.

Their Seeds may be fully relied on as being in every respect of first-rate quality, and true to their sorts. Catalogues may be had on application.

Pine Apple Place, Edgeware Road, London.

## AGRICULTURAL SEEDS.

**FLOWER SEEDS, AND SEEDS FOR THE KITCHEN GARDEN**, Delivered Carriage free by Railway.

**J. C. WHEELER and SON, SEEDSMEN TO THE** GLOUCESTERSHIRE AGRICULTURAL SOCIETY, beg to state that their new Seed List for this season will be forwarded free by post on receipt of one postage stamp.

To those desirous of buying the best varieties in cultivation, their List will be found extremely useful.

J. C. WHEELER & SON, Seedsmen, Gloucester.

## NEW ROSES.

**PRINCE ALBERT (PAUL'S)**; the finest Bourbon Rose yet raised. Colour of the richest scarlet crimson, outline a perfect circle; a robust but compact grower, and most abundant bloomer. Strong Standards, 10s. 6d. each. (Figured in "Turner's Florist" for Nov. 1852.)

**QUEEN VICTORIA (PAUL'S)**; an entirely new style of Hybrid Perpetual Rose, of the colour of the Celestial, white, shaded with the softest peach, large and full as "La Reine." Strong plants, Standards, 7s. 6d. each; Dwarf, 5s. (Figured in the "Florist," Oct. 1851.)

**ROBERT BURNS (PAUL'S)**; Hybrid Perpetual, light vivid carmine, colour of Chénédolé, a good autumnal climbing Rose, and one of the latest bloomers. Dwarf Standards, 3s. 6d. each.

\* \* \* The above have received first-class certificates from the National Floricultural Society, and have been admired and purchased by many of the leading Nurserymen and Amateurs.

The Subscribers also beg to offer—

12 Standard Roses, superior varieties and fine plants, for 18s.  
12 Dwarf Standard, or Dwarf do. do. do. 12s.  
12 Hybrid Perpetual and Tea Roses, extra size for forcing, 18s.

Weeping Roses for lawns, handsome specimens, 3s. 6d. each. A fine stock of all the leading sorts, Standards and Dwarf, still on hand. Carriage free to London. Priced Descriptive Catalogues free by post on application.

A. PAUL & SON, Nurserymen, &c., Cheshunt, Herts, near London.

## NEW HOLLYHOCKS.

**CRIMSON PERFECTION (PAUL'S)**; rich bright crimson, good shape, splendid spike, and rather dwarf habit, a fine show flower; 7s. 6d. each.

**CROCEA (PAUL'S)**; buff and yellow, a bold flower of a distinct and desirable colour; large and full; 5s. each.

**ENCHANTRESS MAJOR (PAUL'S)**; deep rose, superb form, larger, darker, and finer spike than the old variety, and decidedly a first-rate show flower; 2s. 6d. each.

**FIREBALL SUPERB (PAUL'S)**; brilliant rosy crimson, larger, brighter, more double than the original, and with a finer spike; 2s. 6d. each.

**MRS. TAIT IMPROVED (PAUL'S)**; large peach, soft and pleasing colour, and most desirable for its novelty and beauty; 2s. 6d. each.

**SHYLOCK (PAUL'S)**; one of the deepest and richest scarlet crimson, and a good show flower; 5s. each.

The Subscribers, who obtained during the past year the Silver Cup for Hollyhocks at the Edinburgh Grand Open Show,—Four first Prizes from the Royal South London Floricultural Society,—Two first-class Certificates from the National Floricultural Society, and numerous other prizes, beg to offer—

12 First-rate and distinct Hollyhocks, show varieties, for 30s.  
12 Superior do. do. do. 18s.  
12 Good do. do. do. 12s.  
100 Good mixtures for Borders do. do. 30s.

CARRIAGE FREE TO LONDON. Priced descriptive Catalogue free by post.

A. PAUL & SON, Nurserymen, &c., Cheshunt, Herts, near London.

## BEDFORD ROAD NURSERY, NORTHAMPTON.

**JOHN PERKINS** respectfully invites attention to the following:—

Laurestinus, fine bushy plants	1, 2, and 3 ft.
Portugal Laurel	1, 2, 3, and 4 ft.
Common Laurel	1, 2, and 3 ft.
Irish Yew	2, 3, and 4 ft.
Common Yew	2, 3, and 4 ft.
Chinese Arbor-vitæ	2, 3, and 4 ft.
Siberian ditto	2, 3, and 4 ft.
American	2, 3, and 4 ft.
Arbutus Unedo	1, 2, and 3 ft.
Red Cedars	1 and 2 ft.
Aucuba japonica	1 and 2 ft.
Juniperus recurva	1, 2, and 3 ft.
Cupressus macrocarpa	2, 3, and 4 ft.
Pinus Combra	1 and 2 ft.
— excelsa	1 and 2 ft.
— canadensis	2, 3, and 4 ft.
Abies morinda	2 and 3 ft.
Green Box	for covers 1, 2, and 3 ft.
Berberis aquifolium	1 and 2 ft.
— — 2 years seedling	"
— — — — —	1, 2, and 3 ft.
Cotoneaster microphylla	1 and 2 ft.
Privet	12 to 2 ft.

A large quantity of 3 years white sweet-scented Clematis. Standard Ornamental Trees, such as Lime, Beech, Horse and Spanish Chestnut, Sycamore, Birch, Poplars, Elms, Scotch; ditto English and New Jersey.

## FOREST TREES.

A large quantity of fine Larch Fir	2, 3, and 4 ft.
— Spruce Fir	2, 3, and 4 ft.
— (fine for filling up woods)	6 and 7 ft.
Scotch Fir	12 to 2 ft.
Silver	2, 3, and 4 ft.
Balm of Gilead	3, 4, 5, and 6 ft.
Ash	2, 3, and 4 ft.
Beech	2 to 3 ft.
Alder	2 to 3 ft.
Turkey Oak	4 to 5 ft.
Birch	2 to 3 ft.
Horse and Spanish Chestnut	3 to 4 ft.
Ky-cypress	3, 4, 5, and 6 ft.

White Thorn or Quick, a large quantity. Fruit Trees, Standard Cherries, very fine dwarf-trained Peach, Gooseberries, and Blackberry Raspberries; fine collection of Standard Roses. All the above are well rooted and of first-rate quality.

Prices forwarded on application.

## ONE YEAR SEEDLING CEDRUS DEODARA.

**MAULE and SONS** beg to call attention to their large supply of CEDRUS DEODARA, and are now enabled to offer fine one year Seedlings, grown in the open ground, at 25s. per 100, or 10l. per 1000; together with sizes of various ages—6 to 9 inches, 1 foot, 1 to 1½ foot, 1½ to 2 feet, 2 to 3 feet, and 3 to 4 feet. All of which are grown in suitable sized pots, prices of which will be forwarded on application.

These are magnificent plants, well suited for specimens for Lawns, Parks, or Avenue planting. May be had grown either in or out of pots.

The Nurseries, Stapleton Road, Bristol.

## TO AGRICULTURISTS AND HORTICULTURISTS.

**THE SUBSCRIBERS** have a few Tons of POTATOES, the produce of their prepared cuttings, to spare.—York Regents, 6s.; American Native, 6s.; Cambridge Radical, 6s.; Soden's Early Oxford, 8s.; True Ash-leaved Kidney, 8s.; and Early Ebrington Kidney, at 10s. per bushel, all in first-rate condition.

They have also still a few of their celebrated Early No. 1 Pea, 2s. 6d. per quart, and Prince of Wales Early Scarlet Rhubarb, 5s. each.—Post Office orders to be made payable at the Borough Post Office to the firm of HAY, SANGSTER, & Co., Newington Butts, London.

## HOP SEED FOR EXPORTATION.

**W. J. EPPS** begs to state that he has carefully selected a quantity of well ripened Seed from the finest kinds cultivated in Kent, which may be had packed in tin cases from 10s. 6d. and upwards.—Seed Establishment, Maidstone and Ashford.

## NEW SEEDS—GROWTH OF 1852.

## THE WESTERN SEED ESTABLISHMENT.

**WILLIAM E. RENDLE and CO., SEED MERCHANTS**, Plymouth, have much pleasure in stating that they have this season a fine and well-selected Stock of all kinds of KITCHEN GARDEN and FLOWER SEEDS in the best possible condition, harvested by themselves and by Growers of high reputation.

In consequence of the unfavourable weather for ripening seeds during the past autumn, the stocks of some sorts of seeds are very small, and the prices in the trade consequently much higher, yet we shall not make any corresponding advance, but supply all kinds of Kitchen Garden and Flower Seeds on the same terms as last year.

OUR NEW SEED CATALOGUE is NOW READY, and can be had in exchange for one penny stamp. It contains prices of every article, and will be found very useful to all who have Gardens.

## COLLECTIONS OF GARDEN SEEDS.

Our Collections have given the greatest satisfaction to all who have received them; and we have the greatest confidence in highly recommending them. They are supplied on the following terms:

- No. 1. Complete Collection for a large garden for one £ s. d.  
year's supply, including 20 quarts of Peas, 11 quarts of Beans, 14 ounces of Onion, eight sorts of Cabbages, seven sorts of Broccoli, seven sorts of Lettuce, and full quantities of Beet, Brussels Sprouts, Carrot, Savoy, Cauliflower, Leek, Colewort, Spinach, Radish, Turnip, Herbs, Cucumber, Melon, Endive, and other useful vegetables, for ... .. 2 10 0  
No. 2. Complete Collection in smaller quantities ... .. 1 10 0  
No. 3. do. do. do. ... .. 1 0 0  
No. 4. do. do. do. ... .. 0 12 6

The full quantities sent in each Collection are stated in the PRICE CURRENT.

RENDLE'S PRICE CURRENT and GARDEN DIRECTORY.—A few Copies of this useful work still remain on hand. A Copy will be sent free by post in exchange for six penny stamps.

All orders for Seeds above 2l. (excepting heavy articles, as Grain, Tares, Clover, &c.), will be delivered Free of Carriage to any Station on the following Railways:—

Great Western ... .. Bristol and Exeter  
Bristol and Birmingham ... .. South-Western  
Southampton and Dorchester ... .. South Devon,  
Or to any Market Town in Devon and Cornwall, or to Cork, Dublin, and Belfast by Steamers.

The Terminus and principal Station on the South Devon Railway is close to our Union Road Establishment, so that we now enjoy direct Railway Communication to all the principal Towns in England, Scotland, and Wales. Our Premises are also within five minutes' walk of the Great Western Docks, from whence steamers are continually running to Cork, Dublin, Belfast, Glasgow, London Falmouth, and most of the principal Ports in the Kingdom.

The Cape, Australian, and Chinese Mail Packets leave this Port every fortnight.

All Goods not thoroughly approved of immediately exchanged; and it is particularly requested that any deficiency in quantities, or inattention to orders, be immediately communicated to us.

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.  
ESTABLISHED 1788.

## The Gardeners' Chronicle.

SATURDAY, JANUARY 15, 1853.

## MEETINGS FOR THE ENSUING WEEK.

MONDAY, Jan. 17	Chemical	8 P.M.
	Statistical	8 P.M.
	Horticultural	2 P.M.
TUESDAY, — 18	Linnean	8 P.M.
	Civil Engineers	8 P.M.
	Pathological	8 P.M.
WEDNESDAY, — 19	London Institution	7 P.M.
	Society of Arts	8 P.M.
	Geological	8 P.M.
THURSDAY, — 20	Antiquarian	8 P.M.
	Royal	8 P.M.
FRIDAY, — 21	Loyal Institution	8 P.M.
	Royal Botanic	8 P.M.
SATURDAY, — 22	Medical	8 P.M.

It is a prevalent notion that the climate of this country has altered: the winters, and more especially the months of December and January, being now much milder than they were in the end of the last, and beginning of the present century. Mr. KNIGHT was of opinion that the winters 70 years ago were much more severe than they had been for some time previous to his writing the following remarks, in 1829, *Horticultural Transactions*, Vol. VII., p. 536:—"There are, I believe, few persons who have noticed, and who can recollect, the state of the climate of England half a century ago, who will not be found to agree in the opinion that considerable changes have taken place in it; and that our winters are now generally warmer than they were at that period [1779]. The opinion of such persons would be entitled to very little attention if they were adduced to prove that our

climate has grown colder, because they themselves, being far advanced in life, and therefore less patient of cold, and being also incapable of bearing the same degree of exercise which kept them warm in youth, might be readily drawn to conclude that the severity of our winters has increased. But when their evidence tends to prove that our winters have become warmer, it cannot, I think, be reasonably rejected. My own habits and pursuits, from a very early period of my life to the present time, have led me to expose myself much to the weather in all seasons of the year, and under all circumstances, and no doubt whatever remains in my mind, but that our winters are, generally, a good deal less severe than formerly."

In order to arrive at a more definite conclusion on the subject, the following table has been prepared from the mean monthly temperatures of 80 years, including the period from 1771 to 1851. It would have been desirable to have had the means deduced from one uniform series of observations in the same locality; but such cannot be found in this country. It was therefore necessary to refer to the observations made by Mr. BARKER, at Lyndon, for the years from 1771 to 1793; from this to 1825, to HOWARD'S "Climate of London;" and to the Chiswick observations from 1826 to 1851.

MEAN TEMPERATURE OF NOVEMBER, DECEMBER, JANUARY, AND FEBRUARY, for periods of every Ten Years, from 1771 to 1851:

	Nov.	Dec.	Jan.	Feb.	Average
1771 to 1781	...	40.80	38.10	35.62	37.90
1781 to 1791	...	40.12	36.62	36.92	37.95
1791 to 1801	...	45.56	37.58	37.03	39.28
1801 to 1811	...	43.05	39.78	36.77	40.28
Mean ...	...	41.88	38.02	36.06	38.77
1811 to 1821	...	41.84	36.88	35.22	38.30
1821 to 1831	...	43.90	40.23	35.06	40.24
1831 to 1841	...	43.54	39.77	37.43	39.63
1841 to 1851	...	43.50	39.15	37.36	38.93
Mean of 40 winters, 1811 to 1851	...	43.19	39.01	36.27	39.27
Mean of 40 winters, 1771 to 1811	...	41.88	38.02	36.06	38.77
Apparent difference in favour of the last 40 years	...	1.31	0.99	0.21	0.50
Average of 80 years, 1771 to 1851	...	42.54	38.51	36.16	39.02

From this table it appears that the average temperature of the winters in the period of 40 years, from 1811 to 1851 was only three-quarters of a degree warmer than that of the winters in the period of 40 years, from 1771 to 1811. This difference may be fairly attributed to the circumstance of Lyndon being situated a degree to the north of London, and higher than the neighbourhood of the latter above the level of the sea. The respective average temperatures of the winters in the two 40-year periods may therefore be considered equal.

But while this general equalisation of temperature between the two periods must be admitted, according to the figures, it becomes necessary to examine the respective decades more in detail; for it is not likely that men, such as Mr. KNIGHT, accustomed to observe the effects of seasons on vegetation, would be deceived in their recollections of severe winters.

It will be observed that the mean temperature of these four months, November, December, January, and February, for the whole period of 80 years, is 39.06°. Two successive decades, namely from 1771 to 1781, and from 1781 to 1791, were below the average; but only one decade, that from 1811 to 1821, was below the average in the last 40 years. Again, on comparing the respective mean temperatures of each winter of the 80 years with the average, it is found that the

Between 1771 and 1781 were 8	Between 1811 and 1821 were 7
" 1781 and 1791 " 7	" 1821 and 1831 " 3
" 1791 and 1801 " 4	" 1831 and 1841 " 3
" 1801 and 1811 " 4	" 1841 and 1851 " 4
23	17

From this it appears that 15 winters out of the 20, between 1771 and 1791, were severe; and that only 17 out of 40 winters, between 1811 and 1851, had that character, or little more than half. The prevalence of numerous very cold winters is thus traced to the period between 1771 and 1791. The winter is severe when the mean of the four months, from November to February inclusive, is below 36°. Nine such occurred in the 80 years, and five of them between 1775 and 1795, or more than half in the earliest 20 years.

With regard to the months of December and January, it may be briefly stated, that the former of these is reckoned unusually cold when its mean temperature is at or below the freezing point; and there were only five instances of this in the period of 80 years, three of which occurred between 1784 and 1796, and the other two in 1840 and 1846. January is intensely cold when its mean temperature is below 30°. There are six instances of such



in the 80 years, four between 1776 and 1795, and only two in the present century—namely, in 1814 and 1838. The latter will be well remembered, for, under its influence, plants perished that had withstood all the other extremely cold Januaries, even those of which the mean temperature was still lower than that of 1838, the mean of which was 27.79°; while that of January, 1814, was 26.71°, and of January, 1795, 26.75°.

From what has been stated, and by reference to the table, it is evident that severe winters were unusually prevalent between 1771 and 1791: that in the first 10 years of that period the months of January were excessively cold; that the next 10 years the winters maintained fully an average temperature; that those of the next 10 years were still warmer; between 1811 and 1821 they fell below the average; but since that time they have been generally above it.

We rejoice exceedingly that after so many years of the most disinterested devotion to a branch of botany which had been previously much neglected in France, Dr. MONTAGNE has been elected a member of the French Academy, by a majority of 56 out of 58 votes, into the place vacated by the death of M. RICHARD. Dr. MONTAGNE at a very early age served with the French army in Egypt under NAPOLEON, and on his retiring from the service on half-pay as Chirurgion-Major many years afterwards, he settled at Paris, where he has since devoted almost his whole time without intermission to cryptogamic botany. His original *penchant* was towards philology; but having already acquired a taste for botany during

the course of a very active life, he found, on settling at Paris, that the cryptogamic collections formed by travellers were for the most part sent to botanists of other countries for determination. This circumstance induced him to apply to the study of these obscure but most interesting plants, and one of the first results of his researches was a great portion of the volume on Cryptogamia in BELANGER's "Voyage." Besides his larger works, such as the "Cryptogames of Cuba, Algeria, Chili, &c.," his separate memoirs are so numerous that a mere list would fill many pages. One of the most important memoirs which he presented to the Academy was one on the structure of the Hymenium of Agaricus, of which he was perhaps the first to figure the real structure, though scarcely at the time aware of the importance of his discovery. His memoir, from accidental circumstances, was not published as at first proposed; and after the observations of LÉVEILLÉ, PÆRUS, and others, the season for publication was gone by, and he consequently lost for the moment the credit to which he was justly entitled. As associated with the Board of Agriculture he has of late paid much attention to the diseases of cultivated plants, and his active spirit is such that we are sure that the accession to that post, which is the great object of ambition of every follower of science in France, will only stimulate him to pursue with greater zeal the objects of study in which he is so usefully engaged.

No country can now boast a larger number of accurate and acute cryptogamists than France, amongst whom it is sufficient to mention TULASNE and THURET, and it may be asserted safely that far the greater part of the botanists who have so successfully cultivated this branch of science in that country acquired their taste from our venerable friend. We cannot close this short notice without observing that Dr. MONTAGNE is by no means a mere botanist, but a most accomplished scholar, and one of the kindest-hearted creatures in this chequered world.

#### SIMPLE OBLIQUE TRAINING.

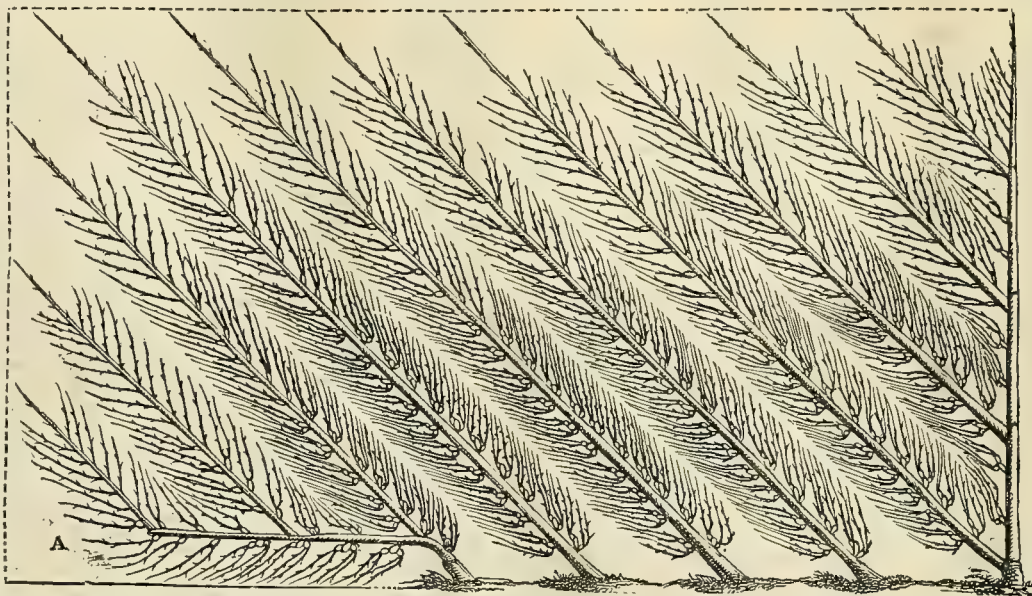
The Peach trees (for this plan is only applicable to them) are planted obliquely at a distance of 34 inches from each other, and so that, the stems being inclined at an angle of 45°, the perpendicular distance between any two of them which are adjacent may be 2 feet. At the first pruning, the stem is cut at about 20 inches from the graft, and during the following summer the shoots

which make their appearance are so managed that an elongation is obtained only at the top, whilst fruit-branches are produced on the two sides. The next year the length of the new growth is left at from 2 feet 4 inches to 3 feet, according to the strength of the tree, and the fruit-branches are treated in the ordinary way. The stem of each tree is thus made to elongate continually, in the line of inclination, until the top of the wall is reached. The tree is then completely formed, and consists of one single stem inclined at an angle of 45°, and bearing nothing but fruit-branches.

Fear might be entertained lest the sap, being confined to a single stem, should cause the lateral buds to develop too vigorously to admit of the formation of flower-buds. But this action of the sap being proportional to the quantity of the roots, and these being confined by their proximity to each other, the vigour of the trees does not become excessive. The walls against which trees are thus trained should not be less than 10 feet in height, otherwise the trees will, notwithstanding their inclination, be too confined to fruit well.

In order that empty spaces may not be left on the wall, it is necessary, as appears from the figure, to begin the series of trees to the right, with a half horizontal, and to end, to the left, with a tree bearing a horizontal principal branch A, which itself must bear secondary branches inclined at an angle of 45°. This principal branch is, in fact, nothing but the original stem of the tree gradually brought down, and upon which the secondary branches have been allowed to develop, beginning with those farthest from the stock.

Let us now see whether this arrangement does or does not possess the advantages we ascribe to it. And first, inasmuch as the successive elongations of each stem when pruned are on the average 32 inches in length, it cannot take more than six years at most to cover a wall 10 feet in height, since the stems inclined at an angle of



45° are at the end of that time upwards of 16 feet long. Five years, then, at least are gained by the above method, which cannot be gained by any of the others, and most of the inconveniences attributed to them are at once avoided by this. If one of the trees should die, another may be put in its place, and the empty space is soon re-filled. Lastly, this form of training is very easily accomplished, and the regular inclination of the stems renders the means of equally distributing the action of the sap extremely simple.

As to the productiveness and longevity of trees thus trained, we are perfectly satisfied, both by those which were planted by us 10 years ago in the Garden of Plants at Rouen, and by others since planted in the environs of Paris, and all of which are quite equal to those treated in the ordinary way, that in this respect the above plan is inferior to none. The plan can only be followed in the case of Peach trees. *Journal of Horticultural Society, extracted from the Revue Horticole.*

#### THE CHIRONIA.

SOME of the species of this genus, as *grandiflora*, *glutinosa*, and *decussata* for instance, are excellent subjects for the decoration of the greenhouse during the summer and autumn months, when the greater number of such structures are not over filled with handsome plants. All the sorts are easily induced to form compact, large-sized specimens; and when well managed, they become literally covered with bright-coloured flowers, which keep gay for months together.

Young plants will be found to form the finest specimens, and therefore a good stock of them should be kept up by annual propagation. For cuttings, select strong, short-jointed, rather firm bits of young wood, as early in the season as they can be obtained. Plant in light, sandy soil, under the protection of a bell-glass, and plunge the pot in a mild bottom heat. As soon as the cuttings make a little growth, they will be sufficiently rooted to bear potting singly in 4-inch pots. After potting, place them in a rather warm, moist situation, till they have become

established in their pots. After this, the best situation during the remainder of the growing season will be a pit which can be kept sufficiently close and moist to promote rapid growth, and where light and air can be afforded to prevent the production of weakly shoots. Shift into larger pots as may be necessary, and keep the plants regularly pinched back, and pegged down, or tied out, so as to secure a compact bushy habit; and maintain a moist atmosphere till about the middle of September, when they should be prepared for winter by full exposure to sunshine, and a free circulation of air on every favourable occasion. When the weather becomes cold and damp remove the young specimens to an airy situation near the glass in the greenhouse. Give no more water to the soil during winter than may be required to maintain it in a healthy condition, and admit air freely during mild days, but avoid cold drying currents. By propagating early, keeping the plants growing as rapidly as possible till late in autumn, and starting them into growth early the following spring, they will form nice moderate sized specimens for flowering late in summer and autumn; but if very large examples are wished it will be expedient to grow plants a second season before allowing them to flower; and in this case it will not be necessary to start them into growth so early in spring as when they are intended to form flowering specimens the same season. With good management from the first, and an early start, nice plants in 10-inch pots may be obtained in time for flowering the second season. To effect this place them in a light airy situation, close to the glass, early in February, or as soon after as circumstances will admit of a moist temperature of about 50° or 55° being maintained. When growth commences give a liberal shift, and, as I have already stated, attend to the formation of well-shaped specimens by stopping and training the shoots, as may be required.

Water must be carefully administered for some time after potting, but when the roots strike into the fresh soil, and the plants commence to push vigorously, a liberal supply will be necessary, and clear manure water from the stable or farm-yard tank, diluted with an equal quantity of clean water, may be given frequently. Stopping should not be practised after the middle of May, or the plants will be late in flowering, as blossoms are not freely produced till the wood becomes rather firm. And when the shoots produced, after the final stopping, are from 4 to 6 inches long, the plants should be removed to the warm end of the greenhouse, or to a cold frame, and gradually accustomed

to a free circulation of air, full exposure to sunshine, and a rather dry atmosphere, which will check growth and hasten the production of flowers. While in blossom, give a liberal supply of water to the soil, and avoid exposing the plants to cold drying currents of air. When the beauty of the specimens is over for the season, they may be rather closely pruned and removed to a light airy part of the greenhouse, for the winter; and if repotted in spring, and treated the following season as just directed for last, they will form very large specimens, and this in time to be in full beauty in June or early in July. But after flowering this time it is hardly advisable to retain the plants in hope of their being farther useful, for they seldom prove of much further value, and unless watered with great care during autumn and winter they become a certain source of disappointment. This, however, need be the cause of no regret, inasmuch as young plants are easily propagated, requiring but little care; and as these form nice useful sized specimens, the plants that have flowered in large pots may be thrown to the rubbish heap as soon as their beauty is over.

A rich light porous soil is essential for the successful culture of the Chironia. I use rich turfy peat and turfy sandy loam in about equal proportions, with a liberal mixture of silver sand; and for plants to be thrown away after flowering, I add a sprinkling of thoroughly decomposed cow-dung. For young plants a quantity of broken potsherds, broken bones, or charcoal, is useful in securing perfect drainage. Let the soils be well broken up and intimately mixed before use, and see that they are in a proper state as regards moisture. *Alpha.*

#### THE BED MOOSHK PLANT.—No. II.

The highly esteemed "Ur-qee-Bed-e-Mooskh" is obtained by distilling the flowers fresh-gathered, with the addition of water. No novelty is used in the process of distillation, beyond the apparatus resorted to by the



natives, being in their rude and primeval state. To every maund of the flowers, two maunds of water being added, they are allowed to be steeped for a short time in a big "Degchee," used as a still, the mouth of which is then covered (and luted down with flour paste so as to prevent any steam getting out) by a circular earthen vessel called a Koonalee (in Punjabee, and Gumla in Hindoostanee); this last has a hole in its centre, in which is fixed and luted a bamboo pipe, made up by joining two pieces of bamboo at right angles, and outwardly well covered by coiled ropes and tow, over which is put on a coating of soft tenacious earth; this pipe serves as a conductor of the steam, and is joined at the other end to the mouth of a copper receiver, in which is collected and condensed the steam caused by the application of heat to the big "Degchee" first mentioned. The last-named vessel is fixed in an oven or furnace, and on one side of the furnace is fixed a big earthen tub in which the copper receiver is kept; and while the process of distillation is going on, the tub is frequently kept full of water, which is as often changed as it gets hot; so that by a constantly reduced temperature the steam is condensed, prevented from evaporating and made to assume a liquid form. The degree of heat necessary during the process of distillation is that at the commencement of the operation it should be rather strong, and afterwards to be reduced, and a gentle degree kept up throughout the process. From a maund of the flowers, distilled with the quantity of water specified above, from 10 to 15 seers of the best description of water is obtained, whilst the druggists and Utars of the Bazaar obtain even a maund of the inferior description of the liquid. The best sells at from one-half to two seers; and the inferior sorts at four seers for a rupee. An Utur or distilled essential oil is also obtained in Kashmir.

The author of a celebrated work on Oriental medicine, in his digest of *Materia Medica*, called "Toohfutool-Moomineen," describes three distinct species of Khilof, which is a term synonymous with the "Bed," viz.,—1st, the "K. Burree," 2nd, the "K. Moola," and thirdly, the "K. Bulkhee" or "Bed-ee-Mooshk." I shall only enter on his description of the uses, &c., of the last-named species; but before proceeding I may as well say here, that I cannot positively state, whether our "Bed-ee-Mooshk" is identically the *Salix* Egyptiana of botanists, as is stated on Elphinstone's authority, by Mr. Vigne, in his travels in Kashmir, page 448, vol. ii.; or altogether a distinct and probably a new species, as some call it the "*Salix aromatica*." The author (Oriental) above alluded to, says that the male plants are flowerless! Our learned author, it appears, was not a clever botanist, for the plants here met with are only males; he describes the flowers to be of a whitish yellow colour, inclining to a very faint hue of red on their tops (this yellow colour of the flowers is only owing to the powdery pollen of the male organs), they have a most gratefully refreshing, mellicious fragrance, which is soon lost by exposure to solar rays. The flowers are called "Shah Baid," in the land of Sham. The flowers, if taken internally as a medicine, are resolvents and discutients; they will discuss tenacious mucus and promote its expulsion. The distilled water called "Ma-ool-Khilaf" is cordial and stimulant; invigorating the powers of the nervous and circulatory systems, and also purifying the vital fluid of its effete particles; it allays inordinate thirst; and is useful in palpitations of the heart, and in maniacal affections; it is of great value in febrile and inflammatory affections as a cooling and refrigerating agent; it is also used to give tonicity and strength to the stomach, and to increase appetite. Externally the distilled water is used as a cooling application for headaches and sore eyes. - To a very slight degree the water is said to be aphrodisiac. The ashes obtained by burning its woods are useful in hæmoptysis; mixed with vinegar and applied are useful in piles and warts; also to resolve and discuss inflammatory affections of the breast; and in other kinds of hard inflammatory swellings externally. The stem and leaves are astringent and resolvent; the inspissated juice, if taken internally, will attenuate bile and mucus, and cause their expulsion; it is also diuretic to a certain degree. It is also useful for scorpion bites, and from its astringency is useful in poisoning cases. Dropped into the ears, is useful for painful affections and formation of matter in that organ. It is also said to be of service in jaundice and hepatic derangements; and in affections of the spleen; as also in epilepsy. Rheumatic affections are also said to be relieved by the use of the juice of the leaves; and uterine contraction is also stated to be produced by its use. The gum exuding from the tree is said to be useful for increasing visual powers. The leaves are also used in fomentations to painful parts. The quantity of the water taken at a time is from 2 to 4 ounces three or four times during the day. When concluding this interesting subject, I happened to see a respectable native of Kashmir, a friend of mine, who assured me that it often happens that when the distilled water is kept for any length of time, it is liable to lose its fragrance; and that to restore it the bottles are exposed to the exhalations arising from the Muzbulah, and my friend further related to me that in Kashmir these places have a set of shelves made up there for this particular object. He states that the above is a well known fact; and I should not have entered it here, had I not been assured of such being the case. It is also necessary that the distilled water should be filtered through muslin cloths, once a week at least, otherwise a film is formed on its surface by the stagnation of the organic particles of matter; and the result is a decom-

position and deterioration of the contents. *Tameez Khan, in Proceedings of Agri-Horticultural Society of the Punjab.*

#### THE PIMELEA.

THE Pimelea has never failed to add lustre to our great metropolitan exhibitions; and among the many superb plants congregated at these meetings it is certainly not the least attractive. To have a specimen in full perfection on a certain day requires much experience, patient attention, and unceasing care. The ever-changing weather is a never-failing source of anxiety; a cold north-east wind, a clear sky, and brilliant sun, exercise the skill of the most experienced; one plant requires to be advanced, another retarded, this shaded, that exposed; the temperature of the house regulated by the admission of air, and, finally, seeing that no individual specimen suffers for want of water. Such are the active duties of to-day; to-morrow, perhaps the reverse. At one time the exhibitor is excited with hope, at another depressed with fear, that after all he will be beaten, for on the perfection of all the specimens in his collection on the day of exhibition will depend the chance of obtaining a first prize, so eagerly desired by all, and which indicates the skill of the successful plant-grower. *P. spectabilis* has been admirably shown at our exhibitions, and whether we consider its immense size as a bush in a pot, its luxuriant health, or the great number and regularity of its heads of bloom, it has never failed to attract the attention of every experienced plant-grower. I allude more especially to the noble example of it in the collection of plants at Ealing Park. Like the Rose, when the blossoms of the Pimelea are fully expanded, their charm is fled. There is the great plant to excite wonder, but the beauty of the flower which we admire is gone. *P. Hendersoni* is a charming plant, and one which no large exhibitor will be without. *P. decussata* has likewise been successfully shown; it is one of those greenhouse plants which require great attention in the early stages of growth; for when its branches become rigid and woody it is very untractable, and it cannot be made to assume the form most agreeable to the taste and fashion of the present time, without the loss of many of its branches. Since the number of plants exhibited in large collections has been reduced, *P. decussata* has given place to plants more recently introduced, but a fine well proportioned specimen of it is still deservedly admired. It makes an excellent stock upon which to grow *P. spectabilis*, *Hendersoni*, &c.

It is not my intention to enter minutely into the culture of the Pimelea; to exhibitors that would be superfluous; but to those who have only a greenhouse the varieties already named are well worthy of a place in it, where a well grown plant in a moderate sized pot will be more appreciated than those immense specimens that astonish us at exhibitions. The soil in which the Pimelea grows freely is three parts heath mould, and one part good loam, the whole to be thoroughly incorporated with a good portion of silver sand. When the plants have done flowering, the decayed blooms should be carefully picked off, and if necessary the plants should be reshifted into larger pots. Some of the stronger branches may be cut back, and the plant so regulated that all its branches may have the advantage of a free circulation of air. They should remain in the greenhouse until they begin to grow, when it is desirable that they should be placed out of doors. At this period a little judicious care is required to prevent a sudden check in the growth, and although at first the advance may not be so rapid, yet that is compensated by the more firm texture of the wood, and an acquired hardihood which enables the plant to resist the cold of the succeeding winter much better than had it made the whole of its growth in the greenhouse. *Tassel.*

#### Home Correspondence.

*The Weather in Sussex.*—In looking back on the past year, it cannot have escaped the notice of the most careless observer, that it has been somewhat a remarkable season. January, 1852, was wet and stormy. February was generally milder, while the quantity of rain was under the average for the month. March and April were the driest months throughout the year, and would have been considered dry for the middle of summer. The weather in May was not in any way remarkable, but June was cold and very wet throughout, for summer. July came in hot and dry, and continued so till the beginning of August. And from that time to the end of the year we experienced scarcely anything but wet cloudy weather, having had from 13 to 25 days in each month on which rain fell; and for the last two months accompanied by a temperature very much above the average for the season of the year; the thermometer in only two instances registering below the freezing point, marking 31° on the morning of the 23d November, and 27° on the 1st December. The effect produced on vegetation by this long-continued wet and mildness, will of course much depend on what kind of weather succeeds them. But never perhaps in winter was vegetation in a condition less calculated to bear a very low temperature than at the present time; last year's young wood on fruit trees was but indifferently ripened, and in consequence of the mild winter the buds are now in a forward state. The common broad Bean was observed the other day

growing accidentally among some Turnips, and in full flower. Rhubarb is beginning to grow in the open ground; and on taking up some Asparagus a few days ago for forcing we found some of the young shoots two inches above ground. And considering that everything belonging to a garden is, to a certain extent, in a similarly forward condition, who can foretell the consequences if we should be suddenly visited by severe frost? Of course there are many things out of the reach of the gardener's protection that must of necessity be left to take their chance. But it behoves all at this particular season, who may have things liable to injury under their care, such as half-hardy plants out of doors, or on open walls, to be on their guard, and prepared as far as the means at their command will permit, for we cannot expect (neither is it desirable), that the winter should pass off in this way. Last autumn seems to have been particularly unfavourable for Strawberry plants, great numbers here having died; many more are so far injured as to be not worth saving. Complaints have also been numerous in this neighbourhood that Strawberry plants in pots, intended for forcing, have not succeeded so well as usual. This is doubtless owing to the sunless and wet weather occurring during September and October, when they ought to have been maturing their buds, and laying up a store of organisable matter in their stems, to enable them successfully to meet the demands about to be made upon them in the spring. Observing in last week's *Chronicle* the quantity of rain which fell at Chiswick last year, to differ very much from what fell at this place, I have given below the account for the last seven years, for the sake of comparison. Perhaps it is worthy of remark, that we are between seven and eight miles distant from the sea in a direct line, and 315 feet above its level.

	1846.	1847.	1848.	1849.	1850.	1851.	1852.	Average.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
January...	5.50	2.37	2.10	2.77	1.00	3.70	4.74	3.168
February...	2.30	1.62	5.07	2.92	2.96	1.05	1.31	2.461
March...	2.16	1.22	3.94	0.52	0.50	4.20	0.62	1.880
April...	2.13	1.14	3.35	4.00	3.65	2.24	0.48	2.427
May...	2.07	2.29	4.41	3.46	3.59	1.51	2.78	2.301
June...	1.12	1.95	4.65	1.34	2.24	2.19	6.86	2.907
July...	2.34	0.71	4.66	2.21	2.69	2.98	1.96	2.507
August...	4.39	2.02	4.88	0.74	3.22	1.65	4.84	3.120
Sept...	3.13	1.70	3.83	3.52	2.69	0.23	6.96	3.155
October...	6.61	2.73	4.95	4.76	2.48	3.84	8.32	4.812
Nov...	2.67	2.42	2.23	2.10	4.15	0.93	8.17	2.238
Dec...	2.16	4.58	4.01	3.77	2.94	0.77	4.99	3.317
Yearly Amount	36.61	24.75	44.08	32.11	32.21	25.29	52.03	35.203

*A. D., Dale Park, Arundel.*

*Red Hamburg Grapes.*—Permit me just to mention one fact, in order further to convince Mr. Taylor that Red Hamburg Grapes can be converted into black ones. A few years ago I had, and now have, the charge of a range of Vineries in a very defective state, one of which was renovated every year. In the last of these grew a so-called Red Hamburg, but forthwith, when the new roots had got hold of the fresh loam, &c., and began to feel the benefit of perfect drainage, our foxy Hamburg transformed itself into a genuine black one, and still continues, I am happy to say, in the same condition. *B., Edinburgh, Jan. 10.*

*Mildness of the Season.*—I have this day (January 12th) gathered the following flowers from the open air—viz., *Roses* Queen, La Reine, Madame Nerau, Gloire de Rosamène, Duc de Chartres, and three sorts of China *Roses*; *Salvia fulgens*, *Geranium Unique*, *Mignonette*, *Clarkia pulchella* and *alba*, white *Candytuft*, single blue *Russian* and *Tree Violets*; several sorts of *Polyanthuses*, *Pyrus japonica*, *Anemone*, *Snowdrops*, and *Pansies*; most of the *Bourbon* and *Hybrid Perpetual* *Roses* are showing flower-buds; and vegetation in general is as forward as in the middle of March. *J. George, Lee House, Kent.* [*Rhododendron Nobleanum* and *Red Camellias* are in flower in the open ground near London.]

*Effect of Soil on Vines.*—For seven years I grew Vines in pots, and fruited successively from 100 to 120 every year; each Vine producing from four to six bunches. The Vines were raised from eyes the previous year to forcing. In 1845 my employer consented to let me have a pit erected for fruiting and growing a succession of Vines in pots, which he afterwards expected to have Grapes from, equal to a regular early Vinery; consequently I had to grow a new stock from eyes every year, to take the place of those that fruited. After I got one year's fruit, I generally threw away the Vines, for I could not depend upon a good crop the second year, although there were some that showed plenty of bunches and ripened from two to three the second year, but they were not to be compared with what they yielded the year before. I got one cart-load of loam from Wimbledon Common on purpose to grow blue *Hydrangeas*. With part of this loam I potted eight *Hamburg Vines*, and one *White Sweetwater*, one *White Frontignan*, one *White Muscat* of *Alexandria*, and one *Grizzly Frontignan*, 12 in all. These I kept labelled, so as to know them from the rest, which were grown in the same pit. After repotting the whole collection, which was raised in the spring of 1846, I placed them in the pit for their summer growth in the month of May that same year, and treated the whole with the same attention. After the Vines were ripe, I removed them to a south border, to prepare them for forcing the next spring. Unfortunately the whole of the glass was broken in the garden at Copse Hill, where I was, by a hail-storm, in September, 1846, which retarded the early forcing the following spring to the middle of March, causing the Vines in pots and in the Vineries



to ripen their crops within a few weeks of each other. The result obtained from the growth of the eight Hamburg and the four other Vines, which were potted in the loam we had for growing blue Hydrangeas in, is as follows:—the eight Hamburgs grew very weakly, and did not show fruit; in the year 1847 the white Sweetwater grew stronger, and showed three small bunches, which ripened before the general crop, with a russet colour. The white Frontignan showed two bunches, the berries when ripe being very small, although greatly reduced at thinning time; white Muscat of Alexandria showed no fruit, nor did the Grizzly Frontignan. In the year 1848 the eight Hamburgs all showed plenty of bunches. I reduced these to three on each Vine, thinned them more than is commonly practised, and they began to show colour one week sooner than the general crop grown at the same time in pots. When the other Vines in pots were perfectly ripe and quite black, with a good bloom, the eight Hamburgs coloured like half-ripe ones; I allowed them to remain till after all the other crop was cut. That on the eight Hamburgs was afterwards cut, but I never sent any of it to my employer's table, in consequence of its bad colour, although the taste was good. The Grizzly Frontignan showed two bunches, and ripened well. The eight Vines showed fruit out of doors in 1849. I took them into the pit in June of that year, where I had taken some Vines which had ripened fruit a few weeks previously. The eight Hamburgs did not do so well in 1849; many of the berries dropped, the flavour of the crop was worthless, and all were thrown away about the end of September. *G. Urquhart, Hammersmith.*

*Dormant Narcissus.*—I placed a bulb of *Narcissus* in a Hyacinth glass in October, 1851, in a dark room, where the temperature has been generally about 55°. It did not make any roots or any growth whatever until October, 1852, the bulb being quite as sound as ever; and now it will be in flower in a few days, and quite as strong as bulbs that were put in last October. Is this a common occurrence? [No.] *J. George, Lee House, Kent.*

*Common Salt a Preventive of Mildew, and as a Manure.*—I was induced to try the influence of common salt as a preventive of mildew, from reading the opinion of the late Mr. Knight, in Lindley's "Theory of Horticulture," p. 51. Mr. Knight entertained the idea, that water is sometimes absorbed by leaves to such an extent as to cause a descent of the sap through the albumen, a derangement of function to which he even ascribed the attacks of mildew fungi upon plants. The secondary and immediate causes, he says, of this disease, and of its congeners, have long appeared to me to be the want of a sufficient supply of moisture from the soil, with excess of humidity in the air, particularly if the plants be exposed to a temperature below that to which they have been accustomed. If damp and cold weather in July succeed that which has been warm and bright, without the intervention of sufficient rain to moisten the ground to some depth, the Wheat crop is generally much injured by mildew. I suspect that in such cases an injurious absorption of moisture by the leaves and stems of the Wheat plant takes place. I have proved that under similar circumstances much water will be absorbed by the leaves of trees, and carried downwards through their albuminous substances; though it is certainly through this substance that the sap rises. Under other circumstances, if a branch be taken from a tree when its leaves are matured, and one leaf kept constantly wet, that leaf will absorb moisture, and supply another leaf below it upon the same branch, even though all communication between them through the bark be intersected; and if a similar absorption takes place in the stems of Wheat as by the stems of other plants, and a retrograde motion of the fluids be produced, I conceive that the ascent of the true sap or organisable matter into the seed-vessels must be retarded, and that it may become the food of the parasitical plants, which then only may grow luxuriant and injurious. Such was Mr. Knight's opinion, and his knowledge as a physiologist is generally admitted. By a careful consideration of the above facts, the use of common salt is obvious, as it has a great affinity for moisture, and retains it in the soil. When otherwise, the latter would be comparatively dry, and as Mr. Knight very justly observes, the cause of mildew is the want of a sufficient supply of moisture from the soil, which the application of salt counteracts to a great extent. I do not mean to say that in all instances salt will prevent entirely the attacks of mildew, yet I do positively assert that its use will very greatly, if not altogether, remedy the evil. I have experienced its good effects on the late Pea crops, when the ground had been well subsoiled; and I need not add that every gardener knows the liability of this crop to mildew, particularly late in the season. I am further of opinion that the use of salt is of equal value to many other crops as well as to Peas, both to the gardener and farmer, as was proved by a friend of mine in the case of a Turnip crop; during the turning and preparation of his manure each layer was sprinkled with salt, this manure during its decomposition retained more moisture than manure not so treated, as was proved by examination, and the Turnips were free from mildew where the salted manure was applied; whereas in the same field Turnips on manure not so treated were, to a great extent, mildewed. The properties of common salt as a manure are of some value when it is not already present in the soil, as it adds its base, soda, to the soil, which is

taken up in part by all vegetables. Hence its value applied to Asparagus and Seakale, which take up a large amount of soda. Applied even as a top-dressing to Grass land the soda acts slowly in decomposing silica, in the absence of other alkalies, and rendering it sufficiently soluble to enter into the organism of the plant, from which the fine glassy parts of the stems of the Grass are formed. In addition to this common salt has great power of fixing ammonia, the most valuable part of all organic manures, as ammonia is only limitedly supplied by the atmosphere, whereas carbonic acid gas is supplied from the air to a much greater extent, and also from the decomposition of substances used as manures containing not much nitrogen. Ammonia is most generally given off from decomposing manures in the shape of a carbonate. When a dressing of salt is applied to it, a muriate of ammonia is the result, in consequence of the ammonia having a much greater affinity for muriatic acid (one of the elements of common salt) than it has for the carbonic acid, with which it was combined in the shape of a carbonate of ammonia, and from which it would gradually escape to the atmosphere. Muriate of ammonia is a salt easily soluble in water, valuable as a manure, containing much ammonia, from which, and its compounds the albumen, fibrin, and gluten of all vegetables are supplied. Salt also, in combination with soot, forms a valuable manure. I have heard some say that soot was not much of a manure, and why? I say only a poor manure when improperly applied; one-half of the weight of soot is nearly identical with salts of hartshorn, the other, finely divided charcoal, and is doubtless very volatile, and liable to fly off if means are not taken to fix its ammonia, particularly if exposed to the action of a dry atmosphere for any length of time. Hence the value of a dressing of salt in this case; and for my own part I would apply salt to all vacant ground in a garden during winter as a top-dressing, at the rate of 4 cwt. per acre, from November to February, as circumstances would admit; but if seeds were shortly to follow, its quantity must be reduced in accordance. In addition to the good properties of salt as a manure, and a fixer of ammonia, it destroys slugs, and other insects, such as wireworms, &c.; and as a general rule great good results from its judicious use, when the soil does not abound in that element, which is not common except immediately on the sea coast. *G. Grey Watson, Ribston Hall Gardens, Wetherby.*

*Larch* (see p. 5).—I can assure Mr. Patterson, from my own experience, that I have used Larch, winter fallen, for gates, posts, and rails, and have found it answer very well, better indeed than Oak; it stands wet and dry better on the whole, and for gates it is decidedly better, because a Larch gate can be made of greater scantling in all its parts, therefore stiffer than one of Oak, without being any heavier. Will Mr. P. be good enough to say whether he has ever known a Larch rotten at heart, which was clothed with live branches from top to bottom. *Hazel, Macclesfield.*

*Zygopetalon Mackayii.*—This is a very useful plant for the decoration of the conservatory or drawing-room during the winter months, although I have seldom seen it grown for that purpose. By having five or six plants they may be had in flower from October till March or April, and are very fragrant, and, unlike most of the rarer Orchidaceous plants, may be obtained at a small cost. There are several varieties, or nearly allied species; in some the lip is nearly white, with pink or blue veins. We have an imported variety, the lip of which is of a brilliant blue. I find these plants succeed well if potted in a compost of rough peat, leaf-mould, and silver-sand, and plenty of drainage. Whilst growing they require a liberal supply of water and occasionally a little weak liquid manure. Coming from the temperate part of South America they do not require much heat; they grow well in a warm frame, Vinery, or other similar structure. There are several other Orchidaceous plants flowering in winter and not requiring much heat, which might likewise be cultivated for the same purposes as the *Zygopetalon Mackayii*. There is a plant here of *Barkeria Skinneri* with 18 or 19 flower spikes, which has been in flower for more than six weeks, suspended in a drawing-room. *S. Woolley, gardener to H. B. Ker, Esq., Chesham.*

*Seeds! Seeds! Genuine Seeds.*—In looking over the advertising columns of your paper, how often are we greeted with the fascinating words "Genuine Seeds," and yet how rare it is that we find them anything like "genuine." Indeed, I hardly know what has come to the seeds, or what the seed trade is coming to, for seeds are anything but that which they ought to be; scarcely the half of them vegetate, and of those that do vegetate, the greater portion is not true to their kind or their quality. Some years ago an observation was made in the House of Commons by one of its members; I think it was in reference to the "Beer Bill," namely, "that the greater the competition the more genuine would be the article." Now, however this statement having reference to the sale of beer may have been borne out, it is not my province to inquire; but surely it does not hold good as regards the sale of seeds, for since we have had more than a tenfold increase of seed vendors our seeds are, and have been for years, more than forty-fold the worse. And how is this? There must be a cause. The seed bill for one year, even for a moderately-sized establishment, amounts to something considerable; and I feel assured, from the straightforward course which has invariably marked the character of the *Gardeners' Chronicle*, that you will not only permit me to bring this matter before the gardening world, but that you will

also give us your all-powerful aid in a cause that calls loudly for reform. I will conclude by observing that, as this is a subject paramount in importance to the gardener, he feels a confidence in you, his representative, to see that there be something like honest and fair dealing. The legislature has most wisely interfered and prevented the grocer from mixing chicory with our coffee. Why should not the horticultural voice be heard denouncing the use of killed seeds and Rape oil? *A Gardener.*

*Branch Roots.*—I send you a specimen of some formed on a Laurel, about 3 or 4 feet from the ground, and the branches of several have an abundance of them, some of which may be seen just coming through the bark. I believe in this case that moisture is one great cause of their formation, as the Laurels stand facing the east, or rather more perhaps to the north-east, and the front of them keeps away some portion of the sun they otherwise would receive for a little time, they being also shaded on the south side by buildings. Another circumstance I may mention which took place last summer; a standard Apple tree in a cottage garden had some knobs formed on it similar to a place where a branch had been taken off, and which had been covered again by the epidermis, the surface of these were extended with small root-like swellings, as though fibres were ready to protrude; it then occurred to my mind that if they were covered with soil they would become roots; accordingly I put some soil to them, and by means of a broken flower-pot tied round the tree, I was enabled to keep the mould in the wished-for place, and in course of a few weeks I had fibres on the stem of the tree, to the best of my recollection, from a quarter to half an inch in length; but this tree was not in a situation excluded from the sun as those before mentioned. Do you think it possible that the sap-vessels were injured by some means, and that the escape of the cambium was the cause? It is my opinion that, in some instances, and by some means, it is so. *J. D.*

*Yuccas.*—Mr. Wood's communication in the last number of the Horticultural Society's Journal on this subject is highly interesting, and it were to be wished that it might encourage some practical botanist to procure and cultivate every known species of *Yucca*, with a view to elucidate that now perplexed genus. The species are not exceedingly numerous, and many of them will probably turn out misnomers, or varieties. With regard to those named in Mr. Wood's list, I doubt the correctness of the species *conspicua*, if applied to a plant hardy in the climate of York. The true *conspicua*, as so called in botanic gardens, is a very rare plant in this country, and perhaps the tenderness of all the species. It is not seen grown out of doors north of Naples, and has failed in the west of England. It is a very distinct species, though a true *Yucca*. Again, what is Mr. Wood's *Draconis*? If such a species really exist, is it truly distinct from *Yucca aloefolia*? *Rufo-cincta* is another that is in some obscurity. Have the flowers as well as the leaves of all these species been examined and found sufficiently distinct? Does Mr. Wood possess *Yucca arcuata*, *tenuifolia*, *concaea*, *stricta*, *obliqua*, *serrulata*, or plants under those names, given, it is believed, by Mr. Haworth? *S.*

## Review.

*Rational Arithmetic.* By Mrs. G. R. Porter. 12mo, pp. 248. Murray.

IF before we had seen this little work, we had been asked to recommend a treatise on arithmetic adapted for the teaching of children, we should have been at a loss what answer to have given. Books on arithmetic are generally little more than collections of rules by which to calculate, accompanied by examples, for the exercise of the learner. The properties of numbers and the principles on which the rules depend are seldom explained; and the study of arithmetic is accordingly often disliked, when, if the subject were treated differently, it would not only improve the mental powers of the learner, but also interest and amuse him. That such is not the case, is evidently the fault not of the study but of the teacher; for Mr. De Morgan, in his valuable "Elements of Arithmetic," long since showed that arithmetic might be taught in a rational manner, and consisted of something more than a string of rules to be learned by rote, and applied dogmatically, no one knowing why. Excellent, however, as Mr. De Morgan's work confessedly is, it is not well adapted to the capacities of children, nor perhaps to those of the persons by whom children are usually taught; a certain amount of mental training and close attention is necessary for its profitable study. Mrs. Porter's treatise is written expressly for persons who are beginning to think; and its object is stated to be quite as much to assist the training of a child's mental faculties as to make an expert arithmetician.

We give the following extract, in order to show the style in which the work is written. The chapter on the rule of three is as follows:

"If we have 4 parcels containing 9 each, to be divided into 3 parts, it is exactly the same whether we divide each of the parcels containing 9 by 3, and then multiply

this quotient ( $\frac{9}{3} = 3$ ) by 4, or whether we put the

4 parcels together ( $4 \times 9 = 36$ ) and divide the whole by 3; we shall, in either case, have 36 divided into



3 parts : in the first case,  $3 \times 4 = 12$ , and in the second,  $\frac{36}{3} = 12$ ; therefore, the expressions  $\frac{9 \times 4}{3}$  and  $\frac{9}{3} \times 4$

mean the same; and it is immaterial whether we divide 9 by 3 and then multiply the quotient by 4, or whether we first multiply the 9 by 4 and then divide the product by 3: the same reasoning will equally apply to any other numbers, and therefore, generally, if any number is to be multiplied by one number, and divided by another, the result will be exactly the same, whichever operation is first performed.

"It is sometimes easier to do the one, and sometimes the other, and, therefore, when we have any question which involves multiplication and division, it is better

to bring the expression at once to this form  $\frac{\times}{\div}$  and then we can readily judge whether it will suit the particular question to divide or multiply first.

"Now, let us apply the foregoing to practice.

"You readily found out, some time back, that if 1 yard of cloth cost 6 shillings, 8 yards would cost 48 shillings (Q. 11); and if 3 yards cost 18 shillings, 1 yard would cost 6 shillings (Q. 12). Now, can you tell, if 3 yards cost 18 shillings, what will 8 yards cost?—This is only the two questions put together. We must first, as we did before, divide 18 by 3 to find what

1 yard will cost,  $\frac{18}{3} = 6$ , and now we must multiply this

6 by 8, or  $6 \times 8 = 48$ , equal the cost of 8 yards.

"We have, therefore, divided 18 by 3, and multiplied the quotient by 8, or we have found  $\frac{18 \times 8}{3} = 48$ .

"These questions are of very extensive practical use, and it is necessary to become very expert in their solution. Let us try another. I bought these 7 pencils for 9 pence; now, what should I give for 13?—

9 divided by 7 equal to  $\frac{9}{7} = 1$ , and 2 rem., so each

pencil will cost 1 penny and 2 rem. But what is to be done with this remainder? when we multiply by 13 it will be a very puzzling operation.

"Suppose, then, that we do nothing with the remainder at present;  $\frac{9}{7}$  will express the price of each

pencil, and this is to be multiplied by 13; then  $\frac{9}{7} \times 13 = \frac{9 \times 13}{7} = \frac{117}{7} = 16$  and 5 remainder—so 13 would

cost rather more than 16 pence: as we proceed, we shall show how to divide the 5 remainder into 13 parts, at present we must be satisfied with merely noting this excess.

"You will observe, that in answering the two preceding questions, we found it more convenient in the first to divide before multiplying, and in the second to multiply before dividing. Why was this?

"If we can divide the number without leaving any remainder, it is better to divide first; if not, it is better to multiply first.

"After answering a few questions of a similar nature, you will perfectly understand how they should be managed.

"The rule for answering these questions, as given in the Tutor's Assistant, is called the Golden Rule, or the Rule of Three.

"But I have preferred the above manner of statement, as being more simple in the explanation: when we come to geometrical proportion, the rationale of the Rule of Three will be fully shown, and those questions which more peculiarly belong to proportion can then be answered."

In conclusion, we think that the little work now before us, cannot be commended more highly than by saying, that it is what it professes to be.

## FLORICULTURE.

**HINTS RESPECTING HYACINTHS.**—The Hyacinth, like the Rose, is a universal favourite; for though a diversity of taste occurs in floral matters, as in all others, the merits of the Hyacinth never are questioned. Everybody loves it for its beauty and its fragrance; and it is worthy of it. Dahlia fanciers may "look down" upon the Pelargonium; the florist who never sees beauty but in the eye of his pet Pansies, may rank all other flowers as inferior; the enthusiast who would grow nothing but Tulips, and root up even those which did not produce his acmé of perfection, a semi-globular flower, may pride himself on his eccentricity, and hold himself aloof from the recognition of the universal loveliness of flowers; but one and all will unite in terming the Hyacinth a "household flower," and no greater praise could be awarded it. As regards its culture, we may premise that the first element of success is to encourage a free and healthy root-action before the production of the flower-stems. This general rule applies equally to those grown in pots or glasses. One of the most frequent causes of failure arises from a violation of this fundamental rule. We have seen the bulbs, from the first moment of their being brought home, placed in the glasses and set in the windows, or some equally strong light. In such a position, and under such circumstances, but a sorry amount of gratification will be

reaped. Much has been said on the superiority of certain varieties for glass or pot culture, and many seedsmen continue to make such indication in their bulb lists. For ourselves, we give no heed to such distinctions, and believe there is little foundation in them. Mr. Tye in his little pamphlet on this flower has some remarks on the "selection of bulbs," from which we take the following: "As an important element of success, an early selection of bulbs is recommended. This, in most cases, will ensure to the purchaser larger quantities from which to choose, and finer bulbs may be obtained." And again, at page 7, in deprecating the practice of allowing the bulbs to begin rooting before they are purchased, he says, "If the food it seeks be withheld, it will draw from sources within itself the nourishment with which nature has supplied it; but, like many other unassisted efforts, it fails to mature its parts, and perfection is not attained. Let, therefore, the bulbs be chosen before they begin to grow." And we beg to add, that in removal such young roots are frequently broken off, thus increasing the evil by weakening the bulb, as such roots have to be replaced by a second drain on its resources. The paragraph on the "Management of Bulbs," in the same little work we give entire: "Having filled the bottles with clean rain-water, introduce the bulbs, but do not let them touch the water by half an inch. Place them in a dark closet or cellar, in order that the roots may grow first. The flower starts from the heart of the bulb so soon as it can escape from the leaves which enclose it, when it requires and must have nourishment. If it has but few and short roots, the flower will be poor and dwarf in consequence. When the roots are of sufficient length, say 4 or 5 inches, remove the bottles to a situation where the bulbs will have light, but not too bright at first, and in a week or so place them near the glass in a greenhouse, or in a sitting-room window. In each case be careful to avoid too great a change of temperature, which should be but little higher than that of the place from whence you remove the bottle. Let the plants have air on all convenient occasions, or they will grow tall, pale, and weakly. A variety of methods for giving vigour to the plants, and brightening the colours of the flowers, have been resorted to; such, for example, as adding to the water a few lumps of charcoal, a little nitrate of soda, or a small portion of saltpetre; but the following has been found to answer well: dissolve half an ounce of guano with so much chloride of lime as would equal the size of a large Pea in a quart of rain-water. Let this mixture stand for a day or two to become clear. Pour about two teaspoonfuls into the bottle twice a week after the flower appears well out of the bulb." There is one important feature in the successful cultivation of the Hyacinth in glasses, which, we think, is not sufficiently known or recognised; we allude to changing the water. On this branch of the subject Mr. Tye gives the following excellent bit of advice; the italics are our own, because we know the importance of attention to the precept given: "The water requires changing every two or three weeks. Let the fresh supply be of the same temperature as that in which the bulb has been growing, for remember the heat of the room, or greenhouse, has taken off the 'chill.' The flowers will receive a check if you do not attend to this." And in reference to the too prevalent practice of allowing the flower-stem to become "drawn," we extract the following: "Such plants as appear to grow too rapidly should be removed to a little cooler situation; say from the sitting-room to the parlour, or any such place, according to convenience. On the other hand, such as appear too stunted should be removed for a short time to a little warmer situation, on the chimney-piece, for instance, in the sitting-room; but not for too long a period, or they will be weak and pale. Observation is the best guide in all these matters." It is found that, in the majority of cases, the flower-stem requires artificial supports, although we confess we believe that superior cultivation will obviate such an application. A Hyacinth in the open border will not require it, and from such we must infer that artificial treatment alone renders such necessary. At page 291 of our volume for 1851 is a woodcut representing an improved glass with support attached, which merits attention. The design of the glass is certainly a great improvement on the old shape, and will not be out of place on the table of those who appreciate beauty of design in the useful as well as the ornamental. Of the treatment of the bulbs after flowering, so as to render them creditable, "if not equal to the first season" of flowering, the following is given: "Many bulbs are rendered worthless by careless treatment after they have done blooming; whereas fine blooms, if not equal to the first season, may be relied upon if treated in the following manner: The moment the flowers begin to decay, remove them from the glasses, and plant them in good rich compost, consisting of three parts of good decayed turf, and one each of well-rotted cow-dung and sand. Let the flowers and leaves die off before taking up the bulbs; and do not on any account cut them off when green, as this greatly impoverishes the bulb." In the pot-culture of Hyacinths, as well as in that of glasses, a thorough root-action must be procured before the stimulants to growth in the leaves and flowers are applied, or failure will assuredly follow. Of the "properties" of the flowers we say nothing, the present remarks have been penned for those who love a flower for its beauty, and not for the shape of the petals, or the length of its foot-stalk.

CATALOGUE received from Mr. Stark, of Hope Street, Edinburgh; and from Messrs. Rendle and Co., Plymouth; also a schedule

of the National Annual Exhibition of Tulips, held for May 20th, at Nottingham.

**TOP-DRESSING.**—It is customary to get the material for surface dressing out of the wet, and as it is often found to be broken fine and well intermixed ready for use; reserve, however, portions of each ingredient separate, for what may suit one plant may not be so beneficial perhaps to others.

## Miscellaneous.

**The Irish Shamrock.**—The more an idea is national, popular, and traditional, the more it is accepted without examination, and the more readily perpetuated in error. Thus our "Green immortal Shamrock" is sung by our poets, and accepted as the "chosen leaf" of our country; it is religiously stuck in every man's hat, who is not ashamed of being a "mere Irish;" and it is, therefore, a kind of sacrilegious scepticism to doubt its truth. It is really painful to check such devotion by informing the public they labour under a delusion; yet I think the following remarks, the general substance of which has already appeared in the Journal of the Royal Institution, are worth being noticed. It is almost certain that the original plant to which the term "Shamrock" was first applied was the Wood Sorrel (*Oxalis acetosella*). This would, indeed, seem probable, if from historic evidence we could show, first,—That the Shamrock so called was a plant having a sour taste, and eaten as food, neither of which qualities are possessed by the modern Shamrock (*Trifolium repens*); and, secondly, that the Wood Sorrel existed abundantly in Ireland in ancient times, while the *Trifolium* family were comparatively unknown there till a very late period. Let us now examine some few quotations bearing on this subject. The following is from Spenser's "View of the State of Ireland in Elizabeth's Reign:—" "Out of every corner of the woods they came creeping forth upon their hands, for their legs could not bear them; they spoke like ghosts crying out of their graves; they did eat carrions, happy if they could find them; and if they found a plot of watercresses or shamrocks, there they flocked as to a feast for the time." That the Shamrock was eaten also appears from other authors, as in the following couplet from Wythe's "Abuses Stript and Whipt;—" "And for my clothing in a mantle goe,  
And feed on shamrocks as the Irish doe."

So also, in the "Irish Hudibras," 1689, the following lines:—

"Shamrocks and watergrass he shows,  
Which was both meat, and drink, and close."

The next quotation, from Fynes Morrison, will show that the Shamrock was not only eaten, but had also a sour taste:—"They willingly ate the herbe shamrock, being of a sharp taste, which as they run, chased to and fro, they snatch like beasts out of the ditches. This goes to prove that the Shamrock grew in a wild state in ditches, whilst we know that the *Trifolium repens*, or white Clover, is by no means of common occurrence in wild and uncultivated spots; but, on the contrary, it is known to have a great propensity to diffuse itself in improved countries, being one of those plants which the Americans describe as "coming in with cultivation." Again, if the Shamrock be proved by further evidence to have been a wood plant (where the Clover is never found), it would materially strengthen the position we have assumed. The following, from the "Irish Hudibras," where the plant is twice mentioned as being found in a wood, is directly in point:—

"Within a wood near to this place,  
There grows a bunch of three-leaved Grass,  
Called by the boglanders 'shamroques,'  
A present for the Queen of Shogges [spirits]."

None of the *Trifoliums* are naturally abundant in Ireland, but have become so by cultivation, especially locating themselves in dry pastures. None of them are of very ancient standing in the country, having been introduced into Ireland so late as the middle of the seventeenth century, of which a particular account is given in "Master Hartlib's Legacy of Husbandry." The Wood Sorrel possesses all the qualities which would render it appropriate for the national feast, and is even more beautifully three-leaved than the Clover. It was naturally abundant, came out at the proper season (being much earlier than the Clover), shooting forth its delicate leaves and blossoms with the earliest spring. On the whole, I think it may be justly concluded that the weight of evidence goes to show that the plant first selected as the emblem of Ireland was the Wood Sorrel. It may be further observed that the word "Shamrock" seems a general\* appellation for the *Trifolium*, or three-leaved plants; and this being so the question now arises, What particular member of the great *Trifolium* family (since we know it is not the Wood Sorrel) is that now selected as the emblem of Ireland, and hence termed, *par excellence*, "The Shamrock." The Irish names for the *Trifolium repens*, or White Clover, are *Samar-oge*, *Shamrog*, and *Shamrock*. "This plant," says Threlkeld, who printed the earliest Flora we have of the country, "is worn by the people in their hats upon the 17th day of March yearly, called St. Patrick's Day; it being a current tradition that by this three-leaved Grass he emblematically set forth to them the mystery of the Holy Trinity. However that be, when they wet their *Samar-oge* they often commit excess in liquor, which is not a right keeping of a day to the Lord, error generally leading to debauchery." It may, in fine, be asked, how came the national emblem

\* Gerard says the meadow *Trifolium* in Ireland are called Shamrocks, and other authors so apply the name.



to pass from the *Oxalis acetosella* to the *Trifolium repens*? To account for this substitution is not difficult; cultivation, which brought in the Trefoil, drove out the Wood Sorrel, which was formerly abundant whilst our extensive woods existed, but afterwards disappeared with them, until the commonest plant became the scarcest, and it was more easy to obtain the Trefoil introduced into the country by artificial cultivation. *Daily Express.*

### Calendar of Operations.

(For the ensuing week.)

#### GENERAL REMARKS.

THERE are, perhaps, no two places in the kingdom where the same directions require to be carried out in a similar manner; difference of soil, locality, and the various demands of establishments will require consideration, and in dealing with the multifarious branches of gardening much, after all, must be left to the cultivator himself as regards details. Hence our remarks must be taken as general ones, and varied agreeably to the specialties of particular places and districts. Independently of their proper duties, gardeners have often various other things to superintend; and, consequently, it should be their object to make themselves acquainted with rural affairs generally, and especially with everything connected with the management of landed property. Have everything in readiness for filling the ice-house, should an opportunity occur.

#### PLANT HOUSES.

No pains should be spared in keeping up the floral display in the conservatory, more particularly as the present season, from its dampness, and the wet state of the ground, will make it more frequented, both as a promenade and a place of recreation. Hybrid Rhododendrons and Azaleas should now be brought forward by gentle forcing; they make a gorgeous display when in bloom. Roses, Syringas, Lilacs, &c., should be removed from the forcing pits to the conservatory to fill up vacancies. Prevent damp from accumulating by frequently raking the borders over, and encouraging a moderate circulation through the house. Although it is not desirable to shift the general stock of stove and greenhouse plants for a few weeks to come, yet under some circumstances a part may require being fresh potted at this time. When such is the case provision should be made to keep them apart from the general stock for a short time afterwards, as their treatment should be different till they again begin to grow. Most soft-wooded plants require heading back, or pruning at this season, and this should always be performed a sufficient time before the plant is repotted to enable it to make a new growth. It is likewise often necessary with this class of plants to disroot them more or less at this potting, and this is an additional inducement to defer repotting till the plant has made sufficient growth (say shoots an inch long) to enable it to bear the operation without injury. Stove plants will be generally benefited by being plunged in bottom-heat, and kept in a moist temperature till active growth commences. Attend to the training of climbing plants on wires and trellises. Tropaeolums will require looking to frequently to keep the wires regularly covered. Specimen plants should be turned round weekly, to prevent their becoming one-sided.

#### FORCING DEPARTMENT.

**VINERY.**—Gradually reduce the moisture of the early house as the Vines come into bloom, a comparative dry heat at the season of flowering being essential to the dispersion of the pollen, and consequent setting of the berries. The night temperature, when the Vines are in bloom, should be 65°, allowing a rise of 18° by day, and even a few degrees more with a bright sun. Some kinds of Grapes, as Muscats and the Dutch Sweetwater, set their berries best in a temperature of not less than 70°; attend particularly to the outside borders, and well protect them from rain or snow, which might suddenly check the heat of the fermenting material, and prove injurious to the roots, now becoming active. Where the houses containing late Grapes are required for other purposes, the Grapes may be cut with the spur attached, and hung in a dry dark room, in which they will keep fresh and plump for some time. **PEACH-HOUSE.**—The early house will be coming into bloom, and if the previous treatment has been steady and progressive, the bloom will be fine, and the chances of success much increased. When in bloom, suspend the syringe, and allow only a slight wetting to the pipes or flues once or twice daily. Allow a slight circulation of air at all times, gradually increasing as the day advances, and withdrawn to its minimum point early in the afternoon. Artificial fertilisation may be effected by gently dusting the bloom, when the air of the house is perfectly dry, with a feather or camel-hair pencil. The night temperature should still remain at 45° to 48°. Keep the outside borders well protected from wet and atmospheric changes. **PINERY.**—The dull dark weather we have experienced of late has not been favourable for bringing up the shows for the early crop; and although the application of artificial heat should bear some proportion to the amount of light, still where ripe fruit is in demand early, some sacrifice must be made to get them to show as early as possible, if they are not already up; be content, however, with a night temperature of 65°, and let the increase of heat be by day; water may be given in small quantities only, as the root action is not very

great at present. The plants intended to show in February and March will require steady treatment, allowing gradual increase to the temperature as the days lengthen. If the plants are in pots, the beds will possibly want either surfacing or turning over; whatever is done, it should be so managed that the bottom heat may be expected to last without again removing the plants before they are ripe. Keep up the linings to succession plants growing in dung pits, that air in liberal quantities may be daily given. The atmosphere, as we have before stated, should be kept as dry as can be obtained by the above mode of heating. A hot-water pipe however should be introduced, if only to dry the internal air in winter if possible.

#### FLOWER GARDEN AND SHRUBBERY.

The stock of bedding-out plants should now be looked over; where anything is short, remove a portion of the stock into a warm house to produce cuttings for propagation. It is often difficult to procure sufficient plants in the autumn of some kinds; and cuttings struck in this and the next month of all the more soft-wooded plants, and properly hardened off, will bloom equally well with those struck the previous autumn. It is, however, advisable that bedding-out Geraniums, and other woody plants, which require to be of a certain age, and size, before they are transplanted to the open borders, should have been struck and well established before winter, as fresh struck plants of such are apt to grow too fast to produce a fine show of blooms. Be on the safe side as regards numbers; there is rarely an over stock at planting time. In all large places, some odd corner is set apart for growing such shrubs and plants as are most commonly required to fill up vacancies, or ornament cottage gardens; where such is the case, cuttings of the more common ornamental shrubs, &c., may now be put in, with Honeysuckles, Roses, &c., and every other description of plant used for the above purposes should be propagated, of which the more showy herbaceous plants should always form a part. The stock of evergreens for this purpose should be frequently lifted, that their final removal may be effected at any season without risk.

#### FLORISTS' FLOWERS.

During the prevalence of the long-continued wet, we, in common with many other florists, have suffered from the depredations of slugs; our Hollyhocks out of doors, and Pansies in beds, have come in each for a share of their voracity. Visiting the garden, however, in the evening with a candle and lantern, and perseveringly placing bran, under tiles, raised a quarter of an inch from the ground, have in a great measure rid us of these pests. This notice will answer several queries lately addressed to us on the best method of destruction. Air and cleanliness, avoiding unnecessary wet, is all that need be said about Carnations and Picotees. Still, now there is a dearth of satisfactory employment out of doors, the compost heap should be well examined; under a shed a man's time would be well employed in passing it through his hands. Turning with a spade is not the thing, inasmuch as it is very probable in the spade of soil, a wireworm may be concealed, and should this escape notice, and destroy a pair of such layers as Lady Macbeth (R. P.) it would be but poor economy of time. Florists to be successful should always bear in mind that "whatever operation is worth doing at all, is worth doing well."

#### HARDY FRUIT GARDEN.

Mildew was very prevalent last autumn, and may be expected again; as a preventive we recommend Plums and Cherries (in addition to Peaches), to be dressed over with the following mixture:—Take one part of sulphur and two of fresh slaked lime, and add sufficient soap-suds or strong lye as will bring it to the consistency of grout. A little soft soap may be added if lie is used, to make the mixture adhere better to the trees. After pruning dress the branches over with this mixture when they are dry; should any be rubbed off in nailing them to the wall, go over them again, making sure the young wood is well covered. Gooseberries, Currants, and Raspberries may yet be planted. Where stakes are easily obtained these bushes are better planted in rows five or six feet apart, and the plants the same distance in the row, and trained as espaliers; they occupy less room in this form, the fruit is more easily gathered and protected from birds, &c., and their appearance is much neater; they may be made to separate the different quarters of the garden, or carried alongside the walks, while they take up but little room, and the expense of training is trifling.

#### KITCHEN GARDEN.

Not much can be done in this department until we get better weather. In the meantime, draw a rough plan of your kitchen garden, or vegetable ground; whether it be great or small divide it into a convenient number of plots, in proportion to the number of the different kinds of vegetables grown. Bear in mind what description of crop was grown on each plot last year, and proceed to mark down what you require to grow the present, and the quantity of ground you can devote to each. This will enable you to carry out a judicious system of cropping—by afterwards forming the different kinds of vegetables into classes of allied plants. Thus: Peas, Beans, and French Beans call Class 1; Cauliflower, Cabbage, &c., 2; Onions, Leeks, &c., 3; Spinach and Beets, 4; Celery and Lettuce, 5; Carrots and Turnips, 6. The remainder may be classed with one or other of the above. Such crops as Asparagus, Rhubarb, and Sea Kale will require separate consideration, as remaining

longer on the same ground. By following out the above a regular rotation may be laid down, extending over 3 or 4 years, according to the extent of land, and which will not only economise the use of manure, but will improve the quality of the productions, and reduce to a system what is generally left to chance—except where gardeners of considerable ability have the management.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending Jan. 13, 1853, as observed at the Horticultural Gardens, Chiswick.

Jan.	Moon's Age.	BAROMETER.		TEMPERATURE.					Wind.	Rain.
				Of the Air.			Of the Earth.			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 7	28	29.456	29.136	53	30	41.5	44	44	S.W.	.34
Satur... 8	29	29.527	29.404	49	32	40.5	43	43	S.E.	.00
Sunday.. 9	30	29.740	29.680	50	35	42.5	42	43	W.	.01
Monday.. 10	1	29.664	29.300	51	42	46.5	42	42	S.	.06
Tues... 11	2	29.622	29.473	51	42	46.5	44	43	S.W.	.22
Wed... 12	3	29.568	29.412	51	38	45.5	44	43	S.W.	.24
Thurs... 13	4	29.454	29.382	48	45	46.5	44	43	S.W.	.00
Average..		29.575	29.398	50.7	37.7	44.2	43.3	43		.07

Jan. 7—Rain; boisterous with heavy rain; clear at night.  
 8—Fine; large white clouds; clear at night.  
 9—Fine; very fine, with bright sun; clear.  
 10—Rain early a.m.; densely clouded; rain.  
 11—Clear; fine in the forenoon; overcast; lightning, and boisterous at night.  
 12—Boisterous, with heavy showers; heavy rain in the evening.  
 13—Densely clouded; very fine; clear at night.  
 Mean temperature of the week 54 deg. above the average.

#### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Jan. 22, 1853.

Jan.	Average Height.	Average Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 16	41.3	31.4	36.4	14	0.31 in.	—	7	5	2	—	4	6	3
Mon. 17	42.4	30.3	36.4	9	0.48	3	5	2	3	2	7	3	3
Tues. 18	42.1	31.3	36.5	11	0.55	4	3	1	3	4	9	4	3
Wed. 19	42.1	30.1	36.1	11	0.88	4	4	—	5	6	5	1	1
Thurs. 20	41.0	30.4	35.7	6	0.65	4	6	4	1	5	4	2	1
Friday 21	43.4	33.2	38.3	15	0.48	4	4	1	6	6	4	1	1
Satur. 22	43.3	34.0	38.6	19	0.57	2	4	1	5	3	9	2	1

The highest temperature during the above period occurred on the 19th, 18° 8 therm. 60 deg.; and the lowest on the 15th, 18° 59 therm. 45 deg. below zero.

#### Notices to Correspondents.

**ACORN:** *Erzerum.* Box arrived: acorns and bulbs all dead; perfectly dried up. Seeds alive. Dried specimens rather mouldy, but in fair condition. We will write as soon as the last have been examined.

**CUCUMBERS.** Mr. Hunter assures us that his "Prolifer" has given universal satisfaction; and says that, with two or three exceptions, all his last year's stock went to private individuals, among whom he does not find the name of the gardener at Cadbury House. We can only say that a specimen of it seen by us was that of a fine sort.

**HEATING:** *J. N. Higginson.* The cheapest contrivance is the brick flue. Doulton's pipes will not stand heat. The fire-place should be outside the house. The flue should run along the middle, and either return upon itself or pass out at the end opposite to that by which it enters, according to the temperature you require. It must be on the surface of the ground. Burn what you find cheapest. One Vine to a rafter is enough. You may have the same number of Vines, alternately with the rafters, on the back; but you had better let them be planted inside the house. Black Hamburg and White Muscadine are two very useful Grapes. They may be planted out of pots, at any season of the year. You can have no better compost than chopped and well-rotted fibrous loamy turf, mixed with a quarter of old, thoroughly rotten stable dung. Avoid all rank manure. Mind that the border is thoroughly drained.—*S. W.* We can only say, in reply to your letter, that we have employed Mr. Weeks ourselves, and that his work has been executed in every respect to our entire satisfaction.

**IVY:** *X. Y.* Ivy planted against the sound wall of a house will exclude dampness; and if a wall be already damp, Ivy planted against it will, when grown up, cause it to become dry, provided the brickwork is sound, and the dampness does not arise from water being attracted upwards from the foundation.

**NAMES OF PLANTS:** *St. Domingo.* Mr. Benthall has determined your *Almace* to be the *Hedwigia balsamifera*; but the fruit you sent in the autumn cannot possibly belong to it. There were some good things among the other plants sent to us; but they are, in most cases, too imperfect to be publishable.

The terrestrial Orchids, from the Savannas, were chiefly *Tetraneura*. The little packet has arrived. The Journal is regularly sent to Mr. M. You will find in the last number an answer to your inquiry. *A. F.* These are *Alpeceurus pratensis*.—*H. G. L.* *Oncidium*, *ornithophyllum*, *Odontoglossum*, *Rosell*, some *Maxillaria*, undetermined, and *Dendrobium Wallichii*.—*L. K.* 1, Probably *Acacia melanoxylon*, the foliage will soon change; 2, *Acacia crassiuscula*.—*Southampton.* Some *Eulophia*, smashed to pieces by the very unskillful packing. We cannot tell what ails your Begonias; too dry and hot an air?

**NEW ZEALAND:** *W. R. W.* Your Cacti will travel safely in any manner which secures their dryness. If you can transplant them in the pots which belong to them, and give a very little water when they begin to shrivel—that will be the best plan. If not, put them among dry moss, in a dry box, in a ventilated place, watch them, and if they shrivel much, just damp the moss; keeping them exposed to light and air.

**ORCHIDS:** *Young Gardener.* Give your six fine plants of *Blechnum* Tankerville more heat and moisture, when about to throw up their flower stems.

**QUINCE STOCKS:** *Diss.* These should be headed back in January; and they should be grafted at the usual season, working them as near the ground as possible. Use the mode of whip-grafting, taking care not to lay bare any more of the Quince wood than the scion will cover. Draw some earth over the clay to prevent it from drying; and by attending to these particulars there is little chance of failure.

**THE POTATO:** *A Well-wisher.* We are sorry to say that the *Tara* is not susceptible of field cultivation in Great Britain.

**WALLS:** *T. T. C.* Whether walls can be made water tight or not depends upon whether they become wet from the outside or from the foundations. If the latter, and the wall is on undrainable clay, the case is hopeless; if the former, then a coating of cement would be effectual. We do not know whether tarring would answer; but it probably would if the tar were applied hot, when the wall is dry.—*J. and Z.* In ordinary winters 9-inch boards, fixed immediately under the coping, have been found to be sufficient protection for fruit trees on them; but if the spring be unusually severe, then employ, in addition to the coping-boards, some cheap light canvas covering or straw screens, made as mentioned in the last report of the Horticultural Society's Garden. The latter should be fixed on the top of the wall, so as to project some distance beyond the coping-boards.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

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AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

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**PEAT CHARCOAL**, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertilizer; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenny.

Mr. JOHN ANNETT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

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PRESIDENT OF COUNCIL—Earl BATHURST.

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PRINCIPAL—Rev. J. S. HAYGARTH, M.A.

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## The Agricultural Gazette.

SATURDAY, JANUARY 15, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Jan. 19.—Highland and Agricultural Society.  
THURSDAY, — 20.—Agricultural Imp. Society of Ireland.  
THURSDAY, — 27.—Agricultural Imp. Society of Ireland.

WE can see from the window near which we are writing, two fields: they are both in pasture—permanent meadow land; the soil is in both cases a calcareous clay, not exactly alike, but very similar in natural quality and fertility; in both cases the land is full of water; there has not been a day probably during the past two months, during which you could have walked dry shod over either. There is indeed similarity enough between the two fields sufficient to excite some surprise at the very singular difference of appearance which they now present. The one is as green as spring time could make it, the other is as brown as rotten hay. In the one case the Grass has been rapidly growing and will, it is plain, furnish a very early spring bite for sheep or cattle: in the other there has not been growth but decay; and sedges, rushes, and dead Grass, have served to keep perhaps one sheep per acre in a state of starvation during the past autumn.

The explanation of this contrast of course is, that in the one case we have a water meadow, and in the other an undrained pasture field on poor clay land. But, to go a step further in our inquiry,

what is the reason of results so different as those presented to our view? It is not owing to the greater warmth of the soil: there has been no frost to be warded off the land by the running water in the one case, and to be suffered by the land with its stagnant water in the other. It is not owing to any greater richness of the liquid in the two cases; the rain water which stagnates in the barren field is at least as full of all the elements of fertility as the spring water is which irrigates the fertile meadow. The only cause, and it is one which explains the advantage of draining as well as of irrigation, and the advantage of that sewage irrigation which Mr. MECHI has this day alluded to in our columns, as well as that of the common irrigation which makes just now many a valley in Gloucestershire, Wilts, and Hampshire, green and growing in the midst of dead-looking water-logged hill pastures by which they are surrounded—the only cause of all these contrasts is to be found in the fact that in the one case water is stagnant, and in the other it is moving. No doubt the drop of water when it falls upon the thirsty ground is *meat* as well as drink; it contains within it the elements of *food* for plants as well as the elements of water; but while it is in itself useful as food at the dinner table of the plant, its chief importance arises out of its being such an excellent water. It is not so much for what it is as for what it brings, that it must be valued; and its importance as a mere vehicle of food cannot be overrated.

Of that of course every farmer has experience; he knows that an enormous increase of fertility is attainable, not so much from adding manure, not from growing better sorts of plants, not from adopting a better system of farm management, but simply from enabling drops of water, as they fall upon the land, to put forth all the activity, as waiters at the dinner-table of the plants, of which they were capable; for that is the simple effect of draining the land—it is the simple effect of irrigating it. To drain the land, as we have often said, is not to get rid of water, it is to make use of water. Imagine the condition of a soil full of water—the condition that most of our fields are in at present—so that any rain that falls upon it, just rolls over the surface into the nearest ditch. Of course the plants on such a field must starve. We must remember that a plant in the soil is in much the same position as a man would be in, who stood chained by the leg to one spot in the larder. The larder may be full of food, but as soon as the man had eaten all that was in his reach, he would starve, though in the midst of plenty; that is, he would do so, if there were not a contrivance in operation for carrying the dishes by him as he stood, so that he might choose his food as it passed within his reach. Now, in a well-drained soil the drops of rain water, in an irrigated field the running spring water, is just such a contrivance as this. In this way the nutritive part of the soil is dissolved and presented to the roots of plants, as the water passes to the outlet underground, but if the land be not drained the water soon fills it, and then no more rain will sink in, and the water is stagnant in the land—there is no current through it; the dishes in this larder are lying still on their shelves, and as soon as the poor plant has eaten what it can within its reach it must starve, it cannot go in search of food like an animal; it is like an animal chained by the leg—it is stationary, and must die if food be not brought to it.

This mode of illustrating the subject, which we borrow from a lecture published in a past volume of this Journal, connects the subjects of irrigation and drainage most closely, and as we believe with perfect justice. Certainly the contrast between the irrigated and undrained fields visible at present from many a house beside our own, is sufficient to prove that it is not excess of water of which England has reason to complain—but it is want of drainage, without which water, which, in whatever quantity, might add to our fertility, stagnates and poisons all within its reach.

It is proper to remark, in reference to the examination papers which we have been publishing, in connection with the Royal Agricultural College at Cirencester, that they are printed just as they were delivered to the examiners by the students whose names they bear. These answers were in fact all written in the examination-room without time or opportunity of reference to books or notes; and the manuscript has reached us just as it passed from the hands of the students, so that it represents most strictly the fruits of what has been learned during the session. We have still the answers to the examinations in agriculture and in vegetable physiology and botany, which we shall publish as soon as certain woodcuts, intended to illustrate them, are prepared.



## LIQUID MANURE AND IRRIGATION.

How frequently I am told by careful and observant agriculturists that, although they have constructed tanks for the preservation of liquid manure, they could never perceive any good result from its application. To doubt the value of liquid excrements, would be to deny the utility of the sheepfold, and to disbelieve the science of agriculture. The great mistake is in using it insufficiently diluted on a growing crop. Its strength and pungency are injurious to the roots of growing plants. The urine of a cow or horse, falling in dry, hot weather on young Clover, destroys it; no such result would take place during rain. On light dry soils the danger is greater than on tenacious clays, the latter having a fixing or neutralising power. Plants having their rootlets near the surface, suffer more than robust bulbs of an advanced growth, whose tap roots deeply penetrate the soil. Those who have incautiously administered strong doses of pungent manures, such as admixtures of guano, can fully appreciate the correctness of my remarks. I remember that my gardener ruined half his potted plants by an application of liquid sheeps' manure. The change in their foliage to an unhealthy yellow was almost immediate; and although amply watered, they never thoroughly recovered it. The exuberant results of a heavy rain in June sufficiently indicate the condition for our application of manure. That rain is only water saturated with ammonia and carbonic acid, and perhaps some other salts. This summer has been a wet one, and I observed that my applications of diluted liquefied manure during very heavy rains, have always produced the most favourable results.

Perhaps some of my readers may be surprised when I tell them that we irrigate all day long, and every day, wet or dry, Sundays and hard frosts only excepted. The quantity applied daily may average from 500 to 700 hogheads. In dry weather it is no uncommon thing that we apply 1 inch per acre and cause the drains to discharge abundantly as though it had been raining heavily for 24 hours. We feel that the poor hungry subsoil is thus saturated and amended, and that a thousand affectionate or affinitive compliments are being interchanged and unisons effected between the elements of air, water, and the infinitesimal soluble and insoluble granules of mother earth.

Those who understand the "chemistry" of our soils will readily comprehend and appreciate the advantages of bringing together the elements I have named.

Solid manure might remain for ever inoperative but for Nature's drippings, which, in our dry eastern counties, with an annual rain-fall of 24 inches, are far too few for bulbous and leguminous plants. Hence the poverty of our Grasses, the evaporations of summer demanding nearly all the rain-fall of that period; from April to September, 93 per cent. of the rain-fall is evaporated. When we are thoroughly convinced that water is manure, that it contains (see Liebig) all the organic elements of our bodies, we shall no longer wonder that proprietors in our lake and other districts, blessed with a triple rain-fall, should, if their land be drained naturally or artificially, consider that the breaking up of their pastures would be an act of insanity. Inorganic manure, where deficient, can always be cheaply supplied. I have no hesitation in saying, that by the new principle of irrigation, our poor pastures, constituting so large an area of this kingdom, might be greatly increased in quality and fertility, assuming, of course, that the water of rivers or of springs were available. In Devonshire, irrigation is only made use of on the naturally drained soils; to put water on the heavy clays in their undrained state would be injurious. My process of irrigation may be described as giving an Irish or lake climate to my Grass, root, and leguminous crops, whilst I retain the natural dryness and heat for my Cereals; our natural rain-fall is about 24 inches; I increase it artificially to about 30 inches; 300 hogheads per acre are equal to 75 tons. We often apply that quantity or more per acre at once.

With respect to the necessary dilution of our manure, in a dry summer you can hardly dilute it too much—say 1 hoghead of liquid to 50 of water. During winter, or on a fallow, it may be applied in considerable strength. Still, as a maxim, the greater amount of water we can pass through our soil, the greater will be its fertility, because the ammonia and carbonic acid, supplied by Nature without cost, will be proportionately increased. (See Liebig).

There is an almost universal opinion that liquid manure should be fermented, in order to give the full benefit of its operation. I fancy I see the reason for this. Fermentation converts nitrogen into compounds of ammonia. Clay soils can fix ammonia, and plants luxuriate in ammoniacal gases. But can soil fix nitrogen; and can it as nitrogen be useful to plants? I presume not: if so, well may we value fermentation (in solution of course). I have submitted the question to Professor Way, in the hope that he will test and solve it, and thus add to our obligations.

All our able chemists are agreed that we have abundant elements of fertility in our soil, if we could but render them available.\* Now this availability is

enormously increased by irrigation; filtration and permeation cannot proceed without displacement and replacement of air, and alternations of temperature; for in the summer the heated surface, often 120° to 136°, is by irrigation robbed of its heat, which is conducted to the subsoil. This cold inanimate subsoil, with an ordinary temperature of 46°, is thus warmed, and communicates its invigorating heat to the roots of plants. Nothing will carry heat downwards but water. The falling shower on the heated surface may be compared to the shower-bath which deprives us of our caloric, and takes it to itself for some other purpose. Every gardener and horticulturist can appreciate the value of bottom-heat. I have ere now ventured to predict, that in times to come, water will be economised in every way for application to vegetation. The gardener who daily waters his rapidly-growing plants in a heated atmosphere, is only the type of what the farmer ought to be and will be. The heavy rains and great heats of our tropical climates bless us with abundance of cheap sugar and other productions. The amount of heat and moisture combined, may be safely taken as a measure of fertility, so far as regards organic productions. Our inorganics, such as phosphates, sulphates, and alkalis, are the least costly of manures, and abundantly obtainable and generally present in the soil.

Everything in nature is so grand and gigantic that man's utmost efforts must be comparatively puny and insignificant. A reference to Mr. Parkes's excellent and philosophic paper shows that 2700 tons of rain-water fall annually per acre even in our dry districts, whilst near the lakes and in the west of Ireland, the quantity is from 5000 to 6000 tons per acre per annum, of which about 42 per cent. filtrates, and 58 per cent. evaporates. The study of the rain-gauge gives, with drainage and other due considerations, a true indication of our natural pastoral districts.

I read the other day that 11 inches of rain had fallen in Sierra Leone in 24 hours, and I see that 56 or 57 inches of rain are common in many parts of the United States. Where heavy land is drained artificially and supplied with a much larger rain-fall by irrigation, I can see a great tendency to friability. Thus I do not at all despair of materially improving the tenacious clays, physically and chemically; for Professor Way and Mr. Paine (Royal Agricultural Society's Journal, Vol. XII., p. 2), have shown us how large a proportion of certain soils is soluble in diluted acids.

If the alternations of heat and cold, moisture and dryness, dissolve and crumble the sculptures and cities of antiquity, however hard their material, have we not a right, natural and scientific, to assume similar results for our soils? No doubt perishability has been much graduated by the particular character of climatic influences. We might expect more durability in the arid sands of Africa than in the reeking deltas of enormous estuaries.

The desire of plants for moving water and their power to transmit it through their system is often curiously illustrated. A rapidly growing Acacia tree, planted seven years ago on the border of my pond, has become dissatisfied with mere soil, and has protruded into the water bundles, or rather bunches, of white rootlets as thick as my arm. No doubt these are absorbing and transmitting water, moistening and dissolving the soil in which the other roots are placed, as described by that great agricultural philosopher, Jethro Tull, in his chapter on "Roots." The power that plants have of transmitting and transposing water by their roots is there beautifully and accurately described, and has a considerable bearing on the subject of irrigation. But my pond is of running, not stagnant, water. How few of the non-drainers appreciate the miseries of stagnant water, although personally they quickly miss the oxygen of stagnant air.

It is a pleasing reflection that the increased supply of water to our towns will be an additional advantage conferred on agriculture, provided the force of public opinion and correct calculations shall induce our landed proprietors and farmers to depend upon sewage and irrigation as the cheapest source of fertility, which experience has taught me that it certainly is. Can we doubt it, with the following facts before us? The fertile meadow, periodically overflowed, is coveted by the farmer, and commands a high value for sale. Deprive it of its irrigation and you would ultimately reduce it to the diminished value of the neighbouring uplands. Land adjoining a river, although not irrigated, bears a higher value than the neighbouring uplands. And why? As on a summer's evening we look down on these meadows we see them enveloped in clouds of mist, the exhalation of the river, deposited in millions of dew-drops rolling from the airy pillow that intervenes between them and the plant on which they so lightly and beautifully repose, thus moistening the soil and fertilising its products. How wonderful and almost magical is the influence of a shower on the parched and heated soil; and yet 'tis only water, 'tis irrigation. Our giant Liebig smiles at our wonder, and points out that it is simply solution, absorption, and circulation. He sees in that shower the material for our flesh and fat (ammonia and carbonic acid), supplied in an available form. He knows that the inorganic materials for

our bodies, supplied by mother earth, are rendered soluble and available by that precious lubrication. He pities the slow and wasteful process of roadside dung-heaps, or rather the want of knowledge which causes that waste. The farmer wants solution, but without maceration and irrigation his manure requires years to make him a profitable return.

The artificial multiplication of showers and rain-fall introduces to the soil and its ingredients abundance of oxygen, without which the putrefaction or decomposing action of organic matters is suspended or delayed. Abundance of moisture hastens the farmer's returns, and increases his profits. If the absence of moisture retards vegetation, 'tis only a logical deduction that its presence must accelerate it.

The frequent saturation of the soil imparts activity to our subdrainers and subsoilers, the earth-worms. In dry weather they are inactive, but after heavy rains they quickly supply the surface with the best of soils; wanting in a thorough knowledge of the natural history of these interesting creatures, it is quite clear that they require a dry bed, that they are fearful of continued immersion, and that they labour to keep their runs or courses clear, and their beds dry; the amount of cultivation and drainage they effect in a few years is surprising.

The accumulated organic and inorganic remains and excrements of myriads of insects and animals and birds, find a ready solution by repeated irrigation. It becomes a most serious consideration whether irrigation is not a perfect substitute for cultivation. I believe it to be so. If I am correct, how enormous would be the results! The amount of horse and manual labour on fallows, for root and other crops, can hardly be less than 20 millions annually.

What is the object of fallow but disintegration and decomposition by contact with the ammonia and carbonic acid of the atmosphere? and is not all this more cheaply and effectively done by frequent irrigation on drained soils? Experience has taught me that on Grass no amount of solid manuring will effect that which results quickly from irrigation. A striking instance of this occurred opposite my house, where, on a hide-bound plastic clay, no Grasses would grow but those sour ones indigenous to such soils. Vain was the application of solid manures; but in six short months a few irrigations have changed the unclean and rusty brown to an intense green of fine and succulent Grasses, cropped closely and relished by the animals, and effecting a great change in their condition and produce. The question of irrigation has been well treated by Mr. Pusey, in the Royal Agricultural Journal, Vol. X., p. 462. The evidences of success in the Duke of Portland's Clipstone meadows, those of Lord Hatherton at Teddesley, and the extraordinary results on the Edinburgh sewage meadows (formerly worthless, but now rented at 20s. to 30s. per acre per annum), are sufficiently conclusive, without adducing others, of the benefits of irrigation combined with drainage. There is something ridiculous in our present mode of applying manures. It is ploughed under the depth of a common wine glass, and there it remains waiting for solution and decomposition. There is the manure, but where are the roots? most likely 2 or 3 feet below the manure in the unmanured subsoil. Before a Mangold Wurzel leaf is 6 inches long, its tap root will be 18 inches below the surface; and when well advanced in growth, 3 to 4 feet, or more, deep. Rhubarb-growers in gardens bury their manure 3 feet deep; Wheat and other cereals are very deep rooted. In double trenching some vile soil after a Wheat crop, I found every foot of the subsoil occupied by the roots of the Wheat at considerable depths. In fact, a young Wheat plant at Christmas is searching the soil from 9 to 18 inches. A friend of mine, excavating some soil that had been once moved, found the roots of the adjoining crop of Parsnips at 13 feet 6 inches below the surface.

Well, then, how obvious it must be, that the soluble form of manuring is the only true and profitable principle, searching, warming, and fructifying the barren subsoil by aeration, irrigation, and disintegration.

When we as agriculturists understand chemistry in its relation to agriculture, which shows us that there is no difference between a bullock and a shower of rain, except in inorganics; when we comprehend that three-fourths of the weight of our bodies are water—that nine-tenths of our Turnips are water—then shall we believe that water is manure; then will the sewage of every town, village, and railway, be eagerly sought after and economised; then will covetous contentions arise about trickling brooks and gushing streams; then will the farmer's mind identify the carbonic acid and ammonia of wind and water with the fat and lean of his Christmas bullock; and then will the people of this great nation be better employed, and better and more cheaply fed.

It is easy to comprehend that if carbonic acid and ammonia are the two great fertilising solvents and constituents, how important must be the maceration and reduction of all manure in abundance of water. The evolving gases are stored up in the water for fertility and profit, instead of escaping into the atmosphere and thus being lost to their owner. *I. J. Mechi, Jan. 12.*

## AGRICULTURAL SOCIETIES.

HAVING recently attended a meeting of a local agricultural society, I felt the greatest disappointment in its results, producing as it did anything and everything but the information all desired in relation to the progress and improvements in agriculture. The cross table being

\* Professor Way says, Royal Agricultural Society's Journal, Vol. XIII., page 143, "The fact is, that there is an almost unlimited supply of the mineral requisites of plants in soils, but that the great agricultural problem is to get at them to render them available; and here, again, it seems reasonable to suppose that abundant cultivation, which lets in carbonic acid and ammonia to the soil, may by that very act be providing the potash and phosphate of lime which the former and the silica which the latter are endowed with the power of dissolving and presenting to the roots of plants." See also Dr. Daubeny's most

valuable paper "On the Distinction between the Dormant and Active Ingredients of the Soil," Royal Agricultural Society's Journal, Vol. VII., page 237. I commend the foregoing papers to a perusal in extenso.

\* See Royal Agricultural Society's Journal, Vol. V., pages 119 to 151, On the Influence of Water on the Temperature of Soils; On the Quantity of Rain-water and its discharge by Drains; by Mr. Josiah Parkes.



the post of honour was, as customary, occupied by country gentlemen possessing estates in the neighbourhood; and the carrying out of the programme, as previously arranged, was exclusively delegated to them. I need not, of course, tell you that every Englishman is proud on any occasion, public or private, to do homage to her Majesty, the Prince, and Royal family; but after these, at a meeting for the avowed object of communicating any recently obtained knowledge or advantages which could be applied in cultivating or turning the soil to the best and most useful purposes, you may judge of the displeasure of myself and the rest of the company at being wearied for three hours after dinner by these half dozen gentlemen complimenting and proposing each other's health, and endeavouring to prove to the assembly what very excellent neighbours they were, and the social and friendly terms on which their personal intercourse was carried on. If any one of them did venture to touch upon the real business of the evening, it was accompanied by a remark that the speaker did not really understand sufficiently the subject to enable him to impart any fresh matter to those about him, and that this part would be treated upon by others (if any present) possessed of more practical information.

In making these observations it is far from my intention to underrate the importance of country gentlemen of large estate giving their attendance in such times as these, and showing thereby their willingness to promote inquiry and endeavour to bring together men of practical knowledge and experience, some of whom may be desirous of affording information upon any new plan which might have presented itself, or of conducting more economically any mode of management which may be already established. I would ask those who yet remain wedded to things as they are, why this old and prevailing custom of an exclusive or elevated table should be still continued at public meetings? I know those most anxious for the universal welfare, and for promoting "scientific and practical" views in agriculture, would be glad to see one and all take their seats indiscriminately; conversation would then be more general, and intercourse less restricted. Those selected for speaking would be heard better, and the better informed would have an opportunity of more general intercommunication, as well as knowing and feeling the temper of those around them. These are the days of progress, of enlightenment, and change, and unless those having the influence and conduct of such meetings as these are prepared to abandon their accustomed privileges, and give up the power of excluding some and admitting others to the select table, it is not to be expected that those possessed of a real independence in the middle class of life, will be found sitting for hours to hear gentlemen showering praises upon each other, and from which nothing beneficial can be derived. I wish to cast no reflections upon any one personally, they were all, no doubt, from what each expressed, excellent of their class; but this was not what I and others went to learn, nor do I say that what is now complained of is not as prominent at other meetings as the one referred to; it is the system which requires putting down, and unless the higher class connected with agriculture will abandon these exploded habits, and allow of those having a practical knowledge to give expression to their views, I do not perceive how local agricultural societies can be made capable of producing beneficial results.

At the termination of these complimentary addresses one or two practical men at the extremity of the room began to speak upon the subject immediately under consideration; but at this time patience became exhausted, and those having a distance to go were departing, and this with the confusion caused by some disposed to be noisy, prevented any benefit being received by the few still inclined to listen.

It is a common remark that agricultural societies only flourish for a time; and can it be wondered at? Men will consent to the loss of a given quantity of time, but a repetition of blanks becomes insufferable, and as every successive trial brings about the same ending, the numbers fall off, the interest previously felt begins to fall away, and the society dies a natural death. The line of exclusion for the favoured table is difficult to draw, and some are sure to feel offended on this account.

It is in a great measure such causes as these which lay the foundation for the downfall of these agricultural societies, and of their ultimate extinction consequently; and unless the more influential are disposed in future to treat all who assemble indiscriminately, and to show neither favour nor affection, these meetings can never become prosperous or popular. *B.* [We do not altogether agree in the justice of this criticism. Those whom our correspondent seems to think excluded are, as a general rule, excluded by themselves. If the tenant farmers chose to speak, they would be willingly listened to. The hint will, however, probably induce managing committees to make another effort in the direction "*B.*" has pointed out.]

#### TENANT-RIGHT.

I HAVE been rather amused with two of your correspondents, on this slippery subject. A single plain but practical thrust, has been followed by a volley from behind "*Uncle Tom's Cabin.*" In the "window-and-shop" argument, we are told something that our informer considers to be entirely new, but really everybody was quite well aware of it before. "It is very different in every other trade," from that of

agriculture. Who is so ignorant as not to have known that? We have the Royal Agricultural Society and many other Agricultural Societies, all supported by farmers, whose sole ambition is to teach each other how to farm, and how they can most easily make money. Does the shopkeeper or cobbler enter into similar associations to instruct each other in selling candles or in mending old soles? Can all the combined trades not turn out a *Mechi* amongst them? No; our respected friend must turn farmer, before he can be of any service in the patriotic line. "The British farmer is a primitive sort of person." He is without doubt the most self-denying soul that lives. "What an arrant fool!" exclaims the prudent man of business.

We will suppose, however, that all this arises from some emanation of the ground (and who can doubt it, since *Mechi* was at once affected by the agricultural malaria?) and, further, we will suppose all those who support such institutions as agricultural societies are but *Mechis* in miniature. A meeting of one of these clubs is to be held; Mr. Tarbucket, having got his old ship rigged and coppered and sent to sea, has now leisure to pay his country friends at Twitthell-hall a long-promised visit; he is quite surprised that such associations do exist, it is so different in other trades. His host, A, being president of the club, Mr. T. at last agrees to honour the meeting with his presence. The subject of discussion is the "Use of Guano as a Manure." The president, A, opens the discussion, and wholly "condemns the use of guano, as being the immediate and undoubted cause of the Potato disease and a host of other evils; and he himself has done what he advises every landlord to do—bound all his tenants against putting a single pound upon his lands." Tenant B rises to reply, but is told by the president that "he has no right to say a word in this matter, as he has subscribed a lease and bound himself down. It is entirely a matter of agreement in priority to connection, and has rested entirely upon his own prudence in having embarked in an undertaking neither trustworthy nor serviceable, and therefore instead of saying anything in this matter, he should turn his exertions to another quarter."

Mr. Tarbucket has a personal interest in getting a hearing, as his good ship *Rover* has gone out to the coast of Peru for a cargo, and breaking through the rules of the club—as he forgets he is not a member—he remonstrates with his friend the President, who at length agrees that B shall be heard, if he will confine himself to the agricultural merits of the subject. This arrangement restores harmony in the matter; and B at length proceeds and addresses the President:—"I am glad to find you a member of this Agricultural Club, believing that your opinions on this subject arise, in a great measure, from a misapprehension of the uses and action of guano; I do not blame you for the caution which you exercise in binding me, along with your other tenants, against the use of this powerful manure; you have an undoubted right to do so, and I shall be the last to challenge it—I have taken your farm with these conditions—I am well pleased with my bargain, and with you as a kind-hearted landlord; but allow me to say, as a member of this society, that I think you mistake your own interests, as well as mine and those of the community. I hope when you look around you will be almost forced to admit that you are so far acting the part of the dog in the manger; I therefore will conclude by saying that guano is a capital manure, and its use ought not to be restricted by landlords; and I hope you will not consider these remarks, which are strictly agricultural, to be in any way personal." A resolution is carried against the President.

Another meeting of the club is held, and the former president is again at his post. The subject of discussion is that of "unexhausted manures;" our friend in the chair, having been outvoted and left in the minority at last meeting, fondly imagines he has a much better case in hand; and therefore to avoid, if possible, defeat on this occasion, digs deep intrenchments which he considers unassailable. A again addresses the meeting:—"The discrimination of the north country farmer is the first step upon the ladder—you must try to imitate him; landlords will not, and ought not in justice to themselves, to expend money for the benefit and comforts of others, so long as they can obtain ample remuneration without making any outlay. Tenants will as surely leap overboard after each other, as sheep will do, and play on at the game of beggar-my-neighbour until they will take a lesson from the cobbler or the shopkeeper; the ambiguity which attends every agricultural minutia, makes a compulsory tenant-right impossible; only consider, some think the power of guano is exhausted the first year, while others confess that the value of oilcake is yet an unsolved problem."

Mr. Tarbucket has again obtruded himself on the notice of the meeting, and congratulates his friend on his surpassing speech; and as he has unconsciously overlooked his own interest in the oration, he lets the meeting know he is against tenant-right in every shape and form; and to bear out the truth of his friend's remarks, states the hard terms he was lately obliged to drive with a merchant who hired one of his vessels, and bids agriculturists go and do likewise. He has entirely forgot that he is addressing himself to simple-minded agriculturists. This is soon forced upon him, however, as tenant B has risen to address the meeting, and thus relieves himself:—"Mr. President, I think that you, and your worthy friend who has just spoken, forget that you are in an agricultural association; until land is bought and sold as readily as an old ship your arguments do not hold. What has the strict commercial

system, as applied to land, done when it has been carried out—can you answer that? Such sentiments as you have uttered steel the hearts of those who have neglected their duties; in the west we hear the cry—which is so far an Irish one—but the misery is most felt where little is heard; we look upon the whole as symptomatic of a bad state of matters. The courage of a Napier we hope will successfully grapple with the question; we do not need his services on this side the water. Mr. President, I no more dictate to you on this question than I did on the guano discussion; you can make what terms you choose—no tenant-right bill can override private agreements—you need not therefore be afraid of anything compulsory. If your own practices and dealings with us were unobjectionable, a tenant-right bill would not disturb you any more than certain enactments, which are directed against those who live by their wits or sleight of hand, would discompose an honest man. I only say that you ought to do all in your power, from the position which you now occupy, to give your tenants as liberal covenants as will not be inconsistent with your own interests. Try and erect a barrier to restrain the sheepish agriculturists from plunging overboard; but throw your smattering of chemistry overboard altogether, and go and view some of the Lincolnshire estates, and see if the farmers have there sickened themselves by dabbling in the waters of liberal allowances. Take Tarbucket with you, and let him judge; compare some of the best-farmed estates with your own, and report. Like sheep we have allowed tenant after tenant to leap overboard; but there 'the names of the principal farmers are nearly the same now as in Arthur Young's time.' No chemist is needed there to impress on you the good effects of oilcake, or the conservative influences of tenant-right. But the last card is thrown, and what is it that all has been risked upon it?" Tarbucket, whose self-interest is always upmost, is already silent; he has seen where his cargoes are swallowed up. "It is the ambiguity which attends every agricultural minutia." Well, but what does that signify? you have the results before you. Maintain, if you will, that guano only lasts for one year, and that the problem of cake is unsolved; it is certain, however, that those who indulge in such costly practices, raise such crops as Tarbucket admits quite put our doings in the shade. It is remarkable how clean the land is kept where this custom of tenant-right goes on—it is only one link in the chain, and would any agricultural Vandal dare break it? Remember the sheep will go overboard: thus the Lincolnshire tenant-right ought to be advocated and promoted even on the lowest grounds that any one will condescend to stoop to. Only bear in mind that it does not pay to—

Spread the compost on the weeds to make them ranker,  
That monster custom—the use of artificials  
Is angel yet in this—  
Their use almost can change the stamp of nature,  
And either curb the twitch, or throw it out,  
With wondrous potency. Forgive me this my virtue!

An Agriculturist.

#### THE FAT STOCK SHOWN AT THE LAST MEETING OF THE SMITHFIELD CLUB.

(Concluded from page 27.)

##### SCOTCH BREEDS.

We have seen four examples. First, Mr. Arkwright's pure ox, bought by Mr. Jefferey, Regent Street, and weighing 173 stones beef and 19 stones fat. The finely marked meat of this animal attracted general admiration. Prince Albert's 4½ year old, bought by Mr. Collingwood, of Bishop's Road, Paddington, and weighing 152 stones beef and 14½ stones fat; his Grace the Duke of Beaufort's, bought by Mr. Slater, of Kensington, purveyor to her Majesty, and weighing 159½ stones beef and 25½ stones fat; and Mr. Gurney's Galloway, bought by Mr. Collingwood, Lamb's Conduit Street, and weighing 194½ stones beef and 21½ fat. The two latter of these were very superior meat; and unless they had been placed beside each other could not say which was best, and his Royal Highness's was not far behind. The four appear to have stood the turmoil of the exhibition better than either of the former breeds examined by us, the young Herefords excepted, cutting up clear and bright. "[The most noble the Marquis of Exeter's ox weighs 146 stones beef and 23½ fat; Mr. Rob, jun., Thapfield, West Highlander, 137½ stones beef and 12 stones fat; Mr. D. Rob's, ditto, 112 stones beef and 18½ stones fat; Mr. Heath's Galloway, 159 stones beef and 19 stones fat; Mr. McCombie's Angus ox, 170 stones beef and 37 stones fat; and Mr. Jonas's Galloway, 190 stones beef and 25 stones fat.]"

##### CROSS-BREDS.

Three examples have been examined, viz., the Earl of Radnor's Hereford and short-horn, fed on hay, corn, cake, and roots, bought by Mr. Buckoke, Church Street, and weighing 154 stones beef and from 14 to 15 stones fat. This ox turned out pretty well, mixed firm and fine in colour both muscle and fat. Mr. Stewart's short-horn and Aberdeen cross, fed on Grass, Turnips, straw, and oilcake, and weighing about 170 stones, was inferior to the above in quality; and Mr. Bliss's Leviathan of the show, bought by Mr. Oxley, King-street, Smithfield, and weighing 244 stones beef and 26 stones fat. This ox turned out as bad as we expected, both in quality and weight.

##### EXTRA STOCK.

Two examples have been noticed; Mr. Heath's 4 year old Hereford steer, bought by Mr. Swithon Horn; and Mr. Farthing's 5 years and 10 months old Devon, bought by Mr. Orris, of King Street Terrace







from 7s. to 9s. per week in dry weather, leaving an average, counting working days, of not more than 6s. per week, if as much—a state of things which must not continue, if farmers consult their own interest. *Falcon.*

## Societies.

**KIRTLING: Drainage.**—The tenants of the Hon. W. H. J. North, belonging to the Kirtling and Ashley-cum-Silverly estates, lately assembled at the audit dinner were addressed by Hewitt Davis, Esq., the Draining Inspector under the Government Drainage Commission (who, in consequence of the extensive drainage doing on the estates, attended to explain the system). He was, he said, come among them to carry out a great, important, and useful work upon their farms, and he sincerely hoped he should do so to their satisfaction. He found that they were suffering from imperfect drainage, which interfered with good farming, and deprived the tenant farmer of a great deal of the return necessary to repay him for his outlay and exertions. He had gone over lands far superior, in many respects, to their's, but he had never found crops better in proportion, or the tenants more desirous of availing themselves of the benefit of improvements of the soil. One great benefit of deep draining was, that it allowed the plant to root deeper down, and receive more nourishment by the water being effectually drained off; as water rises higher and higher till it reaches the surface, so it becomes more and more mischievous. The roots of plants only lived while they fed upon air, and they penetrated the earth as far as they could obtain air to support their vitality; and if they drained land 4 feet deep, the roots of their plants would grow very nearly, or quite to that depth; while upon land undrained they would only penetrate about 12 or 15 inches. Mangold Wurzel growing upon well-drained land have reached 4 feet, the depth of the draining, and in consequence of having had three times the air to feed upon, the plants themselves were giants compared with what they would have been had they been planted upon shallow-drained land. (Hear, hear.) If land were drained only 2 or 3 feet, the water, especially in clay, would rise to the surface by attraction; but if land were drained to the depth of 4 feet, there would be a foot of soil upon the surface free from undue moisture, and the sun would more effectually warm it. The 4-foot draining makes the soil at least 10 days earlier in the spring. Undrained land for some months is similar to a dish of water; and if manure be laid upon it in such condition, its goodness, instead of entering the soil, runs down the furrows into the ditches. On the contrary, when the land is properly drained, the nourishment of the manure enters the soil. There were very many ways in which good draining benefited the farmer—it enabled him to get on his land for ploughing and other purposes in winter, when, if not drained, he would be obliged to keep off for months. Mr. Davis then alluded to the different modes of farming, where, for want of drainage, the farmer was put to double expense and labour, and hoped they had heard enough of deep draining to prevent their falling into the error of the shallow system.—Mr. Hanton thought that shallow draining would dry the lands fully as well and quicker than deep draining.—Mr. Davis wished to convince that gentleman of his great mistake, and explained at some length the different conditions of the earth from the two methods of treatment, and the influence of the sun upon the deep-drained and shallow-drained land. It was a well known fact that deep drains ran quicker and longer than shallow ones, and consequently carried off more water. By sinking deeper into the earth they got nearer the water, and therefore they must admit that they could get more water carried off.—Mr. Fisher thought that if Mr. Hanton or any one else in favour of shallow draining, would examine into the good effects of deep draining, they would very soon change their opinions.—Mr. Cawston had seen the difference between the two systems; the deep drains ran long and well, when from the shallow ones no water was seen.—Mr. Davis said that in the West of England the ditches were nothing but little grips about 15 inches deep, but here they were large enough to swallow up man and horse. Why were they made so deep but to better draw the water from the land? He thought they would agree with him that deep draining was as beneficial for the land as their deep ditches were for carrying off an influx of water.—Mr. Fisher begged to concur in what Mr. Davis had stated; for he found that Mr. Davis's system carried off the water beautifully.—Mr. J. F. Clark, of Newmarket, was not an old farmer. He farmed only 9 acres of land, the soil of which was very poor, but he had improved at a great expense, and still realised a remunerative profit. He had planted it with Carrots, and now produced his balance-sheet of his outlay and returns, which he read to the company. The labour employed on the 9 acres amounted to 49l. 0s. 4d., manure 30l. 5s. 10d., ploughing, subsoiling, harrowing, &c., 15l. 17s., seed 3l. 4s., cartage and delivery of Carrots to purchasers 10l. 8s. 6d., rates 1l. 8s. 8d., rent at 1l. 10s. per acre 13l. 10s., straw to clamp 2l. 5s., making a total of expenditure of 125l. 19s. 4d. He had sold 100 tons of the Carrots for 196l. 10s. 6d., and had 72 tons in hand at 72l., making his receipts 178l. 13s. 6d., which gave him a profit of 52l. 11s. 4d., being nearly 6l. an acre; and at that rate would afford employment for 25 men at 8s. a week for the year on a farm of 100

acres, being 3 times the number employed in the highest cultivated districts. After some further observations in favour of the plan from Mr. Davis, Mr. Cawston, Mr. Hanton, the Chairman, and others, the company separated, having passed a pleasant and convivial evening, much obliged to Mr. Davis for his kind attention to their interest, and to Mr. Innes for his indefatigability in carrying out the extensive improvements on their farms.

## POULTRY.

**POULTRY Shows** have called the attention of the agricultural world to the subject of these inhabitants of the farm-yards, rather for competition than for the useful and profitable purposes which will last when everything like fashion and fancy have passed away. We have thought a few words on the subject, treated as a matter of business, would be acceptable.

The profits hitherto made by a few successful breeders have been enormous, because they have been fortunate enough to possess excellent specimens of a breed now in great request, but this cannot be depended upon; their real utility is still matter of argument, or rather I should say, their superiority over other breeds. As they become spread over the length and breadth of the country their value must decrease; or if very large prices are still made, they will belong only to those choice specimens which are always the exceptions. What is to become of the mass of birds which, while they are useful, are not the *élite* of their class? They must contribute food, either by furnishing the table with poultry or eggs. In those parts so distant from the metropolitan market, that the cost of carriage, and in very hot weather, the time employed in the journey renders it doubtful whether a certain profit may be depended upon from poultry killed and sent up, the supply of eggs will be thought preferable.

The question then naturally arises, which is the most profitable breed to keep? The answer must be, that which produces the greatest number of eggs at the smallest cost. I believe, from experience, it must be the pencilled Hamburg. I think if an accurate account were kept of the number of eggs laid by one of these birds, and against it were put the cost of keep, it would be found I am correct. The objection may be raised, the eggs are small; I think if the weight of eggs produced in the year were put against the food consumed it would startle the observer by its cheapness. It has often struck me as wonderful, that those who supply markets with eggs should neglect this valuable little bird as they do. They are cheap to buy, cost little to keep, and are marvellous layers. Nature seems to have produced them on purpose; they never set, and their productive powers require no stimulant. Of course, to ensure eggs throughout the winter, care must be taken to save early pullets in the previous spring, as none but young birds will lay them.

Which is now the best fowl for the table? That which fairs best at an early age, at the least expense, and which possesses those properties most valued for food. It is notorious that in catering for the palate, there is another sense to please, which is sight. How many persons are there, guiltless of a love for the green fat of turtle, because they have never tasted it, disliking its appearance. Just in the same way the look of a fowl when first put on the table is important. Every body is more or less susceptible of harmony and fair proportion; now if when the cover is removed a bird of plump and round appearance is seen, there is a prepossession in its favour. All the skill of trussing cannot do this unless the shape of the bird is in favour of it. No fowl helps itself to approbation so much as the Dorking, it is essentially the table fowl. Of plump and comfortable look, deep in breast, and of early maturity, it would seem to be adapted for the London and other markets. Another point is, it has invariably white legs. There is always a sale for these, and where there has not hitherto been, they will supply one. The fact that they are to be had of a good quality will cause application to be made for them. But in London there is always a demand. Like all other provisions, there are different periods for different prices, and here it is that poultry shows do much good in offering premiums for early maturity. If those who have facilities for rearing chickens will do so in January, or even December, and bring them to the market in a fat state, in April, May, and June, they cannot fail to receive a remunerating price. Three pounds per dozen is a common value for fowls four months old; at this season, less than two guineas would be ridiculously low. The seasons would appear of late to be so much altered, that there is now less difficulty in rearing early chickens than there was formerly. Last year the January chicks did better than those hatched in May. The most trying weather has been in April, and by that time the early broods are so far out of harm's way, that generous feeding will counteract a little severe weather.

I write this not as a partisan of any particular breed, but as one acquainted with markets, and the prices realised in them. My only desire is to point out to our agricultural friends the birds which I believe most favourable to their interests. *M. S.*

**Weights of Prize Birds at Birmingham.**—In giving an account of the weights of prize birds at the Birmingham or any other poultry show, it must be borne in mind that size, and consequently weight, are only valuable when allied to the other points, that mark purity of breed and stamp the value of a fowl. Thus in Cochins, the pen exhibited by Mr. Sturgeon, which

took the first prize, was exceedingly heavy, but they were also symmetrical. The hens nearly averaged eleven pounds each, and the cock surpassed them. If these had lacked feathering on the leg their size would not have secured a prize. Again, these weights are exceptions to the rule, and the owner of Cochins China cocks of 9½ or 10 lbs., and pullets of 8 or 8½ lbs., possesses, so far as size is concerned, first-rate birds. The Dorkings were very heavy, but they kick the beam when put in the scale with the birds we have just mentioned. The heaviest hen in the show was the property of the Hon. and Rev. Stephen Lawley; she weighed 8½ lbs. This again is an exception. There were plenty of [cocks 8½, and pullets 7 and 7½ lbs. In all these classes, it must be borne in mind, the birds exhibited are the pickings of the United Kingdom. Cocks 7½ lbs. and pullets 6½ lbs. are good birds, and about the average of the stocks kept, where they are carefully attended to, and of first-rate strains. But if they weighed 12 lbs. each, and were four-toed or black-legged, they would be disqualified. The smallest bantams weighed from 12 to 16 oz. each. A bantam cock should not exceed 17 oz. nor a hen 14 oz.; but here, again, if one weighed but seven, sickle feathers in the tail, or long hackle and saddle, or feathered legs, or single comb, would disqualify a Sebright. These are the breeds in which great or small weights are most esteemed; but it will be seen that, although important and essential when combined with other properties, they are only accessories to success. To hope for pre-eminence in any breed it is not enough to have good birds, but the amateur must breed largely to give him opportunity for selection. It is said of Lord Rivers, many years ago, that he was once asked how he succeeded in having always first-rate greyhounds? He answered, "I breed many, and hang many." This was the secret of his success. The same will be found in exhibiting fowls—successful competitors breed largely and keep the best. When it is wished to rear poultry for competing in classes where size is a desideratum, care should be taken to feed the chicken from the first as well as possible. A check at a fortnight old is never recovered; the chicken may live, grow up, and do well, but it will never carry the prize from one that has progressed uninterruptedly. As this is true of all the Gallinaceous tribes, and as I have been writing on weights, I have thought these remarks would perhaps be in place. The weights of the turkeys were as follows:—Cocks 22½, 21½, 21½, 19, and 19½ lbs. each. The first and largest was of the ordinary breed of Cambridgeshire. The others were copper and American. The hens from 11 to 14 lbs. each. The geese weighed from 20½ to 15½ lbs. The successful pens, 1 gander and 2 geese in each, weighed 58½, 52½, and 50 lbs. Last year, 1851, the Rev. John Robinson, of Widmerpool, sent a gander weighing 29 lbs. The best ducks averaged 5½ lbs. each. *J.B.*

**Weights of Poultry.**—In last week's *Gazette* I observe, in the Notices to Correspondents, "Weights of Poultry: R. We will do what we can;" and concluding that it has reference to the prize birds at the Birmingham Show, I think it very desirable to have in your columns, for the benefit of those who were unable to attend the show, not only the weights but the colours and other points of those birds. No person is better able to give your readers this information than Mr. Bailey, whose excellent information on poultry matters, contributed through the *Gazette*, has tended so much to raise the poultry standard in this neighbourhood. The weights to be given, I have no doubt, will show Mr. Dixon his error in supposing that Cochins China fowls do not attain far greater weights than he states in his otherwise admirable work, viz., cocks at 16 months old weighing about 7 lbs., and at 6 months 5 lbs.; for I have a cockerel, though just moulted, 16 months old, weighing 10 lbs., and another of 6 months old weighing 7 lbs. *C. P., Boston.*

**POULTRY:** *C. G. W., Woodbridge.* It is not uncommon for Spanish, Polands, or any other black fowl, to throw a few red feathers. I have seen it so often I dare not say it is a sign of impurity, nor do I think it is hereditary. These deviations are equally common in other breeds, but as an entire colour is not so essential, they are not noticed. Last year, I had a Spanish hen moulted quite white, this year a cock of the same breed moulted with an accurately defined red stripe down each wing. I should be very sorry to destroy a bird for a few red feathers. I believe there are no Polands with pure white tops.—*J. H. I.* I always decline controversy, but as you state many friends wish to know, I unequivocally assert, I had no catalogue at Birmingham, till some time after my duties were over, and that I did not then, before, or after, send one away. I was very sorry to see the unfounded assertion in question. *J. Daily, 113, Mount Street.*

## Miscellaneous.

**Improvement of Settled Estates.**—Of the efforts making, and likely to be made, to supply the want of means for improving land, there is one to be brought before Parliament which will render great service to the landed proprietor. It is intended, through the agency of a joint stock company, the promoters of which propose to apply for, and doubtless will obtain, powers to enable all persons having settled estates or other limited interests in land to effect all or any of the following permanent improvements which any particular property may require; namely, to drain or irrigate land, with powers for entering adjoining lands to make and deepen outfalls, and to buy up mills, weirs, and other obstructions to drainage; to make roads; to embank, warp, or enclose land; to erect farm-houses, homesteads, and other buildings; to clear and convert wood, waste, heath, or bog-lands; to execute drainage and other improvements for public bodies; to purchase, improve, and resell limited quantities of land. Such improvements having been executed under the sanction of the



Inclosure Commissioners, and having been approved by them, the owner of the land will be authorised to make a valid charge upon the inheritance, in favour of the company, of the agreed amount at which the works were contracted for, to be paid off, with interest, by instalments extended over such a number of years as may be arranged. In this way, for a comparatively easy charge, which in most cases occupying tenants will readily pay, esteeming the improvements effected full equivalents, the estate may be permanently improved, and the whole cost paid off in periods varying from 25 to 30 years. In no other way than through the assistance of a company can the majority of the entailed and incumbered estates of our landed proprietors receive the additions of fixed capital which are indispensable to their profitable occupation and to the maintenance of their rentals. Individual capitalists will not make advances to be repaid by terminable annuities; and the system of Government advances for the purpose is so unsound in principle that such advances are not likely to be continued; and, at all events, such advances must be wholly inadequate to the exigencies of the case. Indeed, there are already two or three land drainage companies in existence which have powers similar in kind, though somewhat less complete, to those proposed to be obtained by the Lands Improvement Company. These companies have all full employment, and there is ample room—nay, urgent demand—for more labourers in the same field, even had the newly-projected company only proposed to advance its own capital for works of improvement in the same manner as the existing companies now do. But, in truth, the promoters of the Lands Improvement Company propose a novel plan for raising the capital, by means of transferable debentures payable to the bearer, which they believe will enable the requisite amounts to be obtained, at the lowest market rate of interest, on securities passing freely from hand to hand in the money market. *Economist.*

### Notices to Correspondents.

**BARLEY-STRAW:** *J. W.* If mingled with Clover and cut into chaff, it is the best straw chaff you can use. Sheep will eat 2 or 3 lbs. of it daily; soak it in hot and salt Linseed soup.

**BOOKS:** *A. B.* One of the best and most complete works on agriculture is Messrs. Blackie's "Cyclopedia of Agriculture," now publishing.

**GRAVES:** *G. W.* of the *Chronicle* of the 25th ult. would oblige by stating the quantity of graves he gives to his pigs, and also what sort and quantity of meal; and is the meal boiled? *S.*

**THE LUPIN:** *D. L.* It is not suited for English agriculture. Italy and the south of France are the localities where climates suit it. The Lupins are mere garden flowers here.

## Markets.

### COVENT GARDEN, JAN. 15.

The market is pretty well supplied with most things; but trade is dull. Pears and Hothouse Grapes are however still insufficient for the demand; the former consist of Beurré Rance, Ne Plus Meuris, and Easter Beurré. Apples are as yet plentiful. Cob and other Nuts are realising fair prices. Both Seakale and Rhubarb are now tolerably abundant. But good Asparagus has not yet become plentiful. Potatoes have not altered in value since our last report. Mushrooms are scarce. Cut flowers consist of Heaths, Primulas, Early Tulips, Roses, Mignonette, and Camellias.

### FRUIT.

Pine-apples, per lb., 4s to 8s  
Grapes, hothouse, do., 8s to 10s  
Pomegranates, each, 2d to 4d  
Apples, dessert, p. bush, 6s to 10s  
— kitchen, do., 5s to 8s  
Pears, per doz., 1s 6d to 4s  
Lemons, per doz., 1s to 2s

### VEGETABLES.

Cabbages, per doz., 6d to 1s  
Brussels Sprouts, per hf. sieve, 1s to 2s  
Broccoli, per doz., 2s to 3s  
Greens, per doz., 1s to 2s  
French Beans, per 100, 3s  
Asparagus, per bundle, 5s to 6s  
Seakale, per bskt., 1s 6d to 2s 6d  
Rhubarb, per bundle, 9d to 1s 6d  
Potatoes, per ton, 85s to 140s  
— per cwt., 5s to 9s  
— per bush, 2s 6d to 4s 6d  
Turnips, per doz., 1s to 1s 9d  
Cucumbers, each, 1s to 3s  
Celery, per bundle, 9d to 1s 3d  
Carrots, per doz., 2s 6d to 4s  
Spinach, per sieve, 1s to 2s  
Onions, per bunch, 2d to 4d  
— Spanish, p. doz., 1s 3d to 3s  
Beet, per doz., 1s to 1s 6d

### ORANGES, &c.

Oranges, per doz., 1s to 2s  
Almonds, per peck, 5s  
— sweet, per lb., 2s to 3s  
Nuts, Barcelona, per bush., 20s  
— Cobs, 110s  
— Spanish, do., 16s to 18s  
Chestnuts, p. bush., 8s to 20s.

### LETTUCE, &c.

Lettses, per bunch, 1d to 2d  
Shallots, per lb., 6d to 8d  
Garlic, per lb., 6d to 8d  
Lettuce, Cab. per score, 4d to 6d  
— Cos, per score, 9d to 1s  
Radishes, per doz., 8d to 1s  
Endive, per score, 1s to 1s 6d  
Small Salads, p. pun, 2d to 3d  
Horse Radish, p. bundle, 1s to 3s  
Mushrooms, p. pott., 1s to 1s 6d  
Sorrel, per hf. sieve, 6d to 1s  
Artichokes, 4s to 6s  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. doz. bunches, 2s to 3s  
Mint, green, per bunch, 4d to 6d  
Basil, per bunch, 3d  
Marjoram, p. doz., 2d to 3d  
Watercresses, p. 12 bun, 4d to 6d

### HOPE, &c.

HOPE, &c. per Load of 36 Trusses.

Prime Meadow Hay 80s to 85s  
Inferior do. ... 65 72  
Rowen ... 54 65  
New Hay ... 54 65

### WHITECHAPEL, JAN. 13.

Fine old Hay ... 72s to 80s  
Inferior do. ... 55 70  
New Hay ... 55 70  
Straw ... 25 29

### SMITHFIELD, JAN. 13.

Prime Meadow Hay 80s to 85s  
Inferior do. ... 65 72  
Rowen ... 54 65  
New Hay ... 54 65

**SMITHFIELD.—MONDAY, JAN. 10.**  
The supply of Beasts is much shorter, and the demand is good; in consequence, we have a rise in price. Some of the choicest are said to reach 4s. 4d., but this is too much to note as an average for the best descriptions. The number of Sheep is also rather smaller, but there is not much advance in price, yet everything is quickly cleared off at rather more money. Good Calves are rather dearer. Our Foreign supply consists of 482 Beasts; 1140 Sheep; and 146 Calves. From Scotland 800 Beasts; Norfolk and Suffolk, 1000; and 1000 from the Northern and Midland Counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. ... 4 0 to 4 2  
Best Short-horns 3 10 to 4 0  
2d quality Beasts 3 0 to 3 6  
Best Downs and Half-breds ... 4 10 to 5 2  
Do. Shorn ... 0 0 to 0 0  
Beasts, 3736; Sheep and Lambs, 20,500; Calves, 194; Pigs, 210.

### FRIDAY, JAN. 14.

We have rather a larger number of Beasts, the demand is also increased in consequence. Monday's quotations are fully maintained. There is quite an average supply of Sheep, and trade is scarcely as active as on Monday; however, prices are not much lower. Trade is slower for Calves, and prices have given way a little. Our Foreign supply consists of 92 Beasts; 520 Sheep; and 177 Calves. From Norfolk and Suffolk, 400 Beasts; from the Northern and Midland Counties, 50; Milch Cows, 95.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. ... 4 0 to 4 2  
Best Short-horns 3 10 to 4 0  
2d quality Beasts 3 0 to 3 6  
Best Downs and Half-breds ... 4 10 to 5 2  
Do. Shorn ... 0 0 to 0 0  
Beasts, 512; Sheep and Lambs, 3150; Calves, 252; Pigs, 275.

### MARK LANE.

**MONDAY, JAN. 10.**—The supply of Wheat from Essex and Kent this morning was good, but a large proportion owing to its very wretched condition could not be disposed of, although offered at a reduction of 2s. per quarter; Foreign met a retail inquiry, and the sales effected commanded the full prices of last week. A considerable business was transacted in Black Sea and Azof Wheat on Saturday for spring shipment, at our previous quotations, it is now held for a trifling advance. Fine Malting Barley brings 1s. per quarter more money, other qualities remain unaltered. Beans are a slow sale and rather cheaper. Peas must be quoted the same as last week. For Oats there is a limited sale at the extreme prices of Monday last. The Flour trade is quiet.

PER IMPERIAL QUARTER.  
Wheat, Essex, Kent, & Suffolk ... 44-56 Red ... 40-46  
— fine selected runs ... ditto ... 45-60  
— Talavera ... 54-60  
— Norfolk ... Red ... —  
— Foreign ... 38-58  
Barley, grind. & distill., 25s to 28s ... Chey. 26-35 Malting 27-31  
— Foreign, grinding and distilling ... 26-30 Malting 30-33  
Oats, Essex, and Suffolk ... 18-21  
— Scotch and Lincolnshire ... Potato 23-25 Feed ... 17-23  
— Irish ... 21-23 Feed ... 19-20  
— Foreign ... Poland and Brew 16-20  
Rye ... 29-32 Foreign ... —  
Rye-meal, foreign ... 32-34 Harrow ... 32-34  
Beans, Mazagan ... 30s to 32s ... Tick 39-41 Longpod ... 30-34  
— Pigeon ... 33s to 35s ... Windsor 32-34  
— Foreign ... Small 32-37 Egyptian 32-34  
Peas, white, Essex and Kent ... Boilers 38-41 Suffolk ... 40-42  
— Marple ... 32s to 35s ... Grey 30-33 Foreign 32-42  
Maize ... 32s to 35s ... White 38-46  
Flour, best marks delivered ... per sack 38-46  
— Suffolk ... ditto 23-38 Norfolk ... —  
— Foreign ... per barrel 24-28 Per sack ... —

### ARRIVALS IN THE PORT OF LONDON LAST WEEK.

	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas.
Flour 14148 bks						
— 7010 sks						
English	3123	4924	4221	31	530	224
Irish	—	—	—	—	—	—
Foreign	5020	—	—	51	2265	177

**FRIDAY.**—The arrivals of Grain from our own coast, as well as from abroad, are small, which may be attributed to the contrary winds and stormy weather. The market this morning has been pretty well attended; a fair consumptive demand was experienced for Wheat, and the extreme prices of Monday were realised. In other articles no alteration. In floating cargoes from the Mediterranean and Black Sea there is but little business doing; a cargo of Odessa Wheat off the coast sold at 46s. per quarter cost, freight, and insurance.

### IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Dec. 4	41 2	30 0	18 5	30 11	35 5	32 8
— 11	42 1	29 9	18 5	26 11	35 4	34 10
— 18	43 10	29 9	18 5	29 2	34 6	32 0
— 25	45 11	29 9	18 5	29 2	34 11	32 4
Jan. 1	46 7	29 8	18 9	29 7	35 0	32 9
— 8	46 0	29 8	18 6	29 1	34 8	32 5
Aggreg. Aver.	44 3	29 9	18 6	29 2	35 0	32 4

### Duties on Foreign Grain 1s. per qr.

### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Dec. 4.	Dec. 11.	Dec. 18.	Dec. 25.	Jan. 1.	Jan. 8.
46s 7d	...	...	...	...	...	...
46 0	...	...	...	...	...	...
45 11	...	...	...	...	...	...
45 10	...	...	...	...	...	...
44 1	...	...	...	...	...	...
42 1	...	...	...	...	...	...
41 2	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, JAN. 11.**—The transactions of the week have been on a moderate scale, for local consumption, at steady prices generally. The Corn Exchange this morning was slenderly attended. There was about the usual demand for Wheat and Flour from the neighbouring millers and dealers, at much the same prices as this day se'night. There were only few buyers from a distance. Fine Oats were scarce, and quite as dear, but secondary sorts were 4d. to 4d. per bushel lower. Oatmeal also was rather easier to buy. The sales of Barley, Beans, and Peas, were inconsiderable, and prices stand unchanged. Scarcely any Indian Corn here at present. **FRIDAY, JAN. 7.**—The business in Brunswick Street the last two days has been inactive, and at the Corn Exchange this morning, having a very slender attendance of town and country buyers, the transactions were in mere retail quantities of every article of the trade. Useful quality of Red Wheat commanded the price of Tuesday, but American White was slightly easier to purchase. In Indian Corn very little doing. The high prices and freight of Wheat and Flour from the United States per steamer Arctic, received this week, have had little influence on this market. There was no change in the value of Oats, Oatmeal, Barley, Beans, or Peas.

## RAY SOCIETY.

**REPORT OF THE COUNCIL OF THE RAY SOCIETY.** Read at the NINTH ANNUAL MEETING, HELD at BELFAST, SEPTEMBER 4, 1852.  
PROFESSOR OWEN, D.C.L., F.R.S., in the Chair.

In presenting the NINTH ANNUAL REPORT of the RAY SOCIETY, the Council would congratulate its Members, that amidst the increase of other societies having a similar object in view, they still obtain that amount of support which enables them to carry on their labours with efficiency and success. Although, amongst so large a body, a considerable number are necessarily lost to the Society through death and other causes every year, yet they have to report an increase in the number of Members during the past year. In 1851 the number was 739; at present they are 746; the number who have withdrawn and died are 33; the numbers added, 40. At the same time, the Council would urge upon the present Members the advantage that would accrue to themselves by their obtaining additional Subscribers, and thus increasing the funds of the Society. The Council have the conviction, that there are still a large number of persons in this country who have both the means and the desire to patronise Natural History Science, who have not had the Ray Society brought under their notice, and who would willingly subscribe, not only for the sake of the books published, but that they might assist in the great scientific objects the Society has in view.

Since the publication of the last Report, in July, 1851, the following works have been distributed to the Members:—

Alder and Hancock, Monograph of the "Nudibranchiate Mollusca." Part V. With 15 plates.  
Leighton, Monograph of the "British Angiocarpous Lichens." With 30 coloured plates.

At the present time there are being distributed to the Members:—

Vol. I. of Darwin's Monograph of the "Family of Cirripedes."  
Vol. III. of the "Bibliography of Geology and Zoology," by Professor Agassiz and Mr. Strickland.

The Council hope to be able to publish, in addition to the last work, the Sixth and remaining Part of the great work of Messrs. Alder & Hancock, on the "Nudibranchiate Mollusca," for the year 1852. They are also glad to be able to announce that, by increasing considerably the size of the last two volumes of the "Bibliography," they will be enabled to finish this work in four volumes. The fourth and last volume of this complete and valuable Bibliography will be published for the year 1854.

For the year 1853, the Council proposes to produce a Volume of Essays and Papers on Zoology and Botany, which will comprise:

1. A Report on the present state of our knowledge of the Structure of the Insecta and Crustacea. By Professor Erichson; translated by A. H. Halliday, Esq.
2. A Paper on Hermaphroditism in the Animal Kingdom. By Professor Steenstrup; translated by George Busk, Esq.
3. A Monograph of the family Diatomaceae. By Professor Meneghini; translated by J. Johnston, Esq. And other Papers.

The Second work for the year 1853 will be the Second Volume of Mr. Darwin's work on the Cirripedia, with about 20 plates.

In addition to the works announced in previous Reports, the Council have pleasure in stating, that they have made arrangements with Dr. Carpenter and Professor Williamson for the production of a joint work on the Foraminifera. This work will comprise two parts, the first of which will contain a general history of all that is at present known of the structure, functions, and systematic relations of recent and extinct Foraminifera, by Dr. Carpenter and Professor Williamson; and a Monograph of all the recent British species of this family, with plates of all the species, by Professor Williamson.

The Council have received a communication from the Rev. Mr. Leighton on the subject of publishing another volume on the Lichens of Great Britain, and which, with the former volume published by the Society, will constitute part of a complete Monograph of the British Lichens.

The Council have also under their consideration the question of publishing a translation of Hoffmeister's work on the Germination, Development, and Fructification of the Higher Cryptogamia.

Before concluding, the Council would allude to the complaints that are often made of the publication of the works so long after the subscriptions for the year have become due. They feel that those who pay their subscriptions punctually in advance have reason to complain; and they would especially call the attention of the Members to the fact, that they have no funds to meet the expenses of the Society but the subscriptions of the current year, paid in advance. At the present moment they have owing them, upon this and past years, the sum of 657l.—a sum equaling, within 12d., the whole annual income of the Society.

During the past year the Council have appointed Dr. G. Johnston and Dr. Lankester, Secretaries, and J. S. Bowerbank, Esq., Treasurer, to the Society.

### Abstract of Treasurer's Account from June, 1851, to May, 1852.

INCOME.		EXPENDITURE.	
By balance in Treasurer's hands ...	£ 199 6 4	Drawing, colouring, &c. ...	£ 2 10 2
Subscriptions paid from June, 1851, to May, 1852 ...	604 16 0	Printing and printing plates ...	369 19 10
		Printing letterpress ...	57 15 0
		Stationery expenses ...	115 14 2
		Stationery, postage, and advertisements ...	12 3 8
		Collector ...	2 10 2
		Bookbinding ...	100 0 0
		Books ...	5 3 6
		Editing ...	54 1 6
		Balance in hand ...	86 4 6
		£804 2 4	£804 2 4

Auditors.—JAMES TENNANT, W. FERGUSON.

Moved by PRINCE BONAPARTE, seconded by G. W. DILKE, Esq.:—That the Report now read be adopted, and printed for distribution amongst the members of the Society.

Moved by LORD ENNISKILL, seconded by G. HYNDMAN, Esq.:—That the thanks of this Meeting be given to the President, Council, Treasurer, Secretaries, and Local Secretaries, for their services during the past year.

Moved by the Rev. PROFESSOR W. HYNES, seconded by PROFESSOR DICKIE:—

That the following Gentlemen be requested to act as a Council for the ensuing year:

Professor D. T. Ansted, M.A. F.R.S. F.L.S.	A. Henfrey, F.R.S. F.L.S.
Charles C. Babington, Esq. M.A. F.R.S. F.L.S.	Rev. Leonard Jenyns, M.A. F.L.S.
Robert Ball, Esq. LL.D. M.R.I.A. Soc. R.Z.S.I.	G. Johnston, M.D. LL.D. F.R.C.S.E.
Professor Bell, Sec. R.Z.S.I.	E. Lankester, M.D. LL.D. F.R.S. F.L.S.
J. S. Bowerbank, F.R.S. F.L.S.	George Newport, Esq., F.R.S. F.L.S.
George Busk, Esq., F.R.S. F.L.S.	Professor Owen, D.C.L. F.R.S. F.L.S.
W. B. Carpenter, M.D. F.R.S. F.L.S.	Robert Patterson, Esq., Pr. Nat. Hist. Sec., Bel.
Professor Daubeny, M.D. F.R.S.	Professor John Phillips, F.R.S. F.L.S.
Sir P. de M. G. Egerton, Bart. M.P. F.R.S.	Prædixes J. Selby, Esq., F.L.S. W. Spence, Esq., F.R.S. F.L.S.
Professor Edward Forbes, F.R.S. F.L.S.	Hugh E. Strickland, Esq., M.A. F.R.S. F.G.S.
Professor Goodiss, M.D. F.R.S. F.L.S.	Waterhouse, Esq., F.Z.S. G. Yarrell, Esq., F.L.S.
Sir W. Jardine, Bart., F.R.S.E. F.L.S.	



**TO NOBLEMEN, GENTLEMEN, GARDENERS, FLORISTS, SALESMEN, NURSERYMEN, AND OTHERS.**

**HORTICULTURAL GLASS HOUSES, VINERY, VALUABLE STOCK OF VINES, PEACH TREES, CUCUMBER, PINE, STRAWBERRY, AND A LARGE ASSORTMENT OF OTHER PLANTS, FOR SALE AT ATHERSTONE, WARWICKSHIRE.**

**MR. WILLIAM LLOYD** has received instructions from the Assignees of the Estate of Mr. John Patterson, a Bankrupt, to offer for Sale by Auction, upon the premises, at the Horticultural Grounds in Atherstone (close to the Atherstone Railway Station), on WEDNESDAY, the 26th day of January, 1853, at 11 o'clock in the forenoon, in one or more Lots, and subject to such conditions as shall be then produced, a large Propagating or Cucumber House, well heated by Hot Water or Air Flues, glazed, and in good working order, and measuring 107 feet in length, by 34 feet in width; an unglazed Peach-house, measuring 119 feet in length, by 34 feet in width; a glazed Vinery, with five Workmen's Cottages and Packing Shed, and Store-room underneath, measuring 121 feet in length, by 21 feet in width, well stocked with Vines; all of which have been lately erected. And also the entire stock of Vines, Geraniums, Fuchsias, Strawberry, Pine, Cucumber, and Kidney Bean Plants; Peach Trees; Seed Potatoes. A large quantity of Hot-house Glass, Flower Pots, Garden Tools, &c., &c. The premises on which the horticultural erections are situate have been leased from the Atherstone School Governors for the term of 21 years, which lease they are willing to re-grant to any person purchasing the entirety of the buildings thereon. As to which, and for further particulars, apply to Messrs. BAXTER & SON, Solicitors, Atherstone; Mr. C. CURRIE, Official Assignee, Birmingham; or the Auctioneer, Atherstone, Warwickshire.

**TO GENTLEMEN, CONTRACTORS, PLANTERS, AND OTHERS.**

**MR. JOHN WILLMER** will sell by Auction, on TUESDAY, February 1, and two following days, the whole of the remaining portion of the STOCK of the SUNBURY NURSERY. Full particulars in a future Advertisement.

**MESSRS. RAINEY** have the honour to announce that they will offer for Sale by Auction, on the premises, Camerton Court, near Bath, in the month of February next, a choice Collection of PLANTS, consisting of fine specimens, and half ditto, of AZALEAS, HEATHS, ERIOSTEMON, EPACRIS, STOVE PLANTS, GERANIUMS, CINCERARIAS, &c., of which further particulars will appear in future Advertisements. —Nos. 20 and 21, Southgate Street, Bath, January 15.

**COKE BRICKS.**—Any person having for disposal a quantity of them, described some time since in the *Weekly Times*, which account was copied into the *Gardener's Chronicle* of 1852, p. 631, may hear of a purchaser by addressing a letter to M. M., at the Office of this Paper.

**CHEAP FUEL FOR CONSERVATORIES.**

**COKE**—the same as used in the Royal, and in the largest Conservatories round London, put into a Barge in quantities of not less than 20 chaldrons, at 7s. per chaldron, at the Phoenix Gas Works, Bankside, Southwark, and at the upper Surrey side of the Bridge Foot, Vauxhall.

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43 PER TON.  
TAYLOR & PEARCE, 8, George Yard, Lombard Street, London.

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**TO GRAPE GROWERS, NURSERYMEN, ETC.**

**TO BE SOLD CHEAP, TWO EXCELLENT VINERIES**, with Hot Water Apparatus complete; have been worked these last few years by a successful grower. One is 115 feet long and 15 feet wide; the other is 100 feet long and 15 feet wide. They are in good condition. —Apply to JAMES LEWIS, Horticultural Works, Stamford Hill, Middlesex.

**TO NOBLEMEN, GENTLEMEN, AND PLANTERS.**

**TO BE DISPOSED OF, 300 LIME TREES**, growing on the Clumber Estate, Worksop, Notts. These Trees will average 12 feet in height, and 3 inches in diameter three feet from the ground, and have nicely-formed heads. They form part of a young avenue, and are growing in poor soil; they would be very desirable Trees to any one planting to give immediate effect. —Any further particulars may be obtained by applying to Mr. SPARY, Clumber, Worksop, Notts.—January 15.

**TWO GREENHOUSE STOVES TO BE SOLD CHEAP.**—A Walker's Patent, with 10 feet piping, price 27. 10s. An "Arnot's" lined with fire-clay, 11. 5s. or together for 37. 5s. —Address, C. J. B. PAGE, Bootmaker, 6, Great Tower Street, London.

**TO BE LET, on Lease for 12 years, from Lady-day or Michaelmas next, a LIGHT-LAND FARM**, in Norfolk, free of Great Tithes, at a rent of 200l. a year. It is situate within 6 miles of Thetford and Brandon, and contains 413 Acres, out of which 90 are Sheepwalk, &c., and 333 Acreable, the greater part recently clayed and capable of much further improvement. The House is new and excellent, and the Buildings good, and for the most part, newly built. There are also Two Labourers' Cottages let with the Farm, and included in the rent.

For further particulars, apply to Messrs. CHAPMAN, Land Agents, 23, New Street, Spring Gardens, London.

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**TO PROPRIETORS OR OCCUPIERS OF LAND.**

**WANTED, by a Professional Gentleman, the SHOOTING** over about 600 Acres, stocked with GAME, within an hour of town, the party's object being exercise for one or two days in the week. He would require variety in the game, rather than a great quantity of one kind.—Address J. T., Esq., Mr. Reffills, Newmarket, 14, Great Portland Street, London.

**WANTED, APARTMENTS in the Country, near any Station, not above two hours from London, to consist of a well-furnished sitting and two bed-rooms, for an invalid Lady and Gentleman. A good Farm house and a light land preferred. Change of air being the object, the Advertiser is desirous of meeting with accommodation in two or three different counties, which might be visited a few weeks occasionally. Terms, if without Board, not to exceed a Guinea per week.—Address, D. M., 2, Chapel Terrace, Rayneswater, London.**

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**DR. LESLIE** continues to supply the afflicted with his celebrated remedy for this alarming complaint, the great success of which for many years past renders any further column unnecessary. It is easy and painless in use, causing no inconvenience or confinement, and is applicable to every variety of simple and double rupture, however bad or long standing, in males or females, of any age. The remedy will be sent, post free, on receipt of 7s. 6d., by Post-Office order, payable at the General Post Office, or postage stamps, by Dr. HENRY LESLIE, 37A, Manchester Street, Gray's Inn Road, London. At home daily, from ten till one, and from five till eight: Sundays excepted.

*Notice.*—No letters answered unless they contain a postmark.

**THE NURSERY AND THE SCHOOL.**—The care of the Hair in young children is, by inexperienced mothers and nurses, too little regarded. No mistake can be more injurious than the supposition that neglect in this particular can continue with impunity. The seeds of strength or weakness are laid in the nursery; and the majority of the fine flowing ringlets, or bald heads of after years, are traceable to this early period. **OLDRIDGE'S BALM OF COLUMBIA**, long celebrated for its genial and invigorating qualities in promoting and restoring the growth of the Hair, is peculiarly fitted for application during the tender years of childhood; and no nursery or school where personal advantages are held in any estimation should be without it.—3s. 6d., 6s., and 11s. per bottle; no other prices.—Ask for **OLDRIDGE'S BALM**, and never be persuaded to use any other article as a substitute.—13, Wellington Street North, seven doors north of the Strand.

**WHERE TO BUY A DRESSING-CASE.**—In no article perhaps is caution more necessary than in the purchase of a Dressing Case, for in none are the meretricious arts of the unprincipled manufacturer more frequently displayed. **MECHI, 4, LEADENHALL STREET**, near Gracechurch Street, has long enjoyed the reputation of producing a Dressing Case in the most finished and faultless manner. Those who purchase one of him will be sure of having thoroughly-seasoned and well-prepared wood or leather, with the fittings of first-rate quality. The prices range from 1l. to 100l. Thus the man of fortune and he of moderate means may alike be suited, while the traveller will find the Mechian Dressing Case especially adapted to his necessities.  
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Single or double wicks ... .. 7d. per pound.  
Mid. size, 3 wicks ... .. 8d. "  
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Three and a half inch Ivory-handled Table Knives, with high shoulders, 10s. per dozen; Desserts, to match, 9s.; if to balance, 1s. per dozen extra; Carvers, 3s. 6d. per pair; larger sizes, in exact proportion, to 25s. per dozen; if extra fine, with silver ferrules, from 36s.; White bone Table Knives, 6s. per dozen; Desserts, 4s.; Carvers, 2s. per pair; Black horn Table Knives, 7s. 4d. per dozen; Desserts, 6s.; Carvers, 2s. 6d.; Black wood-handled Table Knives and Forks, 6s. per dozen; Plate Steels, from 1s. each.

The largest stock of Plated Dessert Knives and Forks, in cases and otherwise, and of the new Plated Fish Carvers in existence. Also a large assortment of Razors; Penknives, Scissors, &c., of the best quality.

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**SEASONABLE FESTIVITIES.**—At the social ré-unions of this festive season, the fair and youthful are more than usually desirous of shining in personal attraction under the gaze of many friends, and the following unrivalled requisites for the toilet are called into increased requisition, namely, ROWLANDS' MACASSAR OIL, for creating and sustaining a luxuriant head of hair; Rowlands' Kalydor, for rendering the skin soft, fair, and blooming; Rowlands' Odonto, or Pearl Dentifrice, for imparting a pearl-like whiteness to the teeth; and Rowlands' Aqua d'Oro, a fragrant and spirituous perfume, an essential accompaniment to places of public amusement and crowded assemblies. The patronage of Royalty throughout Europe, and the high appreciation by rank and fashion, with the well-known infallible efficacy of these articles, render them a peculiarly elegant and seasonable present. Beware of spurious imitations. The only genuine of each bears the name of "Rowlands" preceding that of the article on the wrapper or label.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

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**LOCOCK'S LOTION FOR THE HAIR.**—This highly esteemed emollient Lotion, prepared from a recipe of the eminent physician whose name it bears, has proved most beneficial in restoring the Hair, and when used daily, with the ordinary hair brush, communicates a peculiar softness and brilliancy to the Hair, and is alike favourable to its growth and permanency.

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Blinding up	Planting out, and arrangement of trees	GRAFTING.
Budding knife	Pushing eye, spring	shoots from
Budding, time of year, day, month, &c.	Roses, different sorts on the same stock	Aphides, to keep down
Day, state of the plant, care of buds	Roses, short list of desirable sorts for budding with a pushing eye	Free-growers, remarks on
Budding upon body	Sap-bud, treatment of	Graft, binding up and finishing of
Bud, insertion of, into stock	Shape of trees	Grafting, advantage of
Bud, preparation of, for use	Shoots and buds, choice of	Grafting, disadvantage of
Buds, dormant and pushing	Shoots for budding upon, and their arrangement	Operations in different months
Buds, failing	Shoots, keeping even, and removing	Preliminary observations
Buds, securing a supply of	Shortening wild shoots	Roses, catalogue and brief description of a few sorts
Caterpillars, slugs, and snails, to destroy	Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up	Scion, preparation and insertion of
Causes of success		Scion, choice and arrangement of
Dormant buds, theory of replanting with explained		Stock, preparation of
Guards against wind		APPENDIX.
Labelling		A selection of varieties
Loosing ligatures		Comparison between budding and grafting.
March pruning		
Mixture for healing wounds		

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SATURDAY, JANUARY 22.

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\* **GOLDEN YEW**, worked on common, 3, 4, 5, and 6 feet high. \* Visitors to Elvaston Castle cannot have failed to remark the extraordinary effect produced by the last five plants, viz., Irish and Gold-striped Yews, Irish and Chinese Junipers, and the variegated white Cedar; and I believe we may assert, without fear of contradiction, except Elvaston, a superior lot of plants to those here offered cannot be found in any Nursery in Britain.—Priced Catalogues will be forwarded on application.

The Knap Hill Nursery is within an hour's ride of London, being near the Woking Station, South Western Railway, where every train stops, and from whence conveyances may at all times be had.

## AMERICAN NURSERY.

**GEORGE BAKER**, Windlesham, near Bagshot, Surrey, Exhibitor of American Plants at the Royal Botanic Gardens, Regent's Park, begs to inform the nobility and public that he has published a Descriptive CATALOGUE of AMERICAN PLANTS, Conifers, Roses, Ornamental Shrubs, &c. &c., and may be obtained by enclosing two postage stamps. Near Staines Station, Windsor Branch, South-Western Railway.

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JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

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**TWO YEARS TRANSPLANTED NATIVE SCOTCH FIRS, COMMON AND TYROLESE LARCHES.**

The Subscribers have a large stock of the above, which they can recommend as superior in quality, and which are well worthy the notice of the trade, or those gentlemen intending to plant. Purchasers can be supplied either from their Brechin Establishment or here. Their priced Catalogues of Forest, Ornamental Trees, Shrubs, Fruits, and Roses, are now ready, and will be forwarded on application. DRACON & TURNBULL, Perth Nurseries, N. E., January 22.

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**HENRY GROOM, CLAPHAM RISE**, near London, by Appointment Florist to her Majesty the Queen, and to his Majesty the King of Saxony, begs to recommend to the attention of the Nobility, Gentry, and Amateurs, his extensive assortment of the above FLOWERS which, from the large stock he possesses, he can supply at the following moderate prices:—

**LILIAM LANCIFOLIUM ALBUM**, from 9s. to 1s. 6d. each. " " PUNCTATUM, from 3s. to 7 6 " " " ROSEUM, from 3s. to 10 6 " " " SPICATUM, from 3s. 6d. to 15 0 " " " COULENTINUM, from 5s. to 10 6 " " " JAPONICUM, or Brownii, from 5s. to 10 6 " 100 RANUNCULUSES in 100 very fine sorts, named, 2l. 10s. Superfine Mixtures, from 5s. to 15s. per 100. 100 ANEMONES in 50 superfine sorts, named, 1l. 10s. Superfine Mixtures, from 6s. to 10s. 6d. per 100. His Catalogue will be forwarded by post on application.

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**WILLIAM WOOD AND SON**, in order to make room for a new and very extensive Plantation of Roses, have come to the determination of clearing off a large overstock of Standard Fruit Trees; the plants are remarkably strong and healthy, and comprise the most esteemed sorts in cultivation.

Apples, Standards ... 10s. per dozen. " " Pyramidal Trees ... 8s. " Pears, Standards ... 15s. " " " Pyramidal Trees, very fine ... 12s. " " On Quince stocks (pyramidal trees) ... 18s. " Plums, Standards, very strong ... 12s. " " " Pyramidal Trees ... 9s. "

W. W. & Son have still on hand a fine stock of the leading kinds of Roses.

N.B. Extra plants presented with each order to compensate for carriage. Woodlands Nursery, Maresfield, near Uckfield, Sussex.

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WEST OF ENGLAND  
AGRICULTURAL & HORTICULTURAL ESTABLISHMENT,  
FOR THE SUPPLY OF  
EVERY REQUISITE FOR THE FARM AND GARDEN,  
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in Great Britain and Ireland.)

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SEED MERCHANTS, Plymouth, have much pleasure in  
stating that they have this season a fine and well-selected Stock  
of all kinds of KITCHEN GARDEN and FLOWER SEEDS in  
the best possible condition, GROWN BY THEMSELVES, or BY  
GROWERS of the HIGHEST REPUTATION.

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It contains the prices of every article, and should be  
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selected from several hundreds of a similar character. The  
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From a Clergyman in Yorkshire.  
"Your Seeds have given great satisfaction. I will send you an  
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From a Forester and Gardener in Aberdeenshire.  
"I have been very successful with your Willcove Broccoli in  
taking all the prizes offered by the Aberdeenshire Horticultural  
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"I feel it due to you to say that the Seeds sent have given  
myself and my gardener perfect satisfaction. I have named your  
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table Seeds, the whole of which have given much satisfaction to  
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From a Gentleman in Fifeshire.  
"The Seeds furnished by you have proved to be of the best  
possible description."

From a Gentleman resident in Chesterfield.  
"I have great pleasure in saying that I am perfectly satisfied  
with the Seeds furnished by you."

From a Gentleman residing near Dublin.  
"I feel much pleasure in stating the great satisfaction I have  
had with your Seeds; the Mammoth Broccoli particularly has  
been the wonder of all who have seen them. I out one weighing  
16½ lbs. in weight, and my gardener says there are some still  
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"It is gratifying to have again to express the satisfaction I  
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"I am glad to bear testimony of the excellent quality of your  
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"I was much pleased with my last year's Seeds."

If it were necessary, the columns of this Paper could  
be filled with similar testimonies of the excellence of our  
Seeds.

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Our Collections have given the greatest satisfaction to all who  
have received them; and we have the greater confidence in highly  
recommending them. They are supplied on the following terms:  
No. 1. Complete Collection for a large garden for one £ s. d.  
year's supply, including 20 quarts of the best varieties  
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Herbs, Cucumber, Melon, Endive, and other useful  
vegetables of the best varieties, for ... 2 10 0  
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The full quantities sent in each Collection are stated  
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sent free by post in exchange for six penny stamps.

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ESTABLISHED MORE THAN HALF A CENTURY.

**STRAWBERRY PLANTS.**—Any person having a  
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ready for forcing to dispose of, may hear of a purchaser by  
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**CARLY TYSO, Florist and SEEDSMAN, Walling-**  
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\* RANUNCULUSES, 100 superb named vars., 40s. to £4 0 0  
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CARNATIONS and PICOTEEES, 25 select sorts,  
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Stocks, Larkspurs, Salpiglossis, Balsams,  
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**APPLES,** standard, on stems, 5 to 6 feet, bushy,  
12s. per dozen.  
dwarf trained, strong, 30s. per dozen.  
Pears, standard, on stems 5 to 6 feet, good heads, 18s. per dozen.  
dwarf trained, strong, 30s. per dozen.  
Cherries, standard, on stems 5 to 6 feet, 18s. per dozen.  
dwarf trained, strong, 42s. per dozen.  
Apricots, dwarf trained, very strong, 3s. 6d. to 5s. each.  
Peaches and Nectarines, do., do., 3s. 6d. to 5s. each.  
Plums, do., do., 2s. 6d. each.

**THE TRUE FASTOLFF RASPBERRY,** first introduced to the  
horticultural world by us, still maintains its superior qualities  
over every other Red Raspberry in cultivation, can be supplied  
in strong canes at 15s. per 100. Usual discount to the Trade.  
Large white Raspberry, of unequalled size and flavour, admirable  
for the dessert, 24s. per 100.  
Gooseberries, the finest prize sorts, selected for size and flavour,  
in strong bushes, 4s. per dozen.  
Currants, all the most approved sorts, viz., new White Dutch,  
Raby Castle, Black Naples, &c., in strong bushes, 4s. per dozen.  
Strawberries, all the finest varieties.  
Rhubarb, strong undivided roots of Myatt's Victoria, Linneus,  
and Royal Albert, the best kinds for forcing, 8s. per dozen.  
Figs, Brown Ischia, strong, 2s. 6d. each.  
Asparagus (Giant), 3 years, per 100, 3s. 6d.; 2 years, 2s. 6d. per 100.  
Seakale, very strong, 6s. per 100.  
\* \* \* Owing to the luxuriant growth the latter make in our sea-  
coast nursery, the roots are very fine and healthy.

#### CONIFERÆ (IN POTS).

*Araracia imbricata*, the massive appearance and unique char-  
acter of this tree, joined to its extreme hardiness, entitle it to  
the first place among hardy trees. We possess a large stock,  
and beg to offer it as follows:

12 to 15 inches	...	30s. per dozen.
2 feet	...	84s.
3 feet	...	15s. each.

Fine large specimens 4 guineas each.  
*Cedrus Deodara*, the sacred Cedar of the Himalayas; this tree, in  
appearance not unlike a Larch, but weeping and evergreen, is  
so highly esteemed by the natives of these regions as to become  
an object of reverence. With us it is perfectly hardy, and one of  
our most ornamental trees.

1 year, from seed	...	20s. per 100.
2 years, do.	...	30s.
15 to 18 inches, do.	...	12s. per dozen.
18 inches to 2 feet, do.	...	24s.
2½ to 3 feet	...	42s.
3 to 4 feet, splendid plants	...	60s.
5 to 6 feet, fine specimens	...	15s. each.
6 to 7 feet	...	21s.

Irish Yews, 2 to 3 feet ... 9s. per dozen.  
*Taxus pyramidalis*, or new upright Yew, 12 to 15 ins. 18s.  
"adpressa, 6 inches ... 12s.  
"Dovastonii, or weeping Yew ... 18s.  
"Gold variegated ... 12s.  
Thuja pendula ... 18s.  
"Donniana ... 6s. each.

Cupressus Lambertiana, 15 to 18 inches ... 2s. 6d. each.  
"Goveniana, 18 inches to 2 feet ... 3s. 6d.  
"Funebris, 15 inches ... 3s. 6d.  
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"Juniperus Bedfordiana, 9 to 12 inches ... 18s.  
"2 to 3 feet ... 3s. 6d. each.  
"squarata ... 9s. per dozen.

"Irish, a very ornamental species, of most symmetrical  
form, 1½ to 2 feet, very strong ... 12s. per dozen.  
Pinus excelsa, or tall growing; this fine Fir, from the Himalayas,  
has long silvery foliage, and is of very rapid growth. It merits  
a place in even the smallest collection.

6 inches, in pots	...	6s. per dozen.
12 to 18 inches, bushy	...	9s.
18 inches to 2 feet	...	12s.
3 to 4 feet, very strong	...	30s.
5 to 6 feet, fine specimens	...	60s.
6 to 9 inches, bedded	...	4s.
18 inches to 2 feet, bedded	...	40s. per 100.

*Pinus Gerardiana*, a very robust dwarf species, from the Hima-  
layas; it makes a pretty object in situations where very tall  
trees are not desirable, its maximum height being 50 feet.  
Strong bushy plants, 6 inches ... 40s. per 100; 6s. per dozen.

*Pinus Cembra*, 2 to 3 feet ... 30s.  
*Cedrus Libani*, 18 inches to 2 feet ... 12s.  
"2 to 3 feet ... 24s.

"argenteus, the Silver Cedar of Mount  
Atlas, 12 to 20 inches ... 3s. 6d. each.  
*Picea Pinow*; this fine species of silver Fir recommends itself  
by its very long foliage and robust habit, closely resembling  
P. Webbiana, 4 to 6 inches, strong ... 9s. per dozen.

*Picea Pinsapo*, from the mountains of Spain; the leaves of this  
species are strong and rigid, and arranged on the stem in the  
manner of a bottle brush, a very distinct and beautiful species.  
3 years, from seed, strong ... 18s. per dozen.

Fine specimens, 2 to 3 feet in height, and as  
much through ... 15s. to 21s. each.  
*Picea cephalonica*, 15 to 18 inches ... 2s. 6d. each.

*Abies morinda*, a fine robust species of Spruce, of  
a weeping habit, from the Himalayas, 2 to 3 ft. ... 30s. per dozen.  
9 to 12 inches ... 6s.

*Abies Menziesii*, a very distinct species of  
Spruce, with foliage silvery on the under side,  
12 to 18 inches, 12s. per dozen; 18 to 24 inches  
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a dwarf compact shrub ... 12s. per dozen.

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very ornamental, 6 to 9 inches, bushy ... 18s.  
*Cryptomeria japonica*, from seeds, 1½ to 2 feet ... 42s.  
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*Podocarpus Totara*, 12 to 18 inches ... 24s.  
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*Quercus Fordii*, a hardy and very ornamental evergreen Oak,  
with twisted foliage, 12 to 15 inches, 12s. per dozen.  
Do. do., 18 inches to 2 feet, 18s. per dozen.  
Do. do., 2 feet to 3 feet, 30s. per dozen.

*Quercus lanata*, fine species from the Himalayas, described as the  
"King of Evergreen Oaks," 6 to 9 inches, strong, 3s. 6d. each.  
*Quercus rotundifolia*, 9 to 12 inches, 3s. 6d.  
"ballota, 9 to 12 inches, 2s. 6d.

"sempervirens grandifolia, 3s. 6d.  
"flex var. Humel, a very fine variety of the evergreen  
Oak, with very broad foliage, 18 inches to 2 feet, 3s. 6d. each.  
Do. do., 2 to 3 feet, 5s. each.

Standard Thorns, 1s. 6d. to 2s. 6d. each.  
Weeping Ash, on 8 to 10 foot stems, very strong and bushy, fine  
specimens, 3s. 6d. each.  
*Forsythia viridissima*, 1½ to 2 feet, strong and bushy, 12s. per doz.  
*Weigela rosea*, 2 to 3 feet, bushy, 18s. per dozen.

All Orders of £2 and upwards are delivered Carriage Free to London and Hull, as well as to any

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*Euonymus japonicus* foliis var., one of our best variegated shrubs,  
of dwarf and compact habit, 9 to 12 inches, bushy, 9s. per dozen.  
Do. do., 12 to 18 inches, do., 12s. per dozen.  
*Ilex latifolia*; this variety, with fine Laurel-like foliage, is quite  
unique among Hollies; strong plants, 21s. to 18 inches, 18s. p. doz.  
*Ilex Sheppardii*, a remarkable variety, with very broad foliage,  
and free blooming qualities; the finest, perhaps, of the green  
Hollies; strong plants, 2s. 6d.; smaller do., 12s. per dozen.  
Bays, 1½ foot, 5s. per dozen.  
Aucuba, 1½ foot, 6s. per dozen.  
Roses, a fine collection of the most approved varieties for summer  
and autumn blooming; standards, per dozen, 18s.; half do.,  
15s. per dozen; dwarf on own roots, 6s. per dozen.  
Rose, Paul's Queen Victoria, standards (buds), 3s. 6d. each.  
"small, in 60-size pots, 3s. 6d. each.

*Catalpa syriacifolia*, 2 to 3 feet, 9s. per dozen.  
*Escallonia macrantha*; our experience of last season proves  
this to be one of the most handsome, hardy evergreen spring  
and autumn flowering shrubs that we possess; 1s. each.

#### HARDY CLIMBERS.

*Hedera Regeneriana*, or Giant Ivy, 1s. 6d. each.  
"silver-striped, 1s. each; palmated, 1s. 6d. each.  
"Irish, 6s. per dozen.

*Jasminum revolutum*, very strong, 1s. 6d. each.  
"fruticosum, 1s. each.  
*Clematis*, sweet-scented, 9s. per dozen.  
montana, 12s. per dozen.

"Sieboldii and *azurea grandiflora*, 18s. per dozen.  
*Pyrus japonica*, 9s. per dozen.  
*Escallonia rubra*, 12s. per dozen. *Pyracantha*, 9s. per dozen.

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Boursault, Ayrshire, Noisette and other climbing Roses, in strong  
plants, 4s. per dozen; 25s. per 100.  
*Ceanothus americanus*, harder than *C. azureus*, 12s. per dozen.

"rigidus, the hardest and best of the new Californian  
species, 2s. 6d. each.  
*Cotoneaster microphylla*, admirable for walls; its white flowers  
and coral berries form a striking contrast to its dark green  
foliage; 9s. per dozen.

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Camellias of the finest varieties, set with buds, in good strong  
plants, 30s. per dozen; without buds, 21s. per dozen.  
Ericas, fine blooming bushy plants, in large 48s, 12s. per dozen;  
smaller do., 9s. per dozen.

*Epacris*, nice plants, in small 48s, in many fine varieties, 9s. per  
dozen.  
*Cineraria*, choice kinds, new varieties, 9s. per dozen.

*Mandevilla sunculensis*, this fine creeper, of robust habit, pro-  
duces numerous bell-shaped, highly fragrant flowers, of the  
purest white, in large clusters; strong plants, 1s. 6d. each.

*Passiflora racemosa erubra*, the hardest and best for a green-  
house, producing in abundance its pretty purple flowers;  
strong plants, 1s. 6d. each.

*Passiflora Bellotti*, a fine peach-coloured new variety, 2s. each.  
*Mitrasia coccinea*; this fine new shrub produced its fine scarlet  
bladdery flowers freely in our nursery last season, on plants in  
48s. We confidently recommend it as highly ornamental; it  
makes a beautiful specimen; strong plants in large 48s, 1s. 6d.  
each; a few fine specimens, 3s. 6d. to 5s. each.

*Philadelphus mexicanus*, a neat dwarf shrub, producing flowers  
as fragrant as the Orange, 12s. per dozen.  
*Aphelasia*, six fine varieties, 1s. each.

*Crassula Louis Napoleon Bonaparte*, new deep scarlet variety,  
strong, 4s. 6d. each.  
*Statice puberula*, the prettiest, perhaps, of the genus, producing  
its pretty blue and white flowers nearly through the season;  
strong plants, 9s. per dozen.

*Leschenaultia formosa*, 12s. per dozen.  
"biloba nana, 18s. per dozen.  
*Sollya Drummondii*, a neat blue flowering creeper, suitable for  
trellises, 18s. per dozen.

*Burchellia capensis*, this fine old favourite, 12s. per dozen.  
With many other fine species and varieties, on an average 12s.  
per dozen.

#### HARDY BULBS, HERBACEOUS PLANTS, ETC.

*Gladiolus insignis*, a fine robust species, producing during the  
summer and autumn months long spikes of glowing scarlet  
flowers, almost too dazzling to look upon, 6s. per dozen.

*Tigridia conchiflora*, the yellow Tiger-flower, very handsome, 9s.  
per dozen.  
*Lilium lancifolium album*, the beautiful white Japan Lily, 9s. per  
dozen.

"rubrum ditto, spotted and suffused with crim-  
son, 18s. 6d. per dozen.  
*Dielytra spectabilis*; this fine hardy herbaceous plant ranks  
among the most beautiful plants received from China; strong  
plants, 12s. per dozen.

*Paeonias* (herbaceous), in 20 fine new varieties, 1s. each.  
Hollyhocks.—The following superb varieties, 12s. per dozen, viz.:  
Walden Gem, Magnum Bonum, Comet, Mr. C. Baron, Obscura,  
Rosa rubra, Princess Royal, Bicolor, Eclipse, Queen, Con-  
spicua, Delicata, with other fine varieties.

Seed saved from the above, 2s. per packet.  
New Belgian Daisies, in 50 finest varieties, 4s. per dozen.  
Berberis Darwinii, 18s. per dozen.

*Deutzia gracilis*, 18s. per dozen.  
Lily of the Valley, fine strong roots, 4s. per 100.  
*Oxalis floribunda*, one of the finest of our hardy perennials, pro-  
ducing its pretty pink flowers in profusion through the summer  
and autumn, 6s. per dozen.

*Oxalis elegans* and *elegans major*, two pretty species, very free  
bloomers, 9s. per dozen.  
*Viola lutea*, the yellow Violet, a very neat and distinct species,  
9s. per dozen.

Hollyhocks, the choicest varieties of the principal growers, 12s.  
to 18s. per dozen.  
Pansies (our collection comprises all the known varieties of  
merit), strong plants, 6s. to 12s. per dozen.

Rockets, double white, 3s. per dozen; double purple, 6s. per  
dozen; crimson, 18s. per dozen.  
Primroses, the old double scarlet or maroon; we are fortunate  
in possessing a good stock of this rare though fine old plant.

Strong plants, 12s. per dozen; double white, 9s. per dozen;  
lilac, 4s. per dozen; purple, 6s. per dozen.

#### CARNATIONS AND PICOTEEES.

We are probably the largest growers of these in the world; and  
as our soil and climate suit them admirably, they attain a luxu-  
riance with us unknown in other places. We can supply good  
strong Plants of the best varieties as follows:—

12 pairs, the very best and newest	...	1 10 0
12 pairs, fine	...	0 18 0
100 pairs, very best and newest	...	7 10 0
100 pairs, fine	...	5 0 0
12 pairs, fine mixed border do.	...	0 9 0
12 pairs, true old Clove	...	0 12 0



# SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

## BASS AND BROWN'S SEED AND PLANT LIST FOR 1853, WITH THE USUAL FULL DESCRIPTIVE INFORMATION, IS NOW COMPLETE, AND MAY BE HAD FREE FOR THREE POSTAGE STAMPS.

WE have the pleasure to present our 22d ANNUAL SEED CATALOGUE, combined with our usual choice of choice varieties and kinds as can be produced. From the great number of communications from persons in all parts of the Kingdom to whom our goods have been sent, expressing their high approval of the articles supplied, and from our habitual aim to obtain those of the very best description, we can offer them with the fullest confidence.

The following, of our own selection, we wish particularly to recommend. They consist of varieties and kinds which cannot fail to afford the most complete satisfaction, with many new and important additions.

### VEGETABLE SEEDS IN ASSORTMENTS.

- The following of the choicest and most approved, embracing superior new sorts in proportionate quantities of each:—
- No. 1.—COLLECTION FOR A LARGE GARDEN, containing 20 quarts of Peas, in 20 best sorts for succession; £ s. d.  
10 best sorts of Broccoli; 8 do. of Lettuce; with all other Vegetables in proportion ... 2 10 0
- No. 2.—THE BEST NEW AND OTHER SORTS IN SMALLER QUANTITIES ... 1 10 0
- No. 3.—DITTO DITTO ... 1 0 0
- No. 4.—A COLLECTION OF ESTEEMED KINDS FOR A SMALL GARDEN ... 0 10 6
- \* \* \* A complete List of the sorts and quantities of the Nos. 1, 2, and 3 Collections are furnished in the Catalogue. If any sorts are not wished for, enlarged quantities of others will be sent to make up the amount.

### FLOWER SEEDS—FIRST ASSORTMENTS.

- Prepaid by post, at the prices affixed. Useful printed instructions for sowing and raising Seeds sent with each lot.
- 100 Varieties select showy Annuals, including very splendid Prize Asters, Stocks, Larkspurs, Jacobines, Zinnia elegans, &c. also the new Californian Collinsias, Nemophila aurita oculata, and a large number of the newest and best sorts ... £ s. d.  
50 Varieties, including the same, 5s. 6d.; 30 varieties ditto, 5s. 6d.; 20 varieties ditto ... 0 15 0
- 20 Varieties select Dwarf Annuals, in large packets, for filling beds on lawns, 7s. 6d.; 12 varieties ... 0 4 0
- 20 Varieties choice Greenhouse Annuals, including very fine Balsam, Mesembryanthemum, Martynia; beautiful new varieties of Phlox Drummondii; new varieties of Portulacca, Rhodantha Manglesii, Thunbergia, the new Salpiglossis atrosanguinea and new yellow, &c. ... 0 5 0
- 12 Varieties ditto ditto ditto ... 0 7 6
- 20 Varieties choice Greenhouse Perennials, including very fine and new Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Kennedyas, Calandrinia umbellata, Chorizanthes, &c., 10s. 6d.; 12 varieties ... 0 5 0
- 20 Varieties Hardy Biennials and Perennials, including the new white Escholtzia, very choice Antirrhinum, Gladioli, Heartsease, Mimulus, Polyanthus, Dianthus, Brompton and Emperor Stocks, &c., 7s. 6d.; 12 varieties ... 0 5 0

### FLOWER SEEDS—SECOND ASSORTMENTS.

- 100 Varieties, selected and well assorted Showy Annuals ... £ s. d.  
50 Varieties ditto ditto ... 0 10 6
- 20 Varieties ditto ditto, 3s. 6d.; 20 varieties ... 0 5 6
- 20 Varieties Hardy Biennials and Perennials, &c., 12 varieties ... 0 2 6
- Remittances required from unknown correspondents. Post-office Orders payable to BASS AND BROWN, or to STEPHEN BROWN.

In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of goods, to the amount of 20s. and upwards, free to all the Stations in London; also sent free, as before, to the Chelmsford, Colchester, Ipswich, and all the Stations on the same line from London to Norwich.

Copies of the ARTIST'S CATALOGUE may also be had free for three penny stamps, in which will be found the Descriptive List of choice Roses, and most of the hardy description of Plants, Bulbs, &c. The cost of Catalogues may be deducted from orders.

### ESTABLISHED ABOUT HALF A CENTURY.

#### NEW SEEDS FOR 1853.

SUTTON'S COLLECTIONS OF GARDEN SEEDS, which are still unrivalled, may now be obtained in any part of the United Kingdom direct from the Growers, John Sutton and Sons, Reading, Berks.

J. S. & SONS being extensive Growers of Seeds, are enabled to offer peculiar advantages to purchasers, both as to quality and price, and as they retain exclusively in their own possession choice sorts which they have selected during the many years they have been in business, they feel confident that their Collections of Seeds are as superior in quality as they are greater in quantity than any others yet offered.

The Seeds above alluded to are Sutton's Complete Collections for one year's supply, the prices of which are the same as heretofore, viz., No. 1, 2l. 10s.; No. 2, 10s.; No. 3, 1l. 1s.; and No. 4, 12s. 6d.; but any of the Seeds may be purchased separately if the whole Collection is not required; and they are delivered Carriage free by Rail, as stated in the printed particulars of the prices, quantities, and prices of the Seeds contained in the Collection, which may be had, post free, in return one penny stamp.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

RASS SEEDS FOR PERMANENT PASTURE, made up in proper assortments and proportions for every description of soil.

KEYS PERENNIAL RYE-GRASS, very clean Seed, weighing from 28 lbs. to 30 lbs. per bushel.

ALLAN RYE-GRASS, selected from the best growers in the country. This Seed yields a much earlier and more luxuriant crop than can be obtained from any other, and should always be sown when from five to six cuttings in the season is required.

KNIFS, in all the varieties of Swedes, Yellows, and Whites, &c. of cultivation. The Stocks of these have been greatly increased by raising the seed from large picked bulbs. In every other description of Agricultural Seeds, priced in which may be had post free on application.

W. DRUMMOND & SONS, SEEDSMEN.

Carriage of Seeds prepaid to many of the principal Ports and Railway Stations throughout the Kingdom.

ES SUPERB CRYSTAL WHITE CELERY.

M. COLE, Dartford, Kent, begs to inform his friends and the public, that he is ready to send out a late Celery, which he has every confidence in recommending as being decidedly superior to his Superb Dwarf Celery, with universal satisfaction, three years back. The White is a dwarf kind, rarely exceeding (under the best management) 14 inches in height; it is very solid, crisp, and fine, and if sown at the same time as the red variety, will be ready for use a month earlier, and continue good a month later. It is sown by some of the first gardeners in the country, and is found to be a superior article. It may be obtained of Messrs. Cole, or from the following agents, at 2s. 6d. per bushel by post:—

Messrs. Hunt and McMullen, Leadenhall Street; Messrs. Daws, Catrell, and Bonham, Moorgate Street; Messrs. G. & Co., Strand; Mr. Duncan Hall, St. Martin's Lane; Messrs. Mr. Denyer, Gracechurch Street; Messrs. A. & Co., Pine Apple Place; Messrs. Garway, Mayes, & Co., Buryard, Maidstone; Mr. Turner, Slough; Messrs. and Laird, Edinburgh; Messrs. F. and J. Chester; Messrs. T. and J. Dickson, Manchester; and J. Fraser, Leam Bridge, Essex; Messrs. Little and Co., Carlisle; Messrs. Veitch and Son, Exeter; Messrs. G. & Co., Exeter; Mr. A. Poxey, Plymouth; Mr. L. & Co., Exeter; Mr. G. & Co., Exeter; Messrs. F. & Co., Exeter.

#### SEEDLING PELARGONIUMS OF 1851.

JOHN DOBSON is now sending out in strong plants his new Seedlings, which are first-rate, being good in shape, distinct colours, and abundant bloomers. Vulcan, 31s. 6d.; Spot, 21s.; Gertrude, 21s.; Commander, 21s.; Jupiter, 21s.; Pasha, 21s.; Harriet, 15s. Also 12 good show varieties from 12s. J. D.'s CATALOGUE for 1853, with full descriptions of the above, also of Fuchsias, Hollyhocks, Verbenas, Vegetable and Flower Seeds, &c., can be had in exchange for two postage stamps.

VERBENA PURPLE KING, exhibited by Mr. Mockett at the Royal South London Floricultural Society, where it obtained a First Class Certificate; the whole stock being in J. D.'s possession, strong plants will be ready in April next, at 5s. per plant. Where three are ordered four will be sent.

HOLLYHOCK SEED, saved from all the best varieties, in packets of 100 seeds, sent post free on receipt of 12 postage stamps. Also Antirrhinum Seed, carefully saved from a first-rate collection, in packets, sent free for 8 postage stamps. J. D. has a few copies left of his "Practical Observations on the Pelargonium," which has been so favourably noticed, and will be forwarded post free on receipt of 8 postage stamps.

Woodlands Nursery, Isleworth.

#### TALavera WHEAT FOR SPRING SOWING.

MR. OWEN, OF BROCKLEY FARM, LEWISHAM, begs to inform Agriculturists, that he has a very fine sample of the above Wheat for sale, at 9s. per bushel.

ASHLEAF KIDNEY POTATOES for immediate sale.—One hundred sacks of first-rate quality and excellent size for Seed.—Apply to Mr. BENJAMIN CANT, Nursery Seedsman, Colchester, Essex.

#### AGRICULTURAL, KITCHEN GARDEN, & FLOWER SEEDS.

THE GROWTH OF 1852.

GARAWAY, MAYES, AND CO., beg to inform their Friends and the Public that they are now prepared to execute any orders for the above, selected from stocks of the first quality. From their long experience and transactions with the most celebrated growers in the country they have, regardless of cost, obtained the very best articles under their original names. They have many high testimonials of the superiority of their Kitchen Garden and Flower Seeds; the latter are principally grown by themselves. Their Lawn and Pasture Grass Seeds they can with confidence recommend. All Seeds thoroughly proved before leaving the establishment.

G. M. & Co. have to offer the following new and approved kinds:—

Peas, Beck's Gem	Per quart—s. d.	Celery, Cole's Superb Red	Per packet—s. d.
" Hair's new dwarf <td>1 6</td> <td>" Crystal White, new<td>0 6</td></td>	1 6	" Crystal White, new <td>0 6</td>	0 6
" Mammoth <td>1 0</td> <td>" and very fine<td>2 6</td></td>	1 0	" and very fine <td>2 6</td>	2 6
" Middleton green <td>1 0</td> <td>" Imperial Pink<td>0 6</td></td>	1 0	" Imperial Pink <td>0 6</td>	0 6
" Marrow <td>1 0</td> <td>" White<td>0 6</td></td>	1 0	" White <td>0 6</td>	0 6
" November Prolific <td>5 0</td> <td>Cucumber, Victory of Bath<td>1 0</td></td>	5 0	Cucumber, Victory of Bath <td>1 0</td>	1 0
" Sangster's No. 1 <td>2 6</td> <td>" Lord Kenyon's<td>1 0</td></td>	2 6	" Lord Kenyon's <td>1 0</td>	1 0
	Per packet.	" Favourite <td>1 0</td>	1 0
Broccoli, Dilcock's Bride, <td>2 6</td> <td>" Cathill's Black Spine<td>1 0</td></td>	2 6	" Cathill's Black Spine <td>1 0</td>	1 0
fine new White <td>2 6</td> <td>" Kelway's Victory<td>1 0</td></td>	2 6	" Kelway's Victory <td>1 0</td>	1 0
Broccoli, Walcheren, true <td>0 6</td> <td>" Melon, Victory of Bath<td>1 0</td></td>	0 6	" Melon, Victory of Bath <td>1 0</td>	1 0
" Wilcove, true <td>0 6</td> <td>" Bromham Hall<td>1 0</td></td>	0 6	" Bromham Hall <td>1 0</td>	1 0
" Highclere, the finest <td>1 0</td> <td>" Camerton Court<td>1 0</td></td>	1 0	" Camerton Court <td>1 0</td>	1 0
late white grown <td>1 0</td> <td></td> <td></td>	1 0		

Superb Hollyhock, saved from the very best named sorts ... £ s. d.  
" ditto, fine double, in sorts separately ... 1 0  
" Calceolaria ditto ditto ditto ... 1 0  
" Cineraria ditto ditto ditto ... 1 0  
Imported German Stocks and Antennas.

Large collections of Fruit and Forest Trees, Ornamental Shrubs, and Conifers, extending over 50 acres of ground. Hot-houses and Greenhouses, Plants, Orchids, and Florist Flowers extensively grown. Catalogues of which will be forwarded immediately on application. Seeds made up in collections, from 10s. 6d. to 30s. 6d. each.

Durham Down Nurseries, Bristol, Jan. 22.—Established, 1786.

#### GREAT SALE OF ORNAMENTAL PLANTS AND FOREST TREES.

THE TRUSTEE ON THE SEQUESTERED ESTATE OF THOMAS LANG, Nurseryman, Kilmarnock, has instructions to Sell Off, within a limited time, the whole of his Evergreens, Greenhouse Plants, &c.

The Stock has been pronounced, by the most competent judges, to be complete and in most excellent order, and it will be offered at very low prices.

The rate of carriage, per luggage train, on large lots, from Kilmarnock to London, is now only 40s. per ton.

The following are the quantities of some leading articles:—  
Larch, transplanted, very fine ... 230,000  
Scotch Fir, transplanted, very fine ... 170,000  
Thorn, transplanted, very fine ... 250,000  
Beech, transplanted, very fine ... 70,000  
Portugal Laurel, twice transplanted ... 10,000  
Apple-trees, a very select assortment ... 2,500  
Pear-trees, a first-rate selection ... 1,000  
Trained Fruit-trees, very healthy and fine ... 1,000  
Gooseberries, all the leading sorts ... 10,000

#### BEAUTIFUL NEW WEEPING WILLOW.

The Trustee is prepared to send out good Plants of Salix caprea pendula, or Kilmarnock Weeping Willow. This Willow being indigenous, is quite hardy, and is the most pendulous of all Weeping Trees cultivated in this country. It has large broad glossy leaves, which, in spring, are preceded by a profusion of gold-coloured catkins, rendering it at that season a most singular and beautiful ornament to the pleasure ground.

Furnished Plants Grafted on tall stems ... 3s. 6d. each.  
Furnished Plants ... 10s. 6d.

Nurserymen also are procured from the following nurseries:—T. Rivers, Sawbridge; W. Wood & Sons, Marshfield; A. F. & Sons, Cheshunt; Dicksons & Co., Edinburgh; R. M. Stark, Edinburgh; Dickson and Turnbull, Perth; Rowden Brothers, Inverness; Austin and M'Aslan, Glasgow; H. Walker, Londonderry; R. Fennessy and Son, Waterford.

Communications to be addressed to Mr. JOHN DICKIE (of Alex. Fowlds & Co., Seedsmen), Kilmarnock, Trustee on the Estate; and a list may be had on application.

Kilmarnock, Jan. 22, 1853.

THE LARGEST, BEST BEARING, AND FINEST FLAVOURED PEA yet introduced, is HAIR'S DEFERENCE (KNIGHT'S) PEA. It grows about 4 feet, remarkably strong in habit, is earlier than the taller growing varieties, and should be planted 4 to 6 inches apart in the rows.

Plant February to April, 2s. 6d. per quart.  
HAIR'S DWARF MAMMOTH (KNIGHT'S) PEA has been so extensively grown and approved that D. H. does not think anything need be said in confirmation of its established character. Sow 4 inches apart.

Plant February to May, 1s. 6d. per quart.

BISHOP'S LONG-POD PEAS, 1s. ditto.

BURBIDGE'S ECLIPSE PEAS, 1s. ditto.

Garden, Agricultural, and Flower Seeds, wholesale and retail, embracing every article connected with the trade upon the most reasonable terms.

Potatoes, all the best kinds, for seed.

Catalogues furnished upon application.

DUNCAN HAIR, Seedsman, 109, St. Martin's Lane, Charing Cross.

#### SALPIGLOSSIS COCCINEA.

NEW SCARLET SALPIGLOSSIS.

J. G. WAITE, begs to inform the Trade, that he has a Stock of this beautiful New Annual, which he can offer by the ounce; price can be had on application, per packet, 1s. J. G. W. has also the largest collection and quantity of Flower Seeds in the Trade. His supplement to the New Varieties will be ready the end of the week, and can be had on application.

Seed Establishment, 131, High Holborn, London.

## The Gardeners' Chronicle.

SATURDAY, JANUARY 22, 1853.

#### MEETINGS FOR THE ENSUING WEEK.

MONDAY, Jan. 24	Entomological (Anniversary) ...	8 P.M.	
	Geographical Architects ...	8 P.M.	
	Civil Engineers ...	8 P.M.	
TUESDAY, — 25	Medical and Chirurgical ...	8 P.M.	
	Zoological ...	9 P.M.	
WEDNESDAY, — 26	Microscopical ...	8 P.M.	
	Society of Arts ...	8 P.M.	
	Royal Soc. of Literature ...	8 P.M.	
THURSDAY, — 27	Numismatic ...	7 P.M.	
	Antiquarian ...	8 P.M.	
FRIDAY, — 28	Pathological ...	8 P.M.	
SATURDAY, — 29	Royal Institution ...	8 P.M.	
	Medical ...	8 P.M.	

A DISCOVERY was made some months since by Mons. BARRAL, a French chemist, the importance of which, in its relation to cultivation, has hitherto, we believe, been altogether overlooked. And yet it seems to throw an entirely new light upon the rationale of certain processes, the results of which appear incredible to men of mere routine, and are sufficiently startling even to those who study the art of cultivation with all the intelligence which the existing state of science can supply.

The air we breathe was for a long time regarded as a peculiar element, if it was not thought, as we are inclined to suspect it still is by many worthy persons, a nothing, a mere void through which moving things can pass. At last some far-seeing chemists experimentally proved that it really consists of two distinct gases, oxygen and nitrogen, in which is dispersed a variable quantity of aqueous vapour, together with a minute proportion of carbonic acid. Then came Liebig, with his demonstration that carbonate of ammonia is invariably present as an important ingredient in the air, and with that it was imagined that discovery must cease; for the traces of common salt, potash, lime, and other matters, were regarded as too variable and inconsiderable to deserve notice. Even nitric acid, the action of which as conveying nitrogen to the vegetable system, must be supposed to be the same as that of ammonia, although known to occur in the air, was declared by Professor Liebig to be quite secondary and insignificant; he was of opinion that the quantity is too small to be estimated even in the rain of thunderstorms. M.



BARRAL has, however, shown that he was greatly mistaken.

This eminent chemist was led, during the six last months of 1851, to examine minutely the water collected in the rain gauges of the Observatory at Paris. His mode of investigation is declared by Messrs. DUMAS, BOUSSINGAULT, GASPARI, REGNAULT, and ARAGO, names foremost in French science, to be free from all objection, and to bear the most severe counter trials to which they could expose it. M. BARRAL states, that although the quantities of the following substances varied in different months, yet the monthly average, from July to December inclusive, was as follows:—

Substances in a cubic metre of Rain-water.		
Nitrogen	8.36 grammes	= 129 grains
Nitric acid	19.09 "	= 294 "
Ammonia	3.61 "	= 55.7 "
Chlorine	2.27 "	= 35 "
Lime	6.48 "	= 100 "
Magnesia	2.12 "	= 32.7 "

He did not ascertain whether all these substances are contained in rain-water collected at a distance from towns. But Mr. BENGE JONES found at least nitric acid in rain-water collected in London, at Kingston in Surrey, at Melbury in Dorsetshire, and far from any town, at Clonakelly in Ireland. If we assume that M. BARRAL's averages represent what occurs on an English acre, the quantity of such substances deposited on that extent of ground may be safely estimated as follows:—

The average depth of rain which falls in the neighbourhood of London is well ascertained to be about 24 inches per annum. This is at the rate of 87,120 cubic feet, or 2466 cubic metres of rain-water per acre; and this, according to the proportions per cubic metre in the preceding table, would afford annually of—

Nitrogen	451 lbs.
Nitric acid	103 "
Ammonia	191 "
Chlorine	121 "
Lime	35 "
Magnesia	11 "

Annual total per acre 227

Of these substances the three first are of the utmost importance, on account of their entering so largely into the indispensable constituents of the food by which vegetable life is sustained. The quantity of ammonia thus ascertained to exist is about what is expected in 2 cwt. of Peruvian guano, and bountiful nature gives us, moreover, nearly 150 lbs. of nitrogenous matter, also suited to the nutrition of our crops.

Nature gives us food, and we improvidently waste it. What with shallow cultivation on the one hand, hard ill-tilled land, puddled furrow-trenches, and polished furrow slices, rain-water thus highly charged with the most nutritious ingredients either runs off to ditches, or is so ill-directed that it very imperfectly reaches the roots. On the other hand, by means of close cropping, that which is intended to bathe every part of a plant, and to be instantly absorbed by its verdant surface, is as completely turned aside as if two-thirds of the crop grew beneath a pent-house.

No wonder that Lois-Weedon so astonishes the agricultural sceptic; for there the soil is made so deep and kept so open that every root is certain to receive its allotted share of the invigorating shower, and before the land-water finds its way to the drains it has given up its fertilising ingredients to the living suckers for which they were intended. There, too, the plants are so widely spaced, that no one row intercepts what is intended for another. Turnips and similar root crops have 5 feet for every plant to spread in; the lines of Wheat are a yard asunder, and catch every drop of rain or dew that descends upon them; and this is in great part the reason why half an acre of heavy clay land, by no means of peculiar richness, brings 40 bushels of Wheat, six or seven quarters of Beans, and 27 tons of Swedish Turnips, and why it would carry Carrots, Cabbages, Celery and Onions, in similar proportion if it were a kitchen garden.

We will just add that this was also the secret of the magnificent Strawberries, exhibited some years ago at Chiswick by the Speaker of the House of Commons, and which the spectators fancied that the right honourable gentleman must have raised by excessive doses of guano.

We observe that Mr. RIVERS, in the 5th edition of his "Miniature Fruit Garden,"\* just published, recommends the occasional removal of fruit trees, instead of pruning their roots. In a wet district, in heavy land, or in excessively manured soil, many kinds of trees form roots of great size, with rapidity,

and produce branches of corresponding luxuriance. In any country this is fatal to productiveness, because in proportion as barren branches are abundant bearing wood refuses to come—the fact being that under such circumstances all the assimilable matter of a tree is expended upon its foliage, so that nothing is left for the formation of flowers. What is even more unfortunate than the loss of fruit is the inevitable injury sustained by the general health of a tree where coarse rank shoots are formed. Such shoots are "watery;" that is to say they grow so rapidly that fluids continually rise into them from the ground, and are little condensed by evaporation or the chemical changes which take place as soon as the rate of growth slackens. The rate of growth cannot indeed diminish, so long as the powerful action of coarse woody roots continues to operate, for such roots refuse to be affected by the usual dryness of autumn, but work like forcing pumps which know no repose till the lowering temperature diminishes their vital excitability. When growth is arrested by the last-mentioned cause, the season is too far advanced for the ripening process to make progress. The branches therefore remain watery during the winter, like all bodies loaded with moisture, are extremely susceptible of cold, and become frost-bitten, the effect of which is afterwards seen by the ulcers or dry canker which attacks their general systems. Buds, moreover, will not break with regularity, because they are always imperfectly formed upon watery wood; the maturation of the bud, so essential to its future healthy development, being the result of a vital organisation connected with the chemical changes which in watery shoots never occur.

It was to prevent these consequences, and to throw trees into a bearing state, by destroying the subterranean forcing pumps which impart debility under the aspect of spurious vigour, that Mr. RIVERS originally urged the advantages of root-pruning. We know with what success. But the plan was not unattended by disadvantages; and it has been sometimes found that rank trees cannot bear what among animals would be called the shock to the system caused by sudden and severe amputation. Such has been especially the case with trees that are apt to gum. In order to meet this difficulty Mr. RIVERS now proposes to lift certain classes of fruit trees out of the ground every two years, and thus, by a system of gentle pruning, to avoid the grand operation of root amputation.

"For some few years," he says, "I have felt a growing conviction that Peach trees, trained against walls in the usual manner, without careful root cultivation, cannot, in our climate, be kept in a state at all healthy or fertile for a series of years. A wall covered with healthy Peach and Nectarine trees of a good ripe age is rarely to be seen; failing crops and blighted trees are the rule, healthy and fertile trees the exception. In page 20 will be found an allusion to the trees on the walls at Quendon Hall. I have reason to believe that all the success which the late Mr. Sillett had with his trees was owing in the first place to root-pruning, and afterwards to lifting his trees biennially, shortening an occasional straggling root, but not root-pruning them, and giving to each tree some rich light compost. The following mode of treating Peaches, Nectarines, Apricots, and Plums, on the removal system, I have found simple and efficacious.

"Supposing a trained tree, of the usual size, to have been planted in a border well prepared, i.e., stirred to a depth of 20 inches, it may be trained to the wall as usual, and suffered to grow two seasons; towards the end of October, or indeed any time in November, in the second season, it should be carefully taken up with all its roots intact; if there be two or three stragglers, i.e., roots of 2 or 3 feet in length—for roots are remarkably eccentric, and often without any apparent cause, run away in search of something they take a fancy to—cut off 1 foot or so, so as to make the hole from the tree more snug; then make the hole from whence you took your tree a little deeper, and fit to receive its roots without bending or twisting; place in it any rotten manure, and loam, equal parts; leaf-mould, rotten manure, and loam, equal parts; but if the soil of the garden be light, two-thirds tender loam, not sandy, and one-third rotten manure; two inches deep of this compost will be enough for the roots of the tree to rest on—and mind they are carefully arranged so as to diverge regularly—then add enough of the compost to cover all the roots, and fill in with the common soil. A tree that has been planted two years will require one barrowful; at the end of four years, two barrowfuls; when six years have passed, from three barrowfuls, and from four to six barrowfuls will be enough for a tree from 12 to 20 years old, in short, for a full-grown tree. A portion of the earth from the border must be removed, when a

large quantity of compost is added, to make room for it, so as not to have an unsightly mound. In the course of two or three removals the roots of the tree will become a mass of fibres, and the trees so docile as to be lifted without difficulty.

In order to show the practical effect of this management we have the following additional remarks:—

"I have this day (Dec. 12, 1852) removed two Plum trees, that have been planted six years and removed twice. Their roots are a mass of fibres, without one straggling root; they have been replanted with a barrowful of light compost to each tree, and if I may judge by the enormous quantity of blossom-buds, they will bear a plentiful crop next season. They will receive no unhealthy check, for abundance of earth adheres to the mass of fibrous roots. Now, as Peaches, Nectarines, and Apricots, being budded on Plum stocks, are all on Plum roots, they will give exactly the same results from the same mode of culture, neither the *size* nor *flavour* of the fruit will be affected, and the trees will always bear abundantly, and be healthy and flourishing. The plethoric habit of the Moor Park and Peach Apricots, which so often leads to disease and death, will be effectually cured by this simple mode of culture, and Peaches and Nectarines will make short annual shoots, which will be always well ripened, so that they will be constantly full of healthy blossom-buds."

Considering how many gardens there are all over the country in which the rankness of stone-fruit trees is difficult to check successfully, these recommendations deserve to be made generally known. That they will answer the purpose proposed there is no room for doubt; it is, however, as well to add that in warm dry land, with a dry bottom, root-pruning, biennial lifting, and all such practices, are unnecessary, the peculiar circumstances which call for them being absent.

#### CULTIVATION OF CAMELIAS.

SOME extracts from an article on this subject by the Comte de Nancy, in the "Flore des Serres," may prove useful, more especially to beginners, in the cultivation of these plants. The choice of soil, the Comte observes, is of the first importance. Good peat, and peat only should be used. The best is of a chestnut-brown colour, moderately sandy, and soft to the touch; that which is of a black muddy colour, without sand, or containing but very little, is bad.

The Camellia generally likes moisture, but the degree of humidity varies according to the season. At the time of flowering, the waterings ought to be more abundant than in winter; and still more abundant when the plants begin to push, and during the whole period of their growth. Water should be supplied towards the night rather than in the morning, and never in the middle of the day. In hot weather it is advisable to throw water on the floor and footpaths, in order to cool and moisten the atmosphere of the house; but when the shoots have made their growth, when their elongation naturally stops, in order that the wood may become mature and firm towards the end of June, syring must be sparingly performed; for too much moisture together with the heat at that time, would overexcite the flow of sap, and induce a second push, thereby preventing the formation of flower-buds. During winter the waterings should take place at considerable intervals, but at all times, even when the Camellia is most at rest, it is necessary to keep the soil moist, for dryness is injurious to the health of the plant, and occasions flower-buds to drop. The water should be as near possible of the same temperature as that of the hot Rain or river water is to be preferred to spring water.

The Camellia requires plenty of air, and in order that it may circulate freely, the plants should not be too close together, otherwise the lower leaves are apt to drop off.

It also requires abundance of light, and therefore low houses or pits are more suitable for it than those constructions commonly called Orangeries; but cannot bear the ardent rays of the sun, and must be protected from them by nets or other screens, or glass may be thinly painted over with white (Spanish white), or with lime and milk, or with a solution of glue.

Repotting or shifting is not absolutely necessary, the roots completely fill the pot. The operation usually performed immediately after the flowering, in my opinion it is best done after the end of June or beginning of July. I prefer this period, because the shifting affords the plant an abundant supply of nourishment, and consequently it pushes it to push vigorous shoots rather than flower-buds. Varieties not naturally inclined to readily must have less pot-room than those that profusely.

No shrub bears the operation of pruning better than the Camellia does; none submits with more docility to all the forms of training which the fancy of the gardener may impose upon it; espalier, bush, pyramid, or any other form, it will assume with the most grace, and at the same time the most elegant, and at the same time the most

\* The Miniature Fruit Garden, or the Culture of Pyramidal fruit-trees, with instructions for Root Pruning, &c. Longmans, 4to.



geous, considering the small space to which greenhouse plants are necessarily limited, and the facility of regular arrangement according to height, is, in my opinion, the pyramidal form. I have myself adopted it.

Certain varieties, generally those of moderate vigour, naturally take this form. Strong-growing sorts can only be brought to it by pruning. In order to do this, we must commence with the first year's shoots. The *Camellia* usually pushes twice in the first year of its growth; first in the spring, and again in the end of July or beginning of August. It should be allowed to perfect these shoots; then, in the end of November or beginning of December, when the plant is in a state of rest, and not before, it is cut back to the first or second eye of the second push, taking care, however, that the eye to which we prune is *not so forward, nor so prominent, as those below it*. This being attended to, all the buds will start in spring simultaneously. But, on the contrary, if we leave the shoot too long, or prune it to an eye that is more prominent or more forward than those below it, that eye will start away, whilst those below will remain dormant.

In the second year the plant, treated as above directed, will produce three or four branches, the uppermost of which should form the continuation of the upright stem; and when the growth is completed, in November or December, this upright shoot is cut back to two or three eyes, unless it be furnished with flower buds, and in this case the shoot is not cut back till after flowering. If the shoot be in such condition as that all its eyes appear likely to break in spring, it need not be shortened at all. The same rules are applicable as regards the pruning and training of the plant in the next and following years. It must be borne in mind, that under no circumstances should the *Camellia* be pruned when its sap is in active circulation; for by so doing, the sap rushes to one, or two, at most, of the upper buds, and leaves the others inactive. For the same reason, the herbaceous extremities of growing shoots should not be pinched.

Excepting in frosty weather the *Camellia* requires no heat during winter; it will even bear, without injury, two or three degrees of frost, so that, unless the winter is very severe, heating may be dispensed with, provided warm coverings are employed. But when fire is necessary it must be so managed as to maintain uniformity of temperature; for great variations in this occasion the dropping of the flower buds. The hot-water mode of heating is doubtless the best; but notwithstanding its advantages under certain circumstances, I have been obliged to give it up, because, in the country, it is very difficult to get workmen to fit up the apparatus properly. I originally adopted the system for heating my houses; but although I paid dearly for the apparatus, it worked badly; and whilst it cost me much for fuel, it afforded but little heat, and I therefore had it taken away. For several years I have used small cast-iron stoves, from 15 to 18 inches in height, and about 1 foot in diameter. One or two of these, as may be necessary, I place inside the house, on the footpath. A tube of sheet-iron is fitted to the stove and made to pass through a square of tin-plate adapted to the sash. A very small quantity of wood, and some dry tan peats or some Grape pressings, are sufficient to heat these stoves so as to give as much heat as I require. I take care to remove any plants that may be too near the stoves; and I moderate the draught of the furnace by a damper in the sheet-iron tube, which is completely shut when the fuel has given off its smoke. A pan of water is placed on the furnace, in order to give moisture to the air. The stove can be removed in a few minutes, and it can be as quickly replaced.

In forcing the *Camellia* the temperature must be very gradually raised. In commencing, towards the end of September, the house should be kept warmer, by shutting up early, and by covering at nights when these are cold. About the beginning of December a little fire heat should be given at night, so as to raise the temperature only 4° or 5°; then it may be progressively raised to 50° Fahr. by the middle of December. Occasionally, and more especially when the sun is bright, it is advisable to sprinkle water on the footpaths; the moisture thus produced settles on the glass, moderates the intensity of the solar rays, swells the flower-buds, and facilitates their expansion. Thus treated, *Camellias* will show their first flowers in the beginning of January.

The leaves of the *Camellia* should, at all times, be kept as clean as possible. I would advise amateurs to do as I do myself every autumn, and that is to wash every leaf, one by one, successively. I attach much importance to this operation, which I call the *toilette* of the *Camellia*. It has not only a great influence upon the health of the plants, but it also gives a brilliancy and freshness to the foliage, which enhances the beauty of the flowers.

Notwithstanding all our care, some plants will become less healthy than others. Robust as the *Camellia* is, like all created beings it is subject to maladies, which neither science nor human foresight can prevent. An amateur, therefore, need not be astonished nor discouraged if, amongst a number of plants, he should find some unhealthy. The indications are yellowness of the foliage, weak and stunted growth, and dropping of the flower-buds. When such is the case, the plant must be taken out of the pot; the roots must be closely examined, and all that are damaged or decayed must be cut in to the quick; and after shaking away as much as possible of the ball of the old soil, the plant must be repotted in a smaller pot than that from which it was taken; all

unhealthy naked branches must be cut out; the plant should then be placed in a pit, near the glass, but shaded from the sun.]

### Home Correspondence.

*Red Hamburg Grapes.*—For some weeks past you have had communications on this subject, and I would not have enlarged on it, but the testimony I can give is perhaps different from what can be obtained from any other person. A great-uncle of my father's, named Warner, was the original importer of the Black Hamburg Grape, and whose name it bears in the old catalogues. My father was born in Southwark, in 1751, and when he was a boy, 90 years ago, Black Hamburgs were grown in the gardens of many of our relatives who lived in that quarter, and cultivated as the family Grape. My father removed from London between 60 and 70 years ago, and for more than 50 years cultivated the Black Hamburg out of doors without any protection in the vale of Gloucestershire. There, in cold summers, they did not ripen; but in some favourable seasons they ripened perfectly, and when so matured they had a much finer Muscadine flavour than any Black Hamburgs I ever tasted grown under glass. For the last 16 years I have grown Black Hamburgs propagated from the same trees, and descended in direct line from the originally imported trees, without their ever being out of our own family. Whenever they ripened out of doors they were invariably black, with a beautiful bloom. In the house under my own cultivation I have frequently had them perfectly ripe and as well coloured as those that my father grew out of doors, but never so finely flavoured. The house in which I grow mine is a lofty one, nearly 15 feet high at the back and 8 feet in front. Last summer two of my Vines coloured their fruit well; the others, some growing on the other side of the same rafter, were red. I do not know that I ever tasted richer or more saccharine Grapes than the red ones; but they wanted their peculiar Muscadine flavour. The two Vines that bore black fruit had grown at the back of the house, where for a few years they had borne well; but latterly they only bore fruit towards the glass, and the fruit towards the bottom of the Vine, which showed early in the season, withered away before blossoming. These trees I had laid down under the soil the width of the house, and trained them up the rafters. The trees bearing the red Grapes were originally planted on a border outside; that border is now covered by one of Rivers's orchard-houses. The roots would be almost entirely shaded from the sun, a great part of the border being actually covered by pots, and kept damper than inside the Vinery from the constant watering several times a week of the fruit-trees in the pots. From the commencement of the season I had supplied the whole of the trees more abundantly with fresh air than I had been accustomed to do, in order to secure a good colour to the fruit. One of the gardens in which the Black Hamburgs grew in my father's boyish days was what is now the Surrey Zoological Gardens. T. Allis, Osbaldwick, near York.

*Hunter's Prolific Cucumber.*—Private communications, together with what I have seen in print, lead me to believe that I have not been furnished with the true kind; and while I beg to apologise to Mr. Hunter, who I am sure will acquit me of any intentional wrong towards him, I can only say that my case, in this instance, only adds another link to the chain of tricks too often practised by those who deal in seeds. *The Gardener, Cadbury House.* [We have a great mind to publish the name of the seedsman who sold the rubbish which has led to this discussion.]

*Rain at Quedgely, near Gloucester.*—The following is the return of my rain-gauge in 1852:—

January ... ..	5.65	August ... ..	4.42
February ... ..	1.07	September ... ..	3.39
March ... ..	0.36	October ... ..	3.53
April ... ..	0.81	November ... ..	7.68
May ... ..	1.84	December ... ..	3.63
June ... ..	4.60		
July ... ..	2.21	Total ... ..	39.23

The average quantity which fell here during the three preceding years was under 24 inches. The fall of 7.68 in November is the largest upon record; in these parts. In that month we had only two dry days, the 9th and 30th, and on the former of these an earthquake was felt. My barometer had risen steadily for three days preceding that phenomenon, in spite of the prevalence of a gale from the south-west, accompanied by frequent and severe showers of rain, and in the evening of the 8th stood as high, I think, as it has done at all these three months. The earthquake occurred about 4 A.M. on the 9th; at 8 A.M. the barometer had fallen slightly, but the day was fine. I do not know whether others of your readers have observed that the barometer affords a much less trustworthy index of the weather for two months after the autumnal equinox than at other periods of the year; but such I have for several seasons found to be the case. All agricultural operations have been at a standstill in this neighbourhood for many weeks, and scarcely any Wheat has been sown; so we must depend upon spring sowing for that crop, which has of late years proved a very precarious dependence. J. Carter Nayward.

*Cottages for Servants.*—In a late Number, hints on building cottages were asked for. From my own experience I know that more misery is entailed upon the poor, through their cottages having flint walls and brick or stone floors, than from any other cause. Flint walls are always damp, and should be covered with thin boards or some other non-conducting material. Brick and stone floors are so likewise either from

capillary attraction or from the necessity of frequently wetting them, in order to keep them clean, which gives rise to rheumatism and other bad complaints—to say nothing of the wear of the shoes, both of the cottager's wife and children; blocks of any common wood, squared and set on end, after the manner of the wood pavement in the streets of London, would be far better material for floors in cottages where a good boarded floor is too expensive. H. H.

*New Weeping Willow.*—When a new plant is brought forward it is proper that some history of it should be given, for the satisfaction of the public. The *Salix caprea pendula*, or Kilmarnock Weeping Willow, which is now being advertised in your columns, was procured by me about six years ago from Mr. James Smith, an old and enthusiastic botanist, who resided at Monkwood Grove, near Ayr. He was an ardent collector and cultivator of all varieties of British plants. He did not inform me where he procured this variety of *Salix caprea*, but as the species is common in hedges and ditches all over Scotland, it is likely he picked it up on some of his rambling botanical expeditions. It does not seem to take well grafted on other Willows: I have therefore cultivated it principally from layers, which I trained up to poles. The plant is a most inveterate weeper, as pendulous as the weeping Ash, though not so rigid in its habit; its twigs are stouter than those of the *Salix babylonica*, and it has large, broad, glossy leaves of a deep green colour; it flowers very freely on the young twigs in spring, and is quite hardy, as a matter of course, seeing the *Salix caprea* is as hardy a plant as we have in this country. The name Kilmarnock Weeping Willow has been given to the plant to distinguish it from other Weeping Willows, such as the American Weeping Willow, sent out by Mr. Rivers some years ago. All who have seen the original specimen plant in the nursery here are very much delighted with it, and I trust it will be approved of by the public generally. Thomas Lang, Kilmarnock.

*Emigration of Gardeners.*—There is weekly a large muster of gardeners advertising in your columns for situations, many of them being willing to engage on any terms. Now from the last advices from Australia we find that there is the greatest demand for all sorts of artisans, and even the commonest "digger" does not feel satisfied unless he can earn from 1*l.* to 5*l.* per day (!). Gardeners being one of the most useful classes for a new country I would willingly tender my advice to advertising friends to turn their attention to Australia. When they get to that colony, let them turn market gardeners, diggers, or farmers, any of the three professions a gardener is fully qualified for. We learn *1*s.** can be had for a single Cabbage or Cauliflower, 4*s.* for a dozen of Turnips, 4*s.* for a dozen of Onions, and so on. Just let them think over these items before they again advertise, and ask themselves, and those who have wives, with or without encumbrances, whether it be not better to muster courage for a refreshing sail to the Antipodes, where comparative independence is certain, or remain at home—whatever education or abilities may be—in abjectness, and with the forebodings of old age and servility "looming in the future." John Jenkins.

*Bed-Mooshk Plant.*—The plant which forms the subject of an article in your last two Numbers under this name, should be called Beed-y-Mushk. The vowel in the first word being long, in the second short. "Beed" is the ordinary Persian word for Willow; it is therefore literally Musk Willow. Perhaps if you should have occasion to mention the plant again, you will be so kind as to let the name be spelt as above. Orthograph. [We spelt the words as we found them in the Indian document which we printed.]

*Diseased Conifers.*—I have sent you two or three shoots of Douglas Fir, taken from a specimen about from 15 to 20 feet high. The appearance of the tree is a sickly yellow, and I am much afraid there is something wrong. The soil is a red sandstone and iron-stone, perfectly dry. The tree has been planted for seven or eight years, and the progress has been remarkably rapid; indeed, up to this time it has been one of the most thriving specimens I ever met with. The leader, about six inches in length, died down in the autumn, but the terminal buds of all the boughs still look healthy. I have lost a Deodar, about from 15 to 20 feet high, the best specimen of three planted together in the same soil at the end of last year. The Deodar sickened about 12 months before it died. I should be glad if you could give me any account of the malady under which my Douglas Fir is suffering, and if there is any remedy to be applied, such as dusting with sulphur, or anything of that sort. W. G., Lichborough, near Weedon. [We have not before seen the A. Douglasii in such a state.]

*Rotten-hearted Larch.*—A correspondent of yours asks whether Larch trees ever go rotten at the heart, when clothed with branches to the bottom? I believe that you did once publish what I have to say on the subject; but as the question is asked, I will write what I have observed. I have no doubt that the Larch will go rotten at the heart when its branches have never been interfered with, on soil which is unsuitable to it. Some Larch trees were blown down by the storms in January 1839, at Boynton, near Bridlington, Yorkshire, which were rotten, and evidently not from want of room; one especially, which had branches quite to the ground, and had, I believe, never been touched by another tree. Moreover, I am satisfied that the decay generally begins with the roots, which strike downward, whenever they are killed by meeting with a subsoil, either full of water or which (like pure chalk), does not agree with them.



I have traced the decay thus from the root to the stem, both in Larch and Spruce trees, and I have, somewhere, a piece of the shell of a rotten Larch tree, with the undecayed branches extending inwards nearly to the centre of the tree, in which it is evident that the branches must have been growing long after the trunk of the tree was quite hollow. At the same time I believe that the overcrowding of the growing trees in a plantation, whereby the side branches are killed, very much increases the evil, inasmuch as the wood does not become properly matured; less heart wood is made than there ought to be, and it is consequently much less able to resist the decay. I am sorry to say that what Loudon remarks as to Larch not breaking in a wind is not universally true, for the gale at Christmas destroyed two trees at Boynton, which were amongst the oldest in England, by shivering the stem to pieces. *C. W. Strickland.*

—I cannot say that I have ever observed a Larch tree, rotten at the heart, and covered with live branches from bottom to top. But some time ago I saw one cut down, which to all appearance was very healthy, and growing vigorously; while at the same time it was entirely rotten at the heart. The tree, I should think, was about 60 years old, and measured about 2 feet in diameter at the base; the heart was completely rotted out, leaving only a shell of from 4 to 6 inches in thickness all round. At the height of about 3 feet in the trunk all rottenness disappeared, and at the height of 18 feet the heart was quite sound and fresh. In about three-fourths of an acre of Larches of the same age, and growing around the one just mentioned, only three or four trees were "pumped," or rotten at the heart among the whole lot, and only one showed signs of unhealthiness; it was not so large as the others, being only about a foot in diameter at the base, and it was rotted away to a shell of about 2 inches in thickness. The soil upon which these Larches was grown is a light loam, resting upon a rough clay or tilly subsoil, situated about 400 feet above the level of the sea. Will some of your correspondents kindly state how they find Larch to last in buildings, and if it is much used in ship-building? In Scotland I have seen it frequently used in the construction of boats, and not long ago I heard a naval captain say that Larch was the best and most durable timber he knew for a ship's bottom. *A. Patterson, Maristown.*

**Raspberries in Leaf.**—In consequence of the mildness of the season, several of my Raspberries are in full leaf; and many other things are equally forward. I have had several of them lifted, in order to check their progress, which I have no doubt will have the desired effect. *E. Bennett, Perdiswell.*

**Preparation of Roots for Seed.**—On reading the article on this subject, at p. 23, it occurred to me that in my young days I was in the habit of seeing the cottagers, who were famous for their early Cabbages, cut off the Cabbage they intended for seed from its parent stem and place it in some shaded situation to form roots for its own support; how far this answered the purpose of keeping the variety from degeneracy I cannot say, but perhaps by that plan they preserved the leading shoot over winter, and so procured finer seed than from the host of side-shoots springing from the old stool. If such be the case, the growers of Cabbage-seed for market have a much better plan, &c., raise their plants in spring, get them well headed before winter, and in the spring following they will run off for seed with one strong stem. *H. H.*

**Abelia floribunda, Ceanothus, &c.**—Should Abelia floribunda withstand our severe winters it will prove a great acquisition to the flower garden; it endured the last winter here in an exposed situation, without any protection, and flowered beautifully for some weeks in summer, and up to this time it has stood the late heavy winds without losing a leaf, while Hollies and Privets close by are almost denuded of foliage. In the same shrubbery are the Ceanothus rigidus, dentatus, papillosus, and thyrsifolius, three of them promising to flower well in the spring; these being evergreen and early spring-flowering plants must certainly become general favourites. Associated with them are Epacris heteronema, a beautiful spring-flowering shrub, and Sedum Sieboldii; all these, except the former, have endured three winters without receiving the slightest check. *William Culverwell, Thorp Perrow, Yorkshire.*

**Strawberries for Early Forcing.**—Permit me to speak in favour of Cuthill's Black Prince, as I feel assured that it is the best for early forcing. I have this day (19th of January) gathered as fine a dish as can be had in May or June. I have now a large quantity of the above kind, and Keens' Seedling, well set; each root was put to work at one time, and I find that Cuthill's Black Prince ripens three weeks earlier than Keens'. *William Brown, Waltham Abbey, Essex.*

**Underwood and Hop Poles.**—I have read with much interest Mr. Selby's article on this subject. Does that gentleman recommend cutting down the Ash and Chestnut on planting, or in the second year when grown for Hop poles; and cutting down for two or three successive years when grown for underwood? Will one of your correspondents inform me what is the best distance for planting Scotch Fir for Hop poles; will they do at 18 inches apart? and whether it is advisable to trim the lower branches as the trees grow up, or leave them; with any practical directions for the management of these plantations. *J. T. W., Surrey.*

**Destructive Birds** (see p. 6).—In answer to Messrs. Hardy, I beg to say that when I was a boy some 20 years or less ago, myself and companions in a country village in Essex, have taken pounds in a season from the churchwarden, for sparrows, after the following rate:

old birds 10d. per score, young ones 4d. per score, and eggs 3d. per score; of this we made a demand, considering him bound to pay us; but he was very keen at detecting any other bird than sparrows or their eggs, consequently, I should say if an act of Parliament exist for compelling the payment, it does not include indiscriminately destructive birds. *H. H.*

## Societies.

**HORTICULTURAL, Jan. 18.**—W. W. SALMON, Esq., in the chair. The subjects of special exhibition on this occasion were "hardy winter-flowering plants" (cut flowers), "English Grapes," and the "best and most varied salad." The only set of hardy winter flowers exhibited (besides one from the Society's Garden) came from the Hon. W. F. Strangways' place in Dorsetshire; and mild as the season has everywhere been, we think the following names of plants which it contained will be read with interest. Foremost among them were the Mexican Fuchsia cordata, beautifully coloured; the New Zealand Pittosporum Tobira, the Japan Epimedium macranthum, Pernettya mucronata, Yuccas still in flower, Edwardsia macrophylla, Symphytum officinale; Hellebores, Primroses, Anemones, Hydrangeas, Hyacinths, Laurustinus, Salvia fulgens, Epacris grandiflora, Rhododendron nobleanum, Mesembryanthemum, Arbutus, the large trumpet-flowered Brugmansia sanguinea, the winter Aconites, Crocuses, and Snowdrops, from the large-blossomed Galanthus plicatus. The Banksian Medal was awarded them. An extremely pretty collection of cut flowers was shown by Mr. Todman, gr. to Mrs. Buckmaster, of Clapham Park, but they were from greenhouse plants, and therefore not eligible to compete for the Society's prize, which was offered for flowers from the open ground only.—The best Grapes came from Mr. Fleming, of Trentham, to whom a Banksian Medal was awarded for good bunches of Muscat of Alexandria, Black Barbarossa, and the white Tokay, which Mr. Szamos, a Hungarian gentleman, well acquainted with Tokay, and present at the meeting, pronounced to be the true sort. The berries were plump, fresh, and beautiful, showing it to be a better keeper than the Muscat of Alexandria, which was shrivelled. A box of the last-named Grape, for which a Certificate of Merit was awarded, was produced by Mr. Munro, gr. to Mrs. Oddie, of Colney House, St. Alban's. Mr. Allport, gr. to H. Ackroyd, Esq., sent bunches of Black Hamburg and West's St. Peter's. Mr. Watson, gr. to J. Dent, Esq., Black Hamburg; and Mr. Forbes, gr. to the Duke of Bedford at Woburn Abbey, bunches of the same variety grown in 1852, and a small bunch, this year's produce, quite ripe and well-coloured, from Vines which were started, we believe, in September last. These arrived much too late for competition, the rule being that "everything must be in the room three hours before the meeting, and ready for inspection by the judges two hours before the meeting."—Two excellent salads, quite equal to anything that could be obtained in the Paris market, were furnished—one by Mr. Fleming, gr. to the Duke of Sutherland, at Trentham; and the other by Mr. Burns, gr. to Earl Stanhope, at Chevening Park, Sevenoaks. Mr. Fleming had blanched Chicory, Batavian and other Endive, Watercresses, white and red Turnip Radishes, Wood's early frame Mustard and Cress, American Cress, Normandy Cress (a large-leaved kind, very different from that usually so named), Corn Salad, a brace of Sion House Cucumbers, Malta and Hammer-smith Cabbage Lettuces, Beet, Burnet, Chervil, and Celery. Mr. Burns sent Beet, Celery, Radishes, Corn Salad, curled and Batavian Endive, Mustard and Cress, American Cress, blanched Chicory, Watercresses, Tarragon, winter Onions, Burnet, and Chervil. These two salads were very nearly equal in point of merit; Mr. Fleming beat Mr. Burns in Chicory, Cucumbers, Lettuce, and Beet; but then Mr. Burns beat Mr. Fleming in Celery, Corn Salad, curled and Batavian Endive, Radishes, and Mustard and Cress, making seven against four; therefore the first prize (a Banksian Medal), was awarded to Mr. Burns, and the second (a Certificate of Merit), to Mr. Fleming. Mr. Burns also contributed a beautiful collection of the better kinds of kitchen and dessert Apples, for which a Certificate of Merit was awarded.—A very good Enville Pine-apple weighing 4 lbs. 6 oz., was shown by Mr. Bailey, Shardeloes Gardens, Amersham. A new Dendrobe was contributed by Mr. Summerfield, gr. to J. S. Venn, Esq., of Highbury Park. Its flowers were white, like Orange blossom, and almost as sweet scented.—Of other plants, Messrs. Veitch sent the new Neigherry Hill Sonerila orbicularis, grown in less heat, and therefore better coloured than the specimen previously shown from the Society's garden; and managed in this way it is really a very ornamental plant.—A very fine specimen of the Brazilian Amaryllis (Hippeastrum) aluca was communicated by Mr. Smith, gr. to F. Newdigate, Esq., of Blackheath, for which a Certificate of Merit was awarded.—A box of charming Camellia blooms was sent by Mr. Chapman, gr. to J. B. Glegg, Esq., of Withington Hall, Cheshire.—From the garden of the Society came plants of Selago distans, a most useful winter flower; Epacris onosmaeflora and autumnalis, Centradenia rosea and floribunda, Siphocampylus microstomus and the somewhat brighter variety of it called ruber, Muralia Heisteria, Gesnera zebrina and Herbertiana, Echeveria retusa, a capital winter-flowering hardy greenhouse

succulent, which also makes a good window plant; Erica pellucida alba, and pans studded with the lively pale-blue blossoms of the little Cochlearia acaulis. The cut flowers from the garden consisted of the three sorts of Chimonanthus, viz., fragrans, grandiflorus, and parviflorus; Jasminum nudiflorum, one of the very gayest hardy shrubs we have at this season; Nuttallia cerasiiformis, the red and white varieties of Pyrus japonica, Lonicera fragrantissima, a pretty evergreen bush, and sweet-scented; Arabis alpina, Erica carnea, Ceanothus azureus and its pale variety called pallidus, Vinca minor, Helleborus olympicus and odoratus, which are flowering now, while the common Christmas Rose is past; Arbutus Unedo and schizopetala, Phillyrea obliqua, the grey leaved Cotoneaster denticulata, Eranthis hyemalis, Eleagnus argentea, Cornus mascula, the common Laurustinus, and a variety called stricta, which, in addition to blossoms, had also a crop of beautiful blue fruit; Geum triflorum, Stenactis speciosa, Berberis aquifolium, Ribes malvaceum, Clematis calycina, China Roses, Stocks, Erysimum Perofskianum, Limnathes Douglasii, Escallonia rubra and montevidensis, Calendula officinalis, Iberis Gibraltaria and I. amara, Garrya elliptica (the male kind), common single red Camellia, which grows and flowers every year well behind a north wall in the garden; Aubrietia deltoidea, Nemophila atomaria and maculata, Coriaria Nepalensis, Vaccinium ovatum, Andromeda floribunda, Polygala chamaebuxus, and Collinsia bicolor. The garden also contributed a large and varied salad, consisting of Chicoree fin d'Été and sauvage amélorée, Scarole à fleur blanche, Lettuce, Maché d'Italie, very succulent and tender, and certainly the best of all the Corn Salads; mache ronde, Picridium, Celery court hâif and gros violet de Tours, early white winter Radish, Castelnaudari Beet, not very good; Sutton's fine dark red Beet, anything but "fine;" Atkins' crimson-red Beet, a poor sort; Mustard and Cress, Normandy Cress, American Cress, Burnet, French Sorrel, common garden Sorrel, broad leaved Sorrel, and Oseille de Belleville, which is decidedly the best of all the Sorrels, being more fleshy, and not near so coarse as the common garden kinds; Chervil, and Deptford Onion, making in all 24 varieties belonging to 16 species.

## Notices of Books, &c.

**Bonplandia.** (Williams and Norgate.)—With this name a German botanical newspaper has been started in Hanover, under the editorship of Mr. Berthold Seemann, now residing at Kew. Three numbers have appeared, the second of which is almost entirely filled with a report of the proceedings of the Jubilee of the Imperial Academy of Sciences, on the occasion of its two hundredth anniversary.

**Hooker's Species Filicum.** (Pamplin.)—We are happy to announce the appearance of the sixth part of this important systematical work; it is chiefly occupied by species of Cheilanthes and Onychium, with the usual number of admirable plates executed by the practised hand of Mr. Fitch.

**Swift and Richardson.** By Lord Jeffrey. (Longman's Traveller's Library, No. 36.)—Surely this is an unfortunate selection, admirable as are the critical commentaries of the celebrated author who furnished the matter to the Edinburgh Review. Swift was a dirty ruffian, Richardson a vapid coxcomb, and the sooner such people are forgotten the better.

The third number of Dr. Hooker's *Flora of New Zealand* (4to. Reeve and Co.), has just appeared. It contains 20 plates, 80 pages of letter-press, and carries the work as far as the commencement of Orchidaceae. When completed, by the publication of two more numbers, this will be the most important work that has yet appeared in illustration of the Vegetation of the British Australian possessions. Some of the New Zealand Orchids which are figured would be charming plants for cultivation in Ward's cases.

**Forest and Fire-side Hours,** by Westby Gibson (12mo, Aylott and Co.), is a small volume of graceful poems by one of the Lake School.

In his *Art Education at Home and Abroad* (Chapman and Hall) Mr. Yapp points out, with the skill of a writer full of his subject, our grievous defects in all that most concerns the refinements of education. The faults of the British Museum are exposed with no sparing hand; the unfitness of our National Gallery for the purpose for which it was designed, the important lesson that the Great Exhibition taught those who could read the signs it revealed, the means of improvement that this discovery of our national deficiencies has already called into existence, and the expectations which the proposed Industrial University at Kensington Gore are exciting, are all well treated of in Mr. Yapp's pamphlet, to which we may recur hereafter.

## Garden Memoranda.

**GUNNERSBURY PARK, THE SEAT OF BARON DE ROTHSCHILD.**—The principal entrance is on the north side of the house, which is approached by a short carriage-drive, having on the right a strip of Grass that loses itself in a skilfully-arranged shrubbery; and on the left a good extent of lawn, diversified by trees and clumps of evergreens. On the south side of the house, and running parallel with it, is a broad terrace-walk ornamented with marble vases, and in front of that an open lawn with a piece of water near its further extremity. An Orange-house stands close to the side of this lake,



containing four or five large and fine trees with foliage as green and healthy as that of a Portugal Laurel. We learned from Mr. Forsyth, who is gardener at Gunnersbury, that these trees had been brought into their present luxuriant condition in the following manner:—They had fallen into a somewhat unhealthy state, and in order to recruit them a bed of fermenting manure was formed round the tubs where the trees stood. When this was first applied, the old leaves fell off; but after a time the trees began to show that they liked the bottom heat, by pushing afresh with much vigour. The temperature of the house was at the same time slightly increased, and the dung was forked up every morning, so as to allow the steam from it to pass up among the foliage, on which it became condensed like drops of dew, and under this kind of treatment the trees very soon re-established themselves in health. A large glazed shed behind the Orangery contained, among other plants, a large quantity of *Agapanthus umbellatus*, which Mr. Forsyth stated made one of the gayest beds in the flower-garden last year. He plunges them in the bed as soon as they begin to throw up their flower-spikes, and when their beauty is over they are moved again to their former quarters. Following the walk round the lawn, one is led by the west end of the house through a belt of flower-garden to a large circular lake, at the upper side of which is a temple furnished with some admirable figures by Thom, the celebrated Scottish sculptor, and behind that is a circular flower-garden laid out in beds on Grass and surrounded by Roses trained on wire-work, which is also placed round most of the beds. A large clump here has just been filled with *Crimson China* Roses, from which blooms have been gathered up to the present time. The high temperature out of doors which we have hitherto experienced has also caused most things to be unusually forward, though perhaps scarcely so much so here as elsewhere; so mild has been the winter as yet, that *Tom Thumb* Geraniums and other bedding plants are uninjured, except a little by the great amount of wet we have had; *Fuchsias* are pushing, the *Chinese Privet* and common *Laurel* are coming into flower, the two varieties of *Pyrus japonica* are in full blossom; and many shrubs are making young wood. We are happy to state, however, that this forwardness is chiefly confined to the shrubbery; for fruit trees, both on walls and in open quarters, are very little in advance of the usual season. The wet, as might be expected, has much retarded operations in the kitchen-garden; but, should spring set in favourably, all the annoyance it has occasioned will doubtless soon be overcome. Crops were in excellent condition, such as winter Spinach, Celery, Broccoli, young Carrots, winter Onions, &c. In pits here we remarked early Potatoes, French Horn Carrots, said to be one of the very best kinds for a first crop, Radishes and Neapolitan Violets. Cauliflowers, under glasses, are in excellent condition, the mildness of the weather being very favourable for such things. As much, however, cannot be said for Cucumbers, which have been difficult to manage this winter, owing to great want of sunlight. We observed a dung-pit, however, with the trellis beautifully covered with both bloom and fruit beginning to swell. Among Pine-apples some were ripe and others swelling. They are mostly in pots; but whenever they begin to show fruit, they are turned out of their pots into the bed. This is found to be the best practice, where large fruit is wished for. A few Providence Pines have been planted out in pits by themselves, in order to give them the best chance of producing large fruit. Some of this sort cut here last year are said to have weighed as much as 11 lbs. Two houses have been planted with young Vines, which have made excellent rods, that cannot fail to yield a good crop this season. Large quantities of Strawberries have been introduced both into the Vineries and Pine-pits, and most of them are exceedingly promising. In a large span-roofed house attached to Mr. Forsyth's cottage, were some Black Prince Grapes capably coloured and covered with bloom, the footstalks being as green and fresh as in the height of the season. A few Black Hamburgs were also in a good state of preservation. Mr. Forsyth attributes their good keeping to applying artificial heat through the day with air, and allowing the fires to go out at night. This also forms a store-house for half hardy plants, as well as a receptacle for Camellias (many of which were in bloom), Azaleas, and things of that kind. A nice stock of Chinese Primulas, from seed sown last March, is now in full flower, and *Cinerarias* will soon be in a similar condition. We also remarked Lee's Mountain of Light and Flower of the Day Geraniums which, though not in bloom, are pretty, on account of their handsomely variegated foliage. Some *Tom Thumbs*, too, taken out of vases in autumn, were fine specimens, which will flower better than young plants. New fruit-trees have been introduced round some of the borders of the kitchen-garden, and on part of the walls, and a glass covering or frame is being put up over 124 feet in length of the Peach-wall. It is to be 5 feet wide, with an upright front of about the same height, set on brick pillars, between which are to be panels of slate with ventilators in them. The front sashes will also be hinged in the middle of the top ones, made to move so that there will be no want of ventilation. It is to be in two compartments, and heated by hot water. The wall is to be coated with cement, and provided with a wire trellis, on which the trees will be trained. While speaking of alterations, it may also be worthy of mention that the common brick flues in all the houses have been

replaced with hot-water in 4-inch pipes, with means of turning it off or on any particular house, as may be required. Mushrooms are had here all the year round. Mr. Forsyth makes his own spawn in the following manner. He takes cow dung, horse droppings, and a little loam, and mixes them together till they acquire the consistency of mortar. They are then spread out, and cut into bricks, which, as soon as they have dried sufficiently are laid into layers, between each of which former years' spawn is introduced, and as soon as it has run through the bricks they are dried and stored away, and are ready for use. This plan may be worth practising by those who cannot get good spawn. We nearly forgot to mention that in front of the Pine stove were some excellent Vines in pots, with short-jointed, well-ripened wood, which was breaking very satisfactorily, each new branch giving indications of fruiting. These had been raised from eyes put in in March last. A few pots of last year's Vines that were forced were in blossom. We may also add that the first house of old Vines will soon be in flower, and that there was a house full of French Beans which are at present yielding a plentiful crop.

## FLORICULTURE.

**WINDOW GARDENING.**—There are many who have not the convenience of a greenhouse, who are, nevertheless, equally fond of flowers, and spend considerable sums yearly in the purchase of plants, bestowing a great deal of pains in attending to them. It is not to be denied too, that, after all their endeavours, their plants look sickly, and finally die. The blame is too often laid at the door of the florist who supplied them for not giving healthy plants, when in almost every instance the fault lies with the buyers. The plants, it is true, which come into the market have generally been under a high state of cultivation. They have been regularly watered, potted in soil according to their different habits, and grown in pots according to their size. The heat, air, and light have all been arranged and regulated as the utmost skill and experience could suggest. The transition from all this regularity to the tender mercies of the purchaser is soon felt. Drowning or starving, or neglecting altogether, is no uncommon fate. The pots are taken home, put into pans or saucers, deluged with water, and the water left in the saucers, or they are set in some conspicuous place, and left to their fate. In the first case, the leaves turn yellow and drop, the flowers fall, and in a very short time all that can be seen of them are their naked stems, with little tufts of green on the tops or points of their shoots, which a few days before were in perfection; in the latter case, the plants die with all the leaves and bloom upon them. Nearly all the evils attending plants grown in windows are to be traced to these two causes. I will therefore attempt to lay down a few general rules, which, if properly attended to, will do away with nearly all the complaints under this head. 1. Never water but when the plants actually want it. That is easily known by feeling the soil with the finger, or giving the pot a rap on the side with the knuckles. While it is moist no water is needed; when it feels dry, then water—which latter will not be oftener than three times a week in autumn and winter, and every day in spring and summer—giving it copiously every time, and allowing it to run away entirely from the plant, so that the pots may never stand in it. The water used should be either rain or river water. If necessarily from the pump or spring, it ought to stand in the air a day or two before using. 2. Give as much air as possible, when the weather is mild, either by having the window up, or by removing the plants outside. If, in warm weather, this is done under a bright sun, the pots will have to be shaded, as the sun upon their sides would prove injurious to the young roots, and would greatly injure the plant; and if in bloom, and exposed to the sun, the flowers would soon fade and drop. 3. Keep the rooms where the plants are of as uniform a temperature as possible, and the plants themselves as near the window as is convenient, except in severe weather, when they are better near the middle of the room during the night. 4. Examine them occasionally, to see if the pots are full of roots. If this is the case, and the plants are worth it, get some good soil, and shift them into pots a size larger; or if not shifted, be more careful in supplying water, as they will require more when in this state. In summer, water them frequently over the foliage, but not except they also need it at the root as well. These may be adopted as very general rules, though more absolutely necessary to some plants than others, but very good to all. There is a good deal to be considered in buying plants, in making the proper choice; for however gratifying it may be to have those which look best in full bloom, it is most satisfactory to have those which last longest in perfection, especially those which have a succession of bloom, and whose foliage is interesting when the flowers are gone. This rule may be deviated from in behalf of Tulips, Crocuses, Hyacinths, and other bulbs, which are valuable when little else is in blossom. These will also bloom in the darkest streets of cities. They ought to be purchased either in the beginning of November, when the roots are dry, for planting yourselves, or in pots or glasses when they are beginning to grow; for if delayed till they are in bloom, nine-tenths of their value is lost, because they are interesting in every stage of growth, from the first formation of the leaves to the perfection of the flower. Every day of development has its charm; and there-

fore they ought to be possessed from the first. If in pots, all these require a plentiful supply of water when in a growing state; and if kept cool after showing flower, their season of blooming is prolonged. *H.*

**LATE CHRYSANTHEMUMS.**—Permit me to mention a use to which I have put my orchard-house this winter. On some shelves which held Strawberry-plants between two of the rows of trees in summer, I have placed my Chrysanthemums, being there sheltered from the rain and wind, and having abundance of light and fresh air. The plants have continued in bloom for nearly a couple of months; at any time during that time I have had, as I still have, hundreds of blossoms out in perfection (many of them of the new small varieties), and forming at this season a beautiful floral sight. Some of the plants are now going out of bloom, but from present appearances I shall have many that will continue well in flower into next month. *T. Allis, Osballdwich, near York.*

**CAMELLIAS:** *G. B.* A long article on their treatment will be found in another column of to-day's paper.

**CATALOGUE** received from Messrs. Bass and Brown, of Salisbury, Suffolk.

**FUCHSIAS:** *P. P.* We cannot recommend dealers.

**HOLLYHOCKS:** *Mrs. H.* The common practice is to plant them out in March. Those you intend getting in from your nurseryman will, doubtless, be in pots; if necessary, you may give them a shift, but by no means turn them out now: keep them in your frame, as hardy as possible, until the time we have mentioned.

**ROSES:** *L. K.* To prune now, when the plants are growing—in fact blooming, for we last week gathered *Grande Batailles* from the open ground in very good condition, would be to induce the eyes left to start, and we can scarcely expect that they will escape spring frost; you had therefore best let them alone for the present.

## Miscellaneous.

**Fuercventura Truffles.**—I have found real Truffles at Handia, at Mexorata, and indeed throughout all Herbania—delicious white Truffles! I have seen whole baskets of them gathered and exchanged by the ignorant Majoreros against an equal quantity of Potatoes. These Truffles grow but little below the surface of the soil in dry places, and almost always at the foot of the "Turmero," or *Helianthemum Canariense*; their presence is revealed by slight cracks in the ground above them. *Liebmann, in Hooker's Journal.*

**Means employed for the Destruction of the Pear Grub.**—*M. Marieton*, in a communication from Lyons to the Horticultural Society of Paris, states that, in order to destroy the grubs which introduce themselves into the finest Pears, he first tried to stifle them by closing the hole by which they communicated with the external air; this he effected by a bit of paper glued over the orifice with what is termed by artists, "mouth glue;" but the grubs soon re-established the access of air by making a puncture through the paper. He then had recourse to the introduction of some small drops of good oil, which he conveyed to the grub by means of an iron wire. This was generally sufficient; and the fruit, when taken to the fruit-room, ripened a fortnight earlier than that which had not been punctured. The president approved of the proceeding, as regards the finest fruits, of which the preservation is important. He admitted that the remedy would be of tedious and difficult application on a large scale; but he believed the work could be done by women and children, and profitably, if only the finest fruits were operated upon. *M. Chédeville* thought he oil might hasten the maturity of the fruit, as in the case of its application to Figs; but he feared that this substance would cause the Pears to rot. *M. Guérin-Méneville* believed in the effects of the oil; he called to recollection the fact that oil was always successfully employed against the palmer grubs (*Courtilières*). *M. Orbelin* remarked that the size of the fruit was increased by the grub, and mentioned a practice of *M. Luyet d'Ecully*, who said that he obtained fruit one-third larger by scooping out the core, thus removing it and the seeds, and then closing up the wound with the external part of piece taken out. *M. Payen* thought that this practice deserved trial, and that some experiments should be made, in order that it might be either confirmed or condemned. *Flore des Serres.*

## Calendar of Operations.

(For the ensuing week.)

### GENERAL REMARKS.

THE difficulty of obtaining a crop of wall-fruit has of late years brought several plans into notice, to counteract the inclemency of our spring months, by affording shelter to trees while in bloom. Whatever means are employed should now be got into working order; for the sooner protection is now given—not exactly from cold, but from the effects of bright sun, following upon sharp frosts—the better it will be for the trees, by preventing, on the one hand, extreme atmospheric changes, which more particularly prove fatal to the Apricot and Peach; and, on the other, inducing a later bloom when the chances of preserving it are increased. We therefore advise canvas screens, netting, and other protecting materials, to be in readiness, should bright sunny days occur, to place before south walls especially—east and west walls, not being so liable to extreme solar heat at this season, may remain some time longer uncovered.

### PLANT HOUSES.

Camellias will now be approaching their full beauty, and will be benefited by occasional waterings with weak



manure water; be careful when the bloom is expanded not to wet them, or they soon become spotted, and lose their beauty. Chinese Azaleas, when opening their blooms, are improved by assistance with liquid manure. There is scarcely a class of plants so serviceable as these; as, by management, they may be had in bloom from December to July. Those intended for forcing next season should now be started into growth by heat and gentle syringing; when the buds are formed, they may be potted, which is the best time for plants of this habit. Heaths, Epacris, and New Holland plants, in general, will now require a general look over; the surface of the pots should be cleaned, the pots themselves washed, and the plants so placed as to have all the advantages of light and air the house will afford them. As the young growth in some kinds will now be commencing, more room must be allowed, to avoid anything like weak habit; frequently turn the plants round, and let cleanliness and a pure well ventilated atmosphere be the great object of the cultivator, with this class at all times. ORCHID-HOUSE.—In all probability some of the earliest rested plants will be showing indications of growth, and as a succession of flowers is always desirable, such may be encouraged by placing them at once in a warmer position; before however starting them, such as require transferring to fresh baskets or blocks should be provided with them, removing the decayed material from their roots, and repacking them with lumps of fibrous peat, sphagnum, &c., after which secure the whole to the plant with copper-wire, that no displacement may take place by the use of the syringe. After dressing, and placing them in their quarters, let them be damped over once or twice daily according to the state of the weather, and encourage a uniformity of growth by steady treatment, the highest temperature not exceeding 65°, keeping however the species requiring a strong heat at the warmest end of the house. The general stock will remain for some time longer in a dormant state, as it will not be advisable to start the whole at this early season. Should the weather become frosty, fires will be requisite, but with greenhouse plants be as moderate in their application as is consistent with safety; and even in the stove, the temperature at this season need not range much higher than 58° by night, unless the very tenderest of tropical plants are grown; but the degree of cold house-plants will bear will much depend on the treatment for the last three months. If the wood has been well ripened they will bear a low temperature safely, and their future growth and bloom will be proportionally strong. On the contrary, if the last year's growth is still in an immature state, they will suffer from a degree of cold which the former would bear without injury, and their future growth will be feeble in proportion. See that forcing-pits, frames, &c., are daily ventilated in fine weather, and properly secured with mats, &c., from the action of frost; and plants for forcing, plunged out of doors, must likewise have their roots well protected, should frost occur.

## FORCING DEPARTMENT.

VINERY.—Succession Vineries as they are brought into work will require the same progressive treatment as advised for the early house, starting with a night temperature of 45°, and gradually increasing this by a degree weekly till the buds are ready to break; if the out-door temperature is very low, start at 40°, keep the syringe at work till the Vines break, and encourage a gentle circulation of air through the house at all times, increasing it gradually during the forenoon agreeably with the state of the weather, and closing somewhat early in sunny days, to save artificial heating. Strong young Vines should be bent into an horizontal position, to partially check the rising sap and promote the swelling of the buds on the lower part of the Vine. The sooner after this the pruning of Vines can be done the better; they may then be dressed over with the composition previously recommended, and at the same time the wires, trellising, and interior wood-work of the house should either have a coat of paint or be well washed with soap and water (hot as can be used), to remove the remains of any insects or dirt which may have accumulated during the past season. The outside borders, if still uncovered, should be at once protected from sudden changes and wet, supposing even no artificial heat is applied to the surface. What the consequence of the late rains will be to Vine borders we cannot undertake to say; but we much fear the young roots on the majority of borders have been injured, and failures in the ensuing crop may be expected. MELONS and CUCUMBERS, now up, require great attention; they must be near the glass, should have bottom heat, and will require air each fine day; a temperature of from 65° to 70° should be aimed at. Cucumbers in bearing will now be subject to mildew, and for this your remedy, sulphur, must be promptly applied; and the anti-mildew treatment closely followed, i.e., a rather dry, well aired atmosphere, varying from 65° to 80°, by which much trouble with this pest of damp, badly ventilated houses is saved. STRAWBERRIES.—Some of the forwardest may now be placed in a house to bloom; many growers place them in feeders, which, at this season, we consider a bad plan. A thick piece of turf, which allows the waste water to escape, and at the same time, feeds the roots, is better; a still better way, if extra fine fruit is wished for, is to procure pots a size larger than what the Strawberries are in; fill them about one-third with turfy loam, and place the pot with the growing plant in this; the roots will find ample food in the loam below, and the outer pot will protect the roots of the Strawberry from the direct action of the sun later in the

season; and, moreover, they can be moved from one house to another without sustaining injury. Bring on a stock for succession; before taking them in examine the drainage, which we find in many instances choked up by the late heavy rains, and what is worse the roots appear to have suffered as well. CHERRIES progress very steadily, they will require but little fire-heat, and that by day, while the present mild weather continues.

## FORCING GROUND.

The application of hot water to this department would enable the forcing ground to be kept in an orderly state; and that this is not far distant, we are sanguine enough to entertain the hope. We know what a great innovation heating Asparagus beds (by hot water) was considered some years ago; yet it succeeded admirably, and we see no reason why Seakale, Rhubarb, and other vegetables, might not be forwarded, or even forced by the same means; at any rate, Kale and Rhubarb are more easily managed by the application of the heating material below the surface than above it, and the appearance of long ridges of leaves and litter is prevented. Those who like to try need only throw up some beds, 3 feet 6 inches wide, having trenches 3 feet deep and 3 feet wide running between them; the sides of these beds must be kept up either by brickwork or slabs. Make the soil of the beds rich, and plant them this present spring with Kale, Rhubarb, or Asparagus. The two former will answer for forcing next season, to effect which the trenches must be filled with warm litter, and the beds protected by wooden frames, which, for Asparagus and Rhubarb, may have one side glazed, and the linings themselves may be covered with boards. This plan, for the later supply of the above vegetables, presents many advantages, either as regards forcing them in frames, or in the open ground.

## KITCHEN GARDEN.

Nothing in the way of working land should be attempted until it gets into a drier state. Look over previous Calendars, and see if anything important remains undone. Take advantage of the present mild weather to destroy slugs; or, as spring advances, they will be found troublesome. Collect road scrapings, sweepings of streets, wood ashes, &c., into convenient spots, for applying to heavy land in the spring; and turn over composts and manure heaps, to be ready for wheeling on the ground, should frost take place. Soot, in a dry state, is a valuable addition to garden manures; now is a good time to get a stock to last the season; it must be kept in a dry place. Look over the Onion stores, and remove those decayed. Seed and store Potatoes will likewise require examining, the mild weather causing them to grow before the usual time. The stock of Carrots, Parsnips, &c., should be turned over, to remove any that are faulty or rotten. Keep garden seeds in a dry place; light seeds, as Lettuce, Carrots, &c., suffer from being long exposed to damp. Let the kitchen gardener look before him, and forward everything that can be done under cover, to economise labour when a busier time arrives.

## STATE OF THE WEATHER NEAR LONDON,

For the week ending Jan. 20, 1853, as observed at the Horticultural Gardens, Chiswick.

Jan.	Moon's Age	BAROMETER.		TEMPERATURE.						Wind.	Rain.
		Max.	Min.	Of the Air.			Of the Earth.				
				Max.	Min.	Mean	1 foot deep.	2 feet deep.			
Friday.. 14	5	29.776	29.672	47	34	40.5	43	43	S.W.	.04	
Satur... 15	6	29.406	29.393	47	31	39.0	42	43	S.W.	.12	
Sund-y.. 16	7	29.392	29.398	43	33	39.0	42	42	S.W.	.28	
Monday 17	8	29.549	29.157	42	34	38.0	42	42	N.W.	.40	
Tues... 18	9	29.943	29.722	44	40	42.0	41	41	N.W.	.08	
Wed... 19	10	29.357	29.799	54	47	50.5	40	41	S.W.	.05	
Thurs.. 20	11	29.714	29.569	55	37	46.0	43	42	S.W.	.17	
Average ..		29.675	29.478	47.7	36.5	42.1	42.0	42.0		.74	

- Jan. 1.—Clear; fine; overcast at night.  
 15.—Rain in the forenoon; clear and fine.  
 16.—Fine; rain; overcast; hazy; barometer very low.  
 17.—Cloudy; lower stratum of clouds moving from north; clear at night.  
 18.—Fine throughout; clear at night.  
 19.—Uniformly overcast; sudden rise in barometer; drizzly; boisterous at night.  
 20.—Densely clouded and boisterous; cloudy and warm; rain.  
 Mean temperature of the week 6 deg. above the average.

## STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Jan. 29, 1853.

Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 31	44.3	34.5	38.9	13	0.27 in.	2	3	3	4	9	2	4	1
Mon. 24	43.2	36.5	39.9	19	0.51	1	2	3	1	10	5	4	1
Tues. 25	44.2	35.5	39.9	13	0.90	1	2	3	1	4	9	4	3
Wed. 26	43.8	32.8	38.3	12	0.34	1	4	3	1	6	4	3	2
Thurs. 27	43.9	32.2	38.1	12	0.43	1	3	3	1	4	11	4	2
Friday 28	44.8	31.6	38.2	15	0.17	2	3	4	1	11	7	2	4
Satur. 29	45.3	31.6	38.5	11	0.32	3	4	1	1	2	8	6	4

The highest temperature during the above period occurred on the 23d, 1854—therm. 58 deg.; and the lowest on the 23d, 1857—therm. 15 deg.  
 EVAPORATION.—In last week's Tables, Jan. 13, instead of min. temp. 45, read 35; and consequently, mean of the day, 43.5; aver. min. temp. 35; mean of week, 43.5.

## Notices to Correspondents.

AUDULTERATION OF FOOD: *Falcon*. It is true that this takes place to a great extent, although many of the published statements are gross, or even ridiculous, exaggerations. But the public alone can cure the evil by dealing exclusively with persons of known good character, and paying them a fair price for their goods. Audulturation and falsification are the natural sequel to that system of beating down tradesmen which has taken such fatal hold of this country.

ARISTOLOCHIA TRILOBATA. The Rev. C. Tucker, of Charnminster Rectory, Dorchester, would be obliged to any correspondent who would inform him by post where he can obtain a plant of this species.

AUSTRALIA: *An intending Emigrant* will find all English and all Mediterranean seeds useful. If he goes to Moreton Bay he

may try his hand at Cotton growing, for which purpose he should purchase a few bushels of seed at Manchester. He must, however, remember that all Australian colonies abound in European productions of good quality, and he is very likely "to carry coals to Newcastle." The less money he spends in his adventure the better. As to his servants, he may take them out upon the terms he mentions, but they will in all probability desert when he arrives—nor can he prevent it by legal agreement. Just now the farming capital which Australia wants is human labour, not gold.

BACK NUMBERS: Full price will be given for Nos. 40, 44, and 46, 1852.

BIRD SKINS: *A Correspondent* will be obliged by some of our readers informing him the best way to relax foreign bird skins, so that he may preserve them, as he has a quantity, and can do nothing with them in their present state.

BOOKS: *L. K.* We are unable to give you the requisite information. You should apply to the publishers. The most complete and recent catalogue is the last edition of Donn's "Hortus Cantabrigienses."

CHARCOAL: *Giff*. Break it into pieces about the size of the top of the thumb, and use it as drainage for your pot plants, in the same way that you would crocks; some of the smaller pieces may also with advantage be intermixed with the soil.

DRAINS: *W.* It is at all times very difficult to identify the roots of plants. Therefore when we say that we believe that the specimens you have sent belong to some kind of Grass, we must not be taken to pronounce a positive opinion. To answer the inquiry with certainty would require several hours' microscopic examination.

DRAWING: *G. W.* London's "Self Instruction for Young Gardeners" is the book for you to begin with. When you understand that, apply to us for further information.

GLASS: *P. G.* Use Hartley's patent rough plate. For statements in its favour see Messrs. Phillips' advertisement, at p. 576 of our last year's volume.

GUANO: *A Correspondent* has sent us a statement respecting the financial advantage of this article to the Peruvian Government. We ourselves printed the substance of the statement long ago. As we then, and frequently since stated, in our opinion the Peruvians have an indefensible right to sell what they possess on the most advantageous terms they can obtain. It is disgraceful for Englishmen to hold the language of buccaniers. Suppose our correspondent could get 80s. for his Wheat in open market, would he think that wrong? or would the wrong be greater if he were, as the Peruvians do, to apply the spare proceeds of such a sale to the payment of his debts? Tin is almost an exclusively English metal, as important in trade as guano is in farming. But who ever heard of the English being blamed for making the most of their tin mines. Let us not be misunderstood; we are as much interested as our correspondent in obtaining guano cheaper; but we think that end more likely to be gained by making it worth while for the Peruvian Government to reduce the price, than by irrational abuse of it.

INSECTS: *A Clergyman*. The best work on ants is Latreille's "Histoire Naturelle des Fourmis;" it is also cheap. No additions have been made to the British sub-genera beyond those described in Westwood's Synopsis. Shuckard's Formica has not been characterised; it is probable that he intended it for Latreille's second group, Cameline (F. flava, &c.), with the thorax not continuous, as distinct from the first section, Araneate (F. ligniperda, &c.), with the thorax continuous and arched. Some detached exotic genera have been described by Westwood, Spinola, and Guérin. The translation of Huber's book gives the history of most of the British species. *W.*

MARKET GARDENING: *An Inquirer*. The firm you name has a good reputation, but we never recommend tradesmen. Your first question should be asked of the person with whom you deal; or may be answered by consulting the Index of our later volumes. The quantity of gas-line which may be used per acre depends upon the nature of the soil to which it is to be applied. Consult the nearest farmer who knows your land.

MILDEWED WALLS: *Persica*. The fungus which you describe as growing on the walls of your Peach-house, which had been washed with a mixture of lime, sulphur, and soft soap, is the common Cladosporium herbarum, which occurs on damp substances of every kind and in every country. There is no fear of its injuring your Peach trees, though undoubtedly it may grow on the young branches where they are sufficiently damp to encourage its growth. We do not think, however, that it has any power of penetrating living tissues, though it will undoubtedly force a passage by means of its mycelium, where the matrix is already dead. Soap is by no means an enemy to the growth of fungi. We have a very curious case in hand in which fancy soap of a peculiar composition has been materially injured by a parasite allied to what you have sent. This we shall hope shortly to be able to notice. *M. J. B.*

MUSHROOMS: *C. A.* Your question can only be answered by a pamphlet. You will find perfectly good instructions for the growth of these plants in every gardening book of character; and to such a source of information we must refer you. Our own columns contain numerous criticisms, suggestions, and admonitions upon the same subject.

NAMES OF FRUITS: *B. A. D.* 2, Adams's Pearmain; 3, Braddick's Nonpareil; 5, Downton Nonpareil; 6, Easter Beurré; 9, Round Winter Nonsuch; 10, Cockle Pippin.—*W. M.*, *Kelso*. Partially decayed, but appears to be the Vicar of Winkfield.

NAMES OF PLANTS: *Dalsida*. No such names are known. They appear to have been given by some French travelling charlatan, and if so your bulbs will prove to be common things, which you are very likely to possess already. *T. Beau*, *Primula amena*.—*B. E.* 1, *Maxillaria concava*; 2, perhaps *M. corrugata*, but very much shrivelled; 3, *M. variabilis*.—*Mary*. *Hardenbergia monophylla*.

PALMS: *Conard*. Reader. They often flower in England; yours is by no means a solitary case.

THE FIG: *A. M. S.* If the earth is moved round the root of a Fig-tree (about 20 years old), and chalk is dug in, the tree cannot fail to be benefited.

TREE PEONY: *A Constant Sub.* Cut it back now; but take great care to shelter it from the bitter weather that may be expected sooner or later this spring.

VINES IN POTS: *A Beginner* will thank Mr. Urquhart for a hint or two as to the time of putting in his eyes for next year's fruiting, and his treatment of them; likewise what sort of soil and manure he uses for his successful Vines in pots, as he has found the first set of Vines struck from eyes to be always too weak for fruiting the following year.

WALL PLANTS: *A. R.* Plant the following. *Deciduous*: Clematis azurea, C. montana, C. Hendersoni. Magnolia conspicua, Chimonanthus grandiflorus, Pyrus japonica (red and white), Glycine sinensis, Caprifolium gratum, Jasminum nudiflorum, Weigela rosea, Nioisette and China Roses, &c. *Evergreen*: Berberis fascicularis, B. dulcis, Magnolia grandiflora, Cotoneaster microphylla, C. marginata, Pyracantha, Laurustinus, and Garrya macrophylla.

WET WALLS: *T. T. C.* An architectural friend remarks to us that a wall on a wet foundation may be kept dry by saving out a horizontal joint of mortar and pinning in a double course of slates and cement. This must be completed in lengths of about two feet at a time, and the capillary action through the bricks will be entirely prevented.

ZIZYPHUS LOTUS: *G. S. B.* We have no personal knowledge of the fruit of this plant; we never indeed saw it alive. You are no doubt aware of what is said about it by travellers. If not, turn to London's "Arboretum" II, 526. Desfontaines, in his "Flora Atlantica," merely called the fruit dulcis, innocuus. We do not find that the French think it worth cultivation, although an Algerine plant. It requires a greenhouse.

Misc: *O. M.* Forgive an involuntary error. We mistook you for a person of education and intelligence.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound, Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

## MANURES.—The following Manures are manu-

factured at Mr. LAYES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton 27 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites... .. " 5 0 0

Office, 69, King William Street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

## SEWAGE CHARCOAL MANURE.

PEAT CHARCOAL, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenny.

Mr. JOHN ANKITT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

PERUVIAN GUANO, guaranteed, the genuine importation of Messrs. A. GIBBS & SONS, 9l. 10s. per ton, or, in quantities of five tons and upwards, 9l. 5s. per ton in dock. A constant supply of LINSEED and RAPE CAKE.

EDWARD PURSER, Secretary.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

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PRESIDENT OF COUNCIL—Earl BATHURST.  
VICE-PRESIDENT—Earl DUCIE.  
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.

THE NEXT SESSION will open on FRIDAY, February 4th, and the Lectures begin on the following Tuesday.

Students are admitted either as Boarders or as Out-Students. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as for agricultural education.

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## PROFESSORS:

Chemistry, Geology, and Agriculture: Mr. J. C. Nesbit.  
Assistant Chemist: Mr. E. Lane.  
Natural Philosophy, Surveying, Engineering, and Mathematics: T. M. Cregan, Esq., C.E.  
Drawing and Fortification: T. J. Rawlins, Esq., C.E., Professor of Drawing, St. Mark's College, Chelsea.  
Botany, Zoology, and Natural History: G. Johnson, Esq., Professor of Botany, Guy's Hospital.

English Literature and Elocution: James Wigan, Esq., Professor of Elocution in the Ladies' College of London, and late Lecturer in Rhetoric at Chesham College.

Classics and Modern Languages: Able Assistant Masters.  
Messrs. NESBIT take under their charge about 30 students, resident or non-resident, who obtain in the College every aid and advantage for Scientific Education, which immediate vicinity to London commands.

In this Institution unusual facilities are afforded for acquiring a thorough knowledge of every department of Analytical Chemistry, and of the Assaying of Gold, Silver, and other Metallic Ores. Mr. J. C. Nesbit has an extensive practice as an Analytical Chemist; and in his Laboratories the Students acquire a practical as well as theoretical knowledge of perhaps the most important of modern sciences.

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The non-resident students have a commodious apartment for private study, and are each provided with a separate bed-room.

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The terms and other particulars may be had on application.

## IRELAND.

**CAPITALISTS** and Others engaged in Agricultural Improvements can be advantageously supplied with genuine new SEEDS of MANGOLD WURZEL, BELGIAN CARROT, TURNIP, BEET, GRASS SEEDS, &c., by Messrs. SUTTON & SONS, Seed Growers, Reading, Berks, who have for several years had the honour of supplying some of the largest Agriculturists near Enniskillen, Portlinton, Bandon, and other parts of Ireland. The seven Model Farms established by the Irish Church Mission in the West of Ireland were also furnished last year with Agricultural Seeds by Messrs. SUTTON and SONS.

## AGRICULTURAL SEEDS.

FLOWER SEEDS, AND SEEDS FOR THE KITCHEN GARDEN, Delivered Carriage free by Railway.

**J. C. WHEELER AND SON, SEEDSMEN TO THE** GLOUCESTERSHIRE AGRICULTURAL SOCIETY, beg to state that their new Seed List for this season will be forwarded free by post on receipt of one postage stamp.

To those desirous of buying the best varieties in cultivation, their List will be found extremely useful.

J. C. WHEELER & SON, Seedsmen, Gloucester.

## The Agricultural Gazette.

SATURDAY, JANUARY 22, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Jan. 27—Agricultural Imp. Society of Ireland.

THURSDAY, Feb. 3—Agricultural Imp. Society of Ireland.

THERE are two aspects in which the reports of the past two weeks on the FAT STOCK shown at the last meeting of the Smithfield Club are interesting. One relates to the waste which these fat animals have thus been shown to suffer between sale and slaughter; and the other relates to the accuracy of measurement as a test of weight. Both were referred to in somewhat general terms at page 25. We shall now compare our reports of December and January respectively, so as to bring out numerically the discrepancies between the estimate and the fact, so as to show that they are due to the imperfection of our mode of estimation. Both this and the great waste undergone by animals after sale are of great agricultural importance: the latter is so confessedly, and the former is a point deserving some consideration, as every feeder of stock and every cattle-salesman knows that no aids to the judgment should be dispensed with.

The following are the facts in a tabulated arrangement. They are not numerous enough to form sufficient groundwork for any very confident generalisation, but may be viewed as a partial illustration of the subject:—

## THE DEVON BREED.

	MEASUREMENT.		CALCULATED WEIGHT.	CARCASE WEIGHT.	
	Girth.	Length.		Beef.	Fat.
	ft. in.	ft. in.	st.	st. lbs.	st. lbs.
Class I., 1st prize	7 5	5 0	116	118 4	18 1
Class II., 1st prize	7 9	5 4	134½	129 5	16 2
— 2d prize	7 8	5 4	131½	138 0	15 7
No. 5 ...	9 0	5 4	181	182 4	20 0
Class III., 1st prize	7 6	5 0	118	129 0	20 0
— 2d prize	7 5	5 0	116	134 0	21 0

## THE HEREFORD BREED.

	MEASUREMENT.		CALCULATED WEIGHT.	CARCASE WEIGHT.	
	Girth.	Length.		Beef.	Fat.
	ft. ins.	ft. ins.	st.	st. lbs.	st. lbs.
Class VI., 1st prize	9 0	5 9	195	184 4	21 4
— 2d prize	8 2	5 7	157	168 0	24 4

## THE SHORT-HORN BREED.

	MEASUREMENT.		CALCULATED WEIGHT.	CARCASE WEIGHT.	
	Girth.	Length.		Beef.	Fat.
	ft. ins.	ft. ins.	st.	st. lbs.	st. lbs.
Class IX., 1st prize	8 2	5 8	160	165 0	20 0
Class XII., 2d prize	8 4	5 9	168	176 6	24 0
Cross-bred ...	9 7	6 5	250	244 0	26 0

With the exception of the last-named instance in the case of the Devon breed, the estimates and the facts come within 3 or 4 per cent. of one another, which is a tolerable approximation. The ascertaining of weight by measurement, however, is of less use and capable of less accuracy in the case of extraordinarily fat animals, than in that of ordinary butchers' meat. The principle of the process consists in ascertaining the solid contents of the carcase, considering it as a cylinder, and multiplying each cubic foot it contains by such a fractional number as represents ordinarily the weight in imperial or Smithfield stones, which a cubic foot of the living animal so measured weighs in beef. But this fractional number must obviously vary materially according to the condition of the animal: a very fat animal will yield more beef per cubic foot of its living bulk than a very lean one. Hence the fractional multiplier varies in the more perfect of the instruments called cattle gauges according to the breed and condition of the animal. It varies as much as from two to three: and various animals measured and estimated according to one "gauge point" may thus vary as much as 16 per cent. on either side of the truth.

\* These weights are all in Smithfield stones of 8 lbs. to the stone.

When the multiplier, however, is selected according to the circumstance of the case, a very near estimate may be generally arrived at. And such a method as is thus obtained is of much money worth to the practical farmer and to unpractised salemen. We have often in conversing with practised marketmen learned from them, that in very many instances indeed, practical farmers, even old men who have spent all their time in the field or the market, do, in selling or buying of stock, make it extravagantly just an act of getting as much out of those with whom they are dealing as they can. They bid as low, or ask as high a figure as power of face permits, with no more regard to the real value of the article on deal than if that were utterly unknown to them, and there can be no doubt that not only waste of time is thus occasioned, but that a less successful trade results; for men who see in their customers the aim not so much to get or give the real value of the article which they wish to buy or sell, as just to get as much or give as little as the other will allow, are sure in the long run to get the better of the bargain. Now, that this measurement of the living animal is a great assistance to the judgment, there can be little doubt. We have, before now, in valuing for an outgoing tenant, sold by it as much as nearly 400l. worth of fat stock at one deal, without two minutes' talk with the dealer. An hour's examination was required on our side with the eye and hand, and measuring tape, and a quarter of an hour's examination was needed by him, with his note-book in his hand, and, on comparing figures, our respective estimates were within less than one per cent. of one another. In this case the stock were in average marketable condition, and they were an even lot of one breed, all of course tending to the accuracy of the results of measurement. Nevertheless, in even less favourable circumstances, the measuring tape will, we are persuaded, be found a great assistance to the judgment.

Let us conclude by giving the rule:—To find the length of the animal, measure the distance between two upright lines, one of which represents in position the general outline of the hind quarters, and is therefore somewhat beyond the insertion of the tail; and the other passes through a point on the front of the shoulder, about one quarter or one third of the way down the sloping front. To find the girth of the animal, measure it behind the shoulder where it is smallest, and take it tightly when there is any quantity of coarse hair on the skin.

To find the weight from these two measurements, multiply the girth (in feet and decimals) by itself, and the product by the length, and that by the fraction .24 for ordinarily fat animals, or by as much as .275 for extraordinarily fat animals, the result will be the carcase weight of the animal in imperial stones.

WE cannot permit the publication, in another column, of Mr. WILKINS' critique upon the valuable paper contributed to the first number (1853) of this Journal by our valued correspondent Mr. HARCOURT, except as accompanied by this expression of our entire sympathy with the spirit in which that contribution was obviously penned. "The Year's Experience" is just what we want; and if readers of the periodical literature of agriculture think that it is what we get, they are very much mistaken. We get statements of success *ad libitum*, but statements of failure are not so often met with. There is plenty of encouragement, but not enough of warning, in our agricultural publications, to make book farming and field farming exact tallies, the one to the other. In saying this, we are not expressing acquiescence in the sentiments which Mr. HARCOURT's "Year's Experience" has appeared to him to justify, any more than we are expressing disapproval of the suggestions which more sanguine teachers have urged as certain from their experience, to warrant all that has been said by them in their favour. We are merely contending that agricultural literature ought to reflect agricultural practice with perfect accuracy; and that if it were made up of more strict journalism, and less of selected memorabilia, it would more perfectly attain its proper end—instruction in the actual experience of farm practice. So far, therefore, from blaming Mr. HARCOURT for detailing his losses and his failures, we take this opportunity of thanking him for so good an example as he has given to the many who kindly favour us with their correspondence. And while we do not acquiesce in some of his conclusions, at least in so far as we understand the terms in which he has stated them, we cordially, of course, believe all his statements of fact, and thank him for giving them to the readers of the *Agricultural Gazette*—to whose consideration we would especially commend his opening remark—that "hasty conclusions, and the over-eager







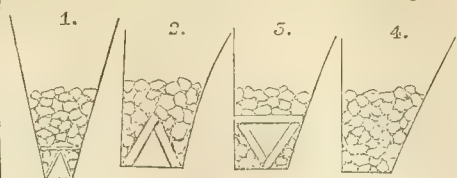
Saintfoin fields for a short time, till No. 33, which is a drier soil, was ready for them, in which field they now are being fed the same as before, with the exception of receiving about 1½ lb. of Clover hay chaff per head, per diem, instead of hay, and 1 lb. of Beans instead of Lentils. Besides the 315 lambs now in No. 11, there have been 6 fat ewes and 5 fat tegs at Coute's Barn, receiving Beans, Lentils, Clover hay, Turnips, and Carrots, *ad libitum*, and 20 Cotswolds and 4 southdowns in 6 lots fed respectively on Clover, hay, Mangold Wurzel, Swedes, and Lentils. The southdowns being tried against the Cotswolds on miscellaneous food, and all the sheep having miscellaneous chaff *ad libitum*. The rainy season has caused the corn to be increased sooner than it otherwise would have been, and also No. 33 to be eaten before No. 11, which would not have been the case. It has, however, supplied the breeding ewes in the Grass fields with food longer than in a drier season.

No. 5. Corn may either be cut by the sickle, which is the cleanest and most expensive mode, or by the bagging hook, which does not cost so much, and is nearly as clean; or by the scythe, which is the most slovenly method in respect to Wheat. Wheat is usually done by the sickle, and Oats sometimes. Beans are bagged, and Barley is generally mown. McCormick's machine costs 24*l*., is complicated in construction, and on that account is liable to get out of order; it takes a great deal of room, and is exceedingly difficult to get through ordinary gateways. It has the highest draught of most of the reaping machines, and takes the broadest swath, delivers the corn well at the side, but in a heavy crop it is extremely hard work for the raker. It does a large amount of work in a day without distressing the horses, and, on account of the peculiar construction of its knives, it does not require speed, and to a certain extent it will cut laid crops very well, and it will work on wet ground without clogging. Hussey's machine, as manufactured by Deane and Dray, has very few points to recommend it; but, as manufactured by Garrett, it is a much better implement. It is compact, simple, and durable, and easily moved about from place to place, and not liable to get out of repair; but it is hard work for the horses and requires great speed, and does not deliver the corn at the side (except with a tail-board, which can only be used in light crops), and if the ground is at all wet, it clogs up and will not work. It does less work and tires the horses more than McCormick's. Crosskill manufactures a reaper on the Hussey principle; it is not, however, as good as Garrett's. Bell, in Scotland, has a reaper which goes in front of the horses, and does away with the necessity for cutting a swath round the field before commencing. It deposits the corn regularly, but is a good deal of trouble to bind up after. It has a very good reputation in the north of England, but some people say it is not as good as McCormick's.

No. 6. Flax when ripe is pulled by the hand in as dry weather as possible, so as not to injure the fibre near the roots, nor shake out the seed. It is pulled and tied into little sheaves, which are put into small stooks, and allowed to get as dry as possible before they are carted away and stacked. The great objection to growing Flax to any great extent is the want of a market to sell the produce in, as at present there has not been sufficient spirit in the manufacture of that article of commerce, and the farmer has not time enough nor capital enough to manufacture it himself. The only way to remedy this want would be for several of the largest and most influential farmers in any district, favourable for the growth of Flax, to combine together and establish Flax mills, &c., in which the raw Flax fibre could be rendered fit to sell directly to the great linen manufacturers, who would buy it to an unlimited extent. At present, however, there is want of a middle man, between the producer of the raw material and the manufacturer of the fine Flax fibre into various fabrics, which are becoming every year articles of great importance to this country.

No. 7. Draining is necessary on all retentive soils, or all soils so situated with respect to retentive soils that they are constantly covered with a quantity of superfluous moisture which remains for a long time, even in dry weather, and then leaves the soil in a dense hard mass. All soils which are either themselves porous, or situated immediately on porous beds, which remove superfluous moisture, do not require any artificial drainage. Drainage removes superfluous moisture; it causes a circulation through the soil, which keeps it in a finely divided and porous state; it carries off materials noxious to plants, and supplies the roots with soluble materials which are washed from the surface of the soil. On well drained land, too, certain valuable Grasses, &c., spring up naturally, whereas other plants, as the Tassock Grass, &c., die out. In tile-draining it is usual to let out the digging, &c., of the draining by piece work, giving about 4*l*. a pole for a drain 3 feet deep, which drains would be placed at a distance of from 20 to 30 feet apart. The main drains would cost 6*l*. or 8*l*. per pole, and would be about 4 feet deep. The best tiles are 2 inches in diameter; and for the very small drains no tiles should be used of less than 1 inch in diameter. The outlet should first be considered, and all the branch drains should run into the main drains, and not into the open ditch. They should run in at an angle of 30° if possible. For small drains the fall should be 3 feet in the mile, branch drains 4 feet, and for main drains 1 foot is enough. For 4*l*. a pole the man who drains ought to dig out the earth, lay the tiles, and fill in again all small drains, &c., and at this rate the whole expense of an acre, tile-

drained, would be about 4*l*. Sometimes stone drains alone are used, and sometimes stones on the top of tiles, as in fig. 1. Some stone drains are made of large flat



stones, piled in the form of a triangle, as in fig. 2, or upside down, as in fig. 3; or are merely made up of loose rough stones, as in fig. 4. In stone drains a greater fall is necessary than in tile drains, and great care must be taken to keep the outlets open, which is the grand point in all drainage. The expense of stone drains depends on the distance from which the stones have to be carted, &c., and varies considerably, from 2*l*. to 4*l*. or 5*l*. Draining with bushes is usually done in peaty ground, in which branches will last a long time without decaying. It is not, however, a good method of draining on any other kind of ground, and it is extremely liable to be choked up. The plan is to take two or three good spits of peat turf out, and then spread the bushes along the bottom, and cover the turf in again, and it costs in this way 1*l*. 10*s*. to 2*l*. per acre. Turf draining is done in peaty districts usually, and acts well where there are no heavy animals or carts to pass over the drains and break them in; it is done by making what is called a shoulder near the bottom of the drain, and laying the spit of turf which was taken out at the top across these shoulders, and then filling in the earth. Drains in peaty land should always be allowed to settle before they are filled in. Draining by this method has no expenses attending it, except manual labour. It is a very good plan in all cases where much draining is to be done to plough the first 6 inches of the drain up before commencing the manual labour, and then when the drains are nearly completed, throwing back the soil again by the plough.

No. 8. There have been innumerable reasons assigned as the cause of blight in Wheat, but none appears more likely to be true than that which attributes blight to the weather acting upon crops, which from peculiar circumstances are liable to become blighted more than others. It is been found by experience that crops which are very much forced on light sandy or calcareous soils are more liable to blight than crops not forced, and ground on stiff good Wheat soils. There is no reason why artificial manures in particular should cause blight, especially since on the College Farm this year fields No. 18 and part of No. 2, which had been top-dressed with shoddy, were not worse than No. 27 and part of Nos. 19, 18, and 1, which had not been top-dressed; in fact all No. 2 was better Wheat than any of the above-mentioned fields. Again, it cannot be particularly attributed to new varieties, for the old Red Lammas and Spalding Wheat were more blighted than any of the other varieties sown on the farm last year. By analysis it has been proved that the sound grain contains nearly twice as much nitrogenous compounds as the blighted Wheat, and also about 5 per cent. more flour, starch, &c.; consequently, as a feeding substance, blighted Wheat is only worth half an equal amount of sound Wheat. If, therefore, the farmer can get 3*s*. a bushel for blighted Wheat to sell as poultry food, &c., he had better take it and spend the money in buying good Wheat at 5*s*. a bushel, which, in comparison to the other, is really worth 6*s*. a bushel.

No. 9. Agriculture is the only pursuit or business which has entire dependence on the weather for its success or failure; and so changeable is the weather in this climate, that a farmer cannot adhere to any fixed or definite plan of cultivation which he may have previously determined on; but he is obliged to modify his arrangements according to the peculiar circumstances under which the weather may subject him, and that man farms to the best advantage who is able to make the best of his position, be it what it may, that the weather places him in.

### Home Correspondence.

"The Year's Experience."—You begin the year 1853 with two articles: one signed "C. W. H.," and the other "Vernon Harcourt." Never before in one Journal had I seen two articles more dissimilar; indeed, brilliant light and obscure darkness are not more opposite. "C. W. H." put me in mind of the express engine on the Great Western Railway, flying away a mile a minute; whilst Mr. Vernon Harcourt brought to my recollection the first coach I ever travelled by, called the Royal Expedition, whose pace, including stoppages, was five miles an hour, and no more. "C. W. H." is for progress, for improvement, for bounding forward, for taking the lead, whilst Mr. Harcourt stands still or retrogrades. But to drop metaphor; Mr. Harcourt feels a horror at the felling of trees and of thin-seeding, lest the country thereby should be denuded, but I lament to say he does not state these questions fairly. For example, as to trees, no one doubts the beauty and usefulness of fine, towering and spreading trees, when standing in their proper places, that is, where common sense and nature designed them to be;

nor has it ever been a question whether trees in such situations ought or ought not to be grown, for all admit that they ought to be so grown; but the simple question at issue is this, ought trees—and most of such trees are worthless pollards—to be permitted to grow in hedge-rows, overhanging and shadowing cultivated fields, and sending out their roots in all directions among growing corn? I for one fearlessly maintain that all trees in such situations are a public, as well as a private, injury, and I further maintain that the axe ought to be laid to the root of every one of them. No real improvements can take place where such trees are suffered to grow, and consequently, wherever we see estates "denuded" of them, there we also witness visible signs of intellect at work; there the farmer can make remunerating improvements, send his loaded waggons with corn to market, pay a handsome rent, and live as a farmer ought to live. But wherever, in passing through this country, we see hedge-rows on arable farms full of trees, there we also see farming on the model of the 11th or 12th centuries, and poor and ignorant farmers, poor and half-starved labourers; and, indeed, there the whole of such a country is full of gloominess and poverty. Depend upon it no farmer can grow a fair crop of corn, pay a fair rent, properly maintain a sufficient quantity of labourers, whose farm is covered over with trees; I say then down with them, denude the farm of them, let the beams of the sun spread over the whole fields where they now can only partially and by fits penetrate, and let the fertilising showers and the air impregnated with ammonia likewise have free access to the growing crops and the soil. But Mr. Harcourt has as great a dread of thin-seeding as of field denudation of trees; but here again the real questions involved appear to be unknown to him. But I will illustrate my reasoning on this matter by one out of many examples; and if he will favour me with a visit sometime before next harvest, I will undertake to prove, and I think to his own satisfaction, all that I may now advance, and also show that the practice he turns into ridicule has at least some merit in it. A gentleman of my acquaintance possessed and occupied a good-sized farm; I often saw him and often reasoned with him on his mode of farming, which was, of course, as old as the hills nearly, or at least had existed without change for many hundred years. He, of course, was a bountiful seeder, always sowing of Wheat from 2 to 2½ and 3 bushels, and of other kinds of grain in like proportions. He was also a successful grower of long, thin, and light straw, and a very unsuccessful grower of plump and heavy corn; but what he did grow was thin and light like his straw. In this manner the old gentleman muddled on until he was gathered to his fathers. In two or three years afterwards the farm was let to one of the "C. W. H." school, a wide-awake man, one who had been bred in a gentleman's garden, then became a railroad contractor, and from that he became a farmer and took the farm in question! and what a change now took place on the devoted farm! and how would Mr. Harcourt's heart have beat to have witnessed the havoc! Trees were felled, hedges were trimmed, ditches were cleansed, drains from 5 to 7 feet deep were sunk, and everything on the farm underwent a complete and radical change. There was seen deep and thorough ploughing, that is, the best cultivation I had ever before seen done by the plough; and this was followed by thin-seeding, such for quantity and quality as, I will venture to assert, Mr. Harcourt never saw grow, the finest Wheat averaging, year after year, upwards of six quarters, Barley the same, upwards of seven quarters, Oats still more, and Pulse equally as good; nor is this all, for his Clovers and root crops are as good, I believe, or nearly as good as it is possible to be grown. The grain always sells at the very highest price. Now, Mr. Editor, as I am stating facts, let me ask the candid readers of your Journal which is the greatest public benefactor—the man who brings common sense, modern science, general knowledge, prudence and energy into his fields, or the man who moves plodding on, like a cartwheel in a deep rut, in one continued sluggish track, out of which he fears to get, and gives no other reason for what he does than that he does it because his forefathers all did the same? *George Wilkins*. [We should be glad of a more detailed account of the farm referred to. Methods which result in average crops of upwards of 6 quarters of Wheat deserve imitation.]

Thin Seeding.—If further proof is needed, I beg to hand you the result of thin seeding with Newington's Dibble. I planted half an acre with 1 peck of Talavera Wheat on the 10th of March last; it came up well, was hoed twice, and promised to produce as good as the seed until the 5th August, when wet set in, and continued with little cessation till the 13th. This much laid it, and I began to think I had paid "too much for my whistle;" however, I found that though the weather had stained the sample, it had not materially damaged it. I have now beat it out. The result of the half acre's produce is six sacks of marketable corn. The seed was Richard Webb's prize medal Talavera, of the Great Exhibition; he charged me after the rate of 20*s*. per bushel. A correspondent inquires, in your Christmas Number, for Wheat to sow this spring. I should recommend him (if not Talavera) the Polish Odessa, known as the "Nursery Wheat;" it is much grown in this neighbourhood with great success. In this last season of trial to the farmer those who cultivated the "Nursery" escaped blight, both the white and red. As to quantity, I knew one gentleman in the neighbourhood of Wantage had 12 sacks to the acre. It is to be



had most market days at Newbury of any of the porters. *Amicus.*

**Experience in Draining.**—The many facts that from time to time are being adduced in explanation of the principles of draining are both interesting and highly instructive; and landowners and farmers will do well to learn from them the occasion for a superior and more careful superintendence of the work than has usually been given to it. In going over some extensive draining that has been done some time, and where the surface lies for long distances almost level, and the soil is clay, I have been much puzzled to account for the partial effect of the draining. Although the mouths of the drains discharge freely, and the surface in all the late rains has generally been without standing water, yet there are spots, and over the drains too, where water lies after rain some days. On opening the drains they were seen to be carrying a continuous stream from end to end, and nowhere was there any impediment save that from some slight irregularity in maintaining a uniform fall. I found that owing to slight inequalities in the surface, and inattention to maintaining a uniform inclination in the bottom of the drain, there were places where the pipes for short distances lay too low, and ran full, and whenever this occurred there was no drainage from the surface. I saw that the surface wetness was occasioned by the pipes not admitting the access of water from their exterior, and although they carried off the water brought to them from beyond, and the quantity was not sufficient to fill them, except in these low places, they were inoperative in draining from around them; and from careful examination I am now able to account for a defect in draining which has not unfrequently attracted my notice, and I do so thus, viz.:—Where the pipes discharge without running full, there is a vacuum above the stream, and free access to it from the exterior of the pipes that causes fissures in the soil above, which extend to the surface; but where the pipes run full the soil around them is kept saturated and closed, and without the fissures that drained land always has; so that the water from the surface, having no vent below, has no escape, and the land is undrained, so far as the pipes below lie full of water. That this is the right explanation I have tested by cutting communications from these low spots into adjoining drains that were open to take the water, and by so doing have, as I anticipated, immediately given porosity to the surrounding clay, and the surface water has rapidly disappeared. When draining is done in wet weather, or where there is ample fall and a continuous stream to direct the pipe layer, but little danger from this cause has to be apprehended; but without a run of water to prove the continuous inclination, or sufficient fall of the land to insure it, there will always be considerable hazard in leaving draining to the superintendence of men unused to or unacquainted with the use of instruments that alone can be depended on in these cases, and I can trace much imperfect drainage to imperfect attention in this respect. *Hewitt Davis, 3, Frederick's Place, Old Jewry, London, Jan. 19.*

## Societies.

**HIGHLAND AND AGRICULTURAL, Jan. 11.**—The half-yearly general meeting of this Society was held this day. Fifty-nine new members were admitted. The Duke of Hamilton was elected President of the Society, in room of the Duke of Roxburgh, who had now to retire. The Society's meeting in 1854 was fixed to be held at Berwick-upon-Tweed.

**Winter Show.**—Professor Low rose and said: You are aware that after the long and successful experience which we have had of the results of our general shows of live stock, and the great advance that has been made in this important department of rural economy, the Society has come to the conclusion that it is not now necessary to hold these general shows in each year; but that every purpose of utility may be served by holding them at intervals, as in every second or third year. Farther, the directors have seen fit to restrict the offers of premiums to breeding animals only, as conceiving that this will be sufficient to induce the breeders of the country to bring forward sufficient examples of their superior animals. It has appeared, however, to many gentlemen that this Society might greatly aid the purposes of the more general shows, now confined to breeding stock, by instituting shows likewise for fattened stock. This it has been proposed to do, by establishing annual shows for fattened animals, to be held alternately in Glasgow and Edinburgh, and this at the season of Christmas. It is proposed, too, that what is usually called the minor stock, but which yet is of great economical importance—namely, fattened pigs, and the domestic fowl—shall be admitted to competition; and farther, that there shall be an exhibition of seeds, tubers, roots, and vegetable productions of every kind, for which it is conceived the season will be peculiarly adapted. In offering premiums for fattened stock, it must not be supposed that we are not taking right means to improve the breeding stock of the country. An animal is brought to its state of maturity by the conjoined efforts of two classes of producers—the breeder and the feeder. Each is entitled to his share of merit, and when the breeder is likewise the feeder, he unites the merit of both classes. Our object, however, would not be attained by offering indiscriminating premiums for fattened animals, kept perhaps beyond the proper age, and fattened for the

occasion. This would be doing nothing towards inculcating right principles in breeders, or encouraging useful practices in feeding. The ages at which animals can be brought forward must be strictly limited and defined. We all know that there is a great disproportion in the periods at which different classes of breeds of animals can be brought to the required maturity of muscle and fatness. We know how entirely different in this respect it is with the more highly-cultivated breeds of the plains, fattened it may be said from the birth, and the hardier breeds of the higher country, which can only be fed for a period of their lives on the natural produce of the countries in which they are reared. But making due allowance for these different conditions, it is easy to determine the maximum of age at which breeds or classes of animals of any kind shall be allowed to be brought into competition; and doing this, the premiums for fattened stock are really calculated to improve the live stock of the country, although in a different manner than when premiums for breeding stock only are given. The improvement of the live stock of the country, I need not say, is worthy of our continued attention. From this source alone half the rental of the British Islands is paid; but however important this kind of public industry may be, it is not the only branch of rural economy to which it is the province of this Society to attend. A great proportion of its funds is devoted to the encouragement of other branches of rural economy; to bringing chemical and physiological science to the aid of the practical farmer; to improving the dwellings of the humbler classes; to rewarding the manual skill of the labourer; and, above all, co-operating with, and encouraging, by means of honorary and pecuniary premiums, the local associations now happily established in every part of Scotland. These are important objects, and will never be neglected while the Society maintains the influence and character which it now possesses. In taking further means, then, for improving the live stock of the country, we have carefully to consider whether this can be done without interfering with other and not less important duties. I am happy to say that it is the opinion of the directors that this can be done, and efficiently done. From the rapidly increasing number of our members, and the progressive accumulation of our capital, no doubt need arise that we shall be able to carry on these Christmas shows without interfering in the least degree with those other purposes for which our funds are now employed. It is not necessary, however, that I should enter into details. I merely ask that if the meeting is satisfied that the general measure proposed is calculated to be of benefit to the country, they will authorise the directors to take the subject into consideration, so that they may be prepared to present a full and specific report to the next general meeting to be held in this place. I have, therefore, merely to beg leave to move—“That the proposal to establish Winter Exhibitions of fat stock, swine, poultry, roots, and seeds, be generally approved of, and remitted to the directors for their consideration, and report to the Summer General Meeting.” Mr. Maconochie, in seconding the motion, said it was impossible to doubt the utility of the measure proposed, and it was agreed to unanimously. The Chairman inquired when it was proposed to hold the first Show? The Secretary—About Christmas next. Betwixt this and the Summer General Meeting we may arrange all the conditions, so as to have them then authorised, and published afterwards. But as this notice will go forth to the public, the parties contemplating taking part in the Show will have sufficient intimation. He might mention that the directors had it in view to take stringent measures to exclude all breeding animals who came in the same state of obesity as some animals at Perth.

**Agricultural Statistics.**—Sir John McNeill stated the progress that has been made towards making arrangements for collecting agricultural statistics in Scotland. The Society proposed to select three counties in which to collect agricultural statistics experimentally, and the Board of Trade had required an estimate of the probable cost of that experiment.

**Chemical Department.**—Professor Anderson gave in the report on the chemical department for the last six months, which, he said, on this occasion, must be of a very routine character, as he had not had matters of sufficient importance or interest to occupy the time of the meeting with in detail. The most important point connected with the department, perhaps, was his removal to Glasgow, where he had been appointed since last meeting to the Professorship of Chemistry, and the Society had resolved that he should still continue to superintend the chemical department. Since his removal to Glasgow the operations of the laboratory had been carried on there, and he trusted that this arrangement would in all respects prove satisfactory. They had still several investigations in active operation, of which he should be able shortly to give the results. There was one which had been for some time in readiness, but had been unavoidably delayed. It was an inquiry into the subject of finger-and-toe in Turnip. As far as the chemistry of this matter was concerned, they had been long since ready, but being desirous of obtaining some practical information on the subject, queries had been sent out to the practical farmers, the answers to which would be included in a report in course of preparation for next number of the Transactions.

**Premiums for Reports of Experiments, &c.**—Mr. Makgill, of Kemback, in giving in the following list of

premiums awarded for experiments in 1852, referred to the papers which had been contributed in terms of the highest commendation, and stated that any suggestion through Mr. Maxwell with regard to any subject which a member might consider worthy of investigation, would receive the attention of the committee.

*Gold Medals have been awarded to—*

1. James Cowie, Mains of Haulkerton, Kincardineshire, for a plan and specification of a steading and offices, adapted for a farm of mixed husbandry, containing about 200 acres, under a regular rotation.
2. James Cowie, Mains of Haulkerton, for a plan and specification of a steading and offices, adapted for a farm of mixed husbandry, worked by two pairs of horses.
3. Duncan Forbes, Culloden, Inverness-shire, for a report of improvement of waste land on the estate of Culloden.
4. James Melvin, Bonnington, Ratho, Mid-Lothian, for a report on the manurial value of Turnip and Linseed-cake.
5. John Lockhart Morton, land-agent, Edinburgh, for a report on the application of liquid manure.
6. John Lockhart Morton, land-agent, Edinburgh, for a report on the formation and early management of plantations.
7. James Porter, land-steward, Monymusk, Aberdeen, for a report on draining.
8. James Porter, Monymusk, for a report on compost heaps.
9. Andrew Templeton, Clonduboy, Hollywood, Ireland, for a report on the best modes of housing, and on the comparative advantages of soiling and of pasturing cattle.
10. Alexander Thomson, of Banchory, Aberdeenshire, for a report of improvement of waste land on the estate of Banchory.
11. John Wilson, Edington, Mains, Berwickshire, for a report on the use of the grubber.

*Medium Gold Medals have been awarded to—*

1. William Adam, of Ranna, advocate, Aberdeen, for a report on soiling and pasturing cattle.
2. Henry Anderson, jun., Ballynacree House, Ballymoney, Ireland, for a report on the employment of peat in burning clay pipes and tiles.
3. Robert Boyle, Drongan Pottery, Ayr, for a report on top-dressing Grass with guano.
4. Thomas Ferguson, Ashmore, Perthshire, for a report of improvement of waste land.

*Silver Medals have been awarded for Papers not in Competition for Premiums to—*

1. Kennedy McNab, Millburn Cottage, Inverness, for a report on the cottage accommodation of parts of the counties of Nairn, Inverness, Ross, and Cromarty.
  2. James Young, land and wood surveyor, Perth, for a report on arboriculture.
- Mr. Makgill also intimated that a gold medal had been awarded to Mr. Milne, of Kinaldie, for Purple-top Yellow Turnip seed, grown in the county of Aberdeen.

Mr. Horne, in very complimentary terms, then moved the re-appointment of Mr. Hall Maxwell as secretary, which having been unanimously agreed to, a vote of thanks was, on the motion of Mr. Maconochie, tendered to the noble chairman for presiding, and the meeting separated.

## Reviews.

**Italian Irrigation: A Report on the Agricultural Canals of Piedmont and Lombardy, addressed to the Hon. the Court of Directors of the East India Company.** By R. Baird Smith, F.G.S., Captain in the Army, &c. Printed by order. W. H. Allen and Co., London.

THE past Numbers of the *Agricultural Gazette* have contained a good deal of matter relating to irrigation, and succeeding numbers will continue to keep the subject before the minds of our readers. It is a subject which has latterly received greater attention from agriculturists than has hitherto been conceded to it; and the weather of the past season has especially directed the notice of farmers in that direction. It is well that they should know not only where, in what districts, the practice of irrigation may be inspected, but where, in what books, it is described. Among all the English works, certainly not many, that can be placed upon this list, unquestionably the most important, the most instructive, and, we may add, the most interesting, is the one before us, by Captain Smith. We can at present merely state the character of the work so as to inform our readers of what they may expect in it, leaving to future opportunities a more particular examination and illustration of its contents.

It consists, then, in the first place of Captain Smith's personal narrative—the journal of a tour, during which the traveller has had his eyes open especially to the agricultural features of a most interesting agricultural district. This portion of the work contains a great deal of interesting matter on the relation of landlord and tenant in northern Italy, on irrigation generally, on warping, on the utilisation of sewage manure, now a first-class agricultural topic, and especially on the Italian literature of the subject, which it was the particular business of this author to examine. Part II. includes historical and descriptive details of canals of irrigation in Northern Italy, illustrated by maps, plans, and sections in great detail. Part III. describes the practice of irrigation in Northern Italy, also illustrated by drawings, and giving ample money details of results, as well as practical descriptions of methods. The fourth Part describes the legislation on irrigation in Northern Italy. The whole work is especially deserving attention at the present time, when the practice and results of irrigation are exciting particular attention amongst Scotch and English farmers; it well deserves careful and repeated perusal. It occupies two octavo volumes, of some 400 pages each, and is accompanied by a folio series of maps and sections.

**A Farmer's Budget.** Effingham Wilson. A pamphlet. A FARMER'S Budget! And why not as well as a novelist's? We engage that the farmer knows what he wants better than the most ingenious gentleman who ever adorned the history of literature. This farmer says, sweep away all the assessed taxes, and all the excise, except the duty on spirits, which he would have transferred to the customs. About 11 millions would be thus



disposed of, which our financier thinks might *probably* be replaced by a graduated income tax, and a house tax of a shilling or eighteen pence in the pound. The only remark that we have to offer is, that if the new Chancellor of the Exchequer can realise this agricultural vision, he will be a marvellously clever man. The pamphlet contains other suggestions, and is worth reading by those who have a stake in the rural districts.

### POULTRY.

**METROPOLITAN SHOW.**—Redeeming the pledge of last week, we now purpose to give a more detailed account of the Great Metropolitan Show. Poultry being one of the great questions of the day, and most of the celebrities of the different local exhibitions being present at this show, it will be readily believed that the principal topics were mooted and discussed.

The first and most prominent was the proper duration of a show, and a declaration was ready for signature, whereby the principal breeders pledged themselves not to exhibit at any place where the birds were required to be more than four days. This declaration did not of course originate with the officers of the Metropolitan. This is a question of peculiar delicacy. Exhibitors and the public are both interested, and before the former complain that their interests are injured by conveniences afforded to the latter, they should recollect that their greatest pleasure, and it may be said profit, will be done away the moment the public ceases to take an interest in the exhibition.

We touched on this subject in our report of the Birmingham and Midland Counties Show last year, and we see no reason to alter our opinion, that with proper arrangements as to the feeding, the birds need not suffer by the necessary confinement. The only change we would suggest would be that the exhibition shall close at 1 o'clock on the last day, Friday, instead of the evening, in order to enable the birds to be sent off, and to reach their destination on the Saturday morning. We believe some birds did suffer at Birmingham last year, but we also know, that for three previous years there were no complaints whatever, because there was no cause for them. Exhibitors must admit the arrangements have always been most liberal, and we think they may safely leave themselves in the hands of a committee, which, leaving out of sight any possible personal interest, has done so much for the poultry world. Another reason why birds suffered more this year was, that from the long continuance of wet weather they were out of condition, and predisposed to disease. Having no object in view but the prevalence of harmony among those who frequent these exhibitions as spectators or competitors, we trust we shall be excused these preliminary remarks; the more so that we believe the Birmingham and Midland Counties Society deserve the thanks of all lovers of the gallinaceous tribes.

The next point was the novelty of selling the birds by auction; we believe it is admitted by nearly all that it is a failure compared with the system hitherto adopted at exhibitions. If in one instance a pen of birds marked by the owner at 15*l.* made nearly 50*l.*, in numberless others, reductions from 50*l.* to 5*l.*, and 15*l.* to 30*l.* did not secure a bidder. Of the first class of Cochins submitted for sale only two lots were sold—one for 42*s.*, the other for 44*s.*, and this in spite of the exertions of an able and popular auctioneer. The Dorkings sold much better than any other class, and made in most instances more than the reserved price put upon them. Several pens of a cock and three hens realised 10 guineas. Captain Hornby sent two chickens of 1852, cock and hen, of an unusual size; and Sir John Cathcart sent two pens of great beauty, the old-fashioned dark birds; cocks, black breasted red, and the hens a rich chocolate, spotted with white. The difficulty of finding four perfect birds, even in large stocks, was shown by the fact, that in every division of classes, that containing only cock and hen was superior to that requiring cock and three pullets. The chickens shown by Mr. T. H. Potts, in pen 50, class 12, were perfect. They were lemon-coloured, without the slightest mixture, of faultless symmetry, and in exquisite condition. Even the cock was tail-less, and honestly so, merely a few drooping feathers, shaded with rich Chestnut, falling over. A pen almost of equal merit, took the second prize, and stood beside them in pen 49. Next came the birds belonging to Mr. Fairlie and Captain Squire, exquisite specimens, but condemned to a third prize—no mean merit in the teeth of such competition. But the greatest struggle was in class 15; Mr. Midwell, of Guildford, stood first, with two beautiful birds, perfect in every point. In this, as in the two other prize pens, there was an excellence, much noted, the "fluff" of the hens had the texture of the finest silk, more particularly the pullet belonging to Mrs. George. These were also very large birds, and a connoisseur could have made up two or three pens, by picking judiciously, that would have realised the day-dream of many an enthusiast in Cochins China fowls. There is little to remark in the pens of Hamburgs beyond the fact that, in the prize pens, the markings were very beautiful and unusually perfect. A word of advice to exhibitors may not be thrown away, and will save future judges the unmeaning question, "Why did not my pen get a prize?" No Hamburg cock has a black tail—the golden is bronzed, the silver is silvered. The Poland fowls were good, but, with the exception of the white-crested, they were inferior to those exhibited at Birmingham. The bantams were good, and among them

were two pens pre-eminently distinguished, one a pen of feathered-legged whites of most exquisite proportions, short-legged, dropping wings, proud carriage, and ridiculously small; and another of game fowl, duck wings in miniature. The singularity of the latter was striking, and, as a new variety, we hope to meet them often at the exhibitions all over the country. A pen of frizzled or Friesland fowls was also remarkable for excellence; not only were the feathers turned, but they were also curled as correctly as if the most finished "friseur" had exercised his utmost art upon them. It would be unfair not to notice a pen of "stumpies," or, as a Scotch friend of our's named them, "creepies"—a Scotch fowl, apparently destitute of legs, and said to be marvellous layers. If the same rule that makes absence of tail a merit in Cochins Chinas, confers a like distinction on this breed if wanting legs, then these were perfect, but they must have had a sorry time during the rains of the last four months. In imitation of the Lord Mayor's dinner, we will conclude with the bill of fare for the poultry during the week. Seventy gallons of strong ale; 170 quatern loaves; eight sacks of meal; 100 Cabbages; and one sack of Oats. The judges were E. Hewitt, Esq., Eden Cottage, Birmingham; W. Symonds, Esq., Rodwell House, Weymouth; and Mr. John Bailly, 113, Mount Street, Grosvenor Square, London.

**Metropolitan Poultry Exhibition.**—The writer of the article in last week's Number, on this subject, does us an injustice in his remarks on the Polands. He says: "In this and other classes a reference to the prize list will show the old names were everywhere successful." This is not the fact. We competed for the first time, and obtained a first prize for the only lot we had in this class. We should not have troubled you had not our attention been called to it. *S. C. & C. N. Baker, Pheasantry, Beaumont Street, King's Road, Chelsea.*

**POULTRY: M. D. Hammersmith.** Your pullets will soon lay; their being fat and in high condition is an indication of it. I do not like your feeding; Barley is not good food for a continuance. All fowls want a change; and I think you will find the benefit of giving meal from Oats or Barley two or three days in the week. If the weather sets in cold from frost or easterly winds, give them every day the old pieces of bread from your table, steeped in good strong ale. Lempsed or tallow-chandler's greaves will make them lay, but will also injure the birds.—*N.B.* Gold and silver pheasants, like chickens, for the first few hours after birth, are better under the hen than anywhere else. After, if the day be dry and sunny, the rip in which the hen and her brood are should be put on the Grass, in a very dry spot. A small space, about 3 feet long by 2 wide, should be made with three boards fastened with pegs in the ground, so as to be easily movable. These should be covered with string netting, to protect the young from any enemy, winged or otherwise. The pullets come out through the front bars of the coop, and run in the space afforded to them, till they are strong enough to have more liberty. I would never keep the young of any pheasants from the sun, but I would not expose them to great heat without a cover.—*F. N.* I am now setting Cochins China eggs. Of late years the weather has been more favourable to chickens, in January and February, than in April and beginning of May. At this time of year I set only nine eggs under a hen, because the chickens want more covering and warmth than they do later in the year; this is essential while the nights are so long.

### Miscellaneous.

**New American Threshing Machine.**—A man from North Carolina has invented a threshing machine which accomplishes the following objects:—1. It differs from and is superior to all others in its capacity to thresh every kind of grain or seed grown, with the exception of Indian Corn; and the machines for shelling corn are already perfect. This thresher can be so adjusted in a moment as to come together close enough to thresh out Timothy seed, while it can be gradually opened to admit other coarser grains and seeds, until it will thresh the large field Pea. 2. It cleans the grain out from the straw perfectly, so that there is not a kernel or seed left that is worth saving. Several of the richest and most successful practical farmers of North Carolina say, in a certificate we quote from, that they are warranted in stating that the saving effected by this machine in the grain that is wasted by other machines, is at least 20 per cent., or one-fifth. 3. This thresher will clean grain of every kind most perfectly from smut; for all the smut which is not taken off from the grain while it is going through the air cells, is perfectly cleaned by passing through the air. 4. A serious objection against every thresher hitherto invented has been the danger to life and limb in working them. This machine has no such danger. It is fed on the sides, and does not whirl towards the operator. Moreover, it has but a few flails, which revolve like the spokes of a wheel, and being of wrought iron strongly clenched on the axle, they cannot fly off. 5. Other threshers are liable to get out of repair, and are soon worn out; but "this thresher is so simple in its construction," says Judge Martense, of Long Island, "it does not seem possible for it by any ordinary usage to get out of repair." 6. It is cheap—it does not cost much—it is not more expensive than many other threshers, while it can perform a great deal more work, and do it better than any of them. It can, moreover, be transported without difficulty from place to place, because it is so light, and can be so easily handled. It can also be adjusted and managed by the commonest labourer. 7. It can thresh much more grain of any kind in a day than any other machine ever invented. Mr. Charles Shepherd, a good scientific farmer in North Carolina, says, that although his Wheat had been seriously damaged by smut, his shipping merchant told him it was in better order than any Wheat he got, and with one of Palmer's small machines he threshed over 600 bushel per day. Mr. Shepherd also says, after he had tried Palmer's thresher with Flax seed,

that five hands could with it beat out more Flax seed in a day than 50 without it; and so the certificates and the letters we have seen from many parts of the country testify to all the various kinds of grain. We rejoice that this invention comes from North Carolina, one of the truest and best sisters in the Federal Union; and although till now she had not contributed her full share to the inventions of the country, she has atoned for it all by giving to the world William Russell Palmer's threshing machine. *New York Herald of the Union.*

### Notices to Correspondents.

**AGREEMENT.** A Regular Subscriber should obtain this, which relates to the lease of a "house and 8 acres of land," from his lawyer. The principles and the forms of farm leases have been often discussed in our columns; but house property hardly comes within our scope.

**ASPHALTIC FELT: W.P.** It requires, we believe, an annual dressing. **DISTEMPER: R. G. T.** A seton across the loins may be tried; but we fear, there is little probability of a complete cure. **W. C. S.** **DRAINERS: W. P.** In most neighbourhoods now there are men who are competent to dig and superintend the digging of drains.

We know of several.

**FARM, TO PURCHASE: K.** We should prefer either the old red sandstone, where as much improvement by drainage and hedgerow removal is to be done as on any other; or the green sand formation, where chalking, claying, &c., can be done cheaply, as the best localities for investing in land. We suppose you must find what you are in search of by advertisement.

**DRAIN PIPES LIABLE TO TOLL: W. P.** The question as to whether drain tiles be free of toll or not is an open one. In the many instances I have had brought to my notice, the parties have, after demurring, thought it right to pay, or rather have not seen their way sufficiently clear to resist paying the toll; and I believe lawyers generally think it better to do so, although there is little doubt the intention was to let so important an assistance to agriculture escape free. *Hewitt Davis.*

**IRRIGATION: S. B.** The water may be allowed to run on for a fortnight, or until a scum appears upon the Grass. The process fertilises for the season.

**MOSS: A Reader.** Harrow it well, and gather the moss dragged out. Then lay on a lime compost. The land should be drained. Gas water is said to be useful in extirpating moss.

**OSTEND RABBITS: G. H.** We believe that this trade is of comparatively recent origin, and that the rabbits imported have been unprotected in the warrens; and are not the results of any, so to speak, artificial cultivation.

**PEAT COMPOST: J. B.** No doubt the ingredients named, applied in a liquid state to peat, would ultimately form with it a useful compost.

**REFUSE HAIR, &c.: E. W.** There can be no doubt that it would be a valuable manure. If we had a lot of it we should be disposed to cut it up, and keep it in a heap moistened with liquid manure, until it was thoroughly disintegrated; keeping it covered well with charcoal powder, and ultimately drying it with the same, and using it as a drill manure for Turnips.

**STRAW: T. S. W.** We have to beg pardon for the delay of this reply to your question, which had been mislaid. 20 tons of straw will, by littering and foddering well-fed cattle, make at least 100 tons of dung. Good crops of Wheat, Barley, and Oats respectively may yield 20, 18, and 25 cwt. of straw per acre. But of course the produce is exceedingly variable on the same soil in different seasons, and on different soils in the same season.

**WATER-TIGHT LEATHER: W. P.** wants a receipt for making his boots water-tight. [Resin and nutmeg fat generally play an important part in such mixtures, we believe.]

### Markets.

COVENT GARDEN, JAN. 22.

The market is well supplied with Vegetables; but fruit is scarce, more especially good table Pears and Hothouse Grapes. The supply of Pine-apples is pretty well kept up. Apples are as yet plentiful. Cob and other Nuts are realising fair prices. Both Seakale and Rhubarb are now tolerably abundant; but good Asparagus has not yet become plentiful. Potatoes have not altered in value since our last report. Mushrooms are scarce. Out flowers consist of Heaths, Primulas, Early Tulips, Roses, Mignonette, and Camellias.

### FRUIT.

Pine-apples, per lb, 6s to 8s  
Pomegranates, each, 4d to 6d  
Apples, dessert, p. bush, 6s to 10s  
— kitchen, do, 6s to 10s  
Pears, per doz, 1s 6d to 4s  
Lemons, per doz, 1s to 2s

### VEGETABLES.

Cabbages, per doz., 6d to 1s  
Brussels Sprouts, per hf. sieve, 1s to 2s  
Broccoli, per doz., 2s to 3s  
Greens, per doz., 1s to 2s  
French Beans, per 100, 3s  
Asparagus, per bundle, 5s to 8s  
Seakale, per bush, 1s 6d to 2s 6d  
Rhubarb, per bundle, 9d to 1s 6d  
Potatoes, per ton, 85s to 140s  
— per cwt., 5s to 9s  
— per bush, 2s 6d to 4s 6d  
Turnips, per doz., 1s to 1s 9d  
Cucumbers, each, 1s to 3s  
Celery, per bundle, 9d to 1s 3d  
Carrots, per doz., 2s 6d to 4s  
Spinach, per sieve, 1s to 2s  
Onions, per bushel, 2s to 3s  
— Spanish, p. doz., 2s to 5s  
Beet, per doz., 1s to 1s 6d

Oranges, per doz., 1s to 2s  
Almonds, per peck, 5s  
— sweet, per lb, 2s to 3s  
Nuts, Barcelona, per bush., 20s  
— Cobs, 110s  
Chestnuts, p. bush., 8s to 20s.

### WATERCRESS.

Leeks, per bunch, 1d to 2d  
Shallots, per lb, 6d to 8d  
Garlic, per lb, 6d to 8d  
Lettuce, Cab., per score, 4d to 6d  
— Cos, per score, 9d to 1s 6d  
Radishes, per doz., 8d to 1s  
Endive, per score, 1s to 1s 6d  
Small Salads, p. pun, 2d to 3d  
Horse Radish, p. bundle, 1s to 3s  
Mushrooms, p. pott, 1s to 1s 6d  
Sorrel, per hf. sieve, 6d to 1s  
Artichokes, 4s to 6s  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. doz. bunches, 2s to 3s  
Mint, green, per bunch, 4d to 6d  
Basil, per bunch, 3d  
Marjoram, do, 2d to 3d  
Watercresses, p. 12 bun, 4d to 6d

### HOPS.—BOROUGH MARKET, JAN. 21.

Messrs. Pattenden and Smith, Hop Factors, report that the demand for both old and new Hops continues good, and late rates are fully realised. The continued wet weather will operate much against an average crop being grown next year, and has caused a considerable amount of speculation in old Hops.

### WOOL.

**BRADFORD, THURSDAY, JAN. 20.**—The transactions during the week are certainly not so buoyant as at the close of the last, and opening of the present year, nor is it desirable that they should, for the staplers who then cleared out their stocks have not been generally able to replace their supplies, and those who have done so cannot offer on terms so favourable to the buyers. It is quite evident that the country growers are clinging to their clips, and the dealers consequently hold for high prices, which causes the supply coming to market to be diminished. This will not be attended with any great inconveniences, as the consumers are in good supply from their recent purchases. Nolls and Brokes are in good request, and better prices are obtainable.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, JAN. 20.  
Prime Meadow Hay 78s to 84s  
Inferior do. ... 65 72  
Rowen ... 45 60  
New Hay ... — —  
Clover ... 85s to 100s  
Second cut ... 65 85  
Straw ... 26 30  
E. J. DAVIS.



CUMBERLAND MARKET, Jan. 20.

Prime Meadow Hay 80s to 88s	Interior Clover	70s to 84s
Interior do. ... 65	New do. ...	2
New Hay ... 76	Straw ...	28 34
Old Clover ... 92	98	

SMITHFIELD, Monday, Jan. 17.

We have a considerable increase in the supply of Beasts, principally in the Scotch and Foreign consignments; we have consequently some difficulty in maintaining late prices, but the weather being favourable, and the stock on hand not very heavy, a tolerably fair clearance is effected at very little reduction. The number of Sheep is again small, and although the trade is rather depressed, yet, in consequence of the scarcity, late quotations are realised in most instances. Choice Calves are by no means plentiful, and are quite as dear as on Friday, but inferior kinds are rather lower. Our Foreign supply consists of 621 Beasts; 1980 Sheep; and 258 Calves. From Scotland 900 Beasts; Norfolk and Suffolk, 1500; and 1000 from the Northern and Midland Counties.

Per st. of 8 lbs.—s d	Per st. of 8 lbs.—s d
Best Scots, Herefords, &c. ... 3 10 to 4 2	Best Long-wools... 4 6 to 4 8
Best Short-horns 3 8—4 0	Do. Shorn ... 0 0—0 0
2d quality Beasts 2 10—3 6	Ewes & 2d quality 3 8—4 2
Best Downs and Half-breds ... 4 8—5 0	Do. Shorn ... 0 0—0 0
Do. Shorn ... 0 0—0 0	Lambs ... 0 0—0 0
Beasts, 4502; Sheep and Lambs, 20,960; Calves, 307; Pigs, 285.	Calves ... 3 8—4 10

FRIDAY, Jan. 21.

We have a fair average supply of Beasts; the trade is very dull, owing to the mild weather, and a large supply at the dead markets. Prices are rather lower. The number of Sheep is unusually small; still the demand is so inconsiderable, that they are with difficulty disposed of at reduced rates. Trade is worse for Calves. Our Foreign supply consists of 123 Beasts; 290 Sheep; and 236 Calves. From Scotland, 40 Beasts; from Norfolk and Suffolk, 800; from the Northern and Midland Counties, 100; Milch Cows, 105.

Per st. of 8 lbs.—s d	Per st. of 8 lbs.—s d
Best Scots, Herefords, &c. ... 3 8 to 4 0	Best Long-wools... 4 4 to 4 6
Best Short-horns 3 6—3 8	Do. Shorn ... 0 0—0 0
2d quality Beasts 2 8—3 4	Ewes & 2d quality 3 8—4 0
Best Downs and Half-breds ... 4 8—4 10	Do. Shorn ... 0 0—0 0
Do. Shorn ... 0 0—0 0	Lambs ... 0 0—0 0
Beasts, 847; Sheep and Lambs, 2290; Calves, 311; Pigs, 300.	Calves ... 3 8—4 8

MARK LANE.

MONDAY, Jan. 17.—The supply of Wheat from Essex and Kent this morning was moderate; the best descriptions were taken off at the prices of this day se'night, secondary and out of condition samples were difficult of disposal. There was a fair demand for Foreign, but as it was generally held for an advance business was confined to a few retail sales.—The Barley trade is firm, and fine Malt commands an advance of 1s. per quarter.—In the value of Beans and Peas we observe no alteration.—Oats in rather better demand, and bring a trifling advance.—Flour remains as last week.

PER IMPERIAL QUARTER.	s. s.	s. s.
Wheat, Essex, Kent, & Suffolk ... White	44—56	Red ... 40—46
— fine selected runs ... ditto	45—60	Red ... 46—52
— Talavera ...	54—60	
— Norfolk ...	Red ...	
— Foreign ...	39—58	
Barley, grind. & distil., 25s to 28s.—Chev.	26—36	Malt ... 27—32
— Foreign—grinding and distilling	26—30	Malt ... 30—33
Oats, Essex, and Suffolk ...	18—21	
— Scotch and Lincolnshire—Potato	23—25	Feed ... 17—23
— Irish ...	19—23	Feed ... 19—20
— Foreign ... Poland and Brew	21—22	Feed ... 16—20
Rye ...	29—32	Foreign ...
Rye-meal, foreign ...	32—34	Harrow ... 32—34
Beans, Magazan... 30s to 32s ... Tick	39—41	Longpod ... 32—34
— Pigeon... 30s—36s ...	32—37	Egyptian ... 32—34
— Foreign ... Small	32—37	
Peas, white, Essex and Kent ... Boilers	38—41	Suffolk ... 40—42
— Maple... 32s to 35s ... Grey	30—33	Foreign ... 32—42
Maize ... White	38—46	Yellow ...
Flour, best marks delivered... per sack	38—46	
— Suffolk ... ditto	23—38	Norfolk ...
— Foreign ... per barrel	24—28	Per sack ...

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

Flour 11923 sks	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas.
English ... 5490 bbls	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
Irish ...	2182	1244	1673	193	220	183
Foreign ...	135	61	4960			
	5214		605	2750	25	

FRIDAY.—The arrivals of Grain this week have been moderate. To-day's market was but thinly attended, and only a limited business was transacted in Wheat on the terms of Monday last. —Flour is held for extreme prices, but business is inactive. —The value of Spring Corn remains as on Monday.—In the early part of the week several cargoes of Wheat from the south changed hands at full prices, since which there has been but little doing.

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Dec. 11	42 1	29 9	18 7	26 11	35 4	34 10
— 18	43 10	29 9	18 5	29 2	34 6	32 0
— 25	45 11	29 9	18 5	29 4	34 11	32 4
Jan. 1	46 7	29 8	18 9	29 7	35 0	32 9
— 8	46 0	29 8	18 6	29 1	34 8	32 5
— 15	45 10	29 10	18 7	30 8	34 8	30 7
Aggreg. Aver.	45 0	29 9	18 6	29 2	34 10	32 0

Duties on Foreign Grain 1s. per qr.

PRICES.	Dec. 11.	Dec. 18.	Dec. 25.	Jan. 1.	Jan. 8.	Jan. 15.
46s 7d	...	...	...	...	...	...
46 0	...	...	...	...	...	...
45 11	...	...	...	...	...	...
45 10	...	...	...	...	...	...
43 10	...	...	...	...	...	...
42 1	...	...	...	...	...	...

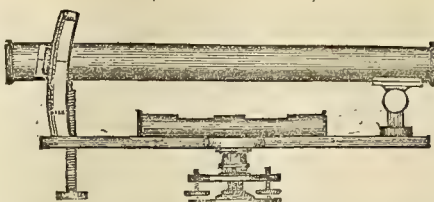
LIVERPOOL, Tuesday, Jan. 18.—A reference to the import note of the past week will show goodly quantities of Oatmeal and Oats from Ireland, but little of other articles of the grain trade thence and coastwise. Of Foreign produce the arrivals are small. The transactions of the week have been to a fair extent in Wheat and Flour, and prices have exhibited an inclined tendency. The Corn Exchange this morning was scarcely so well attended by millers and dealers, and the demand for Wheat and Flour was not so active as on Friday. Oats met a fair demand, and brought full quotations. Notwithstanding the large supply of Oatmeal, purchases could not generally be made on easier terms than last week. Barley, Beans and Peas, all dull sale. No change as regards Indian Corn.—FRIDAY, Jan. 14.—The arrivals from Ireland and coastwise, during the past two days, have been light. At this day's market there was a small attendance of the trade, but a fair consumptive demand was experienced for Wheat at rather better prices than were obtainable on Tuesday. Flour, however, could have been bought on quite as favourable terms. Oats and Oatmeal met with a very slow sale, and may be quoted 3d. per 45 lbs., and 3d. to 6d. per load cheaper. Barley, Beans, and Peas, were unaltered in value. Indian Corn was generally held at Tuesday's prices.

DRAINAGE OF LAND.

HENRY WEBBER begs to inform Landowners and the public that having had several years' practical experience, he is prepared to undertake the drainage of estates to any extent, together with the laying out and mapping of the drains, on the most approved plans; and will contract for the execution of the work. Reference given.—Address, Halberton Court, near Tiverton, Devon.

DRAINAGE.

NEW LEVELLING INSTRUMENT.  
(REGISTERED No. 2502.)



The print represents the Instrument one-fifth of the real size.

This is a simple and effective self-recording instrument, suitable for Levelling Drains, Sewers, or Roads, or for Measuring the Elevations and Depressions of the Ground. It consists of a Telescope, Level, Graduated Arch, and Tripod Stand. The Arch is so divided as to show the rise and fall in feet and inches.

From the Practical Mechanic's Journal, Feb. 1, 1851.

"In the hands of even the most unlettered farm-servant this little instrument will afford the most correct measurements, as the operator has only to level the plate and bring his sight to bear upon the object, when the elevation or depression is given at once. It will be a most useful contrivance for draining or road-making."

Price 4l. 4s. Made only by GARDENER & CO, 21, Buchanan Street, Glasgow.

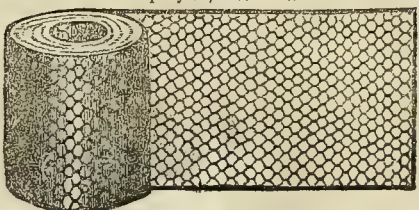
WINTON'S PARKES'S CELEBRATED STEEL DIGGING FORKS AND TOOLS are universally approved of. They facilitate labour 20 per cent. They have received the Silver Medal at Lewes, Dublin, Galway, Sheffield, and other places. Anthony's Patent American Churn has received the prize at every one of the numerous agricultural meetings where it has been shown. The Royal Agricultural Journal, p. 41, says, "This form of churn is the best for churning sweet cream, and will undoubtedly produce butter from milk or cream, in any form, in much less time than any churn that has yet been introduced." Pumps for manure and watering gardens. Mr. Mechi has one working admirably. These pumps are cheap, durable, and effective. Gutta percha tubing, bands for machinery, hose for pumps, and an assortment of price and the best farm implements. Price catalogues sent on application.—Burgess & Key, 103, Newgate Street, London, agents for McCormick's American Reaper.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

GALVANISED WIRE GAME NETTING.—

7d. per yard, 2 feet wide.



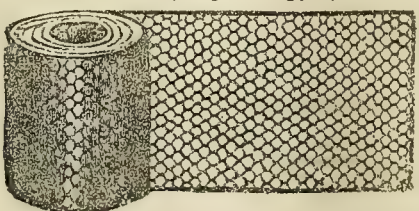
	Galvan-ised.	Japanned iron.
2-inch mesh, light, 24 inches wide ...	7d. per yd.	5d. per yd.
2-inch " strong " ...	12 " 6 "	9 " 6 "
2-inch " extra strong " ...	12 " 9 "	9 " 9 "
1 1/2-inch " light " ...	8 " 6 "	6 " 6 "
1 1/2-inch " strong " ...	10 " 8 "	8 " 8 "
1 1/2-inch " extra strong " ...	14 " 11 "	11 " 11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasants, 3d. per square foot. Patterns forwarded post free. Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CHEAP WIRE GAME & POULTRY NETTING,

5d. per running yard.

GALVANISED DITTO, 7d. per running yard, 2 feet wide.



	Galvanised.	Not Galvanised.
24 in. wide, 2 in. mesh, 7d. per yard. ...	...	5d. per yard.
30 in. " 2 in. " 9d. " ...	...	6d. " "
36 in. " 2 in. " 10d. " ...	...	7d. " "
48 in. " 2 in. " 1s. 2d. " ...	...	10d. " "

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bording, Flower Stands, Tying Wire, Trellis Wire, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

REAL FRENCH COLZA OIL, 3s. 9d. per gallon, and the largest as well as the choicest assortment in existence of the best manufactured FRENCH MODERATE LAMPS, PALMER'S MAGNUM, CAMPHINE, ARGAND, and SOLAR LAMPS, with all the latest improvements, and of the newest and most recherche patterns in Ormolu, Porcelain, Bohemian and Plain Glass, or Papier Mâché, is at WILLIAM S. BURTON'S. They are arranged in one large room, so that the patterns, sizes, and sorts can be instantly selected.

PALMER'S CANDLES, 7d. per pound. PALMER'S

Patent Candles, all marked "Palmer."

Single or double wicks ...	7d. per pound.
Mid. size, 3 wicks ...	8d. "
Magnums, 3 or 4 wicks ...	9d. "
English's Patent Camphine, in sealed cans, 4s. 9d. per gallon.	

CUTLERY WARRANTED.—The most varied assortment of Table Cutlery in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales.

Three and a half inch Ivory-handled Table Knives, with high shoulders, 10s. per dozen; Desserts, to match, 9s.; if to balance, 1s. per dozen extra; Carvers, 3s. 6d. per pair; larger sizes, in exact proportion, to 25s. per dozen; if extra fine, with silver ferrules, from 36s.; White bone Table Knives, 6s. per dozen; Desserts, 4s.; Carvers, 2s. per pair; Black horn Table Knives, 7s. 4d. per dozen; Desserts, 6s.; Carvers, 2s. 6d.; Black wood-handled Table Knives and Forks, 6s. per dozen; Table Steels, from 1s. each.

The largest stock of Plated Dessert Knives and Forks, in cases and otherwise, and of the new Plated Fish Carvers, in existence. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY, including Cutlery, Nickel Silver, Plated and Japanned Wares, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with Engravings, sent free by post. The money returned for every article not approved of.

No. 39, Oxford Street, corner of Newman Street; Nos. 1 and 2, Newman Street; and Nos. 4 and 5, Perry's Place.

MANUFACTURERS BY SPECIAL APPOINTMENT TO THE QUEEN.

Obtained the Prize Medal Great Exhibition, 1851.

J. S. FRY AND SONS have all the advantages which experience and a Manufactory on a large scale can command. FRY'S FRENCH CHOCOLATES, which are used at the royal table and by the first nobility, are delicious, both taken as a beverage and for eating. Those who wish a cup of really fine delicious well-frothed Chocolate, to pass softly off the palate, should obtain these articles. Important directions are contained in each package. Most persons have never tasted this beverage in perfection.

FRY'S CHOCOLATE BONBONS are delicious and nutritious condiments for the railway carriage, for invalids, the nursery, and the luncheon table, and especially adapted for presents. Their celebrated SOLUBLE COCOA is so moderate in price, that no person need resort to other makers. It will go farther than inferior qualities, thus purchasers obtain most for their money by using FRY & SONS' SOLUBLE COCOA, in green and gold, or in hexagon packets, will be found of excellent quality.

FRY'S HOMEOPATHIC, DIETETIC, and GRANULATED COCOAS possess perfect solubility—light, nutritious, and delicate articles—to invalids invaluable.

J. S. FRY and Son's name on the label of their COCOA NIBS will warrant them perfectly genuine.

FRY'S PATENT COCOA possesses a full flavour.

J. S. FRY & SONS, Bristol, manufacture all kinds of Chocolates and Cocos.

Fry's Chocolate, or Cocoa Paste, Chocolate Powder, Broma, and Soluble Chocolate, require no boiling. Sold by Tea Dealers, Grocers, and Druggists in Great Britain and Ireland. Be careful to observe that the name of "Fry & Sons" is on the packet of each article. Enquire at all Grocers for FRY and SONS' Book on COCOA—GRATIS.

METCALFE AND CO.'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, & Co.'s Sole Establishment, 130 E, Oxford Street, one door from Holles Street, London.

METCALFE'S ALKALINE TOOTH POWDER, 2s. per box. CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

TESTIMONIALS IN FAVOUR OF PARR'S LIFE PILLS.

"To the Proprietors of PARR'S LIFE PILLS.

"GENTLEMEN,—I have great pleasure in testifying to the decided approbation with which many hundreds, perhaps thousands of my customers continue to speak of PARR'S LIFE PILLS; and although I have sold tens of thousands of them, I have never heard of a single instance in which they have been otherwise than highly beneficial to the health of man, woman, or child, although I have sold them to persons of all classes and of all ages.—I am, gentlemen, yours truly, JOHN NOBLE.

"Medicine Warehouse, Boston, Lincolnshire."

Communicated by Mr. J. GAMIS, Yeovil.

"Yeovil, Feb. 25, 1852.  
"GENTLEMEN,—The following testimonials to the efficacy of PARR'S LIFE PILLS were communicated to me by the persons who had received the benefit:—A highly respectable female, who has been for many years a customer at my shop, told me that one box of PARR'S LIFE PILLS had done her health and constitution more good than all the medicine she had previously taken. Her health had been much shattered from worms, but the immortal PARR'S Medicine has completely destroyed them, and she is now enjoying excellent health.—Another instance of their good effect was in the case of a young man who had been unable to work for seven months, and by taking two boxes was enabled to go to his usual employment.—I continue to receive the most gratifying testimonials of the efficacy of PARR'S LIFE PILLS. A short time since a gentleman of London who had been staying in a neighbouring village, and who was about returning home, called for a 2s. 9d. box of Pills, and told me it was the only medicine that did him any good after all the medical advice he could get, and he had the best; he further said, that a person who had experienced the value of them had recommended them to him, and that it would in future be his family medicine. In fact, some villages in this neighbourhood repudiate all other medicine.

"I am, yours truly, J. GAMIS."  
T. ROBERTS & Co., Sole Proprietors, Crane Court, Fleet Street, London. Sold by E. Edwards, 67, St. Paul's Churchyard; Barclay & Sons, Farringdon Street; Sutton & Co., Bow Churchyard, London; and by most respectable dealers in medicine.  
Price 1s. 1d., 2s. 9d., and family packets 11s. each.



**JAMES PHILLIPS & Co.,**  
116, BISHOPSGATE STREET WITHOUT.

**HARTLEY'S PATENT ROUGH PLATE GLASS**  
FOR CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTURES  
SKYLIGHTS, &c.

PRICES OF		3th inch thick.	2th inch thick.	1 inch thick.
Packed in Crates, for Cutting-up of the sizes manufactured.		s. d.	s. d.	s. d.
30 inches wide and from 40 to 50 long	Or 20	0 5½	0 7	0 9
50 " 70 "		0 6	0 7½	0 9½
above 70 "				
In Squares cut to the sizes ordered.				
Under 8 by 6		0 4	0 5	0 6
8 by 6 and under 10 by 8		0 4½	0 6	0 7
10 by 8		0 5	0 6½	0 8
14 by 10	1½ ft. sup., if the length does not exceed 20 inches.	0 5½	0 7	0 8½
1½ ft. sup. " 3 ft. sup., or if above 20 and not above 30 inches long		0 6	0 7½	0 9
3 " 4 " 5 " 6 " 8 " 10 " 12 " 15 " 20 " 25 " 30 "	20 " 30 " 40 " 50 " 60 " 70 " 80 " 90 " 100 " 120 "	0 6 0 6 0 6 0 6 0 6 0 6 0 6 0 6	0 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8	0 9 0 9 0 9 0 9 0 9 0 9 0 9 0 9
Quarries		0 6		1 3

PACKED IN BOXES OF 50 FEET EACH.  
8 by 4 and 6½ by 4½ 10s. 6d. 7 by 5 and 7½ by 5½ 12s. 0d.  
8 by 6 and 8½ by 6½ 13s. 6d. 9 by 7 and 10 by 8 15s. 0d.  
**JAMES PHILLIPS & Co., Horticultural Glass Merchants, 116  
Bishopsgate Street Without, London.**

## HORTICULTURAL GLASS


OF EVERY DESCRIPTION.

**THOMAS MILLINGTON'S WAREHOUSE,**  
87, BISHOPSGATE STREET WITHOUT,  
LONDON.

**GLASS FOR CONSERVATORIES, ETC.**  
**HETLEY AND CO.** supply 16-oz. SHEET GLASS  
of British Manufacture, at prices varying from 2d. to 3d.,  
per square foot, for the usual sizes required, many thousand feet  
of which are kept ready packed for immediate delivery.  
Lists of Prices and Estimates forwarded on application, for  
PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS  
TILES and SLATES, WATER-PIPES, PROPAGATING  
GLASSES, GLASS MILK PANS, PATENT PLATE GLASS,  
ORNAMENTAL WINDOW GLASS, and GLASS SHADES,  
to **JAMES HETLEY & Co., 35, Soho Square, London.**  
See *Gardeners' Chronicle* first Saturday in each month.

**TO AMATEUR GARDENERS,  
LOCAL BOARDS OF HEALTH, & SANITARY WORKS.**  
**PATENT GLASS TUBES,** Iron-Coated with Glass,  
Gutta Percha, Combined ditto, Patent Flexible India  
Rubber Tubing, and every other Hose for Watering Gardens.  
The Hydraulic Ram, Fire, Garden, and every other kind of  
Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all  
other articles to be had, Wholesale and Retail, of **FREEMAN ROSE,**  
Hydraulic Engineer, 70, Strand, and Bridgefield, Wandsworth.  
P.S. Important to Farmers, &c.—**F.R.** begs leave to call attention  
to his New Water Power, which in many cases will supersede  
the use of the Steam Engine.

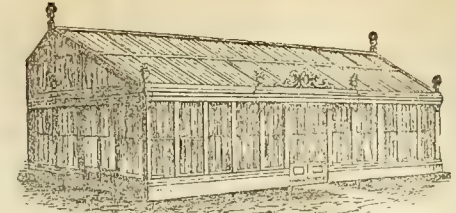
**WARNER'S PATENT FARM AND COTTAGE  
PUMPS.**  
Cast-iron Pumps for the use of Farms,  
Cottages, Manure Tanks, and Shallow  
Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead  
pipe attached, and bolts and nuts  
ready for fixing ... .. 2 10 0  
Larger sizes if required.  
To Emigrants proceeding to the Gold  
Regions they will prove to be the most  
simple, durable, and the cheapest Pumps  
hitherto introduced.  
May be obtained of any Ironmonger or  
Plumber in Town or Country, or of the  
Patentees and Manufacturers,  
**JOHN WARNER & SONS,**  
8, CRESCENT, JEWIN STREET, LONDON.  
Every description of Machinery for Raising Water, Fire  
Engines, &c.



**FRUIT TREES, POULTRY, RABBIT, SHEEP,  
AND CAT FENCING.**—Worsted Netting to protect the  
bloom of Peach, Nectarine, and other trees, flowers, or seed-beds  
from frost, blight, and birds, two yards wide, 5d. per yard. New  
Twine Netting (tanned if required), one yard wide, 14d. per yard;  
two yards wide, 3d. per yard; four yards wide, 6d.; half-inch  
mesh ditto, two yards wide, 6d. per yard. Tanned Netting, two  
or three yards wide, 14d. per yard; four or six yards wide, 3d. per yard,  
or 5d. per 100 yards, one yard; 10s. per 100 yards, two yards; and 20s.  
per 100 yards, four yards wide. Elastic Hexagon Garden Net, or  
Serim Canvas, 44d. per square yard. Cocoa Nut Fibre, or Hemp  
Sheepfolding Net, of superior quality, four feet high, 4d. to 6d. per  
yard. Rabbit Net, four feet wide, 14d.; six feet wide, 24d.; eight  
feet, 3d. per yard. Each edge corded 4d. per yard extra, suitable  
for poultry fencing. Square Mesh Cracking Net, fix its full  
width and length, made of stout cord, 3d. to 4d. per square yard;  
this is the best article made for fencing, against fowls, cats, &c.,  
and, in **W. CLARKE'S**, No. 1, Strand, Terrace, Shadwell,  
London. Orders by post, with Post Office order or town reference,  
punctually attended to. The Trade supplied. Fishing Nets of  
all kinds in stock. Nets made to order. Rick Cloths, Tarpaulin,  
Lines, Ropes, Twine, &c., made to order.

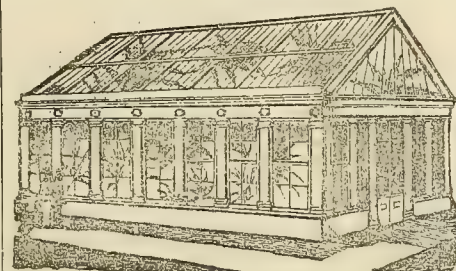
**BAKIER'S PHEASANTRY,** Beaufort Street, King's  
Road, Chelsea, by special appointment to her MAJESTY  
and H.R.H. PRINCE ALBERT. **ORNAMENTAL WATER FOWLS,**  
consisting of Black and White Swans, Egyptian, Canada, China,  
Barnard, Brent, and Landling Geese, Sheldrakes, Pintails,  
Widgeons, Summer and Winter Teal, Gadwall, Labrador,  
Shovellers, Goldeneyes and Dum Divers, Carolina Ducks, &c.,  
domesticated and imported; also Spanish, Cochon China, Malay,  
Poland, Surcouf, and Dorking Fowls; White, Japan, Pied, and  
Common Parrots, and Pure China Pigeons; and at 3, Half-moon  
Passage, Greenwich Street, London.

**HORTICULTURAL BUILDING AND HEATING BY  
HOT WATER.**  
WARRANTED BEST MATERIALS AND WORKMANSHIP,  
AT THE LOWEST POSSIBLE PRICES.



**J. WEEKS AND CO., King's Road, Chelsea,**  
**HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and  
HOT-WATER APPARATUS MANUFACTURERS.**  
The Nobility and Gentry about to erect Horticultural Buildings,  
or fix Hot-water Apparatus, will find at our Hothouse Works,  
King's Road, Chelsea, an extensive variety of Hothouses, Green-  
houses, Conservatories, Pits, &c., erected, and in full operation,  
combining all modern improvements, so that lady or gentleman  
can select the description of House best adapted for every re-  
quired purpose.  
The **HOT-WATER APPARATUS** (which are efficient and  
economical) are particularly worthy of attention, and are erected  
in all the Houses, Pits, &c., for both Top and Bottom Heat, and  
in constant operation in the Stoves.  
The splendid collections of Stoves and Greenhouse Plants are  
also in the highest state of cultivation, and for sale at very low  
prices. Also a fine collection of strong Grape Vines in pots, from  
eyes, all the best sorts.  
Plans, Models, and Estimates of Horticultural Buildings; also  
Catalogues of Plants, Vines, Seeds, &c., forwarded on application.  
**J. WEEKS & Co., King's Road, Chelsea, London.**

**HORTICULTURAL BUILDING AND HEATING  
BY HOT WATER,**  
AT THE LOWEST PRICES CONSISTENT WITH GOOD  
MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON, Danvers Street, Chelsea,**  
London, having had considerable experience in the  
construction of Horticultural Erections, which, for elegance of  
design, good materials, and workmanship, combined with  
economy and practical adaptation, cannot be surpassed by any-  
thing of the kind in the country, are now in a position to execute  
orders on the lowest possible terms.  
G. & O. have been extensively employed by the Nobility,  
Gentry, and London Nurserymen; and to all by whom they have  
been favoured with orders, they can with the greatest confidence  
give the most satisfactory references.  
Their Hot-Water Apparatus is also constructed on the most  
approved and scientific principles, for all purposes to which the  
application of Heating by Hot Water can be made available.

**WATERPROOF PATHS.**—Those who would enjoy  
their Gardens during the winter months should construct  
their walks of **PORTLAND CEMENT CONCRETE**, which  
are formed thus:—Screen the gravel of which the path is at  
present made from the loam which is mixed with it, and to every  
part of clean gravel add one of sharp river sand. To five parts  
of such equal mixture add one of Portland Cement, and incorpo-  
rate the whole well in the dry state before applying the water.  
It may then be laid on 2 inches thick. Any labourer can mix  
and spread it. No tool is required beyond the spade, and in 48  
hours it becomes as hard as a rock. Vegetation cannot grow  
through or upon it, and it resists the action of the severest frost.  
It is necessary, as water does not soak through it, to give a fall  
from the middle of the path towards the sides.  
Manufacturers of the Cement, **J. B. WHITE & BROTHERS,**  
Millbank Street, Westminster.

**THE COMFORT OF A FIXED WATER-CLOSET**  
for 21.—Places in gardens converted into comfortable water-  
closets by the **PATENT HERMETICALLY-SEALED PAN**,  
with its self-acting water-trap valve, entirely preventing the re-  
turn of effluvia. Price 11. Any carpenter can fix it in two hours.  
Indispensable for health in case of cholera. Also Patent Her-  
metically-sealed Inodorous Commodes for the sick room, price  
11. 4s., 21. 6s., and 31. A prospectus with engravings forwarded  
by enclosing a postage stamp, at **FYFE & CO.'S, 26, Tavistock  
Street, Covent Garden, London.**

**MECHI'S AUSTRALIAN DRESSING CASES,**  
4, Leadenhall-street, London.—These contain a pair of  
Mechi's razors and strop, with other necessary articles of toilet  
of the most approved quality. They vary from 25s. upwards,  
according to their ornamentation. Those who inspected Mr.  
Mechi's manufactures at the Great Exhibition will appreciate the  
portability and finish of his various productions.

**THE RHEOCLINE, OR SPRING COUCH,**  
portable without detaching any of its parts, softer than  
a Feather Bed, and which can be changed in One Moment from  
a Couch to either a Bed or Sofa, may be seen at  
**COTTAM & HALLÉN'S, 76, OXFORD STREET,**  
where also is on view a great variety of **METALLIC BED-  
STEADS**, fitted with and without the patent **RHEOCLINE**,  
&c. &c., together with a large assortment of the patent  
Radiating and other **STOVES**, and every other description of  
**IRONMONGERY.**

**SHIRTS.—FORD'S EUREKA SHIRTS** are not  
sold by any hosiers or drapers, and can therefore be obtained  
only at 34, Poultry. Gentlemen in the country or abroad,  
ordering through their agents, are requested to observe on the  
interior of the collar-band the stamp—"Ford's Eureka Shirts, 34,  
Poultry"—without which none are genuine. They are made in  
two qualities, the first of which is 30s. the half-dozen, and the  
second quality 30s. the half-dozen. Gentlemen who are desirous  
of purchasing shirts in the very best manner in which they can  
be made, are solicited to inspect these, the most unique and only  
perfect fitting shirts. List of prices, and instructions for measure-  
ment, post free.—**RICHARD FORD, 34, Poultry, London.**

**TO NOBLEMEN, GENTLEMEN, GARDENERS, FLORISTS,  
SALESMEN, NURSERYMEN, AND OTHERS.**

**HORTICULTURAL GLASS HOUSES, VINERY, VALU-  
ABLE STOCK OF VINES, PEACH TREES, CUCUMBER,  
PINE, STRAWBERRY, and a LARGE ASSORTMENT  
OF OTHER PLANTS, FOR SALE AT ATHERSTONE,  
WARWICKSHIRE.**

**MR. WILLIAM LLOYD** has received instructions  
from the Assignees of the Estate of Mr. John Patterson, a  
Bankrupt, to offer for Sale by Auction, upon the premises, at the  
Horticultural Grounds in Atherstone (close to the Atherstone  
Railway Station), on **WEDNESDAY, the 26th day of January,**  
1853, at 11 o'clock in the forenoon, in one or more Lots,  
and subject to such conditions as shall be then produced,  
a large Propagating or Cucumber House, well heated by  
Hot Water or Air Flues, glazed, and in good working  
order, and measuring 107 feet in length, by 34 feet in width;  
An glazed Peach-house, measuring 119 feet in length, by 34  
feet in width. A glazed Vinery, with five Workmen's Cottages  
and Packing Shed, and Store-room underneath, measuring 121  
feet in length, by 21 feet in width, well stocked with Vines; all  
of which have been lately erected. And also the entire stock of  
Vines, Cucumbers, Fuchsias, Strawberries, Pine, Cucumbers,  
and Kidney Bean Plants; Peach Trees; Seed Potatoes; a large  
quantity of Hothouse Glass, Flower Pots, Garden Tools, &c., &c.  
The premises on which the horticultural erections are situate  
have been leased from the Atherstone School Governors for  
the term of 21 years, which lease they are willing to re-grant to  
any person purchasing the entirety of the buildings thereon. As  
to which, and for further particulars, apply to Messrs. **BAXTER  
& SON, Solicitors, Atherstone; Mr. C. CHRISTIE, Official Assignee,**  
Birmingham; or the Auctioneer, Atherstone, Warwickshire.

**COCHIN CHINA FOWLS.**

**MR. J. C. STEVENS** begs to announce that the  
next periodical sale of **FANCY POULTRY** will take  
place at his Great Room, 38, King Street, Covent Garden, on  
**TUESDAY, February 1st, commencing precisely at 12 o'clock.**  
The **COCHIN CHINA** are many of them very choice, light  
coloured, and well feathered. Catalogues will be forwarded on  
receipt of a stamped directed envelope, enclosed to Mr. J. C.  
Stevens, 38, King Street, Covent Garden.—N.B. These Sales  
will be continued throughout the season on the First and Third  
**TUESDAY** in every month. Amateurs wishing to include any  
Birds in the Catalogue, may have a Form of Entry, on applying  
to Mr. J. C. STEVENS as above.

**TO GENTLEMEN, CONTRACTORS, PLANTERS, AND  
OTHERS.**

**MR. JOHN WILLMER** will offer for Sale by  
Auction, without reserve, on the Premises, Sunbury  
Nursery, on **TUESDAY, Feb. 1,** and two following days, at 12  
o'clock each day, the whole of the remaining Stock, comprising  
fine Green Hollies; Striped Ditto, from 3 to 8 feet; Yews, 3 to  
8 feet; Spruce Firs, 3 to 12 feet; Striped Box, 3 to 5 feet; Por-  
tugal Laurel, 3 to 5 feet; Common Laurel, 2 to 8 feet; extra fine  
large bushy Laurustinus, 5 feet; Arbutus, 4 to 6 feet; fine large  
plants Yucca gloriosa; Bays, 5 feet; fine Lancashire Goose-  
berries; Standard, Dwarf, and trained Fruit Trees. Also Elm,  
Oak, Horse Chestnut, Limes, and other Forest Trees from 8 to  
14 feet. May be viewed one week prior to the Sale.—Catalogues  
may now be had by enclosing two postage stamps to the Auc-  
tioneer, Sunbury, Middlesex.

**PURE BRED JERSEY IN-CALF HEIFERS.**

**TO BE SOLD, two beautiful and pure bred  
JERSEY HEIFERS,** coming two years old. They are in  
Calf, by a good short-horned Bull; one will calve at the middle of  
February, and the other at the middle of May. Price 221, deliv-  
ered to a Railway Station.—Apply, post paid, to the Rev. A. Z.,  
at the Office of this Paper.

**TO BE DISPOSED OF, a most respectable SEED  
AND NURSERY BUSINESS,** which for many years has  
been carried on successfully in one of the most favourable  
localities in **SCOTLAND**, and is at present in active operation.  
A better opportunity of entering into a really good and profitable  
business of this description does seldom occur. A transfer can  
be had now or afterwards, and the retiring proprietor, if required,  
will be willing to give every facility, and, by his personal advice  
and assistance for a few weeks, do all in his power to forward the  
interests of his successor. The value of the business and stock,  
&c., can be fixed by the parties, or, if preferred, all or part may  
be referred to competent neutral parties. No person need apply  
who is not prepared to pay at least 1000*l.*, and according to the  
energy and amount of capital employed, so in like manner can  
the business be extended, and the corresponding profits be  
increased. Principals only will be attended to.—Address  
"Seedsman," North British Agricultural Office, Edinburgh.

**TO BE SOLD cheap, to close an account, either in one  
or more Lots, 150,000 strong Transplanted White Thorns;  
60,000 Seedlings, 2 years old; 5000 Common Laurels, 1 to 2 feet  
high. Delivered free of carriage at the Carnarvon Railway  
Station.—For further particulars apply to **ROBERT EVANS**  
Pwllheli, North Wales.**

**TO LET, on Lease for Seven Years, from Lady Day,  
1853, the Raizes Farm, 273 acres, in the parish of Marsh-  
field, Gloucestershire, 6 miles from Bath, and comprising about  
150 acres of very useful Meadow and Pasture Land, and 123 acres  
of Arable Turnip Land.—Apply to Messrs. **PICKERING & SMITH,**  
14 Whitehall Place, London.**

**COKE BRICKS.**—Any person having for disposal a  
quantity of them, described some time since in the *Weekly  
Times*, which account was copied into the *Gardeners' Chronicle* of  
1852, p. 631, may hear of a purchaser by addressing a letter to  
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No. 5.—1853.]

SATURDAY, JANUARY 29.

[PRICE 6d.

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Address **JOHN SUTTON & SONS**, Seed Growers, Reading, Berks. N.B. We have a very fine Stock of Mangold Wurzel and Carrot Seed.

## CHOICE FLOWER ROOTS FOR PRESENT PLANTING.

**SUPERB RANUNCULI**, with principal directions for planting and culture, sent in cases, prepaid, at the undermentioned prices:—  
100 strong roots—100 superb varieties, including several 2 s. d.  
50 ditto for 12 17s. 6d.; 25 ditto ... 3 10 0  
100 strong roots in 100 very fine varieties ... 1 15 0  
50 ditto for 18s.; 25 ditto ... 0 10 0  
Gill Noir, best black, 2s. each; per dozen ... 0 18 0  
Mixed fine, 5s. per 100 (prepaid, 6s.); very fine varieties, 10s. per 100; extra choice, per 100 ... 0 18 0

### ANEMONES.

50 beautiful and distinct named double ... 0 12 6  
12 roots each of 12 beautiful double vars., for clumping 1 12 0  
6 roots each of ditto, 17s. 6d.; 3 each of ditto ... 0 9 0  
Mixed, very fine, 6s. per 100; finest, per 100 ... 0 10 6  
Hortense superb Seedlings, 2s. 6d. p. doz.; fine red, p. doz. 0 2 6  
La Brillante Eclatante, extra bright, single scarlet, 1s. 6d. per dozen; per 100 ... 0 10 6

### GLADIOLUS.

Brencheleyensis, fine, 3s. each; Gandavensis, 3s. 6d. per dozen; Gan. splendens, very superb, 2s. 6d. each; Autumnalis, fine orange, 9d. each; Floribundus, 2s. 6d. per dozen; Psittacipus, 1s. 6d. per dozen; Psit. sanguineus, 5s. per dozen.  
12 superb late varieties, Ramosus habit, 20s. (should be planted early).

Ramosus, 9d. each; Ramosus Imperialis, 2s. 6d. each; Formosissima, 1s. each; Prince of Wales, 1s. 6d. each; Queen Victoria, 1s. 6d. each; Insignis, 9d. each, or 7s. 6d. per dozen.

Lilium lancifolium album, 1s. to 2s. 6d. each; rubrum or speciosum, 2s. 6d. to 10s. each.

Tigridia (Tiger Iris) pavonia, 2s. 6d. per dozen; conchiflora, new golden, 7s. 6d. per dozen; Wheelerii, new crimson, 7s. 6d. per dozen; canariense, new yellow, red species, 1s. 6d. each, or 15s. per dozen.

For a great variety of Bulbs for present planting, see our Seed and Plant List of 1853, page 16, sent, prepaid, for three penny stamps; also Autumn Catalogues for three penny stamps.

In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods of 20s. and upwards Free to all Stations in London; also sent Free, as before, to the Chelmsford, Colchester, Ipswich, and all Stations on the same Line from London to Norwich.

### BASS AND BROWN.

SEED and HORTICULTURAL ESTABLISHMENT, Sudbury, Suffolk.

## NEW WHITE BROCCOLI—"DILCOCK'S BRIDE."

**BAINBRIDGE and HEWISON** beg to announce that they have purchased of Mr. Dilcock the entire stock of the above, which is a Broccoli of the highest merit, surpassing every other (even the far-famed "Mammoth") as the following will testify. It has been sold in the York market at 1s. per head.

"York Horticultural Society, June 18, 1852.

"In reply to your enquiries I find 'Dilcock's Bride Broccoli' was awarded first and third prizes 1850; first, second, and third, 1851; and first, second, and third in the present year. It ought to be grown by every gentleman's gardener, especially where any are grown for competition. Market gardeners also will find it to their profit to possess it.—Yours truly,

"R. DREWERY, Hon. Secretary."

The seed can be procured wholesale of themselves at York; or of Messrs. Noble, Cooper, and Bolton, 152, Fleet Street, London; or Messrs. Charlwood and Cummins, Covent Garden, London; and retail of all the principal seedsmen throughout the country, in sealed packets containing 1300 seeds at 2s. 6d. each.—Hope Nursery, York.

## FLOWER, VEGETABLE, AND AGRICULTURAL SEEDS.

**DAWE, COTTRELL, & BENHAM** (Successors to FREDERICK WARNE), have their Descriptive List ready, containing all the newest and choicest varieties, which will be forwarded, post free, on application.

D., C., & B. beg to call attention to **MILLS' CHAMPION OF ENGLAND CUCUMBER**, of which they have secured the entire stock. It is unequalled in length, symmetry, flavour, and colour. Specimens were exhibited both this and last season, measuring 35 and 37 inches, and obtained the first prize at several of the provincial Shows. Price 1s. per seed, or three seeds, 2s. 6d.

36, Moorgate Street, and 3, Lawrence Pountney Lane, London. (Established, Cornhill, A.D. 1720.)

## LILIUM LANCIFOLIUM, RANUNCULUSES, AND ANEMONES.

**HENRY GROOM, CLAPHAM RISE**, near LONDON, by Appointment Florist to her Majesty the Queen and to his Majesty the King of Saxony, begs to recommend to the attention of the Nobility, Gentry, and Amateurs, his extensive assortment of the above FLOWERS, which, from the large stock he possesses, he can supply at the following moderate prices:—

**LILIUM LANCIFOLIUM ALBUM**, from 9d. to 1s. 6d. each.  
" " **PUNCTATUM**, from 3s. to 7 6 "  
" " **RUSEUM** from ... 3s. to 10 6 "  
" " **SPECIOSUM**, from 3s. 6d. to 15 0 "  
" " **CRUENTUM**, from ... 5s. to 10 6 "  
" " **JAPONICUM**, or Brownii, from ... 5s. to 10 6 "

100 **RANUNCULUSES** in 100 very fine sorts, named, 2l. 10s.  
Superfine Mixtures, from 5s. to 15s. per 100.  
100 **ANEMONES** in 50 superfine sorts, named, 1l. 10s.  
Superfine Mixtures, from 6s. to 10s. 6d. per 100.

His Catalogue will be forwarded by post on application.

## MAHONIA AQUIFOLIA.

**THOMAS BARNES** has a fine healthy stock of the above-named hardy undershrub to offer at the following low prices, viz.:—1 year transplanted, 40s. per 1000; 2 years transplanted, 50s. per 1000; 3 years transplanted, 60s. per 1000.

Dane Croft Nurseries, Stowmarket, Suffolk.

## HORTICULTURAL AND FLORICULTURAL SEED ESTABLISHMENT.

1, KING STREET, CASTLEGATE, YORK.

**GEORGE EDWARD** begs to return his sincere thanks to his friends and the public generally for the liberal support he has already secured at their hands, and to inform them that he has opened the above premises with an entire stock of NEW SEEDS, which have been selected with great care from the best growers, and which he is enabled to offer on the most reasonable terms.

G. E. hopes, by unremitting care and strict attention to all orders, to merit a continuance of their favours. Vegetable and Flower Seed Catalogues will be forwarded on application.

**LISIANTHUS RUSSELLIANUS**—Strong bushy and healthy Plants, at 3s. 6d. to 5s. each; seed of ditto, 1s. per packet. Also, CUTHILL'S Black Spine CUCUMBER, 1s. per packet. The BLACK PRINCE and PRINCE OF WALES STRAWBERRIES still sending out.

CUTHILL'S "Pamphlet on the Potato," including several of the best fruits and vegetables, 2s., or by post, 2s. 4d.; his "Market Gardening round London," 1s. 6d., or by post 1s. 1d.

JAMES CUTHILL, Denmark Hill, Camberwell, London.

## TAYLOR'S EARLY PROLIFIC PEA.

**THOMAS BARNES** has a few sacks of the above to dispose of. Price on application.

Dane Croft Nurseries, Stowmarket, Suffolk.

## TO PURCHASERS OF SEEDS.

**SUTTON'S PRICED CATALOGUE OF ALL THE BEST SORTS OF SEEDS IN CULTIVATION**, will be found the most useful of any yet offered. In addition to the usual information, it contains the particulars of the sorts and quantities contained in "Sutton's Complete Collections for One Year's Supply," and should be seen by all who intend purchasing Seeds. The prices of the Collections are the same as last year viz., 2l. 10s., 1l. 10s., 1l. 1s., and 12s. 6d.

Address, **JOHN SUTTON & SONS**, Seed Growers, Reading, Berks.

**PETER LAWSON and SON'S PRICE LISTS OF SEEDS, FOREST, FRUIT, and ROSE TREES**, are now ready, and may be had on application, or free by post from their Agent, J. C. SOMMER, 159, Fenchurch Street, London.

## SEED TRADE.

**J. G. WAITE'S CATALOGUE OF VEGETABLE AND FLOWER SEEDS** is now ready, and can be had on application.

Seed Establishment, 181, High Holborn, London.

## THE SCARLET SALPIGLOT, SALPIGLOSSIS COCCINEA.

**ARTHUR HENDERSON and Co.** have the honour of offering to their friends and customers the seed of this new and beautiful annual. It differs from other Salpiglots most materially in colour, which is here of a clear vivid tender scarlet, charmingly relieved by short veins of a deeper colour. As a garden plant it possesses high claims to distinction, for there are few annuals that equal it. The whole of the seed of this valuable annual has been purchased by A. Henderson & Co., of the celebrated Mr. Burridge, of Colchester, to whom the horticultural world are already indebted for many new and choice seeds; and A. Henderson & Co. will be prepared immediately to send out packets of the seed at 2s. 6d. each.

\*"Since we brought this plant under the notice of the public, in Saturday week's Chronicle, other parties have offered for sale the seed of what they term 'Salpiglossis coccinea,' but we beg, most distinctly, to state to our customers that the seed we offer is the genuine seed of the plant that bloomed in Mr. Burridge's garden at Colchester, and no other, we are sure, has been bloomed in this country by any one. The seed that is now being offered by other parties is a foreign variety, whose merits to the title of 'Coccinea' have yet to be proved, and are, we consider, of a very dubious character.

N.B. This beautiful annual will be found figured in the December number of Sir Joseph Paxton's and Dr. Lindley's "Flower Garden"—Pine Apple Place, Edgeware Road, London.



## SHORT GRASSES.

**FINE GRASS LAWNS IN FLOWER GARDENS,**  
 &c.—The great expense of cutting and earthing turves from a distance may be avoided, and a superior Turf produced in a few weeks, by sowing SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds.

Great improvement may be effected in old Lawns by sowing about 20 lbs. to the Acre of these Seeds; for the formation of new Lawns twice that quantity will be necessary.

Price 1s. 3d. per pound; 3s. per gallon, or 21s. per bushel.  
 Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**PERMANENT PASTURE GRASS SEED,** in mixtures, to suit various soils and situations, can be obtained from the Subscribers at the lowest prices. They have devoted much care and attention to this particular branch of the Seed Trade; and the large and increasing patronage they are daily receiving is the best proof they can offer of the quality and genuineness of the Seeds they supply.

Descriptive Catalogues of all the best varieties, with the lowest market price of each article, can be obtained in exchange for one postage stamp.—Apply to WILLIAM EDGECOMBE KENDLE & CO., Seed Merchants, Plymouth.

**SUPERB HOLLYHOCK SEED.**—Well ripened Seed, warranted to be saved exclusively from Comet, Elegans, Obscura, Mr. C. Baron, Penelope, Rosa grandiflora, Meteor, Walden Gem, Magnum Bonum, Spectabilis, Safranot, Delicata, Eucharistess, Pieta, Queen, Bicolor, Dido, Charles Turner, Formosa, Hebe, Model of Perfection, Rosa Alba, Sulphurea Perfecta, White Perfection, Blue Beard, Mulberry Superb, Snowball, and Queen of England.

A good mixture of the above, in packets containing UPWARDS of 200 SEEDS, will be forwarded post free, upon the receipt of 2s. 6d. worth of postage stamps, by R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk.

## STANDARD AND PYRAMIDAL FRUIT TREES.

**WILLIAM WOOD AND SON,** in order to make room for a new and very extensive Plantation of Roses, have come to the determination of clearing off a large overstock of Standard Fruit Trees; the plants are remarkably strong and healthy, and comprise the most esteemed sorts in cultivation.

Apples, Standards	10s. per dozen.
Pyramidal Trees	8s. "
Pears, Standards	15s. "
Pyramidal Trees, very fine	12s. "
On Quince stocks (pyramidal trees)	18s. "
Plums, Standards, very strong	12s. "
Pyramidal Trees	9s. "

W. W. & Son have still on hand a fine stock of the leading kinds of Roses.

N.B. Extra plants presented with each order to compensate for carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

**ST. IVE'S GREEN-FLESHED MELON,** warranted the best Melon ever raised. The above very superior Melon was raised at St. Ives's, near Bingley, Yorkshire, and has been much admired by all who have seen it. It was exhibited at the Horticultural Show held at Bingley in September last, and took the 1st prize; the Judges expressed the most favourable opinion of its merits. A fruit was sent to the Editor of the "Cottage Gardener," who says:—"MELON: *M. Binn's*. Your Melon, green-fleshed, pale green skinned, somewhat netted, flattened, globe shaped, very deeply ribbed, about 6 inches in diameter, and weighing 4½ lbs., had the most juicy, melting, and deliciously flavoured flesh we ever tasted; it well deserved the 1st prize it was awarded at Bingley—Sept. 23d, 1852."

Packets, 2s. 6d. each, to be obtained from M. BIRNS, Gardener, St. Ives's, Yorkshire, or the undermentioned Nurserymen and Seedsmen: Messrs. HURST & M'ULLEN, Leadenhall Street, and Messrs. BATTY, LUTLEY, and Co., 412, Strand, London; Mr. JOHN CARTER, Jun., Keighley, Yorkshire; Mr. GEORGE CHERRY, Bury, Lancashire; Messrs. FRANCIS and JAMES DICKSON & Co., Manchester.

## SUPERB NEW MELON.

**AUSTEN'S "INCOMPARABLE" GREEN FLESH.**  
**EDWARD TILLEY** having purchased the whole stock of Seed of this superior Melon of Mr. Austen, of Truro, Cornwall, respectfully solicits the attention of the public and all others connected with Melon growing, to the very superior qualities of the above delicious variety. The following prizes have already been successfully competed for and awarded, viz.:—Exhibited at the Royal Botanic Society of London's show at Regent's Park, on July 2d, 1851, and obtained the bronze medal; again exhibited at the Royal Horticultural Society of Cornwall, at Truro, on the 8th July, 1851, and obtained 1st prize; also on the 6th July, 1852, exhibited at Falmouth, and awarded by that Society the first prize; an extra prize was also given for this Melon by the said Society at their show, at Truro, for a fruit of a second crop from the same plant as the fruit shown at the preceding July show. E. T. has also many private flattering encomiums given to Mr. Austen by gentlemen of the highest standing and respectability, and who are considered first-rate judges of the Melon, which he is not at liberty to publish, but will enclose copies of them to purchasers. The fruit of this Melon is very handsome, thin skin, firm and solid, melting favour, free settler, a very early and most productive bearer, weighs from 3 lbs. to 4 lbs. It will prove a superb variety for those who are limited as to room; in proof of its productive qualities, 20 fruit were cut from one box, and all of which were exceedingly fine for flavour, weight, &c. E. T. feels confident that the above will give as great satisfaction as former Melons offered by him, including the Bromham Hall sent out in 1850. Packets of good sound seeds, 2s. 6d.; large ditto, of 15 seeds, 5s.; also the following first-rate varieties:—Tilley's Golden Ball Melon, 1s. 6d. per packet; Tilley's Bromham Hall ditto, 1s.; Tilley's Queen Melon, 1s. ditto; Tilley's Bowwood Melon, 1s. ditto; Victory of Bath Melon, 1s. ditto; Camerton Court, 1s. ditto; Beechwood, 1s. ditto; Windsor prize, 1s. ditto; Emperor, 1s. ditto; Fleming's Hybrid Persian, 1s. ditto; Hampton Court, 1s. ditto; and Black-hall's Green Flesh, 1s.; Bailey's ditto, 1s. ditto; and many other older varieties.

## THE TWO FINEST CUCUMBERS IN CULTIVATION

**TILLEY'S "CAPTIVATION" & "PHENOMENA."**  
 both Black spines, handsome fruit, uniform size from stem to point, measuring 24 to 28 inches, carrying a good bloom, fine dark-green, and free from ribs or shrivels. As Cucumbers for competition they are not yet equalled—wherever exhibited they have always been successful. Phenomena is the hardiest long cucumber, and grows with less heat than any other of its length. Both sold in packets, 2s. 6d. each, warranted sound seeds. Lord Keyn's Favourite Winter Cucumber, a good variety, 2s. 6d. per packet. All other good varieties can be supplied.

N.B. A packet of the new Incomparable Melon, and a packet of either of the above Cucumbers, and also one of the Golden Ball, or any other Melon named, for 5s. A remittance must accompany the order from all unknown correspondents by penny postage stamps, when the whole or any quantity of the above will be forwarded free to any part.

EDWARD TILLEY, Nurseryman and Seedsman, 14, Abbey Church-yard, Bath.

## JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

**ARTHUR HENDERSON AND CO.** have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine, at 7s. 6d. and 10s. 6d. each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25, 1851.  
 Pine Apple Place, London.—Jan. 29.

## AGRICULTURAL SEEDS.

FLOWER SEEDS, AND SEEDS FOR THE KITCHEN GARDEN, Delivered Carriage free by Railway.

**J. C. WHEELER AND SON, SEEDSMEN TO THE GLOUCESTERSHIRE AGRICULTURAL SOCIETY,** beg to state that their New Seed List for this season will be forwarded free by post on receipt of one postage stamp.

To those desirous of buying the best varieties in cultivation, their List will be found extremely useful.

J. C. WHEELER & SON, Seedsmen, Gloucester.

## TO AGRICULTURISTS AND HORTICULTURISTS.

**THE SUBSCRIBERS** have a few Tons of POTATOES, the produce of their prepared cuttings, to spare.—York Regents, 6s.; American Native, 6s.; Cambridge Radical, 5s.; Soden's Early Oxford, 8s.; True Ash-leaved Kidney, 8s.; and Early Ebrington Kidney, at 10s. per bushel, all in first-rate condition.

They have also still a few of their celebrated Early No. 1 Pea, 2s. 6d. per quart, and Prince of Wales Early Scarlet Rhubarb, 5s. each.—Post Office orders to be made payable at the Borough Post Office to the firm of HAY, SANGSTER, & CO., Newington Butts, London.

## NEW SHRUBBY CALCEOLARIAS.

CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

**J. WEEKS AND CO., CHELSEA,** have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all shrubby they are perpetually in flower; and from the great variety and brilliancy of their colours, they are invaluable for the conservatory or bedding-out.

J. WEEKS & CO., King's Road, Chelsea, London.

## IMPORTANT TO ALL WHO HAVE A GARDEN.

**J. CHARTRES AND CO.** beg to announce that they have, as usual, a large and carefully selected stock of AGRICULTURAL AND HORTICULTURAL SEEDS, which they have received from the most eminent growers in this kingdom and on the continent, and which they can confidently recommend as new and true to their kinds.

J. C. & Co. strongly recommend their collections of KITCHEN GARDEN SEEDS, which have given universal satisfaction; they contain as great a variety of the leading articles as possible, at considerably less than Catalogue price.

Carriage paid on orders above 1*l*. Catalogues may be had on application.

Wholesale and Retail Seed Warehouse, 74, King William Street, London.—Jan. 29.

**WILLIAM HAMILTON, SEEDSMAN, & C., 156,** Chapside, London, begs to give notice that he has been distributing his Descriptive Catalogue for 1853, and those of his correspondents who may have been inadvertently overlooked will receive a copy on application. All orders for Seed Plants and other Horticultural Articles, whether received by post or otherwise, will be punctually attended to, and executed with articles of the best quality.

**THE LARGEST, BEST BEARING, AND FINEST FLAVOURED PEA** yet introduced, is **HAIR'S DEFANCE (KNIGHT'S) PEA**. It grows about 4 feet, remarkably strong in habit, is earlier than the taller growing varieties, and should be planted 4 to 6 inches apart in the rows.

Plant February to April, 2s. 6d. per quart.

**HAIR'S DWARF MAMMOTH (KNIGHT'S) PEA** has been so extensively grown and approved that D. H. does not think anything need be said in confirmation of its established character. Sow 4 inches apart.

Plant February to May, 1s. 6d. per quart.

**BISHOP'S LONG-POD PEAS, 1s. ditto.**  
**BURRIDGE'S ECLIPSE PEAS, 1s. ditto.**  
 Garden, Agricultural, and Flower Seeds, wholesale and retail, embracing every article connected with the trade upon the most reasonable terms.

Potatoes, all the best kinds, for seed.  
 Catalogues furnished upon application.  
 DUNCAN HAINS, Seedsman, 109, St. Martin's Lane, Charing Cross.

## NEW ROSES.

**PRINCE ALBERT (PAUL'S);** the finest Bourbon Rose yet raised. Colour of the richest scarlet crimson, outline a perfect circle; a robust but compact grower, and most abundant bloomer. Strong Standards, 10s. 6d. each. (Figured in "Turner's Florist" for Nov. 1852.)

**QUEEN VICTORIA (PAUL'S);** an entirely new style of Hybrid Perpetual Rose, of the colour of the Celestial, white, shaded with the softest peach, large and full as "La Reine," Strong plants, Standards, 7s. 6d. each; Dwarfs, 5s. (Figured in "The Florist," Oct. 1851.)

**ROBERT BURNS (PAUL'S);** Hybrid Perpetual, light vivid carmine, colour of Chénédol, good autumnal climbing Rose, and one of the latest bloomers. Dwarf Standards, 3s. 6d. each.

\* The above have received first-class certificates from the National Floricultural Society, and have been admired and purchased by many of the leading Nurserymen and Amateurs.

The Subscribers also beg to offer—  
 12 Standard Roses, superior varieties and fine plants, for 18s.  
 12 Dwarf Standard, or Dwarf do. do. do. 12s.  
 12 Hybrid Perpetual and Tea Roses, extra size for forcing, 18s.

Weeping Roses for Lawns, handsome specimens, 3s. 6d. each. A fine stock of all the leading sorts, Standards and Dwarfs, still on hand. Carriage free to London. Priced Descriptive Catalogues free by post on application.

A. PAUL & SON, Nurserymen, &c., Cheshunt, Herts, near London.

## NEW MELON.

**THE GOLDEN QUEEN,** from North America, small size, weight about 2 lbs. each, good bearer, with a rind as thin as a water: decidedly distinct from all others known.

"I have had several opportunities of testing the above Melon, and consider it much superior to any other known to me."—*Henry Drines, Sub-Director to the Museum, and Gardener to the Philosophical Society, York.*

"I have frequently tested the 'Golden Queen' Melon, during 1851 and 1852, and found it very rich and high flavoured, which character it fully maintained so late as November."—*W. Burnett, Gardener to J. Buckle, Esq., York.*

"I have been a Melon grower upwards of twenty years, and have grown the most popular sorts of the day, but never met with one to equal the above, and when known, it will, no doubt, displace most others."—*T. Henderson, Gardener to J. Barber, Esq., Tang Hall, near York.*

Packets, containing seeds, will be sent to all applicants on receipt of postage stamps to the amount of 2s. 6d.—Apply to JOHN TULY, Gardener, Friends' Retreat, York.

## WANTED TO PURCHASE,

Either by Contract or otherwise,  
**CHOICE FRUITS AND VEGETABLES.**

Apply to GEORGE TAYLOR, Jun.,

FRUIT SALESMAN,

And Contractor for Choice Garden Produce,

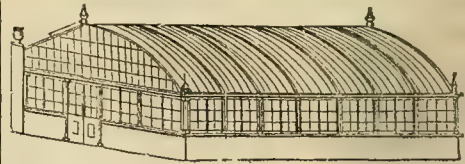
St. JOHN'S MARKET, LIVERPOOL.

Payment, Nett Cash on Delivery.

**ASHLEAF KIDNEY POTATOES** for immediate sale.—One hundred sacks of first-rate quality and excellent size for Seed.—Apply to Mr. BENJAMIN CANT, Nursery Seedsman, Colchester, Essex.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



**J. WEEKS AND CO., King's Road, Chelsea,** HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collections of Stoves and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application, J. WEEKS & CO., King's Road, Chelsea, London.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON, Danvers Street, Chelsea,** London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

## CUCUMBER AND MELON BOXES

and LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes, ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l*. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties in England.—JAS. WATTS, Hothouse Builder, Claremont Place, Old Kent Road, London.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

## FRUIT TREES, POULTRY, RABBIT, SHEEP,

AND CAT FENCING.—Worsted Netting to protect the bloom of Peach, Nectarine, and other trees, flowers, or seed-houses from frost, blight, and birds, two yards wide, 6d. per yard. New Twine Netting (tanned if required), one yard wide, 1*l*. 2d. per yard; two yards wide, 3*l*. 6d. per yard; four yards wide, 6*l*. 6d. per yard; two yards wide, 1*l*. 2d. per yard; four or six yards wide, 3*l*. 6d. per yard; or 5s. per 100 yards, one yard; 10s. per 100 yards, two yards; and 20s. per 100 yards, four yards wide. Elastic Hexagon Garden Net, or Scrim Canvas, 4*l*. 6d. per square yard. Cocoa Nut Fibre, or Hemp Sheepfolding Net, of superior quality, four feet high, 4*l*. 6d. per yard. Rabbit Net, four feet wide, 1*l*. 2d. per yard; six feet wide, 2*l*. 6d. per yard. Each edge corded 3d. per yard extra, suitable for poultry fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3*l*. 2d. to 4*l*. per square yard; this is the best article made for fencing against fowls, cats, &c., at W. CULLINGFORD'S, No. 1, Strathmore Terrace, Shadwell, London. Orders by post, with Post Office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Rick Cloths, Tarpaulins, Lines, Rope, Twine, &c., made to order.



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\*Heliotrope, fine, mixed  
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\*Mandevilla, varieties, 6d. to 1s.  
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\*Lobelia, white  
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\*Nymphaea salicoides  
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— d. umbriata, choice, 1s.  
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— from Hendersonii, Primrose Perfection, and other best new, 1s.  
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\*Carnation, mixed, showy, 4d.  
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\*Cistus, many vars., 3d. each  
\*Euphorbia, new white  
\*Gaillardia, new  
\*Gladiolus, fine mixed, early  
— choice, from named, 1s.  
\*Hollyhock, very choice, 1s.  
\*Lathyrus rotundifolius  
\*Mammula, choice mixed  
— variegatus, white  
\*Nepeta pinnatifida, beautiful  
\*Panicle, extra choice, 1s.  
\*Polemonium imperialis  
\*Polygala, choice mixed hardy vars  
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GLADIOLUS BOWIENSIS.

THOMAS BARNES having purchased the stock of the above named hybrid GLADIOLUS, begs to offer fine blooming Roots of the same, at 3s. 6d. each, or 36s. per doz. It is of a deep blood colour, with calyx spotted and striped with yellow, producing immense spikes of very large blossoms—quite distinct and very attractive.—Dane Croft Nurseries, Stowmarket.

FLORISTS' FLOWERS, SEEDS, AND BOOKS.

CAREY TYSO, Florist, &c., Wallingford, Berks, begs to offer, of best quality, as under:— s. d. £ s. d.  
\*ANEMONES, 100 double varieties ... 24 0 1 10 0  
\*RANUNCULUSES, 100 ditto ... 40 0 4 0 0  
\*CARNATIONS, 12 excellent varieties, in pairs 17 6 3 0 0  
\*PICOTEES, 12 ditto ... 17 6 3 0 0  
\*PANSIES, 12 superb sorts ... 6 0 0 12 0  
\*TREATISE ON THE RANUNCULUS, 6d., post free, 8d.  
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\*IMPORTED FLOWER SEEDS.—German Asters, Stocks, Zinnias, Hollyhocks, Poppies, Salpiglossis, &c., each 1s. and 2s. 6d. per named assortment, postage free. ANNUALS, 25 fine varieties, post free, 5s. Catalogues 2d.  
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NEW HOLLYHOCKS.

CRIMSON PERFECTION (PAUL'S).—Rich bright crimson, good shape, splendid spike, and rather dwarf habit, a fine show flower; 7s. 6d. each. CROCEA (PAUL'S).—Buff and yellow, a bold flower of a distinct and desirable colour, large and full; 5s. each. ENCHANTRESS MAJOR (PAUL'S).—Deep rose, superb form, larger, darker, and finer spike than the old variety, and decidedly a first-rate show flower; 2s. 6d. each. FIREBALL SUPERB (PAUL'S).—Brilliant rosy crimson, larger, brighter, more double than the original, and with a finer spike; 2s. 6d. each. MRS. TAIT IMPROVED (PAUL'S).—Large peach, soft and pleasing colour, and most desirable for its novelty and beauty; 2s. 6d. each. SHYLOCK (PAUL'S).—One of the deepest and richest scarlet crimson, and a good show flower; 5s. each.

The Subscribers, who obtained during the past year the Silver Cup for Hollyhocks at the Edinburgh Grand Open Show.—Four first Prizes from the Royal South London Floricultural Society.—Two first-class Certificates from the National Floricultural Society, and numerous other prizes, beg to offer 12 first-rate and distinct Hollyhocks, show varieties, for 30s.; 12 Superior do. do. do., 18s.; 12 Good do. do., 12s.; 100 Good mixtures for Borders, do. do., 30s. CARRIAGE FREE TO LONDON. Priced descriptive Catalogue free by post.

A. PAUL & SON, Nurserymen, &c., Cheshunt, Herts, near London.

COLE'S SUPERB CRYSTAL WHITE CELERY.

WM. COLE, Dartford, Kent, begs to inform his friends and the public, that he is ready to send out a new White Celery, which he has every confidence in recommending as being decidedly superior to his Superb Dwarf Red, sent out, with universal satisfaction, three years back. The Crystal White is a dwarf kind, rarely exceeding (under the best management) 18 inches in height; it is very solid, crisp, and fine flavoured, and if sown at the same time as the red variety, will come into use a month earlier, and continue good a month later. It has been seen by some of the first gardeners in the country, and pronounced to be a superior article. It may be obtained of W. C., as above, or from the following agents, at 2s. 6d. per packet, free by post:—

London: Messrs. Hurst and M'Mullen, Leadenhall Street; Messrs. Dave, Cottrell, and Benham, Moorgate Street; Messrs. Minier & Co., 60, Strand; Mr. Duncan Hairs, St. Martin's Lane, Charing Cross; Mr. Denyer, Gracechurch Street; Messrs. A. Henderson & Co., Pine Apple Place.—Messrs. Garaway, Mayes, & Co., Bristol; Mr. Bunyard, Maidstone; Mr. Turner, Slough; Messrs. Downie and Laird, Edinburgh; Messrs. F. and J. Dickson, Chester; Messrs. T. and J. Dickson, Manchester; Messrs. J. and J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Vetch and Son, Exeter; Messrs. Finney & Co., Gateshead; Mr. A. Patey, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Messrs. Lucombe, Pince, & Co., Exeter.

NEW FLOWER SEEDS.—Collections of the best varieties can be obtained from the Subscribers as follows:—100 Superior Sorts for 25s., 50 for 15s., and 25 for 8s. All the newest varieties can be had, and all the best imported German and Prussian Seeds. For particulars refer to our NEW FLOWER SEED CATALOGUE, which can be had in exchange for one postage stamp. Apply to WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

Leptosiphon densiflorus (Cluster-fld. Leptosiphon.)

Syn: Glilia Leptosiphon.  
Nat. Ord., Polemoniaceae.—Native of California.—Cult. 1833.—Annual; 1 ft. erect; fl. rosy-lilac; May to September.

Cult.—A neat pot plant early in the season, suitable for early borders and mixed borders. Sow, to stand through the winter, in September, in the open ground; and for succession in March and June. Rich light garden soil.

SUTTON'S ASSORTMENTS OF FLOWER SEEDS

Are put up in Ayres' and Moore's Descriptive Cultural Papers as above. Ladies and Gentlemen naming any sum they wish to expend on Flower Seeds, from 6s. to 20s., may rely on having the very best sorts yet introduced.

The Gardeners' Chronicle.

SATURDAY, JANUARY 29, 1853.

MEETINGS FOR THE ENSUING WEEK.

	1	Linnean	8 P.M.
	2	Civil Engineers	8 P.M.
TUESDAY, February	3	Patent	8 P.M.
	4	Royal Soc. of Literature	4 1/2 P.M.
	5	Society of Arts	8 P.M.
WEDNESDAY, —	6	Geological	8 P.M.
	7	Zoological	8 P.M.
THURSDAY, —	8	Antiquarian	8 P.M.
	9	Royal	8 P.M.
FRIDAY, —	10	Botanical	8 P.M.
	11	Royal Institution	8 P.M.
SATURDAY, —	12	Asiatic	2 P.M.
	13	Medical	8 P.M.

We have seldom perused a more cautious document than Sir ROBERT KANE'S Report upon SUGAR BEET CULTIVATION IN IRELAND. For two years past the question of manufacturing sugar profitably from Beet grown in Ireland has been under consideration. Dr. SULLIVAN and Mr. GAGERS, able chemists attached to the Museum of Irish Industry, have been engaged in numerous experiments upon this subject; the result of their enquiries is embodied in the report before us, and all that Sir ROBERT KANE feels justified in stating is hypothetical. He has

little success to announce, nor does he find anything to justify even sanguine recommendation; all that he can speak of with certainty is the zeal, ability, and diligence shown by Messrs. SULLIVAN and GAGERS in the discharge of their duty, in which, after a very careful perusal of the report itself, we heartily concur. Upon the cost of production he does not wish to announce any positive conclusion, but prefers directing attention to estimates with which he has been furnished, and which "would indicate that the cultivation of the Sugar Beet would prove at least as profitable as other green crops, provided, &c." He points out that the laboratory researches upon the quantity of sugar existing in Irish grown Beet, although interesting in a theoretical point of view, "cannot be safely calculated upon as working produce in a manufactory," but he refers with satisfaction to the fact that in a trial made on a tolerably large scale, although conducted under the disadvantages which necessarily attend a manufactory experiment, the yield of sugar was fully equal to that usually calculated on by Continental makers. In conclusion, Sir ROBERT adverts to the advantage that may accrue to Ireland from the establishment of the manufacture of sugar from the Beet-root; but then he adds, what we take to be the main point in his report, and one of the highest interest it is, "that, as the material used can only be profitably obtained by means of improved agriculture, and that an important element in the profits of the manufacture would be the careful economy of the scums and pulp either as manures or as food for cattle, the manufactories of Beet-root sugar should exercise a powerful influence on the agriculture of their districts, inducing a greater variety of cultivation, a more thorough preparation of the soil, and a more careful economy of manures; and that in this way, even should the manufacturing speculation become hereafter, by improvement in the management of the Colonial sugar industry, or by any other cause less probably successful than it now appears to be, there should still have been conferred on Ireland a great advantage in the improved practice of green crop husbandry which would be certain to remain."

The able reporter had just before said that "in considering the position of the manufacture as to Ireland, it must be assumed that the manufacture should be conducted with the most perfect means, most accurate knowledge, with careful economy and judicious business management; for, should those conditions be not fulfilled, the manufacture would necessarily fail to succeed here, as it should fail elsewhere from the like causes, and the country or the period would be stigmatised as unsuited or improper for the manufacture, when the fault really lay with the ignorance or inattention of the individuals who had taken up an occupation for which they did not possess the necessary qualifications."

It is to be hoped that the warning thus conveyed will produce the intended effect. That it was required is sufficiently clear from Dr. SULLIVAN'S repeated complaints about the needless difficulties he experienced in his investigation. No ordinary care seems to have been taken in selecting seed. "The greater part of the seed employed was, we believe, obtained from one source, and was not altogether unobjectionable, being a mixture of the collet vert, jaune, and rose, the former predominating, judging from the specimens of roots which came under our observation. They also displayed a great tendency to throw out flower-stalks, which well-grown seed does not; on the whole we would consider the seed to have been inferior, and to have been, considering the object, very carelessly saved."

Even the crops obtained from this seed were grown without any knowledge of what is suitable or unsuitable in cultivation to the production of sugar. "It is, therefore, needless to remark, that the conditions under which the experiments were made were very unfavourable. And, if to these it be added, that the season of the year at which they were made was one at which vegetation begins to commence, and a series of changes to occur in most roots, which produces not only a diminution in the quantity of sugar, but which gives rise to the production of bodies which affect the crystallising power of the sugar."



is certainly not the kind of management which Sir ROBERT KANE thinks indispensable to success.

We may, therefore, safely assume that no evidence has yet been brought forward upon the all-important question of profit and loss. No experiments were needed to prove that Beet grown in Ireland would yield sugar as well as that of France and Belgium. No one questioned that the Irish chemists are just as able to extract sugar from Beet as those of other countries; there was, in reality, no great reason to doubt that the per centage of sugar would be as high, *ceteris paribus*, at Cork or Waterford as at Arras or Valenciennes. These were not the points which required elucidation; the great question was WILL IT PAY to grow sugar in Ireland, in the face of colonial competition? While an acre in the Caraccas will yield 37 cwt. of sugar in 14 months, will it pay to grow sugar in Ireland at the rate of 24 cwt. per acre in 7 months—all the circumstances of the two cases being rightly considered.

As to that, although everything is at present conjectural, yet the eagerness with which certain sugar speculations are now pushed forwards, tempts us to draw attention in a future article to some highly interesting considerations which seem to be generally lost sight of, and which may bear upon the question as much as the elaborate experiments reported on by Sir ROBERT KANE. For the present we must refrain from saying more than that we believe no pecuniary success has as yet been experienced by the manufacturers, notwithstanding what we understand to have been an almost entire relaxation in their favour of excise restrictions.

A NOTICE in our columns at p. 55, respecting the discovery of TRUFFLES in Fuerteventura, requires a little correction. Their discovery is not due to LIEBMAN, but to Dr. CHARLES BOLLE. The error is merely a clerical error, arising from the juxtaposition of their respective memoirs in Sir W. J. HOOKER's Journal. The former illustrious traveller, indeed, discovered the Italian *Gauteria graveolens* in Orizaba, of Mexico, and in the same locality *Melanogaster variegatus*, both agreeing perfectly with European specimens. The species found by Dr. BOLLE is probably the same with the African Truffle *Terfezia Leonis*, which is sought for with much avidity, and which grows very frequently under the shade of *Cistus halimifolius*, as the Canarian species does under that of *C. canariensis*. It is probably the same again with what is known in Spain under the name of Turmas, as reported by CLUSIUS. *Cistus salicifolius*, L., is called in the same locality by the name of Turmera, because the Truffles occur in its neighbourhood. *Cistus tuberaria*, L., also derives its name from its being indicative of Truffles, and is called by the Castilians Yerva Turmera.

Another Truffle occurs in the Canaries, as for instance in Gran Canaria, equally known by the name of Turmas, which belongs, however, to a very different genus, and is *Rhizopogon Webbi*, CORDA. This is found in elevated situations under the fallen leaves of *Pinus canariensis*, and is eaten when roasted, which, by the way, is far the best way of dressing our English *Tuber aestivum*. M. J. B.

#### ENTOMOLOGY.

THE WEEVIL OF THE CABBAGE-STALK—AND TURNIP-GALLS, FINGERS AND TOES, ANBURY, &c.

It is almost the constant exclamation of persons examining a collection of British insects for the first time, that they could not have believed such a vast number of distinct species were natives of these islands, as they had never seen a hundredth part of them, even though they may have resided in the country. This remark is not surprising, for it often actually happens that species, even of great rarity, may occur in a given locality, without their being detected by professed entomologists, unacquainted with their particular habits; and hence it is that any person who will but take the pains to investigate the natural history of even a very confined district, will be sure to be rewarded by the discovery either of rare species, or, which is of more consequence, of facts in the economy and habits of different species hitherto either entirely unknown, or only insufficiently recorded. It is thus, that in the pages of this work we have been able to record, for instance, the discovery in our own little garden at Hammersmith, of a series of anomalous facts in the history of different species of saw-flies; one mining the leaves whilst in the larva state; another residing in the larva state in the centre of Apples; another making spiral cases of bits of Rose leaves; and another beautiful species (of which scarcely more than a single specimen was known) residing in the larva state in a close, web-like tent on the Pear. But we need scarcely add, that it has only been by long, careful, and repeated examination, that such results have been obtained; and to show how completely even such examinations may fail in success we now present our readers with an account of the economy of a species which, although it is of such common occurrence in our

garden that almost every Cabbage-stalk shows the effects of its presence in considerable numbers, has never yet been detected by us in the perfect state; although year after year we have found the larvæ and endeavoured to rear them. Our friend M. Guérin Meneville, of Paris, has, however, been more successful, and by his assistance we are enabled to complete its history.

The swelling of different parts of the roots of Turnips into elongated excrescences, called fingers and toes, is too well known to most horticulturists to need description\*; but both from Mr. Curtis's memoir in the "Journal of the Royal Agricultural Society," (vol. iv., p. 121), as well as our correspondent Mr. George Singer's remarks (1852, p. 761), there seems to be but little ground for considering them as caused by the attacks of insects. Mr. Curtis, however, gives the history of the winter gnat, which he reared in considerable numbers from larvæ inhabiting the interior of already-formed excrescences of Turnips. Several species of small Staphylinidæ also occur in rotten Turnips, and different species of Muscidæ (Anthomyia Brassicæ, gnava, trimaculata, and radicum), feed in the larva state in the crown, or at the base of the tap root, or else within the bulb or roots of the Turnip. An analogous case in the Cauliflower was communicated to me by the late Mr. Loudon, in the beginning of the month of August, 1842, the roots of which resembled those of a Kidney Potato plant rather than that of a Cauliflower; but on opening the smaller excrescences attached to the more elongated root-fibres, the surface of all of which was entire, the interior of the mass was found solid, more like the root of the Radish, but the larger ones had the outside more or less cankered in patches, within which were found several larvæ of Dipterous insects (Anthomyia Brassicæ), which had most probably been produced from eggs laid in the crevices of the already formed clubs, thus indicating that the dilated excrescences were the result of a disease of the plant itself, and not produced by the attacks of insects.

The Turnip is, however, subject to the attacks of a small weevil (*Ceutorhynchus sulcicollis*, Gyllenhal; *Cur-*



*culio pleurostigma*, Marsham), which deposits its eggs beneath the outer covering of the tuber, producing a number of small knobs or galls† within which the small footless grub is developed. This disease is termed the anbury, in some districts. So numerous are these insects occasionally that I have known instances in which cart-loads of Turnips have been brought to market nearly every tuber in which has been infested, and sometimes entirely covered with these galls.

The various kinds of Cabbages are also subject to have their roots infested by the larvæ of the *Anthomyia Brassicæ*, above mentioned. Linnæus evidently alludes to this insect under his "*Musca Larvarum*," when he says "*Mihi visa in radicibus Brassicæ oleraceæ unde radix strumosa et unde capita laxa*," (Syst. Nat., p. 992), thus confounding it with the true *Musca* or *Tachina* larvarum, which infests the bodies of the caterpillars of butterflies and moths. According to Kollar the larvæ of the true *Anthomyia Brassicæ* live under ground in the roots and stems of plants of the Cabbage tribes, in which they eat passages and cause them to rot, thus sometimes destroying whole fields of Cabbages (Treatise on Destructive Insects, p. 160). The transformations of this species are described and figured by Bouché (Naturg. d. Ins., p. 74, pl. 5, f. 34.)

Throughout the winter and spring Cabbages may also be observed to have their roots, close to the surface of the ground, distorted by the growth of a great number of small rounded galls, produced by the deposition of the eggs of the same species of weevil which produces the Turnip galls. The accompanying figure represents an ordinary specimen of the roots of a small Cabbage plant at the surface of the ground from my garden, whence it will be seen that some of the galls (e) have already been quitted by the insect reared within them, but others (f) are still entire, and on opening each a small cell (a, a) is observed, containing a white maggot destitute of legs, with the body curved and fleshy, bearing a close resemblance to the grub of the nut weevil, but with the skin more transparent; the head is pale orange and the

jaws chestnut, with the tips black, as is also a small eyelet on each side of the head (b, the grub magnified).

According to information received from M. Guérin Meneville, these larvæ when full grown quit the galls and burrow themselves in the earth, where they undergo their change first to inactive pupæ and then to the perfect weevils (c, natural size; d, magnified), systematically named *Curculio* (*Ceutorhynchus*) *sulcicollis* (*Curculio pleurostigma*, Marsham) being about one-eighth of an inch long, of a black shining colour, sparingly clothed with greyish hairs, with the head and pro-thorax coarsely punctured, and the latter with a channel down the middle; the wing cases, with ten impressed lines on each, the interstices scabrous, the underside of the body clothed with buff scales, and the pleura buff coloured. It is common throughout the summer. J. O. W.

#### THE OLEANDER-LEAVED ALLAMANDA.

It must be admitted that the flowers of this species are somewhat inferior in size and beauty to those of *A. Schottii* and others, but then it has the advantage of being easily made into a dwarf, shrubby, evergreen bush, requiring little room, and whose numerous clusters of pale yellow blossoms are produced for several months in succession. Plants of small size are found to bloom freely; and during the season of growth it thrives well in a lower temperature than is necessary for other species of this handsome genus. As its merits become better known it will doubtless come more into favour, and receive, as it deserves, more extensive cultivation.

In propagating this plant from cuttings young shoots should be secured in the early part of summer, or earlier if practicable; these may be from two to three inches long, taken off with a heel, cut smoothly over, and inserted in sandy soil. After planting, cover with a bell-glass, and afterwards plunge the pot in a gentle bottom-heat. In about six weeks they will be well rooted, and may then be potted into 4-inch pots, using a light rich sandy soil. After potting, place the plants in a close warm situation, and if bottom-heat can be given them they will grow more rapidly. When the pots are well filled with roots, select the best plants and shift into 8-inch pots, placing them in a warm house, where a moist atmosphere and a night temperature of from 60° to 65° can be maintained. Endeavour by judicious airing and watering to keep the plants growing vigorously. During their growth stopping should be once or twice resorted to, for the purpose of keeping the plants dwarf and stocky, and any flower-buds produced should be removed, to prevent the exhaustion of the plants in a young state. If proper attention has been paid, by the end of September the wood will have become well ripened, after which the plants may be gradually hardened and removed to a cooler situation; from this time through the early part of winter a temperature of 60° is sufficient. During that period water should be sparingly applied, sufficient only being given to prevent the foliage from flagging.

In the early part of February the plants may be pruned back, leaving two or more joints to each shoot, and placed in a temperature of 60°. When the buds have broken freely, a shift into 12-inch pots should be given, carefully removing any impure soil, &c., previous to repotting. As they advance in growth water should be liberally supplied, and a gentle sprinkling with the syringe given on favourable occasions. With the increase of light a higher temperature will be of advantage in bringing the plants into flower, which will be in May. If desirable they may then be removed for a short time to a cooler situation; but if kept in a growing heat the lateral shoots will continue flowering to a late period of the summer; afterwards they may be treated during the winter as before stated.

In the following spring they should receive an early shift into larger pots, and they will then, with judicious management, become fine bushy specimens. These, with a careful repotting each season, will continue some years in perfection, and may eventually be replaced by younger plants.

The soil most suitable for the growth of the *Allamanda nerifolia* is a compost of equal parts good turfy loam and peat soil, with a good sprinkling of sharp sand. The soil should be carefully broken up but not sifted. Previous to use a liberal supply of charcoal, broken to half-inch sizes, may be added; this assists in preserving the porosity of the soil, and it is a useful fertiliser. During active growth clear manure water once or twice a week will benefit the growth of the plants. It will also be found advantageous to preserve a tolerably moist atmosphere about the pots, which will tend to keep in check the red spider, or thrips. Should these at any time gain a footing, no time should be lost in applying the usual remedies for their extirpation; but it is only under unskilful management that these pests become really troublesome. Alpha.

#### WOOD WOOL.

NEAR Breslau, in Silesia, in a domain called the *Prairie of Humboldt*, there are two establishments which are very remarkable, whether we view them separately with reference to the particular objects of each, or regard them in connection; the one is a manufactory, which converts the leaves of the Scotch Fir into a sort of cotton or wool; the other affords salutary baths for the sick from the water resulting from the fabrication of this vegetable wool. Both have arisen under the direction of a head inspector of forests, M. de Pauwewitz.

\* See a remarkable example figured in the *Gardeners' Chronicle* for 1849, p. 58.

† Mr. Spence reared the little weevils *Nedys contractus* and *N. assimilis*, from galls, at the roots of the allied *Sinapis arvensis*.



the inventor of a chemical process, by which there can be drawn from the long slender leaves of Firs a very fine fibre, which has been called *tree wool*, or *wool of wood* (*Laine des Bois*), because it curls, felts, and can be spun like common wool.

The leaves of Pines, Spruces, and of Conifers generally, are composed of a bundle of extremely fine tenacious fibres, held together by a resinous substance, which has the form of thin pellicles. By boiling, and the use of chemical reagents, this resinous substance is dissolved, the fibres are then easily separated, washed, and cleared from all foreign bodies. According to the mode of treatment to which it is subjected, the woolly substance acquires a finer or coarser quality. The finer is employed for wadding, and the coarser for stuffing mattresses. Such is a brief explanation of the discovery due to M. de Pannewitz. The *Pinus sylvestris* has been preferred to the Spruces in this manufactory, because it has longer leaves; but we may reasonably suppose that in countries where other species of Conifers exist, with equally long foliage, a similar produce could be obtained.

We need not fear divesting the Fir of its leaves, partially, even in its youth. For the continuation of its growth, this tree requires only some whorls of leaves at the extremity of each branch, so that without injuring the tree we may take off all the leaves on the lower parts of the branches. But this should be done whilst they are green, otherwise the woolly substance cannot be extracted. The leaves are gathered by the poor people, and their earnings at this employment are very good. The gatherings are made every second year. A pound of leaves is gathered from a branch of the thickness of the finger. A beginner may collect 30 pounds a day; but one accustomed to the operation can collect as many as 200 pounds, and much more than this if the trees are felled.

The fibrous substance was first used as a substitute for cotton wadding, or for wool in quilted coverings. In 1842, 500 of these coverings were purchased for the hospital of Vienna, and after several years' proof, a fresh order was given. It was remarked amongst other things that, under the influence of the Fir-tree wool, no species of insect lodged in the beds; and that the aromatic odour which the substance gave out was not only agreeable but likewise beneficial to health. A third order very soon followed the preceding, and the penitentiary of Vienna was also furnished with the same kind of coverings. These have been adopted, and also mattresses stuffed with the same kind of wool, in the hospitals of Berlin, and in that of the invalids of Breslau. Five years' experience has shown that Fir-tree wool is exceedingly well adapted for quilting and stuffing, and that it is very durable.

At the end of five years, a mattress of this kind of wool costs less than the pailasse. Carpeting in which this substance has been introduced has not been attacked by the moth. It is only one-third of the expense of hair, and the most skilful upholsterer could not distinguish a piece of furniture stuffed with it, from one stuffed with hair.

The substance, moreover, may be spun and twisted. The finest gives a thread like that of hemp, and as strong. Spun, twisted, and combed (like cloth), it furnishes an article which may be used for carpets and some cloths. The fabrics of Zuckmantel, and of the prairie of Humboldt, have actually gained for M. Weiss a bronze medal at the Berlin Exhibition, and a silver medal at that of Altenbourg.

In the preparation of the Fir-tree wool, there is produced an ethereal oil, of fragrant sweetness. This oil is at first of a green colour; exposed to the light, it takes an orange-yellow tint; replaced in the dark, it again becomes green. By rectification, it is rendered colourless as water. It is different from the essence of turpentine, extracted from the stem of the same tree. Employed in various affections, of rheumatism and gout, and applied as balm for wounds, it has produced salutary effects; and also in vermicular complaints, and for tumours. When rectified it answers as well as oil for burning in lamps. It quickly and completely dissolves caoutchouc. The perfumers of Paris have procured a quantity of it.

The liquid residue from the boiling of the Fir leaves exercises a very salutary action when used as a bath. A bathing establishment has therefore been annexed to the manufactory. This liquid has a green colour, with more or less of a brownish tinge, according to circumstances and the mode of preparation. It is sometimes gelatinous and balsamic, and sometimes acid; in the latter case it contains formic acid. During the nine years that the bathing establishment has existed, its reputation and the number of persons availing themselves of its beneficial effects have kept increasing. When it is necessary to augment the strength of the baths, there is added an extract obtained by distillation from the ethereal oil above mentioned. This extract likewise contains formic acid. The residual liquid is also concentrated to the form of an extract, and sent out in sealed bottles for domestic use.

The membranaceous substance obtained by filtration from the washings of the fibre is moulded into the form of bricks, and dried for fuel and light. Fifty tons of the wool leaves a quantity of combustible matter equal in value to 6480 cubic feet of Pine wood. *Flora des Serres*, December, 1852.

Note by the Editor.—Samples of this material were exhibited in the Great Exhibition, and are thus spoken of by Professor Solly in his report upon Class IV. (*Jury Reports*, p. 103). "A new fibrous material, pro-

posed for wadding, for clothing, and for upholstery work, in stuffing mattresses, &c., is exhibited by C. G. Fabian, of Humboldt, near Breslau. This substance, which is called 'Pine wool,' is prepared from the leaves or needles of Pine trees; it is soft and somewhat elastic, though the fibre is very weak, so that it would perhaps soon mat or felt together in mattresses. It has been found to be very cleanly, and peculiarly free from the attacks of insects, and might probably be advantageously employed, mixed with some stronger and more elastic fibre. The jury awarded a prize medal for this substance." It is to be observed that the remark made on this substance by Dr. Lindley, at p. 1054 of the Official Catalogue, was written before the Prussian packages had been opened, and their contents examined. Before being seen the term "Pine-needle wool" was unintelligible, in the absence of all explanation of the nature of an article unknown in England. A short account of this material appeared in "Chambers's Journal" some time since.

### Home Correspondence.

*Rot in Larch.*—In a former paper I mentioned that I had found it necessary to fell above a hundred Larch trees in a plantation of 40 years' growth, in consequence of a discovery that decay was taking place; and as your correspondent observes in your Number of the 22d of January, the decay had, in every instance, begun with the roots, and had extended 2 or 3 feet, and in some cases to the height of 5 or 6 feet; and it is evident that in a few more years the timber would have been quite destroyed. I was fortunate in an opportunity of disposing of them. All that were of sufficient size were immediately sold for building purposes, and the timber above the decay was exceedingly good. There were a great many worthless Beech trees in the same plantation, which I had also cut down. They were good for nothing except pit wood; but as there was no symptom of decay, I felt satisfied that the Larches were the only sufferers from disease in the late gale on Christmas-day, and after; however, several fine Elms were blown down and decay had begun in most of them. The plantation had never been properly thinned, the side branches were all gone, and the trees were undoubtedly injured by neglect of judicious thinning; but I also think the soil may be in fault, though very dry, and no chalk (being on the new red sandstone formation); but is it possible that a portion of iron or any other mineral might be impregnated in the soil? A stone quarry, much tinged with carbonate of copper, is not more than a few hundred yards distant. The plantation being almost destroyed by the wind, as well as by the axe, I have replanted it with Larch, Oak, Spruce, and Scotch Fir, the two latter as nurses and shelter for game; and under the Oak and other trees still remaining, I have planted Privet for underwood, and Gorse seed is to be sown in April for the same purpose, to make a covert for game. I shall be glad of any remarks from your correspondents. *L. C. K.*

*Bird Skins.*—Your correspondent may relax his skins by placing them on very damp sand, and covering them over with damp linen for several days. Small skins are relaxed in a very short time by introducing steam into them by means of a small pipe, or a tea-kettle spout. *C. P., Boston.*

*Weather in Scotland.*—Every one is talking about the mildness of the season, and in the newspapers we are continually seeing some evidence of it either in the early blooming of flowers or in the advance of leaf-buds. With us vegetation may be said to have got no check this season; late-planted crops are making evident progress, and the buds of black Currants are so prominent that I expect every day to see them in leaf. It is impossible to rest plants under glass; what the ultimate consequences may be of this extreme mildness it is difficult to say. We have had heavy gales, principally from the south-west; they occur for the most part during night; and although we have not had the extraordinary floods that have inundated some parts of England, we have had rain almost daily in a lesser or greater quantity. The following is the fall for 1851, and 1852:—

1851.		1852.	
January	6.70	January	8.01
February	3.06	February	4.31
March	4.00	March	0.83
April	2.76	April	0.88
May	0.51	May	2.41
June	2.82	June	2.34
July	4.39	July	4.38
August	5.08	August	4.10
September	0.84	September	1.35
October	2.33	October	4.00
November	1.14	November	5.93
December	1.63	December	10.07
	35.26		49.10

*W. Hepburn, Millfield Gardens, Stirlingshire.*

*New British Fern.*—Your assurance that my Fern is *Gymnogramma leptophylla*, an entirely new Fern to the Flora of Great Britain, is highly gratifying. This morning I examined the place where it was gathered last year, and find that it is coming up plentifully again. It is growing in a clay soil, on a bank at the foot of a hill, and is much overshadowed with Ivy and larger Ferns; the *Asplenium lanceolatum*, too, grows plentifully all round it, and the bank in that part is covered with a small round lichen. The situation is very damp and much sheltered, and the Fern is scattered over a surface of two or three yards; but I can find no trace of it on any other part of the bank, and I have never met with it in any other part of the island.

The place where it grows is unfrequented, and I do not think it is possible that it should be anything but wild. *J. M.* [We do not publish the locality of this curious discovery, and we recommend "J. M." to keep his secret. That the Fern is found on one of the Channel Islands is enough for the purposes of science. If the locality is made public "J. M." is very likely some day to find the whole batch in Covent Garden Market, or between sheets of paper in the hands of some dealer. "J. M." says "it is coming up plentifully again," which is remarkable at this early season of the year. We gladly avail ourselves of "J. M.'s" offer to have a "small living specimen" sent in damp paper to our office in Charles Street, Covent Garden; and if he will favour us with his exact address we should be happy to communicate with him. If a small tuft of the plant with the earth on it is wrapped in damp brown paper, and then enclosed in thin sheet lead, such as tea chests are lined with, it will travel securely for a week. *S.]*

*The Lotus of the Ancients.*—I know *Zizyphus Lotus*—having found it wild in Sicily, where it is naturalised; and received seeds of it from Egypt, which I gave to the Botanic Garden at Naples, where it is still probably cultivated. I once had a plant of it in my garden; but lost it, I cannot now say how. It is a neat little bush, with grey bark, and dark shining leaves. *S.*

*Is Fertilisation, whether natural or artificial, essentially necessary for the production of fruit?* I have taken it into my head—and that head has seen some winters—that, whatever fertilisation may have to do in the perfecting of seed, it has nothing to do in the formation, production, or development of fruit, which, I am of opinion, is the result of causes, perhaps I ought rather to have said conditions, quite extraneous. I cannot enter into detail as regards this matter, or, in other words, I am so engaged that I have no time to "cudgel my brains" in the formation of articles fit to appear in print. I trust, however, that I have said enough to arouse "Job Tilt" and "Mr. Spriggins" from their slumbers (with the former of whom I would rather beg to identify myself), and to direct their attention to a subject worthy of their consideration, pregnant as it is with highly important and valuable results. Lest you should suppose that this new idea of mine, for which I believe I may claim originality of conception, is the offspring of some toilet imagination, I beg to state that I have brought the subject physiologically under the notice of individuals whose education enabled them at once to judge of the correctness of this, my new theory. I therefore now submit it to the consideration of your readers generally. *A Gardener, Castle Carey.* [This opinion is by no means new. It will be found in books of vegetable physiology, published many years ago. See a hint to this effect in Lindley's "Introduction to Botany," ed. 4, vol. ii., p. 218.]

*Hunter's Prolific Cucumber* (see p. 53).—Justice to myself compels me to notice your comment attached to the communication from the gardener at Cadbury House; and though I feel that I am seriously exposing a friend, yet duty requires me to state the following facts. I recommended two of my friends to try Hunter's Prolific Cucumber, and I received orders to get two packets of seed; one I obtained from Hurst & M'Mullen, the other from Messrs. Flanagan; the former packet (from Hurst's) I sent to a neighbour of mine, and many fruit from it were sent to table from 24 to 30 inches long, and it also produced the one which originated this discussion, and which was described in a recent Number. I forgot then to say that it was grown for seed, but every one who read the account must be aware of that. Well, the other packet which I had from Flanagan I sent as received to Cadbury, expecting, of course, the same results; and I never heard of the mistake until I saw it noticed in the *Chronicle*. I have written to Mr. Flanagan, and I subjoin a copy of his reply, which will at once convince you whence the mistake arose. I merely add that although perhaps not in such a large way of business as some others, I will give place to no one in the trade as to the quality and correctness of the articles I send out, which have been tested for upwards of half a century, during which time the business has been carried on by me and my predecessors. Mr. Flanagan's letter was as follows:—

"With regard to the Cucumber, we send you a leaf from our retail catalogue, in which you will see we have had Hunter's Prolific Cucumber, but certainly not the one you wanted. This we have had some time, and it is quite natural to suppose that when you ordered it we sent you what we had in our own list by that name. The one we sent is most prolific but not long.—FLANAGAN & SON." This Cucumber was not in his wholesale list. *Geo. Edwards, Wells Nursery, Somerset.*

*Emigration of Gardeners* (see p. 53).—Permit me to refer your correspondent "John Jenkins," to your volume for 1851 (pp. 635 and 700) where he will find no such tempting accounts of "Agriculture in South Australia" as would induce any gardener to go there with the intention of turning either farmer or market-gardener. No doubt, however, many gardeners would willingly, ay gladly, go to Australia, but, like the Great Britain, they are short of coals to carry them there. *J. M.*

*Red Hamburg Grapes.*—Although I asked the cause of the Grapes in one house here not colouring properly, whilst in another they did so perfectly (see p. 773, 1852), I was convinced it was not the difference in the sort, as the following facts will show:—Having been told by some brother practicals that they were Red Hamburgs, but not wishing to avail myself of that way



of settling the question, and wishing to convince them, and to make assurance doubly sure on my own part, I struck nine eyes from a Vine in house No. 1, where the fruit did not colour properly, and grew them in pots. I grafted a Sweetwater in No. 2 (where they coloured perfectly), with one of them, and the result is perfectly well-coloured Grapes. I placed four of them on the front shelf in house No. 1, by the side of their parents, and from these I also obtained black Grapes, whilst fruit from their parents was not so. I plucked four others of the same sort in a bed or pit of leaves, in house No. 1, and these of course having the same treatment, with the exception of the roots or pots being plunged in the leaves, were what would be called by some Red Hamburgs. Now, as I stated in my first letter to you, a constant circulation of air was kept up, a proof that the evil did not arise from excess of fire-heat. I beg to direct Messrs. Watson and Williamson's attention to the fact, that some were well and some badly coloured in the same house, when placed under different circumstances at the roots; and I could also refer to two Vineries near here begun to be forced at the same time as this, which ripened before mine, the produce being well coloured, although having more or as much fire-heat. I am quite aware of the truth of what Mr. Watson advances about the action of light, and also what he asserts as to the effects of a high night temperature; indeed, his opinions in that respect are those of every intelligent gardener. A free circulation of air-heat in proportion to light, never over cropping and keeping the leaves, the digestive organs, healthy to the last, are the principles I have acted on; and I am quite satisfied with my Grapes in all respects, except in the matter of colour; and taking all things into consideration, I begin to think with "M. G.," that it is no advantage to apply artificial heat to the roots of Vines, at least it seems to interfere with their perfect colouring. The case of my Vines, both in pots and the main Vines in each house here, appears to favour that conclusion; but I am trying the matter again this year on one border, and will report the result. *W. H. Wheeler, Aldershot, Farnham, Surrey.*

**Cottages for Servants.**—Boarded floors for the living room are decidedly objectionable, as they cannot be kept clean without a great waste of time. I have one in my kitchen, which I intend to have paved over with bricks, as the traffic necessarily causes it to look at all times dirty, and it has in a short time worn out several Cocoa-nut fibre carpets. *C. P.*

**Mildness of the Season.**—In addition to the examples which have been already mentioned of the extreme forwardness of vegetation at this time, I beg to notice the pretty little *Corydalis claviculata*, which I found in full flower on the 16th inst. This, I believe, about four months before its usual time of producing blossoms. The plants enumerated in your pages as having been found in flower at this time, are, I think, mostly productions of the garden; as far as my observation has gone I do not think a great many wild flowers have yet appeared, and this is easily explained when we consider how wet, as well as mild, the winter has hitherto been; a circumstance which would act with much more force in fields and on hedges, than in gardens which are constantly receiving attention from the gardener; for this reason, therefore, we are most likely to find the premature wild flowers in dry, strong soils, which is exactly the situation best adapted to the pretty little *Fumitory* above mentioned. *Wm. Hott, Bromley, Kent.*

**Diseased Potatoes Luminous.**—On passing by a place one night in November last, where one of our men had been washing some small Potatoes, some of which were diseased, I observed something luminous on the ground not unlike the light of a glow-worm or of phosphorus. On examining the bright objects I found them to be some parts of diseased Potatoes; the bad seemed cut or broken in two. Not having seen or heard of anything of the kind before, I should be glad to know whether any of your readers have observed the same thing in Potatoes that have been diseased. *J. Grice, Setlington.* [The luminous appearance presented by decaying Potatoes is a very old and well-known fact.]

**Guano Water.**—Seeing in your pages mention made of this having been tried for Orchids at Chiswick, I beg to state that I have been in the practice of using it for that tribe of plants these two years past with the best results. I apply it once a week or fortnight, according to the state of growth the plants are in, and I am of opinion that by this treatment the flowers come larger and much finer in colour than without it. *J. A., Corehouse.*

**Zinc Roans (Gutters?) for Prevention of Drip.**—In a span-roofed Orchid house here I cultivate Bananas, which grew satisfactorily the first season, but last year (the second) when coming into flower we were sadly disappointed; for instead of throwing up their flower-stems properly, one-half of them never reached further than the middle of the plant, and there they became twisted like a corkscrew, the result of which was, with one exception, that from those thus affected we had no fruit. This I attribute to the humid state of the atmosphere throughout the winter, which of course was necessary for the well-being of the Orchids; the moisture rising to the glass, condensed there, and coming down the sash-bars dropped into the hearts of the Bananas, causing the leaves to decay, and hence the evil affecting the fructification. To get rid of this was of great importance, at the same time taking care not to destroy the good appearance of the house or darken it, a matter in which we succeeded perfectly, for any one going into the house would not observe the change; a small zinc roan or gutter, made to a right angle, was attached to

the sash-bars by means of small hold-fasts of the same material; the water from these gutters was received at the bottom into one lying on the side beam, and carried through the latter by means of a small pipe into the gutter on the outside of the house. The effect has been quite astonishing, for even during this very wet time we require to water the plants twice for once before the alteration was effected, and we can sprinkle the paths now and then, thus renewing the moisture in the house without any bad effect to the plants. Nay, on the contrary, I would say with much good to them. After a fair trial I am of opinion that it would be well to have all fruit and plant houses furnished with these small zinc gutters when first put up, for the extra expense would be trifling in comparison with the great benefit to be derived from them, more especially in the case of flat roofed houses, in which most gardeners are annoyed with drip, which this plan would entirely remedy, except in the case of broken glass. *J. N., Corehouse Gardens.*

**Ill effects of carelessly Pruning Wall Trees.**—In walking over gardens in various parts of the kingdom, I have been surprised to see so many mutilated wall trees, many of the branches of which have been cut away in consequence of disease and decay. After much observation, I am induced to believe that more than half the mischief is the result of careless pruning, for in many cases which I examined I have found short spurs, fruit-stalks, &c., that had died the previous year, had been left at the time of pruning. The disease thus descended the branches; ultimately the whole tree became affected, and death was the consequence. I would particularly warn young practitioners against this evil. Where a branch is diseased, I would recommend it to be cut away, so as not to leave a trace of the mischief; for where even an unsound fibre is left, the decay will spread, and in a short time become as bad as ever. I am aware that there are many other causes which contribute to the destruction of wall trees besides bad pruning—such as unfavourable situations, soils, seasons, &c.; but still I am of opinion that if the removal of all dead parts was scrupulously attended to, much disappointment would be prevented. Another precaution is by many neglected, being considered unimportant, viz., the covering of recently pruned trees in frosty weather. This is a cause of much evil, for the fresh wounds are easily injured by frost. *Hickling.*

**Fall of Rain at Carlesgill, parish of Westerkirk, Dumfriesshire, in 1852.**

	Inches.	Wet Days.
January ... ..	12.55 ... ..	28
February ... ..	6.67 ... ..	14
March ... ..	0.37 ... ..	5
April ... ..	0.65 ... ..	5
May ... ..	4.02 ... ..	15
June ... ..	5.00 ... ..	22
July ... ..	3.97 ... ..	14
August ... ..	6.65 ... ..	21
September ... ..	2.05 ... ..	13
October ... ..	3.15 ... ..	13
November ... ..	6.22 ... ..	19
December ... ..	18.38 ... ..	28
	69.68 ... ..	197

From the evening of Monday, the 13th December, until the forenoon of Monday, the 20th, 7.50 inches fell, while the average fall in December for nine years previous to 1852 is 5.01. The average annual fall for the last 10 years is 58.72. Fall in 1846, 68.71. During the whole of November and December the barometer was comparatively high, being seldom below 29, until the forenoon of the memorable 27th December, when it fell to 27.83. It has only once been as low for the last 10 years. The thermometer has been high for the season, with the exception of the night of the 29th Nov., when it fell to 17°. The temperature has been much above the average ever since. Swallows returned on the 19th of April, and the cuckoo on the 27th of that month; the corn-crack upon the 12th May. The weather continues as wet and stormy as ever; already (7th January) we have 3.72 of rain. *J. Little.*

**Weeping Willow.**—The Kilmarnock Willow seems to agree with the large Willow, common by all river-sides in Poland, Russia, and the North, very like our Bedford Willow; a fine tree, often weeping very pathetically. *S.*

**Euphorbia jacquiniiflora.**—Allow me to offer a few remarks upon this valuable winter-flowering stove plant, which, if well managed, in my estimation, stands unrivalled. Nevertheless one scarcely ever meets with a well-grown plant; they are generally very tall, and deficient of good foliage; the only point left to recommend them is their long wreath of orange-scarlet blossoms near the ends of the shoots—certainly an object worthy of admiration, but how much more would the plant be admired if it formed a well-grown bush, displaying its fine dark green pencilled foliage along with its beautiful flowers. How easily might such a plant be produced by merely stopping the points of the shoots when young. I am aware that many consider it wrong to stop this plant, or *Begonia fuchsoides*; but as I have tried both ways, I certainly give the preference to stopping. I have at the present time plants grown on both plans, so that I am well able to judge which of the two is the better. *E. Bennett, Perdiswell.*

## Societies.

**LINNEAN, Jan. 18.**—R. Brown, Esq., in the chair. The Rev. C. Babington, and Joshua Clarke, Esq., were elected Fellows. A paper was read by Mr. Yarrell on the Habits and Structure of the Great Bustard (*Otis Tarda*). This bird, which was formerly very plentiful

in Great Britain, is now very scarce. Two instances had come to the author's notice of its having been recently found in England—once seen by Mr. Waterhouse on Salisbury Plain, and a specimen shot by Dr. Plomley at Romney Marsh. He read notes on the habits of this bird from several correspondents. Mr. Nicholson had seen this bird in Spain, near Seville. The males arrive in flocks of from seven to fifty in number in February, the females singly in April. In May the male birds retire again, the young are hatched in June, and all disappear in July. They are good eating. He had shot one weighing 23 lbs. Two had been seen in the neighbourhood of Salisbury in 1801. One was taken after having attacked a horse. It lived many years afterwards in confinement. It ate sparrows and mice, as well as vegetable food. At the beginning of the present century, Mr. Nash says that he had seen as many as nine flocks of bustards in a single day, near Thetford, in Norfolk. The author alluded to the fact that Dr. Douglas had described the male of this bird as possessing a gular pouch, in which it carried water. It was supposed to carry the water about with it to supply its need in the arid districts in which it was found, and also as a means of defence. A preparation of the throat of a male bird which had died at the Zoological Gardens, was exhibited, in which no gular pouch could be detected. Other anatomists had also looked for this pouch in vain. The author, in his work on "British Birds," had followed Dr. Douglas, but he was now convinced that the description must have applied to some other bird. Mr. Gould exhibited a drawing of the Australian type of the genus *Otis*, and stated that he had failed to discover in that bird any pouch, such as had been described. The Australian species was excellent eating and in great abundance, and he and his party had principally subsisted on them for several months.

**ERRATUM.**—In our report of the meeting of the Horticultural Society last week, *Edwardsia macrophylla* was inadvertently written for *macrocarpa*, and *Symphytum officinale* for *orientale*. The former, which is a weed, will not be open, even in Dorsetshire, for a month to come.

## Notices of Books, &c.

**A Reply to the Strictures of Lord Mahon and others, by Jared Sparks (Tribner and Co.),** is an admirable example of the sharpest and most courteous criticism. Although the subject matter relates to political not natural history, all may study it profitably for the sake of its skillful argumentation and polished language.

**Dwyer's Principles and Practice of Hydraulic Engineering** (Dublin, McGlashan; 8vo) has reached a second edition. We have formerly noticed the work as one of great practical value to all who wish to understand the principles of drainage, and the mode of carrying them out. The work is too technical for much extract; but we are tempted to select, as an example of the perspicuous style of the author, the following passage from the section "on the proper form of channels, and the velocity of water in them:"—

"Before proceeding farther, it may be desirable to notice the most suitable form for the channels or beds of rivers, and, from the former considerations on the hydraulic mean depth of rivers, it would appear evident that the form which offers the least resistance, in point of friction, and which would give the greatest hydraulic mean depth, should be the most favourable, and this form is peculiarly the property of the circle, as it contains the greatest area within the least compass, and therefore of all transverse sections of a river, having the same area, the semi-circular would have the least perimeter or border, and its hydraulic mean depth equal to half the radius; but, notwithstanding this apparent advantage of the circular bed, it is not difficult to perceive that it is incompatible with a due regard to the regimen of the stream or stability of its banks, and could only be used with advantage in artificial works, such as culverts, conduit pipes, &c., as the banks of a circular bed would soon be undermined and tumble down; and, being dissolved in water, would be carried along and deposited where the ocean or other obstruction may check its speed: similar events would constantly recur, until Nature had eventually formed a bed, permanent and suitable to her necessities. Slopes of one to one are found sometimes too steep for the banks of rivers, although they have been selected for their simplicity in the construction and calculation of Table II., as being suitable and less liable to objection than any other. But it has been observed, that the spontaneous efforts of mysterious nature frequently slope the banks in a ratio of four to three, which is known to stand very well, and is the slope usually given, especially in the higher and steeper grounds."

In Section 17, which treats of thorough drainage, we find the following remarks:—

"Thorough-drainage works should never be undertaken unless clearly ascertained that the surface level of the maximum floods, in the main drains, can be discharged at a level which will admit of the sub-mains venting their waters from the most remote points of the land proposed to be thorough-drained, at least 3 to 4 feet below the surface, or that the highest flood in mains shall be at least 3 feet below the lowest point of the land to be thorough-drained, taking great care not to connect mains, sub-mains, or minor drains to any sluggish adjoining water-courses which may exist, but to convey them parallel (if necessary) until a suitable



fall is obtained, and always connecting them in an acute angle, and at a proper level."

"But as the object here is not to write extensively on thorough-drainage, but to show the expense likely to be incurred therein, and also the most suitable and efficient drains for carrying off any proposed quantity of water from the lands to be drained, as it frequently happens that, for want of information, those main and sub-mains may be made either too large or too small, in the former case an unnecessary expense is incurred, and in the latter the drains are almost useless. An example will elucidate the case: Required the dimension of a pipe or tube capable of conveying the water from any number of acres of land with any given inclination between 1 foot in 100 feet. Look for the number of acres in Table I., under the head of Pipes or Tiles, and opposite will be found the discharge in cubic feet per minute. Now look for the rate of inclination at the top of 10th Table, and in that column find the discharge or the next greater, and in the margin corresponding therewith will be found the diameter of the tube required. Example: Let the number of acres be 5 and the rate of inclination 1 in 30, what should be the diameter of the tile or pipe? Opposite to 5 acres will be found 12.5 cubic feet—which look for under the rate of inclination, and corresponding to 3.6 inches will be found 12.0 cubic feet, the required number; therefore, a tube of that dimension will answer. If it were required to convey the waters of 10 acres through a pipe, what should be its dimensions, the fall being the same as before? Opposite to 10 acres will be found 25 cubic feet, and corresponding to the inclination given, and 4.8 inches, we have 25.1 cubic feet discharge. These calculations have been made on the principle that one-third the rain water enters the pipes in 12 hours after its descent. But should the nature of the land, &c., warrant an alteration, still the table will show the dimensions for the required quantity. When large covered or open mains are used, Table No. II. will show the dimension that should be used. Let persons engaged in drainage may happen to be misled by the apparent smallness of the pipe here found, it will be necessary to observe that when there is a great declivity or fall in the surface of the land, the greater portion of the rain-water will run off on the surface, and therefore particular attention should be paid to this, for the amount of rain water that has to be discharged per minute will form the chief difficulty they will have to encounter; the maximum quantity has already been ascertained, but the velocity it acquires when precipitated down steep inclines, is as fluctuating as the variety of gradients, and may be observed by inspection of Table No. X., which gives the discharge for a pipe of 12 inches diameter, with an inclination of 1 in 10, 503 cubic feet per minute, which is about 3134 gallons: but if the inclination had been 1 in 100, the discharge would only be 127 cubic feet, or 791 gallons per minute. And if we proceed further with a less rate of inclination, say 1 in 1000, or about 5 feet per mile, the discharge will be reduced to 10.38 cubic feet, or better than a gallon per second."

"The author has invented a very simple instrument for finding the rate of inclination and setting off parallel drains; by it and the tables any intelligent man could make and lay down suitable drains for any farm or estate."

Twenty-seven tables of logarithms, required for hydraulic calculations, terminate this very useful volume.

### Garden Memoranda.

MESSRS. HENDERSON'S NURSERY, PINE-APPLE PLACE.—The show-house here is already gay with Camellias crimson Rhododendrons, the Winter Heath (*Erica hiemalis*), and *E. reginae*; *Cinerarias*, *Linum trigynum*, which is a really useful plant at this season; *Epacris hyacinthiflora* and its white variety, two of the best of this genus; *Genista racemosa*, Chinese Primulas, double Snowdrops, Early Tulips, Narcissi, a hybrid *Daphne*, and *Hyacinths*, among which *Grand Vainqueur*, white; *Duke of Wellington*, blue; and *Waterloo*, red; were conspicuous; *Styphelia tubiflora*, a capital winter blooming shrub; *Pelargonium album multiflorum*, and a fine collection of *Cyclamen persicum rubrum*—all plants imported from the Continent last autumn. Of this variety too much cannot be said; it is exceedingly beautiful, and no greenhouse should be without it. In a long span-roofed house, chiefly devoted to hard-wooded plants, the slender growing *Acacia rotundifolia* was just coming into blossom. This is a neat kind for a pot; it occupies little room, and is therefore very suitable for small houses in which variety is an object. A degree of elegance was imparted to the flat front shelf of this house by introducing here and there among the small plants which it contained the variegated Aloe-leaved *Yucca*, whose fine heads of yellow-striped leaves set on thick gnarled trunks, a foot high or so, gave the whole quite an exotic appearance. The stove has hitherto been very gay with *Amaryllids*, but their beauty is now partly over. The display which these plants make should not be overlooked by those who are fond of showy flowers. The ever-blooming *Euphorbia jacobiniflora* was here in great beauty, as was also the less common *E. punicea*, whose crimson bracts reminded one of those of the much admired *Poinsettia pulcherrima*. The larger variety of *Aschynanthus pulcher* was likewise in blossom, as were *Strelitzia Reginae*, *Phrynium sanguineum*, which proves to be a good scarlet-flowered winter

plant; *Echeima fulgens*, and various *Begonias*. The Showy *Medinilla* (*M. speciosa*) was producing berries which are quite as ornamental as its flowers, and the red-leaved *Dracena terminalis* served in an eminent degree to enliven the monotony which too commonly prevails in plant houses during winter. Some small coloured glass vases suspended from the roof, and filled with Lycopods, Ferns, and plants of that sort, were also objects at once striking and interesting, and we should think their skilful introduction into plant stoves generally would help to break the uniform appearance they too often present. We had nearly forgotten to mention the old *Phaius grandifolius*, which is still indispensable in the winter decoration of our stoves. In the Heath house a few of the early varieties were in blossom, and in the specimen house the yellow *Hibbertia dentata*, *Styphelia tubiflora*, and one or two other plants, were objects of considerable beauty. In the Orchid house there was little to admire in the way of flowers; but the plants looked very healthy and clean. At one end of this house was a nice group of Pitcher-plants, of which Messrs. Henderson have a good collection. In the open ground little was in blossom except the red *Pyrus japonica*, and the bright yellow *Jasminum nudiflorum*, both of which were trained plants on walls.

### FLORICULTURE.

ROSES IN DERBYSHIRE.—I have frequently read with delight the glowing descriptions of the far-famed Rose gardens of Hertfordshire, and I have also made a point of taking an annual ramble through them, and in no instance do I recollect being disappointed. Still there are, I dare say, some who would like to hear something of the growth of our "Queen of flowers" in the less favoured climate of the north; for there are a good many sorts that may bloom splendidly in Hertfordshire which refuse to fully unfold their beauty to the chilling breezes of the Derbyshire Hills. Nevertheless I am glad to say that, with common attention, I find the majority of our popular Roses to grow and flower with amazing vigour and beauty even in this locality. An attempt, however, to grow Tea and China Roses, without due preparation, I have found at all times to be a failure, until I adopted the following plan, which I can strongly recommend. Three years ago I excavated a bed about 30 feet by 6 to the depth of about 2½ feet, the soil being of that clayey retentive kind which rendered it unfit for almost any description of plants to grow in. I then placed at the bottom, upon drain tiles, about 18 inches of compact faggots, or bundles of sticks; the remaining 12 inches were filled up with turfy soil and road-scrappings, with a portion of night-soil, and the bed was planted with China and Tea-scented Roses, consisting of *Safranot*, *Goubault*, *Comte de Paris*, *Julie Mansais*, and other free growing kinds. They have hitherto only received the protection of Fir boughs supported over them by a temporary frame-work of Larch poles. Many of them are fine bushes, and have been a mass of bloom until very late in autumn. Last spring I introduced into the bed plants of the yellow *Vicomtesse Decazes*, and the glorious Hybrid Perpetual *Géant de Batailles*, and the effect of the whole was remarkably good. In regard to the last-named Rose, I may venture to affirm, that it will be found quite indispensable as a mass flower, for nothing can surpass it in the rich and fiery brilliancy of its colouring, and the rapid and constant reproduction of its bloom; its dark green foliage is also very handsome, but as an individual Rose for exhibition, it will, I fear, never maintain a very high position. What, in the whole range of Flora's beauties, can compare, however, with the gorgeous combination of colouring afforded by a bed of each of the following varieties placed in close contiguity; viz., *Géant de Batailles*, *Duchess of Sutherland*, *Baronne Prévost*, *Auberon*, *La Reine*, and (Tea) *Vicomtesse Decazes*! These never fail in this neighbourhood to produce a mass of bloom, until the chills of approaching winter arrest the expansion of their flowers. As to yellow Roses, at present the Persian is the best; it flowered profusely all round here last year, but allowing it to bloom two seasons together kills the plant, and it is with justice complained of as being generally a sickly unhealthy looking tree after the first blooming. When a bed of it is grown it ought to be planted very closely, and every other tree pruned to about four eyes each year. One half then will be blooming plants, and the other will supply their place the following season, which will keep the plants in health; that is the plan we adopt here. The Cloth of Gold *Noisette* is certainly a splendid Rose when one has the good fortune to catch a flower, but unfortunately they are "few and far between;" it is therefore worthless for general cultivation; not so, however, if you will go to the trouble and small expense of carrying out the following plan, which, for its unique appearance (independent of its practical results) may be safely recommended. Having fixed upon a favourable site, upon a sheltered part of the lawn or Rosery, excavate a circular bed, 6 feet in diameter and 8 inches deep, clear of a concreted bottom, which is absolutely necessary to prevent the roots of so strong a feeding Rose penetrating in that direction; form also a circular wall of the same material, or of brick, to confine their progress within the circle, then fill the bed up with prepared Rose soil, not forgetting a point most essential to success,

viz., a thorough drainage through the bottom. The Roses should then be planted in the centre, and trained to a semicircular wire frame, which, when covered with the plant exhibiting a dome-shaped mass of foliage and flowers, must be seen for its effect to be fully appreciated. After the first season, when the frame-work is covered with leading shoots and they have produced a quantity of erect laterals for blooming, it will, of course, require proper attention, in the way of giving copious waterings, occasionally mixed with liquid manure. The same plan may also be adopted with all the other pale yellows of similar habits, as *Solfaterra*, *Lamarque*, *Jaune Desprez*, &c., and indeed with any rapid growing Rose which may be a shy flowerer, and why not with that old and universal favourite the Yellow Banksian; this latter I have not tried, but I am sure, were any possessor of a strong Banksian Rose, who may have for some years cultivated it against a wall without success, to subject it to such a system he would have no cause to complain. Protection in winter is easily effected by means of Fir branches, &c. To finish with yellow Roses, I may mention that *Vicomtesse Decazes*, previously named, is a most brilliant Rose, but like the generality of Teas, it does much better worked on short stems—doubtless the *Manetti Stock* would be very suitable for it. *Harri-sonii* is a useful semi-double Rose, but its beauty is very soon over. We are still much in want of a really good dark ever-blooming climbing Rose; for, with the exception of *Amadis* or the *Crimson Boursault* (which by the bye is only a summer sort), I hardly remember one worth placing on pillars. The Queen of the Prairies is a famous grower, but the flower is a poor affair, and the same may be said of two or three others of our Transatlantic friends. The two classes of Hybrid Perpetuals and Bourbons at present command the greatest share of patronage in this part of the country. Indeed, with the exception of the Moss and the old Cabbage Provins, which retain their hold upon the affection of nearly every lover of the Rose, scarcely anything else is cultivated. A. G. Ashbourne.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—At a special general meeting, held on the 26th inst., the election of committee-men at the late anniversary meeting was confirmed by a large majority.

HACKNEY AND STONE NEWINGTON DANIELA SOCIETY.—The annual account of this society has just been handed to us. It exhibits a favourable state of affairs generally.

AZALEA: *W. G.* Petals somewhat narrow, and dull in colour.

CYRILLAS: *J. W.* Charming flowers, but not sufficiently distinct from sorts already out.—*T. W. A.* A robust pure white, with lilac disk, but having the too prevalent fault of reflexing.

PANSY: *T. G.* A chaste white-ground variety, but at present too small to enable us to report on its individual properties.

PRIMULAS: *J. W.* If the specimens sent be fair examples, they are below average merit.

### Miscellaneous.

*Surda Melons*.—The sight which pleases me most is a collection of fine, healthy *Surda Melons*; some of these are now putting forth their second set of leaves, and promise well; they will be six weeks in advance of the general sowing, and will no doubt be very productive, besides escaping an exposure to hot winds, which I find invariably ruins them. I have only once tasted a *Surda* here, with its natural flavour, but I do not now despair of eating them *ad libitum*. They thrive in temperate climes. In Ireland a friend has lately grown them with no more labour than Cucumbers; the smallest actually weighed 1 lb. 10 ounces. I have just sent off several packets to different parties in England. Even in India the fruit realizes enormous prizes—often its own weight in silver. I have once seen a good one sold (at Mooltan) for five rupees, but I have been repeatedly asked eight; an offer from me of six was rejected with disdain, the Lahoree informing me that he should sell his whole lot to one Nawab after his own price. *Lieut. Lowther, in Proceedings of the Agri-Horticultural Society of the Punjab.*

*Remedy for the Stings of Bees*. By M. Gumprecht.—The stung place is to be rubbed with the freshly-pressed juice of the Honeysuckle (*Lonicera caprifolium*). The expressed juice may be kept in closely-stoppered bottles for this purpose. *Dingler's Polyt. Journ.*, cxxvi. p. 80; *Chemical Gazette*.

*Floriculture, the Past and Present*.—Whoever may be able from memory, or by reference to such records as are left, to revert to floriculture as it existed 20 years since, cannot fail to be struck with the singular feature it then presented, in the almost total absence of a middle class among its votaries. The love of flowers, indigenous in all, and hardly unacknowledged by the coldest and most barren of natures, was pursued as an art almost exclusively by the descendant of the exiled or emigrant Netherlander—by the hardy miner, earning his daily subsistence in the depths of the earth, shut out from the light of heaven—by men of sedentary employments, from hand-loom weavers, stockingers, or other artisans, whose occupations, ministering to the sheer necessities of our nature, might seem the very antithesis of everything poetical, or wherein a love of poetry could be engendered—men rude and untaught, and often so proclaiming their vocation as to draw down ridicule and contumely upon themselves and the conceits they gave utterance to, even when they escaped the sterner denunciation of being empirical charlatans, masking their pot-house dissipations and the practice of gross chicanery and most scandalous frauds, under a pretended love of flowers. To such men, so low in the social rank, or to the high and wealthy in the land, was floriculture almost wholly confined, and long it pined under the



crude ignorance of the one or the careless regard of the other. Here and there, indeed, a light arose, but it was dim and misty in its burnings, and unsatisfying in its results; the beautiful was sought upon crude tradition or instincts quite as crude, and the truthfulness of the forms sought was unknown, illusory, and undefined; few, indeed, being able to render a reason for the opinions which they held. In such circumstances it can excite no wonder that a "Florist" was a term nearly allied to contempt, that his vocation was held a fancy, and so little removed from sports of the lowest order, as to place him on a level with the pugilist and dog-fancier; neither can it be denied that the press, when first it came to represent a feeling which had been slowly germinating—how slowly—for many hundred years, did little to remove these false conclusions. Not directed by high and noble instincts, it fed the vices of the mass it should have lifted to nobler things; and whilst it defined much which will be read with pleasure while a flower remains to grace the earth, it prostituted its aptitude and intelligence to coarse invective and scurrilous abuse, making its pages rather to resemble the violence of a bull-ring than the peaceful enjoyment of a well ordered garden. Men of refined habits and educated intelligence kept studiously aloof, fearing to lose caste and position in the violent and indiscriminating abuse any attempt to remedy the evils deplored was sure to encounter; and floriculture still continued infamous. But such a state of things could not long continue. With intelligence widely spreading, with the arts of life diffused beyond all precedent, floriculture could not long remain enslaved. The *Chronicle* came to teach and lecture upon scientific gardening—the "Midland Florist" addressed itself to the elevation of the humblest of floral devotees—Mr. Hardy showed how the attainments of a scholar and a gentleman could be devoted to the delineation of exact proportion in the Tulip—the "Florist" supplies a still higher demand. "Iota" gave an unanswerable refutation to the objectors to the "Florist's" labours; and, delineating in simple language the principles upon which beauty in flower depends, furnished us with our articles of faith, showing floriculture an art, worthy alike of the attention of a wise man and the admiration of a good one. In Scotland, some energetic individuals have taught and exemplified with the most signal success. Floral meetings, beforetime insignificant, have swollen into aggregate gatherings of florists from the Land's-End to John o'Groat's House; and results, such as the most sanguine seven short years since would never have ventured upon predicting, have been realised. Most points on flowers from varying localities have been largely determined; jealousies and suspicions, engendered in ignorance, have been eradicated; the cultivation and knowledge of flowers have extended immensely beyond all former experience; and an eager, earnest, deep-seated intelligence is plainly to be recognised in the length and breadth of the land, proclaiming the advent of large victories, and claiming for Flora a worship at least akin to that given to the genius of painting and sculpture. Such, as it appears to the writer, is the aspect of the present. That it is not wholly without alloy is simply the concomitant of our mortal state. Ignorance has still to be dissipated; and during the past year we have witnessed an attempt, desperate indeed in its utter futility, to arrest the progress of intelligence and the diffusion of sound principles. True, however, to its character to the last, it defeats itself by calling to its aid the press, which magnifies a thousand-fold its ugly features; and it requires no seer to prophecy the speedy end of the attempt, and the confusion of its authors. Of the future the title of this paper gives me no leave to speak; but I cannot forbear suggesting that the same eminent results which have attended the aggregate meetings of the Tulip, and Carnation, and Picotee cultivators, may be equally participated in by all the lovers of the Rose, the Pink, the Pansy, the Pelargonium, the Hollyhock, the Dahlia, and every florist's flower; and, next to the guiding of the press, I look upon these as the most powerful means of disseminating a knowledge of flowers, and the surest guarantee for the advance of the art of floriculture. *Dodwell, in Scottish Florist and Horticultural Journal.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT HOUSES.

In pruning and training the climbers in plant houses, some regard must be paid to the time when it is desirable the plants should bloom. Thus with stove climbers, not required to bloom before the autumn, pruning may be deferred for some time yet, which for an earlier show should be done at once. Passion-flowers, Begonias, and similar plants, which make long annual shoots, should only have their wood thinned and slightly shortened, while some others, as *Combretum*, *Beaumontia*, &c., may be spurred in. Much depends upon the space allowed for their growth. In the conservatory, Kennedys, &c., will be showing bloom, and what training they require should be done at once, but the pruning of these should not take place till after blooming. Where Orange trees are grown to decorate the flower garden during summer, care should be taken to prevent their beginning to grow previous to their removal to the open air, and more especially if the trees are wintered in a dark roofed house. Where such happens, we have always found the young leaves thin and flabby, and turn brown the first bright weather when set out; whereas, if growth is

prevented till the plant is in the open air, the leaves will bear any amount of sunshine, and will carry that dark glossy hue so essential to their beauty.

#### FORCING DEPARTMENT.

**PINERY.**—When the early crop is showing bloom, some care must be taken to ensure the perfect development of the flowers, or misshapen fruit will be the result. For this purpose the air of the house should be dry, and a slight additional temperature allowed, especially on bright days. Whether grown in pots or in an open bed, the bottom heat should be kept steady, between 80° and 90°. We never advise moving fruiting Pines after they have shown fruit, and when additional bottom heat is necessary the leaves or tan between the pots should be carefully removed and fresh materials introduced, to give the required warmth. With Pine growing over hot-water pipes, this trouble is avoided. At this season the fruiting stock may require water; we have never found anything better than clear soft water for Pines, but at this season, when the growth is not very active, stimulants should be applied with caution. Mind the young stock do not suffer from damp at this season, which they are very liable to do if grown in dung pits. Air must be given sufficient to produce a free circulation, and the top heat kept up to 60° or 65°, either by linings of dung or by the aid of pipes. Remove into a shed, if not done before winter, a stock of loam for spring potting. **PEACH-HOUSE.**—You cannot hurry Peaches at this stage, and it will be better to keep them very steady and comparatively cool, than attempt to make up for light and sun by fire-heat; dust the flowers frequently, and keep what circulation you can in the house, the health and vigour of the blooms will depend mainly on the supply of air they get; bring on the second house gently, making fires chiefly by day; the temperature at night may be 45° this mild weather, and this may be maintained without fire-heat. Figs may have their temperature gradually raised, as the leaves advance, one degree weekly should however not be exceeded; syringe frequently. CHERRIES will require caution, and their progress should be slow; fires will only be necessary by day, and even then the heat should not rise higher than 55°, to which point it should be kept, by free admission of air.

#### FORCING GROUND.

Another sowing of the Early Horn Carrot and Frame Radish may be made, if the demand for them is considerable. Pits or frames should now be got in order for Potatoes; for forcing we prefer the genuine Ash-leaved Kidney; the Golden Dwarf and early Oxford are likewise good forcing kinds; in bringing forward the tubers (forced Potatoes should never be cut into sets), for planting, keep them in a slight heat only, dry, and well exposed to light and air, as the best preventives against disease. When they are finally transferred to the frames, plant them in light dry turfy loam, which may be mixed with wood ashes, or charred refuse, with benefit to the crop. Keep up a good stock of French Beans in small pots for transplanting to larger as room occurs. Mushroom beds should be made to continue the succession, a somewhat moist temperature of 58° will be requisite; sprinkle the beds with tepid water when dry.

#### FLOWER GARDEN AND SHRUBBERY.

Wherever the soil is found to be at all poor, Roses should be frequently lifted, and have a fresh supply of compost. November is the best time for this operation, the next best the present; take each plant up carefully, and remove the contiguous earth, and replace it by a compost of strong loam and well rotted manure, when the plant, after a moderate root-pruning, should be replaced in its place; all Roses are benefited by this practice every three or four years, but in poor soils it is absolutely necessary to insure a fine bloom.

#### FLORISTS' FLOWERS.

Auriculas will now require more water, with abundance of air. Prepare the compost for top-dressing; this should not be the stimulants which have been recommended in some floricultural works, but well-decomposed sheep manure mixed with decayed leaves. Some florists merely stir the surface, and use weak liquid manure; and by this treatment we have seen splendid trusses of flowers. Too great care cannot be directed towards valuable collections of Tulips; these are more forward than usual, consequently will be more susceptible of severe weather in February and March. The attention required is comparatively speaking small; this we have previously enforced. For Carnations and Picotees, all soil or compost should now be under cover. Those varieties which start early will require potting first; and the enthusiastic cultivator will find abundant cause for observation in the various habits and constitutions of his plants, which vary as much as those of the human race. Attention to minutiae is the great source of success.

#### KITCHEN GARDEN.

The land for the general crop of Potatoes should be got into planting order immediately the state of the soil will permit of its being moved. We do not advise the planting of the general crop in the autumn, feeling sure no advantage is gained by the plan; and as to its exempting the crop from disease, our own experience, in a large Potato district, leads to no such result. We would, however, advise planting in March, on dry, open soils. Avoid fresh and rank manure; soot, peat-ashes, and other dry absorbent manures, are preferable; and the more so on damp and heavy lands. Prepare ground for the main crops of Parsnips (a favourite root in the West of England), Carrots, Beets, and other roots requiring a deep, good, pulverised soil.

STATE OF THE WEATHER NEAR LONDON,  
For the week ending Jan. 27, 1853, as observed at the Horticultural Gardens, Chiswick.

Jan.	Moon's Age.	BAROMETER.		TEMPERATURE.				Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean.	Of the Earth 1 foot deep.		
Friday..	21	29.463	29.360	50	33	41.5	43	S.W.	.05
Satur..	22	29.764	29.523	42	35	38.5	41½	N.W.	.00
Sunday..	23	29.764	29.570	43	31	37.0	40½	N.	.00
Monday..	24	30.157	29.644	42	34	38.0	40	N.	.00
Tues..	25	29.803	29.647	42	37.0	40	40	N.W.	.00
Wed..	26	29.737	29.651	40	36	38.0	40	E.	.00
Thurs..	27	29.791	29.739	40	36	38.0	39	E.	.04
Average	..	29.834	29.693	42.7	32.4	37.5	40.5		.10

Jan. 21—Hazy; shower; cloudy.  
22—Cloudy; clear and cold; hurricane, from north, without rain at night.  
23—Fine; overcast and cold; clear at night.  
24—Overcast throughout.  
25—Foggy; overcast; rain at night.  
26—Fine; fine in forenoon; cloudy at night.  
27—Fine; densely clouded; rain at night.  
Mean temperature of the week 14 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending Feb. 5, 1853.

Jan.	Feb.	Average of 27 Years.	Average Lowest Temp.	Average Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
							N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30		44.1	31.7	37.9	12	0.38 in.	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Mon. 31		44.1	31.8	38.0	14	0.32	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Tues. 1		43.4	32.0	37.7	11	0.75	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Wed. 2		44.3	31.2	37.8	11	0.12	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Thurs. 3		44.9	31.6	38.2	13	0.42	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Friday 4		44.8	31.2	38.0	13	0.31	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Satur. 5		44.8	32.6	38.7	13	0.23	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9

The highest temperature during the above period occurred on the 3d, 1850—therm. 57 deg.; and the lowest on the 5th, 1830—therm. 10 deg.

#### Notices to Correspondents.

**BRICK-FIELDS:** A Sub. Such places are extremely disagreeable to those who live near them, but we have no information about their doing harm to fruit trees.

**CHERRY TREES:** J. B. W. The root pruning of Cherry trees, 20 years old, is a hazardous experiment; therefore, it will not be advisable to apply it to your trees, at this period of the season more especially. By next autumn you will see how the tree you have root pruned is likely to succeed, and then you will be able to judge of the propriety of operating upon the others. In the meantime you will do well to loosen the soil about the roots of these (taking care not to cut or break the fibres), introducing at the same time plenty of rich compost about a foot below the surface. The compost will so much encourage fresh roots that, in all probability, the trees will make good wood, and again become productive.

**COAL:** Enquirer. It seems to be iron pyrites. De la Bêche's "Geological Manual."

**COPING:** A. B. None of the copings formed of tiles imbedded in cement, and cast in moulds, will stand long: there is so much expansion in summer that the joints break, and the coping slabs are pushed out of their place or crushed. We are unable to say positively whether a coping worked like a moulding in mere cement, on the upper face of the wall, would give way; but we are of opinion that it would not, if the whole top of the wall were cemented so as to prevent rain soaking in behind the moulding. Portland cement is what we should use. If your wall is still to build, then we advise you to work a projecting course of tiles into the wall below the last course of bricks, so as to form a key for the coping or cornice; and then, if Portland Cement is employed, there will be nothing to fear, provided the work is well done.

**FRUIT TREES:** Sub. Apple trees 20 years old may be grafted advantageously; they will then bear in a few years, whereas by planting young trees you would have to wait many years before the stems could be so strong as those you already have, and still that is the case, they will not be able to bear heavy crops. You must lose no time in cutting back those trees you intend to graft; if you delay till the sap begins to flow canker will ensue. Cut so as to leave four, eight, or more forks, or stumps, for grafts. You mention the Dumelow's Seedling and Normanton Wonder; they ought to be the same.

**GLASS FACINGS FOR WALLS:** Sub. Hartley's patent rough plate will be found to suit your purpose best.

**HEATING:** Eben. You may doubtless heat your pit efficiently in the way you propose; 4-inch pipes will be found to answer best. One kind of boiler is nearly as good as another; more depends on the setting and the fitting than on the boiler itself. Insist upon the fire-place, &c., being fitted with Sylvester doors.

**HOTBEDS:** Mary, being about to make a hotbed for raising young plants, would be glad to know the best materials of which to compose it, and would feel much obliged if any of our correspondents would kindly inform her on the subject.

**LAWNS:** Old Sub. Your friend had better inoculate his lawn, where the "Grass seeds have not hit," with good turf. Frequent mowing will improve the quality of the Grass.

**NAMES OF FRUITS:** J. Rodolph. 1, Bourne Race; 2, Reine des Canards; 4, King of the Pippins; 5, Paradise Pippin.

**NAMES OF PLANTS:** J. L. We have no conception what your Orchid is, and it is useless to conjecture. Should you not be at liberty to send the flower to London, you will have to forego the name. If it really comes from the district you name, it is probably new and interesting.—Wigan. 1, *Eleocharis cyaneus*; 2, *Some Eleocharis*. Both from New Holland; their medical qualities are nil.—W. J. E. *Cyrtomium falcatum*, Presl; a native of Japan, and nearly hardy in this climate. *S. — Eriogonum*. 1017, *Oxalis acetosella*; 824, *Adonis Persica* ? Boiss.; 87, *Adonis autumnalis*; 9, *Ceratophyllum falcatum*; 173, *Anemone silba*; 155, *An. umbellata*; 1056, *Cynanchum autumn.*; 482, *Vincetoxicum officinale*; 434, *Vin. fuscum*—*La Cella*. 1, *Maxillaria grandifolia*, rare; 2, *Epidendrum dichromum*, very rare; 3, *Odontoglossum Pescatorei*, smaller and paler than usual; 4, *Oncidium*, probably *tenuis*. We should be glad to see the Stanhopea; the name is unpublished and new to us. It might come through Borrani & Droz, Rue des Saintes Péres, under cover to Williams & Norgate, London.—Young Reader. *Buxus balearica*,—George Toovey. *Lacena bicolor*; the foreign weed is not in flower and cannot be named.

**PLUMMET LEVEL:** C. Lucas. Your communication has been received, and will be published as soon as the woodcut can be got ready to accompany it.

**POPPIES:** J. F. B. Sow in February broadcast. First mix the seeds with four times the bulk of sand. Hoe out to 8 or 10 inches apart, according to the richness of the soil.

**TEMPERATURE:** G. S. B. Your observations are correct. The minimum temperature at Chiswick on the 18th inst., as checked by different thermometers, was 26°. The night was clear, with much radiation, so that a thermometer indicating the amount of this fell to 21°; but the change was such, that in the following night, the 19th, the radiating thermometer was not lower than 46°.—C. R. N. Bath: The lowest temperature near London on the 17th inst. was 34° by the common thermometer, and 29° according to one exposed in a radiator. But the temperature at Bath must have then been much lower, for no ice has been carted near London. Scarcely a film of ice has been seen in this neighbourhood all this winter.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

## MANURES.—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:

Turnip Manure	... ..	per ton	£7 0 0
Superphosphate of Lime	... ..	"	7 0 0
Sulphuric Acid and Coprolites	... ..	"	5 0 0

Office, 69, King William Street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

## SEWAGE CHARCOAL MANURE.

PEAT CHARCOAL, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, and it will be twice as efficacious the second year as the first."—*The Garden, by Mr. Gleming.*

Mr. JOHN ASHLEY, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

SUPERPHOSPHATE OF LIME, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

PERUVIAN GUANO, guaranteed, the genuine importation of Messrs. A. GIBBS & SONS, 9l. 10s. per ton, or, in quantities of five tons and upwards, 9l. 5s. per ton in dock. A constant supply of LINSEED and RAPE CAKE.

EDWARD PURSER, Secretary.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

## DRAINAGE OF LAND.

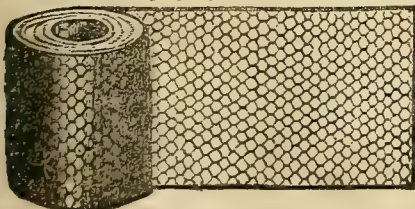
HENRY WEBBER begs to inform Landowners and the public that having had several years' practical experience, he is prepared to undertake the drainage of estates to any extent, together with the laying out and mapping of the drains, on the most approved plans; and will contract for the execution of the work. Reference given.—Address, Halberton Court, near Tiverton, Devon.

## IRON HURDLES.

STEPHENSON AND PEILL, 61, Gracechurch Street, London; and 17, New Park Street, Southwark, Manufacturers of every description of Iron Fencing, beg to call the attention of Noblemen and Gentlemen to their present prices of HURDLES:—for Sheep, 6 feet long, 3 feet high, with 3 bars, at 4s. 6d.; and for Cattle, 6 feet long, 3 feet 3 inches high, with 5 bars, at 5s. each.

## GALVANISED WIRE GAME NETTING.—

7d. per yard, 2 feet wide.



	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong	9 "	6½ "
2-inch " extra strong	12 "	9 "
1½-inch " light	8 "	6 "
1½-inch " strong	10 "	8 "
1½-inch " extra strong	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrows-proof netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. 2 s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 2 10 0  
Larger sizes if required.

To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest Pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentee and Manufacturers,

JOHN WARNER & SONS,

8, CROMBIE, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water, Fire Engines, &c.

## ROYAL AGRICULTURAL COLLEGE,

CIRENCESTER.

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THE NEXT SESSION will Open on FRIDAY, February 4th,

and the Lectures begin on the following Tuesday.

Students are admitted either as Boarders or as Out-Students. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as for agricultural education.

Prospectuses and information can be had on application to the Principal.

## GRASS SEEDS FOR PERMANENT PASTURE.

Which may be had separate or mixed, expressly to suit the soil.

SUTTON AND SONS having for many years paid special attention to the examination of Natural Pastures, and the collecting of various kinds of Grasses, which grow naturally in the various soils of England and Wales, are enabled to supply the sorts and quantity of Seeds best adapted to suit the soil for which they are intended, and at much less expense than is usually incurred.

SUTTON AND SONS are also extensive Growers of Turnip, Carrot, Mangold Wurzel, and other Agricultural Seeds, which they sell at the lowest market prices, Carriage Free, and which they can warrant new and true.

Any particulars required respecting Grasses or other Seeds will be promptly given to applications addressed to JOHN SUTTON & SONS, Seed-growers, Reading, Berks.

## NEW FARM SEEDS—1853.

WILLIAM EDGUMBE RENDLE AND CO.

have this season a very superior stock. No purchases should be made till the appearance of their New Farm Seed Catalogue, which will be published in the course of a few weeks.—For Copies, apply to

WILLIAM EDGUMBE RENDLE & Co., Seed Merchants, Plymouth.

## The Agricultural Gazette.

SATURDAY, JANUARY 29, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Feb. 2	—Agricultural Society of England.
THURSDAY, — 3	—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 9	—Agricultural Society of England.
THURSDAY, — 10	—Agricultural Imp. Society of Ireland.

AN "Economist" has favoured us with his opinions on LOIS-WEEDON WHEAT GROWING; and we have published them for the use of our readers in another column. This, however, we should not have done if we had not been able, from personal knowledge, to furnish the details for which he asks, and in the absence of which he has been misled, and would mislead.

The questions he asks are—Can the practice be generally adopted? and Is it more productive than any other plan of cultivation? He considers that both of these questions must be answered in the affirmative before the Lois-Weedon method of Wheat growing can be profitably adopted. Now, we do not think they need. The first question is one about which individual occupiers need not trouble themselves at all. It will often be found best, in other things beside Wheat-growing, for each to think of the proprieties, possibilities, and interests of his own individual case, without much anxiety about the result of every one else acting as he proposes to himself. It will be a strange thing indeed in agricultural history, when universal and energetic acquiescence in novelties, however plausible they may be, shall become the rule; and in the meantime cultivators of the soil may discuss the policy of following Mr. SMITH's example without troubling themselves with anticipations of its effect on the labour-market, when all the Wheat land in the country shall thus be forked and hoed and forked again. The second of our correspondent's questions, therefore, seems the only pertinent one; and even here, as he has explained it in the case he puts, we do not perfectly agree with him. Mr. SMITH will have "proved his case" when he shall have offered credible evidence that a large profit per acre is derivable from the constant growth of Wheat crop, taken year after year from the same land, when cultivated in the method he recommends. It is not fair to require as the case for comparison with his, land "cultivated to the same depth, with the same cleanliness," and so on, simply because the great advantage of his system is that it offers peculiar facilities for the deep and thorough tillage of the soil. Mr. SMITH's system is not best described when expressed in definite terms of so many pints of Wheat at so many inches between the different seeds, so many forkings of the land to so many inches beneath the surface. His land, cultivated as he recommends, is best described as presenting strips of deep and thorough tillage, alternating with narrow seed beds. And this alternation, the fallow strip of this year being the

seed bed of the next, is, it is believed, the very best method of attaining that clean, deep, and thorough cultivation on which of course the agricultural result is dependent.

Having lately visited the farm on which Mr. SMITH has for the last seven or eight years carried out the practice detailed in his pamphlet, we are able to speak with confidence on the results of that practice, as there developed. These results we shall very soon give in detail; meanwhile, and in reference especially to some of the points which "An Economist," names, we may just say that the few acres that furnish his best illustration of the subject, are by no means "Wheat" land; they are on gravelly soil, not by any means so clayey as one generally understands by a "Wheat" soil—more calculated indeed for Barley, and yet they are now covered with as vigorous and healthy a growth of Wheat, in rows of single plants, as was ever seen—three rows, a foot apart, alternating with 3 feet intervals, well and deeply dug; this being the fourth Wheat crop in succession, and the seventh year since the dung-cart was over the land.

We may also add that "An Economist," above all others, should admit the merits of Mr. SMITH's system. Here is a method by which natural sources of fertility are made use of and economised to the utmost—all other sources to the full extent of their ability remaining for the use of green crops and for the growth of cattle food, which will not injure by excessive grossness; the natural supplies of carbonic acid gas and volatile ammonia are retained as safely as the most careful "economist" could wish—committed for future use to that best of all stoppered bottles a well and deeply-tilled and thorough drained soil.

THERE is a class of ailments known to the body-politic which, like the maladies of the school sick-room, evince a singular dread of the approach of the doctor, with that searching eye of his that can distinguish with provoking acuteness between the hues of health and disease, and the practised finger that can decide between the conscience-hurried pulse of a 'sham,' and the true flutter of debility. Unwelcome as his visit is on all occasions, and to people at all times of life, however great the need, we can most of us remember a happy class of patients, in former days, to whom it was commonly more formidable in proportion, not to the need but to the lack of it.

Something forcibly suggestive of this early recollection was brought to the mind of the public during the last two or three years, by the attitude taken up by 'the Times' towards the free trade distresses, and complaints of agriculture. Not that the distress was false or the complaints unfounded: 'the wolf' had come in earnest this time; but the doctor had been deceived too often, and came with a face of suspicion, which the patient had to meet as best he might under a pricking consciousness of the justice of distrust. Shower upon shower fell the un pitying storms of ridicule upon every utterance of complaint: not a groan could escape the broken ranks of the 'country party' without an instantaneous roll of the drum and a crash of shrill music to stifle and drown it, in the shape of a free trade 'leader,' in ready type, upon the very page that recorded the 'Protectionist' outcry; not an argument, not an allusion could escape, be it morning debate or after-dinner speech, but the Times was prompt with its crushing rejoinder. Never did the thunderer appear so cruel: he gave less law to Protection than a cat does to a mouse—he would not let it squeak.

But, meantime, HERCULES was not so deaf as he seemed. Throughout the length and breadth of the land, a 'Commissioner' was despatched to learn the truth and meaning of the complaints, and to penetrate as far as possible, and report upon the actual condition and circumstances of British agriculture. People did not wish to see the farmer ruined or even hurt, but really it was, for certain reasons, too late in the day to take exactly his own account of his own state. The stereotype of his 'distress' had ceased to make impressions; indeed the work itself seemed to want complete revision.

Nothing could have been more opportune, probably nothing more unwelcome; but the mode was even worse than the act. The very idea of an investigation by a 'Commissioner' was a new humiliation. To be bound over to give evidence of its own condition before any tribunal less distinguished (and more searching), than a Parliamentary Committee of country gentlemen, was a trial both new and mortifying to agriculture. Besides, the cloak of mystery is your true 'robe of durance' for complaints that seek a political remedy. Listen—and avenge! but don't 'investigate.' It is help we want—public help, not private advice, much less inquiry. Above all, defend us from the home-visits and espial of a keen-eyed Scotch gentleman, who knows what



farming is, and has already told the world in pretty plain terms what it ought to be, and what it may be! So prayed the farmers!

But the *Times* thought differently. The 'fourth estate' had its own way of going to work, and was not to be gagged nor diverted from it: and to the astonishment equally of both land-owners and farmers, district after district of the kingdom appeared, shown up in rather prominent place and type, photographed to the life by some unknown hand, that displayed far too close and accurate an acquaintance with all the mysteries of the craft, and, with it, an adroitness of phrase, and familiarity with the pen, so rarely ever witnessed in combination with practical knowledge of husbandry, that the older guessers thought ARTHUR YOUNG must have risen again upon the stage. Indeed, Mr. CAIRD's travels and labours could hardly have escaped comparison with those of his great predecessor; but never was parallel more inexact. The 'Secretary to the Board of Agriculture,' and adjutant of Sir GEORGE SINCLAIR, its President, had a very different task to perform to that encountered by Mr. CAIRD. Inflated by a dozen years and more of war-prices, Agriculture was, at the time of its visitation by the "man in obscurity," as he had once called himself, at the highest zenith of prosperity and high prices, real and factitious, that it had ever known in this country. The establishment of a Government Board, a real live state department all to itself, evidenced its acme of expansion and importance. The collection and codification of the Customs of Counties at such a time into a voluminous mass of reports (since epitomised by MESSRS. KENNEDY and GRANGER, and subsequently condensed in the volumes on Husbandry of the Useful Knowledge Society), was like the brilliant catalogue of a museum or art-gallery compared to that undertaken by Mr. CAIRD, whose report might be regarded as approaching more nearly to the Inventory of a dress-sale.

But at the close of this same 'Inventory' of the farming stock of England there was found room for a few practical suggestions, of a kind so rarely ventured before by the agricultural appraiser, that it almost seemed at first as if the Commissioner had travelled out of his circuit. Fundamental matters, lying deeper than the subsoil, and more potent and influential than any customs of farming, local or general, however old or new, or otherwise remarkable, were for the first time dragged before the public eye. The laws of entail, the difficulties of the transfer of land, the impediments and encumbrance that cripple the hand of ownership, the delays that torture and the expenses that deter the interchange of a commodity that many would be so glad to sell, more to buy, and still more to improve, were either process commercially feasible; all this was touched upon shortly but comprehensively, in the language of one who had earned the right to announce a few broad conclusions, and felt that the time was come when the virtue of necessity would compel an attention to them for which any other virtue might petition in vain.

The expectation was not unfounded. There are symptoms gathering around that those peculiarities of fact and circumstance in the occupation and ownership of land which have been sometimes described under the general title of the 'Anomalies of Agriculture' are likely to receive—if not a very immediate cure—that next best thing, a tolerably free elucidation. The public eye is a rather capricious organ, its obstinate repose seems sometimes to realise the medieval fable of the Seven Sleepers; but when it does begin to wink and wake up, it seems as if all that had been said and all that had been written, urged, and exemplified again and again in vain, by speakers and writers who have gone down to their graves one after another without attracting so much as a nod of assent or intelligence from their cotemporaries, had suddenly aggregated into one vast concert of remonstrance, with an acknowledgment in which every tongue agrees to what formerly found scarcely an ear to listen.

There was a time—when the acres of England were not smaller than at present, and the agriculture certainly not better—when the idea of attempting to interest the public mind by an investigation into the 'agrarian laws' that underlie our Husbandry, was utterly chimerical. The laborers belonged to the soil, the soil to the Farmers, the Farmers to the Landlords, and the Landlords to Parliament and the State. Who upon earth would have dreamt of a task so audacious and Herculean as the attempt to question or unriddle an establishment so complete, a mystery so complicate? A system so guarded by law or what seemed like law, and so rooted in ancient custom, or what was taken for ancient custom, of the realm: and it is surprising

how short a time in man's short generation, will suffice for this deception.

But the time of trial had come: a time which tried the truth and soundness of all that network which had grown around it, and which had in truth been effecting some strange mutations in the landed system of this kingdom, but so gradually and so steadily, so 'legally' and 'Parliamentarily,' that the three-score years and ten of human life were insufficient to mark or measure the change that was produced. Instead of the Yeoman of the olden time farming his own land, the word had come to be applied to something it was never coined for. Yeomen in truth had vanished from the soil: the 'Tenant-farmer' had succeeded in his place, and (with about equal justice) to his name: the ancient division of the soil had jumped, like a conjuror's puzzle, into large 'Estates,' and 'Family-properties,' and while those pet nurslings of our legal system 'Heirs at law'—always in prospect and never in possession—were rolling into each other, like quicksilver globules, dilating at every turn, as primogeniture produced its natural effect, and land became more and more intransferable except on a scale sufficiently immense to pay for the parchment—the business of Husbandry had become altogether vicarial, and under the appropriate name of 'farming' the whole soil of the country was put out to dry-nurse; having become amassed into hands that could not profitably use it, and could only act upon the necessities presented by the problem of owners that could not occupy and occupiers that did not own. Some of the results and features in the working out of this problem it is our purpose to examine.

#### LOIS-WEEDON WHEAT GROWING.

At the meeting of the Royal Agricultural Society at Lewes I saw some implements used in the cultivation of Wheat by the Rev. Mr. Smith, of Lois-Weedon; and having from time to time seen in your Journal mention made of Mr. Smith's system, I a few days since purchased his pamphlet, "A Word in Season," and you will perhaps allow me to make a few remarks upon it. The pamphlet is addressed to "The Stout British Farmer," and the system advocated is, I presume, intended for general adoption. Two things, then, have to be considered: 1st, Can it be generally adopted? 2d, Will it be more productive and more profitable than any other plan of cultivation? At present the adoption of the plan is simply impossible, from the want of labourers to dig the ground. Mr. Smith may do it on a small scale. I may do it experimentally on a small scale, but as a general system I conceive that by hand labour it is impracticable. With such a steam machine as Mr. Smith mentions, there is no doubt that land can and will be eventually rendered far more fitted for the growth of plants; but it will, I imagine, be used not in intervals of a crop, but over a whole piece; and that brings me to the second point. Will Mr. Smith's plan be more productive and more profitable than any other? In fact, is there no advantage in plants succeeding each other? Is all that we have read and learnt as to rotation of crops but "the baseless fabric of a vision?" Such, however, must be the case if Mr. Smith is right.

I will take, then, Mr. Smith's farm of 400 acres: 100 acres devoted entirely to Wheat; another 300 allotted, one to Barley or Oats entirely, one to the sole growth of roots, and the fourth to Clover, Saintfoin, Lucerne, &c. Mr. Smith does not enter into any particulars as to his mode of cultivating anything but Wheat, so to that I also will confine myself. Mr. Smith then takes his 100 acres out of his 400-acre farm, and devotes it to Wheat. Mr. Smith's next-door neighbour has also a 400-acre farm, which he cultivates on the four-course system, and he too devotes 100 acres annually to Wheat. Mr. Smith, however, in reality only sows 50 acres of Wheat yearly out of his 400. "Oh!" but says Mr. Smith, "I grow 34 bushels on only half my land, and therefore more than the average produce which is grown on an acre throughout England!" This seems at first sight very captivating, but let us examine it more closely. To begin with, Mr. Smith takes the average of England; but his land, for all we know [There is no room for doubt on the subject; Mr. Smith's land is described in his pamphlet], may contain within itself peculiar Wheat-growing properties, and it is possible that land in his parish, valued generally at under 30s. the acre, may produce, even with the present system of cultivation, quite as much Wheat per acre as Mr. Smith does on his half acre, and if so, where is the advantage of the Lois-Weedon system? But I will give Mr. Smith the benefit of the doubt, and suppose that he grows on his half-acre more than his neighbours do on a whole one; but what then? It proves nothing. Let us look at the condition of Mr. Smith's land. It is first of all to be Wheat land; land picked out as suited to the growth of Wheat—it is to have a fair depth of staple, and a subsoil generally, though not universally of the same chemical composition with the surface; it is to be dry or drained 3 feet deep at least; well cleaned of weeds, and stone-picked, forked from 20 to 24 inches deep. Now, with what sort of cultivation does Mr. Smith make his comparison? Mr. Smith compares his produce from land so prepared with Wheat grown on all kinds of land, suitable or

unsuitable, deep or shallow, a great portion of it undrained and very wet, ploughed 3, 4, or 5 inches deep, and at harvest time proving itself to be certainly not well cleaned of weeds. Will Mr. Smith argue that if his 400 acres were all in the state of tilth and cleanliness he speaks of, he would not get a much larger crop of Wheat if he drilled it 1 foot apart over each hundred acres once in four years? I do not conceive that it admits of argument, and I confess that I agree with Mr. Smith's neighbours in preferring their 6 quarters to the acre to Mr. Smith's 34 bushels.

I do not know what your opinion may be on the subject, but I conceive that before Mr. Smith can be said to have proved his case, he must take another 4 acres of land as nearly as possible of the same quality as that he now holds, he must subject it to the same deep cultivation—the same cleanliness—it must be equally well drained—it must be farmed on the four-course system; one-fourth part in its regular rotation drilled to Wheat at 1 foot apart; and having done this, if the produce falls short of 34 bushels, then we may fairly set ourselves to work to find a machine which will act instead of a fork, and do our best to produce 34 bushels a-year, per acre, as at Lois-Weedon. In concluding this letter I must beg to say that, though I do not imagine, with equally deep and clean cultivation Mr. Smith's plan would be nearly so productive as our present system, yet it is impossible not to admire and appreciate the ingenuity with which Mr. Smith has carried out his plan; and I trust he will believe that in anything I have written I have been actuated by one motive, viz., inquiry and argument on this, or any new system, which, in this age of rapid agricultural improvement, is placed prominently before the farming community. *Economist.*

#### ROYAL AGRICULTURAL COLLEGE.

SESSIONAL EXAMINATION.—PRACTICAL AGRICULTURE, Chiefly with regard to such matters as have been brought before the attention of the Students since the middle of August.

AFTERNOON.

10. Specify a few of the most remarkable improvements in agriculture during the present century.

11. Show, from a calculation of the expenses of production, what is the cost of a sack of Wheat, supposing the land to produce 8 sacks to the acre, and the rent and taxes to amount to 2l.

12. In considering the subject of feeding stock—(1.) What are the points of a good beast? (2.) How many pounds per week ought a fatting beast, a sheep, and a pig respectively, to increase in weight? (3.) What are supposed to be the relative feeding qualities of Turnips, Mangold Wurzel, and Carrots? (4.) What weight of Turnips would be consumed per day by a three-year-old beast, by an average sheep? supposing them to constitute their chief food? What weight of hay, if they had nothing else?

13. What do you consider to be the expense of erecting buildings suitable for—(1.) Box-feeding; (2.) Stall-feeding; (3.) Yard feeding—at per head of beasts that can be accommodated in them at the same time?

14. Explain what is meant by a rotation of crops, and what grand principles should guide you in planning one. Give specimens of rotations for light and strong soils.

15. What is the best mode of calculating the value of roots? and the weight per acre? Why are errors so frequent in both of these calculations?

16. The following is supposed to form a page in a farmer's memorandum book:—Agreed to sell to Mr. Wells 4 fat oxen, at 10s. per score.—Paid Mr. Wilkins, for 3 qrs. seed Wheat, 7l. 10s.—Delivered to Mr. Jones 20 qrs. of Barley, at 30s.—Sold Mr. Wells 20 fat sheep at 2s. per head, at Cirencester Fair.—Paid labourers at home week's wages, 11l. 15s.—Received of Mr. Brown, for 20 qrs. of Wheat, at 45s., 45l.—Which of these entries would remain as simple memoranda, and which ought to be posted, and in what form? Illustrate by means of them the distinction between single and double entry.

Cirencester, December 11, 1852.

[ANSWERS BY MR. PEILE.\*]

No. 10. During the present century the most remarkable improvements have been the introduction of steam power and machinery for many important agricultural operations, which were formerly performed by the hand, viz., in threshing, grinding, chaff-cutting, winnowing, &c. Again in agricultural implements used in the field, great improvements have been made, such as the reaping machine, horse-hoe, drill for manure and Turnips, clod-crushers, and scarifiers; and such implements as the plough and harrow have been much improved, of late years especially. Amongst some of the latest agricultural implements we may mention Fowler's draining-machine, the steam plough, and the American reaping-machines, and Dr. Newington's dibble. In the dressing of flax and the making of draining-tiles, also, great strides have been made of late years.

#### No. 11. Expense of one acre of Wheat.

Rent, tithes, and taxes	£2 0 0
Ploughing	0 7 6
Three harrowings	0 1 6
Drilling	0 2 0
12 bushel seed, at 6s.	0 7 6
Two rollings	0 1 0
One clod crushing	0 1 0
Horse hoeing	0 0 6
Hand hoeing	0 2 6
Reaping by machine and binding	0 5 0
Carting, stacking, &c.	0 8 0
Thatching, &c.	0 1 0
Preparing for market	0 8 0

£4 5 6 for 8 sacks of Wheat, or 10s. 8d. per sack.

No. 12. (1.) A good beast for fatting purposes ought to have a fine clean head, with a clear though placid eye, a good straight neck, broad chest, round barrel well ribbed up, broad loins and hips, good rump, and fine boned and short legs. The skin ought to have a soft, loose feel, and the hair should have a bright colour. In general terms the beast ought to have such a frame that when it is fat it will fill up all the lines between the bones, and present as near an approach as possible to

\* Last week's answers were incorrectly headed Mr. Peile and Mr. Cape. It should have been Mr. Peile alone.



the figure of a parallelopipedon. Small bones narrow in front and flat at the sides, and clean joints, are always the best indications of a good feeder.

(2.) To be profitable, a fattening beast ought to increase from 12 to 18 lbs. per week, a sheep 2 to 3 lbs., and a moderate sized pig from 4 to 6 lbs. per week.

(3.) According to the analyses of Dr. Voelcker,\* Turnips are worth more as feeding substances than Carrots, but it is generally supposed that Carrots are better than Turnips, and that Mangold Wurzel lies between the two. Mangold Wurzel, according to analysis, are more nutritious than either Turnips or Carrots. The experimental sheep fed on Mangold Wurzel at first increased much faster than those fed on Turnips; but lately those fed on Turnips have increased most, and the others have begun to refuse their food, eating scarcely 5 lbs. per diem of Mangold Wurzel. An equal quantity of Mangold Wurzel goes further in feeding stock than the same quantity of Turnips, as the latter contain frequently a larger per-centage of water.

(4.) A three-year-old beast would, supposing that it had hardly anything else, consume 3 cwt. of Turnips per diem. An average sheep generally eats a quarter of its live weight a day of Turnips alone. A three-year-old beast would eat 40 lbs. of hay per day, if it had nothing else, and an average sheep would eat about 4 lbs.

No. 13. The expense of erecting buildings for box-feeding animals of course varies considerably according to the way in which they are built, and the materials used for the purpose. A building large enough to hold twelve beasts in separate boxes, 12 feet by 12 feet each, might be erected very well at a cost of 150*l.* or 200*l.*, or about 13*l.* per beast. A building large enough to hold 24 beasts, stall-fed, would be about the same size, but would cost more for wood-work and drainage, say 200*l.* altogether, or about 8*l.* 10*s.* per beast. If ground-room is an object, it ought always to be remembered that stalls take least room, boxes next least, and yards take most room. In yard-feeding a stone wall might be built at the back, and a low shed, and wooden palings round the other three sides might be erected large enough to hold 12 or 14 beasts, for about 75*l.*, or 6*l.* per beast.

No. 14. A rotation of crops means a certain definite system of cultivation, extending through a certain number of years, and including a certain number of crops following each other in a regular order till the rotation is complete, and the commencing at the beginning of the rotation again. In planning a rotation, the nature of the soil and climate, and the position of a farm with reference to markets must be so kept in view, and made to act together, that the land may be cultivated with as little expense as possible, and that the largest amount of profit be made out of it, without exhausting the soil or deteriorating its value. The best rotation for a light soil is the one commonly known as the four-course, which is a system which has lately become very popular, and consists of Turnips, Barley seeds, and Wheat. Of course the Turnips may be supplanted by Mangolds, Carrots, or any crop found to be suitable to the soil and profitable, and Oats may be grown instead of Barley, or Flax instead of Wheat, if necessary, and Vetches and Rape may be grown as catch crops before Turnips. A heavy soil may be cropped with advantage on the following system:—Turnips, Wheat, Beans, a three years' course, by which the consolidation of land in laying down to seeds will be avoided. Turnips out to be carted off in frosty weather, and not eaten off with sheep.

No. 15. The safest method of ascertaining the weight per acre of a root-crop is to measure out an acre and weigh it. If, however, shorter methods are necessary, an average piece ought to be selected, and the Turnips on it weighed (a square chain is the best, or if not a square pole). A shorter way is to weigh a few Turnips in a row, take the average, and calculate the number of Turnips per acre. But all mistakes in calculations of the weight of root crops are caused by taking only a small portion perhaps above the average; and then in calculating for the whole acre, an error of 2 lbs. is perhaps multiplied 1000 times, making a difference of a ton per acre immediately. The larger the piece that is measured and weighed, the more likely it will be to be right.

No. 16. The following entries show remain as memoranda:—Agreed to sell Mr. Wells' fat oxen, at 10*s.* per score. (Delivered to Mr. Jones, 20 quarters of Barley, and sold Mr. Wells' fat sheep, at 2*l.* per head); or if the accounts do to be more carefully kept, the two latter may be printed in the journal along with the other three. For instance:—

Date.			
Paid Mr. Wilkins' 3 quarters seed Wheat ...	£7 10 0		
Paid 1 labourer at 30 <i>s.</i> week's wages ...	11 15 0		
Received of Mr. Brown for 20 qrs. of Wheat, at 45 <i>s.</i> ...	45 0 0		
Transferred to the ledger these accounts would be entered:—			
Dr. Wheat.		Contra.	Cr.
To 3 qrs. seed Wheat £7 10 0		By 20 qrs. Wheat, at 45 <i>s.</i> ...	
Pr. at 60 <i>s.</i> —(gained 37 10 0)			£45 0 0
	£45 0 0		
Dr. Labour.		Contra.	Cr.
To money paid for week's wages ...	£11 15 0		
Dr. Cash.		Contra.	Cr.
To Cash received from Mr. Brown for Wheat £45 0 0		By Cash paid for Labour ...	
			£11 15 0

In proper accounts nothing should be transferred to the ledger or cash book till actually paid for, and in

\* We understand the fact to be that Dr. Voelcker's analyses prove that a dried Turnip contains more nutriment in a given

the memorandum all transactions, whether performed or promised, are entered, with the date of the transaction, and the address of any person whom it may concern; but nothing is put down in the journal except what has actually taken place, whether paid for or not. When paid for, "paid" should be written under it, and the account should be transferred to the ledger, both under the head of the article it belongs to and the particular province of the farm to which it belongs. If the farmer likes he can keep a cash book, to show how his own private account stands; how much money he has on hand, &c. In the cash account, all receipts are debited to cash, and all payments credited to it. In double entry a debtor and creditor account is kept for every branch of the farm, and every account appears in two lights, as shown above; but in single entry the accounts are merely kept so that all the receipts may be added up on one side, and all the payments on the other.

#### THE WOODLAND QUESTION.

In begging you will favour me by inserting in the *Gazette* the following correspondence on the subject of unremunerative woodland—to which you drew attention some few weeks back—I most earnestly desire the attention of owners of entailed estates to the facts set forth in my letter to the Inclosure Commissioners, in the hope that they will use their endeavours to rid themselves of disabilities which militate so manifestly against the interest of themselves and their successors. To many the case of my employer will appear but as a statement of their own position, differing only in amount of present comparative loss and future prospective gain. To all it must be evident that the restrictions of settlement—which were wise and consistent with circumstances 100 years ago, when foreign timber and railways were alike unknown in England, and when coals were only seen by the poor of the southern counties in the fireplaces of the rich—are now opposed to all reason, prudence, and profit; and that some effort should be made to enable tenants for life to bring into cultivation such unproductive lands, free from liability to impeachment for waste. The proper course appears to be to obtain a short act to amend and extend, under due restrictions, "the Private Money Drainage Act, 1849," to this special object. *J. Bailey Denton, 52, Parliament Street, Westminster.*

#### TO THE INCLOSURE COMMISSIONERS OF ENGLAND AND WALES.

GENTLEMEN,—I beg to submit for your consideration the following particulars of a case of much public interest and private importance, with a view to gain the opinion of your Board on the suggestion I have ventured to make for the relief of the evils it is now particularly desired to remedy, and which are generally incidental to entailed properties of any extent.

A tenant for life of an estate of above 30,000 acres, situate in the southern counties of England, is possessed of about 3500 acres of unremunerative woodland. This condition is owing partly to the timber having been exhausted by the usual periodical and by occasional extraordinary falls of timber, without a due regard (by former owners) to the nature of young trees to replace the timber felled; partly to the general introduction and use of foreign squared timber, and the preference given to it by builders, which has so much reduced the value of home grown Oak that the average price realised by the sales of the last six years has not reached 1*s.* 2*d.* per foot; partly to the very low price of bark, which for the same period has not averaged 4*s.* per ton; and partly to the extension of railways into the rural districts, by which not only has the squared foreign timber been brought to the yard of the country builder, but the poorer inhabitants, who were formerly dependent on underwood and topwood for fuel, have been enabled to purchase coal at a greatly reduced price.

Under this state of circumstances the landowner, whose case I am now representing, states that the average annual returns from the sale of timber, bark, &c., and underwood for the period referred to (six years) have not only covered the annual purchase of maintenance, and the costs of felling, peeling and selling; but that so nearly balanced are the outgoings and incomings, that the property would be entirely valueless. And he further states that the difficulties of managing this extent of woodland and the cost of its supervision have been greater than have attended all the rest of his estate, while the social evils peculiar to woodland, such as petty trespassing, wood-stealing, and poaching, have increased as the woods have become less remunerative; and that therefore it behoves him, from national as well as private considerations to increase the means of employing the labouring poor, and to create a source of profit to himself and his successors by bringing the land, if possible, under tillage and Grass.

My opinion having been sought by the present owner of the property, as to the mode by which this may be done without injuriously affecting the interest of succeeding tenants for life, and viewing the question as one of great public as well as private importance, I have considered it with great attention and care, and beg to submit to you the results of my investigation, with the facts arising out of the subject. I find—

1. That after making every deduction of cost (including interest at four per cent. compound rate on the annual payments, in anticipation of the fall) the woodland is not at present remunerative in a commercial sense, while the drawbacks to territorial enjoyments are so numerous and weighty that the property affords no equivalent to its disadvantages in a social sense.

2. That the soil of a major part is naturally fertile and capable of profitable cultivation, if properly converted into arable or pasture land.

3. That it would be inexpedient to replenish the existing woodland, because a sufficient quantity of timber trees could be much more profitably planted and raised upon very much less land, with better regard to the general economy of the estate, by the selection of other sites for the purpose.

4. That by returning about 800 acres of those woods which exhibit the best signs by growing vigour of a prospective yield of timber for the next 50 years, much more than sufficient timber for any possible repairs on the estate would be supplied; and the average return per acre from such reduced area would, comparatively with the present state of things, afford a considerable profit instead of loss, and in the meantime any newly planted portions would be approaching maturity and attaining their maximum value.

5. That after the selection of such 800 acres there would remain 2700 acres for cultivation.

weight than a dried Carrot. Their relative value, as taken from the field, depends, of course, in a measure, upon the quantity of water contained in the roots, to which Mr. Peile has not hitherto adverted.

6. That there are many parts of the estate where judicious planting might afford beneficial shelter to exposed lands; where the timber arising would be better situated for the repairs of the estate and for sale; where fresh plantings of well-selected timber in lieu of the old woods would enhance the picturesque beauty of the property, and obviate much of the objection of the tenants on the score of game and the irregularity of the woodland boundaries, which so much interfere with the farming operations of adjoining lands.

7. That the renting value of adjacent farm lands varies from 16*s.* to 26*s.* per acre, titheable; that the 2700 acres of convertible woodland are of a quality to command, when cleared and drained, a higher rent than such present cultivated land, owing to the advantage arising from the fact that the tithe rent-charge on the present woodland would continue only at the present average of 1*s.* 2*d.* per acre, while that in the adjacent arable land is 5*s.* 3*d.* The 2700 acres, when cleared, drained, and provided with good homesteads would permanently command a rental of 26*s.* per acre, or 3500*l.* per annum.

8. That the cost of clearing, draining and dividing, the 2700 acres will amount to from 12*l.* to 16*l.* per acre, or an average of 15*l.*, to which should be added the cost of trenching or double ploughing (so as to give the incoming tenant every advantage), increasing the average cost to 17*l.* per acre; equal to £40,500 0 0

9. That the cost of planting 270 acres, being one acre for every 10 acres converted, will be, together with fencing, draining, and trenching ... 4,250 0 0

10. That the 2,700 would be divisible after certain additions to existing farms into five good tenancies, which would require houses and homesteads at a cost of ... 10,000 0 0

Making altogether ... £54,750 0 0

11. That the estimated value of the trees and underwood at present growing on the said land varies from 10*l.* to 15*l.* per acre, or an average of 13*l.* 10*s.* per acre; equal to ... £36,450 0 0

12. That upon these figures the results will be:  
Expenditure ... £54,750  
Amount to be realised by timber, &c. ... 31,450

Excess of Expenditure ... £18,300

And the annual income as shown will be ... £3,500 0 0

Less rent, &c., of the land newly planted, titheable 25*s.* per acre, with 12*s.* 6*d.* per acre for tithe rent-charge, rates, &c., payable thereon, say ... 500 0 0

Improved annual value, exclusive of any return from newly-planted wood ... £3,000 0 0

13. That with respect to the existence of social evils peculiar to woodland, it appears the annual expense of prosecuting wood-stealers and poachers has varied from 150*l.* to 15*l.* per annum.

And may be permitted to say, incidentally, that with respect to one wood of 90 acres, near a populous sea-side town (of which wood the returns show an indisputable loss), the external fences and underwood have been constantly destroyed, and the wood has become a resort for destruction and vice.

Having stated the results of my investigation, it is necessary I should add that the present owner enjoys his large property under the usual restrictions of settlement, which render him liable to impeachment for waste at the suit of the succeeding owner.

Upon these facts I have recommended an application to be made to one of the Land Drainage and Improvement Companies (the General Land Drainage and Improvement Company, or the West of England Land Drainage Company), if your Board should concur in the opinion I entertain that the improvement is a permanent one, and that the acts of those companies give them power to execute such works as are involved in the case thus cursorily explained.

It appears that the sum of 20,000*l.*, to which, with costs and contingencies incidental to the whole transaction, the 18,300*l.* may be increased, may be liquidated in five years by an annual charge on the inheritance of 4*l.* 13*s.* 10*d.* per cent., or 330*l.* 16*s.*, which, if deducted from the improved net income of 3000*l.*, will leave a clear annual profit of 2600*l.* 4*s.* in addition to the proceeds from 270 acres of fresh planted woodland, the timber of which at the termination of the charge will be at its most profitable growth and worth above 20,000*l.* (the gross amount originally charged) for the benefit of the owner then in possession, if properly preserved in the meantime.

To secure these advantages, and the effective execution of the works, the medium of a public company, acting with the concurrence of your Board, is to be preferred to a private compact with the succeeding heir, even though he be favourable, as in this case, to the conversion desired by the present owner; for such a compact would naturally limit the outlay in the proposed works to the amount that might be realised from the timber and underwood, and thus defeat the more perfect proceedings contemplated by the suggestions now offered, and which include the first essentials of profitable management—Draining and the erection of Homesteads.

And beyond this, another important desideratum is gained by having recourse to a public commission, viz., the transaction would be publicly recorded, so as to afford to future successors conclusive legal evidence that the income of the estate had been increased to the extent of 2000*l.* a year without any appreciable loss to the inheritance.

Should I have failed in suggesting a mode of proceeding legally recognizable, I shall feel grateful to your Board for advice as to any other existing means of gaining an equitable remedy for the loss my employer is suffering.

I have the honour to be, Gentlemen,  
Your very obedient servant,  
*J. BAILEY DENTON.*

8th December, 1852.

#### REPLY.

Inclosure Commission, Dec. 11, 1852.  
Sir,—I am directed by the Inclosure Commissioners to acknowledge the receipt of your letter of the 8th instant, relative to unremunerative woodland, and to inform you that having given the subject their best consideration, they are of opinion that there is no power to carry out your views under the Private Companies' Act, or any public acts of Parliament.—I am, Sir, your obedient servant,  
*JAMES STEWART, Secretary.*

*J. Bailey Denton, Esq.*

#### Home Correspondence.

Prize for Essay.—Would it not be a fitting and suitable proceeding for the Agricultural Society of England, to offer a prize for the best essay on the probable effects of the recent influx of gold on the increase of prices, socially and commercially considered, as it is a question which will much affect landlords and tenant farmers, who may now be giving or taking leases of considerable duration? *A Constant Reader.*

Cornish and Devonshire mode of Making Butter.—Put yesterday's milk in a pan of iron, tin, or earthenware (usually about 9 inches deep, and 14 to 18 in diameter); place on a slow fire; do not allow it to boil; but as soon as nearly boiling (which should require two hours), remove from the fire, and place on cold stone for 12 or 18 hours. Then skim the cream, and make the butter with the hand, which will occupy from 10 to 40 minutes, according to circumstances well known to dairymen. The butter made in this manner, though



perhaps greater in quantity, is not in my judgment quite equal in richness and flavour to that made from raw cream. *W. P. Hoblyn, St. Columb.*

**Draining.**—It is gratifying to those who take an interest in draining operations to mark from time to time the progress which truth and intelligence are gaining over error and prejudice. We have seldom seen a more happy illustration of this than is exhibited by contrasting the letter of your correspondent, "H. C. Selby," of December 18th, with that of "J. R. A." of the 8th inst.; in the first we have Mr. S. endeavouring to place the question in its true light; from "J. R. A." we have a practical statement and, in a general sense, one which experience and science have proved to be true. In the remarks which we purpose to make, it will be more our aim to record our experience tending as we hope to establish a fact, than to combat Mr. S. in his rather antique notions. But with the idea of placing the question in a variety of shades we will take the liberty of quoting Mr. S., which is as follows:—"A doubt can hardly be entertained by any practical man that a drain made 3 feet deep will be a sufficient depth for all agricultural purposes, in most if not in all clays." We beg to assure Mr. S. in this statement we differ from him in  *toto*, and perhaps Mr. S. will allow us the term practical when we inform him, that during the last four months we have had the supervision (under the instruction of Mr. Hewitt Davis) of about 50 miles of drains 4 feet deep, in a very tenacious clay; and the site of those operations have been at different times the experimental field of every gradation of depth from 15 to 36 inches, none of those depths have been found so efficient as the now uniform depth of 4 feet. We have also learned in draining, that one fact is worth more than the utmost stretch of imagination; and if Mr. S. could favour us with a visit, we would be glad to show him a convincing proof within a few minutes' walk of where we write, the superiority, in the strongest clay, of drains 4 feet deep over those of 3 feet deep, all other circumstances being equal. On another point, Mr. S. says the less the distance between the drains, the earlier and more uniformly dry the land becomes, after rain. Our lessons of experience have taught us to believe that this is a fallacy, and consequently not placing the question in its true light; for we have observed during the continuous rains of the last few months, that drains 24½ feet apart convey the water as soon off the land as drains at 15 feet apart; and our own conviction is that there is a limit in all soils to regulate the distance between the drains; and we think observations on this point would be of the utmost importance, as Mr. S. again says, and what we are happy to give him credit for—"It is of great consequence to have a clear perception of the exact requirements of the land that the means employed may be duly apportioned to the effect intended to be produced, so as not to fall below the mark, nor extend beyond it, expending money unnecessarily." In taking leave of Mr. S. we are inclined to suspect that he has revealed this fact, that he has yet something to learn before he can place the question in its true light. We hesitate not to identify ourselves with those who assert that no soil should be drained at less than 4 feet deep; and further, we think no first-class cultivator will gainsay this statement, that the health of vegetation depends on the scope the roots have in a free and active soil, or, in other words, the deeper the area for the ramification of roots in a soil free of standing water, the more abundant and rapid the growth. *P. Mitchell, 4, Ernest Street, Regent's Park, Jan. 14.*

**Predatory Birds.**—The destructive habits of small birds were noticed in your number for January 1, but the article omitted larks, and did not give "rooks" credit for so much mischief as is occasioned by them. At this season, in consequence of so much Wheat being sown late, and growing slowly, at the time of just peeping above ground larks do incredible damage. I went past a field of about 14 acres this morning, a boy was sitting on the gate, of as much use as a bunch of straw would be; the field was literally covered with larks, and with proofs of the havoc they wrought in the shape of small white pieces of the plant strewn about in the drills. I had a piece of Wheat under a similar infliction about three weeks since; the scare-boy had managed to keep the crows off, but the larks had established themselves before we were quite aware of them, and then it took the whole time of a person with a gun killing them by the dozen for five or six days before the Wheat was safe, and the birds effectually scared. The sight of a gun is enough for rooks, but with larks, once having a taste of the young sprouting corn, nothing seems to daunt them or keep them at a proper distance. Rooks are more formidable when undisturbed or carelessly tended. I saw in a field last week of newly sown Wheat 2000 or 3000; a boy was lazily walking towards the field giving an occasional halloo; the birds flew to some neighbouring trees, and again settled on the Wheat as he walked from one side to the other. This Wheat I am informed was "ploughed in," which would give it a chance, or else when so many crows take a fancy to seed, or young Turnips just in the rough leaf, or Potatoes, or ripening corn, they will make quick work of it, and do more harm than can be compensated by the good side of their character prevailing in the fens for devouring wire-worms and picking out grubs or beetles. The pleasure of a pleasant party in spring at "rook shooting" causes a considerable amount of indulgence to be shown to these black cormorants. There are 30 or 40 rookeries within a few miles circuit here, at some of which as many as 20 dozen of young rooks are shot in one afternoon; the consequence is,

that every farmer is liable to be selected, according to the favourable view his growing produce may present, to a visit from clouds of felon crows, who begin at sunrise and continue all day unless disturbed; then, on the watch, two or three may be seen at a safe distance perched on a lofty Oak or solitary Ash: at a fitting time they telegraph their associates, who may be half a mile off; and with as little noise as their cawing propensities will permit they go to work most expeditiously and effectually; no hawks trouble them, nothing but a gun will do, and they smell powder with marvellous sagacity. Sparrows like crows obey a gun; one or two days, with a diligent use of duck-shot, will teach them respect and forbearance. But they increase and multiply beyond endurance, if the surveyor of the highways or other village magnate does not set a price upon their heads; for not merely are they a nuisance in the corn fields, but they riddle thatch, stop up spouts, and rob the garden. In all cases the gun is the surest safeguard of our fields against rooks, larks, sparrows, and pigeons; the latter are chiefly known to injure Peas, Beans, and Tares, and these they will thresh as promptly and thoroughly as a flail would do, particularly the wild pigeon, if your Pulse is near a wood. *J. W., Peterborough, January 12, 1853.*

**Greaves for Pigs.**—In answer to enquiries made in your number of the 15th January, referring to a communication of mine on the subject of greaves, I beg to state as to quantity that I used half a cake, or about 14 lbs. to 24 gallons of water, that being the capacity of my copper. As to the sort and quantity of meal, I prefer Barley, but find good Oats answer perfectly well when Barley is dearer in proportion, as happens this year; the meal is mixed thick with the soup instead of water, and the pigs have as much as they can eat clean, three times a day. I have never boiled the meal, but I have no doubt it would be an improvement; the question is whether it would pay for extra fuel and labour, as meal doubles its bulk when boiled. *G. W.*

**Cultivation of Wheat.**—It has hitherto been a difficult matter (at least in the wet climate of Lancashire) to ascertain how far it is prudent to manure for Wheat; for in unfavourable seasons the plant runs so much to straw, that it is liable to lodge and become mildewed; in which cases the manure is not only wasted but is positively injurious, as appears to be the case in the south of England last year, and as was also the case in the north in 1845, when every shilling expended in manuring the Wheat crops of that year made the crop at least a shilling worse than if no manure had been applied. But if we could find a Wheat so short in the straw that it would bear heavy manuring without being loaded, Wheat-growing would be a far less hazardous occupation than it is at present; and we might confidently calculate on a far greater production per acre than we can now. The following appear to me to be some of the advantages of growing a short-strawed Wheat:—1. It will bear highly manuring without lodging, and with much less liability to mildew than a long-strawed Wheat. 2. The proportion of grain to straw is greater in short than in long-strawed Wheat. 3. As it very rarely lodges, it will be far better suited to the reaping-machine than a long-strawed Wheat; and no doubt other advantages will occur to the minds of experienced agriculturists. When making these assertions, I ought to state that my experience of Wheat-growing does not extend beyond the counties of York and Lancaster; but from what I can learn of the agriculture of more southerly districts, I fancy these opinions of mine will be found correct even there. I may be asked to prove my assertions, and I will endeavour to do so. I have been experimenting on the growth of Wheat for the last 10 or 11 years, particularly with reference to the practicability of doing this on the same land year after year; and, that I might do it in the most satisfactory manner, I have varied my seed Wheat and my manure very frequently. But I very soon discovered that the advantages of abundance of manure and high cultivation did not insure good crops of Wheat, inasmuch as, in our moist climate, we had not one summer in five that was favourable; and, consequently, the crop was generally lodged and the straw mildewed—I found that the time of sowing, and also of applying the manure, were matters of very great importance—and it occurred to me that the remedy was a straw so short that it would not lodge when highly manured; I consequently addressed a query to the *Gardeners' Chronicle*, asking what was the shortest-strawed variety of Wheat known, and was told that "Piper's Thicket" was so. I therefore got some of this kind from Mr. Piper, which I have cultivated since 1847. It is a coarse red Wheat, but the quality has improved with me every year; and this season, being the third successive crop on the same land, I have nearly eight quarters to the statute acre from this variety. 2. The proportion of Wheat in Piper's Thicket is 38 per cent. of the gross weight of the crop; in the Hopetoun Wheat (I speak of my own crops only) 34 per cent. 3. Not having seen a reaping-machine, it may seem absurd in me to say that short-strawed Wheat is better adapted to it than long-strawed; but every report of the working of these machines goes to show that, so far, they are not well adapted to the cutting of laid corn, and therefore a variety that always stands upright will be much better suited to the working of them. I have been trying for the last six years to obtain (by cross-breeding) a Wheat of good quality, and with a straw shorter than Piper's, but hitherto with indifferent success; but, thanks to the kindness of Messrs. Brownell's, of Liverpool, who furnished me with many samples of

Chilian Wheat, about three years ago, I have now got varieties much shorter in the straw than Piper's, and some which appear to be of much better quality; but these will require to be tested for a year or two before I can speak decisively about them. The Chilian varieties are very difficult to acclimatise. The original samples were beautiful white Wheats, very much resembling the Australian; but, when grown in Lancashire, they resemble Rye more than Wheat, and three years' sowing has not much improved them. It has, however, enabled me to obtain crosses which seem better adapted to the soil and climate, and so short in the straw that the highest manuring produces no tendency to lodge. If we could obtain a variety of Wheat of good quality, which, instead of 2 tons of straw and 1 of Wheat to the acre, produced 1½ ton of each, it might be very profitably cultivated by agriculturists; and the differences in the chemical composition of grain and straw are not so very great as to make me despair of this being done some time or other. It may be asked, where can a short-strawed Wheat of good quality be procured? To this I am afraid the reply will be, "Nowhere at present." But can none of our expert manipulators, who rejoice exceedingly when they cross-breed a Fuchsia or a Geranium, turn their attention to the cross-breeding of Wheat? Cannot the Royal Agricultural Society offer a premium for the production of short-strawed Wheat of good quality? Do none of the great agriculturists themselves see how desirable such a Wheat would be for the agriculture of this country? Apparently not; for, with the exception of Mr. Raynbird, of Hampshire, I am not aware of one scientific operator who is endeavouring to produce such a Wheat. My own attempts at cross-breeding are such as may be tried by any one who has sufficient perseverance, and (with one or two exceptions of doubtful success) have been confined to sowing the different varieties I wished to cross in contiguous drills, and then sowing the produce of these. At the second harvest I carefully select such ears as differ from both the varieties, and at the same time seem, by their quality of grain, and the shortness of their straw, to be the best suited to my wishes. It has been, no doubt, to the accidental contact of distinct varieties, that we owe the numerous kinds now known to agriculturists, and which differ from each other in colour, quality, yield, and comparative value, in the various districts in which they are grown. Fully sensible of my inability to do justice to this important subject, I yet hope (if you do me the honour to publish my letter) that my remarks may induce scientific men to consider it; for it appears unaccountable to me that hitherto they seem to have thought it unworthy of their attention. *T. G., Chilheroe.*

**Pleuro-Pneumonia.**—One of my cows was attacked, last September, with pleuro-pneumonia, and died while under care of a person supposed to have some skill in such cases. Shortly after, a subscriber of yours, Mr. Blood (Wicklow), forwarded to me Mr. Thicknesse's recipe, as given at p. 652 of the *Agricultural Gazette* of 8th October last. On 3d November, another cow was attacked with some disease; I decided on trying the malt-mash, &c., and gave her a quart of strong salt-water. By next morning her bowels had got a change for the better; but otherwise she was apparently worse, more so than the cow that died had been after a week's illness. I then took from her six quarts of blood, which came very copiously, but I feared in too large a quantity, as she lay down immediately after, and appeared much exhausted. After about 4 days, 3 or 4 quarts more were taken from her, which also came very freely. Meanwhile the malt-mash was given 5 or 6 times a day, but with some difficulty; it was not deemed advisable to force it on her often, on account of her weak state. After the 6th or 7th day, she showed signs of relief; on the 10th day she began to chew the cud and to take food herself, continuing gradually to improve till quite well. A friend has since tried this treatment, with like good effect, the only difference being that he had given 1½ lb. salts before hearing from me. I must say when my second cow was attacked, no slight alarm was felt by me, as an adjoining farmer had lost 28 of his stock not long before from some disease. This is written to express my obligation to your correspondent and yourself, and to instance, so far, the success of his remedy. *Patrick Marnell, Clenagowan, Maryborough, January 17, 1853.*

**Chemical Works.**—The downfall of Messrs. Muspratts and Son's great and majestic chimney, at the Newton-le-Willows chemical or alkali works, has caused much rejoicing amongst the farming community of South Lancashire for miles round where it once stood, but now, alas! no more; and had Messrs. Muspratts paid the full amount of damage said to be done by their works to the farmers, he might, it is said, yet have remained where he had been for years, although the deadening vapours and gases which were poured forth both night and day vanquished every description of trees and vegetation, and ruined our once crystal brooks. But his company have got land only a few miles from where he was, viz., at Widness-docks, on the banks of the Mersey, and have commenced erecting; but it seems the landed proprietors are equally alive to his operations, and some have already got their timber valued. Messrs. Muspratts have, it is true, been martyrs; for there are no less than a dozen works at St. Helen's, several about Wigan, West Derby, and Garston; and we maintain that it is wrong to stop one, and not all, for they do equally as serious and great damages in their several neighbourhoods as he did. And the protestation of the agricultural community has



been of late very great; and we believe that such nuisances which are both detrimental to man and beast, trees, fences, and all the tend family of the vegetable kingdom—come within the range of the duties of the Board of Health in London. The running brooks near these works are all descriptively of colours, and all the streams once loaded with ash are now completely poisoned, as well as the water ruined for our cattle's use. *St. Helen's.*

*The Year's Experience.*—I assure you that I had no intention but to treat your correspondent, Mr. Harcourt, with courtesy; but as I thought, and I still think, that the excellent Archdeacon was too severe upon a class of men to whom I consider this country greatly indebted, I thought his article called for a reply, or that it challenged one. But you complain that I did not state failures as well as successes. Now, Mr. Harcourt gave a year's experience on one farm which was under his own management, and which his experience showed, as you admit, that on the whole it was a failure, and that he had losses. Now, I took a farm, not for one year but for a succession of years, on which I could not record a failure, because I verily believe there had not been a single one on this farm since the present occupant has had it. But would it have been on the Archdeacon's plan of farming? No, it would not, for that plan had been tried for years and years, and compared under the former occupant, and always, when compared with the present crops, with failures, or never without them. Depend upon it, a skilful and unprejudiced man will make land produce, and, at half the expense likewise, double or three or four times the produce that an unskilful one will, and I maintain that such a man is a benefactor to his country; for were energy and modern science applied to agriculture as they are to our manufactures, farmers would export corn, and our country would not be, as it now is, dependent upon all the rest of the world for daily existence; we should then not export labourers and import corn, but should rather import labourers and export corn. I conclude by expressing my regret if I have offended your excellent correspondent, but at the same time I would advise him to cut down all his hedge-row timber and become a thin seeder, and then the current year's experience, should he give it, will prove that, as he grows in years he increases in wealth, by improved farming. *G. Wilkins.*

*Experience in Draining.*—In your last number there appears a letter from Mr. Hewitt Davis, on "experience in draining," in which he mentions a fact with reference to the imperfect draining of certain portions of generally well-drained land, which has come also under my observation some considerable time ago; and since I first discovered the cause of such partial failures, I have always taken the precaution to make each man in the bottom have a pail of water constantly at hand, by which to test the bottom previous to laying in the pipes. And by this simple means I prevent the possibility of such occurrences as Mr. Davis mentions. Of course it is equally necessary to set out the work accurately first with the spirit-level, giving the men the depths at various places; and in some important drains I have found it necessary to chain-pig the line, just as we do for a railway, giving the depth at each chain; but even then the most skilful workman will require the aid of the stable-pail to do the work as it ought to be done, and must be done to be effectual. *J. O. Sherrard, Reigate.*

*Manures.*—Permit me, through the medium of your influential Journal, to make a few suggestions on this subject. The want of an abundant supply of manure of equal fertilising power to guano at a much lower price is now generally felt by agriculturists. There is no want of artificial manures in the market, but most of them on trial are found defective, and any that are of real value are as costly as guano. There appears to be one untried source from which the want could be supplied. Part of the produce of each farm is consumed in feeding the live stock, and the farmer carefully collects the excrement and applies it to the soil as his best fertiliser; but the most valuable part of the agricultural produce of the country is consumed in our cities, and the excrement is floated down the nearest river, and irrecoverably lost. Could this not be remedied? I think it could. You have Banking Companies, Gas Companies, and Water Companies, let us have a Manure Company in every large town, and let them be invested with authority, to enable them to erect works and collect material. The night-soil could be conveyed from every house to a main pipe in each street—excluding of course street drainage, and all unnecessary water; the street pipes could all run into one great main, discharging itself at such place as the company's works should be erected. Immediately on the soil being discharged from the main pipe it should be mixed with powdered charcoal, which would at once absorb the offensive, but valuable gases, and give it more consistency; it would then be evaporated to dryness by passing over heated cylinders or otherwise, then reduced to powder, and weighed out for sale. In that way I believe a manure could be produced of fertilising power, equal to the best guano, at, perhaps, less than half the price. Of course this implies an outlay of capital, but what great undertaking does not? Surely it would pay the capitalist as well as any other kind of stock, and at the same time prove a great public benefit. *A Porfarschire Farmer.*

#### POULTRY.

*CORNWALL SOCIETY.*—The show was very good. There were 119 entries—an increase, we understand, of

about 20 over the show of last year; but 19 of these were not sent, and the pens were filled with other birds furnished for the purpose. There were 5 pens of Spanish, 9 of Grey Dorkings, 3 of White Dorkings, 38 of Cochin China, or Shanghai, 3 of Malay, 6 of Game Fowl, 7 of Silver Pencilled Hamburg, 4 of Silver Spangled Hamburg, 4 of Poland Fowl, 4 of White Silk Fowls, 6 Gold Laced, 2 Silver Laced, 2 White and 2 Black Bantams, 18 Pigeons of 10 sorts, 4 of Geese, 1 of Turkeys, 1 Peafowl, 2 Aylesbury, 2 Rouen, and 7 other varieties of Ducks, 1 Guinea Fowl, and 1 Silver Pheasant. In 7 classes none were considered to possess sufficient merit to deserve a prize, and in 10 others only a second prize was awarded. The prize pens of Spanish were very superior. In this, as in most other classes, the prize birds were exhibited at Truro, and took similar prizes there; a fact that tends to confirm the judgment and firmness of the judges. On the present occasion, the judge was Mr. Andrews, of Dorchester, who was one of the judges at Birmingham. The Grey Dorkings were an excellent class. The White Dorkings were not so good. Mr. Smith's pen would probably have had a prize, but one of the pen birds did not match. The Cochin Chinas were the pride of the show. The White and Buff were distinguished, not indeed in the class lists, but in the award of prizes; an act of justice, since the Whites are far superior to the others, not only in beauty of plumage, but in symmetry. They have lost the great coarse legs and long poking necks of the Buffs, which, whatever their intrinsic merits may be, are certainly most superlatively ugly; to say nothing of their hoarse croaky crow. The Whites, on the contrary, have the bold and graceful figure and bearing of the Dorking or Spanish. The Game Fowls obtained a 2d prize. There were good birds, but the matching was defective. The Hamburgs were a fair class, but there was no first prize, for want of distinctness in the markings. The Black Poland, with white crests, failed, from defective crests, which were not perfectly white. The Golden Polands were beautiful. There were some lovely birds among the Bantams. The Pigeons were excellent. Mr. G. Williams's pen of magnificent Geese, which took the first prize at Truro, obtained the same distinction to-day. Their weight exceeds 61 lbs. the three, while the heaviest pen of three geese at the Metropolitan Poultry Show, lately held at Baker-street, was only 48 lbs. The prize Aylesbury Ducks were large and good; the Rouens were defective in colour. On the whole, the exhibition was creditable and gratifying.

*TORQUAY.*—A most successful show of Poultry was held at Torquay on the 19th and 20th of this month. The judges were G. J. Andrews, Esq., of Dorchester, and the Rev. G. F. Hodson, of Chew Magna, Somerset; and we believe we may congratulate these gentlemen on giving almost universal satisfaction. The champion prize was carried off by Mr. T. H. Potts, of Kingswood Lodge, near Croydon. This gentleman appeared last week in our Paper, the gainer of four prizes and three commendations at the Metropolitan, and he here monopolised a class, taking all those awarded in No. 6. Wherever a prize is given for Spanish it seems to belong to Captain Hornby; he took the two first in Class I. The Dorkings were awarded to Miss Wilcox, Messrs. J. F. Pearce and Vivian; Mr. T. Atkins took two prizes for brown and partridge Cochins. The game fowls were very good, the first prize was gained by Captain Hornby; and the second and third by J. K. Brunel, Esq., of Watcombe. Without going through the different classes in detail, those accustomed to read the prize lists of the different shows, and to make their estimates of the birds by the known judgment of the owners, will be able to form a correct opinion of the quality of those exhibited from the following list of prizes. Captain Hornby, five; Mr. T. H. Potts, four; Mr. E. Vivian, five; Mr. J. K. Brunel, four; Mr. W. W. Rowe, three; Rev. L. Hammick, three. There was a novelty in this show; viz., there was a prize for a Devon collection, of not less than three varieties, nor more than 20 birds. Perhaps so much anxiety was never before manifested to gain distinction in poultry, as in this instance. The judges awarded first prize to Mr. W. W. Rowe, of Longbrook, Milton Abbot; the second to E. Vivian, Esq., Woodfield, Torquay; and the third to the Rev. W. Vincent L. Hammick, Milton Abbot, Devon. There were next three prizes for the best Devon pens, and they were awarded to H. Adney, Esq., Lympstone; J. K. Brunel, Esq., Watcombe; and Mr. R. T. Head, The Briars. These honours were well deserved, and the display of poultry competing for them was excellent.

*Metropolitan Poultry Show.*—On referring to the prize list of the Metropolitan Exhibition of poultry, pigeons, rabbits, &c., you will find that I took three prizes out of four given for carrier pigeons, and one for black. As there has not appeared any notice of these birds in any paper as yet, I trust you will give me a favourable notice. These birds have been seen by some of the first fanciers, who say the blues are the best in England, and the blacks very fine; after obtaining three out of four prizes in this class, it is rather disappointing not to find them even named in your articles on the show. One black cock sold for 3*l.*; another was bid 4*l.* for, and was bought in for me at 4*l.* 4*s.*; one blue cock was bid 3*l.* 15*s.* for, and bought in at 3*l.* 17*s.* 6*d.*; one blue cock, 10 months old, was bid 3*l.* 12*s.* 6*d.* for, and bought in at 3*l.* 15*s.*; a blue hen was bid 3*l.* 10*s.* for, and bought in for 3*l.* 12*s.* 6*d.*; from these prizes obtained

at the sale, you must be aware that the birds were very good. *W. W. Hayne, Sutton, Surrey.*

*A Remunerative Price for Poultry.*—The *Times*, in a very sensible leader of the 13th of January, nevertheless, has this sentence. "Although 2*s.* 6*d.* a couple would, according to all calculable expenses, be a remunerative charge, we are compelled to pay at least double." Can any of your readers point out where, when, and how, a good Dorking or Surrey fowl, or any fowl, was hatched, reared, fed, fattened, killed, plucked, and trussed, and sold for 1*s.* 3*d.*? and who was the owner, "higgler," whole-salesman, and retail dealer, that found a profit? or, if the three latter were got rid of, how the owner sent it to market or direct to the consumer, and found a profit after payment of the wages, or, what is equivalent, of a proper charge for the value of his own time occupied and railway carriage? *Simplex.*

*Poultry Scraps.*—At the Metropolitan Show it was constantly asked, What is a dealer? One gentleman said, the amateurs seemed in as much difficulty about that, as the "turf" was, when he was a member of it, to define what constituted a gentleman jockey. It was agreed to refer to the dictionary. "To deal: to traffic, to transact business, to act between two persons, to intervene; to behave well or ill in any transactions; to deal in, to have to do with. Dealer: one that has to do with anything; a trader or trafficker." The definition did not help the question much, or facilitate a solution. At last an ingenious person, doubtless good at conundrums, propounded that a dealer was a man who sold; which, being laughed at, he explained by saying that a farmer, chemist, or any other trader who sold, or bought and sold fowls was not a dealer in them, although he might realise very large sums. But that the man who sold nothing else was a dealer. Having explained himself thus far, he concluded by expressing his contempt for all the latter class. He would have nothing to do with them, nor should any one who had anything at all to do with poultry, ever be a judge if he had his will. He would choose a man who had never been mixed up with it, and was consequently above suspicion. It was mildly objected, that perhaps from great experience, an honest dealer, if such could be found, was a fit person, and that, admitting poultry was like pitch, and defilement followed its touch (by a dealer), still if his knowledge were made use of and his dishonesty qualified or neutralised by associating two or more gentlemen with him he might be admissible. But nothing would satisfy him. The dealer might be honest, might be full of knowledge, might be desirable if it were not known he was a dealer, but being one, he prophesied failure of every show where one was employed. He could only add, he knew nothing whatever of poultry, but he was perfectly willing to act as judge, provided no dealer acted with him. *Spectator.*

*The common Whin or Gorse*, as it is called in the south, is the best plant to grow near a poultry yard—for this reason, that from the peculiar formation of the branches there is no drip from it in wet weather; all the rain runs down the stem. A proof of its advantages is, that in a rainy time, in pheasant preserves, you will find more birds in a good Whin cover than in a plantation. I have long used a sod at the bottom of each nest, and I fancy the damp is of great value in hatching. *R. P.*

However well my Cochin Chinas may have laid, a grey Dorking has outdone them. Towards the end of November I one evening missed her, and after long search found her between two bundles of straw, setting on 24 eggs, which she must have laid herself. We took them from her, and on the 12th December she recommenced laying, and has continued ever since. She lays four days consecutively, and then misses one. *M.*

POULTRY SHOWS: Letters from *Lady Annet, an Ancient Poultry Fancier, Lower of Fairplay, S. G. Baker, and an Exhibitor*, are under the consideration of the editor.

#### Calendar of Operations.

##### JANUARY.

*LAMMERMUR SHEEP FARM, Jan. 13.*—Here we have felt in their full force the fearful storms of wind and rain which have for some time prevailed over the country. Rarely, indeed, during the last six weeks, have there been 24 hours of uninterrupted dry weather. There has been very little frost; for though the thermometer frequently descends to the freezing point, it rarely falls below it; its usual range for some time having been between 31° and 40°. This is by no means a low temperature for a Lammermur winter, yet even this, from the high winds and raw state of the atmosphere, has made the present season, so far as it has gone, anything but comfortable for either man or beast. We need hardly add that it has been very unfavourable for hill sheep, and that they have lost condition greatly. Never, during the last seven years at least, have we seen our own stock so much reduced so early in the season. On low undrained grounds considerable fairs are entertained of loss from rot, though we have not as yet heard of its actual appearance. Even upon dry or well drained farms, things are not looking well; and should the coming spring be stormy and late, the prospects for the next lambing time are not over cheering. The rams were removed from the ewes a few days ago, after having been among them between six and seven weeks. They are now upon Turnips, which at present are laid down to them upon a piece of dry old Grass. Along with the old sheep, there are a few scores of Cheviot and black-faced hogg Rams, most of which we purpose disposing of during summer. These have been upon Turnips for some time; and besides their allowance of roots we now intend giving them half a pound of Oats daily, that they may be in good condition when presented for sale. We are in the habit of drafting the old rams at this season, and giving them Oats. By this means we endeavour to get them into fair condition, and disposed of to the butcher about the beginning of April, when they command a readier market than during the heat of summer; and at the same time leave the inclosed pastures for something requiring better treatment, such as twin ewes and weakly animals, of which there will always be some where a large stock is kept. For some time to come the work of the shepherds will be light and of quite a routine nature, unless we



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MR. STRAFFORD has received instructions from THOMAS H. POTT, Esq., Kingswood Lodge, Croydon, to offer for sale by Auction, without reserve, at the Bazaar, King Street, Portman Square, on THURSDAY, February 10, about 120 lots of first class COCHIN CHINA FOWLS, including some imported hens of great weight and other fowls purchased and bred with great judgment, principally from the far-famed stock of Mr. Andrews, comprising a number of lemon, buff, and cinnamon chickens, bred from the above, many of which have taken prizes at the Great Metropolitan, Bristol, Torquay, and other Shows.—Catalogues, with full particulars, will be ready on the 1st February, and may be had upon application to Mr. Stafford, 89, Guildford Street, Russell Square; or at the offices of the Bazaar, King Street, Portman Square.

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 the Editor.—SATURDAY JANUARY 29, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 6.—1853.]

SATURDAY, FEBRUARY 5.

[PRICE 6d.]

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**HORTICULTURAL SOCIETY OF LONDON.**—At the Meeting in Regent Street, at 2 P.M., February 15, the objects of SPECIAL EXHIBITION may be CAMELIAS (shown in three, in pots not exceeding 15 inches in inside diameter); TABLE PEARS, correctly named, in collections of six, two specimens of each sort to be produced; LETTUCES (shown in sixes).

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"I feel it due to you to say that the Seeds sent have given myself and my gardener perfect satisfaction. I have named your establishment to several of my friends, who another year will, I have no doubt, send orders for what they may want."

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**EDWARD TILLY** having purchased the whole stock of Seed of this superior Melon of Mr. Austen, of Truro, Cornwall, respectfully solicits the attention of the public and all others connected with Melon growing, to the very superior qualities of the above delicious variety. The following prizes have already been successfully competed for and awarded, viz.—Exhibited at the Royal Botanic Society of London's show at Regent's Park, on July 24, 1851, and obtained the bronze medal; again exhibited at the Royal Horticultural Society of Cornwall, at Truro, on the 8th July, 1851, and obtained 1st prize; also on the 6th July, 1852, exhibited at Falmouth, and awarded by that Society the first prize; an extra prize was also given for this Melon by the said Society at their show, at Truro, for a fruit of a second crop from the same plant as the fruit shown at the preceding July show. E. T. has also many private flattering encomiums given to Mr. Austen by gentlemen of the highest standing and respectability, and who are considered first-rate judges of the Melon, which he is not at liberty to publish, but will enclose copies of them to purchasers. The fruit of this Melon is very handsome, thin skin, firm and solid, melting flavour, free setter, a very early and most productive bearer, weighs from 3 lbs. to 4 lbs. It will prove a superb variety for those who are limited as to room; in proof of its productive qualities, 20 fruit were cut from one box, and all of which were exceedingly fine for flavour, weight, &c. E. T. feels confident that the above will give as great satisfaction as former Melons offered by him, including the Broomham Hall sent out in 1850. Packets of good sound seeds, 2s. 6d.; large ditto, of 15 seeds, 5s.; also the following first-rate varieties:—Tilly's Golden Ball Melon, 1s. 6d. per packet; Tilly's Broomham Hall ditto, 1s.; Tilly's Queen Melon, 1s. ditto; Tilly's Bowdoin Melon, 1s. ditto; Victory of Bath Melon, 1s. ditto; Camerton Court, 1s. ditto; Beechwood, 1s. ditto; Windsor Prize, 1s. ditto; Emperor, 1s. ditto; Fleming's Hybrid Persian, 1s. ditto; Hampton Court, 1s. ditto; and Black-hall's Green Flesh, 1s.; Bailey's ditto, 1s. ditto; and many other older varieties.

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## TILLY'S "CAPTIVATION" &amp; "PHENOMENA."

both black spines, handsome fruit, uniform size from stem to tip, measuring 24 to 28 inches, carrying a good bloom, fine dark-green, and free from ribs or shrivels. As Cucumbers for competition they are not yet equalled—wherever exhibited they have always been successful. Phenomena is the hardest long cucumber, and grows with less heat than any other of its length. Both sold in packets, 2s. 6d. each, warranted sound seeds. Lord Kaysan's Favourite. Winter Cucumber, a good variety, 2s. 6d. per packet. All other good varieties can be supplied.

N. B. A packet of the new Incomparable Melon, and a packet of either of the above Cucumbers, and also one of the Golden Ball, or any other Melon named, for 5s. A remittance must accompany the order from all unknown correspondents by penny postage stamps, when the whole or any quantity of the above will be forwarded free to any part.

EDWARD TILLY, Nurseryman and Seedsman, 14, Abbey Church-yard, Bath.

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**J. WEEKS AND CO., CHELSEA,** have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all Shrubby they are perpetually in flower; and from the great variety and brilliancy of their colours, they are invaluable for the conservatory or bedding-out.

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25 Azaleas, new hardy Belgian varieties on their own roots, s. d.  
with flower buds, one of a sort by name, for ... 20 0  
25 American Azaleas do. do. ... 15 0  
25 Hardy American Plants, one of a sort by name ... 10 6  
12 Rhododendrons, including Searlet, White, and Rose, hardy varieties ... 12 0  
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Fine dwarf and standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries; the best and most approved sorts of these respective kinds, true to name each 2s. 6d., or per dozen ... 24 0  
Untrained or Maiden ditto, 1s. 6d. each, or per dozen ... 12 0  
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Fine Gooseberries, Currants, and Raspberries, per dozen 3 0  
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Filberts, new, thin shelled, and red skinned, per dozen 3 0  
Strong Vines from eyes and layers, in pots, per dozen ... 15 0  
Rhubarb Roots, Early Seed Potatoes, Seakale, and Asparagus Plants, and Garden Seeds of all kinds supplied. Choice Flower Seeds, 20 papers, 5s.; 50, 10s., free by post.

Albion Nursery, Stoke Newington, London, Feb. 5.

## NEW MELON.

**THE GOLDEN QUEEN, from North America,** small size, weight about 2 lbs. each, good bearer, with a rind as thin as a wafer: decidedly distinct from all others known. "I have had several opportunities of testing the above Melon, and consider it much superior to any other known to me." *Henry Baines, Sub-Curator to the Museum, and Gardener to the Philosophical Society, York.*

"I have frequently tested the 'Golden Queen' Melon, during 1851 and 1852, and found it very rich and high flavoured, which character it fully maintained so late as November."—*W. Burnett, Gardener to J. Buckle, Esq., York.*  
"I have been a Melon grower upwards of twenty years, and have grown the most popular sorts of the day, but never met with one to equal the above, and when known, it will, no doubt, displace most others."—*T. Henderson, Gardener to J. Barber, Esq., Tang Hall, near York.*

Packets, containing seeds, will be sent to all applicants on receipt of postage stamps to the amount of 2s. 6d.—Apply to **JOHN TULLY, Gardener, Friends' Retreat, York.**

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**FINE GRASS LAWNS IN FLOWER GARDENS,** &c.—The great expense of cutting and carting turves from a distance may be avoided, and a superior Turf produced in a few weeks, by sowing **SUTTON'S LAWN GRASS SEEDS**, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds.

Great improvement may be effected in old Lawns by sowing about 20 lbs. to the Acre of these Seeds; for the formation of new Lawns twice that quantity will be necessary.

Price 1s. 3d. per pound; 3s. per gallon, or 21s. per bushel. Address **JOHN SUTTON & SONS, Seed Growers,** Reading, Berks.

## The Gardeners' Chronicle.

SATURDAY, FEBRUARY 5, 1853.

## MEETINGS FOR THE ENSUING WEEK.

DAY.	MEETING.	HOURS.
MONDAY, February 7.	Eutomological .....	8 P.M.
	Chemical .....	8 P.M.
	British Architects .....	8 P.M.
	Syria Egyptian .....	7 P.M.
TUESDAY, —	Civil Engineering .....	8 P.M.
	Medical and Chirurgical .....	8 P.M.
	Zoological .....	9 P.M.
	Literary Fund .....	8 P.M.
WEDNESDAY, —	Graphic .....	8 P.M.
	Pharmaceutical .....	8 P.M.
	Ethnological .....	8 P.M.
	National Horticultural .....	8 P.M.
THURSDAY, —	Antiquarian .....	8 P.M.
	Royal .....	8 P.M.
FRIDAY, —	Astronomical (Anniversary) .....	8 P.M.
	Pathological .....	8 P.M.
SATURDAY, —	Royal Institution .....	8 P.M.
	Royal Botanic .....	8 P.M.

The state of the Woods and Forests belonging to the Crown has for many years past been a subject of animadversion, not merely in the newspapers but in conversation. Persons thoroughly acquainted with woodland property, and living on the borders of the Royal forests, have not hesitated to condemn their management in the strongest terms; and we have repeatedly had our attention drawn to what

was described as a system of the most wasteful expenditure, as well as of unheard-of misadministration. There is, however, so much difficulty in getting at truth in these matters that we have never thought it advisable to open the question; which indeed we avoided the more because it was generally understood that Government had taken in hand, in good earnest, the entire reform of the department to which the administration of the Royal forests is attached.

The measure upon which future improvements was to be founded, in fact took place in the autumn of 1851, when the duties of the three Commissioners of Woods and Forests were separated and better defined, and the management of the land revenues, parks, and forests, was divided between the Hon. CHARLES GORE and the Right Hon. THOMAS FRANCIS KENNEDY; the former being charged with Windsor Forest and most of the land revenues of the Crown, and the latter with all the other Royal forests. In this manner responsibility has become better defined, and the public will know with some certainty upon whom to fix in future any charge of maladministration.

We have now before us the first report of the two Commissioners, and we regret to say it shows that the animadversions above alluded to have been only too well founded. Mr. KENNEDY, who is known to possess considerable experience in the subject of his new department, in an able and very explicit document, has placed the real state of affairs clearly before the eyes of the country, and has left no room for doubt about the causes which have brought the Royal forests to their present lamentable condition. As the document itself is not likely to meet the eye of many except members of the Legislature, we shall proceed to extract from its pages some of its more striking representations. This is indeed absolutely due to the new Commissioner, in order that he may not hereafter be charged with the consequences that must for some time to come continue to ensue from the acts of his predecessors.

No complaint has been more frequently brought against the department than the excessive expense attendant upon the unproductiveness of the Royal forests. This can no longer be matter of surprize, when we find that the accounts remain unaudited from the year 1844-45 inclusive, to 1850-51. The accounts of the Crown estate in the Orkneys, with their vouchers, have not been transmitted from the year 1833 (eighteen hundred and thirty three). No wonder that the Commissioner considers this unsatisfactory; it might, however, be matched by a case nearer Whitehall than the Orkneys. When we add to this the other startling fact, that in the annual accounts, such as they have been, no distinction has been made between expenditure for annual maintenance, and an outlay of capital for the purpose of improving the Crown property, or in the words of the report, "for the purpose of creating an increased value and future increased production," we shall have shown that the wonder is not that mismanagement should have been so great, but that it should not have been far greater.

If we look to the money results of the past state of things it is found that the gross revenue of all the Royal forests was, in 1851-52, no more than 61,437l. 0s. 5d., obtained at an expenditure of 38,926l. 14s. 7d., so that the net revenue of fourteen forests is less than 23,000l. Parkhurst could only spare 31l. out of 890l. received, New Park 190l. out of more than 1200l., Delamere 410l. out of 2250l., while Salecy and Waltham cost respectively 237l. and 400l. more than they produced. Even the New Forest, the greatest of all, could only account for 23,500l. received, out of which 14,500l. were spent, leaving the Crown a little more than 9000l. Mr. KENNEDY hopes to obtain out of these forests for the service of 1852-53, 46,000l., at an expense of 27,747l. for maintenance, exclusive of about 5000l. laid out as reproductive capital. But even under their improved management Salecy is to cost 128l. and Alice Holt 460l. more than it can produce; while Parkhurst is to contribute the magnificent sum of forty pounds out of an income exceeding 900l.

The state of the forests is just what might have been expected, and what has been so frequently alleged. Let us take the forest of Dean by way of illustration. Orders having been given for the supply of 553 loads of Oak timber from Dean Forest, and 177 from the High Meadow estate, both in charge of the same deputy surveyor, it turned out that when the Navy Purveyor came to examine what had been provided for him, he found it necessary to reject in Dean Forest 93 trees out of 242, and in High Meadow 348 out of 450; or about eight out of every eleven! This excited some surprise at the Treasury, and Mr. MARTIN, an experienced officer of Lloyds, was directed to visit the forest and report whether the Navy Purveyor had pro-



perly rejected the timber offered to him. And what does Mr. MARTIN report? He says that out of the 93 trees rejected, six are fit for squaring, and two partially so; and that out of the 149 trees selected, 50 are wholly unfit for service, and 40 partially so. Thus, it appears, that in the old forest of Dean, which cost the country in 1851-52 the sum of 8821*l.* 4*s.* 2*d.*, 242 trees were selected, which, in the opinion of the deputy surveyor, were fit for falling; out of which, when felled, the Navy Purveyor rejected 93, and LLOYD's officer found that of what he accepted, just 90 more should have been also rejected. Making all allowances, only 65 Oak trees were furnished by the forest of Dean, fit, in the opinion of so experienced a man as Mr. MARTIN, for first class naval purposes. As to the 450 High Meadow trees, Mr. MARTIN reports that the 348 rejected, are (with the exception of about 24), "altogether unfit for building in the Navy." This High Meadow estate cost, we observed, in 1851-52, 2269*l.* 10*s.* 7*d.*

And what does Mr. MARTIN say of the Dean and High Meadow standing timber? He says that the trees have been allowed to stand too long, and that "some thousands of trees of the same age and dimensions are now standing," that they are stag-headed, or loaded with rotten limbs decayed to the very trunk; that they are getting worse and worse, and injuring the young trees around them; and further on, that many of the standing trees have branches damaged and broken by the falling of other trees, which branches have never been removed, but allowed to remain "to convey serious defect into the body of the tree ultimately." It comes out too incidentally that instead of the Dean timber being sawn to suitable sizes, it is "chopped to no given size," and that when felled it is left to rot upon the wet ground, instead of being blocked up, so as to allow air to pass under it, in order to dry and season it.

Are we living in the reign of QUEEN VICTORIA? or in the days of the Heptarchy?

We have already stated what the cost was in 1851-52 of the forest in which this state of things has been shown to exist. If we look back the facts are still more startling. In 1848-49 it cost 4104*l.* 18*s.* 7*d.* more than it produced; in 1849-50 it cost 536*l.* 14*s.* 9*d.* more than it produced; in 1850-51, after spending upon it 7971*l.* 7*s.* 3*d.*, it yielded the brilliant income of *forty-three pounds four shillings and five pence*. At last, in 1851-2, a clear return of rather more than 4000*l.* was obtained from it. Hence it appears that a forest, called by Mr. KENNEDY "that very fine possession of the Crown," consisting of upwards of 16,000 acres of Oak woodland, yielded the sum of 4412*l.* 4*s.* 6*d.* in four years, or about 1000*l.* a year, or about *fifteen pence* per acre per annum, at a cost of 35,982*l.* 10*s.* 2*d.*, or about 9000*l.* a year.

Comment is superfluous. After this exposure no one can wonder that Mr. KENNEDY should report the necessity of removing one of his deputy surveyors; we venture to hint that the number of removals might be advantageously increased.

We learn that SULPHURIC ACID has been proposed by M. RENIER, in a letter to the Minister of the Interior of Belgium, as an easy and sure mode of destroying such weeds as Thistles, Dandelions, &c. The sulphuric acid is put into a glass vessel resembling a teapot, but instead of a loose lid it has a short, narrow, tubular neck, which expands into a funnel, into which the sulphuric acid is poured when required. The acid is dropped into the centre of the plant intended to be destroyed; the leaves very soon turn black and fall: whilst the disorganising action of the acid is carried down to the roots, and completely kills them. The advantages are stated to be—the destruction of weeds without injury to adjoining plants; that this may be done at any time after the weeds begin to make their appearance; that a boy of the age of 12 or 15 years can destroy as many weeds by this mode as would require several men applying the old method of extirpation; and that it is the only mode by which Thistles and such deep rooted species can be effectually destroyed.

M. RENIER's letter having been published in the agricultural journals of Belgium, M. YSABEAU remarks in the *Flore des Serres*, that it does not furnish certain essential data. 1. At what degree the acid ought to be employed. 2. The quantity required per acre, in order to completely clear a field much infested with Thistles, &c. 3. The expense per acre. He also objects to the use of glass vases, so brittle that, in the hands of children especially, serious accidents are, in consequence, likely to occur. He moreover doubts whether the roots would be all so effectually destroyed, as that crowds of suckers would not spring up.

In this country, salt is sometimes employed

advantageously for the same purpose. The merits of both modes are certainly worthy of comparative trial.

#### THE CONSERVATORY.

THE conservatory at this place holds from 200 to 400 plants, and is very well constructed for showing them. We endeavour to have all the plants in it in flower throughout the year. The following monthly lists are taken from the note-book of one of the under gardeners, who, on the first week-day of every month in 1849, noted down the names and number of plants in bloom in it. Many of them are too common, but they were the best we could produce—number considered—by limited means, and amid the smoke of Manchester. Apart from the houses erected for, and I may say devoted to the production of Pine-apples, Grapes, and Peaches, we have unfortunately nothing but a large 10-light pit, from which to supply the conservatory with flowering plants. Since the lists were prepared we have discarded some things, and introduced others, grown more of one kind of plant, and less of another. The high vocation of every gardener is to improve on his former year's practice, to do better every year.

*January*.—44 plants of *Chrysanthemums*, 70 Chinese Primulas, 16 *Ageratums*, 4 *Siphocampylus bicolor*, 3 *Epiphyllums*, 2 *Kalmias*, 6 *Eupatorium rugosum*, 1 *Daphne odorata*, 1 *Cytisus*; 15 pots of *Hyacinths*, 4 Tulips, 1 *Narcissus*, 29 *Cinerarias*, 16 *Camellias*, 8 *Justicias*, 2 *Ericas*, 2 *Coronilla glauca*, 3 *Leschenaultias*, 1 *Epacris*, and 1 *Ledum*.

With pot-room and rich soil the *Chrysanthemum* does well everywhere. There are many ways of growing and training it. The principle of novelty implanted in the human mind is gratified by variety, and hence the desirableness of departing occasionally from one common mode of training and arranging plants. Nice *Chrysanthemums* may be had by allowing only one stem in a pot, growing it well, and topping it about the end of July. Plants thus treated are kept erect by single sticks, they look very well, cover little space, and in shape are like an Irish Yew tree. By having two or three stems to a pot, stopping them about the end of July, and then bending and tying them down to the rim of the pot, dwarf plants might be obtained. The introduction of *Pompones*, however, has rendered the dwarfing of larger varieties less necessary. The common way of training them is perhaps the best. Four or five stems well tasselled with bloom on every plant nobody will find fault with.

The Chinese Primula, as a small winter flowering plant, has no equal. On account of its compactness and beauty, as well as the length of time it lasts in bloom, it is well worth attention and space; it flowers best when most wanted, i.e., between the months of November and May; it is, however, seldom grown well; the seed, generally speaking, is not sown early enough. To have it very fine, sending up dense bunches of flowers, larger collectively than a man's hat, the seed should be sown sometime between August and February. When very large bunches are wanted, three plants should be grown together in a pot; they thrive well in leaf and peat, mixed with sand. The old plants are eligible for autumn flowering or the borders.

The *Ageratum*, as an autumn and winter flowering plant, is grown here in great abundance. We take 50 plants of *Ageratum* from the "bedding stuff," and plant them 3 feet apart in a convenient place in the kitchen garden. The shoots are topped and thinned all the summer, the last stopping being about the end of August. They are lifted as late as possible to escape frost with large balls, and potted. When a plant thus treated is in full flower, it presents to the eye a sheet of blue or lavender blossom 2 feet across. It is pretty in nosegays.

The *Cineraria* is beautiful at all seasons, but it is most needed in autumn and winter. It is propagated by seed and dividing the roots. For spring flowering dividing the roots in autumn answers very well; but for autumn and winter decoration seed is necessary. We have to sow it in the month of February at Manchester; about London the month of April is soon enough. The *Cineraria* does not thrive when exposed to the direct rays of the sun; it is therefore necessary to grow it in summer on the north side of a wall or hedge.

The *Siphocampylus bicolor* is made to blossom in winter by cutting down its shoots during the dog days of the previous summer. As a winter flower it is not pretty, but it is useful for variety at that season. Though I have not tried the *Bouvardia* I think it might be successfully treated in the same way, and many other things besides.

*February*.—90 Chinese Primulas, 16 *Ageratums*, 15 *Camellias*, 10 *Cinerarias*, 4 *Ericas*, 57 *Hyacinths*, 16 pots of Tulips, 10 do. Crocuses, 6 *Eupatorium rugosum*, 4 *Siphocampylus bicolor*, 4 *Narcissi*, 3 *Ledums*, 2 *Azaleas*, 1 *Acacia*, 1 *Daphne*, 1 *Linum*, 3 *Kalmias*, 3 *Epacris*, 3 *Leschenaultias*, 1 *Cytisus*, and 1 *Scotia dentata*.

Since 1849 we have adopted *Salvia gesneriflora* as an ornament for the conservatory in spring. I am of opinion that the best way of growing it is to plant it out in the month of May in the kitchen garden, where it invariably grows strong and bushy. About the beginning of October it is lifted and potted like the *Ageratum*. Plants treated thus bloom splendidly for six weeks in early spring.

*March*.—130 Chinese Primulas, 33 *Camellias*, 10 *Azaleas*, 6 *Ageratums*, 6 *Epacris*, 6 *Sweetwilliams*, 6 *Pinks*, 4 *Kalmias*, 1 *Ledum*, 55 *Cinerarias*, 26 pots of *Hy-*

*cinths*, 12 do. Lily of the Valley, 9 do. *Narcissi*, 8 do. Tulips, 8 do. Crocuses, 3 do. Jonquils, 4 *Ericas*, 2 *Leschenaultias*, and 1 *Clematis*.

We force a great deal of *Sweetwilliam* and Lily of the Valley for cut flowers. Generally speaking the Lily of the Valley is confined to some poor corner in a garden, or starved against a wall. It is worth better treatment than this. It should be planted in a very rich border pretty fully exposed to the light of day, and well manured like Grass land every winter. It delights as much in sending up an abundance of its fragrant flowers as we have in smelling them.

*April*.—130 Chinese Primulas, 29 *Camellias*, 15 *Kalmias*, 4 *Ericas*, 4 *Ageratums*, 3 *Correas*, 2 *Leschenaultias*, 1 *Acacia*, 1 *Scotia*, 86 *Cinerarias*, 18 *Azaleas*, 6 *Epacris*, 4 *Genistas*, 3 *Ledums*, 3 *Aphelaxis*, 2 *Chorozemas*, 1 *Boronia*, 24 *Sweetwilliams*, 6 *Pinks*.

As standards, *Genistas* are very useful and ornamental, producing a good effect when placed amongst *Cinerarias* and other dwarf plants. Their stems should be about 3 feet high, sustaining heads not much larger than a man's hat. One or two dozen of such plants require but little space or care.

*May*.—90 *Cinerarias*, 24 *Schizanthuses*, 10 *Cactuses*, 6 *Epacris*, 6 *Lobelias*, 4 *Leschenaultias*, 3 *Aphelaxis*, 3 *Euthales macrophylla*, 2 *Pultenases*, 1 *Daviesia*, 1 *Scotia*, 1 *Camellia*, 86 *Calceolarias*, 18 *Azaleas*, 7 *Ericas*, 6 *Geraniums*, 12 Chinese Primulas, 3 *Genistas*, 3 *Fuchsias*, 2 *Chorozemas*, 1 *Boronia*, 1 *Pimelea*, 1 *Lantana*, 1 *Balsamina latifolia*, 1 *Cytisus*.

Herbaceous *Calceolarias* cannot be grown from cuttings now-a-days. In winter a disease "takes off" the plants struck in autumn. The only way of getting good examples is to sow seed in the month of July or the beginning of August; and the surest way of getting good sorts is to save one's own seed. We always do so here, and ours are second to none. Herbaceous *Calceolarias* cannot be dispensed with, because they come in so nicely between the flowering of the *Cineraria* and that of the *Geranium*, and are so beautiful. In 1851 I gave Mrs. Dr. Robinson, of Swinton Park, a packet of seed, from which she raised some hundreds of plants. Last year when they were in full flower she kindly invited me to see them. On entering her conservatory I was quite astonished. There was nothing in it but *Calceolarias*, closely placed on the stages, with their flowers so well and tastefully spread that the pots from which they were produced were nearly hid from view. The great masses and mixture of spotted flowers made the sight quite magnificent.

For extreme gaiety, what can equal a well-grown specimen of *Schizanthus*? The plants grown here are generally about 3 feet in diameter, and densely covered with little butterfly flowers—for really the blossoms of *S. splendens* much resemble spotted butterflies. Seed is sown in the beginning of August, and in a few days the plants are up and pricked out in pans. They are potted off soon after that, and during winter they are repotted over and over again. About the commencement of April they receive their last shift into 13-inch pots. They well repay a little attention, and continue a long time in bloom. *S. retusus* should be sown in July. Great care is necessary in shifting them from pot to pot, as their roots are tender, and the balls easily broken. Removing all the crocks is often unnecessary and dangerous in the case of the *Schizanthus*.

*June*.—108 *Calceolarias*, 40 *Schizanthus*, 18 *Cinerarias*, 15 *Balsams*, 9 *Ericas*, 5 *Cactuses*, 9 *Balsamina latifolia*, 5 *Lantanas*, 2 *Aphelaxis*, 1 *Pimelea*, 1 *Chorozema*, 68 *Geraniums*, 28 *Lobelias*, 16 *Fuchsias*, 14 *Mimuluses*, 6 *Epacris*, 5 *Petunias*, 9 *Achimenes*, 2 *Cytisuses*, 2 *Euthales*, 1 *Rhodante*, and 1 *Pernetia*.

In the conservatory *Lobelias* are no mean ornaments; they quite cover and bury our largest-sized pots with their small but beautiful flowers. When held up with a hoop from the sides of the pots in which they are growing, they appear to be as large as an ordinary-sized umbrella. It is the white variety chiefly which we grow—called by some *Erinus rosea*, by others *E. alba*. Pots of the blue (*Erinus*) and white variety growing together are much admired. The seed is sown in the end of July, pricked out and potted like the *Schizanthus*. Six or more plants of the *Lobelia* may be planted together. It is thus that the blue and white are mixed. They continue in flower from June to September inclusive.

*July*.—100 *Calceolarias*, 41 *Lobelias*, 20 *Fuchsias*, 11 *Impatiens platycentra*, 7 *Achimenes*, 12 *Mimuluses*, 3 *Cactuses*, 2 *Clerodendrons*, 78 *Geraniums*, 32 *Schizanthuses*, 14 *Balsams*, 10 *Ericas*, 7 *Petunias*, 7 *Cockscombs*, 6 *Lantanas*, 2 *Begonias*, 2 *Cytisus*, 2 *Aphelaxis*, 1 *Pimelea*, 1 *Epacris*, 1 *Scutellaria*, 2 *Nierembergias*, 2 *Euthales*, 1 *Campanula*, 1 *Rhodante*, and 1 *Pernetia*.

The *Impatiens platycentra* or *Balsamina latifolia* recommends itself by its beautiful flowers and the length of time it continues in bloom. We put in a great number of cuttings, five in a pot, early in spring. They are not potted off singly, but grown together in very rich soil, more than one-half being well-rotted manure. In this they grow very vigorously, measuring often from 18 to 30 inches in diameter, and they flower very profusely during July, August, and September.

The *Lantanas* are cultivated in a similar way, but they require stopping several times, and no manure in the soil. *S. crocea superba* is a splendid variety. In the south of England it answers as a bedding or border plant, but when well grown and clad with bloom it cannot fail to be admired in the conservatory. It is one of our favourites, and therefore I most heartily recommend it.



August.—92 Lobelias, 27 Browallias, 36 Geraniums, 18 Cockscombs, 9 Impatiens, 7 Achimenes, 6 Ericas, 5 Liliums, 3 Euthales, 3 Mesembryanthemums, 46 Fuchsias, 20 Calceolarias, 20 Balsams, 17 Petunias, 6 Mimulus, 6 Amaranthuses, 6 Lantanas, 3 Nierembergias, 3 Cupheas, 1 Vinca rosea, 1 Statice, 1 Hibiscus, 1 Cytisus, 1 Alonsoa, and 1 Campanula.

September.—80 Fuchsias, 26 Amaranthuses, 14 Geraniums, 7 Ericas, 11 Impatiens, 5 Liliums, 3 Campanulas, 2 Vinca rosea, 1 Egg plant, 78 Lobelias, 20 Calceolarias, 12 Alonsoas, 6 Lantanas, 11 Browallias, 4 Mimulus, 2 Pentas carnea, 2 Euthales, 1 Soliya heterophylla, 26 Petunias, 19 Balsams, 9 Echeverias, 13 Verbenas, 6 Cupheas, 3 Nierembergias, 2 Nemophilas, 2 Cinerarias, and 1 Statice.

October.—61 Geraniums, 24 Lobelias, 17 Petunias, 10 Salvia splendens, 7 Alonsoas, 4 Achimenes, 12 Amaranthuses, 2 Siphocampyluses, 1 Vinca rosea, 54 Cinerarias, 18 Calceolarias, 12 Ageratums, 8 Cupheas, 6 Campanulas, 4 Lantanas, 4 Eupatoriums, 2 Nierembergias, 1 Statice, 46 Fuchsias, 15 Verbenas, 10 Schizanthuses, 7 Balsamins, 5 Heliotropes, 3 Ericas, 2 Cytisus, 2 Leschenaultias, and 1 Veronica.

The above Geraniums were chiefly common sorts, the rest were scarlet and pink varieties. The number of trusses of flower on each plant varied from 2 to 20. To have pretty flowers out of their season—such as Geraniums in winter—is very desirable. If plants can be made to bloom after the warm weather and bees have gone, they last a long time. My friend, Mr. Usher, gardener, Burton Constable, Yorkshire, has for years succeeded admirably in flowering Geraniums in winter. The Burton Constable guests are astonished at the display of flower seen there in winter.

Salvia splendens, Campanula pyramidalis, Schizanthuses and Heliotrope are eligible for flowering at this season. Though not very pretty to look at, Mignonette is a general favourite, on account of its fragrance. Early in spring three or four dozen of small pots are filled with soil, and a few seeds of it dropped into each; they are then placed in a frame. When the plants are up the strongest in each pot is left. They are potted as they require it, and stopped at every second joint during the summer. Of course they are placed out of doors after the month of May. In this way we get very large plants, which flower profusely in winter. Mr. Jisher, to whom I have alluded, grows the Mignonette as a perennial standard.

November.—95 Cinerarias, 10 Fuchsias, 8 Schizanthuses, 6 Eupatoriums, 9 Salvias, 4 Siphocampyluses, 3 Leschenaultias, 1 Coronilla, 58 Geraniums, 9 Calceolarias, Heliotropes, 6 Cupheas, 5 Petunias, 3 Lantanas, Veronica, 1 Cytisus, 18 Ageratums, 9 Verbenas, Primulas, 6 Lobelias, 4 Chrysanthemums, 3 Agatheas, Ericas, and 1 Statice.

Shrubby Calceolarias are now grown here in greater abundance for winter flowering than is indicated in the above list. By careful hybridising for many years, we have a great variety of colour and form in the flowers. There are some with scarlet or crimson pouches and flow caps, which I call my "Turban" varieties, and which are much admired. All the shrubby sorts may be propagated either from seed or from cuttings. In order to get autumn and winter flowering plants, seed should be sown about Christmas, or cuttings struck in April. They are planted out in some places in the open garden, and stopped four or five times during summer. In September they are permitted to form flower-buds or trusses, and potted about the end of the month. They flower splendidly during the three following months. The yellow shrubby varieties are pretty in winter bouquets.

December.—100 Chinese Primulas, 16 Ageratums, 9 Verbenas, 7 Salvias, 3 Fuchsias, 2 Ericas, 58 Chrysanthemums, 9 Calceolarias, 8 Schizanthuses, 7 Heliotropes, 4 Siphocampyluses, 1 Coronilla, 20 Geraniums, Cinerarias, 10 Camellias, 6 Eupatoriums, 3 Cupheas, Cytisus. The above monthly lists do not include the plants that were taken to the conservatory after the first day of the month, and removed from it before the commencement of next month. A. Pettigrew, Cheetham Hill.

### Home Correspondence.

**Kilmarnock Weeping Willow.**—Your correspondent "J." is mistaken in supposing this Willow to resemble Salix Russelliana. The latter has long narrow leaves; the Salix caprea pendula, or Kilmarnock Weeping Willow, has broad roundish leaves. The S. caprea is one of the most common Willows of this country and the continent: it is found in natural woods, dry pastures, and waysides. It is called sometimes the Common Black Sallow, or great round-leaved Sallow, or "Palm," and its flowers are very showy in spring; they are gathered in Easter week. The Kilmarnock Weeping Willow, then, is a variety of Salix caprea. It is not a species that weeps naturally, like the Salix Babylonica, as it is a pendulous variety of the Salix caprea, just as the Weeping Ash is a pendulous variety of the Fraxinus excelsior, and the Weeping Beech a pendulous variety of the Fagus sylvatica. Thomas Lang, Kilmarnock.

**Rot in Larch.**—The result as far as I know of all the information we have on the subject of Larch rot is this: all descriptions of soil, wet or dry, are liable to it; it is our own fault? How do we grow it? Generally taking the poorest land is planted with Larch, and thickly, and kept thick—is not this overcropping? Have we any right to expect a maximum result of

Larch, or any other timber tree, from such a process? I conceive our own mismanagement is the real reason of our failures; hence my question, which both Mr. Strickland and Mr. Patterson have been so kind as to answer. To grow sound Larch of 40 cubic feet and upwards, I say let it have as good a situation, as to soil, as you can give it; plant it thinly, mixed with non-resinous trees, and let it always have plenty of room. Is there any timber tree that pays the planter better or is more useful to the community? Larch is highly valued at Liverpool, where it is used for ships' boats in preference to any other wood. The American Larch (hakmatah) is used for knees, the butt end being cut up with the principal roots for this purpose; but it is not generally of sufficient scantling for ship building. There is no doubt good Larch is highly valuable for ship planking, but where is it to be obtained of large size? It should average a load or upwards. Hazel, Macclesfield.—I have formerly advanced in your columns the opinion, that the cause of the heart-rot in Larch is too dry a situation. The Larch (like the Spruce and Silver Fir) appears to be impatient of drought; hence, I suppose, when planted over a subsoil of chalk or porous sandstone it becomes diseased and heart-rotten, not from any poisonous quality of such soils, but simply from the want of a sufficient supply of moisture. Has any one ever seen a heart-rotten Larch grown in a moderately moist soil? P. P. P. [Yes, plenty; in the county of Flint, and very fine trees too.]—Larches are not exempted from the general natural laws to which every other tree is subject; certain soils and situations are requisite for their full development, yet they excel most other trees in their adaptation to circumstances, and sometimes succeed well in very opposite soils and situations. The Larch seems to prefer alluvial earths, or deep, rich, gravelly lands; yet it grows well in almost every description of poor soil, and may sometimes be seen luxuriating on a shallow moor, or even on the nearly naked rock. In some districts, however, comparatively young trees of it, and even whole plantations, acquire a premature old age, or canker and perish; and on undrained, retentive clays, adhesive loam, and springy gravel in particular, Larches of not more than 18 or 20 years of age often show symptoms of decay, and are found by the axe-man to have become unsound or rotten in the heart. Degeneracy in seed, deep planting, stagnant, dry, or ferruginous subsoil, microscopic fungi, the Larch blight-bug, cold winds, bad management, and several other causes, have all by turns been assigned for the disease in the Larch, and most, or all of them may probably contribute to work out disastrous results; their action, however, is very obscure, and they have often formed the subjects of dispute among the most eminent foresters. "One fact seems to be universally admitted, namely, that the disease commences at the roots, and proceeds upwards until the tree becomes completely destroyed, or rendered unfit for the generality of purposes to which the timber is applied. It may be inferred that the Larch, like most others of the Pine tribe, has not the power, like some hard woods, of reproducing either young roots or young shoots, when these receive any considerable check; that any particular injury done to these, especially to the roots, either from the effects of drought, moisture, or insects destroying the functions of the leaves, and thereby retarding the returning flow of proper sap to the roots and other parts of the tree, or any other cause whatever, must at first weaken the whole plant, and render it less able to exist under repeated attacks arising from the same or other causes. Your correspondent thinks the subsoil might be in fault, while at the same time he admits they were subjected to a system of bad management. Might not the latter be the sole cause of failure? and from the crowded state of the plantation the atmospheric air was prevented from circulating freely among the branches, thereby impeding the free action of the functions of the leaves; the latter communicating their disorder to the roots, disease must inevitably follow; and although the first perceptible symptoms proceeded from, or were observed in the roots, yet the first great natural cause of the evil might be traced to the leaves. A. Patterson, Maristown.

**Cheap Hot-water Apparatus.**—In reference to a notice [what notice?] on heating in a late Number, I beg to inform you that the churchwardens of this parish have a quantity of 4-inch pipe (about 230 feet) with boiler, elbows, chairs, and all things necessary to constitute a complete heating apparatus, which was got for heating Morpeth Church with hot water, but the project was laid aside owing to the opposition of a parishioner, who commenced a suit in Chancery against the churchwardens, on the plea of its being injurious to the health of the people assembling in the church. The apparatus has cost 27*l.*, and I dare say may be got now for a great deal less, although metal is much dearer than it was when the pipes were got. Any one wishing for such an apparatus, ought to lose no time in making application for this, for it will in all likelihood be disposed of in the course of 10 or 12 days. The churchwardens of Morpeth have the disposing of it. W. W.

**Sikkim Rhododendrons.**—We have a plant of R. Dalhousie just coming into bloom; it has a fine bud, and the foliage is much larger than that in Dr. Hooker's drawing. Are you aware of any one else having a plant with flower-buds on it? Alpha. [No.]

**Hotbeds.**—Mary may rest assured that the best materials for making up a hot-bed for raising young plants on, are three parts good Oak or Chestnut leaves

(the former having the preference), and one part good hot stable-dung, well mixed and turned a few times before making into a bed, which should be 5 feet in height, so as to allow for settling. Care must also be taken to form the bed six inches or more larger than the frame or box. The above materials will be found to produce a nice steady heat, and to retain it for a considerable length of time. E. Bennett, Perdiswell.

**Emigration of Gardeners** (see pp. 53 and 69). Your correspondent "J. M." refers "John Jenkins" to the *Gardeners' Chronicle* of 1851, for information relative to the South Australian colonies. "J. M." must remember that mighty revolutions have taken place in that part of the world since then. Certainly we cannot be satisfied that what applied to 1851 is to be the criterion of our actions in 1853. Has not a source of wealth been opened up in one direction, which calls urgently for industry in another? Are not the productions both of the farm and the garden required for a mass who are growing richer and more numerous every day? I much approve of the advice given at p. 53, and I think it would be wise if some of our advertising friends would take the hint. Although they may in some instances be short of coals, yet—observing the greater part are young married men—if they would avail themselves of the assistance afforded to emigrants, and hoist what little canvas they can muster to the first propitious breeze, very few of them would fail in reaching those inviting shores. An extract or two from a letter which I received only a few days ago, from a near relative who was bred a farmer, and has followed his profession in South Australia for nearly 16 years, may not be uninteresting. He writes, "Should you come to the colony you will find your knowledge of horticulture of great value. I wish I possessed the same amount of skill in that science. The Vine is being cultivated to a great extent, and it is my opinion that this will become a great wine-producing country. Apples, Pears, and all the hard-wooded fruits do exceedingly well. The fast growth of the Apple tree here would surprise you. I have recently planted two acres. I am growing Gooseberries extensively, which find a ready sale at 1*s.* per quart. The average price of Apples is from 10*d.* to 1*s.* per lb. I have a dairy of 40 cows—the price of milk is 1*s.* 4*d.* per quart." And he further adds, "I shall stick to my business, and I have no doubt I shall do as well as the average of those who go to the diggings." The success of the gold-diggers on the average I need not refer to; and, should any of our friends in need of situations weigh the prospects in South Australia, with those in England, I think I can guess what their decision would be. T. S. Acton, Middlesex. —"J. M." appears to have overlooked the most important feature in Australia, namely, the discovery of the great gold fields since 1851. If he will refer to the file of the *London Times* or *Daily News* for the last six weeks he will find by private letters and authentic correspondence that labour has at least advanced 200 per cent. within the last 12 months. Or what may be better authority, I would suggest that he consults the *Melbourne Argus*, a paper printed on the spot, and which may be seen in any respectable news-room in this country. He will find that a higher rate is given for labour in Australia than was ever known in the world's history. An emigrant writing from Melbourne, Sept. 20, 1852, says,—"They give 80*l.* for a horse, and 50*l.* for a cart horse. They go to the diggings for three months, and make 1000*l.* more or less, then they return to Melbourne. They pay 14*l.* for the use of a 'bus' for three hours, 2*l.* an hour for the loan of a horse, 1*l.* a day for a labourer, and 30*s.* for shoeing a horse. 'D. J.' has engaged at 7*l.* per week. Should we not succeed at the diggings, this place is good enough for us. People go to and fro to the diggings very much as we used to go from Cardiff to Llandaff fair. Buildings are at a stop for want of workmen. I was offered 3*l.* 10*s.* per week and maintenance for looking after a horse. I could get 1*l.* per day and maintenance in three different coffee houses as waiter, but I am determined to go to the Bendigo diggings this day." From the immense quantities of gold almost daily arriving in England, the product of free labour in Australia, it requires but little reflection to see that all kinds of general labour must be at a very high premium in that country. "J. M." asserts that many gardeners would gladly go to Australia; but that, like the Great Britain, they are short of coals to carry them there. I fear, however, that many want the inclination to go; and those who have the will but not the means, I should recommend to make inquiry of the Family Colonisation Loan Society. That all men going to Australia will succeed is what no reasonable person will expect, any more than that every one will be content even in the land of Goshen; but I maintain that gardeners, as a body, are a most fitting class for the Australian colonies; not only on account of their industrious habits, but general knowledge; and even should the pursuits of the gold diggings cease, there is a delightful climate and a country possessing within itself all the elements of health to fall back upon. John Jenkins.

**Imported Orchids.**—I send you my experience as regards the importation of Orchids from Assam, which are advertised in your columns. A friend of mine in Calcutta ordered a collection, which being sent in the spring arrived in this country in excellent condition, and the plants were large and all according to name. Eager to have another batch my friend ordered a further assortment, which arrived in two large cases. The first had arrived in the spring, and were sent when the plants were in a dormant state and fit to travel. The



second collection, however, had evidently been packed when in a growing state, and travelled through the heat of summer, and the consequence was that of the whole collection not above two or three of the least valuable survived the journey. *Dodman.*

*Monthly Depth of Rain* which fell at Chichester in the years 1839 till 1852 inclusive, extracted from the Meteorological Journal kept at the Museum.

YEARS.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
1839	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
1840	1.64	2.13	2.15	1.54	0.60	1.87	1.16	1.34	5.83	2.85	5.19	5.77	34.86
1841	3.16	1.88	0.11	0.20	1.43	1.41	3.68	1.73	4.10	1.67	5.23	0.43	25.03
1842	3.54	2.09	1.56	1.39	3.04	1.92	1.74	3.47	4.13	6.31	4.91	2.77	36.87
1843	1.65	2.26	1.78	0.10	1.09	0.82	0.79	3.64	4.19	2.13	6.03	2.88	27.34
1844	2.35	1.56	1.13	2.68	5.62	2.02	1.73	4.18	0.38	5.11	2.65	1.57	31.08
1845	4.59	3.40	4.18	0.89	0.06	1.14	1.62	2.83	0.62	4.13	3.14	0.48	27.08
1846	2.93	1.94	0.92	1.36	2.90	1.93	2.02	1.97	2.78	2.03	3.10	2.65	26.53
1847	3.94	1.69	2.28	2.05	1.80	0.91	1.95	5.32	1.84	5.88	2.31	1.65	31.62
1848	1.77	1.91	1.15	1.00	1.53	1.49	0.69	1.25	1.14	2.30	2.51	4.00	20.74
1849	2.00	3.90	3.56	3.26	0.43	3.88	3.16	4.84	2.21	4.01	1.48	3.40	36.14
1850	2.16	2.20	0.94	3.39	3.17	0.95	2.16	0.71	4.17	3.71	1.48	3.25	28.59
1851	1.95	1.85	0.58	3.41	2.13	2.17	1.93	2.80	2.15	1.78	3.32	2.42	26.49
1852	3.49	1.01	3.69	2.01	1.19	1.72	2.22	1.23	0.25	2.96	1.04	0.70	21.51
1852	4.20	0.79	0.42	0.55	2.10	4.95	1.03	3.08	5.74	5.65	6.42	4.00	38.93

The average quantity of rain that falls at Chichester is between 28 and 29 inches, so that we have at the least 4 inches more than there falls at Chiswick. There has not been so wet a year as the last since 1821.

*W. W.*

*Rain in Essex.*—The following is the fall of rain at this place in 1852:—

January	...	2.79	August	...	3.22
February	...	0.99	September	...	2.89
March	...	0.80	October	...	3.82
April	...	0.56	November	...	4.95
May	...	2.20	December	...	1.54
June	...	3.29			
July	...	1.44			28.49

—*Henry Dixon, Dorward's Hall, Witham.*

*Rain at Cirencester in 1852:—*

January	...	5.70	August	...	5.67
February	...	1.70	September	...	5.48
March	...	0.50	October	...	3.88
April	...	0.70	November	...	8.95
May	...	2.00	December	...	4.30
June	...	6.82			
July	...	3.15			48.85

The average of seven previous years is 30.42. *T. C. Brown.*

*Rain which fell at Castle Hill, Devon, in 1852:—*

January	...	7.87	August	...	7.06
February	...	1.88	September	...	3.48
March	...	0.39	October	...	5.94
April	...	1.72	November	...	8.10
May	...	2.21	December	...	5.61
June	...	4.80			
July	...	1.43			50.49

The year has been an extremely wet one, and therefore I believe the above amount of 50.49 inches is something above the usual average. *A. Saul.*

*Rain which fell in 1852 at Goodmoor, Plympton St. Mary, Devon, as measured by Howard's gauge:—*

	Ins.	Wet Days		Ins.	Wet Days
January.....	11.38	27	November .....	15.54	27
February.....	3.08	19	December .....	9.66	27
March.....	2.01	6			
April.....	1.90	6	Total .....	74.57	217
May.....	3.40	16			
June.....	7.95	25	1839 .....	68.99	250
July.....	0.86	14	1841 .....	71.42	220
August.....	6.60	20	1848 .....	69.71	248
September.....	3.73	14	1851 .....	52.61	204
October.....	8.46	16			

*Henry H. Treby.*  
*Rain which fell in 1852 at Holne, on the Dart, Dartmoor, Devon, as measured by Howard's gauge:—*

	Ins.	Wet Days.		Ins.	Wet Days.
January .....	19.98	24	September .....	3.24	14
February .....	3.97	17	October .....	11.58	17
March .....	2.70	8	November .....	21.17	29
April .....	1.85	5	December .....	15.70	28
May .....	4.76	15			
June .....	10.52	24	Total .....	102.53	213
July .....	0.65	13			
August .....	6.43	19	1851 .....	77.92	175
<i>T. H. and H. H. T.</i>					

*T. H. and H. H. T.*

*Rain at Ithen Abbey, near Winchester, in 1852:—*

	Ins.	Wet Days.		Ins.	Wet Days
January.....	5.73	17	October .....	5.24	15
February.....	1.26	10	November .....	7.47	25
March.....	0.51	5	December .....	3.75	25
April.....	0.69	7			
May.....	2.03	6	Total .....	41.62	176
June.....	5.69	24			
July.....	2.13	10	Monthly Aver.	3.47	15
August.....	4.23	19			
September.....	2.69	13	Ditto 1851	2.04	12
<i>W. W. Snicker.</i>					

*W. W. Spicer.*

*Red Hamburg Grapes.*—My present information on the subject of colour in Hamburg Grapes will not permit me to accept your decided pronouncement against me, nor the standard authority of Mr. Thompson on the same side. This is not the first occasion on which my attention has been directed to the matter. Some time ago I held a situation where several Vineries were under my charge; the Vines were a miscellaneous collection of sorts, and several of the varieties were strangers to me. Taking "Lindley's Orchard and Fruit Garden" for my guide I went patiently through them, and had no difficulty in recognising several acknowledged as distinct kinds. Black Prince, Black Hamburg, Black Damascus, and other black and some white sorts were there, and amongst the rest the Red Hamburg. I was much struck with this variety, and what I regarded as the correctness of its described character in "Lindley." Finer Grapes than these pale Hamburgs were could not easily be found, except as regards colour. The black varieties ripened a good colour, especially some Black Hamburgs. Now the Red Hamburg was growing side by side, and under

precisely similar conditions, with the other sorts, and yet on one rafter could be seen the black, and on another, the red variety. The greater part of the Vines were young, and planted in newly-formed borders; I examined the latter and found all satisfactory: several plants were of a goodly age, and one of these—an excellent old plant—was the Red Hamburg. Suspecting that the roots of this particular Vine had descended

into uncongenial soil, I had them examined, and, finding my anticipations correct, raised them, carefully laying them as dry as possible. The following season saw this Vine bearing a regulated crop of fine fruit, but no change as to the colour of the same. My experience in charge of these Vines extended over three seasons. The fruit I produced gave the highest satisfaction to my then employer. To come to the Oakley Grapes. Under the same roof, and enjoying exactly similar conditions of culture, are Black Hamburg, several examples of pale-coloured ditto, Black Prince, White Frontignan, and others. The whole of the kinds bear annual crops, very uniform in character. Black Hamburgs ripen black, the pale variety red, &c., and that has been their unvarying characteristic these 20 years. Grape-growing here is not limited to one nor two houses, but in each structure the kinds, and the general results are similar. I shall be told, perhaps, that Vines growing, even in the same border, may have their roots acting under "dissimilar influences." I do not dispute the possibility; but I cannot conceive that a Vine whose fruit would be affected in colour by the position of its roots, would not exhibit unhealthy function in other particulars. As for instance, we might look for "shanking," extrusion of roots from the stems, &c. As regards some of the points brought forward in the *Chronicle* for the 1st inst., pardon my saying that I cannot admit the conclusiveness of the but partially repeated experiments you describe as having taken place in the garden of the Horticultural Society. To "Zephyrus" I have to say, that if he can make it convenient to visit Oakley about September, I have little doubt of being able to convince him of the favourable nature of the conditions under which the Vine he alludes to is growing; and of exhibiting to him red, as well as black Hamburgs on the backs of the houses. I thank Mr. Massey for the interesting experiment he suggests; but in reference to his Vine having always borne red fruit until it came under his management, I must say the information does not appear of the most reliable description. To all such communications as that given at p. 37, I reply that I have no morbid desire to make out a red variety of Hamburg, but as yet I must give credence to views formed from my own personal experience. I trust if any of my fellow readers can favour your columns with competent information respecting the colour of the Hamburg in Grape growing countries, that they will do so. In the mean time, when Mr. Thompson's experience can justify him in deliberately writing—"I have been long aware that Black Hamburg and Red Hamburg would be very convenient distinctions," notwithstanding the qualifying conclusion of the sentence from which I quote, I am sure I may be excused holding the opinions I do, and for questioning the justice of pronouncing upon all Hamburg Grapes by one standard of colour, especially when a red variety happens to be "more sugary than any black coloured Hamburg." At the same time, too, that the process of colouring in the Hamburg is at periods confessedly so capricious as to be inexplicable. *J. Taylor, jun., Oakley, Bedford.* [Our readers will probably agree with us that enough has now been said upon this subject. "A man convinced against his will—is of the same opinion still."]

## Societies.

LINNEAN, Feb. 1.—R. BROWN, Esq., in the chair. D. Oliver, Esq., and W. Thomson, Esq., were elected Fellows. The Chairman announced that, through the death of M. Achille Richard and Dr. Schouw, there were two vacancies in the list of foreign corresponding Fellows. Prof. Schlechtendal, of Halle, and M. Tulasne, of Paris, were proposed to fill the vacant places. A paper was read by Mr. Moore, *On the Venation of Ferns*. The object of this paper was to enquire into the general importance of the modifications of the vascular structure of the fronds in distinguishing the genera of Ferns; and also into their relative value in the case of some species having reticulated veins, which had been associated with Adiantum and Deparia. It was urged in reference to the former question, that numerous botanists of repute—Langsdorff and Fischer, Brongniart, Bory, Gandichaud, Kaulfuss, Fee, Blume, and Robert Brown especially, had employed venation as a promi-

nent character, and that Mr. Brown had proposed several sub-genera of Polypodium, distinguishing them by the various modes in which their veins conjoined from the more numerous group which had free veins, thus attaching importance to reticulation. After noticing the labours of Presl and J. Smith, and instancing Sir W. Hooker's genus Dictyoxiphium as resting entirely on the peculiarities of its venation, the author contended that it was a mere question of words, whether peculiarities which had received the sanction of such high authorities as sub-generic characters, might not in certain cases be employed generically. The constant and unvarying occurrence of parallel free veins and of reticulated veins in the primary groups of flowering plants, and the occurrence of the intermediate smaller groups proposed by Dr. Lindley, in which the peculiarities of venation—equally constant—were associated with other characters, were mentioned as significant facts in support of giving prominence to the character of venation in the Ferns; whilst the little variety offered by the aggregations of naked or covered soredia, which were here the only parts of the fructification really available for generic definition, rendered it a matter of necessity that other characters should be taken into account in the case of these lower groups of vegetation, than those employed amongst flowering plants, whose more perfect reproductive organs offered the diversity requisite for purposes of classification. The most available additional characters were pointed out in the constant and unvarying diversities of the vascular structure, which, moreover, could be perfectly relied on; because, whatever modifications were presented in a particular species, were constant to that species. It was therefore concluded that without lowering the importance of the fructification of Ferns as affording distinguishing characteristics of generic groups, the modifications of venation might with convenience and propriety be admitted to share the same office, and, according to this view, a wild species presenting constant organic differences in their fructification, should not be placed in the same genus, so neither should species presenting constant organic differences in the development of their vascular structure. The question "whether or not a reticulated venation is in itself a sufficient generic distinction among the Ferns," was answered in the affirmative, on the ground that, a genus being an arbitrary group, all that was required in a generic character was a constant difference from established genera in the structure or development of some important organs. The vascular system of plants was held to be of the highest importance in the vegetable economy, since it was not unfrequent—and more common among Ferns than most other plants—to find such extraordinary means of propagation as adventitious buds, developed in connection with it. In Ferns, particularly those points of the veins which normally serve as the receptacles which bear the sori, in other cases become viviparous and develop gemmæ, from which plants are ultimately produced. On these grounds and the peculiarities of venation exhibited by flowering plants, the author arrived, though with much deference, at a conclusion opposed to that recently expressed by Sir W. Hooker, and concluded that Mr. J. Smith's genus Hewardia, which had been again merged in Adiantum, ought to be kept distinct.\* The species mentioned were—1. H. adiantoides, J. Sm.—Adiantum Hewardia, Kunze; 2. H. dolosa, Fee.—Ad. dolosum, Kunze; 3. H. Prieurii, Fee.—Ad. Le Prieurii, Hooker; the two former distinguished by continuous sori, and costae-form primary veins; the latter with interrupted sori, and the veins uniform and dichotomously forked; the genus Hewardia being distinguished from Adiantum by its constantly reticulated venation. The restitution of the original Hewardia, rendered necessary the substitution of another name for the second Hewardia recently proposed in Hooker's "Icones Plantarum." This, a very distinct Melanthaceous plant, it was proposed to call Isophysis, in reference to the circumstance, unusual in this order, the stamens equalling the stigma; for the species the specific name of tasmanica was retained. The same argument, if correct, must apply to a reticulate-veined Fern which had been recently referred to Deparia—a genus of which the legitimate species have the veins free. This plant, which had been recently discovered in New Caledonia by Mr. C. Moore, it was proposed to constitute into a new genus to be called Cionidium (from kionidon, a pillar or column, in reference to the stipitate sori), and to distinguish from Deparia proper by its constantly reticulated venation. The name Cionidium had been already employed, but without definition, in the "Garden Companion," where the only known species—C. Moorii, Deparia Moorii Hooker—had been referred to.—A paper was commenced *On the Islands and Flora of Hong-Kong*, by Dr. H. F. Hance, and communicated by B. Seeman Esq. It embraced the introductory part of the paper consisting of an account of the geology and climate of Hong-Kong.

MICROSCOPICAL Jan. 26.—G. JACKSON, Esq., in the chair. Dr. Gibson, W. Huggins, Esq., W. Beck, Esq., J. G. Hepburn, Esq., and C. Poulton, Esq., were elected

\* This conclusion has been unexpectedly confirmed by Fee's "Genera Filicum" (1852), just received in this country, in which the genus is retained, and a hitherto undescribed species, *I. serrata*, added. H. Wilson, Fee (Adiantum, Hooker), is, however, a true Adiantum. In this, as also in Sir W. Hooker's variety of *Ad. lucidum*, the dichotomous veins occasionally anastomose, but the union is evidently accidental, and nothing like reticulation occurs. *M.*



members. Mr. Tuppin West read a paper from the Rev. W. Smith on the stellate bodies called sporangia found in the interior of many fresh-water Algae. The author doubted if these bodies could be regarded as sporangia, a term which had been applied to them by Mr. Shadbolt, who had first described them. He entered at length into the reasons which led him to doubt their being true sporangia, especially the absence of conjugation, and the absorption of endochrome which accompanied the development of sporangia. He regarded them rather as parasitic growths, and was inclined to that opinion from the fact that they were produced more abundantly in confinement than in their natural position. He proposed to call them Asteridia. Mr. Shadbolt stated that he questioned whether the bodies Mr. Smith had described were the same as those which he had seen. The bodies he had seen were produced under the same circumstances as the ordinary zoospores.—A paper was read by Professor Quekett on the presence of a fungus and crystals in the heart of an Oak tree. The author stated that whilst dining with a picnic party under the celebrated tree, known as the King Oak, in Marlborough Forest, a large branch suddenly fell off. At first sight there was nothing to account for it, but on examining the wood it appeared damp, and on bringing it home and examining it under the microscope, it was found to contain a fungus which was lodged in little gaps of the woody tissue. Upon the fibres of the fungus embedding them to a certain extent were seen a number of crystals of prismatic and tabular forms. The woody tissue around the fungus was softer and more easily separable than that in the other parts. Mr. Shadbolt mentioned, in connection with this subject, that when iron was used for fastening mahogany it was attacked by fungus, but when copper was used no such effect followed.

## Notices of Books, &c.

*Fungi Caroliniani Exsiccati. Fungi of Carolina; illustrated by Natural Specimens of the Species.* By H. W. Ravenel. Fasc. I. J. Russell, Charleston, 1852. CRYPTOGRAMIC plants are so extremely variable, and in consequence so difficult to determine from any specific phrase or description, however carefully drawn up, that typical specimens are almost indispensable to those who wish to attain anything like accuracy. Numerous works containing dried specimens have greatly facilitated the study of these curious and beautiful objects in Europe; but hitherto nothing of the kind has appeared in America, which is extremely rich in our rarest European forms, and swarms with multitudes peculiar to itself. It is with great pleasure therefore that we hail the appearance of the beautiful volume before us, containing admirable specimens of many very interesting species. Of course, as the work is general, all the species admitted cannot be of equal interest, but there are numerous species by no means common in herbaria, such as the curious *Scorias spongiosa*, *Mitremyces lutescens*, *Urnula craterium*, &c. Out of 100 species there are 56 of the species of Schweinitz, and 11 of Berkeley and Curtis, and out of the 33 which remain there are several interesting things, so that the work must be considered as a very welcome acquisition to every one who is an admirer of Fungi. It is hoped that ere long the immense mass of materials collected by Curtis, Ravenel, and others, will be published in a form available for the general student, both in Europe and America.

## Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN.—Two objects of by far the greatest interest here at present are the glorious *Lælia superbiens* in the curvilinear stove, and the grand example of the Showy Dendrobe (*D. speciosum*), in the house which was once a Pine-stove, but which is now converted into an Orchid-house. The *Lælia* is in full blossom, its noble bunches of charming flowers set on the ends of six long flower-spikes producing an effect at once striking and magnificent. This is doubtless the finest plant of the kind in Europe; it was large when it was imported, but it has increased very much in bulk every year since, and now it is, indeed, a truly splendid specimen. This species has been considered by some to be a shy bloomer; but it has not proved so here, where it annually furnishes a display with which what in the way of Orchids can compare? Less showy perhaps, but little less effective, is the fine Dendrobe above alluded to. It has 20 spikes of pale yellow blossoms, which a few days more will bring into such perfection as must excite the admiration of all who have the good fortune to see them. This too is one of the finest plants in the country. It was long before it could be brought into a flowering state, but ever since that condition has been induced it has seldom failed to reward the care bestowed upon it by a plentiful crop of blossoms every season. These two plants are themselves ample recompense for a journey of many miles to see them; but there are others also well worth inspection. The large *Luculia gratissima*, planted out in the bed of the great conservatory, is nearly in full flower; the numerous clusters of blossoms, notwithstanding the very little sunshine we have had, being well coloured, and deliciously sweet-scented. At one time it was thought that this plant was only cultivable in a stove, or an intermediate house, but the fine example

in question proves that it will succeed perfectly well in the properly made bed of a cold conservatory. *Acacia Riceana*, in the shape of a graceful tree, is beautifully in blossom here, and others of the fine leguminous plants which this house contains will also soon be in bloom. In about a month, too, the *Camellias* promise to be in fine condition, the flower buds being abundant and prominent. *Cestrum aurantiacum* having finished flowering, the trees have been pruned "hard in;" and managed in this way, both it, *Brugmansia sanguinea*, and things of that kind are kept within bounds, and made to bloom two or three times a-year.

As might be expected, there is little yet out of doors in the way of flowers to attract notice. Since more favourable weather has set in, however, ground operations are beginning to be proceeded with. We remarked in the American garden that a piece of Portland cement edging for walks had just been laid down. It is made in foot lengths, with holes and other openings in the portion inserted in the ground for allowing the water to escape from the walk into the borders, and it has an ornamental top, standing about four inches above the walk, and inclined slightly outwards to the borders. When neatly laid, as these were, a good substantial edging is formed, which costs 8d. a yard above and 9d. below 100 yards. There can be no doubt of its standing the weather, Portland cement being harder than Bath stone. It is patented, we believe, by Thomas Adamson, jun., of Turnham Green. An example of another kind of edging, laid down in the Orchard department appears to possess considerable merit. It is hard, of a good colour; cheap, and being hollow, enables the walks to be relieved speedily of water. It is  $4\frac{1}{2}$  inches broad at the base,  $6\frac{3}{4}$  inches deep, and about a foot long. In forming curves, as in the case of Adamson's tile, very short lengths are employed. Mr. Hogg, the inventor of them states that, "they are composed of the same clay, and are manufactured at the same works, as the patent hollow bricks; and from what I have seen of them they appear to become harder on exposure to the weather. As to cost, they can be supplied in any quantity at 10s. 6d. per 100, or about 14d. per foot."

With respect to wall trees, we may mention that the Stanwick Nectarine, against a south aspect, has made shoots from 4 to 5 feet in length; and, as a proof that they are well matured, it may be stated that they are furnished with blossom-buds from the base to the very extremity. This, then, decides the question as regards the ripening of its wood on the open wall.

As regards the experiments which are being made with a view to determine the best kind of material for flues, it has been found that the Doulton drain pipes will not answer; they split near the furnace, a fault which can only be remedied by attaching them to a brick flue 4 or 5 feet from the fire, and then it would be unsafe to employ them except for houses in which a moderate amount of heat is required. Six-inch iron pipes have also been tried, but in their case the fire refuses to burn, although they have been laid with a considerable slope to the chimney. For the benefit of those who wish to try Doulton for greenhouses, &c., we may mention that they may be jointed securely in Portland cement; but that an equally good joint may be made by means of lime and cow-dung.

Owing to the violence of the storm of wind of the 26th of last December, assisted no doubt by the wetness of the ground, many of the large *Thuja*s, *Arbor-vitæ*s, and other Conifers, were blown half over; to prevent as far as possible such an occurrence again, all trees and shrubs likely to be injured by wind, have been secured in their places by three stakes set in the form of a triangle, a mode of fastening which is ordered to be always used in the garden in trees, instead of upright stakes.

Speaking of trees, reminds us of what many will be interested in knowing, viz., that Mr. Stewart M'Glashan has received permission from the Council to test the efficiency of his transplanting apparatus in the garden some time during the present month.

We observed a notice in the Reading Room that Dr. Lindley intended to lecture in the evening, on the relation of the atmosphere to vegetation.

## FLORICULTURE.

FORCING THE HYACINTH.—The imperfect success which very commonly attends the attempts to obtain this charming flower soon after Christmas, is a pretty good proof that the constitution of the bulb is very imperfectly understood by common cultivators, who too often contravene its habit of development, and endeavour to control instead of assist its natural efforts. The following are maxims for early forcing, which, if fully attended to, will at all times guarantee the cultivator first-rate blossoms early in January, as has been the case with me this season; provided the bulbs are good. As to the quality of the flowers in point of beauty, that is a mere matter of price: we cannot expect as noble blossoms at sixpence or eightpence as at a couple of shillings; and as for a profuse display, those who can afford to place three bulbs in each pot, as I have frequently known to be done, may, of course, have a much more gorgeous display than their neighbour with his single bulb. First, then, select your bulbs the moment they come from Holland; choose hard bulbs with a firm and full crown, and possessing a kind of protuberant ring at the root circle. Pot them immediately, in a rich loamy soil, keeping the bulb base level with the rim

of the pots, and strewing a little clean sand in their bed. Let a warm corner be selected, where no water can collect, and here place them on the ground level, on a substratum of ashes six inches deep. Cover them over with fine old vegetable matter or tan, or even ashes six inches deep, and place some board or screen over them, to ward off all rains. They may remain in this position without a drop of water for about six weeks, when it will be well to give them a little tepid liquid manure, sprinkling it over the surface of the covering at three or four times lightly. About the middle of October many of them will possess a pot full of roots, and several of those whose fibres are seen through the bottoms of the pots may be introduced to bottom-heat. They must be all pulled up and examined, with a view to this end, and the best place possible is the front of a dung bed, where there is sure to be a continuous bottom-heat of from 65° to 70°. Here make an excavation in the warm material, and place a board as a base to prevent the fibres coming through; on this place the pots, and cover again with only 3 inches of old and fine tan. Now they may be kept close and dark. My practice is to nail down double mats over that portion of the frame or pit; these are fast day and night. By the end of December they will be rising through the tan, and the first thing now is to remove the old tan carefully with the hand from those ripe for development; from some wholly—others partially, with a nice discrimination, still retaining a shade, but giving air freely. In a week or so a removal may commence; those nearly expanding first, and so on; such attention being frequently given. And now beware of the sudden effects of light; this transit requires much caution, they have to be inured gradually to light, and a comparative absence of bottom-heat. My practice is to place them under the stage of any intermediate house for a few days; there they become gradually reconciled to their changed condition. From hence, of course, they pass to a front shelf in any structure ranging from 50° to 60°, and henceforward their management is so simple as to need no advice. There is little doubt that the first stage in the bulbs is absorption, to fill up the vacuities in their internal tissue, occasioned by the high leaf elaborations of the previous summer; and that until this is complete, hurrying processes are vain. The next stage appears to be the conditioning of a free development, based on the well-known habits of the bulb in a state of nature. During the last stage, of course, the foliage has an important office to perform, and all the accessories to a complete exercise of the functions of the plant must be called in requisition. *R. E., January 31.*

*CAMELLIA: J. M. and S. Anemone* flowered sorts are losing ground; that before us has but three rows of petals, with a small tuft in the centre; colour carmine, or deep pink; foliage bold, and very dark green; a fair flower of the kind, but unworthy of much attention.

*CINERARIAS: C. P.* It will be necessary to have two sets of plants for our two large exhibitions, as one society demands 8-inch pots, while the other requires 11-inch pots.

*DAHLIA: R. H., Brompton.* Your request shall be attended to. *NEWBURY HORTICULTURAL SOCIETY: A.* The exhibition days are fixed we find for Fridays, June 24th, and September 2d. *RECEIVED* a schedule of prizes of the Royal Botanic Society of London. We have previously announced when the exhibitions take place. The Handsworth and Lozells Society holds its anniversary meeting at Birmingham on the 10th inst. The schedule of prizes offered by the Midland Horticultural Society, Derby, has just reached us. We are pleased to find that the expectations we held of the society obtaining the Derby Arboretum for its exhibitions are fully realised. The days appointed are Saturdays, May 28, and July 30.

*ROSES: Olericus.* Good seedling Roses do not abound, nor can they, in proportion with Dahlias; we shall have a word or two to say on this subject soon.

*TULIPS: Exhibitor.* The National Tulip Exhibition this year is, we believe, to be held at Nottingham on May 25, which so far as concerns southern is an unfortunate day, being that on which the first show at the Royal Botanic Gardens, Regent's Park, is to take place; if the 26th had been selected it would have enabled metropolitan exhibitors to have been at Nottingham by availing themselves of the night mail train after the Park show was concluded; as it is, either the one or the other must be lost sight of.

## Miscellaneous.

*The Seed Trade.*—Growers of seeds suffer most, as the continental cultivators sell their rubbish so cheap; this, in the course of time, will entirely destroy our fine breed of vegetables, which we have taken many years to improve. Just think of foreign Onion seed at 9d. per lb., that for which we used to get 3s. and 4s. Foreign cultivators grow all sorts of Cucumbers together, and all sorts of Cabbages and Onions, so that our vegetables will soon be as mixed as an Irish stew. Just look at the tons of Horse-radish that come over every winter from the continent; you may just as well try to scrape a broom-stick. Their Asparagus is all white, and as hard as their Horse-radish. The worst of it is that the English people don't know what it is; it ought to be sold, as the chicory is now, with a ticket on it, the stuff would very soon find its level—let any one try to eat a Dutch Melon or a French Cucumber—compare them with our growth. All this cannot now be helped; but the seed ought to be put a stop to directly—deal with no house a second time where the seed turns out all sorts of mixed rubbish, you may be sure that it did not grow in Kent, Essex, or Surrey. The other day I asked a large grower in the Fulham-fields if he still saved Cucumber seed? He said, no; the seed merchant would no longer give a fair price, as they could get foreign so cheap. He used to grow 12 acres. Again, some years ago, he used to save two tons of Cauliflower seed—this he was obliged to give up. Now, one thing is certain, market gardeners grow seed for their own consumption; but what will become of



the growers elsewhere who are obliged to depend upon the London merchants? I know every one of them, and they have no desire to buy the foreign; but they say that the country people apply to those who advertise far below the real market prices. Growers ought never to buy of these people, it is "cheap and nasty," and sure to end in disappointment. *Cuthill, in Scottish Florist and Horticultural Journal.*

## Calendar of Operations.

(For the ensuing week.)

### PLANT HOUSES.

**CONSERVATORY AND SHOW HOUSE.**—Remove such plants as are getting past their best, to make room for fresh supplies from the forcing-houses and pits. An interesting addition to the more commonly grown conservatory plants will be found in forced common and Scarlet Thorns, Sweetbriars, Honeysuckles, Wistaria sinensis, Cydonias, Syringas, Duetzias, &c., and a variety of other plants which may be brought forward for the purpose. Keep up a good supply of bulbs—Lily of the Valley, Neapolitan Violet, &c., which are always in demand either as pot plants or for cut blooms. As the general potting season is approaching, have everything in readiness to commence operations whenever time and the state of the plants enable you to begin. As a matter of course where valuable plants are kept, a stock of the various kinds of loams and peat should always be kept in readiness. For all potting purposes, a soft, sandy, yellow loam is to be preferred, such should have been dug not more than 6 inches deep with the turf, and after being stacked long enough for the Grass to decay, may be considered as fit for use. Silver sand, rotten leaves, and dry, well rotten cow-dung, are all necessary ingredients in one form of compost or other; the best peats for Heath and hard-wooded plants are those from Wimbeldon and Shirley, and the neighbourhood of Exeter furnishes a peat much prized for Orchid growing, but which alone is rather too spongy for plants; with these general hints the cultivator must select such soils as are most readily attainable in his neighbourhood. Clean dry pots, crocks of various sizes, dry moss, &c., will enable you to proceed without interruption through this important part of plant growing. As it is not good practice to water heavily immediately after potting, see that the roots are rather more moist than dry when turned out for the purpose; this is more particularly necessary with plants growing in peat. Plants should likewise never be potted and cut back at the same time; but the heading back should precede potting by a sufficient length of time to enable the plant to begin a fresh growth. Fuchsias may now be put in a little heat to start them for cuttings; such as are wanted for early bloom may be pruned in preparatory to disrooting them. Pelargoniums for early blooming will now require careful training; thin out the shoots where too crowded, and tie out the rest in the desired form; fumigate on the first appearance of green-fly, as it will save much after trouble.

### FORCING DEPARTMENT.

**EARLY VINERY.**—Maintain a steady temperature, and take advantage of sunny days by closing the house rather early, which will not hurt the Vines, and save fire heat. Directly the crop is set, any surplus bunches left previous to their setting should be removed at once, and the berries thinned out on the bunches left, when grown sufficiently to show which are likely to swell off. With Hamburgs there is no difficulty in this; but Sweetwaters and some others require time, or many berries will be found apparently set, which, through imperfect fertilisation, never swell afterwards. In thinning avoid handling the bunches with the naked hand. Stop laterals as they appear, leaving one joint, unless the wood is crowded, when they must be pinched quite back, as it is useless leaving more leaves than can be exposed to light. Thin out the extra shoots in succession Vineries, selecting to remain those situated nearest the main stem, if the spur system is practised, and tie in when sufficiently advanced. **PEACH-HOUSE.**—As the crop in the early house will now be set, a careful disbudding should be commenced, doing a little daily to avoid any check, which a final disbudding at one time would be sure to cause; be careful to leave a supply of young wood regularly over the entire tree; pinch out gross shoots as they appear, which will help to send the sap to the weaker wood, and equalise the growth. The young fruit, like the buds, should be thinned by degrees, leaving about equal portions of the earliest and latest set, which will prolong the season when the fruit ripens. Fumigate, should the aphides appear, and when the fruit is fully set the syringe may be again applied. **STRAWBERRIES** may have a trifling advance in temperature; the truss of bloom will now be showing, and a slight increase of heat will help to bring them up above the foliage. If hot-beds for Melons were made some time back, the bottom heat will now be getting steady enough to put in a ridge of rather dry turfy loam; raise this to within a foot or 18 inches from the glass; make it rather firm than otherwise, and when the ridge attains a heat of 80° you may plant out the crop; the temperature of the frame should be kept rather dry, and should not fall below 70°, while air should be admitted more or less at all times; but much the easiest and cheapest way to grow early Melons is to plant them in hot-water pits, and having pipes running under the bed for supplying bottom heat. You

have the advantage of heat, light, and moisture entirely under control, and all the uncertainty of the pit and frame management vanish.

### FLOWER GARDEN AND SHRUBBERY.

Wherever a high degree of keeping is insisted on in the pleasure grounds, nothing tends so much to their beauty as a close, velvety lawn. It often, however, requires considerable trouble to effect this desideratum. On rich soils the coarser Grasses prevail, and are difficult to eradicate or keep under; while on soils naturally poor, and which have been for some time under the scythe, the different kinds of mosses are found to increase in a manner prejudicial to the better sorts of lawn Grasses. As the present is the season when the mosses attain their greatest perfection, it will be found the best time to eradicate them also; a sharp-toothed iron rake, or light drag, will be the best implement for this purpose, worked sufficiently to bring up the moss, which should be cleared off, and the lawn left for some time, when a second operation may perhaps be necessary. In March, sow thickly Sheep's Fescue Grass and Crested Dog's-tail, and apply a dressing of sifted lime rubbish and fresh soil, or the latter and fine bone-dust; which with occasional rollings to keep the land firm, will soon produce a good sward. When herbaceous plants are grown as border flowers, a fresh arrangement of them is necessary each season, to prevent them exceeding their proper limits. Plants with the habit of Phloxes, Delphiniums, Asters, Solidago, and other strong growers should be lifted, and a spadeful of fresh soil or dung placed under each; this will prolong the period of blooming, and increase the quantity of bloom.

### FLORISTS' FLOWERS.

Every arrangement should now be made for planting Ranunculuses; take advantage of any frosts which may occur just now, and give the bed a turn. There has been so little frost this winter that exposure of this kind has been impossible. Prepare the bulbs for planting by removing all small roots; these should be immediately planted by themselves, and, as but few will flower the coming season, they will gather strength and size for the next. In arrangement, diversify the colours as much as possible; and as there is now such a great diversity, the character of which is now described in most extensive catalogues, it renders the amateur's task comparatively easy. Examine carefully the stock of Carnations and Picotees: remove every appearance of spot, and, should the plants still exhibit symptoms of disease, let them be removed from the near vicinity of the others. Tulips, Pinks, Auriculas, &c., will require similar treatment to that lately recommended.

### HARDY FRUIT GARDEN.

The extreme mildness of the present season will induce an early bloom in fruit trees, which should by all means be avoided. Let the training of wall trees, especially on south walls, be finished at once. If you possess canvas screens, or any other protective material, we should recommend their being applied each fine day to shade the trees, and removed, to expose them at night. In the absence of the above fasten the spray of Evergreens, Beech branches, with the dry leaves attached, or suspend straw ropes, &c., in front, as in all probability we shall have winter in March or April; and the more retarded wall trees are, the greater chance will there be of a crop. Protect the stems of standard Apricots by hay-bands, and finish as quickly as possible pruning of every description, with the exception of Figs and Raspberries, which are better left till all danger of frost is over. Watch the smaller kinds of fruit bushes, as Gooseberries, &c.; and if liable to have their buds eaten by birds, dust them frequently with soot and lime. To protect Cherries and larger fruit trees from bullfinches, &c., we strongly advise parties troubled with the above to use the gun.

### KITCHEN GARDEN.

The general preparation of ground for the spring crops having been delayed beyond its usual time, no time should be lost in forwarding the necessary digging and trenching, preparatory to a more thorough manipulation of the soil before sowing time; the principal causes of success in growing vegetables are a fine tilth and as great a depth of earth as can be obtained, without interfering with the subsoil (if the latter is of a sour nature). Clayey and retentive subsoils should, however, be forked over, loosening the ground for some depth; this will facilitate the passage of water from the roots, and by degrees will become improved. There are but few vegetables but what require a medium depth of 2 feet to grow in (some more), and hence the necessity of deep well pulverised soil for their successful cultivation; it is often, too, a rule to put the manure in when digging in trenches. This is a bad system. To be effective the manure should be completely mixed with the soil to its full depth. For the present, therefore, the dung may be dug in in the process of trenching, and its thorough incorporation with the soil will be best effected when the ground is again worked over with the three-grained fork. Respecting the application of manures to different soils, we may observe that for warm, dry soils, apply (if possible) such as are of a cool nature—as cow and pig manure. Horse-dung will answer best on medium loams; while on stiff clayey soils a portion of ashes, road-scrappings, old mortar, or refuse of any kind may be used in addition to ordinary manure. They will help to keep the land porous and consequently assist the roots of growing crops to permeate the mass of soil. We have said nothing of

artificial manures, because, in nine cases out of ten, if proper means are taken to economise and store up what is made on the spot, none will be required. Pay attention to young vegetables, wintering under glass, or other protection; they are more than ordinarily tender this season, from the long continuance of mild weather. Sow, either on a slight hot-bed, protected by glass, or in boxes, &c., which may be placed near the glass in any of the houses, where a little heat is kept up, a small portion of Celery, as well as Lettuce, Cauliflowers, Parsley, &c.; these latter will require to be pricked out under glass when large enough, and will succeed the autumn raised plants.

### STATE OF THE WEATHER NEAR LONDON,

For the week ending Feb. 3, 1853, as observed at the Horticultural Gardens, Chiswick.

Jan. and Feb.	Moon's Age	BAROMETER.		TEMPERATURE.						Wind.	Rain.
				Of the Air.			Of the Earth				
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.			
Friday... 28	19	29.833	29.741	42	37	39.5	39	40	40	N.E.	.00
Satur... 29	20	29.845	29.827	43	35	39.0	40	40	40	N.	.00
Sunday... 30	21	29.795	29.716	43	25	34.0	40	40	40	S.W.	.13
Monday... 31	22	30.294	30.086	47	24	35.5	40	40	40	N.	.00
Tues... 1	23	30.192	30.160	32	23	30.0	39	39	39	N.	.00
Wed... 2	24	30.120	29.962	42	23	33.0	38	38	38	N.E.	.00
Thurs... 3	25	30.175	29.935	39	34	36.5	38	39	39	S.E.	.00
Average...		29.857	29.861	41.1	30.1	35.5	39.2	39.5			.13

Jan. 28—Overcast; cloudy; overcast.  
29—Overcast throughout.  
30—Uniformly overcast; rain at night.  
31—Clear and frosty; very fine with bright sun; foggy at night.  
Feb. 1—Very dense fog, continuing throughout the day; exceedingly dense at night.  
2—Dense fog, especially between 9 and 10 a.m.; a little clearer at night.  
3—Overcast; cloudy; overcast.  
Mean temperature of the week 2½ deg. below the average.

### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Feb. 12, 1853.

Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6	45.7	32.3	39.0	14	0.39 in.	1	1	1	1	1	1	1	1
Mon. 7	46.5	33.5	40.0	15	0.25	1	1	1	1	1	1	1	1
Tues. 8	46.0	33.4	39.7	16	0.67	1	1	1	1	1	1	1	1
Wed. 9	45.9	32.1	39.0	8	0.30	1	1	1	1	1	1	1	1
Thurs. 10	45.1	30.3	37.7	10	0.52	1	1	1	1	1	1	1	1
Friday 11	44.8	30.4	37.6	12	0.54	1	1	1	1	1	1	1	1
Satur. 12	45.1	30.0	37.6	11	0.23	1	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 10th, 1851—therm. 65 deg.; and the lowest on the 11th, 1845—therm. 3 deg. below zero.

### Notices to Correspondents.

**CITRUS JAPONICA:** *An old Sub.* The fruit is acid, like a Lime, and makes a favourite preserve with the Chinese.

**DEODARS:** *One of the Minorities.* We will give you a full answer next week. To put the question on its right footing, some space and many details will be necessary, and therefore more than we can spare just now.

**DISEASED PLANTS:** *Dubius.* Stoves, greenhouses, and all such houses, are just as gay this year as in any other. If yours are not, either the gardener has not proper plants to force, or he does not know how to manage them. There can be no doubt that the cases you speak of are referable to bad gardening of some sort.

**FIRS:** *A G.* They may be pruned now; but it would have been better in October. The less you prune them the better; always do it by removing their lower branches only. Take off one tier a year from each tree, if they are not crowding too much.

**GLAZING:** *B W.* So far is there from being any objection to glazing a Vinery with large sheets of Hartley's patent rough plate glass 3 inches thick, that the plan is an excellent one, provided proper ventilation is secured.

**INSECTS:** *Tasso.* There is not the slightest relation between the two insects you mention. *W.*

**LEAVES:** *W P H.* If laid in heaps, damp, they will ferment. The only remedy is to mix them with layers of earth. If your straw is moist when mixed with the leaves, and no earth is employed, the whole will ferment like stable litter. They must not be trodden, but merely pressed down with the fork until fermentation has fairly commenced. Leaves in the open air will not heat at this time of year.

**MOSES:** *A Correspondent.* These are dried, like other plants, by pressing them between sheets of dry paper. Their character is not at all destroyed if you press them from the side. Where they grow in lumps, you must split the lump, and dry a slice of it.

**MUSHROOMS:** *C F.* To see clearly what is represented you must employ a good achromatic microscope with a quarter-inch objective. The section should be made with a very thin-bladed sharp knife (scalpel) beneath a simple lens with a half-inch focus, taking care to wet the hymenium as well as the knife blade when slicing. You will make many failures at first, but at last you will succeed. The gills must be sliced perpendicularly to their surface. Any common Agaric, or even a Boletus, will show you the structure in question.

**NAMES OF FRUITS:** *C A.* 1. Norfolk Paradise; 2. Lemon Pippin.

**NAMES OF PLANTS:** *Geo Tuzell.* Excuse our saying that you ought not to ask questions which are upon the face of them ridiculous.

*L N R.* 1 and 2, *Polystichum lobatum*; 3, *P. aculeatum*. *S—*

*E B.* 1, *Porphyrocoma lanceolata*; 2, *Polygala grandiflora*.

3, *Chorozema Henchmanni*.

**NOVA SCOTIA:** *A Sub.* You had better use hot water; and, considering the cold you have to contend with, we should use 6-inch pipes. Any of the hot-water apparatus advertisers, whose names you see in our columns, will give you further explanation.

**PAINT FOR IRON WORK:** *B H K.* What Mr. Fleming uses at Trentham is one-third Stockholm tar and two-thirds gas-tar, laid on while quite hot with a brush, and spread as thinly as possible.

**THE BUSTARD:** *H C.* Much obliged. Mr. Yarrell was perfectly aware of all that has been done by the French anatomists and Cuvier, and from Dr. Douglas in 1781, here, down to Edwards and Owen of the present day. The paper is intended for the Linnean Transactions.

**VINES:** *A M S.* If you heap earth of any kind 3 feet deep over the roots of a Vine, you will do it irreparable injury. Merely covering its stem will do no harm.

**MISC.** Full price will be given for Nos. 49 and 52, 1851; and No. 50, 1852.—*Gallopia.* You can have Nos. 41 and 52, for 1852; and 1852, 2, for 1853; the others are out of print.

\* \* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

PERUVIAN GUANO, guaranteed, the genuine importation of Messrs. A. GIBBS & SONS, 9l. 10s. per ton, or, in quantities of five tons and upwards, 9l. 5s. per ton in dock. A constant supply of LINSEED and RAPE CAKE.

EDWARD PURSER, Secretary.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

## MANURES.—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—

Turnip Manure	... ..	per ton	£7 0 0
Superphosphate of Lime	... ..	"	7 0 0
Sulphuric Acid and Coprolites...	... ..	"	5 0 0

Office, 69, King William Street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

## SEWAGE CHARCOAL MANURE.

**PEAT CHARCOAL**, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenny.

Mr. JOHN ANNETT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

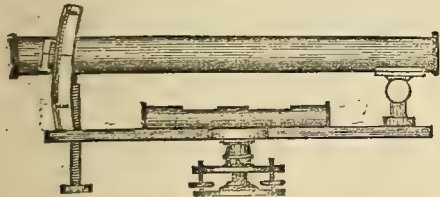
## GUANO AND OTHER MANURES.

PERUVIAN GUANO of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARE FOTHERGILL, 204 A, Upper Thames Street.

## DRAINAGE.

## NEW LEVELLING INSTRUMENT.

(REGISTERED No. 2502.)



The print represents the Instrument one-fifth of the real size.

This is a simple and effective self-recording instrument, suitable for Levelling Drains, Sewers, or Roads, or for Measuring the Elevations and Depressions of the Ground. It consists of a Telescope, Level, Graduated Arch, and Tripod Stand. The Arch is so divided as to show the rise and fall in feet and inches.

From the *Practical Mechanic's Journal*, Feb. 1, 1851.

"In the hands of even the most unlettered farm-servant this little instrument will afford the most correct measurements, as the operator has only to level the plate and bring his sight to bear upon the object, when the elevation or depression is given at once. It will be a most useful contrivance for draining or road-making."

Price 4l. 4s. Made only by GARDENER & CO, 21, Buchanan Street, Glasgow.

## WEIR'S DRAINING LEVEL, PRICE 30s.—

These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

EDWARD WEIR,

AGRICULTURAL ENGINEER,

16, Bath Place, New Road,

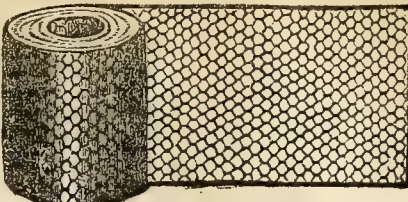
(6 Doors West of the Hampstead Road)

Removed from Oxford Street.

**BAKER'S PHEASANTRY**, Beaufort Street, King's Road, Chelsea, by special appointment to her Majesty and H.R.H. PRINCE ALBERT.—ORNAMENTAL WATER FOWLS, consisting of Black and White Swans, Egyptian, Canada, China, Barnacle, Brent, and Laughing Geese, Sheldrakes, Pintail, Widgeon, Summer and Winter Teal, Gadwall, Labrador, Shovelers, Gold-eyed and Dun Divers, Carolina Ducks, &c., domesticated and plumed; also Spanish, Cochon China, Malay, Polaris, Surrey, and Dorking Fowls; White, Japan, Pied, and Common Peafowl, and Pure China Pig; and at 3, Half-moon Passage, Gracechurch Street, London.

## GALVANISED WIRE GAME NETTING.—

7d. per yard, 2 feet wide.



	Galvanised.	Japanned iron
2-inch mesh, light, 24 inches wide	... 7d. per yd.	5d. per yd.
2-inch " strong	... 9 " "	6½ " "
2-inch " extra strong	... 12 " "	9 " "
1½-inch " light	... 8 " "	6 " "
1½-inch " strong	... 10 " "	8 " "
1½-inch " extra strong	... 14 " "	11 " "

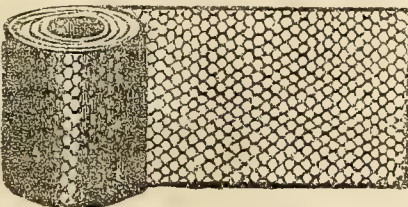
All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasantry, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## CHEAP WIRE GAME &amp; POULTRY NETTING.

5d. per running yard.

## GALVANISED DITTO, 7d. per running yard, 2 feet wide.



	Galvanised.	Not Galvanised.
24 in. wide, 2 in. mesh, 7d. per yard.	... ..	5d. per yard.
30 in. " 2 in. " 9d. " "	... ..	6½d. " "
36 in. " 2 in. " 10½d. " "	... ..	7½d. " "
48 in. " 2 in. " 1s. 2d. " "	... ..	10d. " "

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

**HALL'S GARDEN NETS**, the best Protection from Frosts, &c. A very durable and cheap article; more required than in any former year.—Sold by the principal Nursery and Seedsmen.

## TANNED NETTING, for the protection of Fruit

Trees from frost, blight, and birds, and for the security of fresh Snow Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Waxed Netting for Aviaries, &c., at 3d. per square yard. Serim Canvas, for Wall Fruit.

At EDGINGTON & CO.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may also be seen erected Emigrant Tents in great varieties on their latest improved principles.

## FRUIT TREES, POULTRY, RABBIT, SHEEP,

AND CAT FENCING.—Worsted Netting to protect the bloom of Peach, Nectarine, and other trees, flowers, or seed-beds from frost, blight, and birds, two yards wide, 5d. per yard. New Twine Netting (tanned if required), one yard wide, 1½d. per yard; two yards wide, 3d. per yard; four yards wide, 6d.; half-inch mesh ditto, two yards wide, 6d. per yard. Tanned Netting, two or three yards wide, 1½d. per yard; four or six yards wide, 3d. per yard, or 5s. per 100 yards, one yard; 10s. per 100 yards, two yards; and 20s. per 100 yards, four yards wide. Elastic Hexagon Garden Net, or Serim Canvas, 4½d. per square yard. Cocoa Nut Fibre, or Hemp Sheepfolding Net, of superior quality, four feet high, 4d. to 6d. per yard. Rabbit Net, four feet wide, 1½d.; six feet wide, 2½d.; eight feet, 3½d. per yard. Each edge corded 4d. per yard extra, suitable for poultry fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c., at W. CULLINGFORD'S, No. 1, Strathmore Terrace, Shadwell, London. Orders by post, with Post Office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., made to order.

## DR. S. NEWINGTON'S PATENT PRIZE HAND-

DIBLES, and other MACHINES, to be had on application at Surrey Chambers, Arundel Street, Strand, London.

## STEPHENSON AND PEILL, 61, Gracechurch Street,

London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

## TALAVERA WHEAT FOR SPRING SOWING.

M. R. OWEN, of BROCKLEY FARM, LEWISHAM, begs to inform Agriculturists, that he has a very fine sample of the above Wheat for sale, at 9s. per bushel.

## THE EARLIEST PEA IN CULTIVATION.

"FAIRHEAD'S EARLY CHAMPION."

THE Raiser and Grower of the above variety positively asserts that he procured all the new varieties of early Peas that came out last season, and had them sowed side by side with his "Early Champion," and which beat all the others in point of earliness; and from his experience in horticultural affairs he considers it the best early Pea in cultivation. The pods are large and long, which is a great desideratum in early Peas; in the way of that renowned variety "Warner's Emperor," only much earlier. Price 2s. 6d. per quart, to be had of the underwritten, who have the stock exclusively, and which being limited can only be supplied in single quarts.

CLARK & CO., Seedsmen, 80, High Street, Borough.

## AGRICULTURAL SEEDS.

FLOWER SEEDS, and SEEDS FOR THE KITCHEN GARDEN, Delivered Carriage free by Railway.

J. C. WHEELER and SON, SEEDSMEN TO THE GLOUCESTERSHIRE AGRICULTURAL SOCIETY, beg to state that their new Seed List for this season will be forwarded free by post on receipt of one postage stamp.

To those desirous of buying the best varieties in cultivation, their List will be found extremely useful.

## SELECTED GARDEN SEEDS.

J. C. WHEELER & SON beg to offer the following Collections of Garden Seeds:—

No. 1. A complete Collection suitable for a large garden	2 s. d.
No. 2. A Collection of equally choice varieties, but smaller quantities	2 10 0
No. 3. A Collection suitable for a small garden	1 10 0
No. 1 and No. 2 Collections will be sent free to any Railway Station in England.	0 15 0

J. C. WHEELER & SON, Seedsmen, Gloucester.

## IRELAND.

**NEW SEEDS, 1853.**—The SUBSCRIBERS have had the honour of supplying several hundreds of the first families in Ireland for many years. The transit from this Port to the various Ports in Ireland is quick and expeditious, and the cost is very moderate. The Port of Plymouth is therefore well situated for commercial transactions with our sister country.

The Carriage of all Orders above £2 is PAID to the following Sea-ports:—

DUBLIN

BELFAST

CORK

LIMERICK.

Steamers are continually running from the GREAT WESTERN DOCKS (within a rifle shot of our Union Road Establishment), to the above-named Ports.

For particulars and Catalogues, apply to WILLIAM EDGUMBE RENDEL & Co., Seed Merchants, Plymouth.

ESTABLISHED MORE THAN HALF A CENTURY.

## GRASS SEEDS FOR PERMANENT PASTURE,

made up in proper assortments and proportions for every description of soil.

PACEY'S PERENNIAL RYE-GRASS, very clean Seed weighing from 26 lbs. to 30 lbs. per bushel.

ITALIAN RYE-GRASS, selected from the best growers in Lombardy. This Seed yields a much earlier and more luxuriant crop than can be obtained from any other, and should always be had recourse to when from five to six cuttings in the season is an object.

TURNIPS, in all the varieties of Swedes, Yellows, and Whites, worthy of cultivation. The Stocks of these have been greatly improved by raising the seed from large picked bulbs.

With every other description of Agricultural Seeds, priced Lists of which may be had post free on application.

W. DRUMMOND & SONS, SEEDSMEN,

Agricultural Museum, Stirling, N.B.

Carriage of Seeds prepaid to many of the principal Shipping Ports and Railway Stations throughout the kingdom.

## IMPROVEMENT OF GRASS LANDS.

## SUTTON'S RENOVATING GRASS SEEDS FOR

IMPROVING OLD PASTURES.—Many Old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers, and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are sown early in the season, the improvement in the Pasture will be very considerable, and at a small expense.

The following, just received from Riddlesworth Hall, near Thetford, Norfolk, is similar to hundreds of others sent us by former purchasers:—

"The Grass Seeds which I had from you in 1848 have stood very well, and the Pasture is now very good; the Renovating Seeds also that I had of you, I used in my park on spots where I had removed (by stabling) a coarse sort of Wire Grass, and they answered remarkably well."

Quantity of Seed required, 8 lbs. to 12 lbs. per Acre. Price 1s. per lb. Carriage Free.

Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

N.B. We have a very fine Stock of Mangold Wurzel and Carrot Seed.

## NEW FARM SEEDS—1853.

## WILLIAM EDGUMBE RENDEL AND CO.

We have this season a very superior stock. No purchases should be made till the appearance of their New Farm Seed Catalogue, which will be published in the course of a few weeks.—For Copies, apply to

WILLIAM EDGUMBE RENDEL & Co., Seed Merchants, Plymouth.

## THE BIRMINGHAM CATTLE AND POULTRY

SHOW, 1853.—THE FIFTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, and the various kinds of DOMESTIC POULTRY, will be held in Bingley Hall, BIRMINGHAM, on the 13th, 14th, 15th, and 16th of December next.

THE PRIZE LISTS are now ready, and may be had on application to the Secretary.

JOHN MORGAN, Jun., Secretary.

Offices: No. 2, Insurance Buildings, Union Passage, Birmingham.

## The Agricultural Gazette.

SATURDAY, FEBRUARY 5, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, — 10—Agricultural Imp. Society of Ireland.

WEDNESDAY, — 16—Agricultural Society of England.

THURSDAY, — 17—Agricultural Imp. Society of Ireland.

THE CAUSES OF DISEASE amongst man and animals are very frequently involved in mystery. The most virulent fever or epidemic will break out and spread its destructive influence far and near, numbering its victims by hundreds or by thousands; and yet any attempt to elicit the cause or solve the mystery in which it is enveloped proves futile and delusive, and science turns from the vain speculation in despair or disgust. Although the chemist can analyse the atmosphere, resolve its constituent elements, and discover the sudden admixture of foreign gases, yet he is utterly unable to detect or imprison the subtle poison which floats on the breeze. Many diseases are supposed, and some are proved to be, infectious—that is, propagated by some poisonous particles given off into the atmosphere by the affected bodies—and yet all attempts to demonstrate the invisible enemy have been fruitless: it delights, as it were, to baffle the speculations of science. Thus it is that medical men are divided in opinion as to the character of many diseases,



some resisting the idea of their being infectious, whilst others find no greater difficulty in believing the subtle poison to proceed from the bodies of diseased subjects than in supposing it to issue from the bowels of the earth or the elements of natural decay; and are disposed to assert the infectious character of many diseases, and to recommend the most effectual measures for establishing a sanitary cordon between the healthy and the sick. There are other maladies, however, which do not, like those to which we have alluded, prove the opprobrium of science, but yield up their secrets to the inquirer, their symptoms corresponding to the causes which are known to have produced them. Thus any great or sudden alteration in diet, either an excess in quality or quantity, or the reverse, is productive of recognised disease. For instance, the long continuance of salt provisions is productive of scurvy in the human subject, and when salt provisions were the usual winter food on land as well as water, the scurvy was a very common and troublesome complaint. So likewise with animals: a sudden alternation from very poor to very rich pasture causes inflammatory fever or blood-striking; very poor feeding produces mange, or scab, and this accompanied by hard work produces glanders and scurvy amongst horses, whilst an excess of stimulating food with insufficient exercise produces grease and swelled legs. Ammoniacal vapours induce diseases of the eyes, such as ophthalmia; and a cold easterly wind is productive of rheumatism and paralysis. The health of man and animals is also greatly affected by atmospheric changes, particularly when distinguished by great vicissitudes, or the long continuance of weather of an extreme character, such as that which has prevailed for many months past. This brings us to the subject to which we propose to devote a few articles with the view of rendering good service to our readers:—to consider the diseases amongst animals consequent on the wet season which has prevailed so long, and the precautions necessary to be adopted to obviate the effects that may be anticipated. Such a long continuance of rainy weather is unexampled in the recollection of most of the present generation; indeed, an elderly and well-informed and observing individual assures the writer that he has a distinct recollection of fifty winters, but in none does he recollect such a long continuance of excessive moisture as that which has prevailed throughout the latter half of 1852.

When sheep or cattle are exposed to long continued rain the surface of the body becomes unduly reduced in temperature, and the body itself is robbed of a portion of its vital warmth, to supply which a greater quantity of food is required, otherwise the body itself becomes used up and diminished in weight. Sheep, it is well known, will endure extreme cold if the weather be dry, far better than when wet, although the temperature in the latter case may be milder. Cold is not only generated by the evaporation of moisture from the skin, but when the animal lies down he reposes on a wet and cold surface, and the food which is partaken is also unduly loaded with moisture. Thus, in three different ways are sheep affected by excessive moisture, and instead of being surprised that disease often follows, it is a matter of astonishment that they should be able to resist it so well. The effect of long continued rain is to lessen materially the manufacture of mutton, and it has, no doubt, operated considerably in diminishing the supply, and enhancing the cost of this article of food at the present time. At the same time the very condition in which fattening sheep are kept—that is, abundantly supplied with nutritious food—is the best possible way of warding off the evil effects of excessive rain; and thus fattening sheep are less injured by rain than breeding ewes or lambs.

This remark is of itself sufficient to explain the anxieties of our flockmasters at the present time. Breeders, as well as feeders, and the former even more than the latter, are suffering from the weather. From the Mendips and South Downs in the south, and the Lammerruirs and the other exposed districts of our breeding flocks in the north, no less than from the rich pasture and Turnip lands where mutton is being made, we receive reports of damage suffered by flockmasters. To all of them an exposition of the connection of weather and disease will be interesting; and the statement of the mode in which diseases thus originating may best be treated will be useful.

THE AGRICULTURAL GAZETTE can utter some 16,000 or 17,000 words a week on agricultural subjects. It aims at keeping its readers informed on the current topics of agricultural discussion, whether they be connected (as TULLIAN agriculture, drainage, manure-making, implement shows, and others are) with the cultivation of the soil or (as the rearing, breeding, and exhibition of live stock, and others

are) with the profitable conversion of its produce into meat. It aims at discussing every department of agricultural practice and all the many branches of agricultural theory; and for this, 16 or 17 columns a week is all the space at its command. The right distribution of its means of information and communication—the right division of this space among the topics requiring its consideration—is thus one of the most important duties of its Editor; and he has to be guided in this matter by two considerations. The one would induce him to give prominence to subjects in the proportion of their intrinsic importance, so that the relations of landlord and tenant, the social position of the labourer, and the fundamental topics of drainage, tillage, and manuring, should have the precedence, even of cattle shows, certainly of poultry keeping. The other would lead him to accommodate himself exactly to the public feeling of the time, so that, if nothing is talked about but draining, then the AGRICULTURAL GAZETTE should for the time being become a mere manual of the art of the drainer; while, if Smithfield shows be the main subject of discussion, then 10 or 12 of its 16 columns should become little more than a manual for the feeder; and if poultry keeping be the only branch of agriculture exciting general interest, then 12,000 or 14,000 words should every week be spoken about our poultry shows and our prize lists for Cochins, Chinas, Dorkings, and Polands.

In practice, these two considerations involve a compromise, on which, however, we think the latter term of the alternative should have less influence than the former. Certainly the AGRICULTURAL GAZETTE has no reason to complain of the present excitement about poultry. It can claim for itself and its contributors the credit of much of the interest now taken in that subject. To the series of articles which appeared from the pen of a correspondent in its columns, during the year 1848-49, every impartial historian will attribute a large share in the origination of the present poultry excitement. But while it would, to the extent of its ability, give expression in its columns to the deeper feeling and wider intelligence which now exists in connection with the poultry-yard, its limited space on the one hand, and the numberless other more important subjects with which it has to deal on the other, necessarily restrict this ability within but narrow limits. Under these circumstances our readers must not expect that we shall be able every Saturday to give in full detail every scrap of poultry news that arises from week to week. As for prize lists, they ought to be advertised by the parties interested. It is for us to aim at describing the progress of the different breeds, and the policy and results of the various methods of managing them, rather than to present a full record of all the honours carried off by individual exhibitors. For some of these, when space is at our command, we shall be happy to claim the attention of our readers; but, as a general rule, we believe that we shall be of greater service to them by directing it to questions of practical management, and to those points of economical importance which arise in the course of correspondence amongst them.

To this end we have the assistance of a gentleman who is well known in the poultry world, whether as a judge, a writer, or a practical man. No one can deny that impartial honesty and sound judgment are combined in the notices and reviews with which he has hitherto favoured us. No one, indeed, however conscientiously he may fulfil the duties of such an office, can hope altogether to escape criticism; and we have not been without letters of complaint whether as regards the neglect or injustice with which exhibitors have thought themselves treated. Some of these we have published—one, from Messrs. BAKER, of the Pheasantry, is printed in page 61; and we have received a second from them complaining of the further notice, given in the same page, of the class in which their birds were shown at the Metropolitan exhibition. The two notices are compared in the following passage:—

The writer in the first instance said, "The Polands were highly meritorious in all their varied hues, those with beards and those without." In the next number, Jan. 22, he so qualifies and alters the sense of it (having no doubt had our letter forwarded to him before publication) that he completely neutralises any merit there may be in having a prize for the silver-spangled fowls of this class, by saying, "The Polands were good; but, with the exception of the white-crested, they were inferior to those exhibited at Birmingham." The drift of this is very apparent. Those who saw our silver-spangled Polands can judge for themselves if they were ever excelled or equalled. Those only are deceived who not having that opportunity look to your columns for information which is valuable only when fairly and impartially given.

MESSRS. BAKER, before they make charges of this kind, should take the trouble to ascertain what is fact, and what surmise. Had they done so they would have found that our reporter did not see their letter any sooner than our readers generally—and that what he said was unbiased by

any remarks by ourselves or, so far as we know, by any other person. Our reporter stands too high to be affected by these insinuations, and it would have been better perhaps to have refused to notice them at all.

The public may appreciate the eagerness with which disappointed exhibitors endeavour to throw dirt upon their neighbours, by a perusal of the complaints of some correspondents, whose letters about the conduct of Mr. BAILY, one of the judges at Birmingham, we have lately received. (See page 45, col. c.) An anonymous correspondent brings a charge against an officer, and the latter positively denies it—asserts that it is altogether groundless. What more can he do? There, surely, so far as *he* is concerned, the matter must rest. Not so in the opinion of some of our correspondents! One is surprised to find, "on receipt of the *Gardeners' Chronicle* for Jan. 22, that nothing further is said about the charge brought against Mr. BAILY. Does he intend to rest under the stigma?" Another thinks that "this question of the improper possession of a catalogue by one of the judges at the late Birmingham Poultry Exhibition ought to be sifted and settled for the satisfaction of all parties. It is brought before the public by the *Agricultural Gazette*, and it ought not to be shirked." A third, having assumed the justice of the charge, supposes that all the judges were equally respectable; and if one of them could so act, the others might also, and hence the reason why her pets were not appreciated as they deserved. Now, Mr. BAILY, we have little doubt, cordially joins in the condemnation here expressed of the conduct attributed to him; but having denied it, what more can he do? Let "J. H.," who brought the charge against him pursue the matter farther; we undertake that Mr. BAILY shall keep pace in his justification with the speed of his accuser. Every one must admit, that an unsupported anonymous charge is perfectly met by an open assertion of its groundlessness on the part of the accused. We have no personal acquaintance with Mr. BAILY; but his reputation as a judge of poultry we do know; and until "J. H." shall prove against him the things which he has at present anonymously asserted, we, with every other unprejudiced spectator of the way in which it has been assailed, must continue to hold it in the esteem which it has hitherto commanded.

One word more on the position of a dealer as a judge at Poultry shows—with which most of our correspondents appear dissatisfied. One would think that they regarded an intimate knowledge of the matter to be judged of as the lowest of all qualifications; we can readily indeed understand how some exhibitors would find ignorance more favourable than intelligence. We, however, confess to an opinion on this part very similar to that expressed by "Simplex" in our last number. Apart from a knowledge of personal character, which we may suppose that the committee of management of a Poultry Show does not possess, the index for their guidance must be—how interest and prejudice may affect the man whose qualifications for the office of judge they are discussing. Now in cattle shows judges are appointed whose livelihood depends on their business as breeders of stock; and auctioneers who are more strictly "dealers" are not by any means ineligible, provided they have the requisite skill. The only care taken in our large shows is that short-horn breeders be asked for their decision, only in the case of the short-horn breed; that Hereford breeders be confined to the Hereford breed, and so on; in the case of our smaller shows, where three gentlemen may have to decide in all the cases, if any could be obtained with an equal practical knowledge of all the breeds, he would be preferred, not rejected, on that account. And a dealer in poultry who is equally interested in all the different breeds, or whose interest is proportionate with that of the public, must we think be capable of more disinterested and unprejudiced decision than those who have confined their attention to one tribe only.

Let the committees of poultry exhibitions carefully investigate all *bond fide* charges brought against their judges; but so long as they can be sure of honesty and intelligence, let them treat with indifference idle outcries against individuals or classes of individuals whose only fault is possessing more knowledge of the subject than those who rail against them.

#### STRAW AS MANURE.

THE using up of our straw for cattle food rather than for manure has sometimes been discussed in these columns; but whatever may be the advantages of so doing, I think the advocates for feeding with it have gone a little too far when they have recommended the sale of all they cannot so consume, and when the market value of it is so high as 2*l.* a-ton, if hay can be got at a moderate price, the purchase of it for food appears to



me also as equivocal, for its highest nutritive value, by practical observation, does not seem by Dr. Völcker's paper on Nutrition, inserted in p. 733 of No. 46, 1852, *Agricultural Gazette*, to average one-half of hay, while, theoretically it does not exceed one-fourth. How far it may be advisable to part with it at that price, and to purchase in lieu portable manures, will depend upon circumstances; for although two pounds' worth of guano may bring a more immediate return, and manure a greater breadth of ground than a ton of straw, yet, in its ulterior effects, it may not be found so economical an application. Where peat-mould is easily obtainable, I should have less hesitation in parting with my straw.

Is there not some absurdity in treating straw as valueless for manure with an advocacy for its use for feeding, since its nutritive elements are so very low that its value rather consists in its bulk distending the stomach and correcting the over-nutritious qualities of other matters that are given as food; and since, after having served this purpose, the residue, *quasi* straw, passes to the dung-heap? for it cannot acquire any other properties in passing through the animal economy than those it may receive from the elements of the water which the animal drinks, and which may be equally communicated to the crude straw by saturation with rain-water. Those properties given to the excrements of the animal by the other food it has consumed, are not to enter into our consideration in treating of straw as a feeding or fertilising material. It is true we have a vague opinion, somewhat hard to get rid of, about as well founded as our ancient sword anointing superstition was, that the vitality of an animal communicates a something to the matters which pass through its stomach, which renders them more fertilising to the soil than the same matters would have been, had they not so passed through its stomach.

Perhaps the simplest way of considering the question as to the value of straw for feeding or manure, would be to treat it as one of an animal fed on straw alone; and what has the animal gained in his winter's feeding on straw? If a young beast, has he grown—has he thriven? Our beasts, not fit for the shambles till four years old, answer this question. He has sustained life at the expense of the straw he has eaten, and of the fat and flesh he had gathered in the preceding summer, and which it will demand a large amount of Grass to restore in the following summer. The case is much the same with the dry cow; she will have to make flesh when she should be giving milk; she has merely been kept alive. It is not improbable that a further and a future loss has been sustained; for, from the small quantity of animal nutrient in straw, the animal must either have been insufficiently fed or have taken into the stomach so much as preternaturally to distend it, which, independently of the injurious effect to the system from the over large quantity of nutritious food that in the summer will be required to fill it, will entail an additional cost in the Grass consumed, and prove that straw feeding has been anything but economical. And as to the manure so supplied, I rather think that if the excrements of this animal so straw fed were applied to land, and also on an equal breadth of land an amount of straw equal to that which the animal has consumed, in an incipient stage of decomposition brought on by saturation with rain water, the fertility induced would be in favour of the latter.

Even under the favourable circumstances of such an abundance of succulent food as would enable the consumption of the whole of the straw on the farm profitably as food, I cannot fully enter into the views of those who condemn its application as litter; I would rather, as a village farmer, throw a larger breadth of ground into Red Clover for hay, for in the very concentration which they rest so much on, I think there is injury. Manure from straw as litter, in its earlier stages of transformation, from its bulk, keeps strong soils open to root development, and pervious to the air, which in its reduced state, from having passed through the animal organism, it cannot be so operative in effecting; it also presents soils largely with carbon in a more favourable state for transforming into carbonic acid than perhaps any other vehicle of it, an element which most of our portable or specific manures are deficient in; but one which in its extensive range of operation, and from entering so largely into the composition of almost all vegetable being, has a right to our most serious consideration.

Liebig has well observed, that plants find new nutritive materials only in inorganic substances. It has been discovered that water, impregnated with carbonic acid, decomposes rocks which contain alkalies, and then dissolves a part of the alkaline carbonates. Straw, then, from the large amount of carbon it contains, must be very influential in increasing the staple of the soil, and afterwards its fertility, in rendering soluble and accessible to plants the new material which it had previously broken down. We know not to what amount an acre of straw will liberate the inorganic constituents of plants, but we know it cannot be in excess, whatever may be its amount; and we may suppose, from the small quantity of them taken up by plants, that it will be sufficient for many successive crops; for Liebig says, "A single cubic foot of felspar is sufficient to supply a wood covering a surface of 26,510 square feet with the potash required for five years."

Straw will also in its carbon supply plants with the most essential organic element of their constitution, their bone, their sinew, and their strength; that which enters most largely into their composition; that which, we are

informed, with water, forms their woody texture, their starch, sugar, gum, &c., which, with an additional equivalent of oxygen, composes most of their acids, and which, with an additional equivalent of hydrogen, makes up their volatile and fixed oils, their resins, &c., while it contains sufficient azote to cause its fermentation, and possibly enough for all the exigencies of plants.

Liebig tells us that carbonic acid is the proper nutriment of young plants, which they extract from the soil by their roots; and that this carbonic acid is generated by humus, which he defines as woody fibre in a state of decay; and observes that woody fibre is the principal constituent of all plants, and also that woody fibre consists of carbon and the elements of water.

The value of straw as manure in Ireland is no matter of theory, it does not require the support of science, it is a reality existing in her practice through the entire length and breadth of her land; from the south to the north, from the east to the west, straw and little else, save peat (which, in its carbon, approaches pretty near to it), make up her manure heap. It gives her successions of Potatoes and Wheat, or of Potatoes and two, three, or more crops of grain. Straw, whether passed through the stomach of cattle, placed under them as litter, or rotted on the bye-roads and farm-passages, is still straw.

It is carbon—for the cattle must assimilate the whole of the very small quantity of nitrogenous matters they receive as food; we can with difficulty suppose they can void any as excrement—it is carbon then that gives fertility to her fields, the carbon of straw; for, excepting the very few cattle stall fed by the gentry, and which, in ninety-nine cases in a hundred, are fattened on Turnips only, oilcake and grain being very rarely used. Barring, to use an Irishism, the scanty herbage they can pick up for a few hours of the day, the cattle get nothing for the first four winter months but straw; the latter two months they have hay, which in its amount of carbon differs but little from straw. And this is not the practice of the poor struggling small farmer alone, but is that of our large farmers, of rich men with abundance of stock and means, holding perhaps 150 or 200 acres of ground, and who sell their Turnips off the land as food for man; to whom bones as manure are unknown, whose jaws it would break to pronounce phosphate, to whom the vendors of portable or specific manures would offer their goods in vain, and by whom the chemist would be laughed at who should fix a price upon them. *J. M. Gooddiff.*

### Home Correspondence.

*Liquid Manure.*—The statements of an accredited commissioner, upon a subject of national importance, are certainly entitled to great consideration and reflection, whether his instances of results may be beneficially copied or not. It behoves every man, before laying out his money, to investigate and satisfy himself (upon his own calculations), that there is a reliable possibility of the stated profit being realised; for assuredly too much caution cannot be exercised against the multiplicity of garbled statements which on all sides beset one. But it is a pity that an account evidently intended to be honest and straightforward should, by accident, be rendered so misleading, that to adopt it on the faith of the printed figures would lead to inevitable disappointment, and probably pecuniary embarrassment. I have been led to make these remarks by perusing the extract from "Mr. Home's Report to the East Berwickshire Farmers' Club," in which he says, "So that for each acre of Grass he has to apply about 16 cwt. of guano, in addition to what comes from the court-yard. The cost of this manuring can be easily calculated. On the other hand, 2 acres of Italian Rye-grass, cut and manured 6 times, will support 10 cows, whose produce at 4*l.* each will be 40*l.* Now, deduct from this the cost of 16 cwt. of guano, viz., 7*l.* 12*s.*, &c., leaving a balance of 14*l.* 18*s.* as a return of 7*l.* 9*s.* per acre, instead of 2*l.*" Now, look at the other side of the picture, and it must be evident that, as Mr. Bell takes credit for the produce of 2 acres, he must also charge the expenses of 2 acres; but one acre absorbed the 16 cwt. of guano, 7*l.* 12*s.*, so that a like quantity has been forgotten, which will reduce the available balance to 7*l.* 1*s.*—or 3*l.* 10*s.* 6*d.* per acre, instead of 2*l.*—a still very respectable result; but it is the better for being divested of extravagant error, and arrayed in its own sterling worth. This is not an exceptional case in agricultural statistics; few statements will, after strict investigation, be pronounced correct; very many are like the above, and too many are dictated only by interested motives—

"The world is a bundle of hay,  
Mankind are the asses who pull,  
Each tugs it a different way,  
And the greatest of all is John Bull."

—T.

*Disease in Swedish Turnips.*—Last harvest I undertook the management of a farm on which there was a four-acre field, cropped with Skirving's and Fettercairn's Swede, which bore a tolerably good appearance, and promised to realise a pretty fair average crop, until the month of October, when the crown of each bulb assumed a rusty brown colour, and a dry rot set in, destroying all traces of further vegetation; so much so, that the shaws which were, for the most part, bottle-necked, fell off at the slightest touch of either hand or foot, the disease working or rather eating its way downwards into the sound portion of the Turnip. I had them taken up as soon as the weather permitted, at the same time cutting off the diseased part and harvesting the sound portion for

immediate consumption. During an experience of more than 20 years in the growth and management of Turnips on various soils and manures, I never witnessed an attack of this nature before; nor can I at present attribute this to any distinct cause, unless the following might have had any effect in producing it. In the first place the soil is a light loam, with an extremely bad, retentive soil, which was subsoiled the year before last to the depth of 16 inches, a great portion of which was brought to the surface, and is not as yet properly pulverised nor blended with the natural clay. The land was manured with a compost of night soil and charcoal, with various other substances from the union workhouse, and mixed with a certain portion of guano; the drilling and manuring was properly managed, but the after culture was neglected, being neither hoed, cleaned, nor thinned in proper time. *A Subscriber, Ballinasloe.* [We have seen the disease in many localities. It is probably owing to excessively wet weather. The diseased parts become covered with mildew, probably however as the result, rather than as the cause of the mischief. We can suggest nothing but perseverance in the ordinary rules of good Turnip-culture, drainage, good tillage, and industrious cultivation during the growth of the plant.]

*Gutta Percha.*—I have been induced to try the gutta percha boots upon my sheep since reading the article upon them in the second number of your Journal for 1853. Having first had the diseased feet dressed, the boots were applied, but I soon found, though the diseased part was in a way to be cured, the upper part of the goloshe galled the poor animals just below the ankle, and caused a worse torture than they endured before. I have since had made a boot to come over the ankle of the "spongio piline," which is soft and yielding, and is also quite impervious to moisture; the stitches are afterwards made waterproof, by a binding of tape put on with an india rubber solution. I enclose a pattern of two kinds, the thick for the sole of the boot, and the thin for the upper part. *Your Constant Reader.* [We should have doubted, from the specimens sent, their lasting very long.]

*Value of Straw in Manure.*—In reply to a correspondent, a late *Agricultural Gazette* states that a ton of straw, partly used as fodder and partly as litter, produces (of course in combination with the excrements of stock) five tons of manure. I presume in this statement that Wheat straw is meant. Now a ton of such straw in very many parts of the country sells for 30*s.*, to be drawn away by the purchaser; but five tons of first quality farm-yard manure, at 5*s.* per ton (a commonly estimated value), amounts only to 25*s.* Moreover, even if no allowance be made for waste, the ton of straw can form only an equal weight of the manure containing it. Supposing it, therefore, equal in fertilising value, weight for weight, to the excrements, which can seldom if ever be the case, the result arrived at is that straw worth 30*s.* is reduced by use to manure worth 5*s.* I confess that I, like most others, am using straw in this manner; but can it be correct to do so? Ought not the straw rather to be used wholly as fodder or to be sold? No doubt if straw were more freely sold the saleable value would diminish; but there is so wide a margin between its present saleable and fertilising value, that a considerable reduction of price might take place without producing an equilibrium. It appears to me that if no convenient substitute can be found for straw as litter, we should either cease to follow a system which requires its use, or are bound to place a higher cost per ton on the manure made by its assistance. In such case, does not artificial manure contrast so favourably with farm-made manure as to forbid our making more of the latter than the actual necessity of supplying our horses and milch cows with litter actually enforces upon us? Can the box system be correct, which requires three times more litter than the stall? Is not the conclusion all in favour of feeding on boards, if not too costly, and if on an average the beasts do well? *Alexander Hall Hall, Watergate, Ennsforth, Hants.* [The manure made is wet and the straw is dry; it is water that is the main addition to the weight of the litter. We believe that 20 tons of straw will generally make more than 100 tons of manure. In fact our farm growing 150 to 180 tons of straw has yearly produced much more than 1000 tons of manure. Take two facts in discussing the point; the one of which you allude to, and the other—this, viz., that farmers near stables will often supply them with litter for nothing, provided they may haul away the manure. The 30*s.* and 40*s.* a ton is not the agricultural value of straw, but the market value; it is as bedding for riding and carriage horses, and not as an element of manure that it has acquired this value. Box-feeding does not need three times the litter that is used in stalls.]

### Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held at the Society's House in Hanover Square, on Wednesday last, the 2d of February. The following members of Council and governors of the Society were present:—Lord ASHBURTON, President, in the chair; Lord Southampton, Sir Robert Price, Bart., M.P., Mr. Raymond Barker, Mr. S. Bennett, Mr. Bramston, M.P., Colonel Challoner, Mr. Druce, Mr. Gadesden, Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Hornsby, Mr. Jonas, Mr. Kinder, Mr. Lawrence, Mr. Milward, Mr. Mainwaring Paine, Professor Sewell, Professor Simonds



Mr. Simpson, Captain Henry Vyner, Professor Way, Mr. Jonas Webb, and Mr. Woodward.

William Crosskill, Esq., of the Iron Works, Beverley, Yorkshire, was elected a Governor of the Society.

The following new members were elected:—

Edmonds, Frederick Ezekiel, Wellesley House, Twickenham  
Weston, Jasper, Hofwyl College, River, Dover  
Anderson, George, Walton-on-Thames  
Robinson, Thos. W. Usherwood, Houghton-le-Spring, Durham  
Royds, Albert Hudson, Brownhill, Rochdale, Lancashire  
Swain, Alfred C., Radcliffe, Buckingham  
Squance, Barry Parr, Glanvryan, Llandilo, Carmarthen  
Mello, William, Chadwell Villa, Ware, Herts  
Simpson, John, Pinner Park, Middlesex  
Trimmer, Charles, Alton, Hampshire  
Lawrie, Andrew, Mount Mascall, North Cray, Kent  
Anderson, David, West Nansen, Carnaustie, Forfarshire  
Dover, Richard, 27, Baker Street, Portman Square  
Randell, Charles, Chaddbury, Evesham, Worcestershire  
Murray, Alexander, Eriswell, Mildenhall, Suffolk  
Greatham, William, Stainfield Hall, Wragby, Lincolnshire  
De Trafford, Sir Humphrey, Bart., Trafford Park, Manchester  
Wingate, William, Ludford, Market-Rasen, Lincolnshire  
Parker, Thomas, Tunbridge, Kent  
Jenkins, Thomas, Plas-y-Ward, Ruthin, Denbighshire  
Barrett, John, Milton House, Abingdon, Berks  
Fletcher, George, Shipton, Andoversford, Gloucestershire  
Marryott, William, Kibworth-Harcourt, Leicestershire  
Hancock, John Donne, Halse, Bishop's-Leysard, Somersetshire

The names of 36 candidates, already received on account of the election at the next monthly meeting, were then read.

**FINANCES.**—Mr. Raymond Barker presented to the Council the Report of the Finance Committee, from which it appeared that the current cash-balance at that time in the hands of the Society's Bankers, was 3781l. He explained that this balance included 1500l. as the Gloucester subscription towards the expenses of the Country Meeting to be held in that city in the middle of July next. He also laid on the table the quarterly statements of income and expenditure, and of invested capital and liabilities.

**JUDGES' REPORTS.**—Colonel Challoner, Chairman of the Implement Committee, laid before the Council the following special report:—

"The Committee having taken into consideration the reference made to it by the Council, for the best means of enforcing more punctuality in the presentation of the Reports of the Judges of Implements, are of opinion that all reports from the said Judges of Implements should be sent in to the Secretary (under cover) on or before the 1st of August after the Country Meeting."

The Committee also reported their final recommendations on the general regulations for the exhibition and trial of implements at the ensuing country meeting, which were adopted by the Council.

**TURNIP WATER-DRILL.**—Mr. Pusey's offer to contribute the sum of 10l. as a prize at the Gloucester meeting for the best water-drill, to drill four rows of Turnips with artificial manures on the flat, was, on the motion of Mr. Bramston, M.P., accepted with thanks by the Council.

**TULLIAN HUSBANDRY.**—On the motion of Sir Robert Price, Bart., M.P., the Rev. Samuel Smith's request for a small extent of trial-ground at Gloucester for the purpose of illustrating to the members of the Society the system of cultivation carried out by him at Lois-Weedon, in Northamptonshire, was granted by the Council, and instructions issued accordingly.

**FARM-POULTRY.**—The Council, on the motion of Mr. Jonas, seconded by Mr. Brandreth Gibbs, voted the sum of 100l., as the amount of prizes to be offered at the Gloucester meeting, for improving the breeds of Poultry best adapted for the purposes of the farmer; and referred to the Committee of last year the report with which the Council had been favoured by the Society's Judges of Poultry at the Lewes meeting, with a request for recommendations on the subject of the particular prizes to be offered in this department.

**SHROPSHIRE DOWNS.**—The offer of the Hon. Robert Henry Clive, M.P., to place the sum of 50l. at the disposal of the Council for Prizes to be offered by the Society at the Gloucester meeting, for "Shropshire and other grey and black-faced Short-wooled Sheep," was, on the motion of Mr. Simpson seconded by Mr. Jonas Webb, accepted with thanks by the Council. At the suggestion of Mr. Fisher Hobbs, the following classes for this division of Sheep were approved and adopted by the Council:—

For the best Ram of any age	£20
For the second-best Ram of any age	10
For the best pen of 5 Ewes of any age, with their lambs	10
For the best pen of 5 Shearling Ewes	10

**FEEDING WITH MILK.**—The recommendation of Mr. Milward and Mr. Kinder that in future years greater restriction should be placed on feeding with milk the cattle and sheep intended for the Society's shows of breeding stock, was, at the suggestion of Mr. Fisher Hobbs, referred for consideration to the next monthly meeting. As a breeder, which he still was of pigs, he might, as those animals were not affected by the regulations in question, take the opportunity of remarking, that however wholesome and necessary restrictions of feeding were to a certain extent, it would be desirable not to 'carry them so far as to induce unprincipled parties to evade their operation.

**LIVE STOCK.**—The conditions of the prizes for live stock at the Gloucester meeting, with the exception of those for poultry, and the general regulations of the show, were agreed to by the Council.

**CIRENCESTER COLLEGE.**—The Council ordered their thanks for the communications of Mr. Holland, the chairman of the Committee of Management, and of the Professors at the Royal Agricultural College at Cirencester, for their offer of co-operation in promoting the objects of the Society at its Gloucester meeting, and

referred these communications to the General Gloucester Committee of the Society for their consideration.

**COMMITTEES.**—On the motion of Mr. Milward, seconded by Mr. Bennett, it was resolved that in the future recommendations made by the Council to the General Meetings, of members to be re-elected on the Council, their attendance on Committees as well as at the Meetings of Council should be registered, printed, and taken into consideration, before such recommendations were offered.

**SOILS, FLAX, MANGOLD WURZEL.**—The offer of Professor Wilson to collect specimens of soils for the Society, and to deliver lectures before the members, on the subjects of Flax and Mangold Wurzel, were received with the thanks of the Council, who referred to the Journal Committee the consideration of the proposed lectures, with a request that they would report their recommendations at the next monthly Council.

**ABSORPTION OF AMMONIA.**—Professor Way, the Consulting Chemist to the Society, reported to the Council the recent discovery which, assisted by Mr. Mainwaring Paine, he had made on that gentleman's property in Surrey, of a natural source of silica, in the state known to chemists as "soluble silica." This deposit was situated in the lower beds of the chalk formation, immediately above the upper green sand, in quantities that would prove inexhaustible; and it was found in many instances to contain no less than 75 per cent. of the soluble silica in question. This substance so unexpectedly found ready-made to hand in nature, would be invaluable in a variety of ways in the manufacture of manure; and he desired an early day, if it met with the concurrence of the Council, in order that this discovery might in the first instance, and at once, be laid before the Society, as a link in that chain of investigations which had been originated and carried on under its own direction and at its own charge, in order that by such early announcement its advantages might be secured, free from monopoly, to its members and the agricultural community. The Council thanked Prof. Way for this important communication, and decided that his lecture on this subject should be delivered to the members of the Society in the Council Room on the second Wednesday in March, at 12 o'clock at noon.

**DEPOSITS OF GUANO.**—Mr. Caird's letter, on the desirableness of giving further encouragement to the discovery of natural deposits of guano, was referred to the guano committee.

The Council then adjourned over Ash-Wednesday, to the 16th of February.

### Farmers' Clubs.

**PROBUS, Jan. 22.**—At the annual meeting of this Club, held this day, Mr. Karkeek gave a lecture *On the Hereditary Diseases of Horses and Cattle*; and Mr. Whitley, of Truro, made some remarks on *Agricultural Geology*. We abridge the statements of both from the *Royal Cornwall Gazette*:—

Mr. Karkeek introduced his lecture by some prefatory remarks on hereditary diseases generally, showing how they were induced in animals by domestication, and by exposure to the operation of unnatural influences. "In a general way," he said, "the offspring is born free from disease, and it was not disease itself which was transmitted from parent to offspring, but organs or textures of imperfect kind, which were liable to be morbidly affected by causes which would produce no effect on limbs or textures soundly and normally developed." He treated the subject under three heads:—1. Those diseases which are induced by peculiarity of conformation. 2. Those in the transmission of which the condition of the blood may be supposed to be concerned. 3. Those in which the united agencies of both solids and fluids may be engaged. He illustrated the first part of the lecture by numerous examples in ossified diseases of the neck, pasterns, and other joints of the horse; such as spavin, splints, ring bone, and ossified cartilages. Horses most liable to spavin, he said, were those possessing upright, short, pointed hocks, wanting width and breadth below, and disproportionately small compared with the upper portion. Those most disposed to ring bones were horses having upright pasterns and high action, whilst ossified cartilages were common to the heavy draught breeds. The reason of this liability he attributed to peculiarity of structure, and showed how concussion was very likely to be produced in joints of this description, by which inflammation of a chronic kind followed, and osseous effusion was the result, causing partial or complete lameness, depending more or less on the situation and the extent of the deposition. Curbs, he also considered to be hereditary, the consequence of peculiarity of structure of the hock joint, likewise various diseases of the feet of horses. "There was a strong hereditary tendency," he said, "in various diseases of the feet. Sometimes the hoofs are disproportioned to the frame, being either too small, wanting sufficient base to support the superincumbent weight, which renders the footing insecure. At other times they may be too large and unwieldy, rendering the action slow and clumsy. At other times the crust of the hoofs was naturally weak from a faulty secretion of horn. Such hoofs are generally uneven, indented, and wrinkled, having flattened soles, with a disposition to become pumiced. Sometimes the crust was found morbidly dry and brittle, from a want of that peculiar tough elastic material which connects the longitudinal fibres of the crust together. Such hoofs were disposed to sandcracks. All these defects are found to exist in horses of various breeds or kinds, and were propagated in the race." Some of the diseases of the respiratory organs were adduced as examples of hereditary tendency to disease of the internal parts of the body, depending on something defective or ill-balanced in the organisation. Rearing, a disease of the upper portion of the windpipe, he adduced as an example, and mentioned numerous cases which had occurred in the neighbourhood in proof of his position. Broken wind, also, he considered, frequently had an hereditary origin, and he showed the folly of farmers breeding from broken-winded mares, the progeny, in a great number of cases, inheriting a tendency to the disease. He said he had known the progeny of a broken-winded mare similarly diseased in three consecutive instances, and the history of one of them, a farm mare, could be easily traced in two cases, her colts also becoming broken-winded at an early age. Tubercular phthisis, or consumption, in cows, and the choke-ill, so frequently met with amongst working oxen in Cornwall, he adduced as examples of a scrofulous character, and which were recognised as constitutional disorders, continued from one generation to another, partly through the medium of the blood, and partly through the solids. Constitutional ophthalmia was also another disease of an hereditary character, depending on some peculiar state of the blood, and involving the same question as gout in the human subject, though perhaps more dependent on occasional exciting causes from without. When

the hereditary tendency exists, the disease was quickly produced in colts and young horses that were exposed to the miasmas arising from crowded, dirty, and imperfectly ventilated stables. In conclusion, Mr. Karkeek pointed out to his audience the important practical relation which the subject of hereditary disease bore to their pursuits, it being one that could not fail to enter as an element in the breeder's estimate of the purity and value of an animal's breed, and to form an object of special regard in the breeding of stock.

Mr. Whitley, in the course of his remarks on *Geology and Agriculture*, referred to a review of his work on that subject, which appeared in the *Agricultural Gazette*, p. 141, 1844. He said,—

"They had all read the valuable work in their library, Morton's valuable work on soils. When that work came out, some 10 or 15 years ago, it was considered a very valuable addition to agricultural literature. The theory advanced by that gentleman—that soils were formed by the crumbling down of the rocks by which they were supported—was not only advocated by him, but it was generally received for some time. Mr. Morton was looked on for a time as the great gun of the day—assumed a very high position, rode his hobby with flowing reins, whip and spur, and would give a lash to any one who dared to differ from his peculiar views and opinions. In an unfortunate day, perhaps (said Mr. Whitley), I turned my pen that way and wrote a little work on *Agricultural Geology*; and my views did not happen, I believe, to accord with the views of the able gentleman who had preceded me. I had a newspaper put into my hand one day, and was told to 'read two columns of the *Agricultural Gazette*, and keep my temper.' (Laughter.) Mr. Morton appears to be the Editor of this Paper; and he certainly did lash me and spur me and whip me, till the blood got up in my cheeks as I read that article. I do think he did it most unfairly; and he wound up by recommending 'Morton on Soils.' (Laughter.) He accused me of having followed and copied a great deal from him on that occasion. But the fact is, my theory on the formation of soils was altogether different from that of Mr. Morton. The theory which I brought forward was that soils were formed by deposition from water—that some vast torrent of water had swept over the whole country, tearing up the surface, and holding its parts in mechanical suspension; that stones, clay, and rubble sank down first; and then the subsoil of various clayey materials went down next, forming an admirable material for retaining the moisture of the earth; and that then the finer earthy matters were deposited over the whole. And if you look to any section of soils you will be pretty sure that something like this was the way in which soils were formed. I do not mean to say that that was wholly right; but probably it was a little in advance of Mr. Morton's theory—that soils were formed by the gradual crumbling down of the materials of the rocks on which they are found. Since that, we have been favoured with an excellent and valuable essay by Mr. Trimmer—a gentleman connected with the Geological Survey, who won the prize last year for the best Essay on the *Agricultural Geology of England and Wales*. He not only gives up Mr. Morton, as I gave up Mr. Morton, but he goes beyond us both, to this extent—that the geological formation beneath the soil has comparatively very little to do with the soil itself—he shows that nearly over the whole of England, the soil has been formed of drifted materials that have gone over other formations, and that thus we find soils differently constituted from the rocks on which they rest. With all due respect to the high authority of Mr. Trimmer, I think he has pushed his hobby a little farther than it will legitimately bear; for in our own neighbourhood I find that the soils are formed mainly from the rocks beneath; and it is only here and there we find soils of drifted materials. A few days ago I was at a place in the parish of St. Austell, and found a soil of drifted materials over an extent of 4 or 5 acres. But, mainly, I may say, the soils of our country have been formed by deposition from water."

[We give Mr. Whitley's remarks in full, as they convey a pretty correct history, during the past few years, of the theory of geology in its relation to agriculture. Mr. Whitley, however, is wrong in two or three of the particulars to which he alludes. Mr. Morton, the author of the work on *Soils*, never was the editor of the *Agricultural Gazette*—never saw the review of which Mr. Whitley complains until after its publication, if indeed he saw it then, which we are unable to say—never gave a "lash to any one who dared to differ from his peculiar views," and never did anything in public defence of them beyond editing the successive editions of his work as they were called for. The review in question was not an editorial article, and did not express our views at the time, though as honestly expressing the opinions of a far more competent authority on geological subjects, we did not feel at liberty to refuse its publication. We may, however, remark that it "wound up," not by recommending Morton on *Soils*, but by a word in praise of, and an extract taken from, Whitley on *Agricultural Geology*.]

### POULTRY.

THE DONCASTER ASSOCIATION has started into existence under the most flattering and encouraging auspices. Its entries are splendid; and as a beginning cannot be excelled. Every class has its admirers: and in many instances has brought together such a list of competitors, that, excepting the Birmingham and the Metropolitan shows, it is, we believe, without a rival. The entries were closed on Saturday week, to the honorary secretary, Mr. Henry Moore. The following is an analysis:—

PIGS.		CLASS	
CLASS			
I.	1	XXI.	13
II.	1	XXII.	14
III.	8	XXIII.	8
IV.	9	XXIV.	12
V.	7	XXV.	24
VI.	20	XXVI.	5
VII.	23	XXVII.	2
VIII.	9	XXVIII.	11
IX.	22	XXIX.	22
X.	5	XXX.	2
COTTAGERS	5	XXXI.	4
	105	XXXII.	4
		XXXIII.	7
		XXXIV.	13
		XXXV.	4
		XXXVI.	22
		XXXVII.	8
		XXXVIII.	1
		XXXIX.	30
		XL.	321
		Number of Exhibitors	127,
		who showed 105 pens of Pigs,	
		321 pens of Fowls.	
		Total number of pens, 426.	

We were very much pleased with this exhibition. It was, indeed, gratifying to behold the beauty and splen-



dour in which many of the birds had been brought to the show; and it was reasonable to hope that whilst Doncaster can, in so short a notice, produce such an exhibition as was witnessed this day, it is destined to vie with any in the kingdom. The game birds were better, we are assured by a gentleman who was present at the Birmingham show, and superior to Baker Street. In our remarks we have no wish to speak disparagingly of any, as we are satisfied that the respective breeders have done their best to bring them to the show in the best possible condition. We are again pleased to have it in our power, through the unbiased opinion of the judges, to assert that Doncaster carried off the first prize in class 10, for the best golden-spangled Hamburgh cock. It was awarded to Mr. Edward Auckland, of the Red Lion Hotel. The Rev. Arthur Fullerton displayed a splendid pair in class 11. Mr. W. B. Tate, who seems to be an excellent amateur and a good judge, was successful in class 13. The comb of the male was very fine and the colour good; but that shown by Wm. Hall, Esq., No. 136, in class 14, was splendid, and was as perfect as could be wished. Messrs. Hall & Co. produced the best game cock and hen in class 16, and it would appear that they are in no hurry to part with them, for the sum of 20*l*. was the price asked for them. The most beautiful birds ever witnessed in Doncaster were the splendid game cock and hen of William Mellows, Esq., of Carburton, No. 169, in class 17. This class, certainly, was, without exception, really splendid. H. Eddison, Esq., of Gateford, was second in the prize list. The head and neck of this pair were perfect, and well might they receive the admiration of all. London could not equal this. Reluctantly leaving these beauties, we proceeded to the far-famed Cochins China department, which, for novelty, were not the least attractive in the exhibition; and we found that Mrs. Batty, of Ackworth Grove, had the honour of receiving the premier prize in class 26. Mr. George Hatfield obtained the second prize, and the pair were much sought after and admired for shape, plumage, and size. In class 27, Sir Thomas W. White was an exhibitor; and although not successful, he was not at all disposed to depreciate the value of his birds; for over the pen was conspicuously placed "10,500*l*," and underneath some person afterwards wrote in pencil, "Who bids?" We presume that the gallant colonel did not mean to have any questions asked him as to their value. They are evidently favourite birds and no money will buy them. Mr. Thomas Hudson, of Wakefield, exhibited "a rare bird for his age." H. Lister Maw, Esq., of Tetley, exhibited some very fine specimens in class 30. Mr. T. Kendall, of Goole, had a very handsome pair of the Spanish breed in class 22. The plumage was remarkably fine. The same remark applies to R. J. Bentley, Esq., of Finningley Park. We were glad to observe that Mrs. William Workman, of Adwick-le-Street, carried off the first prize class 23. This pen (Spanish cock and pullet) was very superior, and in admirable condition. The display of ducks, geese, and turkeys was excellent—probably the finest ducks shown, not excepting Birmingham, were the magnificent pair from Marr Grange. For size, plumpness, and colour, they were unsurpassed. H. Lister Maw, Esq., sent a noble pair of turkeys in class 39. In class 36, No. 345, 20*l*. was the value put upon a drake and duck (White Aylesbury). W. F. Hoyle, Esq., of Ferham House, Rotherham, exhibited the best gander and goose. It is impossible in a rapid notice of this kind to state the peculiar merits of each; but to embrace all in the expression, that the poultry department exceeded all anticipations. The show of pigs came fully up to expectation, but for a description of this department we have not room. *Abridged from the Doncaster Gazette.*

We should be glad if this column could be made useful to amateurs—as many have desired—as a medium of intercommunication, even on such subjects as the exchange or sale of specimens; but we must keep clear of the advertisement duty, which is chargeable upon all announcements of objects for sale.

**POULTRY: G. H.** All doctoring of fowls is more or less empiricism; but nothing more can be done. An eminent surgeon in London has been at work two years, and has 20 times given it up, but I believe he will still carry out his intention of publishing a work on the diseases of poultry. The editor of the "Cottage Gardener" recommends ergot of Rye for an egg-bound hen, but I have never tried it. I dare say it is good; but I am told it is not sold to the public, only to medical men, as its uses in medicine render it an improper thing to be in houses. I am not finding fault with the prescription, but I would advise my poultry friends, before they despatch a mounted messenger with a humble note to their medical adviser begging a little of the forbidden remedy, to dip a feather in oil, and gently insert it until it reaches the egg. When this is done, press the end gently, and the egg will appear. When no oil is to be had, a feather alone will do it. While judging at Birmingham I saved a valuable hen in this way with a feather only. Have patience and your hens will lay. There is a season for everything; and mild as January is in 1853, it is not the time of year when hens are most prolific.—*Orate's Wife.* I would advise you to set your hens at once, early chickens are the most valuable; and of late years I have repeatedly said that February is a better month than April.—*B. E.* The Birmingham prize lists will shortly be published. I cannot say whether the days of exhibition are abridged; but, as I have before stated, I believe the poultry public is greatly indebted to the Midland Counties' committee, and may safely leave themselves in their hands.—*B. G.* Redness of comb is an indication of good condition in a fowl, and always considered a sign of laying being at hand. The cackle you mention is often heard when the eggs are far off.—*G. P.* Gloucester. It is difficult to assign the cause of the falling off of the hickles, but we always think it proceeds from heat of the skin, which dries up the secretions, that should feed the feathers, and can see them to die away instead of growing. Is "G. P." are they not picked off by the other fowls; it is a common thing when birds are out of condition, and especially when they have been fed on raw meat, and it is withheld, for them to pick growing feathers, which bear the strongest

resemblance to the food they wish for. If they fall off naturally, I should recommend to rub the naked skin with any grease that has neither salt, flour, nor any foreign substance in it: fresh marrow is a very good thing. If they are picked out, wash the culprits and remove them. In both cases give a tablespoonful of castor-oil, and let the birds have generous, but not stimulating, food, also a good Grass run. There will soon be plenty of poultry medicine growing, and the fowls will find it, if the opportunity is afforded to them. I expect the perches are too high, and the lameness comes from injury to the ball of the foot, in flying down from them. If it is so, put them within two feet of the ground. I am not aware when the prize-list and forms of entry for the R. A. S. E. show at Gloucester, will be ready. You had, probably, better apply to the Secretary of the English Agricultural Society. *J. Bailey, 113, Mount Street.*

## Review.

### *A Guide to the Royal Agricultural College Farm.* 1853.

A CATECHISM of the present condition of the farm, and of the various agricultural subjects which would probably arise in conversation with the manager as visitors walk round the fields and the buildings. It is principally intended for the use of students, but contains much useful information which would interest our readers. We select a passage on the reaping-machine tried on the farm last harvest, as an illustration.

"Reaping machines, like all other new implements, must fight their way against the common prejudice, against innovation on ancient customs. The machines themselves are not yet perfect; and their operations last harvest were much impeded by bad weather, the want of willingness on the part of the operatives, and the requisite knowledge to work them. In this field, Hussey's machine cut down three acres in two hours and six minutes. Twelve men bound up the sheaves. Two horses worked the machine; at this rate the cost of reaping an acre of Wheat was only 3*s*. 6*d*. Admitting that double the labour was done during this trial which would be done in daily practice, the cost would then be but 7*s*. per acre. Field, No. 2.—Twenty-one acres, was all cut by the 'Reaper,' at the rate of more than an acre an hour, and cost about 4*s*. 6*d*. per acre. In the cases mentioned, everything was favourable for the working of the machine. The corn was standing, and the soil comparatively dry. When the land was wet, or the corn damp, Hussey's machine would not work, and we were obliged to have recourse to the scythe. We tried and tried again to make this reaper act on wet ground, but the wheels always clogged, and we were obliged to conclude that the implement was only calculated for fine weather, for upright corn, and dry ground. Whilst we were learning the use—the merits and defects—of Hussey's reaper, a challenge was sent by the agents of McCormick's reaper. This was arranged, and the trial made as stated in field No. 8. McCormick's machine, on the day of trial, was indeed beaten by Hussey's, simply because his agents failed to have their implement in proper working order. The public, however, from the progress which McCormick's machine made, were in favour of it, and seemed highly disappointed that the implement was not properly put together. Another trial was pressed for, McCormick's machine against Hussey's, to convince the public which was the machine of the two. This second trial extended over nine days, on all kinds of corn, during exceedingly wet weather, and proved a better test of the respective merits and defects of the machines than any previous trial made in England. A committee of inspection investigated the working of the reapers, and decided in favour of McCormick's. McCormick's machine is of easy draught for the horses, and cuts all kinds of corn in all weathers, and is not liable to clog on the driving wheel, unless the land is very wet and sticky. 'Hussey's' clogged repeatedly on the driving wheel, and would not cut damp corn well—nor at all when mixed with seeds. 'Bell's' machine has many points in its favour, but has not succeeded in cutting corn well where there is much undergrass—especially when the undergrass is wet. Thus, Bell's and Hussey's are both dry-weather machines. In Scotland, where corn is seldom cut damp, Bell's machine will be of more service than in England, where there are many reasons why corn may be cut damp or even wet. There has been much talk as to whether it is most advantageous for a reaper to deliver the corn at the side in sheaves, as with McCormick's, or in a stream or continuous swathe, as with Bell's. McCormick's requires a man to deliver the sheaves from the side, Bell's does not. On the other hand, a reaper should cut ten or a dozen acres a day, and this quantity would require half a dozen hands to gather it into sheaves. Upon the whole, I think McCormick's machine of more practical use for economising the labour of harvest than any other yet before the British public. It can cut all kinds of corn under any circumstances, save that which is much laid. All reaping machines are open to this objection, and some of them to many more. It is evident that a reaping machine before it can be entirely depended upon for a harvest implement, should be such as would work whenever a farmer would send his men into a field with a scythe. No other machine but McCormick's has been found equal to this task. The partial mid-day trials for a few hours, which have been made in many parts of the country, were not sufficient tests. The prolonged trial here has undoubtedly afforded more opportunities for judging of the intrinsic merits and defects of the rival reapers, than all other trials put together. There is no doubt, however, but that both Bell's and Hussey's machines would work well in all ordinary cases, in all ordinary harvests; and are calculated to economise time

labours of harvest very much. Those who are opposed to reaping machines in toto, base their condemnation—first, upon the fear of destroying labour; and, secondly, because they cannot cut corn much laid. The first objection has so little reason in it that we need not approach it. The second objection requires but a few remarks to be overcome. Although some acres of laid corn on a farm could not be cut by the 'reaper,' it does not follow that the machine should not be used with economy in its proper place. If only 100 acres of standing corn, on a farm with 200 acres of laid, were cut by the 'reaper,' at half the usual cost by the sickle, would there not be 20*l*. saved in labour to expend if necessary on the laid corn? Would laid corn cost any more to cut it with a scythe or sickle, because the 'reaper' could cut standing corn? It is no imaginary statement to say that 20*l*. would be saved by the 'reaper' in cutting down 100 acres. On this farm we paid 9*s*. 6*d*. per acre for reaping by sickle, whilst a whole field was cut down, bound up in sheaves, and finished off as well as the reaped corn for 4*s*. 6*d*. On 100 acres there would be a difference of 25*l*."

## Notices to Correspondents.

**AGRICULTURAL CHEMISTRY:** R. F. W. Professor Johnston's Lectures on Agricultural Chemistry and Geology.

**CANKER IN THE EAR:** J. A. Bell. Sulphate of zinc, 5 grains; acetate of lead, 5 grains; distilled water, 2 ounces. Pour a little in the ear, daily, moderately warm. *W. G. S.*

**DRAINING:** *Arden's Admirer.* Your outlet must be the lowest point in your system of drains. If you drain ever so deep, even so that the pipes are level with the very bottom of the central pond, then unless your outlet be below that level your labour will have been useless. If the water has to rise in the pond until it can reach the escape pipe, then it is of no use making the drains in the field deeper than the height of that level to which the surface of the pond must rise. You must cut a deep outlet as the first step.

**GESTATION:** *W. M. Z.* The usual period is 63 days. What is known of unusual cases will be stated next week.

**LOIS WEDDON:** *G. B. & Co.* Ridgway, Piccadilly, is the publisher. You should apply to the author himself—we cannot speak for him.

**OTHERS:** *G. C.* Salix purpurea or S. rubra will grow on wetter ground than any other sort.

**TANK:** *Glaucon.* You do not state dimensions. The rain would not be too much for dilution. But if the liquid be undiluted urine, a covering will be advisable, on account of the loss by evaporation which would otherwise follow. Some slight timbers, covered with faggots and thatch, would serve the purpose for 10 years. If the tank be not very large, it may be shallow domed over, without much expense. If it be very large, there must be either a central support, and flat covering, or a regular roof.

**WEIGHT OF CATTLE:** *G. Redivivus.* The rule results in imperial stones, and you will find that 66 imperial stones is very nearly 116 Smithfield stones.

## Markets.

COVENT GARDEN, FEB. 5.

The market is still well supplied with Vegetables; but table Peas and hothouse Grapes continue scarce. The former are almost entirely confined to Beurre Rance of but second-rate quality. The supply of Pine-apples is pretty well kept up. A few forced Strawberries have made their appearance. Apples are getting scarce. Cob and other Nuts are realising fair prices. Both Sea-kale and Rhubarb are now tolerably abundant; and Asparagus is becoming more plentiful and good. Potatoes have not altered in value since our last report. Mushrooms are scarce. Cut flowers consist of Heaths, Primulas, Early Tulips, Roses, Mignonette, and Camellias.

## FRUIT.

Pine-apples, per lb, 6*s* to 8*s*  
Apples, dessert, p. bush, 6*s* to 10*s*  
— kitchen, do., 6*s* to 10*s*  
Pears, per doz., 1*s* 6*d* to 4*s*  
Lemons, per doz., 1*s* to 2*s*  
Oranges, per doz., 1*s* to 2*s*

Almonds, per peck, 5*s*  
— sweet, per lb., 2*s* to 3*s*  
Nuts, Barcelona, per bush, 20*s*  
— Cobs, 110*s*  
Chestnuts, p. bush, 8*s* to 20*s*.

## VEGETABLES.

Cabbages, per doz., 6*d* to 1*s*  
Brussels Sprouts, per hf. sieve, 1*s* to 2*s*  
Broccoli, per doz., 2*s* to 3*s*  
Greens, per doz., 1*s* to 2*s*  
French Beans, per 100, 3*s*  
Asparagus, per bundle, 5*s* to 8*s*  
Sea-kale, per bskt, 1*s* 6*d* to 2*s* 6*d*  
Rhubarb, per bundle, 9*d* to 1*s* 6*d*  
Potatoes, per ton, 85*s* to 140*s*  
— per cwt., 5*s* to 9*s*  
— per bush, 2*s* 6*d* to 4*s* 6*d*  
Turnips, per doz., 1*s* to 1*s* 9*d*  
Cucumbers, each, 1*s* to 3*s*  
Celery, per bundle, 9*d* to 1*s* 3*d*  
Carrots, per doz., 2*s* 6*d* to 4*s*  
Spinach, per sieve, 1*s* to 2*s*  
Onions, per bushel, 2*s* to 3*s*  
— Spanish, doz., 2*s* to 5*s*  
Beet, per doz., 1*s* to 1*s* 6*d*

Leeks, per bunch, 1*d* to 2*d*  
Shallots, per lb., 6*d* to 8*d*  
Garlic, per lb., 6*d* to 8*d*  
Lettuce, Cab., per score, 4*d* to 8*d*  
— Cos, per score, 8*d* to 1*s* 6*d*  
Radishes, per doz., 9*d* to 1*s*  
Endive, per score, 1*s* to 1*s* 6*d*  
Small Salads, p. pun., 2*d* to 3*d*  
Horse Radish, p. bundle, 1*s* to 3*s*  
Mushrooms, p. pott., 1*s* to 1*s* 6*d*  
Sorrel, per hf. sieve, 6*d* to 1*s*  
Artichokes, Jer., doz., 9*d* to 1*s* 3*d*  
Fennel, per bunch, 2*d* to 3*d*  
Savory, per bunch, 2*d* to 3*d*  
Thyme, per bunch, 2*d* to 3*d*  
Parsley, p. doz. bunchs, 2*s* to 3*s*  
Mint, green, per bunch, 4*d* to 6*d*  
Basil, per bunch, 3*d*  
Marjoram, do., 2*d* to 3*d*  
Watercresses, p. 12 bun, 4*d* to 6*d*

## WOOL.

BRADFORD, THURSDAY, FEB. 5.—The past week has been one of careful inquiry and watching among the spinners, but their purchases have been exceedingly limited. The prices sought are a complete barrier to business, and the whole trade seems to watch the opening of the Wool sales, fixed for the 10th, in London, with more than ordinary interest. The increased rate of discount and uncertainty of large buying for foreign account, with a large quantity offering, gives, and properly so, a strong feeling of caution to those requiring colonial wools. In mohair, alpaca, and English wool, the supply is far short of the quantity held 12 months ago, and without a very close curtailing of the spindles, there is but little if any hope of any ease in the price this side clip day.

POTATOES.—SOUTHWARK, JAN. 31.

During the past week the arrivals have been large, particularly from France, and trade very heavy, except for very fine samples of Regents. The following are this day's quotations:—York Regents, 80*s*. to 140*s*.; Lincolnshire do., 70*s*. to 100*s*.; Scotch do., 80*s*. to 100*s*.; Scotch Reds and Cups, 70*s*. to 80*s*.; French whites, 70*s*. to 80*s*.; Dutch, 60*s*.

COAL MARKET.—FRIDAY, FEB. 4.

Wallend Harton, 16*s*. 9*d*.; Wallend Haswell, 18*s*. 9*d*.; Wallend Hetton, 18*s*. 6*d*.; Wallend Stewart's, 18*s*. 6*d*.; Wallend Tees, 18*s*. 6*d*.—Ships at market, 79.

SMITHFIELD.—MONDAY, JAN. 31.

There is a large supply of Beasts, and of good quality. The choicest still reach 4*s*, but this is an extreme quotation. Trade is slow for inferior kinds, and some remain unsold. The number of Sheep is about the same as on Monday last. Trade is not so brisk, and it is with difficulty the quotations of that day are realised. Good Calves are readily sold at Friday's prices. From Germany and Holland there are 539 Beasts, 1160 Sheep,



The only genuine of each bears the name of "Rowlands" preceding that of the article on the wrapper or label.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.



## Sales by Auction.

## HER MAJESTY'S ROYAL FORESTS' OAK BARK FOR SALE.

One Thousand Nine Hundred Tons of Timber, Flittern, and Sapling Bark, in Stock, situate in the New Forest, Dean Forest, Whittlewood and Saley Forests, Wychwood Forest, and at Hainault.

**MESSRS. DRIVER** have been honoured with instructions from the Right Hon. T. F. Kennedy, the Commissioner in charge of her Majesty's Woods and Royal Forests, to offer to public competition, at the Auction Mart, Bartholomew Lane, London, on THURSDAY, the 3d day of March, at 12 o'clock, in Lots, about 1900 Tons of excellent Timber, Flittern, and Sapling Bark, of good quality, and a considerable portion in capital condition from Timber and Sapplings felled last spring, all of which is in stock in the following respective Forests, viz.:

- About 183 tons in the New Forest, in the County of Southampton.
- 1025 tons in the Forest of Dean, in the County of Gloucester.
- 286 tons in the Forest of Whittlewood, in the County of Northampton.
- 43 tons in the Forest of Saley, in same County.
- 238 tons in the Forest of Wychwood, in the County of Oxford.
- 158 tons at Hainault, in the County of Essex.

All of which will be divided into lots suitable for the accommodation of all classes of purchasers, and sold at per ton. The Park in the New Forest may be inspected on application to Mr. L. H. CUMBERBATCH, Deputy Surveyor, New Park Farm, Lynton, Hants; that in the Forest of Dean on application to Mr. E. MACHES, Deputy Surveyor, Whitemead Park, Coleford; that in Whittlewood and Saley Forests on application to Mr. LUNNELL, Deputy Surveyor, Hartwell Lodge, Saley Forest, Northampton; that in Wychwood Forest on application to Mr. LUNNELL and Mr. R. MORRIS, Ascot, Burford, Oxfordshire; that in Hainault on application to Mr. JOHN McCLECHERIE, of Little Heath, Barkingside, of all of whom printed Catalogues, with conditions of sale, may be had, also at the Office of her Majesty's Woods and Forests, 2 Whitehall Place; at the Auction Mart, Bartholomew Lane, London; of Messrs. CLUTREX, 8, Whitehall Place; and of Messrs. DRIVER, Surveyors and Land Agents, 5, Whitehall, London.

## NEW FOREST, HANTS.

BY ORDER OF THE COMMISSIONER IN CHARGE OF HER MAJESTY'S WOODS AND FORESTS.

**MR. CHARLES NORTON** will Sell by Auction, at Lyndhurst, on THURSDAY, the 17th day of February, 1853, at 1 o'clock in the afternoon precisely, about 1400 Loads of ROUND OAK TIMBER, and 400 Loads of HEWN OAK TIMBER.—For further particulars and for Catalogues of sale apply to L. H. CUMBERBATCH, Deputy Surveyor, New Park, Lynton.—Feb. 5.

## GRANTCHESTER NURSERY, CAMBRIDGE.

**MESSRS. PROTHEROE AND MORRIS** are instructed by the Proprietor (who is declining the nursery business), to sell by public Auction, early in March, the whole of the valuable NURSERY STOCK, consisting of an excellent assortment of Evergreens and Deciduous Shrubs; 7000 Standard, Half Standard, and Dwarf Roses, of all the leading kinds; 2000 Herbaceous and Alpine Plants; Roses in pot; a few fine specimens of Coniferous Plants, &c.; a quantity of smaller sizes; Camellias, Ericas, Epacris, and other hard-wooded Plants. Further particulars will appear. Also in May, the entire stock of soft-wooded Plants: consisting of Dahlias, Geraniums, Cinerarias, Bedding Plants, &c., with the newly erected Greenhouses, Pits, Frames, and utensils in trade.—American Nursery, Leytonstone.

## GREAT SALE OF ORNAMENTAL PLANTS AND FOREST TREES.

**THE TRUSTEES ON THE SEQUESTERED ESTATE OF THOMAS LANG**, Nurseryman, Kilmarnock, has instructions to Sell Off, within a limited time, the whole of his large and varied Stock of Forest and Ornamental Trees, Shrubs, Evergreens, Greenhouse Plants, &c.

The Stock has been pronounced, by the most competent judges, to be complete and in most excellent order, and it will be offered at very low prices.

The rate of carriage, per luggage train, on large lots, from Kilmarnock to London, is now only 40s. per ton.

The following are the quantities of some leading articles:—

Larch, transplanted, very fine	230,000
Scotch Fir, transplanted, very fine	170,000
Thorn, transplanted, very fine	250,000
Beech, transplanted, very fine	70,000
Portugal Laurel, twice transplanted	10,000
Apples, a very select assortment	2,500
Fruit-trees, a first-rate selection	1,000
Trained Fruit-trees, very healthy and fine	1,000
Gooseberries, all the leading sorts	10,000

## BEAUTIFUL NEW WEEPING WILLOW.

The Trustees to send out good Plants of *Salix caprea pendula*, or Kilmarnock Weeping Willow. This Willow being indigenous, is quite hardy, and is the most pendulous of all Weeping Trees cultivated in this country. It has large broad glossy leaves, which, in spring, are preceded by a profusion of gold-coloured catkins, rendering it at that season a most singular and beautiful ornament to the pleasure ground.

Furnished Plants	3s. 6d. each.
Grafted on tall stems	10s. 6d. "

Furnished Plants may also be procured from the following nurserymen:—T. Rivers, Sawbridgegorth; W. Wood & Sons, Maresfield; A. Paul & Sons, Cheshunt; Dickinsons & Co., Edinburgh; R. M. Stark, Edinburgh; Dickson and Turnbull, Perth; Howden Brothers, Inverness; Austin and Maclean, Glasgow; H. Walker, Londonderry; R. Fennessy and Son, Waterford.

Communications to be addressed to Mr. JOHN DICKIE (of Alex. Fowlds & Co., Swedenborg), Kilmarnock, Trustees on the Estate; and a list may be had on application.

Kilmarnock, Feb. 5, 1853.

## BLACK SPANISH FOWLS.—THE ADVERTISER

being convinced, after much trouble and expense, in testing the best varieties of different breeds of Poultry, that the Black Spanish are decidedly preferable as the Poultry for the Million, has selected from the various Shows (in addition to his own Stock), a small but valuable collection of these most beautiful Birds. Before desiring of bringing them within the reach of all classes, he will charge 5s. for 12 Eggs, box and packing included; 10s. per pair for Chickens from 2 to 3 months old, hampers, &c., included; he can also spare a few pair of his last year's Birds, at 20s. per pair. As the object of the Advertiser is to increase the breed of this most useful description of Poultry, no orders will be taken for more than one pair of Chickens, or one sitting of Eggs, and the orders will be supplied in the rotation in which they are received. These Birds are quite equal to those advertised at from 40s. to 60s. per pair. The Advertiser having separate runs for his Poultry, the Eggs will be sent in equal quantities from each place, and also the Chickens, to prevent breeding from the same stock. Money Orders to be made payable to the Nottingham Post Office. Address to WILLIAM MILBURN, Farm House, New Basset, Notts.

(This Advertisement will not be repeated.)

## COCHIN CHINA FOWLS.

**MR. STRAFFORD** has received instructions from Thomas H. Potts, Esq., Kingswood Lodge, near Croydon, to offer for sale by Auction, without reserve, at the Bazaar, King Street, Portman Square, on THURSDAY, Feb. 10, at 12 o'clock precisely, 120 lots of first-class COCHIN CHINA FOWLS, including some imported hens of great weight and other fowls purchased and bred with great judgment, principally from the far-famed stock of Mr. Andrews, comprising a number of lemon, buff, and cinnamon chickens, bred from the above, many of which have taken prizes at the Great Metropolitan, Bristol, Reigate, Torquay, and other Shows.—Catalogues, with full particulars, may be had upon application to Mr. Strafford, 89, Guildford Street, Russell Square; or at the Offices of the Bazaar, King Street, Portman Square.

## COCHIN CHINA AND OTHER FOWLS.

**MR. J. C. STEVENS** begs to announce that the next Periodical Sale of FANCY POULTRY will take place at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 15th inst., at 12 o'clock precisely. Many of the Cochin China Fowls are well deserving attention, they are from the stocks of E. J. Simpson, Esq., of Sandbach, Joseph Symonds, Esq., of Gorse, Mrs. Stow, of Bredon, and several other well known and successful exhibitors, altogether numbering nearly 200 Lots. May be seen on the morning of Sale, and Catalogues forwarded on receipt of a stamped directed envelope inclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

## BIRDS' EGGS.

**MR. J. C. STEVENS** is instructed to announce for Sale by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, Feb. 11, at 12 for 1 o'clock, the COLLECTION OF EGGS belonging to J. R. Wise, Esq., of Lincoln College, Oxford, in which will be found many very choice sorts, as Eagles, Vultures, Gyr Falcons, Kites, Buzzards, Owls, Turnstones, Bustards, Little Auk, Phalaropes, &c., &c. Catalogues will be forwarded on receipt of a stamped directed envelope, inclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

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THORNHILL AND DICKSON (Late VERNEY), No. 1, Wine Street, and Lawrence Hill Nurseries, Bristol, beg to call attention to their stock of new seeds for the Kitchen Garden, Flower Garden, and Field. The following will be found well worthy of attention. Superior varieties of

CUCUMBERS.—Model, quite new, and without exception the finest variety of the season, (per packet) 2s. 6d.; Ellis' Prolific, do, much recommended as an immense bearer, and fine crisp fruit, (per packet) 2s.; and other best varieties, (per packet) 1s.

MELONS.—Trentham Hybrid (Fleming's), new, very superior, (per packet) 1s. 6d.; Bromham Hall, do, excellent sort, fine flavour, (per packet) 1s. 6d.; Hoosaine, fine show variety, do, much recommended to all who are growing for competition, (per packet) 1s.; and many other choice sorts, (per packet) 1s.

CELERY.—Bosson's Prince Albert, beautiful pink, very large and solid, flavour unequalled, in sealed packets, warranted genuine (per packet), post free, 1s. 6d.

N.B.—An immense stock of Bedding plants will be ready in Spring.

THE ONLY CUCUMBER that has as yet obtained a Silver Medal at the Exhibitions of the Royal Botanic Society, Regent's Park, is

#### HUNTER'S LONG PROLIFIC.

It has also been awarded First Class Prizes at Colchester, High-bury, and other Exhibitions.

Price, per packet, 2s. 6d., to be had of the Subscriber, or of Mr. REYRICK, Seed Merchant, 107, St. John Street, West Smith-field.—JOHN HUNTER, 5, King Street, Islington, London.

ESSEX HERO CUCUMBER.—This splendid black spine variety gave such general satisfaction last season that it needs very little recommending, suffice it to say, that five prizes were gained by it at the May Show, in Ipswich, last spring; Eight Seeds will be sent post free, on the receipt of 30 postage stamps; or Plants delivered at Colchester Station, at 1s. 6d. each pot.

Also Chamberlain's Fine RIDGE, which is decidedly the best Hardy Cucumber. (See the disinterested opinion of a Manchester gentleman, in *Gardeners' Chronicle*, Nov. 27, 1852, page 757.) Twenty-four Seeds will be sent free by post, on receipt of 12 postage stamps; or a packet of this and one of Essex Hero for 3s. 6d.

JOHN CHAMBERLAIN, Great Horkesley, Colchester, Essex.

T. APPELBY, LANDSCAPE GARDENER, GARDEN IMPROVER, NURSERY AND SEEDSMAN, Victoria Nurseries, Uxbridge, Middlesex, begs to inform his friends and the public in general that his Catalogue of new Seeds is now ready, and will be sent, on pre-paid application, to any part of the United Kingdom. The seeds are all of last year's growth, and every article is warranted good and genuine.

T. A. has opened a register for Gardeners, Foresters, and Land Bailiffs. All such wishing to obtain situations are invited to send their names, ages, and qualifications, to the above address, to be entered free of charge. And all Noblemen and Gentlemen requiring such servants may hear of them by application to T. APPELBY.—Victoria Nursery, Feb. 5.

#### LILIAM LANCIFOLIUM, RANUNCULUSES, AND ANEMONES.

HENRY GROOM, CLAPHAM RISE, near LONDON, by Appointment Florist to her Majesty the Queen and to his Majesty the King of Saxony, begs to recommend to the attention of the Nobility, Gentry, and Amateurs, his extensive assortment of the above FLOWERS, which, from the large stock he possesses, he can supply at the following moderate prices:—

LILIAM LANCIFOLIUM ALBUM, from 9d. to 1s. 6d. each.  
" " PUNCTATUM, from 3s. to 7 6 "  
" " ROSUM from 3s. to 10 6 "  
" " SPECIOSUM, from 3s. 6d. to 15 0 "  
" " CRUENTUM, from 5s. to 10 6 "  
" " JAPONICUM, or Brownii, from 5s. to 10 6 "  
100 RANUNCULUSES in 100 very fine sorts, named, 2l. 10s.  
Superfine Mixtures, from 5s. to 15s. per 100.  
100 ANEMONES in 50 superfine sorts, named, 1l. 10s.  
Superfine Mixtures, from 6s. to 10s. 6d. per 100.  
His Catalogue will be forwarded by post on application.

#### FLORISTS' FLOWERS, SEEDS, AND BOOKS.

CAREY TYSO, FLORIST, &c., Wallingford, Berks, begs to offer, of best quality, as under:—  
\*ANEMONES, 100 double varieties ... 24 0 1 10 0  
\*RANUNCULUSES, 100 ditto ... 40 0 4 0 0  
\*CARNATIONS, 12 excellent varieties, in pairs 17 6 3 0 0  
\*PICOTEES, 12 ditto ... 17 6 3 0 0  
\*PANSIES, 12 superb sorts ... 6 0 0 12 0  
\*TREATISE ON THE RANUNCULUS, 6d., post free, 8d.  
\*TREATISE ON THE ANEMONE, 3d., post free, 4d.

\*IMPORTED FLOWER SEEDS.—German Asters, Stocks, Zinnias, Hollyhocks, Poppies, Salpiglossis, &c., each 1s. and 2s. 6d. per named assortment, postage free. ANNUALS, 25 fine varieties, post free, 5s. Catalogues 2d.

\*These articles can be forwarded by post.

#### FLOWER, VEGETABLE, AND AGRICULTURAL SEEDS.

DAWE, COTTRELL, & BENHAM (Successors to FREDERICK WARREN), have their Descriptive Retail List ready, containing all the newest and choicest varieties, which will be forwarded, post free, on application.

D. C. & B. beg to call attention to MILLS' CHAMPION OF ENGLAND CUCUMBER, of which they have secured the entire stock. It is unequalled in length, symmetry, flavour, and colour. Specimens were exhibited both this and last season, measuring 36 and 37 inches, and obtained the first prize at several of the provincial Shows. Price 1s. per seed, or three seeds, 2s. 6d. 36, Moorgate Street, and 3, Lawrence Pountney Lane, London. (Established, Cornhill, A.D. 1720.)

#### NEW HYBRID CALCEOLARIA.

SPLENDID—SUITABLE FOR BEDDING OUT.

WILLIAM DENYER, SEEDSMAN, &c., 82, Gracechurch Street, London, begs to offer Seed of the NEW HYBRID CALCEOLARIA, partaking of the habit of Kentish Hero and Sultan; the colours are very brilliant, being deep crimson, bright red, yellow, orange, spotted, and various other shades, in sealed packets, sufficient to produce several hundred plants, 2s. 6d. per paper. Also seeds of the following:—

Abronia umbellata, very fragrant, for bedding out, 1s. per paper  
Arctotis breviscapa, a new and beautiful annual, 6d.  
" " multicolor " 6d.  
" " " " 6d.  
" " " " 6d.

Descriptive and priced list containing all that is new, rare, and good, may be had on application.

SUCCESSION PINES FOR SALE.—A choice Collection of some of the best kinds of Pine plants, the property of a gentleman no longer intending to grow them, may be had on reasonable terms. They are about 150 in number, potted, and in thriving condition, and may be expected to fruit this year and the next. For further particulars, and leave to view the plants, apply to Mr. RAYLEY, Corn Merchant, near the Plough, Clapham.

#### AMERICAN PLANTS.

JOHN WATERER begs to announce that his CATALOGUE of the above plants, Roses, Conifers, &c., is now published, and may be obtained by enclosing two postage stamps. The colours of all the Rhododendrons worthy of cultivation are described, in order to facilitate purchasers in selecting. \*The Rhododendrons, Azaleas, &c., annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

The American Nursery, Bagshot, Surrey, three miles from Blackwater Station, South-Eastern Railway, and four miles from Farnborough, South-Western Railway.

#### THE MOST SYMMETRICAL AND BRILLIANT DAHLIA OF THE SEASON.

GREEN'S "SCARLET KING," sound roots, 10s. 15s., and 21s.; Balsam seed, from flowers 3 inches across, six varieties, 9d. each packet, or all for 3s. 1d. Yews and Conifers wanted at per thousand; Standard Orange trees wanted; Camellias wanted (a lot); Freehold Mansion and Grounds wanted; Market Garden to Let; Small Florist's Garden to Let.—GEOFFREY GLENNY, Agent, 430, Strand, London. Letters only attended to. Glenn's "Quarterly Review," and "Quarterly Advertiser," now on Sale by all Booksellers.

#### DOUBLE STRIPED FRENCH MARIGOLD.

A packet of the Seeds of this beautiful Flower forwarded on receipt of Six Penny Postage Stamps.

EDWARD SANG & SONS, Nursery and Seedsmen, Kirkcaldy, North Britain.

#### DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.

The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. CONNOR'S Foreign Warehouse, 15, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

#### TRANSPLANTED LARCH, 1½ to 2 feet, Ditto,

2 to 3 feet.—There is a large stock of the above at the Inverness Nurseries, prices of which on the ground, or delivered at the ports of Glasgow, Edinburgh, or London, may be had by applying to HOWDEN BROTHERS.—Inverness, Feb. 5.

#### PONTEFRAC NURSERY.—Over stock of Larch,

1½ to 4 feet, well topped, and fibrous rooted. Also a large quantity of BERBERIS AQUIFOLIUM; samples and price on application to JOHN SCOTLEY, as above.

#### WANTED, PROVIDENCE AND MOSCOW

QUEEN PINE SUCKERS.—Persons having strong Suckers of the above to dispose of in March, which must be WARRANTED PERFECTLY CLEAN, may state the quantity of each, and the lowest price, to HURST & M'ULLEN, 6, Leadenhall Street, London; or EAGLE & HENDERSON, Edinburgh.

#### ASH-LEAF KIDNEY AND WHITE BLOSSOM

KIDNEY POTATOES FOR SEED.—Price, Ash-leaf, 6s. per bushel, or in quantities of 20 bushels, 5s. White Blossom Kidneys, 5s., or in quantities of 20 bushels, 4s.—Apply to W. G. K. BREVINGTON, Hounslow, Middlesex.

#### TAYLOR'S

#### EARLY PROLIFIC AND EARLY WARWICK PEAS.

THOMAS BARNES has a few Sacks of the above to dispose of. Prices on Application. Dane Croft Nurseries, Stowmarket.

#### THE LARGEST, BEST BEARING, AND FINEST

FLAVOURED PEA yet introduced, is HAIR'S DEFIANCE (KNIGHT'S) PEA. It grows about 4 feet, remarkably strong in habit, is earlier than the taller growing varieties, and should be planted 4 to 6 inches apart in the rows.

Plant February to April, 2s. 6d. per quart.

HAIR'S DWARF MAMMOTH (KNIGHT'S) PEA has been so extensively grown and approved that D. H. does not think anything need be said in confirmation of its established character. Sow 4 inches apart.

Plant February to May, 1s. 6d. per quart.

BISHOP'S LONG-POD PEAS, 1s. ditto.

BURBIDGE'S ECLIPSE PEAS, 1s. ditto.

Garden, Agricultural, and Flower Seeds, wholesale and retail, embracing every article connected with the trade upon the most reasonable terms.

Potatoes, all the best kinds, for seed.

Catalogues furnished upon application.

DUNCAN HAIR, Seedsman, 109, St. Martin's Lane, Charing Cross.

#### AGRICULTURAL, KITCHEN GARDEN, & FLOWER SEEDS.

THE GROWTH OF 1852.

#### GARAWAY, MAYES, AND CO., beg to inform

their Friends and the Public that they are now prepared to execute any orders for the above, selected from stocks of the first quality. From their long experience and transactions with the most celebrated growers in the country they have, regardless of cost, obtained the very best articles under their original names. They have many high testimonials of the superiority of their Kitchen Garden and Flower Seeds; the latter are principally grown by themselves. Their Lawns and Pasture Grass Seeds they can with confidence recommend. All Seeds thoroughly proved before leaving the establishment.

G. M. & Co. have to offer the following new and approved kinds:—

	Per quart—s. d.	Per packet—s. d.	
Peas, Beck's Gem	1 6	Celery, Cole's Superb Red	0 6
" Hairs' new dwarf		" Crystal White, new	
" Mammoth	1 6	" and very fine	2 6
" Middleton green		" Imperial Pink	0 6
" Marrow	1 0	" White	0 6
" November Prolific	5 0	Cucumber, Victory of Bath	1 0
" Sangster's No. 1	2 6	" Lord Kenyon's	
		" Favourite	1 0
Broccoli, Dilcock's Bride,		" Cuthill's Black Spine	0 0
fine w. Wilcock's	2 6	" Kewley's Victory	1 0
Broccoli, Walcheren, true	0 6	" Melon, Victory of Bath	1 0
" Wilcock's, true	0 6	" Bromham Hall	1 0
" Highclere, the finest		" Camerton Court	1 0
" late white grown	1 0		

Superb Hollyhock, saved from the very best named sorts ... 1 0

" ditto, fine double, in sorts separately ... 1 0

" Calceolaria ditto ditto ditto ... 1 0

" Cineraria ditto ditto ditto ... 1 0

Imported German Stocks and Asters.

Large collections of Fruit and Forest Trees, Ornamental Shrubs and Conifers, extending over 50 acres of ground. Flowerhouse and Greenhouse Plants, Orchids, and Florist Flowers extensively grown. Catalogues of which will be forwarded immediately on application. Seeds made up in collections, from 10s. 6d., 20s., 30s., to 50s. each.

Durdham Down Nurseries, Bristol, Feb. 5.—Established, 1786.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and by FRANK MULLER, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitechapel, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to the EDITOR.—SATURDAY, FEBRUARY 5, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 7.—1853.]

SATURDAY, FEBRUARY 12.

[PRICE 6d.]

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## JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine, at 7s. 6d. and 10s. 6d. each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25, 1851.

Pine Apple Place, London.—Feb. 12.

**SCOTCH FIRS—LARGE SURPLUS STOCK.**  
The Subscribers have more than FIVE HUNDRED THOUSAND Scotch to clear from their grounds immediately, and can supply three years old Transplanted Scotch at 8s. per 1000, and three years old Seedlings at 4s. per 1000.

Samples will be forwarded on application to WILLIAM E. RENDLE & Co., Nurserymen, Plymouth.

## SHORT GRASSES.

**FINE GRASS LAWNS IN FLOWER GARDENS.**  
—The great expense of cutting and carting turves from a distance may be avoided, and a superior Turf produced in a few weeks, by sowing SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds.

Great improvement may be effected in old Lawns by sowing about 20 lbs. to the Acre of these Seeds; for the formation of new Lawns twice that quantity will be necessary.

Price 1s. 3d. per pound; 3s. per gallon, or 21s. per bushel. Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## THE BLACK BARBAROSSA.

"A GRAPE THAT DON'T KNOW HOW TO SHANK."

JOHN BUTCHER begs to inform Grape-growers (requiring late Grapes), through January, February, and March, that the above will be in fine condition for table during the above months. Fruiting Plants, 10s. 6d.; Good Plants, 5s. 6d. each. May be obtained of Messrs. DAWE, COTTELL, & BENHAM, 36, Moorgate Street, London; and JOHN BUTCHER, Nurseryman, Stratford-on-Avon.

Samples of Berries sent upon receipt of 12 postage stamps.

**A VERY EXTENSIVE STOCK OF ONE-YEAR SEEDLING LARCH, ETC.**

Woodlands Nursery, Marazion, near Uckfield, Sussex.

WM. WOOD AND SON have the pleasure of offering their Friends a fine Stock of one-year seedling Larch, one and two-year ditto Alder, one-year ditto Beech, two-year ditto Ash, and two-year ditto Scotch Fir. The prices, which are exceedingly moderate, will be furnished on application.—Feb. 12.

PETER LAWSON AND SON'S PRICE LISTS OF SEEDS, FOREST, FRUIT, AND ROSE TREES, are now ready, and may be had on application, or free by post from their Agent, J. C. SOMMERS, 159, Fenchurch Street, London.

## AMERICAN NURSERY.

GEORGE BAKER, Windlesham, near Bagshot, Surrey, Exhibitor of American Plants at the Royal Botanic Gardens, Regent's Park, begs to inform the nobility and public that he has published a Descriptive CATALOGUE OF AMERICAN PLANTS, Conifers, Roses, Ornamental Shrubs, &c. &c., and may be obtained by enclosing two postage stamps.

Near Staines Station, Windsor Branch, South-Western Railway.

**CHOICE FLOWER ROOTS FOR PRESENT PLANTING.**

**SUPERB RANUNCULI**, with printed directions for planting and culture, sent in cases, prepaid, at the annexed prices:—  
100 strong roots—100 superb varieties, including several &c. d. ... 3 10 0  
50 ditto for 11. 17s. 6d.; 25 ditto ... 1 0 0  
100 strong roots in 100 very fine varieties ... 1 15 0  
50 ditto for 18s.; 25 ditto ... 1 0 0  
Eil Noir, best black, 2s. each; per dozen ... 1 0 18 0  
Mixed fine, 5s. per 100 (prepaid, 6s.); very fine varieties, 10s. per 100; extra choice, per 100 ... 1 0 18 0

## ANEMONES.

50 beautiful and distinct named double ... 0 12 6  
12 roots each of 12 beautiful double vars., for clumping 1 12 0  
6 roots each of 12, 17s. 6d.; 3 each of ditto ... 0 9 0  
Mixed, very fine, 6s. per 100; finest, per 100 ... 0 10 6  
Hortense superb Seedlings, 2s. 6d. p. doz.; fine red, p. doz. 0 2 6  
La Brillante Eclatante, extra bright, single scarlet, 1s. 6d. per dozen; per 100 ... 0 10 6

## GLADIOLUS.

Brenchleyensis, fine, 3s. each; Gandavensis, 3s. 6d. per dozen; Gan. splendens, very superb, 2s. 6d. each; Autumnalis, fine orange, 9d. each; Floribundus, 2s. 6d. per dozen; Psittacinus, 1s. 6d. per dozen; Psit. sanguineus, 5s. per dozen.  
12 superb late varieties: Ramous habit, 20s. (should be planted early).  
Ramosus, 9d. each; Ramosus Imperialis, 2s. 6d. each; Ramousissima, 1s. each; Prince of Wales, 1s. 6d. each; Queen Victoria, 1s. 6d. each; Insignis, 9d. each, or 7s. 6d. per dozen.

Lilium lancifolium album, 1s. to 2s. 6d. each; rubrum or speciosum, 2s. 6d. to 10s. each.  
Tigridia (Tiger Iris) pavonia, 2s. 6d. per dozen; conchiflora, new golden, 7s. 6d. per dozen; Wheeleri, new crimson, 7s. 6d. per dozen; canariense, new yellow, red spotted, 1s. 6d. each, or 10s. per dozen.

For a great variety of Bulbs for present planting, see our Seed and Plant List of 1853, page 16, sent, prepaid, for three penny stamps; also Autumn Catalogues for three penny stamps.  
In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods by 20s. and upwards Free to all Stations in London; also sent Free, as before, to the Chelmsford, Colchester, Ipswich, and all Stations on the same Line from London to Norwich.

## BASS AND BROWN,

SEED AND HORTICULTURAL ESTABLISHMENT, Sudbury, Suffolk.

**NEW 'SHRUBBY CALCEOLARIAS,** CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

J. WEEKS AND CO., CHELSEA, have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all Shrubby they are perpetually in flower; and from the great variety and brilliancy of their colours, they are invaluable for the conservatory or bedding-out.

J. WEEKS & Co., King's Road, Chelsea, London.

## NEW HYBRID CALCEOLARIA.

SPLENDID—SUITABLE FOR BEDDING OUT.

WILLIAM DENYER, SEEDSMAN, &c., 82, Gracechurch Street, London, begs to offer Seed of the NEW HYBRID CALCEOLARIA, partaking of the habit of Kenish Hero and Sultana; the colours are very brilliant, being deep crimson, bright red, yellow, orange, spotted, and various other shades, in sealed packets, sufficient to produce several hundred plants, 2s. 6d. per paper. Also seeds of the following:—

Abroma umbellata, very fragrant, for bedding out, 1s. per paper  
Arctotis byviscapa, a new and beautiful annual, 6d.  
Collinsia Bartesioffia " " 6d.  
" multicolor " " 6d.

Descriptive and priced list, containing all that is new, rare, and good, may be had on application.

## AMERICAN PLANTS.

JOHN WATERER begs to announce that his CATALOGUE of the above plants, Roses, Conifers, &c., is now published, and may be obtained by enclosing two postage stamps. The colours of all the Rhododendrons worthy of cultivation are described, in order to facilitate purchasers in selecting.

\* The Rhododendrons, Azaleas, &c., annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

The American Nursery, Bagshot, Surrey, three miles from Blackwater Station, South-Eastern Railway, and four miles from Farnborough, South-Western Railway.

## TO AGRICULTURISTS AND HORTICULTURISTS.

THE SUBSCRIBERS have a few TONS of POTATOES, the produce of their prepared cuttings, to spare.—York Regents, 6s.; American Native, 6s.; Cambridge Radical, 6s.; Soden's Early Oxford, 8s.; True Ash-leaved Kidney, 8s.; and Early Ebrington Kidney, 10s. per bushel, all in first-rate condition.

They have also still a few of their celebrated Early No. 1 Pea, 2s. 6d. per quart, and Prime of No. 2s. Early Scotch Rhubarb, 6s. each.—Post Office orders and made payable at the Borough Post Office to the firm of H. V. BANGS, & Co., Newington Butts, London.

**RHUBARB.**—1000 Roots of the finest VICTORIA, ALBERT, and LINNEAN Species of this valuable Plant for Sale, at 30s. per hundred.—Apply to Mr. HARNETT, at the Cottage, New Cross, Kent, adjoining the Brighton and Croydon Railway Station.

**NEW FLOWER SEEDS.**—Collections of the best varieties can be obtained from the Subscribers as follows:—100 Superior Sorts for 25s., 50 for 15s., and 25 for 8s. All the newest varieties can be had, and all the best imported German and Prussian Seeds. For particulars refer to our NEW FLOWER SEED CATALOGUE, which can be had in exchange for one postage stamp.

Apply to WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

## GERMAN SEEDS.

MESSRS. PLATZ AND SON, Erfurt, Prussia, respectfully inform the trade, that their Seed Catalogue for 1853, in which will be found many new varieties, may be had on application to their agent, Mr. ROBERT KENNEDY, Bedford Conservatory, Covent Garden, London.

**GREEN'S SCARLET KING in Exchange for**

Plants, at 10s., 15s., and 21s.  
EVERGREENS WANTED, at per 1000.  
BALSAM SEED unequalled, 6 classes, 3s. 1d.; separate, 9d.  
WANTED, Freehold Ground, 1 to 20 acres.  
TO LET, Small Market Garden; also, a Walled Flower Garden, &c.

G. GLENNY, Agent, 420, Strand. No. 1, "Glenny's Quarterly Review," now publishing, price 1s.

## SUPERB NEW MELON.

AUSTEN'S "INCOMPARABLE" GREEN FLESH, 2s. 6d. per packet; larger do., of 15 seeds, 5s.; Golden Ball Green Flesh, do., 1s. 6d.; Bromham Hall, do., 1s.; &c.

"CAPTIVATION" & "PHENOMENA" CUCUMBER, THE TWO FINEST BLACK SPINES IN CULTIVATION, in packets at 2s. 6d. each; Lord Keydon's Favourite Cucumber (true), 2s. 6d. per packet; Victory of Bath, do., 1s.; and other good varieties. A packet of Austen's "Incomparable" Melon, a packet of Golden Ball, and one of either of the above Cucumbers, will be forwarded to any part on receipt of 6s. in penny postage stamps.—For further particulars of the above, see *Gardeners' Chronicle* of Feb. 5.

**HOLLYHOCK SEED**, selected from one of the best collections now in cultivation; 1s. 6d. per packet.

**FIRST PRIZE GERMAN ASTER SEED.** This is unequalled in quality of bloom for exhibition, the seed having been saved from varieties that have taken from 40 to 50 first prizes within the last 10 years; 1s. 6d. per packet.

**SWEET WILLIAM SEED**, saved from upwards of 50 distinct dwarf and superb varieties; 1s. per packet.

**ANTHRINUM SEED**, from all the best shaped, striped, spotted, and brilliant varieties; and if sown now, will produce plants for blooming through the whole of the season; 1s. p. packet. Also Seed of that very scarce and delicious vegetable CROWN GOURD or CUSTARD MARROW, 1s. per packet.

N.B. A remittance must accompany the order from all unknown Correspondents, in penny postage stamps, when the whole or any quantity of the above will be forwarded free to any part.

EDWARD TILEY, Nurseryman and Seedman, 14, Abbey Churchyard, Bath.

## CHOICE GERANIUMS.

ISAAC DAVIES has a few strong healthy plants of the following Geraniums to offer at reduced prices, viz., Arethusa, 3s. 6d.; Christine, 3s. 6d.; Elise, 3s. 6d.; Ganymede, 3s. 6d.; Herald, 3s. 6d.; Lablache, 3s. 6d.; Magnet, 7s. 6d.; Mochanna, 3s. 6d.; Purple Standard, 5s.

The usual discount to the Trade taking equal quantities of each, or of any of them taken separately, except Magnet. Larkfield Nursery, Waverley, near Liverpool.

## FLOWER SEEDS FREE BY POST.

50 Packets of Annuals, 8s. 6d.; 25 do., 4s. 6d.; 12 do., 2s. 6d. 25 Packets of Superior Annuals, 5s. 6d.; 12 do., 3s. 25 Packets of Perennials and Biennials, 5s. 6d.; 12 do., 3s.

Also every variety of KITCHEN GARDEN SEEDS of the best quality.—Apply to ROBERT WESTMACOTT, Florist and Seedsman, Stuart's Grove Nursery, Fulham Road, Chelsea.

## IMPORTANT TO PLANT GROWERS.

**SPECIMEN HEATHS.**—An Amateur wishes to dispose of his entire Stock of the above fine healthy Plants, consisting of the best kinds, in 8, 11, and 16-inch pots, and in good condition, to exhibit the ensuing season.

Price and size of Plants, and every requisite information will be forwarded on application to J. W., Post Office, Maidstone.

## NORTH AMERICAN PITCHER PLANT.

(SARRACENIA PURPUREA.)

**GOOD PLANTS**, just imported, 18s. per dozen, or two plants, free by post, for 4s. 6d.

THOMAS JACKSON & SONS, Nurserymen, Kingston, Surrey.

**ASH-LEAF KIDNEY AND WHITE BLOSSOM KIDNEY POTATOES FOR SEED.**—Price, Ash-leaf, 6s. per bushel, or in quantities of 30 bushels, 5s. White Blossom Kidneys, 5s., or in quantities of 20 bushels, 4s.—Apply to W. G. K. BREAVENTON, Hounslow, Middlesex.

**ASH-LEAF KIDNEY POTATOES for immediate Sale.**—One Hundred Sacks, of first-rate quality and excellent size for Seed.—Apply to Mr. BENJAMIN CANT, Nursery Seedsman, Colchester, Essex.

**TURKEY OAKS (A BARGAIN).**—3000 Splendid TURKEY OAKS, from 10 to 14 feet high, at Cotton's Wharf, Tooley Street.—Apply to Mr. J. CLAPP, jun., Cotton's Wharf. Offices, Tooley Street, London.

**SALPIGLOSSIS COCCINEA—NEW SCARLET SALPIGLOSSIS.**—Price per ounce can be had on application, 1s. per packet.

J. G. WAITE, Seed Establishment, 181, High Holborn.

**PONTEFRAC NURSERY.**—Over stock of Larch, 11 to 4 feet, well topped, and fibrous rooted. Also a large quantity of BERBERIS AQUIFOLIUM; samples and price on application to JOHN SCOLEY, as above.

**DOUBLE STRIPED FRENCH MARIGOLD.**—A packet of the Seeds of this beautiful Flower forwarded on receipt of Six Penny Postage Stamps.

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**A DESCRIPTIVE PRICED CATALOGUE OF SELECT VEGETABLE AND FLOWER SEEDS**, post free on application.

W. DRUMMOND AND SONS, SEEDSMEN, Stirling.

N.B. Seeds forwarded carriage free to the principal Shipping Ports and Railway Stations throughout the kingdom.

**FLORIST'S FLOWERS, SEEDS, AND BOOKS.**

CAREY TYSO, FLORIST, &c., Wallingford, Berks, begs to offer, of best quality, as under:—  
\* ANEMONES, 100 double varieties ... 24 0 to 1 10 0  
\* RANUNCULUSES, 100 ditto ... 40 0 4 0 0  
\* CARNATIONS, 12 excellent varieties, in pairs 17 6 3 0 0  
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\* PANSIES, 12 superb sorts ... 6 0 0 12 0  
\* TREATISE ON THE RANUNCULUS, 6d., post free, 8d.  
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\* IMPORTED FLOWER SEEDS.—German Astera, Stocks, Zinnias, Hollyhocks, Poppies, Salpiglossis, &c., each 1s. and 2s. 6d. per named assortment, postage free. ANNUALS, 25 fine varieties, post free, 5s. Catalogue 2d.

\* These articles can be forwarded by post.



## NEW AND GENUINE SEEDS CARRIAGE FREE.

(SEE BELOW.)

## NEW SEEDS—1853.

**WILLIAM EDGECUMBE RENDLE AND CO., SEED MERCHANTS,** Plymouth, supply all kinds of **KITCHEN GARDEN SEEDS** to suit Gardens of various sizes, in collections, for 12s. 6d., 20s., 30s., and 50s. each, warranted genuine, and of the best quality. The qualities are stated in full in our New Catalogue, which can be had in exchange for one penny stamp.

All Orders above 23 CARRIAGE FREE to most of the Railway Stations in the South and West of England, and to the following Sea-ports:—London, Liverpool, Dublin, Belfast, Cork, Penzance, Falmouth, Portsmouth, and Southampton.

For Testimonials of the qualities of our Seeds see page 50, in the Number published January 22, 1853.

For Catalogues and further particulars, apply to **WILLIAM EDGECUMBE RENDLE & CO., Seed Merchants, Plymouth.**

ESTABLISHED MORE THAN HALF A CENTURY.

## GRASS SEEDS.

**J. C. WHEELER AND SON, SEEDSMAN** to the **GLoucestershire Agricultural Society**, beg to offer the following **GRASS SEEDS**, which have been well harvested, well cleaned, and which they can warrant to be of the very best quality.

We have for some time paid considerable attention to Grass Seeds, and especially to mixing them in such proportions as the nature of the soil and other local circumstances may require, so as to form fine pastures. Having had much experience in this branch of our business, and the Grass Lands we have laid down having given great satisfaction, it is with much pleasure that we can recommend a fine mixture of the best Grasses and Clovers, suitable for the formation of a rich permanent pasture, from 25s. to 30s. per acre.

For improving the quality of Grasses already laid down, we can supply a good mixture at 1s. per lb.

For the information of those gentlemen who would prefer buying the varieties separately, and mixing them themselves, we have given a short description of some of the best sorts. About two bushels of the larger or light seed, and 12 lbs. of the small or heavy seed, is the quantity usually sown to the acre.

**ITALIAN RYE-GRASS**, imported seed, per bushel ... 7s. 6d. Too much cannot be said in favour of this excellent Rye-grass. Compared with any other of the varieties of common Rye-grass, the Italian affords a stronger braid, arrives sooner at maturity, has a greater abundance of foliage, and of a lighter and more lively green colour; grows considerably taller, is more upright, or less inclined to spread on the ground. Another of its distinguishing characteristics is, that it is much preferred by cattle to any of the common sorts, and is greedily eaten by them, whether green or dry.

**PERENNIAL RYE GRASS**, per bushel ... 6s.

**MEADOW CATSTAIL**, or **TIMOTHY GRASS** (*Phleum pratense*), per lb. ... 10d.

The Timothy Grass possesses the advantage of affording double the quantity of nutriment when its seeds are ripe, that it does if cut when in flower. On strong, tenacious, and rather moist soils, it is entitled to a precedence almost to any other, and should at least form a considerable portion of the mixture employed for sowing down such, either for alternate husbandry or permanent pasture.

**MEADOW FOXTAIL GRASS** (*Alopecurus pratensis*),

1s. 6d.

This is one of the earliest and best of Pasture Grasses, but not so well adapted for hay, as it produces but few stalks; its root leaves are very broad, long, soft, slender, and grow rapidly when cut, or when eaten down by live stock. It requires two or three years after sowing to arrive at full maturity.

**ROUGH COCKFOOT** (*Dactylis glomerata*), per lb. ... 1s. Is a valuable Grass in cultivation, on account of the great quantity of produce which it yields, and the rapidity with which its leaves grow after being cut. It is well adapted for growing in shady moist places under trees, as in orchards, &c.

**MEADOW FESCUE GRASS** (*Festuca pratensis*), per lb. ... 1s. This is an excellent Grass, either for alternate husbandry or permanent pasture, but more particularly the latter. It is well liked by all kinds of domestic herbivorous animals.

**SHEEP'S FESCUE** (*Festuca ovina*), per lb. ... 10d. This Grass forms the greater part of the Sheep pastures of the Highlands. In quantity of produce it is much inferior to the other cultivated Fescues; but, from being well liked by Sheep, it should always enter into the composition of mixtures for lands on which they are to be pastured. In fact, on the authority of Linnaeus, these animals have no relish for hills and heaths which are destitute of this Grass.

**HARD FESCUE GRASS** (*Festuca duriuscula*), per lb. ... 1s. Will thrive on a great variety of soils, and is found to resist the effect of severe drought in summer, and to retain its verdure during winter, in a remarkable degree. From the fineness of its foliage and greenness in winter, it is well adapted for sowing in Parks, especially for Sheep pasture.

**WOOD MEADOW GRASS** (*Poa nemoralis*), per lb. ... 1s. 3d. Its habit of growth is delicate, upright, close, and regular. There is no Grass better adapted for Pleasure Grounds, particularly under trees, as it will not only grow in such places, but forms a fine sward where few of the other fine Grasses can exist. It produces a considerable deal of foliage early in spring.

**ROUGH-STALKED MEADOW GRASS** (*Poa trivialis*), per lb. ... 1s.

This is a valuable Grass as a mixture for Pasture Lands, particularly on damp soils. Its habit of growth fits it for mixing along with the upright growing sorts, such as the Italian Rye-grass.

**SMOOTH-STALKED MEADOW GRASS** (*Poa pratensis*), per lb. ... 1s.

This Grass yields a large quantity of herbage at a very early period of the season.

**SWEET-SCENTED VERNAL GRASS** (*Anthraxanthum odoratum*), per lb. ... 2s. 6d.

This Grass yields but a scanty portion of herbage, yet, on the whole, permanent pasture should not be without a mixture of it, particularly in Park and Pleasure Grounds, were it for no other reason than its pleasant scent, not only when cut for hay, but also when its seeds become nearly ripe.

**CRESTED DOGSTAIL GRASS** (*Cynosurus cristatus*), per lb. ... 1s.

From this Grass forming a close turf, and having rather fine foliage, it may be advantageously sown on Lawns and other places, to be kept under by the scythe.

**LAWN GRASS SEED**, per lb. ... 1s. 3d.

By sowing this Grass a fine sward may be obtained in a short time, at one quarter the expense of laying down turf. It is a selection of the FINEST Grasses, and is entirely free from weeds. We can strongly recommend it to those about to form Lawns or Pleasure Grounds.

\* For some of the above descriptions we are indebted to **LAWSON'S "Agriculturist's Manual."**

**J. C. WHEELER & SON** deliver their Seeds CARRIAGE FREE to most of the principal Railway Stations in England.

**J. C. WHEELER & SON, Nurserymen, Gloucester.**

## BASS AND BROWN'S SEED AND PLANT LIST

FOR 1853, supplied, prepaid, for three penny stamps.—We beg to offer a few New and Choice FLOWER SEEDS as under. Those marked thus \* have not been included in the Catalogue, some of which have been received since its publication.

Each, per Packet, 6d., except those priced.

**GREENHOUSE AND OTHER TENDER PERENNIALS.**  
Anomatheca ornata  
\*Acacia lophantha  
\*Asclepias curassavica  
Bossiaea bilosa stenophylla, 1s.  
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Calceolaria, very choice spotted varieties, 1s.  
— fine shrubby varieties  
Calendrinia umbellata, splendid  
Chorozema, choice varieties, each, 1s.  
Cineraria, choice, from new varieties, 1s.  
Climacis pulchra  
Cobaea scandens  
\*Cyclamen rubrum and album, 6d. each  
\*Daubentonia tripetiata  
\*Erythrina cristagalli, 1s.  
Fuchsia, from new and choice, 1s.  
Geranium, choice, 1s.  
— very choice new varieties, 2s. 6d.  
— finest mixed scarlets  
— finest fancy vars., 1s. 6d.  
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Kennedy, varieties, 6d. to 1s.  
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Lychnis fulgens  
\*Mandevilla suaveolens  
\*Neritina salicoides  
\*Nymphaea alba  
Petunia, new and choice varieties, 1s.  
Pimelea decussata, 1s.  
Primula sinensis, mixed  
— do. fimbriata, choice, 1s.  
Salvia Salicaria, fine  
Verbena, choice, 1s.; choice new, 2s. 6d.

**HARDY PERENNIALS.**  
Antirrhinum, finest  
\* — from Henderson's, Primrose Perfection, and other best new, 1s.  
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Carnation, mixed, showy, 4d.  
Cistus, rock, splendid mixed, 1s.  
Dianthus, many vars., 3d. each  
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Gaura Lindneria, new  
Gladulus, fine mixed, early  
— choice, from named, 1s.  
Hollyhock, very choice, 1s.  
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Mimulus, choice mixed  
— variegated, white  
Nepeta macrantha, beautiful  
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Picea, fine showy vars., 4d.  
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**FLORAL SEEDS—BEST ASSORTMENTS.**  
Those of our own selection consist of varieties which cannot fail to please; prepaid, by post, with useful printed instructions for sowing and raising Seeds. s. d.  
100 varieties, select showy Annuals, including the newest 15 0  
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50 varieties choice hardy Biennials and Perennials ... 7 6  
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**IMPORTED GERMAN SEEDS**, in separate colours, very double.  
24 superb varieties Dwarf Stocks, 4s. 12 varieties ... 2 6  
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Also superb double imported Wallflower, Larkspur, Balsam, Senecio elegans, Cock's-comb, Sweet William, &c. See Catalogue. Remittances requested from unknown Correspondents. Post Office Orders payable to STEPHEN BROWN, or the Firm.

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**THOMAS CRIPPS, NURSERYMAN, &c., Tunbridge Wells**, having still on hand a large and healthy stock of Roses, amongst which are the following varieties, respectfully offers them at the prices annexed, viz.:

**PERPETUALS.** Stds. Dwfs. s. d. s. d.  
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Rose du Roi, new white ... 2 0 1 6  
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Narcisse de Salvandy, rose margined with yellow ... 3 6 3 6  
Dwfs. of Young, dark velvet crimson ... 3 6 3 6  
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Fortuniana ... 3 6  
HYBRID CLIMBER.  
Fortune's Yellow ... 3 6 2 6

Standard Weeping Roses, with fine strong heads on stocks, 4 to 7 feet in height, 30s. per dozen, or 2s. 6d. to 3s. 6d. each.  
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Standard Roses, in finest variety, 15s. to 24s. per dozen.  
Dwarf do. do. do. 6s., 9s. to 18s. per dozen.  
Dwarf Géant des Batailles, either on the Manetti or Briar Stock, 15s. per dozen.

A remittance or reference is respectfully requested.

## SELECT FLOWER SEEDS IN CULTURAL LABELS.

**Gilia tenuiflora** (Slender-flowered Gilia.)

Nat. Ord. Polemoniaceae.—Native of California.—Cult. 1833.—Annual; 2 feet, erect branching; fl. rose pink, with violet centre; June to August.

Cult.—Suitable for mixed borders. Sow, to stand through the winter for early spring blooming; and for succession in March and June. Common garden soil.

**SUTTON'S ASSORTMENTS OF FLOWER SEEDS** are put up in Ayres' and Moore's Descriptive Cultural Papers as above. Ladies and Gentlemen naming any sum they wish to expend on Flower Seeds, from 5s. to 20s., and stating whether hardy or tender sorts are preferred, may rely on having the most showy sorts in cultivation.—Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## COLE'S SUPERB CRYSTAL WHITE CELERY.

**W. M. COLE**, Dartford, Kent, begs to inform his friends and the public, that he is ready to send out a new White Celery, which he has every confidence in recommending as being decidedly superior to his Superb Dwarf Red, sent out, with universal satisfaction, three years back. The Crystal White is a dwarf kind, rarely exceeding (under the best management) 18 inches in height; it is very solid, crisp, and fine flavoured, and if sown at the same time as the red variety, will come into use a month earlier, and continue good a month later. It has been seen by some of the first gardeners in the country, and pronounced to be a superior article. It may be obtained of W. C. as above, or from the following agents, at 2s. 6d. per packet, free by post:—

London: Messrs. Harst and M'Mullen, Leadenhall Street; Messrs. Dawe, Cottrell, and Benham, Moorgate Street; Messrs. Minier & Co., 60, Strand; Mr. Duncan Hairs, St. Martin's Lane, Charing Cross; Mr. Denyer, Gracechurch Street; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. J. and J. Fairbairn, Clapham—Messrs. Garaway, Mayes, and Co., Bristol; Mr. Bunyard, Maidstone; Mr. Turner, Slough; Messrs. Downie and Laird, Edinburgh; Messrs. F. and J. Dickson, Chester; Messrs. T. and J. Dickson, Manchester; Messrs. J. and J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Vetch and Son, Exeter; Messrs. Finney & Co., Gateshead; Mr. A. Foster, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Messrs. Lucombe, Pince, & Co., Exeter; Messrs. Edmondson & Co., Dublin; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Mr. Brown, Norwich.

## FIRST CLASS SEEDLING FUCHSIAS.

TO BE SENT OUT THE 30 WEEK IN APRIL, IN STRONG PLANTS.

**GEORGE SMITH**, in offering the following Six Seedling FUCHSIAS, begs to assure the admirers of this beautiful flower that Glory, Lady Franklin, and Mrs. Patterson, are unequalled as plants for exhibition, they being first-rate. In habit the two former approach nearest to perfection of any that has been shown in or near London. Mrs. Patterson is extraordinarily large, and demands attention. Beauty, Brilliant, and Vesta, although not so much claim as the above, are superior to any in the same class, and may be added to the choicest collections. For description of Glory and Lady Franklin, see the opinions of the press.

"Gardeners' Journal," June 12.—"Mr. Smith's Fuchsia Glory (Banks), we have previously described, and which we may now safely pronounce as a first-rate variety; it is of good habit, the sepals elegantly reflexed, and the corolla is like a roll of rich deep purple velvet."

The *Gardeners' Chronicle*, June 13, in a report of the National Floricultural Society, says:—"For Fuchsia Glory a first-class certificate; a fine bold flower, with violet purple corolla and brilliant crimson sepals, much reflexed."

The "Gardeners' Journal," Sept. 13, in reporting the Royal South London Floricultural Society, says:—"First-class certificates were awarded to Mr. Smith for two Seedling Fuchsias, Glory (Banks); a fine variety, with scarlet tube and sepals well reflexed, of good substance, corolla violet purple, smooth and even on the edge, and stout. Also for a light variety named Lady Franklin, with white tube and sepals well reflexed and stout, corolla a brilliant crimson, of good substance and very smooth."

The Editor of the *Gardeners' Chronicle*, Sept. 25, in a report of the North London Floricultural Society, says, in reference to Fuchsias:—"First-class certificates were awarded to Glory and Lady Franklin, both from Mr. George Smith. The former is a glorious dark, the latter an approach to purple and white, so much needed for contrast, our lights at present running mostly with scarlet corollas."

It is needless to say more than that every floricultural work has spoken in praise of them. For illustrations of Glory, see Turner's "Florist" for December last.

**GLORY (BANKS).**—Six first-class certificates and first prize as the best dark Fuchsia; 10s. 6d. each. When three are ordered four will be sent.

**LADY FRANKLIN (SMITH).**—Six first-class certificates and first prize as the best white; 10s. 6d. One over with three.

**MRS. PATTERSON (PATTERSON).**—Tube and sepals white and stout, expanded, the largest light, violet purple corolla, tree growing and fine habit; 10s. 6d.

**BEAUTY (SMITH).**—A beautiful variety, in the way of Sedonia, but much better form and habit. Mr. Glenay, speaking of Fuchsias, says:—"Smith has one which is an improvement on our great favourite Sedonia; it is called Beauty, and is nearly the same colour, but the petals are broader." Colour, tube and sepals bluish, corolla light violet purple, form good; 5s.

**BRILLIANT (PATTERSON).**—Waxy scarlet tube and sepals, very stout, reflexed back to the tube, corolla rosy purple, fine in all respects; 5s.

**VESTA (PATTERSON).**—White tube and sepals, very stout, reflexed, corolla a beautiful rosy pink, excellent habit; 5s.

## NEW VERBENAS.

The following Eight Varieties are warranted to give satisfaction, being fine in form and decided in colour, with large compact trusses. To be sent out on April 20, at 30s. the Set, or 5s. per Plant, viz.:

**ELIZABETH (YOUNG).**—Light ground, lemon eye, tinged with pink, flower round and globular. This is one of the most beautiful Verbenas yet raised.

**Mrs. KIRKPATRICK (YOUNG).**—Deep rose, with bright crimson centre, pip and truss very large, flat, and of great substance. This flower will prove excellent for bedding as well as for exhibition.

**GLORY (YOUNG).**—Crimson scarlet, eye white, flower and truss large, in the way of Defiance, of better form and fine habit.

**VESTA (YOUNG).**—A pure white flower, round and large, of beautiful habit, the finest white Verbenas yet offered.

**GARLAND (SMITH).**—Pure white eye, bright cherry, truss very large, of beautiful compact habit for pot culture or bedding.

**ARESTES (SMITH).**—Lilac eye, crimson purple flower, large, new in colour, of good habit.

**LADY FRANKLIN (SMITH).**—Large white, with a large purple centre, in the style of Madame Benmoud. Every bloom coming perfect, extra fine for show or bedding.

**MIDDLESEX RIVAL.**—Pink, the eye surrounded with purple, the largest Verbenas yet raised, very smooth and flat, extra fine.

**DISCOUNT (SMITH).**—The nearest approach to blue, of fine habit for bedding. Given in with the set.

G. S.'s Priced Catalogue of Verbenas, Fuchsias, Geraniums, Dahlias, Chrysanthemums, &c. &c., is now ready, and can be had in exchange for one postage stamp.

Splendid Illustrations of Fuchsia Glory forwarded on the receipt of eight postage stamps.

Tollington Nursery, Hornsey Road, Islington, near London.



## SEEDS DIRECT FROM THE GROWERS

THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

**SEEDS GROWN IN BERKSHIRE** and the Southern Counties having obtained great celebrity, we have made such arrangements with Messrs. PICKFORD & CO., who have Offices on most of the great Lines of Railway, as will enable us to **DELIVER OUR GOODS FREE OF CARRIAGE** to most parts of the United Kingdom.

Particulars may be obtained by post, on application to us, addressed JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## IRELAND.

**NEW SEEDS, 1853.**—The SUBSCRIBERS have had the honour of supplying several hundreds of the first families in Ireland for many years. The transit from this Port to the various Ports in Ireland is quick and expeditious, and the cost is very moderate. The Port of Plymouth is therefore well situated for commercial transactions with our sister country.

The Carriage of all Orders above £2 is PAID to the following Sea-ports:—

DUBLIN  
BELFAST  
CORK  
LIMERICK.

Steamers are continually running from the GREAT WESTERN DOCKS (within a rifle shot of our Union Road Establishment), to the above-named Ports.

For particulars and Catalogues, apply to WILLIAM EDGEMORE RENDLE & Co., Seed Merchants, Plymouth.

ESTABLISHED MORE THAN HALF A CENTURY.

**NICHOLSON'S AJAX STRAWBERRY**: very large and handsome, most exquisite flavour, unequalled as a Dessert fruit, and forces well.

**NICHOLSON'S RUBY STRAWBERRY**: medium size, excellent quality, and an immense bearing, producing a succession of fine fruit for an unusually lengthened period.

These unrivalled Strawberries were first sent out last autumn, and WILLIAM NICHOLSON is now offering fine Plants, suitable for spring planting, at 1s. 10s. per 100; 15s. for 50.

The stock of "Ruby" is only small; but W. N. will, if desired, send a few plants as a sample to parties ordering "Ajax." For W. N.'s mode of Culture, &c., see *Gardeners' Chronicle* for Jan. 1. Post Office orders to be made payable at Yarm, Yorkshire. Egglecliffe, near Yarm, Feb. 12.

## INGRAM'S HYBRID WHITE SPINE

**CUCUMBER** (offered and described in the *Gardeners' Chronicle* of Dec. 18 and 25, 1852, and Jan. 1, 1853) is now being sent out post free, at 2s. 6d. per paper, on receipt of the amount in postage stamps, or post-office order, by GEORGE WHEELER, NURSERYMAN, Warminster, Wilts. It is considered by good judges to be the best long Cucumber known; in length 2 feet and upwards, firm in flesh, of excellent flavour, and fine green colour without any tint of yellow.

Also ready, carriage free, on receipt of the value in postage stamps or post-office order, sound and strong blooming Bulbs of the following kinds of TIGRIDIAS, at per dozen, viz.:

T. WHEELER, yellow ground, with richly-spotted centre and scarlet sepals, 4s.

T. CONCHIFLORA, yellow, finely-spotted centre, 4s.

T. PAVONIA, straw, and dark-mottled centre, with red sepals, 2s. 6d.

Calceolaria Seed, from a fine collection of spotted kinds, 2s. 6d. per paper. Seedling Plants of the above fine kinds of Calceolaria, to bloom well this season, at 6s. per dozen. Cineraria Seed, from a fine collection, per paper, 1s. Chinese Larkspur Seed, perennial, but will bloom this year, of various shades of colour from white to dark blue, per paper, 1s.

**ST. IVES'S GREEN-FLESHED MELON**, warranted the best Melon ever raised. The above very superior Melon was raised at St. Ives's, near Bingley, Yorkshire, and has been much admired by all who have seen it. It was exhibited at the Horticultural Show held at Bingley in September last, and took the 1st prize; the Judges expressed the most favourable opinion of its merits. A fruit was sent to the Editor of the "Cottage Gardener," who says:—"MELON: M. BINS, Your Melon, green-fleshed, pale green skinned, somewhat netted, flattened, globe shaped, very deeply ribbed, about 6 inches in diameter, and weighing 4½ lbs., had the most juicy, melting, and deliciously flavoured flesh we ever tasted; it well deserved the 1st prize it was awarded at Bingley.—Sept. 23d, 1852."

Packets, 2s. 6d. each, to be obtained from M. BINS, Gardener, St. Ives's, Yorkshire, or the undermentioned Nurserymen and Seedsmen: Messrs. HURST & M'ILLIN, Leadenhall Street, and Messrs. BATT, RUTLEY, and Co., 412, Strand, London; Mr. JOHN CARTER, Jun., Keighley, Yorkshire; Mr. GEORGE CHERRY, Bury, Lancashire; Messrs. FRANCIS and JAMES DICKSON & Co., Manchester.

## SUPERB DOUBLE HOLLYHOCKS.

SAFFRON WALDEN NURSERY.

**WILLIAM CHATER** has now ready a large stock of fine Plants, not to be excelled in the trade, of all the leading and best varieties in cultivation. He being the first who sent out this superior class of Hollyhocks, has been careful to add none but those which have decided merit as to quality and dissimilarity to his original collection, the greater part of which still stand unequalled. To those who are desirous of obtaining a fine bloom this year of these splendid flowers, W. C. offers strong plants of the finest show varieties, dissimilar, at 2s., 1s. 10s., or 1s. per dozen. Good showy varieties at 12s. and 9s. per dozen. Good border sorts, 6s. per dozen, or 30s. per 100.

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12 Pinus Cembra, 3 feet, fine specimens 30

12 " excelsa, 2 to 3 feet, do. do. 6

12 Scarlet Arbutus, 2 to 3 feet, in pots 18

12 Faney Aesculus, 5 to 6 feet, handsome plants 12

12 Handsome Rhododendrons, 2 to 3 feet, scarlet, crimson, purple, white, and all shades of colours, selected from more than 100 sorts 20

100 Rhododendrons, hardy scarlet, 2 feet 50

100 do. campanulatum, from seed, extra, transplanted, seven years old, stout and bushy 60

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1000 Evergreen Privets, 2 to 3 feet, strong, for game coverts 10

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Apples and Pears, standards, 4 to 6 feet, stem very fine 8

" dwarf, 8½ ft., trained 30

Cherries and Plums, standards, 5 feet 12

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## The Gardeners' Chronicle.

SATURDAY, FEBRUARY 12, 1853.

## MEETINGS FOR THE ENSUING WEEK.

MONDAY, February 14	Law Amendment .....	8 P.M.
	Geographical .....	8 P.M.
	Horticultural .....	2 P.M.
	Linnæan .....	8 P.M.
TUESDAY, — 15	Civil Engineers .....	8 P.M.
	Pathological .....	8 P.M.
	London Institution .....	7 P.M.
WEDNESDAY, — 16	Society of Arts .....	8 P.M.
	Microscopical (Anniversary) .....	8 P.M.
THURSDAY, — 17	Antiquarian .....	8 P.M.
	Royal .....	8 P.M.
FRIDAY, — 18	Geological (Anniversary) .....	1 P.M.
	Royal Institution .....	8 P.M.
SATURDAY, — 19	Medical .....	8 P.M.

WHEN the DEODAR was first raised from seed in this country, the graceful weeping habit of its branches, their glaucous hue and long tender shoots presented an aspect so different from the ordinary appearance of seedling Cedars, that no one, we believe, who observed the two trees growing together doubted their distinctness. Systematic botanists have, however, all along, found a difficulty in pointing out tangible characters to distinguish them; and travellers who had seen the trees in their native places of growth have, from time to time, reported that they are both liable to a very great amount of variation, and that both vary in the same way. If to this we add that among the myriads of Deodars which are now yearly raised in this country, many varieties are already beginning to appear, some of which are much nearer the Cedar than the original state, it will not appear surprising that an opinion should have arisen among botanists, which begins to gain ground even among cultivators, that the two trees are not specifically distinct.

It is in all cases a matter of considerable difficulty to decide whether or not two closely allied forms are identical or distinct. Accurate observation of the plants in their native places of growth, during all stages of their existence, is the only unerring guide in such a case, and where that is impossible a careful examination and comparison of extensive suites of specimens in all states can alone enable a botanist to decide on the identity or distinctness of two such forms. The difficulty of solving such a question, always great, is considerably enhanced when large trees form the subject of comparison, and is perhaps greatest of all with cultivated trees which, being placed in circumstances different from those in which they naturally grow, have a tendency to assume appearances different from those which are characteristic of the species. The question, indeed, is one in which the cultivator is as much or more concerned than the mere botanist, and it is one which the observant and philosophic cultivator is peculiarly qualified to answer, as from his acquaintance with the extent to which plants raised from seed are liable to vary, he is better than any other person able to decide what amount of variation may exist without specific difference.

That the Cedar and Deodar are very closely allied to one another no one doubts. Both belong to the same section of the Pine tribe, characterised by solitary persistent leaves and erect cones. The male flowers in both are absolutely the same, and small branchlets of the two are in the herbarium almost undistinguishable—the mode of branching, insertion of leaves, and colour of bark being quite the same. The cones in both vary a good deal in shape, but the scales and broad-winged seeds are the same in both species. A difference in the shape of the scales, indicated by ENDLICHER, seems to have no real existence, or rather to depend on the age of the cone; for before maturity the scales are closely pressed together and bent upwards, but as the seed ripens they spread out and become straight or even reflexed before they fall away from the persistent axis.

The only points of distinction, then, which can be discovered between the Deodar and the Cedar of Lebanon are the generally greater length of the leaves of the latter, and a considerable difference of habit. This difference of general aspect will, we believe, be found to be the ground on which most observers rest their belief of the distinctness of the two trees. But though variations in this respect may be admitted as a *prima facie* indication that specific differences exist, yet they are in themselves no proof of such difference; and if a



minute comparison of two supposed species fails to show any peculiarities of structure, mere size of parts and mode of growth cannot of themselves make two plants distinct. We all know how variable our forest trees are in these points; Coniferous trees, indeed, to a greater extent than most others; and it would be within every one's experience that the Deodar is one of the most variable of a variable tribe. This may be well seen in any extensive plantation of Deodars, and any one may satisfy himself that it is the case by a visit to the fine avenue of these trees in Kew Gardens, in which may be seen many trees which are quite intermediate between the original state of the Deodar and the common Cedar, and one or two, which both in mode of growth and in rigidity and size of leaves, are almost identical with the Cedar of Lebanon. As permanency is the only test that can be applied to estimate the value of distinguishing characters, the occurrence of these intermediates forms the strongest argument against the distinctness of the two species; and if future observations should show a still further approximation of characters, what is now only probable will become a matter of certainty. It is, however, a very curious fact that the Cedar is in this country much less liable to vary than the Deodar; and it has been suggested to us by a practical gardener of great experience, that the explanation of this may be found in the fact that all our Cedars descend from one common stock, or, at least, are derived from the same district in Lebanon, while the seeds of the Deodar are collected from widely distant parts of the great Himalayan chain.

Indian travellers unanimously testify that the Deodar is one of the most variable trees in its native country. Though probably confined entirely to the western and drier Himalaya, not being known to occur in a wild state in any part of the chain east of the Ganges, it has a wide range in altitude, growing equally in warm and sheltered valleys as low as 5000 feet, and on exposed slopes, at a height of 12,000 feet, where, notwithstanding the elevation, the warm dry summer enables it to ripen its wood sufficiently to resist the intense cold of winter. In its native forests, we are assured that the Deodar is a tall conical tree, rising to a height of 100 or 150 feet, and sending out horizontal branches in all directions; or at times dividing close to the base into two or three trunks, which ascend parallel to one another to a great height. It is, however, also common in a state of cultivation, being generally planted near temples in the province of Kumaon, in which it is nowhere indigenous. There, probably, from its isolated mode of growth, as the same thing is observed wherever trees grow in exposed situations, it has a quite different shape. Low and flat-topped it rises to no great height, but sends out long straight branches, which bend downwards and often sweep the ground. The Cedar of Lebanon is also well-known to us from the accounts of travellers, who have observed it in its native forests, and from their descriptions we learn that it is there often a very different tree from that familiar to us in this country, being tall and straight, with horizontal branches, forming a beautiful cone.

The peculiar glaucous hue so characteristic of the earliest imported Deodars is not only not constant in the species, being absent in many of the varieties which have already arisen in this country, and unquestionably not present in adult trees in a wild state, but it occurs in some states of the Cedar. It cannot, therefore, though it forms the most striking distinguishing mark by which the Deodars are ordinarily recognised, be regarded as anything more than a very striking instance of the amount of variation to which species are subject, unless we assume what no one, we think, would be inclined to do, that the true Cedar, as well as the Deodar, is a native of the mountains of northern India.

We have purposely abstained from taking into consideration the geographical distribution of the two trees, as any argument founded on it would be inconclusive. It may, however, be noticed as corroborative of the view which we have been led to adopt, that the Deodar in India is exclusively confined to the western part of the Himalayan chain, and is especially abundant in the mountains of Kashmir, and that it extends thence into the mountains of Afghanistan. The hilly districts of eastern Persia are not, it would appear sufficiently elevated for coniferous vegetation, nor is there at present any reason to suppose that any species of Cedar exists in northern Persia, where there are very lofty mountain chains. Still our knowledge of that country and of Armenia and Caucasus, is too limited to warrant our asserting that the Cedar does not grow there, while in Taurus we know that the Cedar of Lebanon is indigenous.

It ought also to be borne in mind that among the trees which accompany the Deodar in northern India, there is a considerable number of European

species. The Yew is plentiful in all parts of the Himalaya, and the common Juniper, though more Alpine, has nearly as wide a range. The tree Juniper of India, too (*J. excelsa*), extends into western Asia, so that at least three species of Conifers are common to that and the Himalaya. The Walnut, which is one of the commonest forest trees all along the chain of northern India, is also indigenous in the Caucasian provinces, and a species of Oak extends from Spain, through western Asia, Persia, and Afghanistan, into the drier parts of the western Himalaya. The common Berberry may be cited as another instance of the extension of European species far East, and the list of trees and shrubs might, if space permitted, be considerably increased, while the number of herbaceous plants which are common to Europe and the mountains of India is very great. *T. T.*

[This very able statement of the botanical arguments that may be employed to show the identity of the Deodar and Cedar of Lebanon as species, has been communicated to us by an experienced Indian friend, well acquainted with the former tree on its native mountains. The subject is, however, by no means exhausted, especially in its horticultural aspect, to which we shall take an early opportunity of addressing ourselves. Ed.]

PHYSIOLOGISTS are at the present day almost unanimous in their notions of the normal structure of the CELLS of PLANTS. An outer membranous sac consisting at first of pure cellulose, and distinguished by no particular organic structure, lined with one or more coats, involving proteine constituents, and indicating more or less perfectly a spiral arrangement or order of growth, may be considered as conveying a tolerably clear notion of the organisms of which vegetables are in great measure composed. Some botanists have, however, doubted the simplicity of structure of the outer membrane, and instances more or less adverse to the view occur in works on botanical physiology, and in introductions to the study of vegetables; but none perhaps of greater weight than the instance so beautifully represented by KÜTZING, in *Schizosiphon gypsophilus*, and which has been verified by many observers of the more minute fresh-water Algae. In all such cases, however, it is doubtful whether the external membrane is not ruptured, and whether its supposed constituent threads do not really belong to a second membrane, and unfortunately chemical tests have not at present been sufficiently applied to the elucidation of the point.

The question has again very recently been mooted by the younger AGARDH, who has published a small tract in quarto, printed at Lund, entitled "*De Cellula Vegetabilis Fibrillis Tenuissimis Contexta*." His observations do not at all satisfy us as to the compound structure of the external membrane, and are at present too confined and imperfect to warrant the assumption of any general law; they are however so curious, and propose such an interesting field for further inquiry, that we think it almost imperative to call our readers' attention to the subject. The plants which came under his observation were principally *Confervamelagonium*, remarkable amongst British species for the size of its articulations, though surpassed in this respect by such exotic species as *C. clavata*, together with *Griffithsia equisetifolia* and *Polysiphonia complanata*. In the first more especially he found fascicles of fibres, more or less felted with each other, passing from cell to cell, and by means of the diaphragm from the internal membrane of one cell to that of the cells in immediate contact or continuance with it, and leaving spaces between the fascicles threaded and traversed by finer fibres, with very faint and obscure traces of a connecting gelatinous or sub-membranous substance. These fibres were especially evident when the walls were ruptured, and appeared to be solid without any canal. In the *Polysiphonia* he found the fibres separating from the main wall of the cells, and forming little swollen prominences, which he considered to be the commencement of new cells, and the rudiments of the cells external to the well known radiating vesicles of the main stem.

We are unable to verify the structure represented by AGARDH; but as the *Conferva* and *Griffithsia* are by no means rare, it cannot be difficult to procure fresh specimens to enable us to do so. Meanwhile, though we cannot doubt the accuracy of M. AGARDH, and are ready to acknowledge our obligations to him for pointing out so curious a matter, many considerations prevent us from entertaining a notion that the structure is at all general. It is quite impossible, for instance, that in such cases as *Zygnema*, the constituent fibres of the diaphragm of continuous cells, if such exist, can pass from one into the other in the manner represented in *C. melagonium*. A glance at SCHLEIDEN's figure, in his collected memoirs, which is very correct,

will convince any one that it is almost impossible. M. AGARDH, indeed, professes that he is not quite certain whether an external membrane really exists or not; and his figures and observations seem to indicate that it is really present. But even supposing his observations to have reference to a lining membrane only, they differ greatly from those of preceding observers, except in cases where an evident and easy explanation as to the apparent crossing of the constituent fibres exists, in the circumstance that he finds these fibres not simply taking a uniform spiral direction, but felted with one another in distinct fascicles, and passing from one cell to those in immediate contact with it. *M. J. B.*

#### PHILIBERTIA GRACILIS.

THE delicious fragrance of this plant must always render it an agreeable addition to any collection. Its beauty, however, is not of the most conspicuous kind, and unless the plants when in flower occupy a position which will enable the observer to see the interior of the blossoms with their singular markings, the appearance of the finest grown specimens will be anything but attractive or pleasing. The plant is a most profuse bloomer, producing from the axils of every leaf on the bearing wood a cluster of about five flowers, which are suspended by feeble peduncles, and invariably assume a drooping position. In the culture of pot specimens, this natural defect is easily obviated by training to a flat trellis placed in the pot, so as to stand at an angle of some 30° from the point of observation. Like most plants which are profuse bloomers, this is rather a shy grower, and every encouragement should be afforded young plants early in the season, otherwise it will be difficult to induce vigorous growth, or to obtain good-sized flowering specimens.

Propagation is readily effected by cuttings, provided they are selected at the proper season, viz., when the plants are making free growth, but if deferred until flowers begin to be produced, suitable bits for this purpose will hardly be obtained, and they should be put in as early in the season as possible, so as to get the plants some size and well established previous to winter. Short jointed shoots when about half ripe, if planted in sandy peaty soil, covered with a bell glass, and afforded a bottom heat of from 70° to 80° will be found to root freely, but the glasses must be wiped as frequently as is necessary to prevent injury from damp, to which the cuttings are liable, particularly if rather soft. Pot off into 4-inch pots as soon as they are sufficiently rooted to allow of their being handled. Place them in a close moist warm situation, and if they can be afforded a gentle bottom heat it will be all the better, until the plants are well established. The most careful attention during the summer, in addition to early propagation, will be necessary to get them sufficiently large to be useful the second season as flowering specimens. The best situation for them during summer will be a rather warm close pit, where they will be screened from the midday sun, and where a moist atmosphere is maintained. Attend to shifting so as to afford plenty of pot room, but take care that the pots are tolerably full of roots by the end of the growing season; and as the plant is rather a weakly grower, large shifts should be avoided. The leading shoot should be stopped occasionally, in order to secure compact bushy plants, and the support of a stake will be necessary from the time when the plants are potted singly. About the end of September they should be removed to a situation near the glass in a rather warm, dry atmosphere, and be but sparingly supplied with water at the root; this will check growth and ripen the wood previous to the dull sunless days of winter, and unless the shoots of this plant are in a firm state, then they will be very likely to damp off, especially in the hands of amateurs. A temperature of from 50° to 60°, with a situation near the glass, and a sparing supply of water to the soil, is the safest treatment during the winter months. I have wintered the plant successfully in a temperature of from 45° to 55°, but I would not advise beginners to risk their stock of this plant in so low a heat, at least until they have had a year's acquaintance of it.

Early in February, or as soon after as circumstances will admit, remove the plants to a brisk, moist, growing temperature, and a gentle bottom heat of 75° or 80° will greatly assist in promoting active growth. It will be advisable to examine the state of the roots at once, and if the drainage is defective, or the soil sour or ungenial, remedy the evil by reducing the ball so as to clear away the bad soil; but except in the case of plants, the roots of which are abundant and healthy, re-potting will be better deferred for a fortnight, or until the plants start into growth. A rather small shift may be given as soon as more pot-room is required, and the shoots trained to two or three stakes, and stopped occasionally; and when the plants are well rooted after the first move they should be shifted into their flowering pots, 10-inch ones being sufficiently large for this season. The trellis should be applied at once, and the shoots neatly tied to it, taking care to cover the lower part of the trellis first. As the sun becomes powerful in spring, a slight shade during the forenoons of bright days will be of advantage to the plants, and they should be syringed night and morning, and every means used to encourage active growth, so as to obtain specimens of considerable size early in the season, for when once

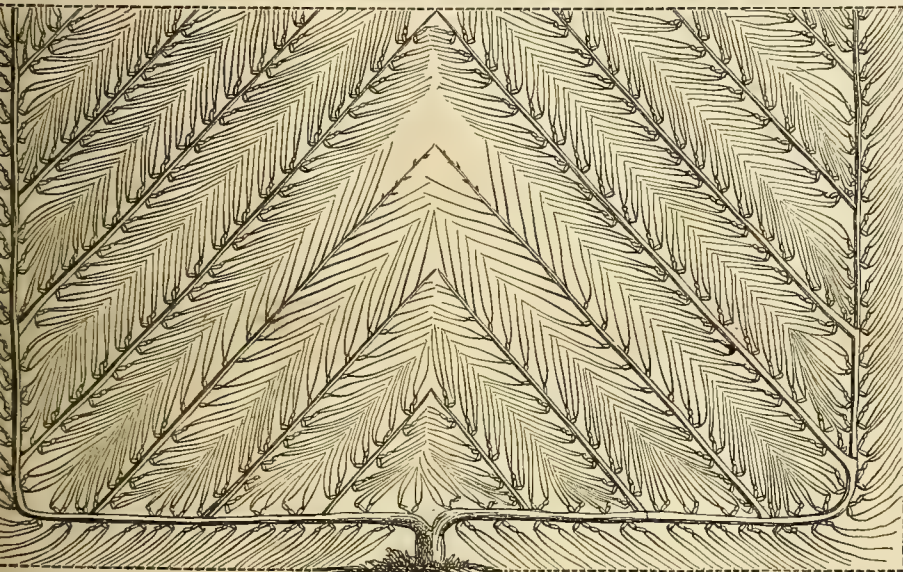


ers begin to appear it will be nearly impossible to obtain rapid growth. The best situation for the plants, after they commence flowering, will be a shady position in a house, where the temperature may range from 60° to 80°, and if properly supplied with water and kept clear of insects (this plant not being particularly liable to any), will continue growing and blossoming for two or three months. After flowering the specimens should be directed for last season, and in spring they will be turned out of their pots, the balls reduced if the plants are found to be unhealthy, and repotted in smaller pots and treated much as they were last season. It will be necessary to cut back and prune the plants, the winter will probably do the greater portion of the work; the stronger shoots should be shortened, so as to secure a supply of young wood at the bottom of the stems, and the weaker pieces should be altogether cut out; carefully managed, the plants will make good specimens in 12-inch pots, but it will be unsafe to depend upon them after this season, and a stock of young plants should therefore be kept up.

rich light sandy turfy loam and good turfy peat, in proportion of three parts of the latter to one of the former, with a liberal quantity of sharp silver sand, should be regulated according to the nature of the soil and peat, and a slight admixture of broken bricks, or lumpy bits of charcoal, will form an excellent compost for this plant. Care should be taken in potting to secure perfect drainage, by using crocks or potsherds; and when used, the soil ought to be in proper state, as respects moisture. *Alpha*.

#### DOUBLE OBLIQUE TRAINING.

The only difference between this and simple oblique training (see p. 36) is, that in the latter the perpendicular distance between the stems was 2 feet, whilst in this it is only 1 foot. That is the space which ought to be left between the branches of a Pear tree, which has been trained as an example in the figure. This necessity,



however, gives rise to another; the trees being planted at a distance of nearly 3 feet from each other, in order to afford their roots sufficient room, two branches have been developed instead of one, as before.

This sort of training is established as follows. The plants should be strong maiden plants; they should be trained vertically, with proper care, in the places intended. The first year nothing more is to be done than to remove portions of the stem, in order to establish equilibrium between it and the roots. The next year a vigorous shoot at the top of each stem must be left to grow, the others being converted into spurs by the proper means. In the spring of the following year, the young trees having taken good hold of the ground, and already grown, each stem is to be trained from its base at an angle of 45°. During the ensuing summer one vigorous shoot is allowed to grow in a vertical direction immediately above the stem. In the fourth spring the branch produced by the bud is itself bent, half a yard above the ground, parallel to the first branch.

The plants are to be taken during the next summer to maintain equal vigour in the two branches of each tree, to promote the vigorous growth of each terminal shoot by converting all the others into spurs. In the following year, about 32 inches of the leading shoots should be cut off, unless they are of unequal strength, in which case the strongest is cut shorter. The same operation is repeated every year until the trees reach the top of the

it were desired to apply this plan to Cherry, Plum, Apricot trees, the young trees should be planted at a distance of 2 feet, instead of nearly 3 feet from each other, in order to have the branches 8 inches apart, which is sufficient in these cases. The advantages of this are the same as those which belong to that adopted in the case of Peach trees. The two branches which each tree has may be obtained in six years at most, and

thus time is gained to the extent of 11 years for Pears and 15 years for Cherries, Plums, and Apricots. The powers of production and of vitality do not appear to be lessened by adopting the double any more than by adopting the single course.

It is no small recommendation to be able to adopt, for trees against walls, a form which is obtained and kept up at a much less cost of time and care than is ordinarily incurred, and to fill up with ease any empty space to which accident may give rise; but if in addition we find that the same surface of wall is covered by the plans proposed in one-half the time taken by those ordinarily followed, the advantages appear to us to preponderate greatly in favour of the former. It cannot be denied that the new forms are less agreeable to the eye than most of the others, but that will not be thought of much moment by those whose object it is to derive profit from their trees. *Journal of Horticultural Society, extracted from the Revue Horticole, Sept. 1852.*

#### TRADE MEMORANDA.

Now that Mr. Bradley, *alias* Watson, *alias* Blomfield, *alias* Seymour, *alias* Stevens, *alias* Collingwood, &c. &c., has been sentenced to six months' imprisonment for swindling, we venture to inquire who the persons have been whose purchases have made it worth the man's while to carry on his operations. The value of the articles he has obtained has been very large, and his plunder has extended over a considerable period of time. What did he do with the goods supplied to him? They could not be pawned—they would not keep; had they been hawked about some one would surely have detected him; he therefore must have had some unknown method of readily disposing of them; in short, there must have been a receiver. Mr. Buck, of Covent Garden, by whom a part of the goods were bought, declared to the magistrate that he had dealings with him only once, and being suspicious of him discontinued his purchases. Who, then, have been the other receivers? This is far more important than the con-

this country a black Grape, with the full flavour of a good ripe Pine-apple. I have cultivated in the kingdom of Naples a Grape of this description, and not being able to find it in any other locality, I should be glad of the information I have just asked for. *Robert Tait.*

*Hotbeds.*—Presuming that "Mary" resides within a few miles of a tanner's yard, and is in possession of a one-light wooden forcing frame, she must first set the frame on the ground, in the place where she intends the hotbed to be, then drive down a strong stake, 1½ inch from each corner outside; remove the frame, and drive down intermediate stakes 1 foot apart, along both sides and ends; wattle the stakes with branches of trees to the height of 2½ feet, much the same as in the formation of basket work; then make a pier of loose brick or stone at each corner inside, nearly the height of the wattle work, laying a course of rubble or branches on the bottom, 3 or 4 inches thick; place the frame firmly on the piers, and the operation thus far will be completed. While the above directions are being attended to, let some one be sent to the tan yard for a good cart-load of bark, nearly fresh from the vat; when the bark arrives, lay a course 1 foot thick on the bottom, and tread or beat it down pretty firmly; then lay another course, beat down as before, and so proceed until the bed is from 3 to 3½ feet deep; on the surface lay 3 or 4 inches of sawdust to plunge the plants in; but not new sawdust, as neither plants nor cuttings do well in it. Thrust a stick into the bed, place the light or sash on the frame, and keep it closely shut until the heat is up. This may be ascertained by occasionally pulling out the stick and feeling the lower end of it, which, when found to be as warm as the hand, the bed is ready for the reception of the plant. When the above is finished place a lining of stable litter 1½ foot thick round the frame; but if litter cannot be had, build a bank of earth round it, to about 3 or 4 inches above the wattle work; this will confine the heat. Litter would be better, as it helps to keep the bed warm by fermentation. *H. H.*

*Mildewed Grapes; and Currants in Madeira.*—Several applications have been made to me recently by Madeira proprietors, respecting the probable cause of the disease which has so extensively affected the Grapes and Currants of that island; as, also, as to the best means of cure. I believe that the cause lies in the imperfect performance of the functions of elaboration in the plants; whence the tissues become gorged with sap, which, under a sudden increase of the influence of the sun and a clear sky, is very liable to pass into a state of fermentation. The plants being unable to throw it off sufficiently quick, the result is formation of mildew, and the loss of the crop. With regard to the cure, we know that the mildew may be arrested in houses by withholding water and applying sulphur; but these remedies are, of course, inapplicable to field cultivation. Three ways, which I shall suggest under existing circumstances, all tending to diminish luxuriance of growth in the plants, are—1, the young plants should be lifted and partly root-pruned and replanted; 2, round older plants should be dug a trench cutting through the larger roots at a distance of 3 or 4 feet from the stem, the ends of the roots being at the same time pruned with the knife; 3, the roots may be laid bare (as the Kentish Filbert growers always do every winter), by drawing off the mould to harden the skin of the roots, to be put back again after several weeks' exposure. These operations, if they do not cure the disease, will much diminish it by importantly affecting the whole circulation of the plants. All quack medicines are useless. I presume that in all Vine and Currant

viction of the man himself, and we trust that some of our correspondents may be able to throw light upon the subject. If they should not wish their communications to be made public, we have no objection to treating them confidentially, using the intelligence in our own way; but we confess to a vehement desire to add something to the knowledge we already possess.

#### Home Correspondence.

*Soil for Vines in Pots* (see p. 37).—Surely Mr. Urquhart must be mistaken in regard to Wimbledon loam containing something prejudicial to the Vine in point of fruitfulness, and also as respects its preventing the berries assuming their wonted dark and glassy colour. Can the cause of Red Hamburgh, or badly-coloured Grapes generally, be traced to something in the soil? The question appears to me to be one of peculiar importance, and one on which I should be glad to have the experience of my brother gardeners. I may add that I have had some experience in cultivating Vines in pots, and have always found them do best when struck from eyes the year previous to that in which they are fruited. The sorts I have generally grown have been Hamburghs, Muscadines, Sweetwaters, Black Prince, and St. Peter. This year I have Hamburghs, Muscadines, and Josling's St. Alban's, which I am told is one of the best varieties for pot culture. The Vines I have now, showing from two to four bunches at an eye, were struck in February 1852, and were potted last June in loam, without any mixture whatever; the pots (11-inch ones) were well drained, and the Vines grew last year in the same house in which they are in now, and under other Vines. No doubt a little rough charcoal would make the soil more porous, and be very beneficial to the roots. *Stripling.*

*Pine-apple flavoured Grape.*—Perhaps some of your readers will kindly inform me if there is to be found in

countries the growers save all the prunings in heaps to rot, to be again dug into the soil; this being the very essence of what they took out of the ground, perhaps it may assist the roots in producing a better and firmer wood; and with Vines and Currants planted upon rather elevated ground, or on the ridge system, perhaps it might tend much to induce a healthy plant, and thereby cause it to resist the disease. *James Cuthill.*

*Emigration of Gardeners.*—Your correspondent "T. S." (see p. 85), reminds me of the great revolutions that have taken place in the South Australian colonies, and observes that what applied to 1851 does not apply to 1853. Now, this is partly correct, I admit. But if in 1851 the herbage in South Australia was scorched up with drought, so that the cattle died in great numbers, I think it is not unreasonable to fear that the like painful circumstance may occur in 1853, or at some future period. If the drought was so great in 1851 that "each sheep would require to be mounted on the back of a pony to be conveyed from one blade of Grass to another," and the milk of half a dozen cows was barely sufficient for a family's tea night and morning for the previous four months, it speaks rather unfavourably, I think, for the adaptation of South Australia for agricultural purposes. It is very true that the productions of the farm and the garden are required for a large and increasing population, but the question arises: Are the soil and the climate of Australia on the whole, under well directed efforts, capable of supplying the wants of that population? "T. S.'s" friend does not mention how many quarts of milk a cow produces in one day, and if the accounts at p. 635 of your volume for 1851 are correct, how many cows' milk (at one milking) will be required to fill one quart? I hardly understand how some men in Australia get from 3*l.* 10*s.* to 7*l.* per week, while an "Essex labourer" only gets 1*6s.* and his rations per week. I may tell John Jenkins that I see the *London Times* daily, and that I take great



interest in the news from Australia. In saying that many gardeners are willing to go there, I only asserted what they mentioned to me in the course of conversation. That there are other barriers besides the want of means in the way of gardeners I admit; for instance, the fearful mortality that has recently taken place on board many of the vessels. The *Times* of Jan. 26 (1853), in an excellent leading article, strongly animadverted on the cruelty inflicted by ship-owners on poor emigrants, and the negligence of the Legislature in not devising better measures and securing more comfort to emigrants in their transit to Australia. The *Marco Polo* lost 53 passengers, the *Ticonderoga* 104, and brought many of the survivors into port prostrated by disease, the medical stores being exhausted, and the surgeon and his assistant incapable from illness of rendering assistance to the sick. So many signal instances coming close upon each other, and not unlikely, I fear, to be followed by others equally distressing, may well serve to damp the joy and hope with which the intending emigrant looks forward to the moment of his embarkation, and interpose a fearful gulf of doubts and anxieties between him and the land of his adoption. I beg to assure John Jenkins that I do not disparage his advice, given at p. 53, neither do I wish to dissuade gardeners from going to Australia; on the contrary. I am a gardener myself, and though I am in an excellent situation, I am preparing to go there, so soon as I have acquired the necessary coals to carry me, and a little to keep the steam up after I land. *J. M.*

**Destroying Weeds.**—Your notice of the efficacy of sulphuric acid (see p. 84), in the destruction of Thistles and other tap-rooted weeds, is highly interesting to those who, like myself, are engaged in warfare with those enduring pests, and you will, I hope, be enabled to give your readers more information upon the subject. Thistles abound in my park and the pastures around, the farmers being content with mowing them down about once or twice in the year; this is expensive, and, I believe, makes them stronger and more numerous. I have tried salt, but without any success; and I should like to see some clear statement from those who have tried that plan and found it answer. I am now drawing them; but unless this is done with extreme care, it will not avail, though I apprehend that in a series of years, and constantly pulling them up, they will be destroyed by the mere privation of the leaf and upper part of the root. Such a plan, however, cannot be resorted to by a farmer, it being an annual expense, and the result uncertain; anything therefore which affords a certain prospect is very important. *D.*—*M. Renier's* plan of using sulphuric acid for destroying weeds is by no means new. It is mentioned by Sir J. Smith, in one of his works. I tried it on a lawn to a large extent two years ago, but gave it up on finding that the root-suckers produced (almost invariably) a fresh supply of young plants, so that the acid multiplied instead of diminished the nuisance. *Exp. docet.*

**Gas Heating.**—There are, I am persuaded, many gardeners and others who think favourably of and recommend gas for heating horticultural structures. I am, however, by experience, convinced of its entire inapplicability if economy is at all regarded. My late employer had gas works erected near his mansion for the purpose of lighting it, and he was strongly recommended to heat his horticultural buildings by means of gas. The system he was told had been tried and found to answer perfectly. He made up his mind to apply it, and intimated his intention to me. I gave him no encouragement, as I felt dubious of a satisfactory result; in fact I made him understand this. However, he heeded me not—he felt anxious to test its merits. Accordingly preparation was made for applying it to two Vineries—a stove, a greenhouse, and a conservatory, in each of which it had an impartial trial. For the purpose in question some of Mr. Ledger's Registered Gas Stoves were procured and fixed under the direction of that gentleman (who also fixed the gas works). Two of these were placed in one of the Vineries which was intended to be forced first. Although this house was not more than 25 feet long, by 18 feet wide, inside measure, we could not, even when the gas was turned on to its full extent, raise the temperature 10° above that of the external atmosphere. The consequence was, these stoves were removed, and two others of much larger dimensions were introduced, in each of which a small copper boiler was fixed; from them, 1½ inch iron pipes (two on each side) were carried round the house, and by this means water was made to circulate in the usual way. The heat was now more regularly distributed, still it failed to accomplish anything like what was wanted. After a few more ineffectual trials, all hopes of its answering were despaired of; and finally, these stoves were taken down to make room for a system of heating which is far more powerful, applicable, and economical. I should say that these large stoves, when in full work, consume 900 feet of gas in 12 hours; and at this rate would not raise the inside temperature 20° above that outside. Gas cannot be made so cheap when it is only occasionally wanted, as when it is continually and regularly demanded, therefore it was in the above case, comparatively speaking, intolerably expensive. I think it right I should say that these stoves were admirably adapted for the purpose for which they were intended; and where it is determined to use gas for heating buildings of any description, I believe they might be employed in preference to any other. And I have no doubt that where a sufficient quantity of them is used, ample heat for some purposes may be obtained: but in all cases expense must be disregarded. I am not prejudiced

against anything novel being introduced in my profession, therefore the system suffered nothing through that; I paid great attention to it, and hoped that it might meet the expectation of its most enthusiastic admirer, and was truly grieved to witness its inapplicability. *Charles Lucas, Brentwood.*

**The Weather in South Wales.**—It is remarkable that the mean temperature of December is within 2° as high as that for the whole year; it is also the sixth highest out of the 12 months, and 2° higher than the mean temperature of December at Greenwich, as stated by Mr. Belville. It is singular, too, that hot as July was, intensely so in most parts of England, my thermometer on the north side of the house did not rise above 76°, while in 1850 and 1851 it rose to 80°. The mean of the three summer months, June, July, and August, is lower by 1.74° than that of 1851, owing to those of June and August being lower than the same months in 1851. The quantity of rain has exceeded that of 1851 by 8.492 inches, and that of 1850 by 15.998 inches. I have had my two gauges (8 inches and 5 inches) on the same level side by side since the 1st of April, and I find the average of the 5-inch gauge invariably lower than that of the 8-inch one. I have no reason to doubt the correctness of either instrument; and I can, therefore, only infer that the larger the area of the funnel that receives the rain, the more correct is the approximation (for it is no more) to the actual quantity of rain falling at the place. As specimens of the mild winter we have hitherto had, I may mention that the thrushes began to sing before Christmas, and have never ceased since. Common scarlet Geraniums bedded out are in full leaf. The following is the state of the thermometer and rain-gauge at this place, Pembroke Dockyard.

Date.	THERMOMETER.						RAIN, in inches.		Wet Days.
	Absolute Maximum.	Absolute Minimum.	Mean.	Average Maximum.	Average Minimum.	Mean.	8-inch Gauge, 5 feet from Ground.	5-inch Gauge, 42 ft. 6 ins. from Ground.	
1852.									
January	53.00	26.00	39.50	48.4	33.48	43.26	5.802	5.410	27
February	53.00	24.50	38.75	46.55	36.30	41.40	1.129	1.887	19
March	60.00	22.00	41.00	48.25	32.99	40.62	.978	.604	7
April	63.50	27.25	45.37	54.29	37.5	45.67	2.258	2.188	7
May	73.00	33.50	53.25	60.65	45.8	52.82	2.272	2.182	16
June	69.50	42.25	55.87	62.55	50.35	56.44	3.341	3.178	21
July	76.00	51.00	63.50	70.21	56.79	63.50	.625	.559	11
August	72.00	42.00	57.00	66.24	52.33	59.53	4.744	4.397	21
Sept.	72.00	36.50	54.25	62.12	49.24	55.68	2.807	2.192	17
October	58.00	28.00	43.00	53.91	32.4	47.98	4.482	4.250	20
Nov.	58.00	23.50	40.75	52.18	33.55	47.86	9.026	8.617	29
Dec.	55.00	35.00	45.00	51.89	44.50	48.17	4.202	3.657	30
Means	63.58	32.62	48.10	56.40	44.10	50.24	Total, 41.166	Total, 38.131	225

\* Gauges both 5 feet from the ground.

	Mean	Ins.	Wet Days.
1851—Mean	...	39.545	233
1850—Mean	...	23.650	182
The mean temperature of the winter months, Dec. 1851,			42.91
Jan. and Feb. 1852			46.37
The mean temperature of the spring months			57.49
" " summer do.			50.506
" " autumn do.			
Difference between summer and winter...			14.58
" " hottest and coldest months			22.28
Maximum temperature			76.00
Minimum			22.00
There has been a singular difference in the minimum temperature between Chiswick and this place in the last week. We are generally much warmer at night than Chiswick is, but in this instance it has been the reverse.			
CHISWICK.			
January 22	...	35	31.25
" 23	...	31	22.00
" 24	...	34	36.25
" 25	...	32	35.50
" 26	...	26	27.75
" 27	...	36	27.75
Mean of 6 days...	32.33	Do. 6 days	30.16
		Do. 7 days	29.39
PEMBROKE.			
January 22	...	35	31.25
" 23	...	31	22.00
" 24	...	34	36.25
" 25	...	32	35.50
" 26	...	26	27.75
" 27	...	36	27.75
Mean of 6 days...	32.33	Do. 6 days	30.16
		Do. 7 days	29.39

*T. S. P., Pembroke Dockyard, Feb. 1.*

**Malformed Pine-apple.**—I have been induced to send you a rough sketch of a Providence Pine-apple, cut on the 21st ult., and weighing 3 lbs. 3 oz. You will observe that it has a crown, not one composed of leaves, however, as usual, but in the shape of a second fruit above the first, and one-third the size of the latter. It had a little hollow in the top, and very small imperfect leaves turning to the centre. *W. R.* [This is a curious thing. The crown seems to have become a fleshy mass and to have formed a true fruit; thus obeying the laws of morphology, which caused the first tuft of leaves to become the customary fruit.]

**Horse Chestnuts in February.**—The Earl of Stamford and Warrington wished me to enclose some buds of a Horse Chestnut, to show how forward vegetation is here. The tree is one of a clump in a field, and has always been very forward, but never so early as it is this year. *John Aiton, Enville Hall Gardens, Staffordshire.* [The buds were burst; the leaves beginning to unfold, and to gain their green colour.]

## Societies.

ENTOMOLOGICAL, January 3.—J. O. WESTWOOD, Esq., President, in the Chair. After the ordinary announcements of donations made to the Society since the last

meeting, balloting for new members, announcement of the nomination of the Council and officers for the ensuing year, to be proposed at the anniversary meeting, and other routine business had been performed, the President announced that the Council had resolved that as a mark of respect to the memory of the late James Francis Stephens, Esq., F.L.S., F.Z.S., and ex-President of the Entomological Society, the meeting would be adjourned without any scientific business being proceeded with. A short obituary notice of Mr. Stephens will be found in our impression of the 8th ult.

January 24.—J. O. WESTWOOD, Esq., in the Chair. This being the anniversary, the business was confined to the election of the Council and officers for the ensuing year; the reading of the report from the auditors of the treasurer's accounts, which were less favourable than ordinary, owing to the expense the Society had been put to in removing to their new apartments, and some other casual expenses, to meet which, the Council had resolved to open a subscription among the members; the report of the Library and Cabinet Committee was also read. The following gentlemen were elected Members of the Council for the ensuing year:—Messrs. E. Newman, W. W. Saunders, A. F. Sheppard, and S. Waring; and Mr. Newman was elected President, Mr. S. Stevens Treasurer, and Messrs. Douglas and Wing, Secretaries. The President read his anniversary address, for which a vote of thanks was passed, on the motion of Mr. Spence, and the same was ordered to be printed. The President also announced that three essays had been sent in for competition for the prize, on the question of the longevity of the three different kinds of individuals of which the hive is composed, with especial reference to the practical relative advantages dependent thereupon, of preserving swarms, or stocks, and that the committee had approved of the essay written by Mr. Desborough, of Stamford, to whom accordingly the prize was awarded, and handed over by the President. The two unsuccessful essays will be delivered to the writers on application to the curator, with the respective mottoes endorsed upon them.

BOTANICAL OF EDINBURGH, January 13.—The

President in the Chair. Dr. Balfour noticed the following donations recently made to the Museum of Economic Botany, at the Botanic Garden:—From H. Bains, Esq., Museum, York, sections of a tree Fern, 20 inches in circumference, and of *Urtica gigantea* from New South Wales; woody substance (supposed to be work of an insect), taken from the centre of a log of Purple-wood from Guiana; fruit from the Grapple Plant (*Uncaria procumbens*), from the Cape of Good Hope; *Polyporus* from the Willow, with brooches made from it, exhibiting a shining velvety appearance; opalised specimen of *Dacrydium Uredo*, from a tree of 10 feet in circumference, said to be imbedded in basalt, in the Macquarie Plains, Van Diemen's Land; also, the following microscopical preparations:—Bract of *Poinsettia pulcherrima*, showing the arrangement of the cells, containing red colouring matter; specimens of spiral fibres from spiral vessels, some of them composed of seven fibres united so as to form a band such as occurs in *Pleiotriches*; section of the silicified wood of *Dacrydium Uredo*, showing the disk-bearing woody tubes. From Miss Neill, specimens of an opalised endogenous stem, carboniferous Fern (*Neuropteris*), and an old Oak Quagha, from Orkney. From A. H. Balfour, Esq., Hong-Kong, specimens of Chinese manuscripts; the letters are written on narrow leaves (probably of a Palm), which are fastened together so as to form small books. From D. Oliver, jun., Esq., four specimens of the interpetiolar glands and hairs of *Pentas carnea*, put up in a solution of chloride of calcium on slides for the microscope. From A. Duff, Esq., large specimen of *Conserva segogropila*, from a lake in South Uist, Outer Hebrides. From Mr. Scrymgeour, specimens of vegetable substance found in the interior of a coffin in the Old Burying Ground, Dundee. Mr. Stewart McGlashan exhibited his patent apparatus for transplanting trees, shrubs, and herbaceous plants. The method of operating was fully explained, and a specimen of *Araucaria imbricata* 2½ feet high, with a ball of earth 21 inches square, and weighing in all 3½ cwt., was shown in the state in which it had been taken up from the Botanic Garden; also a specimen of *Helleborus niger*, in flower, taken up with a ball of earth by a smaller apparatus, consisting of two semicircular spades placed together, so as to form a sort of iron flower-pot by the handles being pressed outwards. Dr. Balfour made some remarks on the efficiency of the apparatus, and the ease with which it was applied. The *Araucaria* shown had been taken up in six minutes from the time the spades were first applied to the soil. He had seen various kinds of trees and shrubs taken up, and in every instance the method was most successful. In some cases four and five tons of earth had been taken up in the Botanical and Experimental Gardens. Dr. Balfour considered the invention as an admirable one, and as being well fitted for its purpose. The following papers were read:—1. On the Lichens used in Dyeing. By W. L. Lindsay, M.D. 2. Remarks on the Flora of the District in the neighbourhood of Peebles. By J. Young, Esq. 3. On the cultivation of Victoria regia in Jamaica. By Dr. G. McNab. In this communication Dr. McNab stated that seeds had been sent to him by his brother, from Edinburgh, in September, 1851, that they had been planted by the Hon. E. Chitty, at Kingston in a tank prepared for the purpose, and that the plant had grown vigorously, and had flowered well. Dr. Balfour observed that the structure of the stem of the Victoria regia had been examined recently by Mr. Henfrey, in the



case of a specimen which flowered in the Garden of the Royal Botanic Society of London. He says that the plant develops its stem by a terminal bud like Palms, throwing out leaf after leaf in a spiral course; that there is no tap-root in the perfect plant, that produced in the embryo decaying, and its place being supplied as in monocotyledons by adventitious roots. There is no true bark, no pith, and no annular zones of vessels, the vascular bundles being scattered as in endogens. Mr. Henfrey regards the stem of *Victoria* as endogenous, as Trecul had already done in regard to other Nymphaeaceae, especially *Nuphar lutea*. The chief differences, Henfrey says, from endogens are the absence of fibrous layers between the cortical and central tissues, and the composition of the vascular bundles being exclusively of spiral vessels, with unrollable fibres.

## Reviews.

*Orchideae in Flora Germanica recensita, additis orchideis Europae reliquae, reliqui Rossici imperii, Algerii, ergo Tentamen Orchidographiae europaeae, iconibus illustratum.* Auct. H. G. Reichenbach, f. 4to, Leipzig.

It is highly satisfactory to find that at last a botanist has appeared in Germany capable of dealing with the difficult subject of Orchids. For many years past, ever since, indeed, the introduction of the tropical species of the order into cultivation, this kind of German literature has contained more error than truth, and it is very clear that the most talented of the botanists of that country had not any such knowledge of the order as would enable them to determine either species or genera with reasonable accuracy. It is very different with Mr. H. G. Reichenbach, who has made the order his study for ten years past, who has addressed a mind naturally acute and well trained by long habits of observation to the examination of the race, and who has thus acquired, in a very large degree, that extensive familiarity with complicated forms which can alone enable a botanist to write upon them without committing the gravest errors.

The work now before us consists of 194 quarto pages of letter-press, and 170 coloured plates. Its object is to settle the species of the European and quasi-European plants of the order, in performing which task the author seems to have been very liberally seconded by his correspondents over all Europe and the north of Asia. If the most careful examination of very extensive series of forms can lead to something like a determination of the limits within which species are to be restrained, Mr. Reichenbach may be supposed to have set the question at rest; for elaborate research can do no more. That he is generally right we do not at all doubt; but we greatly question whether the conclusions at which he has arrived will satisfy our hair-splitting contemporaries. For instance, he pronounces the following names of supposed species to be nothing more than *aliases* of *Ophrys aranifera* in different disguises, viz., *araneoides*, *fuciflora*, *lunulata*, *araneola*, *mammosa*, *pseudo-speculum*, *incubacea*, and *exaltata*—eight in all; and we not only believe him to be right, but it is probable that the list might be extended. And so of other species.

We cannot but doubt whether the process of reduction has been carried far enough, when we find *Orchis incarnata* and *O. latifolia* still separated, the result of the attempt at their discrimination consisting in placing the *Orchis foliosa* of the "Botanical Register" under *O. incarnata*, and the *Orchis foliosa* of the *Sertum Orchidacearum* under *O. latifolia*, both the figures referred to, and upon which this decision has been arrived at, having nevertheless been made from the self-same individual in different states of health.

Mr. H. G. Reichenbach is now diligently engaged in determining the tropical species of the order to be found in German gardens and herbaria, the result of his labour appearing from time to time in the "Linnaea" and "Botanische Zeitung." His work is, upon the whole, executed with much skill and knowledge of the subject. We may, however, venture to hint that the punctuation of both his generic and specific characters might be greatly improved, that it is very desirable that the essential points by which proposed new genera are to be distinguished from others should be concisely pointed out, in addition to the extended descriptions of the genera, for want of which there is no clue to the affinities of his *Mesospindium* and *Ponerorchis*; and, finally, that such barbarous names as *Galeandra Boulou Wongo* are in the highest degree objectionable.

## Garden Memoranda.

MR. MACINTOSH'S NURSERY, MAIDA VALE.—We remarked here an excellent specimen of the charming *Veronica Andersonii*, in the shape of a pyramidal bush about 3 feet high and 2½ feet across at the base, the under branches hanging down so as to partly conceal the pot. This plant, which is exceedingly unique in its appearance, was raised from a cutting about two years ago. With the exception of very severe weather, when it received the temporary protection of a shed, it has, we believe, all along been kept out of doors, and continually growing.—Mr. Macintosh's plan of managing such plants, when fine specimens are wished for, being to grow them one season and bloom them the next. The plant in question has, however, hitherto only been permitted to make wood, the flowering being prevented by a regular system of stopping, by which its present handsome shape has been acquired. It is just now showing bloom, which

will doubtless be developed in succession during the whole of next summer, and possibly even up to Christmas. It may be worthy of remark, that this plant has been grown entirely without sticks, which Mr. M. thinks are unnecessary in the case of hard-wooded plants in general. This is certainly, as we have often stated, one of the most handsome of Veronicas, and a sort which at no distant date must be as common as a Myrtle in every cottager's window. We also observed here a nice compact plant of the old-fashioned *Agathaea caelestis*, which has been blooming for some time back, and is very useful for cutting from, its blue flowers having a cheerful effect in bouquets at this season of the year, when such colours are scarce. By growing a few plants of this during the summer, and stopping them back, they would come into flower now, and form not unattractive objects amongst other things in a conservatory or a cool greenhouse throughout the winter. A few small *Chrysanthemums* were still in blossom. These were flowering tops taken off and struck last September. In a house in which a little warmth is maintained, some of the early flowering kinds of *Pelargonium*, such as *Album multiflorum*, which is still perhaps one of the best for "early work;" *Washington*, a good dark with a fine habit; *Lanei* and *Bloomsbury*, good second early kinds, and *Gauntlet*, were showing flower buds, and may be expected to be in bloom in about a month or six weeks time. Chinese *Primroses*, sown in March last, were in blossom here, along with *Hyacinths* which were potted last November, and buried in old tan till they had become well rooted, when they were placed in a pit on a gentle bottom-heat till their flowers began to expand, when they were removed to their present position, a drier atmosphere being necessary to prevent damping off. A few old plants of *Verbenas* and *Heliotropes* were also introduced here, in order to stimulate them to make new growth for cuttings, a good plan in the case of bedding out things in general, the stock of which is limited. Another house contained a collection of *Hollyhocks*, which the excessive wet we have experienced rendered it necessary to remove from cold pits, where they were found to die off. A greenhouse near the entrance was well filled with scarlet and other *Pelargoniums*, struck in autumn last, and principally intended for bedding out next summer.

## FLORICULTURE.

LEADING FLOWERS OF 1852.—In few flowers has there been so much improvement during the last few years as in the Pansy; we have had smoother surface and edges with increased substance, and consequently denser colours. In its cultivation, too, thanks to the Horticultural Society, there has been a movement in the right direction, for, without seeking to "offer a plea for the Pansy," we consider its exhibition in pots to be one of the many improvements of the day. We have been favoured, during the season, with several contributions of seedlings from our Scotch florists, and many of the flowers possessed much merit; but unfortunately we neither knew their names nor from whom they came. Of flowers we do know, however, Fearless (Schöfeld), Sir J. Cathcart (Turner), National (Turner), Sir J. Paxton (Turner), Mrs. Rouse (Bragg), and *Daphne* (Brown), rank high in merit; the first-named is very similar to, and an improvement on *Supreme* (Youell); of its habit we cannot speak. To Sir J. Cathcart belong colour, form, and refinement, to which may be added dissimilarity; it is middle-sized. National is narrowly margined on a faint straw ground, and is a showy flower, but not without some defects—one of which is a weakly constitution. *Daphne* is remarkable for the cheerfulness of its border colour. Mrs. Rouse adds one to the limited white-ground class. Joe Miller is a dark self, but not being considered sufficiently good we believe it was not propagated. Sir J. Paxton must improve upon its style of margin and ground colour, or it will not be a favourite. A seedling of this class sent us by a correspondent we distinctly recollect; it was remarkably bold and large, much in the way of Mrs. Hamilton; we first had it from "J. P.," then from "E. B.," and we believe with the name of Mary Blanche. Let us next proceed to notice the Tulip, a flower just now commanding much attention; the onward movement in regard to it is, however, more of a sweeping character than may be welcome to possessors of "antique stock," to whom we would hint "discard and be prompt;" for assuredly one-half of our present varieties must be consigned to the rubbish heap—we cannot say to give place to numbers, it is rather to quality, for the time has now arrived when such sorts as may have been seen "once or twice nearly pure," must give way to unsullied and constant purity; with chastity give us marking, but no feather can compensate for a deficiency of the first requirement, a spotless base; even form is secondary to purity in the case of the Tulip. Turn now to the Chinese *Azalea*, a plant, as everybody knows, of the highest order for the decoration of our greenhouse or conservatory; our exhibitions in May would indeed be a blank without the gorgeous banks which are every year produced of this glowing flower. Among novelties, *Admiration* and *Criterion*, from the Messrs. Ivery, of Dorking, are both fine flowers; the former is narrowly striped with pink, it is of average size, and a profuse bloomer; *Criterion* is densely blotched with purplish pink, "flaming" outwards to the edge of the petals, which are margined with white. From the base of the three upper ones, and issuing outwards, are dottings of a deeper shade, approaching crimson, and very similar in style to those of the

*Rhododendron*; the form of the petal is rounder than that of *Admiration*, but it is not so regular on the edge. These two flowers are valuable acquisitions, and in a large shape will no doubt some day be subjects for admiration at our great metropolitan shows. *Vittata* is also desirable; its colours are white and purple, or as florists should say, it is a "purple flake." J. E.

DARLINGS: *Amateur*. Mr. Turner states that *Beauty of Telford* was the first seedling that commanded a high price; this variety was raised by the Rev. S. B. Ward, of Telford, in 1835, and was purchased (the stock) by the Messrs. Brown for 30*l*. Then followed *Yellow Defiance*, purchased by the same firm at the high price of 200*l*., certainly the highest amount ever given for a Dahlia; it was sent out in 1840. *Essex Triumph*, raised in 1841, was sent out in 1843 for 60*l*.; *Marchioness of Ormond*, 105*l*.; *Shylock*, *Beeswing*, *Alice*, and *Cleopatra*, for 100*l* each; *Lady Sale*, 70*l*.; *Nonpareil*, Sir J. Richardson, Duke of Wellington, Bob, Sir R. Whittington, and B. Irish Queen, 50*l* each; and *Queen Victoria*, figured in the last Number of the "Florist." 105*l*. There are, however, many other varieties that would have brought large sums in their day had they not been sent out by the raisers; such as the *Hon. Mrs. Harris*, raised in 1834, *Unique*, *Beauty of the Plain*, Mr. Seldon, Sir F. Bathurst, and *Princess Radziwill*, &c.

FAVOUR PELARGONIUMS: C. L. Fancies undoubtedly like a little warmth; but give plenty of air all day, if you should even have a fire on at the same time, and afford them plenty of room. Keep the outside branches tied out, in order to give the centre shoots all the light and air possible. With every attention to tying, however, the plants have a tendency to become crowded; to lessen this thin out a few of the under leaves occasionally from the centre of the plant, which prevents the shoots from becoming drawn.

FUCHSIAS: Z. Plants intended for specimens should be grown in a gentle heat, drawing the syringe over them lightly in the afternoon. Give them plenty of pot-room, if large plants are required. Cuttings strike at this season very freely, and therefore it is a good time to make the general stock.

ROSES FROM CUTTINGS: J. H. Propagation by cuttings may be performed with success all through the growing season. As soon as the forced plants have bloomed, the shoots taken off, when pruning for a second bloom, may be cut to a joint with two or three eyes, allowing the leaves to remain on all excepting the bottom eye intended to be inserted in the soil. About six of these cuttings placed round a four-inch pot, in equal parts of loam, leaf-mould, and sand, will be sufficient. They should be placed firmly in the pots, and afterwards well watered through a fine rose; then plunged where they will have a moderate bottom-heat, and be shaded from the midday sun. In a few weeks, when rooted, they may be potted separately into 3-inch pots, and gradually hardened off. The same soil may be used as before, but broken up fine, or sifted, with the addition of a little sand. Cuttings will strike through the summer, and at any period when the young wood can be obtained well ripened. They may be taken as late as September, but must then remain in the cutting-pots during winter, and be potted off early in spring.

SCHEDULE received of the Kelso Horticultural Society, the forthcoming show days of which are fixed for April 20, May 18, July 6, September 7, and November 9.

## Miscellaneous.

Phosphorus Paste for Destroying Vermin.—Several recipes have been published for preparing phosphorus paste, but, in following the instructions which have been given, it has sometimes been found difficult to get the phosphorus equally mixed throughout the whole of the mass, and inconvenience has often been experienced from the ignition of the phosphorus during the process of mixing. Doubts have also been entertained whether the phosphorus paste, after being prepared for use, is not liable to undergo spontaneous ignition, especially in warm weather, in which case its use would be attended with considerable danger. With the view of ascertaining the best process for preparing the paste, and of determining the temperature at which its ignition takes place, a few experiments were made, of which we give the results. For the preparation of the phosphorus paste, the following process was found to be unexceptionable.—Introduce one drachm of phosphorus into a Florence flask, and pour over it one ounce of rectified spirit. Immerse the flask in hot water until the phosphorus has melted, then put a well-fitting cork into the mouth of the flask, and shake it briskly until the contents are cold. The phosphorus will now be found to be in a finely divided state, and this, after pouring off the spirit, is to be mixed in a mortar with an ounce and a half of lard. The mixture takes place unaccompanied by combustion, nor does the retention of a small portion of spirit by the phosphorus interfere with this result. Five ounces of flour and an ounce and a half of brown sugar, previously mixed together, are now to be added, and the whole made into a paste with a little water. Cheese may be substituted for sugar when the paste is intended for rats or mice. Some of the paste, prepared as above, was made into little pellets, and these were laid on an iron plate over a furnace. It was found that ignition did not take place until the iron plate had become hot enough to burn the finger, and even then the pellet burned with a very feeble flame, and failed to communicate the combustion to a piece of paper placed beneath it. Similar results were obtained on repeating the experiment several times. Some of the paste was prepared with double the above quantity of phosphorus, and the only difference observed in the results was, that the ignition took place at rather a lower temperature (but still a temperature too hot for the finger), and that when ignited it burned rather more briskly. *Pharmaceutical Journal.*

## Calendar of Operations.

(For the ensuing week.)

### PLANT HOUSES.

To give as great variety as possible to the conservatory, a different arrangement of the plants in pots may be made whenever a fresh supply from the forcing house is brought in. At this season it will be proper to examine any plants which may be growing in the open borders of the house; and where any are found



growing too vigorous, either a complete lifting or partial disrooting will be requisite. The great thing to guard against with plants growing in the open borders of conservatories and other houses, is to prevent the free growing kinds from crowding the more delicate ones; and which can only be done effectively by the frequent transplanting or root-pruning of the strong growers. The delicate and slow-growing kinds should at this time be examined, and any dry and worn out soil changed for fresh compost; such plants as *Brugmansias*, *Hibiscus*, and other free growing genera, should be taken up, and have fresh compost to grow in every second year. The former would be benefited by this treatment annually. When conservatory borders are being constructed or rearranged, we suggest their being divided by  $4\frac{1}{2}$  inch walls into squares, the size of which may be regulated by the height the plants will ultimately attain; by this, each plant will be prevented from encroaching on its neighbour, and the desired compost for each can be given it without difficulty; while for late purposes this plan presents manifold advantages. The walls should be carried up to within two or three inches of the top, to allow for that depth of compost over them, that the surface of the border may present a uniform appearance when finished. Fires in this department will be more needed to dry up damp and to enable you to ventilate freely, than for the purpose of raising the temperature— $45^{\circ}$  may be the maximum height of temperature. Hard wooded greenhouse plants should still be kept comparatively cool, to prevent a too early growth. Air will still be liberally admitted, avoiding, however, by all means, drafts or strong currents of air from coming in contact with plants. To effect this, thin gauze, or close netting, should be placed before such sashes as are opened to admit air. Water cautiously, using it slightly tepid. Epacris will now be fast advancing into bloom. A little clear soot-water will assist any rather under-potted, or that require assistance. Prevent the growth of moss, &c., on the surface of pot plants, by frequently stirring the surface; remove everything in the shape of decayed foliage, and keep the interior of plant houses clean, dry, and healthy. Allow nothing to obstruct the free passage of light through the roof sashes, as an abundance of this element at the present time will be favourable in producing a strong start when the new growth takes place. Pot seedling *Calceolarias* and *Cinerarias*—large plants of the latter should at once be placed in their blooming pots. As the flower stems advance water occasionally with manure water; keep these and similar soft-wooded plants near the glass, in a mild temperature—not, however, exceeding  $48^{\circ}$  by night.

#### FORCING DEPARTMENT.

**LATE VINERIES.**—When it is desirable to have Grapes fresh and plump after Christmas, a house should be devoted to the purpose; and if the kinds selected are the true varieties of St. Peter's and the Barbarossa as black Grapes, and the White Muscat and Charlesworth's Tokay for white ones, you may be satisfied that the desired end is easily to be attained. Numerous writers on this point assert that Grapes should ripen in September to keep well; we have, however, found it very difficult to keep Grapes ripening at that time fresh through January. As our Vinery is very steep, we may perhaps obtain more light in November than some others; but, certainly, we have ripened Grapes in that month of the above varieties (excepting the Barbarossa), which have been equally well coloured and flavoured as those ripened at a much earlier period; and we managed to keep the leaves green and fresh through the greater part of January, by simply covering the borders with warm litter, to preserve the roots in action. We name this, as fresh Grapes and green leaves are a boon at that period. To obtain the above, we shade the Vines, to prevent their breaking before May. Bring on the successional forcing houses, and pay every attention to the regulation of fire-heat, and admission of air. The bunches in the early house will now require thinning, which should take place directly the berries are discernible; aim at doing the work principally at the first operation; do not handle the bunches with dirty hands, nor allow anything greasy to touch them. Keep the house in a moderately moist state, by steaming the heating apparatus twice or oftener, daily, but not during sunshine. **PEACH HOUSE.**—Go over the newly set fruit, and give them a slight thinning.

#### FLOWER GARDEN AND SHRUBBERY.

The demand for bedding out plants (in the spring) is frequently greater than the room devoted for their wintering can supply. It will in this case be necessary to commence propagating to make good the deficiencies. For all the soft wooded and free growing plants a common dung frame, having a slight bottom-heat, will suffice; fill up to within 12 inches of the glass, upon which place 4 inches of dry sandy soil, in which the cuttings may be put directly you can procure a young growth for the purpose. As the display of flowers during the early summer months depends mainly on the health of the stock at planting time, it will save labour and increase the size and healthiness of the plants by turning them out of their pots or cutting pans, into low pits or frames; and a light sandy compost will serve for them to grow in, and if 6 inches of this is placed over a very light bottom-heat, the plants will soon make rapid growth; and you will have the advantage of an abundance of cuttings for propagation, if wanted. *Calceolarias*, *Petunias*, *Verbenas*, and such things, answer best for this; but where time and pot room are objects, scarlet *Geraniums*, and nearly every variety of bedding-out stuff, may be managed on the above plan. Before

planting time the plants should be checked by raising them once or twice with a spade. Put in root cuttings, in a brisk bottom-heat, of *Bouvardias*, and some kinds of *Geraniums* difficult to strike in the ordinary way, or of which cuttings are scarce to be got. Sow in small pots *Maurandias*, *Lophospermums*, and other climbing annuals, to get strong by May. Keep the pleasure-grounds swept and rolled frequently, to keep down moss.

#### FLORISTS' FLOWERS.

Should the weather permit, plant *Ranunculuses* towards the middle of the month. Top-dress *Pinks* and *Pansies* in beds. Those of the former, which have been reserved to fill up vacancies, should be put in their proper places forthwith. *Pansies* in pots will require abundance of air, well looking after, surface soil loosened, &c. The great secret in carrying these things out in first-rate style is constant attention. Those who mean to try for the cups at the National Tulip Show will do well to give a little extra attention. Perhaps a little Nottingham lace to keep off hailstorms would be no bad thing to ensure one of the Nottingham cups.

#### HARDY FRUIT GARDEN.

The Strawberry plantations will now require going over; for the present, however, allow the leaves of last year's growth to remain, as a protection to the crowns; the beds should be cleared of weeds, and a dressing of good rotten dung spread between the rows. We by no means advise a digging between them, but if the ground is firm, a slight pronging will do good, but only to break the crust. As soon as the pruning of espaliers and dwarf fruit trees is completed, let the ground, if poor, have a surfacing of manure, and be slightly forked over, leaving it rough for the winds of March to dry the surface, when it may afterwards be raked smooth. Pruning of all kinds should now be brought to a close, except *Figs*, which may yet remain. When *Filberts* are closely pruned, a deficiency of male blossoms sometimes occurs; in which case stick some branches of the common Hazel, having a crop of catkins on, about the bushes, to fertilise the female flowers. Before *Peaches* are tied to the walls, they should be dressed with a composition, consisting of soft soap, tobacco-water, sulphur, to which add quick-lime, to give it consistence. Whenever any appearance of scale is found on other wall-fruits, they should be dressed during winter with the above composition.

#### KITCHEN GARDEN.

Although both soil and weather are unfavourable for committing seeds to the open ground just at present, still when necessity compels a continuous supply of vegetables to be kept up, means must be taken to overcome both unfavourable seasons and soils. Fortunately for our purpose glass is cheap and timber not very dear, and with such auxiliaries the cultivation of vegetables in unfavourable seasons becomes easier in proportion to the artificial assistance employed. To provide, therefore, against failures in the crops already sown, or where the climate is too cold to trust seeds for the present to the open ground, we advise sowing Peas, Beans, Spinach, &c., in addition to the kinds named in our last Calendar; good early varieties of the former should be selected. They may either be sown in small pots for the more easy transferring to the open ground; or when the quantity is considerable, cut fresh pieces of turf 12 inches long, and 4 or 5 inches wide; turn the Grassy side downwards, and form a channel along the centre of the now upper part, in which sow the crop as you would in the open ground. Place the turves under glass, giving air, &c., as the plants progress, removing the sashes entirely each fine day when the plants are up, to harden them perfectly before planting them out, which, with the turves, requires merely a trench being cut with a spade, and all put in, burying the turves about 2 inches.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending Feb. 10, 1853, as observed at the Horticultural Gardens, Chiswick.

Feb.	Moon's Age	BAROMETR.		TEMPERATURE.					Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday..	4	29.78	29.52	41	31	36.0	38	34	N.W.	.17
Satur..	5	29.78	29.70	42	32	37.0	38	34	S.E.	.00
Sunday..	6	29.88	29.65	43	34	38.5	38	34	N.E.	.00
Monday..	7	29.82	29.34	45	34	39.5	38	34	S.	.01
Tues....	8	29.20	29.02	40	26	33.0	39	35	S.E.	.00
Wed....	9	29.05	28.94	40	34	37.0	38	39	E.	.02
Thurs....	10	29.24	29.01	37	28	32.5	38	38	N.E.	.06
Average ..		29.514	29.339	41.1	31.3	36.2	38.1	38.5		.26

Feb. 4—Cloudy; overcast; cold rain.  
 5—Day; cloudy; densely overcast at night.  
 6—Overcast; cloudy; densely overcast.  
 7—Fine; very fine; slight rain at night.  
 8—Uniformly overcast; frosty at night.  
 9—Foggy; overcast; barometer remarkably low, most unusually so with an easterly wind; rain at night.  
 10—Cold drizzling rain; clear at night; snow.  
 Mean temperature of the week  $22^{\circ}$  below the average.

#### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Feb. 19, 1853.

Feb.	Average Temp.	Average Frost Temp.	Mean Temp.	No. of Days in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13	45.0	31.1	38.1	11	0.30 in.	2	2	2	2	1	5	8	5
Mon. 14	46.3	32.6	39.4	8	0.50	2	2	3	2	4	8	5	2
Tues. 15	47.3	32.1	39.7	11	0.25	2	2	3	2	4	7	7	2
Wed. 16	46.4	31.3	38.9	5	0.23	3	3	1	3	1	5	6	3
Thurs. 17	46.7	32.5	39.6	10	0.30	3	1	2	3	3	5	9	1
Friday 18	45.3	32.7	39.1	11	0.54	4	1	1	1	4	7	6	1
Satur. 19	45.5	32.2	38.8	13	0.51	4	1	3	1	1	7	4	2

The highest temperature during the above period occurred on the 17th,  $47^{\circ}$ —therm.  $57^{\circ}$  d.g.; and the lowest on the 16th and 17th,  $18^{\circ}$ —therm.  $15^{\circ}$  d.g.

#### Notices to Correspondents.

**APPLES:** A Sub. Twelve sorts for table use, the soil rather heavy:—Wormley Pippin, Ribston Pippin, Golden Reinette, Court of Wick, Blenheim Pippin, Boston Russet, Scarlet Nonpareil, Mannington's Pearmain, Pearson's Plate, Adams' Pearmain, Sturmer Pippin, and Court-pendu Plat. Six sorts for kitchen use:—Hawthorne, Dumelow's Seedling, Bedfordshire Foundling, Yorkshire Greening, Rymer, and Waltham Abbey Seedling.

**AUSTRALIA:** Thursday. All communications with this colony are by sea, round the Cape of Good Hope. We do not ourselves see how an overland communication is to be established with an island in the midst of a vast ocean.

**BOOKS:** Delta. Loudon's "Encyclopedia of Gardening,"—Amateur. Cobbett's "Cottage Gardener," and "The Manse Garden." CABBAGES: G. S. Clubbing may be prevented by filling the holes in which they are planted with wood ashes.

**FOREST TREES:** J. C. We are sincerely glad to hear of your prosperity. Good conduct, good manners, industry, and talent, will always bring their reward. Selby on Forest Trees, we suppose, be the book for you; but you should add Brown's Planter's Guide, last edition. Loudon's Arboretum Britannicum, in 8 volumes, 8vo, is, we presume, too much for you. As a work of reference it is very useful.

**GAS:** Color. We cannot say that any experiments in using gas for heating houses have yet been successful. Mr. Cuthill, of Camberwell, has a contrivance of which he speaks highly, but we have never seen it at work. We should certainly not advise you to think of it for such a house as you describe. If it can ever be made available it will be only for very small places, such as window gardens.

**GOSWORTHY:** Sub. We make it a rule never to recommend dealers.

**HOTBED:** Mary is much obliged for the information given at p. 35, respecting a hotbed; but the bed meant by her is one in a Vinery over a stove, which she wishes to fill, but does not know what materials to use for the purpose. She presumes the information given is intended for a hotbed in the open air, and therefore will feel much obliged if any of our correspondents will give her the further intelligence she requires.

**IMPORTED ORCHIDS:** F. E. G. Write for them at midsummer, and order them to be dispatched in the ensuing season, as soon as they have become quite dormant.

**MELONS:** Well-wisher. One 4-inch pipe will heat a bed 4 feet wide sufficiently to grow Melons. It is better to have the pipes for conveying bottom and top heat separate, in order that either one or both may be worked at pleasure; if not, the return pipe should be carried under the bed to supply bottom heat. The pipe for supplying the latter should be laid (either on paving or a smooth concreted surface), 2 feet below the intended surface soil of the border; a 6-inch or 8-inch diameter horse-shoe draining-pipe should be placed over the pipe. As there needs no trough for moisture, place on the side of the pipe, and over the bottom of the bed, 3 inches depth of brick-bats, or soft stone; over which fresh turves may be laid, to prevent the compost from choking up the drainage, this will allow for 18 inches in depth of compost. The heat to be obtained should range between  $85^{\circ}$  and  $95^{\circ}$ , the former being sufficient; pits, heated nearly similar to the above, may be seen in some of our best gardens. S.

**MICROSCOPES:** F. B. W. We cannot find, in the "Annals and Magazine of Natural History," for August, 1852, the paper on the relative power of three microscopes, by Ross, Spencer, and Nachez, to which you refer us. For prices you should apply to the parties themselves. Good achromatic microscopes cost from  $15\text{ s.}$  to  $120\text{ s.}$ , according to circumstances. You ought to have a good working one for  $25\text{ s.}$

**NAMES OF PLANTS:** Orchis. Helleborus fetidus.—A. W. W.; An Apprentice. Indeterminate; not in flower.—E. W. Asplenium Adiantum-nigrum, L. S.—A. G. Poinsettia pulcherrima, Francisca uniflora.—R. O. K. 1, one of the many varieties of Epidendrum variegatum; 4, Selaginella stolonifera; 5, S. apodum; 6, Phymatodes vulgare, S.

**ORANGE TREES:** E. H. From the appearance of the leaves we should say that they are starved; perhaps for want of warmth, perhaps for want of food, perhaps for want of air. See that the soil in which they grow is loose and well drained; raise the temperature a few degrees; water them with lukewarm water, and give them a dressing of guano, or pigeon's dung, or sheep's dung, and they will probably recover.

**PRESERVING TIMBER:** G. C. asks whether the patent Mr. Kyan took out for his steep, for preserving timber, has expired, and if so what is now the cost per cubic foot for steeping timber? There was a tank erected where he now lives for the purpose, but the expense proved so heavy under the patent that its use was discontinued. This was before his time, and he finds there was a prejudice against it by the carpenters. Any information as regards durability of timber steeped, &c., will be most thankfully received, or an account of any other steep of equal or superior value for timber; he is anxious to put his large tank to some useful employment.

**SMALL BIRDS:** G. S. They may be poisoned by Wheat steeped in a solution of arsenic; but the most effectual remedy, perhaps, is either shooting or trapping them.

**TREE LIFTING:** F. H. S. Notice will be given as soon as Mr. McGlashan has completed his arrangements.

**VINE BORDERS:** E. W. The compost you have prepared of turfy loam, rotten dung, and lime rubbish, ought to answer well. The best addition you can make is a quantity of inch or half-inch bone manure. Whilst the weather continues neither much warmer nor colder than at present, the covering of wall trees is not necessary.

**VINERY:** J. F. T. Instead of Mrs. Loudon's work "Gardening for Ladies," you should have referred to Loudon's "Suburban Horticulturist." In attempting to grow various things in the same small Vinery, it will be found impossible to regulate the temperature so as to suit all perfectly well. The Vines, in your case, should be commenced with a night temperature not exceeding  $50^{\circ}$ , then gradually increase to  $55^{\circ}$  and  $60^{\circ}$ ; when the bunches are showing,  $65^{\circ}$ ; and to  $70^{\circ}$  when in flower, and subsequently. The maximum temperature in the day may be  $120^{\circ}$  to  $140^{\circ}$  above that of the night.

**VINES:** Grateful. Your plan of growing Vines from eyes, and planting them out in a span-roofed forcing pit for fruiting next season may succeed; but you must give plenty of bottom heat, in order to obtain abundance of roots.

**WATER LILIES:** W. W. Get them from America in moss kept damp, but exposed to air. When you receive them fill a garden pot with clay, sow them on the top, tie the clay down gently, with just as much moss, and no more, as will prevent the clay's coming out, and then plunge the pot with the top three inches under water in a sunny stream.

**WEIGELA ROSEA:** C. O. J. We cannot conceive what can ail your Weigela, as it blooms freely everywhere without any particular care. Is your plant sufficiently exposed to sun and air for it to ripen its wood? If not, you cannot expect it to flower well. Or is it too luxuriant to blossom? If the latter, give it a check by lifting it carefully and replanting it.

**WOODS AND FORESTS:** R. V. K. Now that we possess authentic data, we shall not lose sight of this important subject. The information is to be found in Parliamentary papers No. 562 of session 1851-2; and No. 34 of 1852-3. The last is the 30th Report of the Commissioners; pp. 313.

**ERRATUM:** In the second line of the paragraph headed "Bromley" in our Provincial News, p. 45, for "George Suon," read "George Snow."

\* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

**ANTONY GIBBS AND SONS,**

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

PERUVIAN GUANO, guaranteed the genuine importation of Messrs. A. GIBBS & SONS, 9l. 10s. per ton, or, in quantities of five tons and upwards, 9l. 5s. per ton in dock. A constant supply of LINSEED and RAPE CAKE.

EDWARD PURSER, Secretary.  
LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites... .. " 5 0 0

Office, 69, King William Street, City, London.  
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Messrs. A. GIBBS & SONS, 9l. 10s. per ton; and for 5 tons or more, 9l. 5s. per ton, in dock. Sulphate of Ammonia, &c.

## SEWAGE CHARCOAL MANURE.

**PEAT CHARCOAL**, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenny.

MR. JOHN ANNETT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

## GUANO AND OTHER MANURES.

PERUVIAN GUANO of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

## WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing if required. 2 10 0

Larger sizes if required.  
To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest Pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

**JOHN WARNER & SONS,**  
8, CRESCENT, JEWIN STREET, LONDON.  
Every description of Machinery for Raising Water, Fire Engines, &c.

REDUCTION IN PRICE.  
WEIR'S IMPROVED GALVANISED WROUGHT-IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

## IRON HURDLES.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London; and 17, New Park Street, Southwark, Manufacturers of every description of Iron Fencing, beg to call the attention of Noblemen and Gentlemen to their present prices of HURDLES:—for Sheep, 6 feet long, 3 feet high, with 5 bars, at 4s. 6d.; and for Cattle, 6 feet long, 3 feet 3 inches high, with 5 bars, at 5s. each.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, an water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

AGRICULTURAL SEEDS,  
FLOWER SEEDS, AND SEEDS FOR THE KITCHEN GARDEN,  
Delivered Carriage free by Railway.

**J. C. WHEELER AND SON, SEEDSMEN TO THE**  
GLOUCESTERSHIRE AGRICULTURAL SOCIETY, beg to state that their new Seed List for this season will be forwarded free by post on receipt of one postage stamp.

To those desirous of buying the best varieties in cultivation, their List will be found extremely useful.

## SELECTED GARDEN SEEDS.

J. C. WHEELER & SON beg to offer the following Collections of Garden Seeds:—  
No. 1. A complete Collection suitable for a large garden 2 10 0  
No. 2. A Collection of equally choice varieties, but smaller quantities ... .. 1 10 0  
No. 3. A Collection suitable for a small garden ... .. 0 15 0  
No. 1 and No. 2 Collections will be sent free to any Railway Station in England.

J. C. WHEELER & SON, Seedsmen, Gloucester.

## IMPROVEMENT OF GRASS LANDS.

**SUTTON'S RENOVATING GRASS SEEDS FOR**  
IMPROVING OLD PASTURES.—Many Old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers, and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are sown early in the Season, the improvement in the Pasture will be very considerable, and at a small expense.

*The following, just received from Riddlesworth Hall, near Thetford, Norfolk, is similar to hundreds of others sent us by former purchasers:—*

"The Grass Seeds which I had from you in 1848 have stood very well, and the Pasture is now very good; the Renovating Seeds also that I had of you, I used in my park on spots where I had removed (by stabling) a coarse sort of Wire Grass, and they answered remarkably well!"

Quantity of Seed required, 8 lbs. to 12 lbs. per Acre. Price 1s. per lb. Carriage Free.

Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.  
N.B. We have a very fine Stock of Mangold Wurzel and Carrot Seed.

## NEW FARM SEEDS—1853.

**WILLIAM EDGUMBE RENDLE AND CO.**  
have this season a very superior stock. No purchases should be made till the appearance of their New Farm Seed Catalogue, which will be published in the course of a few weeks.—For Copies, apply to  
WILLIAM EDGUMBE RENDLE & CO., Seed Merchants, Plymouth.

**THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1853.**—THE FIFTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, and the various kinds of DOMESTIC POULTRY, will be held in Bingley Hall, BIRMINGHAM, on the 13th, 14th, 15th, and 16th of December next. The PRIZE LISTS are now ready, and may be had on application to the Secretary. JOHN MORGAN, Jun., Secretary. Offices: No. 2, Insurance Buildings, Union Passage, Birmingham.

## The Agricultural Gazette.

SATURDAY, FEBRUARY 12, 1853.

## MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Feb. 16 { Agricultural Society of England.  
Highland Society.  
THURSDAY, — 17—Agricultural Imp. Society of Ireland.  
WEDNESDAY, — 23—Agricultural Society of England.  
THURSDAY, — 24—Agricultural Imp. Society of Ireland.

The simple facts regarding Mr. SMITH'S WHEAT CULTURE at Lois-Weedon are as follows:—We confine ourselves to his 4-acre field, for that presents the fairest test of the system. It was taken in hand during the autumn of 1850, having just borne a crop of Wheat. In 1847 it was in Swedish Turnips, and received an ordinary manuring of farm-yard dung—this crop was carried off the land; in 1848 it bore an average crop of Barley; in 1849 it was in Clover; and in 1850 it bore an average crop of Wheat: an average crop of Wheat on such soil is 24 to 28 bushels. The soil is not, strictly speaking, a Wheat soil: it is of a free somewhat gravelly staple—of a dark colour, pretty full of white gravel stones. On entering this field in October, 1850, it was immediately ploughed "an inch deeper than it had ever been ploughed before;" it was then cleaned and levelled, and the Wheat was sown in triple rows 1 foot apart, with the blank intervals of 3 feet. These intervals were dug "two shallow spits" deep—in all not more than 14 inches; and Mr. Smith then, as he wrote in November, "without any misgiving awaited the result." The result was a crop of 164 bushels of clean Wheat (exclusive of tail), from the 4 acres of land. Little more than one bushel of seed had been used over the four acres, in seeding the 29,000 yards of single-row which they contained, and this does not seem so insufficient an allowance when we remember that a bushel of Wheat generally contains upwards of 600,000 seeds. But it was not on the mere thin seeding, the mere space thus given to each individual plant—nor was it exclusively on the greater scope thus given to atmospheric influences, that Mr. SMITH built his confidence. We do not suppose that these alone would have produced the enormous crop that was reaped. The peculiar merit of the alternate seed bed and fallow system adopted at Lois-Weedon, lies less in the management of the former than in the existence of the latter. And it is not upon the fallow given last year to the land under the plants of the growing crop, more than upon the fallow which is being given to the land this year alongside of the growing plants,

that their productiveness will depend. The crop of 1850 was grown upon a well ploughed Wheat stubble, which was not a very desirable preparation for Wheat, but it was grown everywhere alongside of a well tilled and deeply pulverised fallow strip, throughout whose soil the hungry roots could luxuriously expatiate, and that no doubt was how it proved so productive. The crops sown on the strips followed in 1851, yielded last year only 30 bushels "per acre," a result which is sufficiently explained by the character of the season. We prefer to retain the style, which "Economist" objects to, of considering all these as acreable results. We are not to consider the system as crop and fallow alternately (as regards time)—i.e., year about—so much as alternately, merely as regards space, i.e., as you walk from one side of the field to the other. The former style puts the crop to the credit of last year's fallowing, whereas, in truth, the crop is properly due to this year's fallowing. And so we consider, that whereas under previous management the land had yielded an average crop of 24 to 28 bushels per acre once in four years—under present management it has yielded after the rate of 40 bushels and 30 bushels per acre during successive years. Certainly nothing can look finer than this four-acre piece at present does. The seed amounted to about a bushel for the four acres. The fallow strips of last spring and summer were in admirable order for its reception. It was sown in September, and the stubble strips alternating with it have since been deeply dug. The rows of Wheat are now of a healthy colour and most vigorous growth, lying flat and bushy on the land, just as those most interested in the next crop could wish.

For the rationale and the results of the Lois-Weedon system we recommend our readers to study the 10th edition (incomparably the best of the series) of Mr. SMITH'S pamphlet.\*

It is sufficient to add here, in justification of a previous article on the subject, that we do not propose that this new mode of agriculture, if it is to be so called, be recommended for universal adoption. Its results, hitherto, are useful perhaps chiefly as an illustration of the wonderful influence of thorough tillage upon fertility; but independently of the principle which they inculcate, they might, we think, and they will, we have little doubt, induce many to copy in full detail the methods by which they were attained. We strongly advise farmers to try the Lois-Weedon system on one of their Wheat fields, if not on all. This can be done without any great interference with the price of labour; and if a field of suitable soil be selected, we have little doubt that more than one field will, in the course of a few years, be subjected to the same style of management.

The mode in which Mr. SMITH recommends a first adoption of his system is detailed in the tenth edition of his pamphlet.

The principal DISEASES AMONGST SHEEP, produced by excessive moisture, are—abortion, the rot, and foot-rot. When the autumn is unusually wet, there is generally great complaint early in the following year of the breeding ewes casting their lambs some six or eight weeks before they are due; the lamb is generally dead, the abdomen distended with water, and the ewe suffers severely both during labour and subsequently. Puerperal fever supervenes, and is frequently fatal. This is more particularly the case when the heavy ewes are kept upon Turnips previous to lambing—a practice some farmers religiously avoid, whilst others (finding that they can do so with impunity for several years together) follow the practice which is most convenient. Turnips contain some 90 per cent. of water in their ordinary state, and this is increased in wet weather, not only from a larger quantity being contained in the root itself, but from the surfaces of the root and the shaws being unduly wet. As sheep are more valuable than they formerly were, in consequence of their greater size and superior quality, it behoves sheep-breeders to bestow the utmost attention on their breeding flocks, and adopt the best preventive measures to ward off disease. Thus, where it is possible to keep the ewes before lambing without Turnips, it is most prudent to do so; and where this cannot be done, they should be made to follow other sheep, and so have only a limited quantity of roots, and the driest portion, altogether free from greens. If they cannot keep themselves in good condition by this means, a little corn, or Linseed or Rape-cake, should be given in addition, the expense of which, we think, will be well repaid. Indeed, the giving some portion of dry and concentrated food to sheep during wet weather is one of the best ways of

\* A Word in Season, &c. RIDGWAY.



warding off disease, as it enables the sheep to withstand external wet by supplying an abundance of the elements of warmth within, and the requisite quantity of nourishment can be taken without undue moisture. The animal, too, during the prevalence of wet, is not obliged to trample and poach the land in pursuit of its food, if it receives some portion in a dry and concentrated form.

When, however, abortion takes place we can do but little, as the lamb is generally dead. The ewe should, however, be separated from the rest of the flock, and if there is difficulty in yeanning assistance should be afforded. A little gruel may afterwards be given, containing 2 drachms of laudanum, and if there is either fever or costiveness, an ounce or two of sulphate of magnesia may be dissolved in the gruel. Warmth, or rather shelter, is particularly required. Already has there been sad complaints of the prevalence of abortion, and it bids fair during the present year to limit very materially the supply of lambs.

The rot, or *cothe*, as it is denominated in some districts, has not been very prevalent of late years, though formerly it did such havoc as to prove ruinous to many farmers and graziers. The diminution of this disease may be partly ascribed to the comparatively dry winters we have had for some years past, and still more to the great increase of the Turnip crop which has become the principal reliance for the support of sheep during the winter and spring months, to which may be added the extension of drainage, which has rendered healthy many spots that formerly were extremely productive of the disease. The long continued rains which have saturated the earth for some time past, causing every old spring to run freely, and new ones to break out on comparatively dry spots, renders it extremely probable that we shall hear much of this disease when the action of the sun's rays on the humid spots shall bring into activity the germ of this destructive disease. The rot consists essentially in the presence of certain parasites called flukes, or plaice as they are also termed, from their resemblance in shape to the fish so called. These insects, which vary in size from an eighth to a quarter of an inch in diameter, are found floating about the biliary ducts apparently feeding on the bile, and preventing it from fulfilling its destined functions in the animal economy. The most reasonable theory as to their production is that they are taken into the system in the form of minute eggs, which are deposited on the grass in those spots exposed to the joint influence of sun and water, and reaching their proper nidus are there hatched into animal life. The first symptoms of rot are not alarming; indeed, sheep have been known at first to improve for a short time, but when this stage is passed, a train of symptoms succeeds, with a fatal termination. A diminished appetite, loss of flesh, paleness of the membranes, flabby feeling of the limbs, and loss of wool, are sufficient indications of the existence of the malady. With regard to remedial measures, the most useful are those of a preventive kind; for when the disease is established, all we can do is to hurry on the fattening process by means of the most nutritious food, such as oil-cake and Linseed, with the daily addition of salt. The latter medicament, indeed, has to a certain extent a remedial effect, for sheep have been found to improve so much whilst under its influence, that hopes have been entertained that it would prove a specific altogether. These hopes, however, after awhile have proved delusive. It is, however, certainly the fact that salt marshes, damp and wet as they appear to be, do not cause this disease, so that we may justly consider that salt is fatal to the growth or germination of the ova. This agent should, therefore, not be lost sight of, either by way of a preventative or as an attempt at affording temporary or permanent relief. During such a wet season as that which we have just gone through, a little salt should be given daily with the food. About half an ounce daily will be sufficient for each sheep, which if given with dry food will very much tend to ward off this disease, as well as others likely to be brought on by extreme wet. A certain quantity of salt is necessary for the proper fulfilment of the various functions of the body, and this is generally contained in the ordinary food, and bears a certain proportion to the quantity of water taken into the system; but when both the earth and the food is saturated with rain, the proportion of salt consumed is comparatively lessened. In the immediate neighbourhood of the spot from which we write, there is a large salt marsh very frequently overflowed by the sea. It is an ancient custom to feed this marsh in the summer, and mow it for hay early in the autumn. The hay is very inferior and short, and generally injured by the weather and the dampness and dirtiness of the soil; but notwithstanding this, although it is distasteful

to horses, sheep are exceedingly fond of it, and it agrees very well with them, which can only be explained by the fact that the hay is impregnated with salt. For these various reasons, we are of opinion that in wet weather a certain portion of salt should be given with the view of obviating the ill-effects of extreme moisture. This of course must be done with great caution in the case of heavy ewes, as salt in itself has a tendency to cause abortion, but no harm can arise from putting rock-salt in the troughs, and allowing the ewes to lick it. The existence of rot in sheep has frequently proved the cause of litigation. The law is similar with sheep as with horses; if sheep are sold warranted sound (and the buyer should certainly require such warranty to be given), the seller is liable for damages if the sheep should prove to have been unsound at the time of sale. The *onus probandi*, or labour of proving, lies with the purchaser, but the presence of flukes in the liver several weeks after the purchase would be sufficient to prove the previous existence of rot, especially if the sheep had been afterwards kept on healthy soil, and could be proved never to have been turned on any unhealthy spot subsequent to the purchase.

#### LOIS-WEEDON WHEAT-GROWING.

I HAVE read with much interest your remarks on my letter, but I cannot as yet acknowledge that I have "been misled," and certainly have no wish to "mislead." In the columns of your valuable journal, those who interest themselves in agricultural improvement naturally expect to find a mention made of all new systems, whether you approve of them or not; but when we find any one of those systems spoken of in terms of praise, as you write, not for individuals but for the agricultural public, it is a natural supposition that such a system is in the first place generally practicable; and second, that it is an improvement on those now in use. In the present instance, Mr. Smith's system has received from you favourable notice, and therefore, with all due deference to the opinion of so high an authority as yourself, I submit that my first question is pertinent to the subject under discussion. I have never for a moment doubted that Mr. Smith has cultivated a small quantity of land after his peculiar fashion, nor do I doubt that every alternate year (not every year as you state), Mr. Smith has grown 34 bushels of Wheat from half an acre of land. In the same manner, I have no doubt that you can grow Turnips on a deal-table, for I have seen it done; but the real question at issue is this,—Is it possible on anything like a farming scale to carry it out? Could Mr. Smith in his own parish carry it out on the 400 acre farm he speaks of? Can I do it in my own parish? Can any of your readers who farm an average quantity of land carry it out? If Mr. Smith will say, by deep-ploughing, by subsoiling, by horse-hoeing, you can do what I am doing by other means, well and good; but Mr. Smith says, you must do it my way if you wish to succeed! Mr. Smith's way is by forking his land, and if it is not possible to get that forking done, what is the value of the invention? To my second question, viz., will any other system at present known pay better, if properly carried out? you answer, that Mr. Smith will have proved his case when he shows that by his system he grows Wheat at a profit. I hardly think that a reply to my question. I do not deny that Mr. Smith grows his Wheat at a profit, but I ask whether, if Mr. Smith farmed his land on the four-course system—his soil being equally well drained, as deeply cultivated, and the weeds equally eradicated—he would not produce a larger crop of Wheat annually, from one fourth part of his farm, taken in rotation and drilled one foot wide in the drills, than by taking, as he proposes, one fourth of his farm,—devoting it entirely to Wheat, and growing on it annually 34 bushels per acre? In these days no one will doubt the necessity of straining every nerve to make the ground yield as much as possible, and at as cheap a rate as possible; it therefore seems to me that the two questions I have put to you are those that bear most forcibly on the present question, and which require elucidation before we embark in Lois-Weedon Wheat-growing. I need hardly apologise for again occupying your columns, as, if there be real value and practicability about Mr. Smith's plan, the more it is written about, talked of, and argued upon, the better. *Economist*.

P.S. In the columns of your Journal, Jan. 29, is a letter on Wheat-growing, signed "T. G., Clitheroe," in which he states that he has been growing "Piper's Thickset," and that this season being "the third successive crop on the same land," he has "nearly eight quarters to the acre!" It would be interesting to ascertain what his mode of cultivation is.

#### THE CONDITION OF THE LABOURER.

I TAKE the liberty of enclosing a little tract upon "Homes for Unmarried Labourers." It consists of some letters published in a local paper. It is not unusual for editors of London journals to republish letters printed under such circumstances, and as your columns have been the means of diffusing much useful information, and of suggesting so many valuable hints for the amelioration of the labouring classes, I thought you might not decline to give a place to some portion, at least, of the letters enclosed, by way of drawing attention

to the subject, and producing discussion. I am aware that many difficulties stand in the way of the plan advocated in my letters. Some of your correspondents may, however, be able to state whether they have experience of such a plan being adopted, and of those difficulties being overcome.

What I desire is to have the benefit of your own opinion, and the practical experience of your numerous readers. I incline, I think, that in the country the lodgers must not be casual, but permanent, or, at least, by the month or quarter. In order to secure stability the bulk of the occupants should be quarterly tenants. Each ought to have a good allotment close at hand: not less than one-eighth of an acre. *A. H. Elton, Clevedon Court, Bristol.*

[We shall republish, at short intervals, the letters referred to; and have no doubt that this subject will receive the attention of our correspondents.]

#### HOMES FOR UNMARRIED LABOURERS.—No. I.

THE clergy generally complain that they are able to exercise little or no control over the young men and lads of their flocks. The village school-boy, as soon as he has run through the brief course of education at present within his reach, finds himself more or less at a distance from his minister, and released from his influence. A few months will often suffice to transmute the respectful, docile boy, into the careless young fellow, who stares in his clergyman's face, as if they had never met before. He is jostling possibly for daily bread amidst a crowd of hungry competitors; as his powers of self-maintenance increase, so do his claims to independence; old impressions are fading away; old habits fall from him like worn-out garments; whilst, day by day, new ideas, mostly of a coarse nature, are invading and taking hold of his mind. In the case of one thoroughly educated, a complete alteration of external circumstances will sensibly affect the mind—much more so when a youth's character is still unformed, and his faculties only beginning to develop.

Hard work, indifferent fare, comfortless lodgings, try a young man's temper, weigh down his mind, drive him in default of better resources to seek consolation in sensual pleasures; it is a life of toil, and he requires the kind word or the look of sympathy to keep up his spirits and encourage him to persevere. It is a life of temptation, and he needs the support of religious principle to restrain him from evil courses. As long as he was at school, he felt he had a friend in his master and in his clergyman. There was all round him the evidence of an anxiety to do him good. He felt he was linked to others more powerful and better informed than himself by ties of kindness and goodwill. But as a day-labourer he is severed from this humanising influence. His companions are generally no better in any point of view than himself—rather the reverse. They have gone through the process upon which he is now entering. He must go with the stream, or he would be pushed on one side. His companions are always ignorant, and often vicious. Ignorant, because they left school before they were even properly aware of their own ignorance, and they have learnt nothing since which could do them good. Vicious, not so much from deliberate choice as from want of fair opportunities of being other than they are. Nature, even in the roughest organisations, peremptorily demands some sort of diversion and refreshment. There is little recreation for a village youth, except such as is mischievous and sinful. Consider him of a winter's evening; his work over, sauntering down the street, tired and chilly. Home has no great attractions for him; the cottage is small, the children troublesome, the fire is diminutive, the solitary candle is lighted late, and extinguished early; he finds himself in the way at home; he treads on the children, amidst an explosion of screams; is perpetually taking his father's chair by the chimney-corner; is constantly leaving dirty thumb-marks on the fine linen his mother is getting up for the squire's lady. If he goes to bed early, his elder brother, who sleeps with him, awakes him an hour after with a kick; if late, he is scolded by his mother for disturbing the four children, who sleep in the next bed to his own. He saunters down the village street, and sees the red light of a blazing fire through the windows of the beer-shop. He hears jovial voices, and possibly the sound of a fiddle. He stops, hesitates, turns in, and is soon seated by the fire with a pot of bad beer before him. But it is not so much the beer as the warmth and light, and companionship which he seeks. Sottish habits may spring up, but at first it would seem to be chiefly a natural craving for ordinary comfort that draws him to one of the only places where he finds a friendly greeting; where he hears voices more cheering than the austere master's shout, or the whine of children, and can forget the toils of the past day. Thus his only consolations are such as are derived from bad companions and dangerous habits. It is natural he should acquire low and brutal tastes, whilst he loses the better feelings of his earlier years. He begins to look at those whom he once regarded as his benefactors not merely with indifference, but with sour discontent. He is at first ashamed to meet his clergyman, but shame wears off and he becomes reckless; and, finally, often hardens into a state of stupid apathy, or surly hostility to every one who is better off than himself. It is difficult to say how the clergyman can get at him to exercise control. In a large parish there are many such youths. An occasional visit or meeting may produce a temporary effect, but it is forgotten in an hour. Evening schools are good things, but not easily feasible save during winter months, when



the days are short, and labour is over early. The village youth, moreover, has no great reverence for learning, and the most he usually aims at is to be able to write his own name in gigantic characters. When the novelty of the school wears off, he is apt to slacken his exertions, and discontinue his attendance. Occasional checks and influences are not sufficient; you require, if possible, some continuous methodical control—gentle, if you will, but yet sure and steady. Every parish has its own characteristics; but my impression is, that over a great part of England the case is much as I have described. The lads and young unmarried men of a village break away from the guidance of the clergyman, forget moral and intellectual teaching, and degenerate into habits of coarse self-indulgence. I have imperfectly explained the causes of this tendency. It may be said that a shorter explanation may be given; that declension to vice is common to all men, whether young or old. But I think we have a right to expect better results from early training than those I have briefly indicated. I think there is no reason that estrangement should spring up between the minister and the younger portion of his flock at the moment they are turned adrift upon the world, and have most need of counsel and encouragement. Let us remember that this estrangement is commonly coincident with a growing aversion for everything connected with religion. I think that at least we ought not to give up the matter in despair, but calmly reflect whether means may not be found to remedy the evil. If we cannot exercise authority over young agricultural labourers, we can at least perhaps place within their reach the means of safety and deliverance. Animated by a laudable anxiety to effect this object, some of the clergy in this deanery, amongst whom I may mention the Rev. E. Ommanney, of Chew Magna, and the Rev. H. Thompson, of Wrington, have endeavoured to draw the attention of their brother clergymen and landed proprietors to the practicability of establishing lodging or boarding-houses for young agricultural labourers. A particular plan for this purpose was submitted to the Chew dean chapter, and I take the liberty of transcribing it for insertion in your columns, not that I altogether approve of it, but partly because I purpose, with your permission, to make some comments upon it, and suggest some alterations in its details in your next week's paper, and partly because the more these schemes are publicly canvassed and discussed, the more likely shall we be to form a just estimate of their utility, and to mould them into a practical shape.

"The establishment of a home for young agricultural labourers, by renting a house and premises, with 3 or 4 acres of land, if possible; the building to be arranged for a hall, offices, and a separate chamber for each inmate. The management to be entrusted to a respectable person or persons, acting under the parish clergyman. A clergyman who has worked the plan with great success gives the following estimate:—Rent, 30*l.* a year; outlay for fittings, 30*l.*; for furniture, 50*l.*; for sundries, 30*l.*; for library, 10*l.* Total, not exceeding 150*l.* The institution to be self-supporting, each youth paying about 4*s.* a week for his board; meat and vegetables to be provided daily. The cultivation of the land by the youths in over-hours or when out of work, would be both useful and profitable. There should be daily prayers morning and evening, and attendance of the youths at the parish church on Sundays. The object of the institution is to counteract the evils prevalent in rural districts, arising from crowded villages and irregular habits, and to train up the youths in industrious, sober, and religious principles."

Arthur Hallam Eton, Clevedon Court.

### Home Correspondence.

**Drainage.**—I have read many letters and articles on draining in your columns, and the last from Mr. P. Mitchell, by which I see he is bitten by Mr. Davis and other 4 feet deep draining gentlemen; indeed so am I, so far as the depth is concerned, for I hold that most of our clay soils should be, and can be, drained at that depth, provided the width be right; but what I object to in the Government Commissioners or Inspectors is, that they mislead the public, and induce the landed proprietors to spend their money injudiciously. In this way, they contend that our tenacious clays round London can be thoroughly drained at 4 feet deep and 32 feet wide; this I deny, from some years' experience, for I cultivate land now, some of which is drained 4 feet deep and 32 feet wide; some 3 feet deep and 24 feet wide—both the same description of soil. Now, the latter I can work much sooner than the former, and the Wheat is looking much better; still, I hold that had the latter been drained 4 feet deep instead of 3 feet and 24 feet wide, it would have done much more for the crop, simply by increasing the temperature of the soil. I should also observe, that on the 32-feet wide drained ground you can perceive the difference in the crop from 6 to 9 feet on each side of the drains, from the time of its coming up to the time it comes into blossom. The dispute, now, on draining, does not appear to me to be so much upon the depth of the drains, as upon the distance of one drain from another; though some of the writers mention this, many that I know have given way in favour of the 4 feet (who were formerly much prejudiced against it), but contend that the distance must be guided by the description of soil. I have drained more than a thousand acres, some of which I cultivate, and the whole of which I constantly see; in some instances 3 feet deep and 32 feet wide

have thoroughly drained the land; in others, 4 feet deep and 45 feet wide have done the same; in others, 4 feet deep and 32 feet wide have done good; on the same ground 3 feet deep and 24 feet wide have done better; whereas the latter width and former depth would have thoroughly done their work. Again, there are some of the clays that to thoroughly drain should be 4 feet deep and not more than 16 feet wide. Before I close, let me explain what I term thorough drainage—land so drained that it can be laid perfectly flat, so as to induce the whole of the water to pass through the drains, whereby no ammonia nor other fertilising properties falling with the rain, or put on by the farmer, can be carried off the land; nor can any silicious or other mineral properties, required for the making of straw or husk of the corn, be drifted into patches or ditches, in which instance they are entirely lost to the crop; and if you examine these siltings you will find them in the nearest state of solution, in which state alone they are taken up by the plant. Of course, in undulations there must be some water furrows, but let me recommend as few as possible. I was formerly, in all cases, a theoretical runner in the new current of 4 feet deep and 32 feet wide; but am now a glider down the amalgamated stream of *Theory and Practice*.

**Hedgerow Timber.**—Your readers must have been amused at the vigorous onslaught of Mr. Wilkins on the timber-loving propensities of Mr. Vernon Harcourt. The latter would still see here and there a tree dotted about the hedgerows, while the former would sweep everything like a tree away, and reserve here and there patches of land to rear timber in masses. But why have even these? Why have any trees at all, except a few about the house for ornament? Does Mr. Wilkins consider timber as a mercantile article, entirely valueless, and likely so to remain? Then let him dispense with his advocacy of cultivating it in patches. But I do not think the majority of your readers are prepared to go these lengths. While admitting with him that there is a large quantity of unthrifty timber, which will never pay for the room it occupies, and ought at once to come away, they will give their adherence so far to Mr. Vernon Harcourt, as to admit that his sweeping destruction may be carried too far; and to maintain that a certain quantity of hedgerow trees go far towards paying for their ground, by breaking the force of the blast, which would otherwise sweep uncontrolled over our denuded plains. Does Mr. Wilkins know that the vast proportion of the timber which has been cut down during the last 60 years has been either hedgerow timber, or timber certainly not planted by the hand of man, and that such is the greater portion of the timber now remaining? If he doubt let him consult timber merchants of long standing. The noblest Oaks in our English parks have their origin in the chance sown acorn, nursed by the Bramble. They arose thick, were gradually thinned; the Bramble died away, or was grubbed up; the fence disappeared, and there stand the earth-born giants, having braved the storms of centuries, and the antlered troop roam under their stately shadows. And what is the inference? why, that Mr. Wilkins's theory is a little too fierce, and that while too small enclosures, surrounded by thickly standing, unkind trees, should be enlarged by the proper removal of fences, and where necessary, by a clean sweep, a certain quantity of thriving hedgerow timber should be left at fitting intervals, both as a shelter from the storm, and as a provision—in case the revolution of the time to come should bring about a change in the value—that so the future proprietor may not have cause to blame the memory of his predecessor for having yielded without some check to the theory of indiscriminate destruction. *An Inquirer*.

**The Deep Drainage with Wide Intervals** has had a severe trial during the present excessively wet winter and it will be useful and instructive if your readers will state their observations upon the condition of their lands so drained. I confess that upon the deep tenacious soils the 4 feet drains placed at 10 or 12 yards apart have disappointed me. In the early part of the winter the outlets appeared to discharge freely; but latterly the stream from them has been very small, the soil being still saturated. It appears that the soil, from continued saturation, has lost the faculty of drainage; the cracks and fissures have become consolidated, from the expansion of the swollen soil, and the power of parting with water is partly destroyed. The question arises, How is this to be obviated? Can any of your readers give their experience of drainage effected according to the rules laid down by Lord Wharfedale in the Journal of the Royal Agricultural Society. Upon some lands in my own neighbourhood I have observed shallow drains (2 feet) at 16 feet apart doing more service than my own 4 feet deep and placed 36 feet apart. Have we not been taught to drain deeply and at wide intervals by teachers wanting some of the experience of Talpa's "man of 40 years." I have heard much of the drainage upon Lord Lonsdale's estates in Cumberland; can any of your readers state how the deep and wide apart drainage has succeeded in that moist county during this remarkable winter? *James Lloyd, near Carmarthen*.

**Time to apply Manure, &c.**—I read with great interest (in your paper of Jan. 8) your report of the essay read by Mr. Russell, of Kilwhiss, at the meeting of the Highland Society. Mr. Russell finds that guano sown with Wheat in spring has a more beneficial effect than when sown in autumn. My own humble opinion is that the best time to apply manure to Wheat is at that stage of the plant's growth when it would have no effect in giving

luxuriance to the straw, but when it would materially assist in the development of a flower head and the production of heavy seed. Last year I lost a crop of Wheat in consequence of its being lodged, though some say their chemists tell us it is the want of silica in the straw. No doubt that if there were less organic matter in the straw, less silica would suffice. This year I anticipate a better crop from a closer lay. The Wheat plant, I should suppose, an excellent subject for experiment with liquid manure by those who have laid pipes.—A few words on draining. It is said and written often enough that 4 feet drains must be best for this reason and the other reason. But as far as my experience goes, where the clay is very stiff they are a complete failure. The 3 feet run sooner and much faster, and of course dry the ground correspondingly sooner. I will maintain that even in summer the ground soonest dry is the best,—and the reason is obvious: when the water is quickly drained off the air permeates the soil, and the plants flourish; but where it is left to evaporate (as is the case here with 4 feet drains) the soil hardens, and the crops very soon stand in need of a fresh supply from the clouds. In many cases 4 feet is a preferable depth, but not in all; and it would be well if the advocates of that depth would bear this in mind, as it is rather annoying to a tenant to be charged 5 or 7 per cent. on draining that does him little or no good; and the worst of it is, draining done at one-half more expense. It is annoying to all parties. *Hortico-Agricola, Jan. 29*.

**Cattle Feeding.**—Will any of your numerous correspondents be kind enough to give me their experience as to whether cattle that are receiving 140 lbs of Mangold Wurzel or Turnips, 7 lbs. of Linseed-cake, and hay *ad libitum*, per day, require, for them to obtain the greatest weight of beef from the food consumed, water to drink? Or are they better without it? I am induced to make this inquiry by the circumstance, that some of my neighbours' cattle had a much better hand than mine had, that is, they were firmer to the touch; and you know this is deemed a matter of great importance by the butcher, as it is also to the seller, inasmuch as he can obtain more money for the same sized animal if he be firm, than if he be loose. Upon asking how they were fed, I found that they had not been allowed any water. Mine had. And to this they attribute the difference of the hand of mine and theirs. I therefore thought I would try the experiment with four oxen, and accordingly I did not allow them any water; and I found that for the first fortnight they filled themselves equally as well as when supplied with water. Their hand also did improve in a very perceptible degree. I was very pleased, and thought I had gained a very important point; but my pleasure did not last long; for after this time they began to refuse their hay, and looked very thin indeed. I did not like to increase their green food much, for fear of relaxing them too much in their bowels, and thus lose the good effect of the Linseed cake. I therefore was obliged to allow them their water again. I was surprised to see how voracious they were for it; they got up, and licked it out of the pipe that carried it to their troughs like dogs. It appears to me that the roots did not contain sufficient water to make up for the natural calls upon the system—such as perspiration, respiration, and the faecal evacuations, and therefore a supply had to be obtained from an unnatural source; that is, from the fluids proper of the body, the first effect of which would be to make the fleshy parts more solid, and thus give the bullock a better hand. But this spring must soon become dry. The blood and other circulating fluids would become too concentrated. The organs of absorption would be called into greater activity, to supply the necessary degree of dilution; they would work upon the stomach like so many suction pumps, and drain it to such a degree that the process of digestion could not proceed properly or effectually. Saliva was not secreted in sufficient quantity, and therefore the animal refused his food. In fact he was thirsty. It perhaps might be a good plan to adopt a little time before you disposed of him. I am the more anxious to have some light thrown upon the subject, because I think it would prove advantageous as well as interesting to the subscribers to your periodical. *J. T. C., Spalding Fen, Lincolnshire*. [Our cattle, fed on 1 cwt. of Turnips, with chaff, &c., have received no water.]

**Disease in Swedish Turnips.**—Might not the mildew and consequent decay of the crop of Swedes, mentioned by your Ballinasloe correspondent, be attributable to early sowing as well as to excessive moisture, as suggested in your editorial note? Mind I do not say it was, because the time of sowing is not given by him; but my own experience in Norfolk, Lancashire, and South Wales, leads me to the conclusion that it might; for I have generally noticed that the worst cases of mildew were sure to occur in the first sown, whilst the latest, whether Swedes, Scotch Yellow, or any of the white varieties, have escaped. True, the nature and property of the soil will, and ought to influence the time of sowing. For instance, what would be very proper for a cold clay (however well drained) would be far too early for a warm gravel. The farm I occupied in Norfolk comprised both these extremes of soil; and I found it a measure, not only of safety but of necessity, to make a difference of nearly two months between the two in getting in my Turnip crop; in other words, the clay from May to June—the gravel, July to August; something, too, depends on the variety of Turnip; the finer the top the more likely is the plant to resist the action of wet in a dripping season. Now, I believe the Scotch or Aberdeen Yellow to be as hardy as any of its



tribe, Swedes excepted. Nevertheless, I have known them the first to rot, and ultimately perish, partly from the branching sort of top they bear, which is peculiarly liable to imbibe and retain the extra moisture in a wet season, an evil likely to be greatly increased by early sowing. In fact, I have known a fine crop destroyed by this means, long before the occurrence of any frost whatever. I would therefore suggest, in addition to your sensible recommendations of drainage, good tillage, and industrious cultivation during the growth of the plant, a strict adaptation of the time of sowing to the natural coldness or warmth of the soil. *S. Taylor, Wotton, Gloucestershire, Feb. 6.*

## Societies.

**HIGHLAND AND AGRICULTURAL, Jan. 19.—On Rotation of Crops.**—Mr. Hope, Fentonbarns, said: The great object of farming is to obtain from the soil the largest amount of the most valuable produce, year after year. To accomplish this successfully, that is, to raise crops which, after paying rent and all expenses, will leave a handsome profit to the farmer, the soil operated upon must be dry, either naturally, or have been made so artificially. It must also be in high condition or rich in manure, and free from all noxious roots and annual weeds. It may be safely said, that no system of cropping will succeed unless its tendency be at least to keep the soil in this state. Local circumstances must also be considered in choosing the crops to be grown, such as proximity to or distance from a town or city affording either a ready market, or otherwise, for grain, straw, and roots; and again rendering it easy or difficult to obtain abundance of manure to replenish and keep up the fertility of the farm. It may be found also that the market value of one variety of crop is much more remunerative than another. For example, Potatoes or Turnips may be preferable to a Bean crop; or, again, Wheat or Barley may leave more immediate profit than either, were it not that the presence of root weeds or annuals distinctly pointed out a green or cleaning crop to be essentially necessary for continued fertility. I believe that even under the most favourable circumstances for obtaining manure at the cheapest rate, and also for the supply of labour, that the greater the variety of crops grown the better will be the crops, and the smaller the proportional expense of each. Different crops require to be sown or planted at different periods of the year. Were a whole farm in one particular kind of crop, it would be impossible, with the usual number of men and horses, to overtake in proper season the labour required; but supposing it was accomplished, the requisite number of men and animals might consume the whole produce while they would be comparatively idle for perhaps 10 months out of the 12. Whereas by having a due proportion of each of the Cereals and of the leguminous, the forage and root crops, a more economical staff of labour is kept actively and profitably employed throughout the year. One of the chief elements of profitable farming consists in having everything done as cheaply or economically as possible. It is necessary to keep the land clean as well as rich, which, with a succession of grain crops, is almost an impossibility. A Cereal crop may be worth more money than a Pulse or root crop, but, from the later period the latter description of crops are put into the ground, longer time is allowed to clean and ameliorate the soil by repeated ploughings, grubbing, and rollings; and when growing they admit to a much greater extent than Cereals do of the use of the horse and hand-hoe for the destruction of weeds. It is from this that root crops are styled ameliorating, while Cereals are esteemed exhausting crops. Root crops and Beans also are certainly cleaning crops; but when they are all sold off the farm, they are not less exhausting than grain crops. I do not know a more exhausting crop than Swedish Turnips, yet when consumed on the land or in the feeding court, they leave a large amount of the finest manure, and prepare the straw of the grain crops for being again profitably returned to the soil. It is true the quantity of manure required to ensure a large crop of Swedes usually leaves the land rich enough for the after crops, but the fact of their requiring this extra supply, shows how much they can take from the soil. But in growing the same or similar crops year after year, even with the most liberal manuring, they become much more liable to disease and to the attacks of insects and of parasitical plants. The worm which almost invariably attacks the Carrot crop when repeated, and the ball or smut in Wheat, which usually prevails when this crop is sown year after year on the same ground, are familiar illustrations of the truth of this remark. Unfortunately for myself, I know nothing practically of chemistry, but we all know from observation that different kinds of manures are more valuable for one description of crop than for another. I have, therefore, no doubt that what chemists tell us is true, that one class of plants requires different proportions of organic means of nourishment, and also unequal quantities of mineral ingredients, but farm-yard manure, and particularly the droppings of animals, contain all the elements for the production of every kind of crop. If, therefore, it is wished to obtain the greatest benefit from the manure incorporated in the soil, a succession of crops must be resorted to, before the whole of it can be abstracted. Wheat, Barley, and Oats, have been described by chemists as silica plants; Peas, Beans, and Clover as lime plants;

Turnips and Potatoes as potash plants. Of course, it is understood that silica, lime, and potash, are only the leading characteristics of these plants. It is obvious they differ from each other materially; and I think it may be successfully contended that, as a rule, they should as crops be made to alternate with each other. They can be sown at different periods; one class affords ample time for cleaning and ameliorating the ground, another does not; they assimilate to themselves in very different proportions the manure that may be in the land; and from the general use made of them, or the purposes to which they are applied, one class enriches the farm, the other impoverishes it. It follows from this, that the greater the variety of crops grown, if they succeed each other correctly, the more economically are they produced, at least in the expenditure of labour and manure. The three rotations most commonly followed in Scotland are the four course shift, or what is known as the Norfolk system, the five course, and the six course, which latter is the one most generally adopted in East-Lothian. The four course in England is, 1st year, Turnips; 2d, Barley; 3d, Grass; 4th, Wheat. In Scotland, 1st year, Turnips; 2d, Wheat and Barley, and in many cases wholly Barley; 3d, Grass; 4th, Oats. The five course is simply the Grass being allowed to remain for two years; a crop of hay being frequently taken the first year, and after which it is pasture until broken up for Oats. The six course shift, as carried out in East-Lothian, is, 1st, Turnips; 2d, Wheat and Barley; 3d, Grass; 4th, Oats; 5th, Beans or Potatoes; and 6th, Wheat; which ends the rotation. I have said this is the standard course in East-Lothian, and I have no hesitation in saying there is much to recommend it for that district. There is a due proportion of the different kinds of crops, and varieties of grain; none are repeated too frequently, and they follow each other in the order which chemical science admits to be correct; in fine, it is in harmony with all or most of the principles which require attention in the selection of a rotation. It commences with the fallow or Turnip crop, which permits the land to be made thoroughly clean; and by the consumption of the bulbs on the farm, together with which Linseed-cake and corn can be profitably used in feeding, a large supply of excellent manure is obtained to keep up and increase the fertility of the soil. It was once a common practice on strong or clay land farms to have the half or three-fourths of the fallow break in plain summer fallow. But since the introduction of tile draining, it is found quite possible to dispense with plain fallow, and still keep the land clean; and by the aid of guano, and artificial manures, to raise Turnips profitably on every description of soil. I could point out several strong clay land farms, perfectly clean and in the highest state of cultivation, where the fallow break is manured in the autumn, in spring the land is wrought well with the grubber only, the whole sown with Turnips early in May, and the crop removed or consumed on the ground with sheep in ordinary seasons in time to be seeded with winter Wheat, though this season they certainly have not attained this latter object. Plain fallows are now rarely to be seen, and one-sixth part at least of almost every farm is annually under a Turnip crop. Usually, however, only one-fourth of the land that has been under Turnip is sown with winter Wheat, another fourth perhaps is made spring Wheat, and two-fourths Barley. But this proportion varies a good deal, and is seldom two years following the same on the same farm. Some soils are thought more suitable for Barley, others for Wheat. For my own part, I find sometimes one, and sometimes the other yield most money. By making a portion Barley, the Wheat crop is not so frequently repeated; and, perhaps, one-fourth part of a farm is enough for Wheat in one year, besides it divides the labour, and it is certainly better to spread the chances, and not to risk too much on any one crop. It is the invariable practice in East-Lothian to sow amongst the Wheat and Barley, after the fallow or Turnips, the Grass seeds intended for the third crop of the course. In the Carse of Gowrie, Falkirk, and Stirling, Beans are sometimes taken for the third crop; and after a winter and two spring furrows, the land is sown with Barley and Grass seeds, making the Grass the fifth crop. The reason, I believe, given for this is, that winter Wheat after Beans is apt to be destroyed with slugs and worms. The carse lands are admirably adapted for the growth of Beans; and as Barley must succeed them, they are taken close to the fallow crop, when little or no labour is required to clean the ground, while the two spring furrows prepare the land for Barley, and ensure the success of the Grass seeds. Where Wheat does not suit well after Beans, this perhaps may be a very good plan; but I am inclined to think it better, unless for some special reason as I have alluded to, that the Beans should follow the Clover, and not the Clover the Beans. Both are styled lime plants; a greater portion of the Clover, however, from its long, close, and numerous roots, even when cut, and the whole, I may say, when pastured, is left on the ground for the benefit of future crops; while with Beans, both straw and corn are removed. I have seen Grass sown with winter Wheat after Beans, but I never saw the Clover succeed. Besides making the Grass the third crop, brings it as close as it can be to the most cleaning crop of the course, and it is well to attend to this, as root weeds spread rapidly when land is under Grass. Along with the Clover seeds it is customary to sow at least half a bushel of Rye-grass an acre, and in some leases tenants are bound to sow a whole bushel and more. Rye-grass is a silica plant, and is therefore really the same kind of plant as Wheat, Oats, or Barley, and on that score

alone should be avoided. In England, it is seldom or never sown where Wheat is taken after lea; and I am thoroughly convinced its presence is most detrimental to the success of the Clover. Since I reduced the quantity of Rye-grass to a quarter of a bushel, and increased the Clover to 20 or 22 lbs. to the Scots acre, I have never had to complain of the want of Clover plants. It is said to be necessary to have Rye-grass to give sheep a bite in spring, but 2 or 3 lbs. per acre of yellow Clover will be found to be equally beneficial. I cannot help saying, though I know my opinion is in opposition to many for whose judgment I entertain the highest regard, that I esteem the yellow Clover as a most invaluable forage plant, and the dislike to it in Scotland as mere prejudice. It grows early in spring and late in autumn, while in the middle of summer sheep prefer it to white Clover. But to return from this digression, and to proceed with my description:—About one-third of the Grass crop may be cut for hay and for soiling during the summer months, and about two-thirds may be pastured principally with sheep. The portion cut is almost invariably top-dressed with 3 or 4 cwt. of guano per Scotch acre, or with what is better, 1 cwt. of nitrate of soda and 2 cwt. of guano mixed. I have found it an excellent plan to allow the second crop of Clover to attain its full height, and then, instead of cutting it, to fold it with sheep as is done with Turnips, only giving them a fresh piece every 24 hours. The superiority of the succeeding crop of Oats, being the fourth of the rotation, testifies when this is done, that it is, at least, equal to pasturing for the whole season. On thin clays, I may say, generally on hard land, it has been found to pay well to apply 3 cwt. of guano per acre when the Oats are sown. I have frequently heard that the increased crop in straw and corn was on inferior soils equal to the rent of the land, besides paying for the guano, but even on good soils it pays handsomely.

(To be concluded next week.)

## Farm Memoranda.

**MR. BELL'S FARM.**—My next object was to see Mr. Bell, the original inventor of the reaping machine, which was first brought out by himself and a brother 18 years ago, and has been used by Mr. Bell ever since. The American machine, of which so much has been said and written, is only an imperfect piracy of Mr. Bell's machine, and at the trial of all the reaping machines yet brought out, made on the occasion of the meeting of the Highland and Agricultural Society of Scotland, Mr. Bell's machine was declared quite superior, and received a prize of 50*l.* accordingly. Mr. Bell's farm is near Erroll station, on the railway from Perth to Dundee, about 14 miles from Perth, and situate on the Carse of Gowrie. The Carse is one of the most fertile spots in North Britain. It is about 20 miles long, and five to six miles wide. Its position is not very high above the level of the sea, and it is flanked with hills nearly all round. Down one side runs the river Tay, and to all appearance this fertile spot is an accumulation of deposits of the finest particles of different earths and minerals, brought down here by the waters from an extensive tract of high country. On the Carse there is but little timber; the fields are large, and in convenient forms for farm operations. The fences are low, and mostly cut neatly; the farm houses, so far as I saw, are substantial erections, affording accommodation to people in a respectable sphere of agricultural life; and to most of the farm steadings is attached a steam-engine, for threshing corn, and preparing food for cattle. Farms are let on lease for 19 years. The system of paying rents is regulated, I understand, every four years, as per following scale, viz.:—

4 bushels of Wheat, per Scotch acre, at 5 <i>s.</i> ...	1	0	0
6 bushels of Barley, do. at 3 <i>s.</i> 6 <i>d.</i> ...	1	1	0
6 bushels of Oats, do. at 2 <i>s.</i> 6 <i>d.</i> ...	0	15	0

Mr. Bell's farm, as before noticed, is near the railway station, and as soon as I was off the rails I saw teams at work, and a man sowing Wheat, plying both hands most dextrously. A labourer told me that was Mr. Bell. The seed was carried on canvass, fixed in a light frame-work, so as to allow the hands and arms free action; he was working directly towards me, and on a nearer approach I took the best sight I could of that *rara avis*—the man of science and practice. Mr. Bell had the best crop of Swedes I had seen in Scotland, and his corn and Bean stubbles were remarkably clean. The farm contains 150 Scotch acres, and this year was disposed as follows:—

	Acres.
Vetches ... ..	8
Oats ... ..	14
Wheat ... ..	50
Barley ... ..	10
Clover ... ..	18
Turnips ... ..	18
Beans ... ..	10
Pasture and hay ... ..	22
Total ... ..	150 acres.

### Rotation of crops on this farm:—

First, Potatoes	Fifth, Turnips
Second, Wheat	Sixth, Barley
Third, Beans	Seventh, Grass
Fourth, Wheat	Eighth, Oats
From 50 acres of Wheat grown last year Mr. Bell sold 230 quarters.	
From 10 acres of Barley, 83½ quarters.	
From 14 acres of Oats, 104 quarters.	
Peas and Beans, 49½ quarters.	

**Stock on the farm:—**Eight horses, four milch cows, 20 one and two-year-old storks and heifers, 10 rearing calves, six feeding in the byre. The soil is a deep and



close-textured loam, resting on gravel at 3 feet deep. I brought some surface soil, and have since tested it, and find one of its principal constituents to be carbonate of lime. It is the only surface soil I ever examined which effervesces with an acid. *Manchester Guardian.*

### POULTRY.

THE subject of poultry having been already treated by heads quite competent for the task, it is with no small degree of diffidence that I approach it, seeing that my only claim to the suggestions I am about to offer rests solely on the fact of my cherishing a great affection for the "fancy," and an humble hope that the "mania"—as the present excitement is termed—may lead to far more beneficial results to the community at large, than possessing a prize pen of "Cochin China," or "Spanish," from the pet show of Birmingham, or its promising infant, "The Metropolitan." Your readers will, I trust, suppress their ridicule, when they find that at the rear of my house, situated in town, I have a yard somewhere about eight yards square; and in that space I indulge myself in the hobby of poultry keeping, my stock consisting of a cock and six pullets of the Dorking breed. Were I to say that I kept them solely for the purpose of supplying my table with eggs, I should be wrong, and should not have thought it necessary to trouble you with this. My intention is to set the hens on eggs from fowls of a more costly species; and if the chickens come to light and attain to a sufficient age to warrant me in separating them from the hen, then to send them into the country to honest cottagers, of whom, I trust, I may say there are plenty to be found, who will for a trifling consideration per week tend them. They will have the benefit of country air, with plenty of space to roam about, and thereby attain a good size and healthy condition; and if no other opportunity present itself of disposing of them, at all events they may figure in some of the numerous exhibitions springing up in all parts of the country, and realise a fair remunerative price. Why, sir, should not this be carried out by the man who earns his hard living by the sweat of his brow? It may be urged, that such a person would not have time to devote to such things. I reply, where are there better managers of poultry than the wives and daughters of such men, especially if the "better half" have passed her early days in the country? *Metropolitan.*

*Sales by Auction at Poultry Shows.*—The sale by auction at the Metropolitan Show, taking it all in all, was no doubt a miserable affair, and pronounced by many a complete failure, enhancing in some instances the interests of a few, but generally tending to the detriment of the majority. It was, however, quite a new feature in poultry exhibitions, and its originality should not, I think, be too hastily condemned, at any rate not *in toto*. It is almost impossible, under the Birmingham system, to obtain even a commended pen, as all the best birds are claimed shortly after the opening of the doors of Bingley Hall; and many of them at one-fourth of the price which they would have commanded under the hammer. I believe that I am expressing the wishes of many influential exhibitors by suggesting that only the prize and commended pens be submitted to public competition, and the time selected for the purpose should naturally be when most of the amateurs would be present. A sale of this kind would not occupy more than a couple of hours, and ought not in any way to interfere with the disposal of the other pens, which could be carried on as heretofore. It appears to me that it would be nothing more than just and fair, both to the exhibitor and the purchaser, to adopt some method by which the owner can obtain the full value of his specimens, and all have an equal chance of obtaining the winning bird; and it was no doubt with this laudable view that the Metropolitan committee conceived the idea of a sale by auction. This bold step towards an improvement might, I think, with the above modifications, produce the desired object, and prove advantageous and satisfactory to all lovers of the feathered race. Should these few lines meet the eye of any of your readers who may coincide with my views, I trust it may induce them to make some further and improved suggestions on this subject, which my homely occupations will not allow me time fully to digest, and of which my want of experience in this new branch of domestic and agricultural industry renders me but an incompetent agitator. *Incognito.*

*Mr. Punchard's Poultry Establishments.*—We may be allowed to add our testimony to that of "W." to the kindness with which this gentleman received us, and the gratification afforded to us by the sight of his numerous and beautiful stock of Cochin Chinas. Till lately there has been a most erroneous idea afloat, that his stock was confined to the dark birds. His sale has done much to contradict this belief; and when we visited his establishments, we could not forbear expressing our sorrow there were so few of the old-fashioned grouse and partridge birds, such as laid the foundation of his fame some years since. While on this topic, we would observe, that we know of two instances where buff birds have been imported; and, breeding, without fresh blood for several years, they have become dark hens, and black-breasted red cocks. It is still the belief of many good judges, that in the dark birds we had more symmetry than in the light ones now in vogue. *X.*

*Dealers as Judges.*—In your article of February 5th, alluding to Judges of Poultry, you say that dealers are appointed at cattle shows, but the cases are not

analogous; cattle is mostly bought for the purpose of breeding from, and the produce not exhibited till one, two, or three years, or even more; he is not likely to have to decide on the merits of what he has just sold; not so with poultry. In some cases a short ownership is necessary, in others none whatever; and I have often had birds from a dealer only just in time to exhibit, stating at the same time for what they were wanting, and desiring to have such only as were likely to obtain a prize, paying a proportionate price for them; and I have no doubt there are very many lots similarly obtained in every exhibition. Is the system a good one that appoints such dealer as judge? Is it possible that he can be disinterested? His business is his livelihood; it is not satisfactory that he should be put to the test. That sufficient skill is not to be found is absurd and an insult to our goodly array of amateurs. Permit me to say that you treat your correspondents very cavalierly: by your account they are mostly dissatisfied, but you advise that their "idle notions be treated with indifference." *An Old Subscriber.*—[The thing requiring remedy in the case supposed is the practice of purchasing merely to exhibit. The prize is awarded to the exhibitor, not to the article exhibited; and the object of these shows is to reward skill in management and breeding. Hence the rule which generally obtains that all specimens must have been the property of the exhibitor for at least two months—a period which, in our opinion, is not long enough.]

*BAKER'S POULTRY FOUNTAIN.* We have seen these fountains, which have no opening except below, and therefore the water is kept clean and fresh. They look well, and cannot fail to answer. The shape of the top prevents fowls getting on them and defiling them. An overhanging roof prevents dirt getting into the water. Being well made, and of strong metal, they are very durable and cheap.

*POULTRY: M G C.* The fowl is either suffering from cramp or injury in the back. I should be afraid, from many of them being taken in the same way, that they are accustomed to flooring of some sort, as bricks, stones or planking. It is all bad; earth is the best flooring for poultry. I should recommend, in this instance, a table-spoonful of castor-oil, and feed afterwards twice a day with oatmeal mixed with strong ale, or bread will do as well. Keep her in a large basket, with plenty of dry straw, and in a warm place where there is no draught or cold current of air. I always think it is cruel to prevent hens from sitting, and I do not think much is gained by it. The only difference I make at this season of the year is to sit them on seven eggs only, there is little difficulty then, as the hen covers them easily, and affords them all the heat they require. If they are more numerous, as they grow the hen is unable to give them the necessary warmth, and they perish. A hen will keep her condition better while sitting, if well fed, than she will while fretting and trying to follow her natural bent. If you are determined to prevent it, the best plan is to shut them under a rip, away from their usual haunts, for some days and nights.—*M D E.* A hen not feathered on the legs would be disqualified at any show. It is not a characteristic of them to want to sit after laying for a fortnight, but they are very prone to sit, and are excellent mothers; as I have said in former answers, I think it a pity not to let them sit.—*W M H.* Hemp-seed and tallow Greaves are very good things to feed fowls on, to get early maturity; they make them lay an unusual number of eggs for two years, but from the unnatural stimulus contained in such food, many fatal and injurious internal diseases are induced, and cause a premature decay. The only meat I ever give to any of my fowls is roast mutton, and that I only allow to my young chickens. I consider them bad, because, by their use, you compel a fowl to do in a short period that which should be the work of a lifetime. *P P P.* May not the cause of the gapes be the farm-yard water to which the fowls have access, if no other is at hand. If the worms were bred in the putrescent matter I expect they would not remain in the throat. I have always found clean water and good food the best remedy against all these ailments. Strip a feather to the end, leaving about an inch of the feather, which put down the chicken's throat, twist it rapidly between your hands, and then drawing it sharply out you will find the worm adhering to the feather.—*C P, Boston.* I am not friendly to artificial heat, but many large breeders use it. The usual heat is about 85°. You must be very careful, as chickens thus treated will not stand cold or drizzly weather without injury.—*An Enquirer.* I see no impropriety or difficulty in one gentleman asking eggs of another, but if you cannot obtain them I can get them for you. *J. Barry, Mount Street.*

### Miscellaneous.

*Chaff Cutting.*—Hay in Detroit is worth, while we write, 16 dollars a ton. Some say, before the winter is over, it will very probably be worth 20 dollars a ton. That is just 1 dollar a hundred weight. Reader, did you ever open your pocket-book, select a 1 dollar bill, go into your barn-yard, and laying it down in the mud, leave it there for your cattle to trample it into dirt? "No," you answer indignantly; "do you think I am crazy?" Quietly! keep your temper. Are you quite sure? For we have got a notion that perhaps there are not a dozen large farmers in Michigan who do not perform this strange feat daily every winter. What makes the dollar bill of any more value than this very paper which you are reading, and which only costs you 4 cents? There is far more of this, and it is far more amusing than the best got-up bank bill ever issued. Because you can at any time receive 1 dollar's worth of gold for the bill; and why not for the hundred-weight of hay? At the above supposed price, the latter is worth quite as much as the former; and for the same reason. Now, how much hay do you waste, and allow your stock to waste every season? If you have 50 head of stock, is it too much to say that a whole ton is gradually thrown into the yard unconsumed, and consequently wasted? With the greatest care, where every animal is tied to a stall, we believe that it would be a very moderate waste. If the cattle are fed out of doors, and the food, as is too common, is pitched on the ground, four times as much would probably be lost, say 80 dollars worth. Now, this sum of money is a very fair profit in itself, and if lost it is a total loss, for as manure hay is almost worthless; yet does not our yearly experience teach us that we do incur this loss? Did

any of our readers ever succeed in making their stock eat up their food quite clean, unless they were stunted? Is there not always more or less thrown on the floor or ground, and there trodden on and dirtied? Does not the bottom of the manger weekly exhibit a considerable amount of half-chewed and refused fodder? There may be, and we hope that there are some among us who, by great care, prevent much waste; but our own experience and experiments have proved to us the impossibility of preventing it entirely in any of the common ways of feeding, the more especially if we leave the foddering to hired men. [The paper goes on to advocate the use of the chaff cutter.] *Farmers' Companion, Detroit.*

### Calendar of Operations.

FEBRUARY.

*POMFRETSHIRE GLEN FARM, Feb. 7.* Lat. 56° 54'; Altitude, 900 feet.—Our southern neighbours will doubtless like to know how we manage to get along in this wild northern region. While they are busily employed trimming their gardens, planting Roses, pruning over-luxuriant winter Oats, &c., we are breathing a freezing atmosphere, and the ground is lying under a snowy mantle 6 inches thick. Under these circumstances, we cannot help a feeling of discontent—certainly not justifiable—creeping in upon us when we look at the contrast; but, notwithstanding many apparent and some real disadvantages, fatherland is still dear; and any slight deduction from our happiness produced by the contrast will be more than over-balanced by its effects upon our more favourably situated neighbours. From the 26th of October to the 8th of January we have had rain, rain, rain, almost daily; at the latter date snow began falling, and continued at intervals for 10 days. All had nearly again disappeared from the low grounds, and ploughing resumed, when a fresh fall came on the 3d of February, which remains with a clear atmosphere and hard frost. Ploughing is well advanced on dry farms, otherwise little progress has been made. Threshing and delivering grain, and carting manure and Turnips has, since the frost set in, chiefly employed men and horses. The effects of the long continued rains are now becoming apparent upon the sheep; they have never wanted food, but when continually drenched and the pastures wet they lose condition, and after this season it becomes daily more obvious. Rot is not known here, but the common diseases of braxy and sturdy have been more than usually fatal. From the former alone we have already lost 7½ per cent. of our hogs, and in all probability the latter, with other minor contingencies, will require 24 per cent. more from the same stock before the end of summer. The improved black-faced Highland breed is generally kept hereabout; we keep nothing else. We rent winter pasture for all our stock in the lower districts of the country, where the snow does not lay so long, from the farmers who keep no sheep of their own. The hogs are removed to it as soon as the crops are off the fields, and the others follow as the pasture fails at home, or the snows cover it. The last division of our stock was removed from the glen on the 7th January, just before the snow came. We have seldom much snow before the beginning of the year. During a time of snow our mainstay is the Whin.—Gorse I think you call it in England; if it is kept tender and succulent by being frequently burned down, the sheep eat it readily, and thrive well upon it. A go-ahead system of farming has well nigh extirpated this useful plant from the low country, and we now require to cultivate it on "the mountain's barren brow." It grows anywhere if the soil is dry and hard, on rock, gravel, or sand, and on a southern exposure 2000 feet above sea level. If the surface is any way broken and open, the seed is just scattered upon it, but if close and hard furrows are drawn at short distances apart before sowing. It may be sown at any season; but the best time is October or March. The sheep keep them down for the first three or four years; afterwards they require to be burned annually. Every successive burning improves both the Whins and the soil. The time for burning is the end of March or April. The methods of improving hill pastures are draining, irrigating, and burning, which will occupy us next month, if weather permit. *S.*

*SOUTH OXON FARM, Feb. 1.*—The weather for the last few days has been more favourable for out-door operations. Our horses are now employed in carting manure for Beans and Peas, and ploughing for spring Wheat. Our autumn-own Wheat is all looking very well, with the exception of about two acres of one field, which was injured by the floods. We have now filled up the blanks by dibbling Talavera, the ground being too much beaten by the rains to admit either of sowing or drilling. Owing to the long continued rains many ewes are become dropsical, or as it is more commonly termed, water-bellied. Such ewes almost invariably either bring dead lambs, or they die soon after, the lamb being always more or less affected with the same disease as the mother. Fattening sheep on cut Swedes, Clover, chaff, and Beans; but from the wetness of the land they have made but little progress. The young Clover and Grasses have been growing all this winter, and are now looking well. Owing to the inferior quality of Oat and Barley straw, the hayricks have disappeared quicker than usual. Swedes are running fast, and if left standing much longer will not only exhaust the soil, but will also become of less value for feeding; 5s. per acre is paid here for pulling and trimming. We have not threshed out much Wheat, but the greater part of our Barley; the Wheat is deficient both in quality and quantity. Barley is inferior in quality, but the quantity is much the same as last year. *G. W. M.*

### Notices to Correspondents.

*AGRICULTURAL STATISTICS: Mr. R. Dutton.* "The total amount of grain produced in the United Kingdom for 1845 and 1850 respectively," is not known by ourselves or by any other person. There is no exact knowledge on the subject.

*AMERICAN THRESHING MACHINE: Regular Subscriber.* We do not know Mr. R. Palmer's address.

*ANNUAL AVERAGES: Oaktree.* We believe they are given in the book of "Tables lately published by Mr. C. Willich," which was reviewed some weeks ago in this Journal, but on a copy of which we cannot at the moment lay our hands.

*BONEDUST: R B.* Sow 16 bushels per acre of fine dust broadcast over your Grass now. Apply soot in March.

*CLAY FARM: T W.* We will gladly give an opinion when we know your position. If your land is foul, we would, after draining thoroughly and deeply, let it lie till you can work it in spring. Plough shallow then, and harrow and burn and plough and harrow and burn again till it is clean. If it be very foul, you had better give it a summer fallow. If we were in occupation of a small clay farm, where labour was plentiful we would certainly try the Loos Weedon mode of Wheat growing. Mangold Wurzel, Carrots, Parsnips, Cabbages, can all be grown on clay land.

*GESTATION: W M H.* It is sometimes completed two clear days before the expiration of nine weeks. *W C S.*

*LIME, &c.: Jack o' Noct.* Is it your own experience, or mere custom of the country, that you speak of under the term "Practices?" If the former, we should be inclined to follow its teachings, let "science" say what it may; but "science" does not strictly forbid the contemporaneous application of lime and manure. And in certain circumstances, as a loamy soil, in good tilth, on which a green crop is about to be grown, we would not object so much. In your case we would sow the Barley and seeds, top dress with mixed guano and mould, make a lime compost in summer, and apply it over the year;



seeds before winter. Guano has succeeded in abundant instance with Potatoes. See page 131, Vol. 1, Blackie's "Cyclopedia of Agriculture." As regards the lime, we would not apply it, just slaked, to young seeds, but in old compost with vegetable earth. Thanks for your suggestion about subjects for discussion.

**LIME AND SALT, &c.** *Old Sub. Mix* now. The best plan is to slake the lime with brine, and let it lie a month or two in the dry before application.—An ox will consume 12 or 14 lbs. of chaff and 70 or 80 lbs. of Turnips daily.—Cows can be fed on Mangold Wurzel, Carrots, and Cabbages during winter without injury to the taste of the milk.

**LINSEED SOUP: A.B.** We put a couple of large handfuls to every bucketful of water in the boiler; a very inexact way of informing, but the result was to make the soup very disagreeably salt. It was then distributed over the chaff, which it made just agreeably savory. Of course, hay chaff, if you can afford it, is best. Try 4 oz. of salt per sheep per diem.

**PEAT-CHARCOAL: J.N.** Dry the night-soil with it, so that it will drill; 20 or 30 bushels of the dried mixture would be a good dressing per acre.

**"PERENNIAL" TURNIP: S.B.** We do not know it; and should be glad to have the experience of any one who has tried them.

**PROBANG: Apprentice.** The cup end goes down first.

**SEWAGE CHARCOAL MANURE: W.E.C.** Do you mean charcoal which has been saturated with sewage? It is, no doubt, a valuable manure. We should suppose 7 or 8 cwt. per acre would be a suitable dressing.

**WATER-PROOF BOOTS: Mr. Frideaux of Plymouth** tells us:—"The method I have found effective for saturating the boots with solution of Caoutchouc (India-rubber), fill them with absorb no more, at intervals of a week, without needing to leave a coating on the surface. With this I have walked through the bogs of Dartmoor for hours together, and days in succession, without the least leakage. But it is water-tight both ways; the perspiration does not escape when it is thoroughly done. The solution was made with an ounce of India-rubber in a pint of spirits of turpentine, or coal naphtha, kept warm, and occasionally stirred till dissolved, which takes three or four days. In a boiling water bath it can be done in a few hours; but it can now be purchased, in large towns, ready prepared."

## Markets.

### COVENT GARDEN, Feb. 12.

The market continues to be well supplied with Vegetables; but table Peas and Apples are scarce. The former are almost entirely confined to Ben's Range of both second-rate quality, and the latter to American Newtown Pippins, and a few old Golden Pippins. The supply of Pine-apples is pretty well kept up. A few forced Strawberries made their appearance last week, but we understand they did not meet with a purchaser. Cob and other Nuts are realising fair prices. Both Seakale and Rhubarb are abundant; and Asparagus is plentiful and good. Potatoes are a trifle dearer. Mushrooms are scarce. Cut flowers consist of Heaths, Primulas, Early Tulips, Roses, Cyclamens, Mignonette, and Camellias.

### FRUIT.

Pine-apples, per lb. 6s to 10s  
Apples, dessert, per bush, 10s to 12s  
kitchen, do., 6s to 10s  
Pears, per doz., 1s 6d to 4s  
Lemons, per doz., 1s to 2s  
Oranges, per doz., 1s to 2s

### VEGETABLES.

Cabbages, per doz., 6d to 1s  
Brussels Sprouts, per hf. sieve, 1s to 2s  
Broccoli, per doz., 2s to 3s  
Greens, per doz., 1s to 2s  
French Beans, per 100, 3s  
Asparagus, per bundle, 6s to 8s  
Seakale, per bskt., 1s 6d to 2s 6d  
Rhubarb, per bundle, 9d to 1s 6d  
Potatoes, per ton, 8s to 14s  
— per cwt., 5s 6d to 4s 6d  
Turnips, per doz., 1s to 1s 9d  
Cucumbers, each, 1s to 3s  
Celery, per bundle, 9d to 1s 3d  
Carrots, per doz., 2s 6d to 4s  
Spinach, per sieve, 1s to 2s  
Onions, per bushel, 2s to 3s  
— Spanish, per doz., 2s to 5s  
Beet, per doz., 1s to 1s 6d

Almonds, per peck, 5s  
— sweet, per lb., 2s to 3s  
Nuts, Barcelona, per bush., 20s  
Cobs, 110s  
Chestnuts, p. bush., 8s to 20s  
Leeks, per bunch, 1d to 2d  
Shallots, per lb., 6d to 8d  
Garlic, per lb., 6d to 8d  
Lettuce, Cab., per score, 4d to 6d  
— Cos, per score, 9d to 1s 6d  
Radishes, per doz., 8d to 1s  
Endive, per score, 1s to 1s 6d  
Small Salads, p. pun., 2d to 3d  
Horse Radish, p. bundle, 1s to 3s  
Mushrooms, p. pot., 1s to 1s 6d  
Soyol, per hf. sieve, 6d to 1s  
Artichokes, Jer. do., 1s to 1s 6d  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. doz. bunches, 2s to 3s  
Mint, green, per bunch, 4d to 6d  
Basil, per bunch, 3d  
Marjoram, do., 2d to 3d  
Watercresses, p. 12 bun., 4d to 6d

### WOOL.

**BRADFORD, THURSDAY, Feb. 10.**—The past week has been one of careful inquiry and watching among the spinners, but their purchases have been exceedingly limited. The prices sought are a complete barrier to business, and the whole trade seems to watch the opening of the Wool sales, fixed for this day, in London, with more than ordinary interest. The increased rate of discount and uncertainty of large buying for foreign account, with a large quantity offering, gives, and properly so, a strong feeling of caution to those requiring colonial wools. In mohair, alpaca, and English wool, the supply is far short of the quantity held 12 months ago, and without a very close curtailing of the spinners, there is but little if any hope of any ease in the price this side of clip day.

**POTATOES.**—**SOUTHWARK, Feb. 7.** Since our last report the arrivals, both coastwise and by rail, have been moderate, but large from France and other foreign ports. The trade still continues very dull. The following are this day's quotations:—York Regents, 80s. to 140s.; Lincolnshire do., 70s. to 100s.; Scotch do., 80s. to 100s.; Scotch Reds and Cups, 70s. to 80s.; French whites, 75s. to 85s.; Dutch, 60s. to 65s.

**COAL MARKET.**—**FRIDAY, Feb. 11.** Holywell, 17s.; Eden Main, 17s. 6d.; Wallend Haswell, 18s. 6d.; Wallend Hetton, 18s. 8d.; Wallend Lambton, 18s.; Wallend Tees, 18s. 3d.—Ships at market, 11s.

**HOPS.**—**BOROUGH MARKET, Feb. 11.** Messrs. Pattenden and Smith report that the demand for Hops continues unabated, with prices gradually advancing.

**SMITHFIELD.**—**MONDAY, Feb. 7.** We have a shorter supply of Beasts; however, it is quite adequate to the demand; consequently it is only in very few instances that higher prices are realised. The number of Sheep is unusually small, and although there is a great unwillingness to give advanced rates, almost everything is rather dearer. There is brisk for Calves, at fully late prices. From Germany and Holland there are 624 Beasts, 152 Sheep, and 179 Calves; from France, 60 Sheep; from Scotland, 750 Beasts; from Norfolk and Suffolk, 2000; and 500 from the Northern and Midland Counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. 3 10 to 4 0  
Best Short-horns 3 8 — 3 10  
2d quality Beasts 3 2 — 3 4  
Best Downs and Half-breeds 4 10 — 5 2  
Do. Shorn 0 0 — 0 0

**FRIDAY, Feb. 11.** We have a very short supply of Beasts; consequently Monday's prices are fully maintained, and in a few instances exceeded; however, trade is not so brisk. The number of Sheep is also small, but quite equal to the demand; prices remain about the same as on Monday. Calves are plentiful; trade is slow for them at reduced rates. From Germany and Holland there are

78 Beasts, 820 Sheep, and 243 Calves. From Scotland, 30 Beasts from the northern and midland, and 95 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. 3 10 to 4 0  
Best Short-horns 3 8 — 3 10  
2d quality Beasts 3 2 — 3 4  
Best Downs and Half-breeds 4 10 — 5 2  
Do. Shorn 0 0 — 0 0  
Beasts, 623; Sheep and Lambs, 3340; Calves, 308; Pigs, 180.

**IIAY.**—Per Load of 36 Trusses.

**SMITHFIELD, Feb. 10.**  
Prime Meadow Hay 75s to 84s  
Inferior do. 65 72  
Rowen 45 60  
New Hay 45 60  
CLOVER  
Prime Meadow Hay 75s to 84s  
Inferior do. 65 72  
New Hay 45 60  
Old Clover 96 105

**CUMBERLAND MARKET, Feb. 10.**  
Prime Meadow Hay 84s to 90s  
Inferior do. 60 72  
New Hay 45 60  
Old Clover 96 105

**WHITEHALL, Feb. 10.**  
Fine old Hay 75s to 84s  
Inferior do. 65 75  
New Hay 45 60  
Straw 26 29

**MARK LANE.**  
Wheat, Essex, Kent, & Suffolk, White 42—54 Red 40—46  
— do. fine selected runs ditto 44—60 Red 46—52  
— Talavera 54—60  
Norfolk 40—58  
Foreign 40—58  
Barley, grind. & distill., 25s to 28s.—Chev. 26—35 Malting 27—31  
— Foreign, grinding and distilling 26—30 Malting 30—33  
Oats, Essex, and Suffolk 17—20  
— Scotch and Lincolnshire—Potato 22—24 Feed 17—22  
— Irish 21—23 Feed 19—20  
— Foreign 19—22 Feed 16—20

**PER IMPERIAL QUARTER.**  
Wheat, Essex, Kent, & Suffolk, White 42—54 Red 40—46  
— do. fine selected runs ditto 44—60 Red 46—52  
— Talavera 54—60  
Norfolk 40—58  
Foreign 40—58  
Barley, grind. & distill., 25s to 28s.—Chev. 26—35 Malting 27—31  
— Foreign, grinding and distilling 26—30 Malting 30—33  
Oats, Essex, and Suffolk 17—20  
— Scotch and Lincolnshire—Potato 22—24 Feed 17—22  
— Irish 21—23 Feed 19—20  
— Foreign 19—22 Feed 16—20

**ARRIVALS IN THE PORT OF LONDON LAST WEEK.**  
Flour 11775 eks  
Wheat 3640 bbls  
English 1906 Qrs. 5439 Qrs. 5447 Qrs. 454 Qrs. 695 Qrs. 336  
Irish 1906 Qrs. 5439 Qrs. 5447 Qrs. 454 Qrs. 695 Qrs. 336  
Foreign 16032 Qrs. 2730 Qrs. 17394 Qrs. 1052 Qrs. 83  
FRIDAY, Feb. 11.—The arrivals of British Grain and foreign Oats this week have been moderate, but of foreign Wheat, Barley, and Flour they are unusually small; and as the wind has been favourable, the Baltic supplies may be presumed to have arrived. To-day's market was thinly attended; nevertheless, factors succeeded in clearing off the supply of English Wheat which had been left over from Monday at that day's prices. In foreign the transactions were limited, but its value is unaltered. There was little demand for cargoes afloat. Odessa Glirka was done at 45s.; Polish Odessa, 44s.; and Egyptian Beans, 30s. to 31s. The value of Barley, Beans, and Peas remains as on Monday. The Oat trade is slow, without any alteration in prices. In Flour there is but little doing, and its value remains the same as on this day week.

**ARRIVALS THIS WEEK.**  
Wheat. Barley. Oats. Flour.  
English 3020 Qrs. 3050 Qrs. 1510 Qrs. 1250 sacks  
Irish 1410 Qrs. 660 Qrs. 10340 Qrs. 2790 sacks  
Foreign 1410 Qrs. 660 Qrs. 10340 Qrs. 2790 sacks

**IMPERIAL AVERAGES.**  
Wheat. Barley. Oats. Rye. Beans. Peas.  
Jan. 1 46 0 29 8 18 9 34 0 32 4  
— 5 45 0 29 10 18 7 30 8 34 8 32 5  
— 25 45 8 30 5 18 7 32 5 34 11 30 7  
— 29 46 0 31 2 18 7 32 2 34 9 31 9  
Feb. 5 46 1 31 8 18 7 31 11 34 7 31 5  
Aggr. Aver. 46 0 30 5 18 7 31 0 34 9 31 9

**FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.**  
PRICES. Jan. 1. Jan. 8. Jan. 15. Jan. 22. Jan. 29. Feb. 5.  
46s 7d — — — — — —  
48 1 — — — — — —  
46 0 — — — — — —  
48 0 — — — — — —  
45 10 — — — — — —  
45 8 — — — — — —

**LIVERPOOL, TUESDAY, Feb. 8.**—This week's import note shows liberal quantities of Wheat, Oats, Flour, and Oatmeal. Though the transactions in grain and Flour during the week have been moderate, the prices of Wheat have been pretty well sustained, and the downward tendency would appear to be arrested. At our Corn Exchange this morning there was a goodly attendance of millers and dealers, with more general buying than for many weeks. In the chief transactions Wheat improved 1d. per bushel, and American Flour 6d. per barrel over the rates of last Tuesday. Oats maintained late value, and Oatmeal recovered 6d. per load of the recent decline. Indian Corn moved only in retail quantities at last week's prices. Barley, Beans, and Peas were unaltered in value, and slack in demand.—**FRIDAY, Feb. 4.**—We have again liberal arrivals of Wheat, Oats, Flour, and Oatmeal. A large majority of the grain markets of the United Kingdom likewise appear to have been overdone by supply, and with a limited demand, prices have pointed downwards. At this morning's market, though the business transacted was upon a small scale in any article of the grain trade, a better feeling prevailed, and the decline in prices would appear to have met a firm check. The weather continues very mild and open for this season.

**FRIDAY, Feb. 11.** We have a very short supply of Beasts; consequently Monday's prices are fully maintained, and in a few instances exceeded; however, trade is not so brisk. The number of Sheep is also small, but quite equal to the demand; prices remain about the same as on Monday. Calves are plentiful; trade is slow for them at reduced rates. From Germany and Holland there are

## Sales by Auction.

### NEW FOREST. HANTS.

BY ORDER OF THE COMMISSIONER IN CHARGE OF HER MAJESTY'S WOODS AND FORESTS.

**M. CHARLES NORTON** will Sell by Auction, at Lyndhurst, on THURSDAY, the 17th day of February, 1853, at 1 o'clock in the afternoon precisely, about 1400 Loads of ROUND OAK TIMBER, and 400 Loads of HEWN OAK TIMBER.—For further particulars and for Catalogues of s.a.e apply to L. H. CUMBERBATCH, Deputy Surveyor, New Park, Lynton, Feb. 12.

**GRANTCHESTER NURSERIES, CAMBRIDGE.**

**MESSRS. PROTHEROE AND MORRIS** are instructed by the Proprietor, who is declining the Nursery business, to Sell by Auction, on the premises, on TUESDAY, March 1st, 1853, and following day, at 11 o'clock, the whole of the Valuable NURSERY STOCK, consisting of an excellent assortment of Evergreens and Deciduous Shrubs, 7000 Standard, half-Standard, and Dwarf Roses of all the leading kinds; 2000 Herbaceous and Alpine Plants, Roses in Pots, a few fine specimens of Coniferous Plants, and a quantity of smaller sizes; Camellias, Ericas, Epacris, and other hard-wooded Plants.—May be viewed prior to the Sale. Catalogues had, 6d. each, returnable to purchasers, on the premises, 21, King's Parade, Cambridge; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

Also in May, the entire Stock of soft-wooded Plants, consisting of Dahlias, Geraniums, Cinerarias, Bedding Plants, &c., with the newly-erected Greenhouses, Pits, Frames, and utensils-in-trade.

### BANBURY, OXFORDSHIRE.

**TO NOBLES, GENTLEMEN, NURSERYMEN, RAILWAY CONTRACTORS, & PLANTERS GENERALLY. IMPORTANT AND EXTENSIVE SALE OF VALUABLE NURSERY STOCK.**

**THOMAS PERRY, NURSERYMAN, Banbury,** begs to inform the Nobility, Gentry, and others, that he has commissioned Messrs. DANBY & CALLES to offer for public competition, on TUESDAY and WEDNESDAY, the 22nd and 23rd of February, about one million of fine healthy FOREST TREES of nearly every description, including a very superior Stock of the TRUE ENGLISH ELMS, 200,000 Evergreens and Flowering Shrubs, Fruit Trees in great variety, one million of Thorn Quicksets, and a large quantity of fine Specimen Plants well adapted for new Pleasure-grounds; Catalogues of which may be obtained from Mr. PERRY, the Proprietor, or the Auctioneers, Banbury. J. P. begs to call particular attention to his unrivalled Collection of Roses.

The above Stock may be viewed the mornings of Sale till 10 o'clock, at which time the Auction will commence. There are now two Railways opened to Banbury—viz., the Great Western and the London and North-Western. A punctual attendance at the time mentioned is requested, in consequence of the great Number of Lots, and the shortness of the days.

### SOMERSETSHIRE.

#### IMPORTANT SALE OF PLANTS.

**MESSRS. RAINEY** have the honour to announce that they are instructed by John Jarrett, Esq., to Sell by Auction, on the Premises (Camerton Court, near Bath), on THURSDAY, February 24, commencing at 11 o'clock, the well-known Collection of PLANTS, consisting of fine specimens of Azaleas, Heaths, Eriostemon, Epacris, Stone Plants, Geraniums, Roses in Pots, Cinerarias, Aracarias, large Rhododendrons, Camellias, 600 Strawberry Plants for forcing, &c., &c., which will be on view on the 15th and 21st instant, when Catalogues may be obtained of Mr. JOHN PARR, upon the Premises; or of Messrs. RAINEY, 20 and 21, Southgate Street, Bath.

**FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark Lane, on MONDAY, Feb. 14th,** at 2 o'clock precisely, 350 tons of CHILIAN GUANO; being the whole of the cargo ex Ann Smith.—Catalogues and further particulars at J. A. RUCKER & BENNETT, Brokers, 26, Commercial Sale Room, Mining Lane.

**COCHIN CHINA EGGS.**—An Amateur, who has some very handsome Cochin China Fowls, of a pure breed, Cinnamon and Buff, is willing to dispose of some Eggs, at 7s. per dozen.—Address, X. Y., Post Office, Farnham, Surrey.

**COCHIN CHINA FOWLS' EGGS,** from very choice Birds, bred from Mr. Sturgeon's Stock. They are Birds of great merit, all light coloured, and well feathered. Price 12s. 6d. per dozen. Carriage paid to London on receipt of Stamps, or Post Office Order, payable to ARTHUR HORNCASTLE, Grays, Essex.

**COKE BRICKS.**—Any person having for disposal a quantity of them, described some time since in the *Weekly Times*, which account was copied into the *Gardener's Chronicle* of 1852, p. 631, may hear of a purchaser by addressing a letter to M. M., at the Office of this Paper.

### AGRICULTURAL PUPILS.

**THE ADVERTISER,** who farms his own Occupation, proposes taking TWO or THREE PUPILS for INSTRUCTION in FARMING. The situation would offer advantages to those who have just left school, as the Advertiser, having had considerable experience in Tuition, would be able to forward their instruction in practical Land Surveying, Farming Accounts, and Agricultural Chemistry. They would be treated in every respect as members of the family, and strict attention paid to their morals.—Apply (if by letter prepaid) to Mr. E. C. NUNN, Secretary to the Diss Farmers' Club, Thrandeston, Scle, Norfolk.

**THE MISSES COLEBROOKE THOMPSON** will be happy to forward a Prospectus of their Establishment to parents seeking a school for their daughters, where the highest educational advantages are combined with maternal attention to the health and comforts, as well as the religious and moral well-being of the pupils. The house is situated on high ground, and near the Kensington Gardens. The system of education develops the intellectual faculties without overtaxing the memory. The course of instruction is extended, and includes lessons from Professors in Music, English Literature, Drawing, Sketching from Nature, Singing, Chemistry, Mineralogy and Geology, the German, French, and Italian Languages, Harp, and Calisthenic Exercises. A French lady resides in the house. The detailed prospectus containing the plan of study, and the names of the Professors, who are among the first in the metropolis, may be had on application. Number of pupils limited to 12.—25, Eastbourne Terrace, Hyde Park.

**DEACON'S COFFEE AND DINING HOUSE,** 3, WATERLOO (OPPOSITE THE CHURCH-DOOR).

Gentlemen dining or requiring refreshment are respectfully invited to the above House, the Wine, Spirits, &c., being of choice quality. Smoking Room on the first floor. Australian, American, Cape, West India, and other papers filed, and the provincial Papers from every County. Advertisements received for every Newspaper at the Office, Bond Court, Waterloo. The "TIMES" Filed for 60 Years Past. The *Gazette* taken in and filed; also the *Mining Journal*, the *Railway Papers*, the *Gardener's Chronicle*, &c.



GLASS.

JAMES PHILLIPS AND CO.,  
GLASS MERCHANTS.

HARTLEY'S PATENT ROUGH PLATE GLASS, FOR CONSERVATORIES AND  
GREENHOUSES, CROWN GLASS FOR DWELLINGS, ETC.  
10, BISHOPSGATE STREET WITHOUT, LONDON.

HORTICULTURAL GLASS.

Packed in crates, containing about 300 feet, and in Sheets about  
40 inches long by 30 inches wide.

13 oz. to the foot ... .. 0s. 2½d.  
16 oz. " ... .. 0 2½  
21 oz. " ... .. 0 4

Packed in Boxes of 100 feet.

6 by 4 or 6½ by 4½ ... 13s. 0d. 7 by 5 or 7½ by 5½ ... £0 15 0  
8 by 6 or 8½ by 6½ ... 17s. 6d. 9 by 7 or 10 by 8 ... 1 0 0

Cut to size. Squares not above 40 inches long.

16 oz. ... .. per foot 0s. 2½d. to 0s. 3½d.  
21 oz. ... .. 0 3½ to 0 5  
26 oz. ... .. 0 5 to 0 8

Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental and Coloured, as  
well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments.

FLAT SHADES AND DISHES.

HORTICULTURAL GLASS

OF EVERY DESCRIPTION.

THOMAS MILLINGTON'S WAREHOUSE,

87, BISHOPSGATE STREET WITHOUT,

LONDON.

GLASS FOR CONSERVATORIES ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS  
of British Manufacture, at prices varying from 2d. to 3d.  
per square foot, for the usual sizes required, many thousand feet  
of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for  
PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS  
TILES and SLATES, WATER-PIPES, PROPAGATING  
GLASSES, GLASS MILK PANS, PATENT PLATE GLASS,  
ORNAMENTAL WINDOW GLASS, and GLASS SHADES,  
to JAMES HETLEY & CO., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ALFRED KENT'S PATENT WEATHER-PROOF  
GLAZING WITHOUT PUTTY.—For Horticultural  
Buildings in Wood or Metal.

HORTICULTURAL BUILDING WORKS, CHICHESTER.

Illustrated Books describing inventions, containing prices and  
particulars relating to the different designs, sent on receipt of  
your postage stamps. Nurserymen and others appointed agents  
on application.

HALL'S GARDEN NETS, the best Protection from  
Frosts, &c. A very durable and cheap article; more  
required than in any former year.—Sold by the principal Nursery  
and Seedsmen.

TANNED NETTING, for the protection of Fruit  
Trees from frost, blight, and birds, and for the security of  
fresh Sown Seeds, either in gardens or fields, at 1d. per square  
yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Waxed  
Netting for Aviaries, &c., at 3d. per square yard. Scrim Canvas,  
for Wall Fruit.

At EDGINGTON & Co.'s, 17, Smithfield Bars, City, and Old Kent  
Road, Southwark, where may also be seen erected Emigrant  
Tents in great varieties on their latest improved principles.

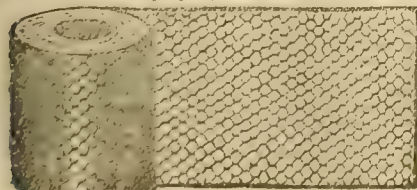
TO NOBLEMEN.  
TO CLERGYMEN.

TO GENTLEMEN.  
TO GARDENERS.

WANTED IMMEDIATELY, the Address of any  
Gardener or his Employer who has not received (free, by  
post) Patterns, with prices and particulars, of HAYTHORN'S  
HEXAGON GARDEN NET, patronised by the Nobility, Clergy,  
Gentry, and all the principal Gardeners. The best and cheapest  
article for the protection of Bloom, Fruit, and Flowers from  
Frosts, Birds, Wasps, Flies, Children, and Servants; also for  
covering Hothouses, Shading Flowers, Pines, &c., without pre-  
venting the admission of light and air.

Letters and Orders to be directed to J. W. HAYTHORN, Not-  
tingham. Parcels Carriage Paid to London, Liverpool, Leeds,  
Bristol, Hull, &c.

GALVANISED WIRE GAME NETTING.—  
7d. per yard, 2 feet wide.



2-inch mesh, light, 24 inches wide ... Galvan-ised. 7d. per yd. Japanned iron. 6d. per yd.  
2-inch " strong " ... 9 " 6½ "  
2½-inch " extra strong " ... 12 " 9 "  
3-inch " light " ... 8 " 6 "  
3-inch " strong " ... 10 " 8 "  
4-inch " extra strong " ... 14 " 11 "

All the above can be made any width at proportionate prices.  
If the upper half is a coarse mesh, it will reduce the price one-  
fourth. Galvanised spruce-proof netting for Pheasantry, 5d.  
per square foot. Patterns forwarded post free.  
Manufactured by BARRETT & BOND, Millers Place, Norwich,  
and delivered free of expense in London, Manchester, Hull, or  
Newcastle.

CROWN WINDOW GLASS.—In crates of 18 tables.

Best ... .. £6 15s. 0d. Fourths ... .. £3 3s. 0d.  
Seconds ... .. 5 17 0 C. C. ... .. 2 12 0  
Thirds ... .. 4 16 0 Coarse ... .. 2 6 0

Double Crown the same price per crate, packed in 12 tables.  
Subject to the usual discount for cash.—Squares cut to order.

CROWN GLASS.—In 100 feet boxes.

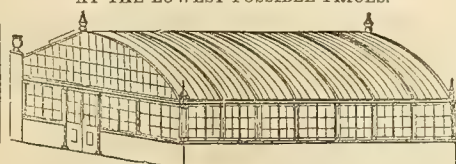
6 by 4 or 6½ by 4½ ... 11s. 6d. 7 by 5 or 7½ by 5½ ... 12s. 6d.  
8 by 6 or 8½ by 6½ ... 13s. 6d. 9 by 7 or 10 by 8 ... 15s. 0d.

HARTLEY'S ROUGH PLATE.—In boxes of 50 feet each.

6 by 4 or 6½ by 4½ ... 10s. 6d. 7 by 5 or 7½ by 5½ ... 12s. 0d.  
8 by 6 or 8½ by 6½ ... 13s. 6d. 9 by 7 or 10 by 8 ... 15s. 0d.

HORTICULTURAL BUILDING AND HEATING BY  
HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP,  
AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's Road, Chelsea,  
J. HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and  
HOT-WATER APPARATUS MANUFACTURERS.

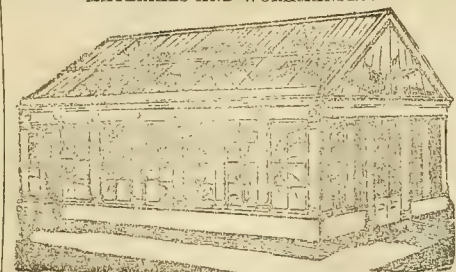
The Nobility and Gentry about to erect Horticultural Buildings,  
or fix Hot-water Apparatus, will find at our Hothouse Works,  
King's Road, Chelsea, an extensive variety of Hothouses, Green-  
houses, Conservatories, Pits, &c., erected, and in full operation,  
combining all modern improvements, so that a lady or gentleman  
can select the description of House best adapted for every re-  
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The HOT-WATER APPARATUS (which are efficient and  
economical) are particularly worthy of attention, and are erected  
in all the Houses, Pits, &c., for both Top and Bottom Heat, and  
in constant operation in the Stoves.  
The splendid collections of Stoves and Greenhouse Plants are  
also in the highest state of cultivation, and for sale at very low  
prices. Also a fine collection of strong Grape Vines in pots, from  
eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also  
Catalogues of Plants, Vines, Seeds, &c., forwarded on application.  
J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING  
BY HOT WATER,

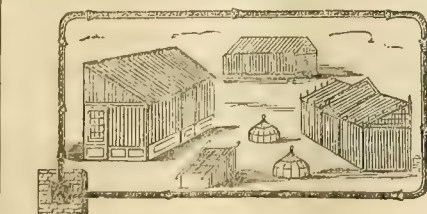
AT THE LOWEST PRICES CONSISTENT WITH GOOD  
MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea,  
London, having had considerable experience in the con-  
struction of Horticultural Erections, which, for elegance of  
design, good materials, and workmanship, combined with  
economy and practical adaptation, cannot be surpassed by any-  
thing of the kind in the country, are now in a position to execute  
orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility,  
Gentry, and London Nurserymen; and to all by whom they have  
been favoured with orders, they can with the greatest confidence  
give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most  
approved and scientific principles, for all purposes to which the  
application of Heating by Hot Water can be made available.



J. BISHOP AND CO., CITY ROAD (NEAR THE TOLL-  
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CONSERVATORIES, &c. The same Heated with any Hot-  
water Apparatus, on the most improved and economic principle.  
Photographic and Portable Houses for Emigrants made  
to order.

BAKER'S FOUNTAINS.

THE FOUNTAINRY, BLAKE STREET, KING'S ROAD, CHELSEA.

MESSRS. BAKER can confidently recommend their  
FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the  
most simple, efficient, and economical; they are easily filled, no  
screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts,  
8s. And at 3, Half-moon Passage, Gracechurch Street.

FOOT-ROT IN SHEEP

PREVENTED AND CURED BY THE EARLY USE OF THE

GUTTA PERCHA GOLOSHES, to be had of  
JOHN JONES & Co., Inventors, Patent Works, Sheffield.  
Sold to the Farmers at 3d., 4d., 5d., and 6d. each. Price of the  
powder in tin cases, 2s. 6d. each, sufficient for 100 sheep.

Directions for use.—Bind round the ankle some tailor's larding,  
which prevents too much pressure, at the same time keeps out the  
dirt; dip the upper part of the shoe into very hot water, then  
stretch up the material when soft to the height required. Full  
instructions are sent with each order.

CUCUMBER and MELON BOXES  
and LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes,  
ready for immediate use. Warranted best materials, packed  
and sent to all parts of the Kingdom; 2-light Boxes and Lights  
from 1s. 4s. Garden Lights of every description, Conservatories,  
Green and Hot-houses made and fixed in all parts of the  
Kingdom. References given to the Nobility, Gentry, and the  
Trade, in most of the counties in England.—Jas. WATTS, Hot-  
house Builder, Claremont Place, Old Kent Road, London.

AUSTIN'S ARTIFICIAL STONE WORKS.—

A number of Garden Ornaments which, through standing  
in the Show-yard some months, have become discoloured by the  
London atmosphere, will, during the present month ONLY, be sold  
at reduced prices.

To save trouble, the manufacturer begs to state that the  
articles alluded to are large and rather expensive—the usual  
prices for new work being from five to twenty guineas. The  
abatement proposed at the present time will vary from 20 to 30  
per cent., according to the condition of the article.  
Nos. 1 to 4, Keppel Row, New Road, Regent's Park.

THE RHEOCLINE, OR SPRING COUCH,

portable without detaching any of its parts, softer than  
a Feather Bed, and which can be changed in One Moment from  
a Couch to either a Bed or Sofa, may be seen at

COTTAM & HALLEN'S, 76, OXFORD STREET,

where also is on view a great variety of METALLIC BED-  
STEADS, fitted with and without the patent RHEOCLINE,  
&c. &c., together with a large assortment of the patent  
Radiating and other STOVES, and every other description of  
IRONMONGERY.

THE PATENT REVERSIBLE OVER-COATS, &c.,

of FUR BEAVER, which obtained the Great Exhibition  
Prize Medal. For warmth, comfort, and economy, these garments  
are unequalled, and a luxury to the wearer; this is the uniform  
testimony of those who have tried them. The cloth has two  
totally dissimilar faces, and can be worn on either side, thus  
combining Two Garments at the usual cost of One; a variety to  
select from. Also one of the largest stocks in London of superior  
OVER COATS, CAPES, &c., of every description, all thoroughly  
waterproof, and reduced to the lowest terms consistent with the  
principle that Quality is the test of Cheapness.

W. BENDON, 96, New Bond Street, and 69, Cornhill (only).

CUTLERY WARRANTED.—The most varied  
assortment of Table Cutlery in the world, all warranted, is  
on Sale at WILLIAM S. BURTON'S, at prices that are remunerative  
only because of the largeness of the sales.

Three and a half inch Ivory-handled Table Knives, with high  
shoulders, 10s. per dozen; Desserts, to match, 9s.; if to balance,  
1s. per dozen extra; Carvers, 3s. 6d. per pair; larger sizes, in exact  
proportion, to 25s. per dozen; if extra fine, with silver ferrules,  
from 36s.; White bone Table Knives, 6s. per dozen; Desserts, 4s.;  
Carvers, 2s. per pair; Black horn Table Knives, 7s. 4d. per dozen;  
Desserts, 6s.; Carvers, 2s. 6d.; Black wood-handled Table Knives  
and Forks, 6s. per dozen; Table Steels, from 1s. each.

The largest stock of Plated Dessert Knives and Forks, in  
cases and otherwise, and of the new Plated Fish Carvers in  
existence. Also a large assortment of Razors, Penknives,  
Scissors, &c., of the best quality.

THE PERFECT SUBSTITUTE FOR SILVER.—

The REAL NICKEL SILVER introduced 20 years ago by  
WILLIAM S. BURTON, when plated by the patent process of  
Messrs. Elkington & Co., is beyond all comparison the very best  
article next to sterling silver that can be employed as such,  
either usefully or ornamentally, as by no possible test can it be  
distinguished from real silver.

	Threaded or Pattern.	Fiddle Pattern.	Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen.....	18s.	...	23s.	...
Dessert Forks " .....	30s.	...	42s.	...
Dessert Spoons " .....	30s.	...	42s.	...
Table Forks " .....	40s.	...	55s.	...
Table Spoons " .....	40s.	...	55s.	...

Tea and coffee sets, waiters, candlesticks, &c., at proportionate  
prices. All kinds of re-plating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's.
Table Spoons and Forks, full size, per dozen .....	12s.	...	28s.
D-ssert ditto and ditto .....	10s.	...	21s.
Tea ditto .....	5s.	...	11s.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS  
(all communicating), exclusive of the shop, devoted solely to  
show of GENUINE FURNISHING IRONMONGERY  
(including Cutlery, Nickel Silver, Plated, and Japanned Wares,  
Iron and Brass Bedsteads), so arranged and classified that  
purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money  
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No. 8.—1853.]

SATURDAY, FEBRUARY 19.

[PRICE 6d.

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This is one of the earliest and best of Pasture Grasses, but not  
so well adapted for hay, as the other two; but few stalks; its root  
leaves are very broad, long, soft, slender, and grow rapidly when  
cut, or when eaten down by live stock. It requires two or three  
years after sowing to arrive at full maturity.

ROUGH COCKSFOOT (Dactylis glomerata), per lb. ... 1s.  
Is a valuable Grass in cultivation, on account of the great  
quantity of produce which it yields, and the rapidity with which  
its leaves grow after being cut. It is well adapted for growing  
in shady moist places under trees, as in orchards, &c.

MEADOW FESCUE GRASS (Festuca pratensis), per lb. ... 1s.  
This is an excellent Grass, either for alternate husbandry or  
permanent pasture, but more particularly the latter. It is well  
liked by all kinds of domestic herbivorous animals.

SHEEP'S FESCUE (Festuca ovina), per lb. ... 10d.

This Grass forms the greater part of the Sheep pastures of the  
Highlands. In quantity of produce it is much inferior to the  
other cultivated Fescues; but, from being well liked by Sheep, it  
should always enter into the composition of mixtures for lands  
on which they are to be pastured. In fact, on the authority of  
Linnaeus, these animals have no relish for hills and heaths which  
are destitute of this Grass.

HARD FESCUE GRASS (Festuca durinacula), per lb. ... 1s.

Will thrive on a great variety of soils, and is found to resist  
the effect of severe drought in summer, and to retain its verdure  
during winter, in a remarkable degree. From the fineness of its  
foliage and greenness in winter, it is well adapted for sowing in  
Parks, especially for Sheep pasture.

WOOD MEADOW GRASS (Poa nemoralis), per lb. ... 1s. 3d.

Its habit of growth is delicate, upright, close, and regular.  
There is no Grass better adapted for Pleasure Grounds, particu-  
larly under trees, as it will not only grow in such places, but  
forms a fine sward where few of the other fine Grasses can exist.  
It produces a considerable deal of foliage early in spring.

ROUGH-STALKED MEADOW GRASS (Poa trivialis),  
per lb. ... 1s.

This is a valuable Grass as a mixture for Pasture Lands, par-  
ticularly on damp soils. Its habit of growth fits it for mixing  
along with the upright growing sorts, such as the Italian Rye-  
grass.

SMOOTH-STALKED MEADOW GRASS (Poa pratensis),  
per lb. ... 1s.

This Grass yields a large quantity of herbage at a very early  
period of the season.

SWEET-SCENTED VERNAL GRASS (Anthoxanthum  
odoratum), per lb. ... 2s. 6d.

This Grass yields but a scanty portion of herbage, yet, on the  
whole, permanent pasture should not be without a mixture of it,  
particularly in Park and Pleasure Grounds, were it for no other  
reason than its pleasant scent, not only when cut for hay, but  
also when its seeds become nearly ripe.

CRESTED DOGSTAIL GRASS (Cynosurus cristatus),  
per lb. ... 1s.

From this Grass forming a close turf, and having rather fine  
foliage, it may be advantageously sown on Lawns and other  
places, to be kept under by the scythe.

LAWN GRASS SEED, per lb. ... 1s.

By sowing this Grass a fine sward may be obtained in a short  
time, at one quarter the expense of laying down turf. It is a  
selection of the finest Grasses, and is entirely free from weeds.  
We can strongly recommend it to those about to form Lawns or  
Pleasure Grounds.

\* For some of the above descriptions we are indebted to  
Lawson's "Agriculturist's Manual."

J. C. WHEELER & SON deliver their Seeds CARRIAGE FREE  
to most of the principal Railway Stations in England.

J. C. WHEELER & SON, Nurserymen, Gloucester.

## TO PURCHASERS OF SEEDS.

**SUTTON'S PRICED CATALOGUE OF ALL  
THE BEST SORTS OF SEEDS IN CULTIVATION,**  
will be found the most useful of any yet offered. In addition to  
the usual information, it contains the particulars of the sorts and  
quantities contained in "SUTTON'S Complete Collections for One  
Year's Supply," and should be seen by all who intend purchasing  
Seeds. The prices of the Collections are the same as last year,  
viz., 2l. 10s., 1l. 10s., 1l. 1s., and 12s. 6d.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## NEW FARM SEEDS—1853.

**WILLIAM EDGCUMBE RENDLE AND CO.**  
We have this season a very superior stock. No pur-  
chases should be made till the appearance of their New  
Farm Seed Catalogue, which will be published in the  
course of a few weeks.—For Copies, apply to

WILLIAM EDGCUMBE RENDLE & Co., Seed Merchants, Plymouth.

## NEW SHRUBBY CALCEOLARIAS.

CONSISTING OF ABOUT FIFTY VARIETIES NEVER  
BEFORE OFFERED TO THE PUBLIC.

**J. WEEKS AND CO., CHELSEA,** have now to offer a  
most splendid and superb Collection of SEEDLING  
SHRUBBY CALCEOLARIAS, which they can confidently  
warrant and recommend, they having been carefully saved and  
varied from the most unique selection in the kingdom. The  
sorts being all Shrubby they are perpetually in flower; and from  
the great variety and brilliancy of their colours, they are invalua-  
ble for the conservatory or bedding-out.

J. WEEKS & Co., King's Road, Chelsea, London.

## AMERICAN NURSERY.

**GEORGE BAKER, Windlesham, near Bagshot,**  
Surrey, Exhibitor of American Plants at the Royal Botanic  
Gardens, Regent's Park, begs to inform the nobility and public that  
he has published a Descriptive CATALOGUE of AMERICAN  
PLANTS, Conifers, Roses, Ornamental Shrubs, &c. &c., and  
may be obtained by enclosing two postage stamps.  
Near Staines Station, Windsor Branch, South-Western Railway.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his  
CATALOGUE of the above plants, Roses, Conifers, &c., is  
now published, and may be obtained by enclosing two postage  
stamps. The colours of all the Rhododendrons worthy of cultiva-  
tion are described, in order to facilitate purchasers in selecting.  
The Rhododendrons, Azaleas, &c., annually exhibited at  
the Royal Botanic Gardens, Regent's Park, are supplied from  
this establishment.

The American Nursery, Bagshot, Surrey, three miles from  
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Farnborough, South-Western Railway.

## NORTH AMERICAN PITCHER PLANT.

(SARRACENIA PURPUREA.)  
**GOOD PLANTS,** just imported, 18s. per dozen, or  
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**DOUBLE STRIPED FRENCH MARIGOLD.**—  
A packet of the Seeds of this beautiful Flower forwarded  
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GENERAL PRICE CURRENT OF PLANTS AND SEEDS  
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**A. VERSCHAFFELT, NURSERYMAN, Ghent (Bel-  
gium),** respectfully informs the amateurs and the trade,  
that his NEW CATALOGUE for the Spring, 1853, may be  
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Tower Street, London.

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**JOHN HAYES, Florist, Farnham, Surrey,** begs to  
say he will send 6 seeds of the above for 12 postage stamps,  
and 10 seeds of VICTORY OF BATH MELON for 12 do. Both  
will give satisfaction. 50 seeds of a good useful CUCUMBER  
for 12 do.

**A DESCRIPTIVE PRICED CATALOGUE OF  
SELECT VEGETABLE AND FLOWER SEEDS,** post  
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This article is the best of its kind; the stock limited.

Year old plants 24s. per dozen, to be had of E. RANDALL,  
Loughborough Gardens, Brixton, Surrey; J. CUTTILL, Denmark  
Hill, Camberwell; and the principal Seedsmen in London.

Allowance to the Trade. Post Office Orders made payable  
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Sale.**—One Hundred Sacks, of first-rate quality and excel-  
lent size for Seed.—Apply to Mr. BENJAMIN GANT, Nursery  
Seedsman, Colchester, Essex.

**ASH-LEAF KIDNEY POTATO SETS for SALE,**  
warranted true and sound, and good size; price, 12s. per cwt.  
To the trade, and parties taking half-a-ton and upwards, 10s. per  
cwt.; delivered at the Station of this Great Northern Railway, and  
Lancashire and Yorkshire Railway.  
Remittance or Reference from unknown Correspondents required.  
Address—EDWARD HAWKE, Kintlingley, Yorkshire.—Feb. 19.



NEW AND GENUINE SEEDS CARRIAGE FREE.

(SEE BELOW.)

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**WILLIAM EDGECOMBE RENDLE AND CO., SEED MERCHANTS, Plymouth, supply all kinds of KITCHEN GARDEN SEEDS to suit Gardens of various sizes, in collections, for 12s. 6d., 20s., 30s., and 50s. each, warranted genuine, and of the best quality. The qualities are stated in full in our New Catalogue, which can be had in exchange for one penny stamp.**

All Orders above 22 CARRIAGE FREE to most of the Railway Stations in the South and West of England, and to the following Sea-ports:—London, Liverpool, Dublin, Belfast, Cork, Penzance, Falmouth, Portsmouth, and Southampton.

For Testimonials of the qualities of our Seeds see page 50, in the Number published January 22, 1853.

For Catalogues and further particulars, apply to **WILLIAM EDGECOMBE RENDLE & CO., Seed Merchants, Plymouth.**

ESTABLISHED MORE THAN HALF A CENTURY.

## PERMANENT PASTURE.

**H. R. SMITHE, of Eastling, Faversham, Kent,** is now prepared to send out his mixtures of the Natural Grasses and Perennial Clovers, to lay down land to permanent pasture. The greatest attention is given in apportioning the various sorts, that the mixture sent may be suitable to the particular soil, &c., of the buyer.

Three bushels of Seed are supplied to the acre, the price of which, including every expense to his nearest railway station, in England, is 24s. per acre, and for a three years' lay, 21s. per acre. The Seeds are gathered principally under the superintendence of the Advertiser. The various species of Grasses can be had either separately or in mixtures for lawns and top dressings.

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Also ready, carriage free, on receipt of the value in postage stamps or post-office order, sound and strong blooming Bulbs of the following kinds of **TIGRIDIAS**, at per dozen, viz.:—**T. WHEELERII**, yellow ground, with richly-spotted centre and scarlet sepals, 4s.

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**Calceolaria** Seed, from a fine collection of spotted kinds, 2s. 6d. per paper. Seedling Plants of the above fine kinds of Calceolaria, to bloom well this season, at 6s. per dozen. **Cineraria** Seed, from a fine collection, per paper, 1s. Chinese Larkspur Seed, perennial, but will bloom this year, of various shades of colour, from white to dark blue, per paper, 1s.

## SUPERB DOUBLE HOLLYHOCKS.

SAFFRON WALDEN NURSERY.

**WILLIAM CHATER** has now ready a large stock of fine Plants, not to be excelled in the trade, of all the leading and best varieties in cultivation. He being the first who sent out this superior class of Hollyhocks, has been careful to add none but those which have decided merit as to quality and distinctness, to his original collection, the greater part of which still stand unequalled. To those who are desirous of obtaining a fine bloom this year of these splendid flowers, **W. C.** offers strong plants of the finest show varieties, dissimilar, at 21s. 10s., or 11. per doz. Good showy varieties at 12s. and 9s. per dozen. Good border sorts, 6s. per dozen, or 30s. per 100.

Hints on their cultivation given to purchasers if required. Plants warranted true to name. Carriage free to London, and plants added to compensate for the remaining distance. Catalogues sent by post on receipt of a postage stamp.

**W. C.** can supply seed of his improved **QUILLED GLOBE ASTER**, the most compact variety in cultivation. Packets containing eight separate sorts, 1s. 6d., or mixed, 1s. per packet.

Hollyhock Seed, saved from best show flowers, 2s. 6d. per packet; from border sorts, 1s. per packet.

Fine Fruiting Peach, Nectarine, and Apricot Trees, established in pots, for Orchard-house, 5s. each.

Post Office orders payable at Saffron Walden.

## NEW HOLLYHOCKS.

**CRIMSON PERFECTION (PAUL'S)**.—Rich bright crimson, good shape, splendid spike, and rather dwarf habit; a fine show flower; 7s. 6d. each. **CROCEA (PAUL'S)**.—Buff and yellow, a bold flower of a distinct and desirable colour, large and full; 5s. each. **ENCHANTRESS MAJOR (PAUL'S)**.—Deep rose, superb form, larger, darker, and finer spike than the old variety, and decidedly a first-rate show flower; 2s. 6d. each. **FIREBALL SUPERB (PAUL'S)**.—Brilliant rosy crimson, larger, brighter, more double than the original, and with a finer spike; 2s. 6d. each. **MRS. TAIT IMPROVED (PAUL'S)**.—Large peach, soft and pleasing colour, and most desirable for its novelty and beauty; 2s. 6d. each. **SHYLOCK (PAUL'S)**.—One of the deepest and richest scarlet crimson, and a good show flower; 6s. each.

The Subscribers, with the exception of the past year, the Silver Cup for Hollyhocks at the Edinburgh Grand Open Show. Four first Prizes from the Royal South London Floricultural Society, and numerous other prizes, beg to offer 12 first-rate and distinct Hollyhocks, show varieties, for 30s.; 12 Superior do. do. do., 18s.; 12 Good do. do., 12s.; 100 Good mixtures for Borders, do. do., 30s.

CARRIAGE FREE TO LONDON. Priced descriptive Catalogue free by post.

**A. PAUL & SONS, Nurserymen, &c., Cheshunt, Heris, near London.**

## COLE'S SUPERB CRYSTAL WHITE CELERY.

**WM. COLE, Dartford, Kent,** begs to inform his friends and the public, that he is ready to send out a new White Celery, which he has every confidence in recommending as being decidedly superior to his Superb Dwarf Red, sent out, with universal satisfaction, three years back. The Crystal White is a dwarf kind, rarely exceeding (under the best management) 18 inches in height; it is very solid, crisp, and fine flavoured, and if sown at the same time as the red variety, will come into use a month earlier, and continue good a month later. It has been seen by some of the first gardeners in the country, and pronounced to be a superior article. It may be obtained of **W. C.**, as above, or from the following agents, at 2s. 6d. per packet, free by post:—

London: Messrs. Hurst and M'Mullen, Lendenhall Street; Messrs. Dawe, Cottrell, and Benham, Moorgate Street; Messrs. Munier & Co., 60, Strand; Mr. Duncan Hairs, St. Martin's Lane, Charing Cross; Mr. Denyer, Gracechurch Street; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. J. and J. Fairbairn, Clapham; Messrs. Garaway, Mayes, and Co., Bristol; Mr. Bunyard, Maidstone; Mr. Turner, Slough; Messrs. Downie and Laird, Edinburgh; Messrs. F. and J. Dickson, Chester; Messrs. T. and J. Dickson, Manchester; Messrs. J. and J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Veitch and Son, Exeter; Messrs. Finney & Co., Gateshead; Mr. A. Ponter, Plymouth; Mr. E. Rundle, Plymouth; Mr. Cattell, Westernham, Kent; Messrs. Lucombe, Pince, & Co., Exeter; Messrs. Edmondson & Co., Dublin; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Mr. Brown, Norwich.

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ASSORTED COLLECTIONS OF THE FINEST QUALITY.

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No. 1. Collection of largest quantities of choice and new sorts	£ 2 10 0
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100 varieties, select showy Annuals, including the newest	15 0
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**IMPORTED GERMAN SEEDS**, in separate colours, very double. 24 superb varieties Dwarf Stocks, 4s.; 12 varieties 2 6 10 superb varieties new large flowering Stocks 2 6 18 superb varieties Wallflower-leaved do. 3 6 New white Wallflower leaved, very fine, 6d.; large pkt. 1 0 6 superb varieties Autumn Brompton Stock 1 6 8 superb varieties Emperor Stock 2 0 New White Emperor do., very choice, per packet 1 0 12 superb varieties German Aster 2 0 12 superb varieties Globe flowering 2 0 12 superb varieties Pyramidalis 2 0

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In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods to the amount of 20s. and upwards, free to all the Stations in London; also free, as before, to all Stations on the London and Norwich Line, via Colchester.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## SUTTON'S COLLECTIONS OF GARDEN SEEDS are the best yet offered.

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Samples will be forwarded on application to **WILLIAM E. RENDLE & Co., Nurserymen, Plymouth.**

## SALE OF NURSERY PLANTS.

**PETER BOOTH, NURSERYMAN, Falkirk,** is selling off at very cheap prices, a large general stock of TRANSPLANTED and SEEDLING NURSERY PLANTS; and, in particular, a very large stock of TRANSPLANTED LARCH FIRS, of various sizes, of most excellent quality, and cheaper than at any other Nursery.

N.B. As the Advertiser wishes to retire from business, a lease of all his Nursery Grounds (which belong to himself), and every encouragement would be given to a purchaser of the above stock and the goodwill of the business, which has been carried on by his relatives for more than 70 years past, and with great success. Should a purchaser not be found, a Partner, with some capital, and good knowledge of the business, would be agreed with.

## GRASS SEEDS FOR PERMANENT PASTURE, made up in proper assortments and proportions for every description of soil.

**PAGEY'S PERENNIAL RYE-GRASS**, very clean Seed, weighing from 26 lbs. to 30 lbs. per bushel.

**ITALIAN RYE-GRASS**, selected from the best growers in Lombardy. This Seed yields a much earlier and more luxuriant crop than can be obtained from any other, and should always be had recourse to when from five to six cuttings in the season is an object.

**TUARNIPS**, in all the varieties of Swedes, Yellows, and Whites, worthy of cultivation. The Stocks of these have been greatly improved by raising the seed from large picked bulbs.

With every other description of Agricultural Seeds, priced Lists of which may be had post free on application.

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Carriage of Seeds prepaid to many of the principal Shipping Ports and Railway Stations throughout the kingdom.

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**MAULE AND SONS** are MANUFACTURERS of all kinds of FLOWER-POTS of the most approved shapes and best designs for the cultivation of Plants, and which they are enabled to supply on reasonable terms.

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The Nursery Trade supplied on most advantageous terms.—The above are securely packed in cases, and forwarded any distance in large quantities. Arrangements are made to forward them loose in Railway Trucks, or Holds of Vessels, to Sea-ports.

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WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



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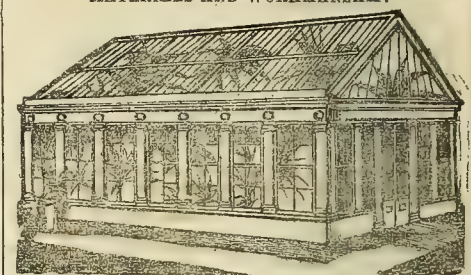
The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

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Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. **J. WEEKS & Co., King's Road, Chelsea, London.**

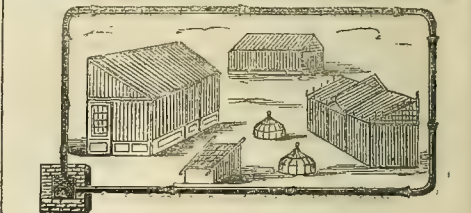
## HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON, Danvers Street, Chelsea,** London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.



**J. BISHOP AND CO., CITY ROAD (NEAR THE TOLL-GATE), LONDON, BUILDERS OF HOTHOUSES, PITS, CONSERVATORIES, &c.** The same Heated with any Hot-water Apparatus, on the most improved and economic principle. Photographic and Portable Houses for Emigrants made to order.

## BAKER'S FOUNTAINS.

THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.

**MESSRS. BAKER** can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

## AUSTIN'S ARTIFICIAL STONE WORKS.

A number of Garden Ornaments which, through standing in the Show-yard some months, have become discoloured by the London atmosphere, will, during the present month ONLY, be sold at reduced prices.

To save trouble, the manufacturer begs to state that the articles alluded to are large and rather expensive—the usual prices for new work being from five to twenty guineas. The abatement proposed at the present time will vary from 20 to 30 per cent., according to the condition of the article.

Nos. 1 to 4, Keppel Row, New Road, Regent's Park.

## BAKER'S PHEASANTRY, Beaufort Street, King's Road, Chelsea.

**H. H. PRINCE ALBERT—ORNAMENTAL WATER FOWLS**, consisting of Black and White Swans, Egyptian, Canada, China, Barnacle, Brent, and Laughing Geese, Shield-drakes, Pintail, Widgeon, Summer and Winter Teal, Gadwall, Labrador, Shovelers, Gold-eyed and Dun Divers, Carolina Ducks, &c., domesticated and pinioned; also Spanish, Cochon China, Malay, Poland, Surrey, and Dorking Fowls; White, Japan, Pied, and Common Pea-fowl, and Pure China Pigs; and at 3, Half-moon Passage, Gracechurch Street, London.

## THE RHEOCINE, OR SPRING COUCH.

portable without detaching any of its parts, softer than a Feather Bed, and which can be changed in One Moment from a Couch to either a Bed or Sofa, may be seen at

COTTAM &amp; HALLEN'S, 76, OXFORD STREET.

There also is on view a great variety of METALLIC BED-STEADS, fitted with and without the patent RHEOCINE, &c. &c., together with a large assortment of the patent Radiating and other STOVES, and every other description of IRONMONGERY.



**DOUBLE ITALIAN TUBEROSE ROOTS, 4s.**  
per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. CORRETT'S Foreign Warehouse, 18, Pall Mall.  
N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

#### EVERGREEN GRASSES FOR CHURCHYARDS AND CEMETERIES.

**SUTTON AND SONS** have had the honour of supplying many Clergymen and others with Grass Seeds for Churchyards and Cemeteries, which have given great satisfaction. Price of Seed, 1s. per lb. From many similar letters they extract the following, recently received.

From Mr. C. Judd, Gardener to his Grace the Archbishop of Canterbury.

"The Grass Seeds received from you succeeded admirably, and, although sown late, the growth was such that we were enabled to mow the churchyard in the autumn, and it has now the appearance of an established lawn of some years' standing; and my employer, the Archbishop of Canterbury, is quite satisfied with its appearance."

"Addington Park, January 7, 1853."

Sutton and Sons, Seed Growers, Reading, can supply similar seeds to those sent to Addington Park, at 1s. per lb., or 18s. per bushel. Quantity required per acre, 2 bushels.

**PERMANENT PASTURE GRASS SEED, in mixtures, to suit various soils and situations, can be obtained from the Subscribers at the lowest prices. They have devoted much care and attention to this particular branch of the Seed Trade; and the large and increasing patronage they are daily receiving is the best proof they can offer of the quality and genuineness of the Seeds they supply.**

Descriptive Catalogues of all the best varieties, with the lowest market price of each article, can be obtained in exchange for one postage stamp.—Apply to WILLIAM EDGECOMBE RENDLE & Co., Seed Merchants, Plymouth.

**THE LARGEST, BEST BEARING, AND FINEST FLAVOURED PEA yet introduced, is HAIR'S DEFENCE (KNOTT'S) PEA.** It grows about 4 feet, remarkably strong in habit, is earlier than the taller growing varieties, and should be planted 4 to 6 inches apart in the rows.

Plant February to April, 2s. 6d. per quart.

**HAIR'S DWARF MAMMOTH (KNOTT'S) PEA** has been so extensively grown and approved that D. H. does not think anything need be said in confirmation of its established character. Sow 4 inches apart.

Plant February to May, 1s. 6d. per quart.

**BISHOP'S LONG-POD PEAS, 1s. ditto.**

**BURBIDGE'S ECLIPSE PEAS, 1s. ditto.**

Garden, Agricultural, and Flower Seeds, wholesale and retail, embracing every article connected with the trade upon the most reasonable terms.

Potatoes, all the best kinds, for seed.

Catalogues furnished upon application.

DUNN & HAIR, Seedsmen, 103, St. Martin's Lane, Charing Cross.

**THOMAS CRIPPS, NURSEYMAN, &c., Tunbridge Wells,** having still on hand a large and healthy stock of Roses, amongst which are the following varieties, respectfully offers them at the prices annexed, viz.:

PERPETUALS.	Stds. Dws.	PERPETUALS.	Stds. Dws.
Auguste Mie ...	5 0 3 6	Victorine Helfenstein ...	5 0
Baronne Hallez ...	3 6 2 0	Souvenir l'Empire ...	5 0
Caroline de Sausal ...	3 6 2 6	M. Drouet, moss ...	3 6 2 6
Gen. Cavaignac ...	2 6 2 0	Herman Kegel, do. ...	3 6 2 6
Comte Bobrinsky ...	2 6 2 0		
Miss Meymott ...	7 6 7 6		
Madame Flory ...	7 6 7 6		
Robert Burns ...	3 6		
Rose du Roi, new white ...	2 0 1 6		
Souvenir de la Reine des Belges ...	7 6		
Beranger ...	2 0		
L'Enfant du Mont Carmel ...	5 0		
L'Etendard du Grand Homme ...	7 6		
Mere de St. Louis ...	7 6		
Queen Victoria ...	5 0		

Standard Weeping Roses, with fine strong heads on stocks, 4 to 7 feet in height, 30s. per dozen, or 2s. 6d. to 3s. 6d. each.

Union Standard Roses, having two choice varieties of opposite colours on one stem, 2s. 6d. to 3s. 6d. each.

Standard Roses, in finest variety, 15s., 18s. to 24s. per dozen.

Dwarf do do. do. 6s., 9s. to 18s. per dozen.

Dwarf Géant des Batailles, either on the Manetti or Briar Stock, 15s. per dozen.

A remittance or reference is respectfully requested.

#### AGRICULTURAL, KITCHEN GARDEN, & FLOWER SEEDS.

THE GROWTH OF 1852.

**GARAWAY, MAYES, AND CO.** beg to inform their Friends and the Public that they are now prepared to execute any orders for the above, selected from stocks of the first quality. From their long experience and transactions with the most celebrated growers in the country they have, regardless of cost, obtained the very best articles under their original names. They have many long testimonials of the superiority of their Kitchen Garden and Flower Seeds; the latter are principally grown by themselves. Their Lawn and Pasture Grass Seeds they can with confidence recommend. All Seeds thoroughly proved before leaving the establishment.

G. M. & Co. have to offer the following new and approved kinds:—

Per quart—s. d.	Per packet—s. d.
Peas, Beck's Gem ...	1 6
" Hairs' new dwarf ...	1 6
" Mammouth ...	1 6
" Middleton green ...	1 0
" Marrow ...	1 0
" November Prolific ...	5 0
" Sangster's No. 1 ...	2 6
Per packet.	
Broccoli, Dilescence's Bride, fine new White ...	2 6
Broccoli, Walcheren, true 0 ...	6
" Witbeve, true 0 ...	6
" Highclere, the finest late white grown 1 0	

Superb Hollyhock, saved from the very best named sorts ... 1 0  
" ditto, fine double, in sorts separately ... 1 0  
" Calceolaria ditto ditto ditto ... 1 0  
" Gloriosa ditto ditto ditto ... 1 0  
Imported German Stocks and Anthers.

Large collections of Fruit and Forest Trees, Ornamental Shrubs and Conifers, extending over 50 acres of ground. Hot-house and Greenhouse Plants, Orchids, and Florist Flowers extensively grown. Catalogues of which will be forwarded immediately upon application. Seeds made up in collections, from 10s. 6d., 20s., 30s., to 50s. each.

Durdham Down Nursery, Bristol, Feb. 19.—Established, 1799.

#### GRASS SEEDS, SEPARATE OR MIXED, CARRIAGE FREE.

**SUTTON AND SONS** having for many years paid special attention to the laying down Land to Permanent Pasture, are well acquainted with the various soils of most parts of the United Kingdom, and the Natural Grasses suitable for each locality.

The following sorts may be had separate or mixed, at lowest market prices. All the best and most suitable of them are contained in our Mixtures for the several purposes described below.

Alopecurus pratensis	Festuca tenuifolia	Poa trivialis
Anthoxanthum odoratum	Festuca hordeiformis	Poa nemoralis
Agrostis stolonifera	Glyceria fluitans	Poa angustifolius
Avena flavescens	Glyceria aquatica	Poa fortis
Achillea millefolium	Holcus lanatus	Poa sempervivens
Cynisus cristatus	Holcus avenaceus	Phleum pratense
Dactylis glomerata	Lolium italicum	Phleum major [minor]
Festuca elatior	Lolium perenne tenue	Phleum pratense
Festuca elatior	Lolium perenne	Petroselinum sativum
Festuca gigantea	Poaaceum	
Festuca heterophylla	Lolium perenne sempervivens [major]	Trifolium repens
Festuca pratensis	Lotus corniculatus	Trifolium pratense
Festuca ovina	Medicago lupulina	Trifolium minus
Festuca rubra	Poa pratensis	Trifolium hybridum

#### MIXTURES FOR LAYING DOWN LAND TO PERMANENT MEADOW OR PASTURE.

Mixed expressly to suit the soil, according to whether it is heavy, light, or medium. The sorts contained in these Mixtures are grown in different localities, and gathered separately by the hand, expressly for this purpose, by which means all noxious weeds are excluded. They consist of the most nutritive kinds of Fescues, Poas, Sweet Vernal, Perennial Clovers, Loliums, &c., and each sort being kept separate, they are subsequently mixed in such sorts and proportions as are most suitable to the soil to be laid down. These Seeds can now be supplied for 24s. to 30s. per Acre, according to the sorts which the soil may require. The quantity we usually supply is 2 Bushels of light Seeds and 12 lbs. heavy Seeds per acre; but if coarser Grasses, which have larger Seeds, 3 Bushels or more would be necessary.

#### MIXTURE FOR RECLAIMED PASTURES AND HEATH LANDS.

Many acres of land of this description have been successfully laid down to Permanent Pasture by us, with Seeds which we have found invariably to thrive on such soil; and the cost for this purpose is very moderate, according to circumstances.

#### MIXTURES FOR LAYING DOWN CHALKY OR GRAVELLY UPLANDS AND SHEEP DOWNS.

For this purpose Grass Seeds are annually collected from dry and hilly districts, where they are found growing spontaneously; and, after many years' experience, we can confidently assure our friends that a good and permanent sward may be obtained on any upland, from this mixture. Price 30s. per Acre.

#### MIXTURES FOR LAYING DOWN WATER MEADOWS.

In this department also we have been very successful, many customers having expressed their great gratification at the effect of these Seeds; one of these, an eminent Agriculturist, and Member of the Council of the Royal Agricultural Society, has contributed a valuable essay on the subject, which has been published by that Society in their Journal (Vol. X., Part 2, p. 463.) Cost of Seeds for this purpose, 24s. per acre.

#### MIXTURES TO LAY DOWN NEW PARK LAWNS. RENOVATING MIXTURE FOR IMPROVING OLD PASTURES.

There are now but few Counties in England wherein Pastures may not be seen which have been formed with our Mixtures of Grass Seeds; it may therefore appear superfluous that we should publish anything in the way of testimonials. We will, however, quote the following from among many other letters now before us:—

From the Rev. A. Huxtable, Nov. 19th, 1852.

"Mr. Huxtable has the pleasure of acquainting Messrs. Sutton that their Grass Seeds of 1851 have turned out admirably."

From the Rev. J. Lawson Sisson, Edingthorpe Rectory, North Walsham, Nov. 2, 1852.

"I have one piece of land, sown last May with your permanent Grass Seeds, and no one can possibly tell it from an old meadow, save in the absence of weeds. I have had a great deal of feed from it also."

From the Rev. Theophilus Sauls, Grazley Parsonage, Feb. 13, 1853.

"As you are passing through Grazeley, I wish you would call and see my garden lawn, pasture, and churchyard, which I sowed last spring with your Seeds, and this time last year was only a Bean field, but now a beautiful close green sward, and I am happy to say free from weeds."

From D. T. Cunyngname, Esq., Wellesbourne, Warwick, Nov. 1852.

"The meadows that were renovated with your Seeds are looking very well. I cut nearly two tons of hay to the acre, and three years ago the same land hardly produced half a ton per acre. The Garden Seeds I have had from you exceed by far any that I have bought elsewhere."

From Mr. R. G. Lewis, Arlington Court, July 26, 1851.

"The Grass Seeds which I had from you have proved entirely to my satisfaction."

From Mr. W. Prestos, Kempshot Park, March 7, 1851.

"In reference to the twenty acres of park laid down with your mixture, it is utterly impossible (taking soil and situation into consideration) to have a better herbage than it does at this moment exhibit. The early kinds are now showing themselves very prominently; the Trefoils too are good and plentiful."

From Captain Heron, Manley Hall, Frolsham, Cheshire.

"As Captain Heron was much satisfied with Messrs. Sutton's Grass Seeds, he purposed having his Garden Seeds from them also."

From Mr. Edward Jones, Henley Park, March 15, 1852.

"I am happy to say that the twenty-four acre field which we laid down last year with your permanent Grass Seeds, has succeeded well: here is a good stock both of Clover and Grasses."

From Mr. J. A. Langford, Steward, Stonor Park, Henley-on-Thames.

"Your perennial Grass Seeds supplied to Lord Camoys some five years since now affords a pasture that is the general admiration of the neighbourhood for its early springing, and the fineness and luxuriance of its herbage."

From James James, Esq., M.D., Sarmistown House, near Kelso.

"I take this opportunity of expressing my unqualified approval of your Grass Seeds; I have sown down some inferior land without a Corn crop in April, and at present it is keeping a considerable flock of sheep. The land I have sown with Oats and Grass Seed is looking equally promising."

From Mr. Edward Jones, Henley Park, March 15, 1852.

"I am happy to say that the twenty-four acre field which we laid down last year with your permanent Grass Seeds, has succeeded well: there is a good stock both of Clover and Grasses."

In several of the above instances the land laid down was heavy clay, and others so poor and gravelly as to be quite unprofitable as arable land. Our present prices are from 24s. to 30s. per acre, as see above.

We have also a superior Stock of Turnip Seeds, Mangold Wurzel, Carrot, and other Agricultural Seeds, Catalogues of which will be forwarded on receipt of one penny stamp.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

Goods Delivered Carriage Free.

#### THE BLACK BARBAROSSA.

"A GRAPE THAT DON'T KNOW HOW TO SHANK."

**JOHN BUTCHER** begs to inform Grape-growers (requiring late Grapes), through January, February, and March, that the above will be in fine condition for table during the above months. Fruiting Plants, 10s. 6d.; Good Plants, 5s. 6d. each. May be obtained of Messrs. DAWK, COTTELL, & BENHAM, 36, Moorgate Street, London; and JOHN BUTCHER, Nutsyerman, Stratford-on-Avon.

Samples of Berries sent upon receipt of 12 postage stamps.

## The Gardeners' Chronicle.

SATURDAY, FEBRUARY 19, 1853.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, Feb. 23 Society of Arts, 8 P.M.  
Geological, 8 P.M.  
SATURDAY, — 26—Royal Botanic, 3 P.M.

WE are accused by a Hampshire correspondent of overstating the case against the past management of the Woods and Forests. He asserts that the disgraceful state of Dean forest, especially mentioned in our late remarks, is altogether exceptional; and he says, we ought to have distinctly explained that no such mismanagement can be shown to have existed in the New Forest, the greatest of all the Royal woods. Let us see.

In their 25th report the Commissioners declare the Royal forests to extend over an area of 47,535 acres, including Windsor, which consists of 5825 acres, and exclusive of a very large extent of open wastes. This does not quite agree with the returns made in the 26th report; but since it is there stated that the area occupied by woods is considerably larger, we may safely assume that, exclusive of Windsor, the Royal forests cover at least 48,000 acres; a truly Imperial domain, capable, one would think, of yielding a princely revenue.

We have now before us the receipts and expenditure of these Royal, now national, forests, for the years 1848-49, 1849-50, and 1850-51. We find that there are 14 of them, lying in various parts of the kingdom, from Hampshire to Durham. And how much does the reader suppose that these domains, managed by a host of foresters, verderers, accountants, sub-accountants, surveyors, deputy-surveyors, receivers, and so forth—how much does he suppose that they contributed to the public revenue during the three years in question? It is officially declared that the net annual revenue from them amounted to 1180l. 17s. 6d. We make it, after going through the particulars, 1181l. 3s. 10d., upon either supposition they could not among them contrive to produce quite SIXPENCE AN ACRE.

And this was not because of a niggardly Government; it was not owing to necessary allowances having been reduced till the public machine came to a dead lock. It is clear that the controllers of this part of the crown property had not the fear of Mr. Hume before their eyes. On the contrary, we find that in order to obtain 1180l., very nearly thirty-four thousand pounds were annually expended in management. Matters in fact have been so contrived among the fourteen royal forests (always excluding Windsor) that it required more than TWO HUNDRED AND THIRTY ACRES TO FURNISH THE VALUE OF A SINGLE LOAD OF ROUGH TIMBER, supposing the average price of rough timber, small and large taken together, to have been 5l. 17s. 6d., which we believe was above the value.

If from this general view of the case we descend to further particulars, we find that in the three years immediately preceding the recent reconstruction of the office of Woods and Forests the country lost—actually lost—163l. 3s. 9d. by Parkhurst, 965l. 17s. 4d. by Waltham, 1240l. 12s. 4d. by Salcey, 1564l. 14s. 10d. by the New Forest, and 4598l. 8s. 11d. by the forest of Dean—in the whole 8532l. 17s. 2d.; and thus the productiveness of the nine other forests was all but absorbed by the incessant demands made by the five above mentioned. Let us beg our Hampshire correspondent, who is so proud of the New Forest, to observe how respectable a figure it cuts in this statement.

Nine of the forests were more or less profitable; in what degree the following list will show:—

	Cost in the Three Years.	Net Income, or Profit, yielded in that time.
New Park ...	£ 1875 11 0	£ 757 19 6
High Meadow ...	9368 19 9	2424 7 10
Alice Holt ...	4412 4 9	3392 15 10
Woolmer ...	2154 14 9	270 3 10
Bere ...	3661 10 5	1224 8 6
Whitlough ...	2301 19 7	2099 7 9
Delamere ...	6110 16 2	1168 2 9
Wychwood ...	2465 19 11	821 4 8
Chopwell ...	1002 6 11	418 8 0

This Table will be the better for a few comments. Woolmer Forest producing a clear gain of 90l. a year, consists of nearly 6000 acres, and was therefore valuable to the extent of 3d. and a fraction per acre. Delamere, which contributed about 390l. annually, covers 3872 acres, according to the 25th report of the Commissioners, or 4022 according to the 30th



report, and was therefore worth on the former measurement rather more than 2s. 2d. an acre.

Chopwell, a place in the county of Durham, consists of 896 acres, and has produced not quite 138l. a year; but Mr. BROWN, of Arncliffe, who was directed to examine it, reported that it ought to produce 600l. net in 1852; and it turns out that it did, in fact, yield 601l. 8s. 10d. It is now estimated to produce in 1853, 687l. 7s. 0d. clear of all charges.

By way of contrast to these monstrous cases of negligence, or ignorance, or something worse, we may take Alice Holt. This forest contains 1896 acres, and has yielded a clear revenue of about 1130l., or nearly 12s. an acre. Whittlewood containing 489 acres, returned about 700l. a year net, or nearly 1l. 9s. 6d. an acre.

A comparison of such statements will serve to show what sort of management has of late prevailed in these government establishments. But the real amount of loss sustained by the country can only be judged of by another kind of comparison. One clear year has passed since March, 1851, and the present commissioner has had so much opportunity of showing what undivided responsibility and an acquaintance with the business of his office are worth. We therefore place in parallel columns the amount of net income actually realised in 1851 when the old system ceased, and in 1852 when the new system began to take effect, together with the amount estimated to accrue in 1853.

	Net income realised.				Net income estimated in 1853.		
	1851.	1852.			1853.		
New Forest ... ..	£ 3,151 11 8	£ 9,079 2 4			£ 14,678 1 10		
New Park Farm ... ..	419 5 11	189 9 10					
Parkhurst ... ..	Nil.	31 9 9			21 0 0		
Dean ... ..	43 4 5	4,369 0 1			21,120 13 0		
High Meadow ... ..	1,406 15 6	2,099 1 0			1,170 19 4		
Alice Holt ... ..	699 7 7	2,142 17 9			Nil.		
Woolmer ... ..	188 2 5	506 10 4			586 12 9		
Bere ... ..	680 19 1	683 8 3			611 0 0		
Whittlewood ... ..	1,822 8 3	1,200 9 11			2,791 2 7		
Salcey ... ..	Nil.	Nil.			Nil.		
Delamere ... ..	864 18 10	410 14 8			1,615 15 3		
Wychwood ... ..	196 3 10	2,135 10 11			3,327 3 0		
Waltham ... ..	164 15 4	Nil.			Uncertain.		
Chopwell ... ..	237 15 9	300 15 0			687 7 0		
	£9,875 8 7	£23,148 9 10			£46,019 10 0		

In 1850 the 48,000 acres of Royal forests produced the net sum of ONE HUNDRED AND FIFTY-NINE POUNDS, SEVEN SHILLINGS, exactly. In 1851, coming events we suppose casting their shadows before, and the deputy-surveyors being alarmed, the net income suddenly rose to nearly ten thousand pounds. Under the influence of the new Commissioner it again made a start, and in 1852 produced more than *twenty-three thousand pounds*. And we now find that in the second year of his rule the Commissioner reports to Parliament that the income ought to be *forty-three thousand pounds*.

This is no small satisfaction: but it would seem that some at least of the skilful gentlemen concerned in the clever management of former years, bear Government no good-will, and are not much disposed to condemn themselves by their own acts? It suits them far better to let ill alone. In saying this, we by no means trust to private information, however extensive it may be, but to official papers. Delamere Forest may serve as a specimen of what we mean. This forest now consists of 4022 acres, in the county of Chester, and has been for many years in the charge of Mr. W. LIPSCOMB. In 1849, 1850, and 1851, it returned an average profit of about 390l.; in 1851, the clear return rose to 864l.; in 1852 it fell back to 410l.; and in January, 1852, Mr. LIPSCOMB reported that it might be expected to yield 588l. in 1853. The Commissioner, not thinking something less than 3s. an acre to be an adequate profit upon such a forest, a great part of which consists of good Oak land, desired Mr. BROWN to visit the place, who reported that Mr. LIPSCOMB's estimate of produce might be considerably augmented and his expenditure proportionately reduced, the upshot being that the Deputy Surveyor's 588l. became converted into 1726l. 17s. 7d. In this case it seems impossible to doubt that the reason why Mr. LIPSCOMB could not himself discover what the forest under his charge was capable of realising, consisted in a very strong conviction that nothing better could be done than what he had been doing all his life.

Some, at least, of the causes that have led to the state of things now exposed deserve examination, and shall have it; but this must become the subject of future remark. In the meanwhile it is evident that the management of the Crown Forests has fallen into excellent hands, which Government will take care to strengthen, should it become necessary to do so for the sake of the public service.

More than a century ago accounts were published in the scientific reports in France of a disease affect-

ing very materially the crops of SAFFRON, amongst which it spread with great rapidity, forming large circular gaps, and totally destroying almost every vegetable production which came in its way. The cause of disease was recognised as a pale madder coloured web, which invested all kinds of roots; and though not visibly penetrating into their substance, so completely impeding all communication of the tissues with the external air as to impair altogether their vital powers. The only immediate remedy was to dig a trench beyond the circular area formed by the pest, so as to stop the progress of the mycelium, which, like that of so many fungals, radiated from a common centre. As the corns also were raised every year, and again planted after a month or six weeks, the greatest pains were taken to remove every particle which indicated the presence of the plague by any tint approaching that of the peculiar red colour of the fungal, and at the same time of cutting out with a sharp knife any specks indicative of decay. Such precautions were unhappily too often ineffectual, on account of the great tenacity of life with which the fungal threads were endowed, and the length of time which they remained in the soil itself without losing their vitality, where they had once been established. By care, however, and strict attention, the evil was greatly alleviated, as is the case to this day, where Saffron is still an object of cultivation.

The Lucern crops after a time were found to be subject to a similar attack from the same mycelium, and in these unhappily there was no way of preventing the increase of mischief except by the positive removal of everything in the neighbourhood of the roots which showed signs of infection; and in many cases the whole crop was found to fall a sacrifice to the disease.

Other plants also suffer occasionally from the same evil. A case was reported in our Journal for 1847, p. 603, where Potatoes were affected by it in Hertfordshire; we had had intimation before of a similar instance in Cambridgeshire; and we have now complaints from Ely, where such fine Asparagus is grown in great abundance for the London markets, that the mould is doing great mischief to the beds, spreading widely and rapidly amongst them, and entirely killing every plant which it attacks. It is known there to the gardeners by the name of the "Coffee Web," and is found to be destructive to Carrots and Potatoes, as well as to the Asparagus. The remedy applied is to dig a deep trench, as in the Saffron-fungus, to cut off all communication with roots hitherto uninjured. It is a curious matter that this fungal is only known as a mycelium. Perfect fruit has never yet been found, though it is assumed, with every appearance of probability, that the bodies figured by TULASNE in the mould, both from Saffron and Lucern, is a miniature state of fructification. As it flourishes equally under such different kinds of cultivation as are applied to Saffron, Lucern, and Asparagus, there is little hope that any effectual plan can be adopted to prevent the growth of the plant altogether. We recommend, however, to our intelligent correspondent, Mr. MARSHALL, who has kindly called our attention to the subject, and furnished us with specimens, to examine the parasite during every successive month in its place of growth, as he may possibly be able to clear up the question as to the real nature of the plant. At present it is distinguished by the name of *Rhizoctonia*, but we should not be surprised if it assumes a far more important form when fully developed. It may be remarked, in conclusion, that Asparagus has been observed to suffer occasionally from a similar attack in France. *M. J. B.*

#### ON THE MEANS OF CAUSING PLANTS TO PRODUCE THEIR LEAVES, FLOWERS, AND FRUIT, AT PERIODS PREVIOUSLY DETERMINED.

ONE of the most interesting problems in natural science is that of which the object is to determine, *a priori*, the number of days which a plant requires to produce, successively, its leaves, flowers, and fruit. This problem is very complicated, its solution depending on various causes occurring simultaneously. It is, however, the fact, that all these causes do not operate with equal energy; one of them so especially predominates that, in most cases, the others may be left out of calculation, without exceeding the limits of sufficient correctness.

This predominant cause is heat. It is employed, with great attention, in our hothouses, for forcing flowers and fruits. The proceedings in these cases are well known; but they are founded more on practice than on science. The problem to be solved may be stated in terms somewhat as follows:—A plant having attained a certain state of growth, what is the mean temperature which it will require in order that it may produce its leaves, flowers, or its fruit, at a given period?

It cannot be supposed that this problem will bear a

strictly mathematical solution; for, the nature of the plant, humidity, aspect, light, and many other causes have effects which are not calculable in the present state of science; but we know that they generally operate within narrow limits. It is also known that there are some plants which will not bear the artificial temperatures of our hothouses, and which are consequently beyond the scope of our experiments.

Adanson, I believe, was the first who announced that by adding the mean temperature of each day from the commencement of the year, it was found that when the sum reached a certain figure, the same phenomena of vegetation were exhibited, such as leafing, flowering &c. His successors, especially the Comte de Gasparin and M. Boussingault, endeavoured to determine the starting point of vegetation with greater exactness.

Guided by particular considerations, I have attempted to show, in my work, *Sur le Climat de la Belgique*, that, instead of the sum of the temperatures, it would be better to substitute the sum of the squares of the temperatures, reckoning from the time of the recommencement of vegetation in the plants.

Experiment alone can decide the merits of these hypotheses. A first trial was perfectly in accordance with the one I have proposed; it was made by the late M. de Bremaecker. I requested that intelligent young person to take some Lilac plants out of the ground and put them to rest in a cellar. After some time one of the plants was taken out and planted in a house with a very genial and equal temperature. This plant budded, and became abundantly furnished with leaves, but it did not flower. The sum of the squares of the temperatures necessary to bring it to flower was exactly that which I had calculated for the Lilacs in the open air.

This single experiment was not sufficient; and I therefore endeavoured to have others made on a larger scale. M. Schram, superintendent of the Botanic Garden of Brussels, has kindly favoured me with the four following series of observations, which have been made under his care in the hothouses of the Botanic Garden. It is to be remarked that M. Schram was ignorant of the end I had in view, and that he confined himself merely to the transcribing of the results which he obtained.

Observations on the vegetation of nine Lilacs (*Syringa rothomagensis*, Rouen Lilac, or *Lilas Varin*), taken from the open ground and immediately potted, February 2, 1852, at 11 A.M.; then placed in a hothouse, and observed every day at 11 A.M.

Feb. 2. Commenced budding.

- " 3. Buds swelling
- " 4. Buds considerably advanced; bracts swelling.
- " 5. Opening; bracts separating, racemes appearing.
- " 6. Leaves beginning to expand; racemes quite apparent.
- " 7. Leaves growing rapidly; racemes showing fully.
- " 8. Leaves considerably advanced; peduncles elongating, and the bracts at the bases of the peduncles becoming yellow.
- " 9. Generally in leaf; the peduncles and pedicels elongating; flower-buds beginning to separate.
- " 10. Completely in leaf; the pedicels elongating and the flower-buds commencing to swell; the bracts at the bases of the peduncles are faded; they drop when touched.
- " 11. Racemes growing rapidly.
- " 12. Racemes very long; flower-buds much swelled.
- " 13. Some flower-buds beginning to colour.
- " 14. Some flower-buds ready to open.
- " 15. Some flowers are open; and many of the flower-buds are coloured; the bracts have nearly all fallen.
- " 16. Many flowers are open; and nearly all the flower-buds are coloured.
- " 17. The greater part of the flowers are open.
- " 18. With very few exceptions, the floration is complete; all the bracts have fallen; there are some racemes which are not entirely developed.
- " 19. The pollen escapes from the anthers; the racemes not developed have elongated, and the flower-buds have swelled; the bracts are dropping.
- " 20. Some young shoots are pushing; the late racemes advance but slowly.
- " 21. The leaves of the new shoots begin to expand, and others are forming; some flower-buds of young racemes are swelling much.
- " 22. Some of the flowers begin to fade; the late racemes are not progressing.
- " 23. Many of the flowers have faded; the racemes not developed are turning yellow.
- " 24. The greater part of the racemes are faded; those not developed appear to be withering.
- " 25. Nearly all the flowers are faded; they fall when the racemes are touched; the backward racemes exhibit no farther development; the young shoots are making rapid growths.
- " 26. All the flowers are faded and dried up, many have fallen; the undeveloped racemes are withering.

Observations on the vegetation of nine Lilacs (*S. rothomagensis*), taken from the open ground, immediately potted, and placed in a hothouse, Feb. 7, 1852, at 11 A.M., and observed every day at that hour.  
Feb. 7. When placed in the house their buds were much swelled.



- Feb. 8. Buds much advanced; bracts swelling.  
 " 9. Buds opening, bracts separating; racemes perceptible.  
 " 10. Leaves beginning to expand; racemes beginning to come out.  
 " 11. Leaves growing rapidly; racemes showing out.  
 " 12. Generally in leaf; the racemes showing almost fully out.  
 " 13. Foliation almost complete; the peduncles elongate, and the bracts begin to turn yellow.  
 " 14. Completely in leaf; the pedicels elongate, the flower-buds are swelling much.  
 " 15. The flower-buds are ready to open; the bracts are faded, they fall when touched.  
 " 16. Some flower-buds begin to colour.  
 " 17. Some flower-buds are almost open, and many are coloured.  
 " 18. Some flowers are open; nearly all the buds are coloured; all the bracts are dried up.  
 " 19. No alteration.  
 " 20. Many flowers are open.  
 " 21. The greater part of the flowers are open.  
 " 22. Floration almost complete.  
 " 23. Floration complete; all the bracts have fallen.  
 " 24. New shoots begin to push; some backward racemes are being developed.  
 " 25. The young shoots are making rapid growth; the new racemes are much elongated, and their flower-buds are well swelled.  
 " 26. The leaves of the new shoots begin to expand; the racemes continue their development.  
 " 27. The same. 28. Ditto.

Observations on the vegetation of four Lilacs (*S. rothomagensis*), taken from the open ground, immediately potted, and placed in a hothouse, Feb. 14, 1852, at 11 A.M., and observed every day at 11 A.M.

Feb. 14. When put into the house the buds were far advanced.

- " 15. The leaves begin to make their appearance; the bracts begin to separate.  
 " 16. The leaves begin to expand; the raceme is perceptible.  
 " 17. The leaves expand rapidly; the raceme is ready to come out.  
 " 18. The leaves are much advanced in growth; the racemes are almost out; the bracts are turning yellow.  
 " 19. The leaves are almost formed; the racemes are almost fully out; the bracts are withering.  
 " 20. Generally in leaf; the peduncle much elongated; the bracts fall when touched.  
 " 21. Foliation almost complete; pedicels much elongated; the bracts have nearly all fallen.  
 " 22. Foliation complete; the flower buds much swelled; bracts all fallen off.  
 " 23. Racemes generally much developed.  
 " 24. Racemes much elongated; the flower buds are separated.  
 " 25. Some of the flower buds are ready to open.  
 " 26. Some of them are coloured.  
 " 27. Some flowers are open, and many of the buds are coloured.  
 " 28. A considerable portion of the flowers are open.  
 " 29. The pollen escapes from the anthers.  
 March 1. Some racemes are in flower.  
 " 2. Many flowers are open.  
 " 3. Floration almost complete.  
 " 4. Floration complete.  
 " 5. Many of the racemes have dried up, without flowering.

Observations on the vegetation of two Lilacs (*S. rothomagensis*), placed in the hothouse, February 22d.

- Feb. 22. Buds much swelled.  
 " 23. Buds much advanced.  
 " 24. Buds open; bracts enlarge.  
 " 25. Leaves begin to appear; the bracts open a little; the racemes can scarcely be perceived.  
 " 26. Leaves are formed; the racemes have pushed out, the bracts are turning yellow.  
 " 27. Leaves greatly advanced in growth; the peduncles are elongated so that all the racemes can be seen; the bracts are withering.  
 " 28. Some leaves are fully expanded; the peduncle is much elongated; the flower buds well swelled.  
 " 29. A considerable portion of the leaves are developed; the pedicels are elongated; and the flower buds are separated.  
 March 1. The leaves continue their development; the peduncles lengthen much; the flower buds swell greatly; the bracts fall.  
 " 2. Foliation complete; the racemes elongate; the flower buds colour.  
 " 3. Some flowers are open; many flower buds are coloured.  
 " 4. Many flowers are open; the pollen escapes.  
 " 5. Nearly all the flowers are open.  
 " 6. Floration complete.

Observations on a Lilac (*S. rothomagensis*), in the open ground.

- Feb. 7. The buds are much swelled; the bracts are swelled.  
 " 21. The buds advance; the bracts begin to separate; the raceme can just be perceived.  
 March 2. The buds are far advanced; the bracts are greatly enlarged and separated.  
 " 22. The buds are shining; the flower buds can be seen through the bracts.

Mar. 23. The buds make great progress; the bracts separate much.

- " 26. The buds are far advanced; the bracts are widely separated; the raceme can be readily distinguished.  
 " 28. The buds are ready to open; the racemes elongate.  
 " 29. The racemes are much elongated.  
 " 30. Some of the leaves begin to expand; the racemes continue to elongate; all the bracts are separated.

April 1. All the leaves begin to expand; the racemes show themselves completely; the flower buds begin to separate.

- " 3. The peduncles elongate.  
 " 4. Very little difference.

The maximum temperature of the house in which the preceding observations were made was from 20° to 21° Reaumur, or 77° to 79° Fahr. But during the night the temperature fell to 15° and, under some circumstances, to 10° R., or from 66° to 55° Fahr. I estimate that we may take 20° centigrade, or 68° Fahr., for the mean.

Now, from many years' experience, I have indicated, in the *Annuaire de l'Observatoire*, that the Lilac (*S. rothomagensis*) requires a sum of temperatures equal to 191° centigrade for the commencement of expansion of its first leaves; or rather a sum of squares of daily mean temperature equal to 1315. According to the mode of calculation of Adanson, Boussingault, and Gasparin, it would require nine or ten days of a temperature of 20°, and according to my method only three or four.

From the tables of M. Schram it appears that it required, in fact, 3½ days of a temperature of 20° to produce the expansion of the first small leaves; and after nine or ten days, which the other method of calculation would lead us to suppose would be necessary to produce the effect just mentioned, the plant was in full leaf.

It is shown in the *Annuaire de l'Observatoire* that it requires a temperature of 508° centigrade to bring out the first flowers of the Lilac; or rather, according to my mode of calculating, a sum of squares of daily temperature equal to 4652. According to Adanson, more than 25 days would be necessary; but, according to my method, only 11 or 12. Now, the latter result agrees with the experiments made in the Botanic Garden, by which the flowering of this kind of plant was ascertained to be, on an average, 9½ days.

[The mean temperature was 20° centigrade. Then, according to Adanson,  $\frac{508}{20} = 25$  days 9 hours; but the time by Quetelet's method is  $\frac{4652}{20 \times 20} = 11$  days 15 hours.

Translator.] The results of calculating the periods of leafing and flowering by the squares of the temperatures exhibit a surprising accordance with the experiments made in the hothouses. If this method shall be more completely confirmed by additional proofs, it will afford great practical advantages.

The necessity of substituting the squares of the temperatures instead of their simple sum was rendered more especially evident to me from the observation of what happens when the temperature, at the principal growing season, is much elevated, or much depressed, comparatively with the usual mean. In the first case vegetation exhibits a remarkable activity; and, in the second, its usual pace is slackened, or it is even apparently brought to a stand-still.

According to the method of Adanson, Boussingault, and the Comte de Gasparin, vegetation would advance as much in two days with a temperature of 10° as it would in one day with 20°, or in four days with 5°. In all these cases the sum is 20°, and the results ought consequently to be the same.

By the method which I propose, the effects would be respectively in the proportions of 200, 400, and 100; that is to say, with 20°, in the month of March, for example, the progress of vegetation in 24 hours would be double that which it usually has with a mean temperature of 10°, and this progress would be one-half less than usual if the temperature were lowered to 5°.

M. Babinet has lately proposed to the Institute of France, of which he is a member, a new method of calculation by which the progress of vegetation may be estimated. It consists in multiplying the temperatures by the square of the number of days. According to his views, the effects produced in the preceding examples would be, respectively, as follows:—

Two days at 10°	...	...	...	4 × 10 = 40
One day at 20°	...	...	...	1 × 20 = 20
Four days at 5°	...	...	...	16 × 5 = 80

So that by this mode of calculating the effect of one day at 20° would be one-half less than two days at 10°; and, on the contrary, the temperature in being lowered to 5° during four days would produce double the effect of two days at 10°. These results are evidently at variance with those obtained by experiment, and particularly with those exhibited by the tables of observation made in the Botanic Garden at Brussels. M. Babinet observes, that, "in general, the effect produced by a constant cause acting for a certain time is proportionate to the intensity of the cause and the square of the time! Although this is true as regards gravitation—a falling body passing through a space proportionate to its weight and the square of the time; and although the assimilation of this effect with that of heat in regard to plants may be very ingenious, yet it is more specious than real.

The problem in question comprises various inte-

resting particulars. It is evident, in the first place, that whatever formula of calculation we employ, there are certain limits of temperature which must not be exceeded in hothouses, or rather below which we cannot descend without not only injuring the development of the plant, but even endangering its existence. What are these limits? They vary, of course, according to the kind of plant; but we possess few good experiments in this way. It will be understood that the formula which I have proposed is only applicable under the condition of not departing from a medium temperature beyond certain limits.

It appears likewise that plants do not require the same amount of heat to rouse them from their winter, or dormant, state. This starting-point also remains to be established.

Ought we to calculate the effective temperature, that is to say, those which effectively contribute to the development of the plant, by reckoning from the zero of the centigrade scale, as is usually done; or start from a point of temperature which will form a constant in the vegetable kingdom, but which will be a variable quantity?

Again, what plants almost resist forcing, and refuse to produce flowers and fruit, notwithstanding the action of heat?

Many questions arise in following up this mode of observation, which is based on calculation, and which may, I think, throw much light on that part of natural science which has been made the subject of this note. A. Quetelet, *Perpetual Secretary of the Academy of Science, Brussels*; in the *Rev. Hort.*

[Note by the Translator.—The preceding calculations are made according to the centigrade scale, the zero of which corresponds with the freezing point of water. Reaumur's scale also starts from the same point, and a similar mode of calculation will give the same results as those obtained by the centigrade. But Fahrenheit's scale commences 32 of its own degrees below the zero of the others just mentioned, and therefore a modification of the process becomes necessary, and requires to be explained, more especially as Fahrenheit's thermometer is the one chiefly used in this country.

We must not take the sum of squares of the daily temperature, as read from Fahrenheit's scale, but we must take the number of degrees which the observed temperature is above 32, and then operate with them as M. Quetelet directs in the case of the centigrade degrees; and thus the same results will be obtained. This may be proved by the following example:—

The effect of 8 days of a temperature of 10° centigrade is represented by  $10 \times 10 = 100$ , the square of the daily temperature, and this multiplied by 8, the number of days, is = 800.

The effect of a temperature of 20° centigrade is  $20 \times 20 \times 8 = 3200$ , or 4 times the effect of a temperature of 10°.

Now, 10° centigrade corresponds with 50° of Fahrenheit's scale, that is 18° above 32; and  $18 \times 18 \times 8 = 2592$ .

Twenty degrees centigrade corresponds with 68° of Fahrenheit's scale, or 36° above 32; and  $36 \times 36 \times 8 = 10,368$ , which is equal to 4 times 2592, the effect of 18° above 32. From this it is evident that by employing the degrees indicated by Fahrenheit's scale, less 32, we obtain results of the same relative value as those more directly obtained by using the centigrade scale.]

### Home Correspondence.

*Thawing Frozen Plants.*—I have an orchard-house here in which I winter a great many plants, such as Geraniums, Calceolarias, Cinerarias, &c., which are stowed away amongst the fruit trees. On the 14th inst. there was every appearance of a severe frost, consequently I covered up with mats, and the Peach-house being at "work" I opened the door communicating with the orchard-house, to allow the warm air to pass into the latter, and left them in that state. At daybreak next morning the thermometer out of doors stood 14° below the freezing point, and on going into the house I found that my hoary enemy had done his work severely; at first I thought of syringing; but then I thought that that would make bad worse. It occurred to me, however, that if I could raise a gentle steam amongst the plants it would possibly save them; I, therefore, put two bricks into the Pine stove furnace, and then went in search of a pail, into which I put as much water as would half immerse a brick, which I put in hot, and in a very short time the house was filled with steam. For some time it had little effect, the steam condensing on the plants, and becoming partially frozen. I kept changing the bricks as they cooled, and in an hour the plants began to assume a wearied, languid appearance, like the sun emerging from an eclipse, and the dark frozen green began to change to a yellow tinge. I kept the steam up for another hour; I did not lose a single plant; the only thing injured was the tips of Heliotrope cuttings. I kept them all shaded till noon, when I fully exposed them to light and air, and gave them a gentle syringing; they seemed improved by the treatment, and looked fresher than they did the day before. Steaming with a hot brick is not a new idea, it is the celebrated Dr. Coffen's vapour bath, by which means he has restored health to a great many of his patients. W. Fitzimon, gr. to W. Phillips, Esq., Reigate Lodge.

*The Deodar.*—I quite agree with you in your opinion of the ability with which your Indian friend has stated the botanical arguments that may be employed to prove the identity of the Deodar and the Cedar of Lebanon,



though he has rather avoided giving an answer to my question, Whether the Cedrus Deodara, at Chatsworth, had become the same as the Cedar of Lebanon? There is one of his facts which I venture to doubt, viz., whether the peculiar glaucous hue so characteristic of the earliest imported Deodars occurs in some states of the Cedars. Undoubtedly there are many varieties of appearance among Cedars of Lebanon. I have seen trees which, compared with others of the same kind, had a peculiar glaucous hue; but that hue was not the glaucous hue of the Deodar: and though the characteristic hue of the usual type of the Deodar is often absent in these plants, the colour, as far as my observation goes, is not, nor do I think that it can be asserted, that it is ever the same as that of any Cedar of Lebanon. To test the fact of two plants being the same, it appears to me that it is necessary that they should be so much alike as, under some circumstances, to be mistaken by an accurate and well informed observer the one for the other; and unless something has happened at Chatsworth, which has not to my knowledge happened elsewhere, I do not think this can be said of the plants under consideration. Sow any number of millions of seeds of the Deodar, and the same number of the Cedar, mix the plants together, and after many years' growth no gardener would have the slightest difficulty in separating the two kinds. The fact then remains that they are different; and though botanists may have a difficulty in pointing out the specific difference, still a difference must exist. The Cedar is never a Deodar, and the Deodar is never a Cedar of Lebanon. But it appears to me that the greater length of the leaves, the less close approximation, their difference of colour, and the more slender growth of the branches in the Deodar, taken together, constitute a specific difference. Perhaps the most marked distinction is the greater smoothness of the bark, and the more perfectly cylindrical form of the young shoots of the latter. It must be remembered that when the Deodar was first planted at Chatsworth there were already many specimens of considerable growth in the country, and I am still indisposed to believe that it can be accurately stated that at that place they have become the same, while at Dropmore, and at hundreds of other places where many thousands have been planted, they are obviously different from the Cedar. As far as the question is of importance, it should be determined soon, as the two are evidently so nearly allied that before long we may have many hybrids, which will give the majority a considerable advantage, and oblige me to remain, as after the statement of your ingenious friend I must still consider myself, *One of the Minority*. It may be added that the Deodar is much more tender than the Cedar. I have had many Deodars killed by a frost which scarcely affected the Cedar; but this is, of course, not conclusive of the main point.

**The Weather.**—Snow commenced falling here on the 9th, with cold east wind and slight frost; on the evening of the 11th, it came down very plentifully, keeping both fast and thick till mid-day of the 12th, by which time the snow was 18 inches deep; still cold and frosty. There was a little thaw on the 13th, rather more on the 14th, with a little more snow; at 4 p.m., the thermometer went down to 22°, sinking rapidly as night came on; at 9 p.m. it had got down to 3° above zero, at which point it remained till 12; as morning came on it gradually got milder, bringing us back to 22° at 6 a.m. This was the sharpest night I ever experienced in this locality. Our glass is of the best make, and hangs in the centre of the garden, facing south. *T. H., East Suffolk.*

**Rot in Larch.**—Within my own personal experience I have noticed the following facts respecting the growth of Larch:—It is never sound when in close neighbourhood with Scotch Firs, except when young. In two cases, the one in low good soil, the other in high poor soil, I have planted Larch where Larch and Scotch had grown before, and in both instances I shall have a wood of Oak and Birch, which I did not plant, instead of Larch, which I did. I have frequently noticed the great liking Oak and Ash have to the Larch; this is, I think, the real reason that Larch has proved such a good nurse for those trees; the Larch manures and prepares the ground for them. When relieved by thinning, Larch frequently puts out a fresh set of branches; this I never saw happen in the Scotch Fir. My theory of Larch rot is, that it is really caused by want of nutriment. There are many trees which become rotten in a similar way—as the Ash, Spruce Fir, and especially the black Italian Poplar, but we generally find that the better the soil, and the greater the room each tree has, the longer will they continue to build up sound timber; there is therefore nothing surprising in the Larch rotting, especially when we consider that we expect a far greater return of timber per acre from it than from any other tree, and plant accordingly. But, indeed, overcropping is the great evil in all present timber management; we plant thick, and keep thick, and are astonished that the result does not equal our expectations. *Hazel.*

**Early Potatoes.**—As I am going to make up a bed for a few early Potatoes, perhaps it may be interesting to some to learn how I get a very early crop without the aid of glass. I take a few cart-loads of half rotten horse-dung, and make a bed 2½ feet deep. After treading it down a little I spread about 2 inches of soil over it, then place the sets in rows 6 inches apart, and 6 inches set from set, covering the whole with about 3 inches of fine soil. When frosty the bed is easily protected with mats, and as soon as spring frosts have disappeared I transplant, lifting each set separately with

a dung-fork, pushing the latter down between the sets until I get hold of 2 or 3 inches of the dung, which generally lifts the set with as much of the soil about the shoot as protects it from injury in the removal. I imagine that the transplanting checks the rapid growth of the stem and luxuriance of leaves, and that it hastens the formation and growth of the tubers. *J. C., Feb. 9.*

**Zieger Kraut.**—Can you inform me what is the botanical, or the vulgar English name of this plant? Rham, "Dictionary of the Farm," p. 141, writes "this herb, called in the country dialect Zieger Kraut (Curd-herb), is the Melilotus officinalis;" and he endorses this dictum at p. 333:—"This plant (M. officinalis) is used in making the Swiss cheese called Schabzieger." Lindley (Med. and Econ. Bot.) makes no mention of Melilotus, nor of any use to which any plant of that genus is applied. Flügel (London, Whittaker, 1841) in his Dictionary has, "Zieger Kraut, common Hemlock;" but looking for the endorsement of this in the German English part, I find "Hemlock, der Schierling." Now which of these is correct? and shall I send the correction to Charles Knight, for the "Dictionary of the Farm," or to Whittaker and Co., for Flügel's Dictionary? If Mr. Rham was wrong, he can have led no readers astray further than to spoil a few cheeses, and arrive at the possibly false conclusion that Schabzieger cheese cannot be made in England. On the other hand, if Flügel is wrong, and an English caseist attempts to make Schabzieger cheese by a German recipe, he appears to me to be in a fair way to poison whatever friends he may associate with him in the final experiment. *Diss.* [We have shown several years ago that Melilotus caerulea is the plant to which Schabzieger cheese owes its flavour. As to Zieger Kraut, we know nothing of it. The sweet Melilot is of too little importance to be introduced into a mere selection of medicinal and economical plants.]

**Rain which fell near Stevenage, Herts, in 1852:—**

January .....	4.45	August .....	4.80
February .....	1.11	September .....	3.60
March .....	0.45	October .....	4.09
April .....	0.52	November .....	5.79
May .....	1.79	December .....	2.47
June .....	4.15		
July .....	4.82		38.07

The amount in July, I may observe, was due entirely to thunderstorms. *C. B. N. P.*

**Rain at Gwynsany, North Wales.**—I send the rain register for this place. I will also furnish you with that which is kept at Oswon, in Yorkshire. I do not know the average here, as I have been resident only four years; but at Oswon it is about 25 ins. I believe that here it is about 30.

January .....	Ins. 3.91	August .....	Ins. 5.74
February .....	4.12	September .....	7.50
March .....	0.38	October .....	4.44
April .....	0.23	November .....	6.56
May .....	2.85	December .....	4.64
June .....	2.64		
July .....	4.73		46.58

Our lowest thermometer (self-registering), against a north wall, 5 feet from the ground, has been, on 28th of January, 26°; and our lowest at 1 o'clock, on Saturday the 22d of January, 36°. We have only thrice had a sprinkling of snow, till about noon on each day. I gathered a flower of *Cobaea scandens* about a week since. To show the advantage of a roof covering about 6 feet of border, I have two plants, of about a foot high, from Lemon pips, looking quite healthy. The roof is made of heather. *P. Davis Cooke.*

**Rain at Ham, near Plymouth in 1852:—**

January .....	Ins. 9.82	Wet Days. 22	September .....	Ins. 4.10	Wet Days. 13
February .....	2.54	12	October .....	8.45	16
March .....	2.10	3	November .....	13.30	25
April .....	1.02	4	December .....	8.72	24
May .....	3.23	11			
June .....	6.34	19		66.85	174
July .....	1.73	11			
August .....	5.26	14	For 1851 .....	47.96	160

**Rain at Landue, near Launceston, Cornwall, in 1852:—**

January .....	Ins. 9.38	Wet Days. 24	September .....	Ins. 2.64	Wet Days. 19
February .....	2.19	14	October .....	7.21	19
March .....	1.46	6	November .....	9.92	28
April .....	1.08	7	December .....	7.02	26
May .....	3.24	15			
June .....	6.04	26		56.92	221
July .....	1.11	16			
August .....	5.63	21	For 1851 .....	43.98	

**Rain at Cobham, Surrey, in 1852:—**

January .....	Ins. 2.36	September .....	Ins. 3.68
February .....	.. 35	October .....	.. 4.41
March .....	.. 20	November .....	.. 5.54
April .....	.. 46	December .....	.. 2.23
May .....	.. 1.77		
June .....	.. 4.64		34.19
July .....	.. 3.36		
August .....	.. 4.89	For 1851 .....	.. 17.38

This register is kept by Miss Molesworth. *H. H. Treby.*

**The Weather in Devonshire.**—Two or three sprigs of yellow Laburnum (flowers and leaves fully developed), were gathered in Mamhead Park, near Exeter, on the 5th of February. The quantity of rain which fell at Mamhead in 1852 is as follows:—

January .....	Ins. Wet days. 6.79	22	August .....	Ins. Wet days. 4.48	14
February .....	1.02	7	September .....	4.08	13
March .....	1.36	3	October .....	5.74	16
April .....	1.11	5	November .....	10.46	26
May .....	2.98	12	December .....	4.53	24
June .....	4.77	20			
July .....	0.82	6		47.94	168

—Anon, Feb. 9.

**Preserving Timber** (see p. 104).—Permit me to inform "G. C." that another process which has been found successful is, to soak the timber in water saturated with lime. As much lime is put into the tank as the water therein contained will hold in solution, and

the wood is soaked in it, I believe, for some weeks. I have not seen the process tried myself, and I am only quoting from memory the substance of a letter addressed to a friend by the gentleman whose name I enclose for "G. C.'s" private benefit, should he apply to you for it. I have no doubt a letter addressed to him would meet with ready attention, and perhaps "G. C." may obtain his permission to give your readers the benefit of his experience. *H.*

**To soften Bird and other Skins** (see p. 69).—Spread some common sand an inch or two deep on the bottom of a tub, sprinkle it with water, lay the skins thereon, and cover with a little tow; 48 hours will be enough in most cases. A cloth over all is sometimes added. *Anon.*

## Societies.

**HORTICULTURAL, Feb. 15.**—Mr. J. A. HENDERSON in the chair. J. Praxedes Pacheco, D. Henry, J. Wilson, and P. Carthew, Esqs., were elected Fellows. Few plants were produced on this occasion, owing to the sudden severity of the weather, the thermometer on the night previous to the meeting indicating no less than 14° of frost. This will sufficiently explain why no Camellias were shown, although they formed one of the subjects for which special prizes were offered at this meeting. Of other plants Mr. Glendinning, of the Chiswick nursery, sent a variety of *Franciscia hydrangeiformis*, called elegans, which was stated to be an improvement on the species, inasmuch as its general constitution was more robust, its leaves broader, and not liable to die off at the ends, a fault which belongs to the original plant. The same exhibitor obtained a Certificate of Merit for *Rogiera amoena*, a plant of considerable beauty, introduced into this country through the German gardens, and a similar award for *Geissomeria nitida*, a scarlet-flowered Acanthad, nearly related to *Aphelandra*, that when fully in flower, which the plant in question was not, promises to be very handsome.—A Certificate was awarded to Mr. Dodds, gr. to Colonel Baker, of Salisbury, for a well-formed Providence Pine-apple, weighing 9 lbs.—Mr. Butcher, gr. to W. Leaf, Esq., of Streatham, furnished three bunches of Muscat Grapes, for which a Certificate was given. They were beautifully ripened, and exhibited no symptoms of shrivelling.—Of Pears, the only collection produced was one from Mr. Snow, gr. to Earl de Grey, Wrest Park, Bedfordshire. It consisted of very fine examples of Old Colmar, Glout Moreau, Beurré Rance, Ne Plus Meuris, Easter Beurré, Warden; and in addition, specimens of a small brown Pear, called Bezi de Caissoy (Nutmeg of some), an excellent table fruit, and an enormous bearer. A Banksian Medal was awarded. From the same establishment also came samples of Snow's Matchless green Cos Lettuces, which were mentioned to have been grown at the bottom of a south wall. They were considered scarcely first-rate in quality, and therefore a second-rate prize—a Certificate—only was awarded them.—Mr. Ingram, of the Royal Gardens, Frogmore, sent 100 heads of excellent Asparagus, weighing (the bundle) 11 lbs. 4 oz. It was stated to have been produced in pits heated by hot-water, in the manner described in our volume for 1847, page 836. A Certificate was awarded.—The Hon. W. F. Strangways again furnished some Hellebores, and cut specimens of other interesting plants, which are at present in flower in his garden at Abbotsbury, in Dorsetshire. Among them was the rare *H. abchasicus*, a pale Russian species little known; and the *Euphorbia mellifera* from the Canaries, a bush quite hardy at Abbotsbury.—Mr. J. Young, Taunton, Somerset, also sent a branch beautifully in flower of *Acacia dealbata*, a handsome species, concerning the hardness of which several notices were published in our columns last year. Mr. Y. stated that the tree from which it was taken had been growing in his garden about 20 years, away from any wall or building, and without any protection, and that it is at this time, notwithstanding the frost, a truly beautiful object about 25 feet high, and covered with its honey-scented flowers.—Among miscellaneous subjects was an example of the kind of bell glasses the French use in the neighbourhood of Paris for promoting the growth of Cauliflowers and other market garden crops which it is desirable to obtain early. It was made of good strong glass, about 15 inches high, and nearly the same in width at the mouth. It was stated that such glasses cost only about 7½d. each, and it was hinted that it might be found worth the while of English glass manufacturers to make similar protections for the benefit of gardening in this country.—Mr. Adamson, jun., furnished specimens of his new Portland cement edging tile, mentioned in our report of the Society's Garden, at p. 87. A gas heating contrivance, the invention of Mr. Cuthill, of Camberwell, was exhibited. It consists of a hemispherical cast-iron chamber, to the top of which is attached a pipe which, after being led along the house to be warmed, is returned, and discharges itself outside. The chamber is intended to be built in the end wall with as much of the dome inside as possible, leaving an opening outside (to which a door is affixed) for introducing the gas burner which is to heat the apparatus. It was stated that if it is possible (which Mr. Cuthill is confident it is) to render the joints sufficiently tight to prevent leakage, this invention might be found useful, near places having gas laid on, in heating window gardens and small houses, which it is very difficult otherwise to warm without overheating. Mr. Cuthill stated that a contrivance of this description



in a greenhouse 12 feet by 8 feet, has been found to work satisfactorily with a gentleman in the Old Kent Road, and that a heat of 45° could be maintained with ease when there were 12° of frost outside.—From the garden of the Society came *Acacia ixiophylla* and *linifolia*, *Rhynchospermum jasminoides* (frost-bitten on its way to the meeting in a covered van), *Correa Goodii*, three varieties of *Epacris*, *Echeveria rosea* and *reclusa*, two useful winter flowering hardy greenhouse plants, three *Camellias*, cut flowers of *Luculia gratissima*, which is now blossoming beautifully in the great conservatory; a good example of Cardoon (*Cardon de Tours*); and *Letitæes* *Laitue chou* de Naples, from the south slope of a ridge, and *Romaine vert d'Hiver*, both excellent sorts for winter cultivation.

It was announced that in consequence of the severe frost which has set in, the trial of Mr. McGlashan's tree-lifter in the Society's Garden would be postponed till Wednesday the 2d of March.

## Books Received.

*Dwellings for the Working Classes*; by R. S. Burn. 4to. Blackwood.—The way in which we lodge our poor is the great sin and scandal of our country. It would seem that we have not yet learned to consider peasants better than serfs, just as in former days serfs were thought to be mere cattle. The Norman manstye has descended to our own days, and is still represented even in the gardens of noblemen by the atrocious bothy, and all its disgraceful accompaniments. It is true that the enlightened and philanthropic have set about curing this shocking evil, but their example is sparingly followed; for sordidness and selfishness are much more common than human kindness. It is, however, to be hoped, that men are upon the whole more generous in their nature than they once were; and that a conviction of the necessity, to say nothing of the policy, of providing better for the habitations of the poor, is beginning to be generally felt. Cleanliness next to godliness, is a saying the truth of which is indisputable; but cleanliness is impossible where people are provided with no better lodging than Irish cellars, Durham sheds, or Caledonian hovels. To secure a general improvement in this part of social economy, it is in the first place necessary that rational plans, forms of specification, and all the *ceteras* that save dull people the trouble of thinking, should be provided at a low price; and we believe we may recommend this little work as likely to afford all such information as is required. It contains good simple plans, detailed specifications, and sound advice, amply sufficient to enable any man in a country neighbourhood to dispense with the assistance of an architect. The price is only 3s.

*Franklin's Footsteps*. By C. R. Markham. (Chapman & Hall's Reading for Travellers.)—This is a well written volume on Arctic discovery, from the pen of one who has beheld the scenes he describes, and who knows how to give life and spirit to his descriptions without impairing their fidelity. We cannot resist the temptation to extract the following amusing account of the way of getting over an Arctic winter on board H.M.S. Assistance:—

"Left in a state of inactivity, to pass the time as we best could, during the gloomy hours of a long continuous night, many amusements were proposed. Guy Fawkes was burnt on the 5th of November, with a display of rockets and blue-lights; a saloon was opened on board the Intrepid, for singing, feats of strength, and other diversions, and two newspapers were published monthly, with the titles of the *Aurora Borealis* and the *Illustrated Arctic News*. A theatre was erected on board the Assistance, on a scale of magnificence which, considering the small means at the disposal of the Expedition, was truly marvellous. In spite of all the difficulties the manager had to encounter, the brilliant and artistic scenery of the 'Royal Arctic Theatre' was displayed, to the admiration and delight of the whole Expedition, for the first time on the 9th of November. The stage was erected on the upper deck, and the front was made of painted canvas. Doric columns with vases of fruit and flowers were painted on each side of the curtain, and two snow statues of the Prince of Wales and the Princess Royal, were placed on either side of the orchestra. The first two nights were confined to farces and songs; but on the 9th of January the famous extravaganza of 'Bombastes Furioso' was brought on the boards with great applause; and on the 28th of February, the last night of the season, the historical drama of 'Charles the Twelfth,' and a pantomime written expressly for the occasion, were brought forward, which produced the greatest mirth and amusement. The pantomime was entitled 'Zero; or, Harlequin Light;' turning all the dangers and inconveniences to which we were exposed in those inhospitable climes, into evil spirits that were leagued against us. It supposes them continually watching every opportunity to surprise an unfortunate travelling party, till at length their power is destroyed by the appearance of the more puissant good spirits Sun and Daylight. Then the metamorphoses take place. The good spirit Daylight turns into harlequin; columbine jumps through an oil-skin sun, which had risen behind the back scenes; and frothy old Zero, who has all along been the leader of the evil spirits, is turned into first clown; and a bear, which had been for some time prowling about, was then fired at, and out tumbled pantaloons and second clown. Then commenced the pantomime of

fun and frolic, which kept the whole party in a roar of laughter from beginning to end."

We regret to see that one so well qualified as Mr. Markham to offer an opinion speaks thus despondingly of the fate of poor Franklin and his companions:—

"It would be mere trifling in one who has seen those barren frozen regions, to hold out a hope that, without provisions or ammunition, and with the cold of that rigorous climate undermining and weakening their constitutions for seven years, any of those gallant men who followed Sir John Franklin in 1845, full of enthusiasm, can still survive. Much is said about the 'club-moss,' which, it is affirmed, might easily be used for fuel, when there is not a single specimen from Cape Warrender to Melville Island,—and a great deal also about the abundance of animal life. So far as we saw, there is not a living thing, save a few wary bears and foxes, from September to May; and even in the summer months, without powder or shot, birds could not be obtained to support a hundred, or even fifty men for a month. We hear also of a theory about a polar basin, and a warm climate far to the northward; yet experience shows that the farther north Mr. Penny went in the Wellington Channel, the colder was the climate; and in 1827 Sir Edward Parry saw immense fields of ice drifting from the northward when in 82° north. But for those, I repeat, who have themselves felt the piercing cold, and seen the impossibility of men sustaining life on their own resources on those bleak and barren shores, it would be heartless wickedness to hold out delusive hopes to the friends and relatives of those brave but unfortunate men. A possibility, a remote and unlikely one indeed, but still a possibility, remains; that the Erebus and Terror may have passed up Wellington Channel, far out of reach of Mr. Penny's travelling parties, and there, as Lady Franklin still sanguinely hopes, they may still be found. But not only have no vestiges of their progress been discovered, either on the shores of the channel itself or on the islands (described as abounding in birds during the summer), but the land also on both sides seemed to close in and form a large bay, the distance between the two extreme points seen being only marked on the charts as 25 miles. It is also just within the range of possibility that Sir John Franklin may have penetrated up Jones's or Smith's Sounds, and that there the remains of his vessels are to be found; but whether any of these remote shores still frown upon this ill-fated expedition, or whether, as is more probable, the two ships have met the fate which has attended so many whalers before and since, and been crushed to pieces by the ice, there can be but little hope that any survivors still remain; for even if it were possible that all the hardships and privations, the cold and hunger, of so many years in the Arctic regions could have been withstood, it is incredible that no part of the expedition should have attempted to reach either the whalers in Baffin's Bay, or the beach where the Fury was wrecked, at which point they knew provisions had been left; or the continent of America, where they would in all probability have fallen in with one or other of the numerous parties which were last year traversing the Parry Islands and the north of America in search of them."

*Agrostographia*, by Messrs. Lawson and Co., is a fourth edition of their well-known account of the relative value and applicability of the herbage and forage plants cultivated in this country. In the present edition we remark very considerable additions and improvements, together with some useful woodcuts explanatory of the structure of Grasses.

*Black's beautiful Library Edition of the Waverley Novels* has now included "Ivanhoe" and the "Monastery."

*Ferdinand I. and Maximilian II.* (Longman's Travellers' Library), is a translation of an able sketch by Ranke, of the state of Germany, in that most interesting period of history which intervened between the establishment of the reformed religion and the re-establishment of Catholic influence in all Southern Germany. The eager disputants of the present day might profit by the lesson that it teaches, if religious extravagance could learn wisdom from experience.

*Joan of Arc* (Murray's Railway Reading), is a reprint of an excellent article by Lord Mahon, published originally in the "Quarterly Review," of March, 1842. We are glad to see in this cheap form one of the best essays we have upon points of popular, and therefore very inaccurate history.

*Johnson's Practical Draughtsman's Book of Industrial Design* (Longmans) is to be completed in 12 4to. monthly parts. Judging from the first number, it will be of great value to the beginner; the style is clever, the illustrations excellent.

*Webb's Otia Hispanica* (Paris: Masson) is at last completed in a 4to volume of 50 pages and 45 uncoloured plates of plants. Those by Riocreux are admirable specimens of botanical drawing.

## FLORICULTURE.

**CARNATIONS AND PICOTEES.**—It need scarcely be stated that during the last few days we have had a great change in the weather in the south; and similar accounts reach us from the midland and northern districts. However this change may affect others, it is not without its difficulties to those cultivators of Carnations and Picotees who may have treated their stock with unnecessary kindness during the long-continued wet

weather we have hitherto experienced. One cultivator writes, "The change is very agreeable, but rather trying; our plants had been pushing up their hearts, and spot abounding." Now, such a state of things should not exist; we fear, however, that this premature growing is but too general, owing perhaps to several causes, not the least of which is early autumn potting, whereby, under our ordinary September and October months, root-action is so rapidly promoted that the pots get filled before winter sets in; the growth in the plants quickly follows, and that at a time the most critical during the whole year; it is customary with us to take off our layers and so regulate the potting and future treatment that the plants get only moderate hold of the soil, or, in other words, become just sufficiently established to bear the free play of all the dry weather from that time up to Christmas; at which season our plants generally look anything but flourishing, our aim being so directed that root-formation is in no way encouraged; this of itself prevents them from "pushing up their hearts," and it secures them against injury during those "trying times;" our Alfreds, Curzons, Ganymedes, Jenny Linds, Green's Knowsthorpe Pets, Beatrices, Splendids, Mrs. Normans, Falconbridges, Prince of Wales, Sebastians, Justice Shallows, Mrs. Barnards, Lorenzos, and Venuses, are all treated in this manner. We leave to the more congenial days of early spring that growth, both above and below, which even older heads than ours strive to obtain at the end of autumn, when we imagine the plants should have that quietude and rest which is so congenial and requisite to their future well-doing. Taking our stock (2000 pots) as a whole, there is little at first glance to excite admiration, and on turning out the most robust plants the roots will not be found more than "just through," and those few and far between; but let the present month be over, and root action vigorously commences, the pots get rapidly amply filled, fresh growth above is everywhere observable, full exposure (except during easterly March winds, when screening is sufficient), can be allowed with impunity, and April arriving potting for bloom may be prosecuted with the utmost energy, while the beneficial effects of showers are distinctly observable on that spring growth which once started should never be checked. Doubtless much of the present lamentation may fairly be attributed to want of air; early potting has certainly much to do with "heart pushing," as we have endeavoured to show; but want of air greatly adds to the evil by accelerating that which early potting tends to induce. In this manner a foundation is laid for the development of that detestable scourge, the spot; it is its prevention we seek; for we know of no cure except carefully cutting out the parts affected by means of a free use of the scizzors. A more hardy system of growth would certainly be an advantage; even at the present time plants should have all the air possible, whenever the weather will permit; full exposure to all, except frosts or falls, will maintain health (if hitherto grown hardy); even during "dripping times" let the glasses of the pits or frames be raised, in order that thorough circulation may be secured; thus will less protection be needed during the severest weather, and the whole collection be kept ready for the routine business of potting, as soon as the time shall have arrived for that operation to be proceeded with. *J. E.*

**THE CHRYSANTHEMUM.**—Everybody interested in the cultivation of this flower must have been gratified when they saw, for the first time, the announcement that it was the intention of the Horticultural Society to offer medals for Chrysanthemums at their rooms in Regent Street, and there are none, I think, who did not regret to see so few competitors upon that occasion. The fact, however, of only one or two entering the lists, by no means proves that the offer was unappreciated. It is to be attributed rather to the first meeting being too early, and the second too late. Should it be the intention of the Council again to invite Chrysanthemums, I would suggest a few days before or after the 20th of November as being a proper time, the experience of some years informing me that on or about that date they are in perfection. Much difference of opinion exists as to the size of pot, and the number of plants to be put into each pot to make the best display at exhibitions. For large flowering varieties, I would say by all means use 11-inch pots; and with respect to plants, I would hint that the question to be determined is, what number will give the finest head of bloom. I have grown and exhibited from one to four plants in each pot upon several occasions, and I have no hesitation in stating, that three in each pot have the most compact appearance, and yield the finest head of flowers. With regard to Pompons, I would recommend 8-inch pots, although some advocate a smaller size; and I understand that one society will adopt smaller pots, which is to be regretted; the experience of past years having furnished abundant proof that a good specimen Pompon cannot be grown in less than an 8-inch pot. *Wm. Holmes, Hackney.*

**AZALEAS:** *Anon.* A. viscocephala is perhaps the finest hardy white Azalea at present in cultivation.  
**DAHLIAS:** *Dahl.* The first shoots will probably be excessively robust, and may be destroyed, unless the variety is scarce; they seldom strike readily. Topping the shoot early will induce other breaks to follow quickly, which root rapidly and make the best stock. Keep your pot roots dormant for another month; they will almost break naturally, and then be in time for turning out by the end of May.  
**PICOTEES:** *Tyrol.* Yellow ground varieties are generally acknowledged to be more tender than white ground kinds, but we do not find them to require more than common attention. The following will form a nice collection, viz., Conrad, Euphemia, Queen, Princess Alice, Royal Standard, Topaz, and William Clough.



there is, however, more room for improvement in this than in any class of flowers that come under our notice.

**RHODODENDRONS:** *Anon.* R. coriaceum is one of the best white hardy Rhododendrons we have seen; album elegans is also very good.

**TULIPS:** *William D—S.* Do not protect your bed from cold weather. Nothing but frost will do any harm; guard them, however, from wet, in case frosts should follow it.

### Miscellaneous.

**Improvements in the Preservation of Woods and Metals from Decay.**—(Machabee's Patent, enrolled Dec. 8.)—The composition specified in this patent is formed by melting together  $\frac{3}{4}$  parts of vegetable tar, one part of mineral tar, one-sixth part of resin turpentine of Pinus Larix, one-third part of wax, one-sixth part of white grease, with or without the addition of one-third part of Roman cement, and a similar quantity of hydraulic lime in fine and sifted powder. The mineral ingredients are added to the others when in a boiling state, but are only required in those cases in which the material to be coated with the composition of mastic is to be exposed to the action of heat. The composition is applicable to wood, metal, brickwork, &c., the surfaces of which must be well cleaned prior to its application, which may be effected by means of a brush, whilst in a heated state, and any number of coats may be employed. When the composition is used for covering the inner surfaces of walls, a coating of plaster is applied over the mastic. *Pharmaceutical Journal.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

THE change from the late mild weather to the frosts we are now experiencing will render fire heat necessary to plant houses; it need not, however, be carried to excess, especially with Heaths, &c., a tribe of plants liable to suffer when subjected to much artificial heat. As the sun has now considerable power, the houses may be closed tolerably early in the afternoon; and if, in addition, the roofs are protected by canvas or mats, slight fires only will be necessary. Still ventilate freely, guarding, however, against currents of cold air. Where there is the convenience of a hot-water pit provided, with a bed for bottom heat, advantage should be taken to employ it for starting a variety of plants which need the assistance of bottom heat to get them into growth. Achimenes, Gloxinias, Gloriosa superba, the tuberous-rooted Gesneras, Hippeastrums, and various stove herbaceous plants, will have their growth materially enhanced by plunging them in bottom heat till they begin to move, when those requiring repotting will be in a more favourable state for the operation; bearing in mind, however, that it should be done immediately the roots show indications of starting into growth. Preparations should likewise be made for potting the general stock of Pelargoniums, excepting, of course, those intended for the earliest show of bloom. The soil for Pelargoniums and other soft-wooded greenhouse plants should be light and rich, and must be in a dry state when used. Kalosanthus, Calceolarias, and similar plants will likewise require a shift at this season, and may have a similar compost. As these and Pelargoniums require a moderate amount of heat and plenty of light, they may be kept together, unless cultivated in separate houses. Pelargoniums intended for late blooming should now have their shoots stopped, thinning out over-crowded wood (which will make cuttings for autumn blooming plants), to preserve a uniformity of growth and show of bloom; the shoots left should be, as near as possible, of equal strength. The washing and cleansing of plants infested with insects should precede their new growth, as they can at this stage be more easily eradicated, and with less injury to the plants. Japan Lilies, Alstroemerias, Gladioluses, and other bulbs, wintered in cold frames, will require increased supplies of air, as the plants are now above the soil. Water will occasionally be required, if the soil appears dry; but in no great quantities, until a more active growth calls for a larger supply. Let pits, frames, &c., be well protected from frost, more particularly as many plants wintering in them are in a growing state.

#### FORCING DEPARTMENT.

**PINERY.**—By all means, now the fruiting plants are fairly started, keep the bottom-heat at that steady point which will insure a regular progressive root action. Nothing tends so much to produce ill-shapen, half-swelled fruits, as sudden changes of temperature at their roots. As the fruit advances in growth, the plant's system is largely drawn upon to support it; and if the roots are prevented, by sudden checks, from supplying the demand made upon them, the above results are sure to follow. The chief advantage of growing Pines on the open bed system is the regularity with which they can be supplied with bottom-heat by hot-water pipes. Keep a rather dry atmosphere, until the plants are out of bloom, and mind no water is allowed to stand in the hearts of plants whose fruit are now forming. Night temperature 60°, increased to 80° by day in sunshine. Avoid cold draughts of air; but in other respects aim at a constant supply of that necessary element. Succession Pines, and those intended for fruiting later in the season, should be kept steadily growing. On this account, if the bottom-heat is declining, the plants should be lifted, and the bed turned, with the addition of fresh tan or leaves. This will stimulate the roots into action, and the plants will be in much better order for potting next month, than when their

roots are in a dormant state. Night temperature 55° to 58°; day, 70° to 75°. Guard against damp; see that the fruiters are kept moderately moist. Plants in pits and frames will hardly require water for some time to come.

**VINERY.**—In the early house proceed with thinning the bunches, having previously fixed on the number to remain, in which the strength and capabilities of the Vines must be carefully considered; as a general rule it is much the safer, and more satisfactory plan, to have too few than too many. Aim at procuring close compact bunches, in preference to large loose ones. Now the fruit is set, a little more moisture may be allowed, which may be accomplished by frequently sprinkling the interior walls and floor of the house; and on fine days, at closing time, let every part of the house (except the Vines themselves) get a good syringing; a liberal allowance of air must be given, and advantage may be taken of sunny weather to increase the day temperature; the night maximum heat should not exceed 65°. Thin out and train the shoots in the succession houses, the heat of which may gradually be raised as the amount of solar heat and light increases; when dull, dark weather intervenes, lower your heat standard accordingly. Houses just now starting will require frequent syringing and a genial growing heat maintaining, till all the buds are fairly on the move. **PEACH HOUSE.**—The stopping, disbudding, and thinning of Peaches will require daily attendance. The syringe may now be applied, taking care the young leaves become dry before evening. The inside border should likewise be examined, and watered if necessary; as the young fruit swells, gradually increase the moisture, especially on bright days. The night temperature should still not exceed 50°, allowing a rise of 15° by day, and even 20° during bright sunshine. Air at all times will be requisite, in giving which be guided by the state of the weather. The second house advancing into bloom should be brought on gradually, so that the blooms may come strong, and the syringe may be used until the flowers open. Night temperature, 40°; 60° to 65° by day. If CHERRIES were commenced early they will now soon be in bloom, and of all our forced fruits none are so fickle in their results as this. Should bright sun occur, after some days of dark weather, the petals will often drop before impregnation of the embryo fruit has taken place; hence it will be advisable to break the direct rays of the sun by a slight shading. A very liberal allowance of air from the commencement of forcing is of the utmost importance, which should be diminished, but not discontinued through the night. When in bloom the temperature may rise to 60° or 65°. Thin the blooms (where too thickly set) before they open, and keep a look-out for a small grub which frequently coils itself upon the foliage. **FIGS.**—Syringe frequently, and keep a temperature free from sudden changes after they have formed full-sized leaves. The night maximum may be 60°, advancing 15° in bright weather. If the roots are confined in pots or tubs, frequent waterings will be necessary, of which each alternate one should be with liquid manure. **STRAWBERRIES** will require attention; the green fly should be stopped at once, and as they get into bloom suspend the syringe and promote by every means their perfect development.

#### FORCING GROUND.

If the young Melon plants for the early crop are strong enough for turning out, a ridge of dry turfy loam should be placed along the centre of the border (supposing they are grown in houses with hot water for bottom-heat), or frame. When a heat of between 80° and 85° is obtained, the plants may be carefully turned out of their pots and planted; one good plant is sufficient to fill a space of about 20 square feet, which will be a guide for planting them. If grown by hot water, a moist atmosphere must be kept up, with a night temperature of 68°, rising to 80° by day in bright weather. As the plants will, in all probability, have some height to grow before they reach the trellis, they should be carefully trained with one shoot till they reach it before stopping them. Cucumbers may be treated in the same way, but they require a lighter soil and a trifle more bottom-heat. Plants now in bearing, assist by surfacing, and the application of clear pigeon or fowls'-dung water. Guard against mildew. Bring on successional crops of Asparagus, Kale, &c., and prepare dung and leaves for making fresh beds for Melons, Potatoes, &c. Keep up the necessary heat to advancing crops.

#### FLOWER GARDEN AND SHRUBBERY.

Take advantage of the present frosty weather to renew old worn-out beds, borders, &c., with fresh compost. To grow flower garden plants in perfection they require a partial renewal of the soil every year, or the beds enriched by adding well rotten manure. As it ought to be known what description of plants is intended for each bed, there will be no difficulty in preparing them agreeably with the habit of the plant intended to fill them. After the beds are filled with the different composts they should be thrown up rough, to expose as large a surface as possible to the action of the weather; where, however, the beds are now occupied by spring-flowering plants, the above practice is out of the question; and the different composts, manures, &c., should be prepared, to be in readiness to fill up the beds, on the removal of the plants in the spring. Well protect from the influence of frost the stock of bedding out plants and half-hardy plants and shrubs.

#### KITCHEN GARDEN.

Proceed actively during the present frosty weather with wheeling manure, trenching, digging, &c., to bring

up the long arrear of work of this nature on hand. In well-kept gardens it is often inconvenient, and always an untidy practice, to wheel manure to the quarters during the summer, on every change of the crop; and, therefore, where practicable, let sufficient manure be applied at this season to serve for the succeeding crop, if a second one is intended to be grown. The preparation likewise of plots intended to grow Asparagus, Sea-kale, Rhubarb, and other vegetables of a permanent character, should be commenced, by trenching the ground from 2 to 3 feet deep, and adding a quantity of well-rotten dung. We shall advert to this again next week. Attend to our previous directions respecting protecting young vegetables, &c., under glass, &c.

### STATE OF THE WEATHER NEAR LONDON,

For the week ending Feb. 17, 1883, as observed at the Horticultural Gardens, Chiswick.

Feb.	Month's Age	BAROMETR.		TEMPERATURE.			Wind.	Rain.
		Max.	Min.	Of the Air.	Of the Earth.	1 foot 2 feet		
Friday.. 11	5	29.368	29.362	36	27	31.5	37	N. .00
Satur.. 12	6	29.494	29.368	34	27	30.5	37	N.E. .00
Sunday.. 13	7	29.632	29.584	34	26	30.0	36	E. .00
Monday.. 14	8	29.818	29.798	32	18	25.0	36	N.E. .00
Tues.... 15	9	29.818	29.798	35	23	29.0	35	N.W. .00
Wed.... 16	10	29.820	29.784	38	23	31.5	34	N. .00
Thurs.. 17	11	29.746	29.531	35	25	30.0	35	N.W. .00
Average ..		29.671	29.606	34.8	24.4	29.6	36.1	36.8

Feb. 11—Slight snow; partially overcast; snow at night.  
 12—Slight fall of snow; cloudy and cold; slight snow.  
 13—Overcast; overcast and cold throughout.  
 14—Overcast; dusky haze; overcast; sharp frost.  
 15—Sharp frost; overcast; frosty at night, slight snow.  
 16—Frosty; fine; clear and frosty at night.  
 17—Clear and frosty; snowing occasionally; clear and frosty.

Mean temperature of the week 7 deg. below the average.

### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Feb. 26, 1853.

Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 20	45.6	32.1	38.8	16	0.51 in.	4	1	4	1	8	3	1	2
Mon. 21	47.1	33.6	40.3	13	0.20	1	3	4	1	2	6	1	2
Tues. 22	45.4	32.8	39.6	11	0.29	3	5	6	1	2	5	1	1
Wed. 23	47.3	33.2	40.2	4	0.23	3	4	1	1	7	6	1	1
Thurs. 24	46.8	34.5	40.6	10	0.32	3	2	2	2	4	4	8	1
Friday 25	48.3	33.6	40.9	11	0.20	2	1	5	1	4	6	1	1
Satur. 26	47.2	33.7	40.5	13	0.64	4	2	3	4	1	8	3	1

The highest temperature during the above period occurred on the 26th, 1846—therm. 50 deg.; and the lowest on the 20th, 1852—therm. 15 deg.

### Notices to Correspondents.

**CRYPTOGAMIC PLANTS:** A Constant Reader. Of dried collections of fungi published for sale, you shall have a list next week.

**FRUIT TREES** for a span-roofed house: N.W. In a house with a south and north aspect, you can grow Vines in front, as you propose; Figs along the lower part of the roof, on the north side; and higher up, Peaches and Nectarines may be trained. **ICE:** A Constant Reader. If your well communicates with water on the outside of it there will be some danger of its thawing; but this risk will be no doubt diminished by your plan of planking over the water, and loading the floor with straw and bushes. It is a good experiment, the result of which we shall be glad to hear. At all events, you cannot do anything better.

**LAURUSTINUS:** C.F. The white substance in the interior of the ovary of this plant is a collection of stellate hairs, as you will see with a little patience. What they do there we are unable to explain.

**MELONS:** Well Wisher. We recommended drain-tiles to be placed over the pipes for bottom heat, in order to prevent the soil from becoming too dry by immediate contact with the pipe. The same end may be obtained by covering the pipes, and space between them, with bats or stones placed hollow, so as to allow the heat given off from the pipes to circulate equally under the border. We consider troughs useless, as their action in affording moisture is too partial to be of benefit, and the bed can be kept in a more healthy state by applying water to the surface.

**MICROSCOPES:** E.B.W. We see nothing except low price in favour of Nachez's microscopes, with which we are unacquainted. We have not heard of the publication of the Dead Sea plants. No doubt Nachez will be found if a letter is directed to him in the manner you propose.

**NAMES OF FRUITS:** G.K.C.B. You call the Apple correctly by its proper name, the Cornish Giffillflower. The tree has a weeping habit; and, as you have observed, the fruit grows at the extremities of the branches. In pruning the tree, this should be borne in mind.

**NAMES OF PLANTS:** A Gardener in a Dilemma will never be anywhere else if he listens to such absurdities; we know nothing about the "gentleman's" meaning—A.J.M. Yanda tricolor, not snavia—A.A. Acacia dealbata—H.C. 1. Too young and no fructification, cannot be determined—H. Libertia denticulata, Presl; 3. Too young—no fructification, it has the glandular hairs of Hypolepis; 4. Asplenium—Probably A. planiculare, Wall. You must not expect correct names when you send such imperfect specimens; and do not roll up the little bits of paper—it takes up time to unroll them to find the number figure. S.—Dis. There is no such plant. You must not wonder at finding heaps of such slovenly blunders in books which, we are sorry to say, are often written by gentlemen pretending to a familiar acquaintance with natural history; but who, in reality, are profoundly ignorant of even its rudiments.

**NURSERYMEN'S RATES:** Anon. We cannot give legal advice. If you will refer to pp. 148, 165, 213, and 229 of last year's volume, you will see how Messrs. Lane acted under similar circumstances.

**PEACH TREES:** A Reader. Sorts most likely to succeed against walls in the Lothians of Scotland, are the Noblesse, Acton Scot Royal George, and Mountaineer.

**RED DEAL:** W.B.H. This is yielded by the Scotch Fir. Larch is better than Scotch Fir for planting among other trees, especially if much exposed to wind. As to the rot, which is so destructive to it, our own opinion is that it is owing to the roots getting among the stagnant water of undrained or ill-drained land. It is invariably preceded by a sickly state of the topmost branches.

**TURNIPS:** G.B. A globular, middle-sized, dark-skinned variety, crisp and sweet, but with a little "woolly." Apparently a good sort for winter use.

**WEIGHT OF FRUIT:** S.B. Your question should have been addressed to the parties whose names you use. It is beyond our power to tell what A or B may have ever done. All we can say is, that we have not heard of such fruit as you mention.

**MISC:** John Grey. The Numbers can all be had.



PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9s. 5s. per ton, less 2½ per cent.*

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London at 6s. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

**PERUVIAN GUANO**, guaranteed the genuine importation of Messrs. A. GIBBS & SONS, 9s. 10s. per ton, or, in quantities of five tons and upwards, 9s. 5s. per ton in dock. A constant supply of LINSEED and RAPE CAKE.

EDWARD PURSER, Secretary.  
LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turpentine Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0

Office, 69, King William Street, City, London.  
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9s. 10s. per ton; and for 5 tons or more, 9s. 5s. per ton, in dock. Sulphate of Ammonia, &c.

SEWAGE CHARCOAL MANURE.

**PEAT CHARCOAL**, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Gabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Gabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Gardener*, by Mr. Glenn.

Mr. JOHN ANNETT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

GUANO AND OTHER MANURES.

**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

FOOT-ROT IN SHEEP

PREVENTED AND CURED BY THE EARLY USE OF THE

**GUTA PERCHA GOLOSHEES**, to be had of JOHN JONES & CO., Inventors, Patent Works, Sheffield. Sold to the Farmers at 3d., 4d., 6d., and 8d. each. Price of the powder in tin cases, 2s. 6d. each, sufficient for 100 sheep.

*Directions for use.*—Bind round the ankle some tailor's lashing, which prevents too much pressure, at the same time keeps out the dirt; dip the upper part of the shoe into very hot water, then stretch up the material when soft to the height required. Full instructions are sent with each order.

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**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

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These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.



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16, Bath Place, New Road,  
(6 Doors West of the Hampstead Road)  
Removed from Oxford Street.

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Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 2 10 0

Larger sizes if required.  
To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest Pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,  
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Every description of Machinery for Raising Water, Fire Engines, &c.



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FLOWER SEEDS, AND SEEDS FOR THE KITCHEN GARDEN, Delivered Carriage free by Railway.

**J. C. WHEELER AND SON, SEEDSMEN TO THE** GLOUCESTERSHIRE AGRICULTURAL SOCIETY, beg to state that their new Seed List for this season will be forwarded free by post on receipt of one postage stamp.

To those desirous of buying the best varieties in cultivation, their List will be found extremely useful.

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J. C. WHEELER & SON beg to offer the following Collections of Garden Seeds:—  
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No. 1 and No. 2 Collections will be sent free to any Railway Station in England.

J. C. WHEELER & SON, Seedsmen, Gloucester.

TO AGRICULTURISTS AND HORTICULTURISTS.

**THE SUBSCRIBERS** have a few Tons of POTATOES, the produce of their prepared cuttings, to spare.—York Regents, 6s.; American Native, 6s.; Cambridge Radical, 6s.; Boden's Early Oxford, 8s.; True Ash-leaved Kidney, 8s.; and Early Ebbington Kidney, at 10s. per bushel, all in first-rate condition.

They have also still a few of their celebrated Early No. 1 Pea, 2s. 6d. per quart, and Prince of Wales Early Scarlet Rhubarb, 5s. each.—Post Office orders to be made payable at the Borough Post Office to the firm of HAY, SANGSTER, & CO., Newington Butts, London.

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**NEW SEEDS, 1853.**—The SUBSCRIBERS have had the honour of supplying several hundreds of the first families in Ireland for many years. The transit from this Port to the various Ports in Ireland is quick and expeditious, and the cost is very moderate. The Port of Plymouth is therefore well situated for commercial transactions with our sister country.

The Carriage of all Orders above £2 is PAID to the following Sea-ports:—

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Steamers are continually running from the GREAT WESTERN DOCKS (within a rifle shot of our Union Road Establishment), to the above-named Ports.

For particulars and Catalogues, apply to WILLIAM EDGUMBE RENDLE & CO., Seed Merchants, Plymouth.

ESTABLISHED MORE THAN HALF A CENTURY.

**PRIZE MANGOLD WURZEL.**—The quality of a crop of MANGOLD WURZEL depends very materially upon the size and the shape of the bulbs from which the Seed is saved; and we have, after several years' selection, obtained a very superior stock of the YELLOW GLOBE-SHAPED MANGOLD.

We have also good stocks of LONG RED, RED GLOBE, and LONG YELLOW. Also, TRUE LARGE WHITE BELGIAN CARROT. Priced Catalogues will be forwarded on receipt of one penny stamp.

Instructions on the Cultivation of Root Crops will be enclosed in each parcel.

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**THE YORKSHIRE AGRICULTURAL SOCIETY** has determined on holding a CHRISTMAS SHOW OF FAT STOCK, POULTRY, ROOTS, &c., at LEEDS, on the 6th, 7th, 8th, and 9th of December, when upwards of 3000, and Gold Silver Medals are offered. Prize sheets are now ready, and may be had on application to the Secretary; as well as for the Show at YORK, on the 3d and 4th of August next, of Breeding Stock, Poultry, &c. M. M. MILBURN, Secretary, Sowerby, Thirsk.

The Agricultural Gazette.

SATURDAY, FEBRUARY 19, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Feb. 24—Agricultural Imp. Society of Ireland.  
FRIDAY, Feb. 25—Royal Institution—Lecture on Ploughs and Ploughing.  
THURSDAY, March 3—Agricultural Imp. Society of Ireland.

WHEN our horse has been stolen, we make fast our stable-door: when cholera has decimated our population, we set about cleansing and purifying our dwelling-places; and now that unceasing rains have steeped our fields, brimmed our brooks, swollen our rivers, and deluged our valleys, we begin to agitate in newspapers and speak loudly at meetings upon the necessity for improving our arterial drainage, and opening more capacious outfalls to the sea. There is a fear, however, that such bitter experiences may, after all, be scarcely grievous enough to force into actual practice the lessons they convey. Sanitary boards and chloride of lime were very plentiful just after the Asiatic monster's visit; but few, alas! are the towns which have been purged of their filth, and deodorised into wholesome sweetness. Let it not be said hereafter of the present emergency, that, though the whole nation suffered from the floods—some men from the drowning of their houses, their farms, their crops and cattle; some from the fevers and sicknesses which inevitably succeeded the assuaging of the waters—the great loss, the general calamity, only advanced the work of drainage as far as complaint of mischief from bad outlets, and outcries to the Government for "arterial works." Often as we have felt the misery of lying unprepared for excessive downfall, let us determine to make this the last time that a large portion of our kingdom—whose bee-hive population needs that every square foot should be dry, warm, and productive—shall be soaked for weeks, producing death instead of food.

Can we so clear, enlarge, and deepen our water-channels as to discharge speedily and safely into the sea the heaviest rains that clouds let fall? Engineers tell us how large a volume of water drops

upon a certain area, how much is evaporated into our misty atmosphere, and how much remains to be conducted to the ocean. Knowing the volume to be evacuated, and the fall of the river-beds, they determine what ought to be the dimensions of the channels, in order to fulfil their office. We are assured by the highest authorities the thing can be done; nay, some of the most unfavourably situated of our lands have been thus adequately provided for, and their drainage made secure. But from our inland valleys the waters are not "conducted;" they are left to feel their own way out, and truly they sometimes grope most circuitously. More than this, they are too often retarded in their descent as much as possible by dams and weirs, and by water-wheels and locks, so that, for want of a systematic arterial arrangement and management of our general streams and water-courses, an individual may hold back our drainage to grind his corn, to float his barge, or sometimes even to swell his lake or feed his fish-pond.

To upset all the difficulties—clear away the weeds and strangulating bridges—the Government is appealed to. And, doubtless, the thousand interests and rights which are found conflicting upon the banks of a river can never be regulated and appeased without the aid of Parliament; but the work itself, the digging and building, can all be done by private parties or public companies. For we are now actually making new land, reclaiming from the ocean part of an additional county, without the help of Government; much less, one would suppose, should we require it for simply drying a portion of the immemorial surface of the island. Why may not the low oft-inundated valleys of our eastern counties, and of many inland districts, be improved as the Nene valley will shortly be? The owners of property interested in the river Nene, inland to its very source, have found that they can procure an efficient outvent for their waters, although a large town has to be cut through, and the stream diverted in a new direction through its streets. And so may the drainage of our longest rivers be made complete, by agitating the question, reconciling all interests by offering a boon as well as a work to each, raising a capital for the undertaking, and "carrying it through Parliament." English agriculture has yet to receive great advantages from enterprises such as these.

Drainage is the acknowledged starting-point in farming; but how comparatively neglected is it in our actual practice? It is in vain to deny the fact; our millions of pipe-tiles, and of wedge and wood under-drainings, are only partial desiccators; and the recent floodings seem almost as if agriculture were weeping for shame, now that, in spite of all her self-praises, her sins of omission are found out. Talk of Government loans for drying our land; why, go into Cornwall, and see what is being done there—what prodigious works are there accomplished by companies and by proprietors. Under-draining—deep draining—the draining of an estate a thousand or fifteen hundred feet below the surface! Talk of "Talpa," in his "Clay Chronicles," plunging in mud boots across a swamp with his spirit-level! Would he fare much better, do you think, if surveying and levelling at such a depth underground—burrowing with chain and compass along the intricacies of the very drains themselves? Yet the mines have to be drained; and the means and the cost by which this is effected may well astonish and also instruct the farmer. Two neighbouring copper mines in Cornwall are drained by nine steam-engines, each averaging about 450 horse-power, together with a water-wheel 48 feet in diameter, making a total power of above 4500 horses. These raise from 2000 to 3000 gallons per minute to heights varying from 700 to 1400 feet, at an annual average expense of 12,000*l.* or 14,000*l.* Let the reader also picture to himself what must be the massiveness of the machinery; let him think of a pump-rod 1400 feet long, built of timbers braced and bolted with ponderous irons, and weighing 250 tons! How insignificant are the steam drainages of our fen lands when compared with these stupendous works? Our fen farmers regard with pride their 60 or 80-horse engines, which are to be found lifting their drainage waters for a few feet, and drying great areas of land. But it is the application of such machinery to the business of agriculture, not the intrinsic importance of the works themselves, that attracts our admiration. Eighty thousand acres of low land in Lincolnshire are drained by upwards of 35 steam-engines, having an average power of about 23 horses each, or an aggregate power of 810 horses; but this is nothing to boast of in point of magnitude; for much trouble as these engines cost before they were obtained, they do not amount after all to the power frequently employed to propel a single steam-ship. Take the 80 steam-engines draining the Lincolnshire fens, together with other lands in the great level of the



fens—a total of about 222,000 acres, and add also about 220 windmills at work; take, besides, the few horse-wheels employed; and the combined motive power applied to the artificial draining of hundreds of thousands of acres will scarcely amount to one-half more than that necessary for drying two *Cornish mines*. Now, until we require works vaster than these, in order to complete the local or general drainage of the kingdom, we ought to be too proud to appeal to the Government for assistance. The agricultural interest—no one can count how many times more powerful in numbers and resources than the mining interest—must not show itself feeble in coping with such enemies as issuing springs and watery weather.

We intend to say a few words about STEAM DRAINAGE in a future article. *I. A. C.*

### KILWHISS v. ROTHAMSTED.—No. III.

ROTHAMSTED having been silent since Oct. 9, I thought I might ask if Mr. Lawes intended to conclude his promised reply to my criticisms on his papers. In answer, I have been informed that other engagements prevent him from doing so at present; and it is now high time that I should clear off a portion of the arrears of work into which I have fallen, by acquiescing in his proposal that I should hear him out before I said a word.

I have no intention of going over all the charges which Mr. Lawes has made against me, as this would be unnecessarily turning the matter into a personal squabble. While, therefore, I will dispose of his attack, only in such a way as an honourable defence actually demands, I shall not shrink from handling the more serious-looking passages; I shall very willingly criticise any paragraph to which Mr. Lawes or any one else may wish to call my attention in any of his articles from the 16th March to 9th October. If any one thinks I have used Mr. Lawes unfairly, the passages where unfairness has been perpetrated can surely be pointed out.

Mr. Lawes tells his readers, on May 22, that I "have chiefly given my attention to the effects of climatic circumstances on agricultural practice;" but how does he know? I am too conscious of my want of knowledge in theoretical and practical agriculture to indulge in boasting; but Mr. Lawes will perhaps have an opportunity, before long, of testing me on another branch of agricultural chemistry. He is mistaken if he supposes that the mineral condition of soils has not occupied my attention; I have been long impressed with the opinion that there are many qualities and properties in soils which analysis has not yet reached, but which accumulated experience demonstrates do exist. Mr. Lawes has done little to help us in this matter.

I have been blamed for "sitting in judgment upon and condemning experimental evidence, using as precedents what are peculiarly only the dicta of authorities, without bringing either on their behalf or my own a shadow of experimental proof;" but I must be made aware of the statements for which he wants proof before I can give any, and I again repeat what I said (Oct. 9), he must "boldly point out the matter which he considers objectionable." But Mr. Lawes does not seem to have got that length, although he has finished two of the principal divisions of his subject; so far as he has gone, he has merely tried to clear up his own inconsistencies. If this mode of defence will do, good and well—though I can scarcely agree with a single paragraph which he has written. I heartily offer him, however, the same terms which he was so merciful as to offer me, "the acknowledgment of superficial views and misapprehensions of our papers;" and, so far as I can see, it is the only way of escape that is open.

Mr. Lawes recognises in my illustration "a fundamental difference of method from his own;" I, on the one hand, "with a great practical appreciation, and logic enough in dealing with individual facts," and with climate as my telescope, have sought to reason upon the materials before me too much one by one. Mr. Lawes, "on the other hand, has from one common centre attempted to throw around them, and draw them within the circumference of rotation, and then to divide his circle into so many sections," &c. Which method is the better one I will leave my readers to judge. What are the facts by which to ascertain the point? Who has been enlightened at the shrine of Rothamsted? Does Mr. Lawes admit that Messrs. Pusey, Way, Daubeny, Huxtable, or Caird, have understood him or his method? I might have added Mr. Mechi, but he has already returned to his first love, and I must compliment him for his brilliant article in the *Agricultural Gazette* of the 15th ult., which I consider as the harbinger of a brighter day for our chemistry of Agriculture. Mr. Lawes would almost persuade his readers that I have been only the humble means of bringing down his great discoveries to the capacities of the eminent names I have just mentioned.

My main object has been to throw open the opinions entertained at Rothamsted to free and full discussion. That there has been much "mysticism and misunderstanding" somewhere is evident, and it is right to see at whose door it lies. Among the many instances in which it is common for great authorities to puff off the revelations of Rothamsted, without understanding what is really meant, none equals one who has seen more of the agriculture of Britain than any man—I allude to Mr. Caird. I suppose I have the warrant of Mr. Lawes for saying that, from the ninth line of page 461 of "English Agriculture" to the 18th line of page 463, the

"misrepresentation is complete." If I had written the following passage, would not Mr. Lawes have "joined issue" with me? "For corn Mr. Lawes considers superphosphate valueless, as also bone manure, except in so far as it supplies 5 per cent of ammonia; though to us this appears doubtful, as we have grown excellent Wheat crops with no other application than bone manure."

I will not find fault with any course Mr. Lawes may take to render his reply most effective; he has made a considerable sacrifice in renouncing his friends, but I cannot see how this will better his position. But I must now say that, unless my objections to the Rothamsted philosophy have gone deeper than the common fallacies which are so profusely strewn over the agricultural writings of the present day, I never would have touched it at all; I thought Mr. Lawes might have gathered from my hints that our principles were widely different.

To prevent any misunderstanding, it will be as well to bear in mind that Liebig's "Chemistry of Agriculture" and Boussingault's "Rural Economy" were in circulation before Mr. Lawes was known as a writer, and long before he was put forth as an oracle. The opinions of any of these authors, so far as any of us were concerned, were common property. Mr. Lawes must not suppose that he can take out a patent for Liebig's or Boussingault's opinions by merely putting them into his own ambiguous English. Therefore it was the peculiarities of Rothamsted, as distinguished from Giessen and Bechelbronn, that I had to do with, and to which my remarks will yet apply.

I am most reluctantly compelled to say a few words which are personal to myself. Professor Johnston cannot be said to have ever taken a low estimate of the value of nitrogenous manures. The contrary is the case. In justification of myself, I must give his opinions of my writings in 1843, when they were compared with those of a Hannam and a Haxton, a Finnie and a Stephenson.

"Agricultural Chemistry Association,  
Edinburgh, 7th Feb., 1845.

"Sir,—I have just read over your report of experiments in the last number of the *Agricultural Journal*; and although they are not so full as those of many of the experimenters, yet the remarks with which you close your paper satisfy me that you have as clear a perception of the principles upon which manuring depends, and of the practical workings of these principles, as any of the authors of the more elaborate and successful papers.

"JAMES F. JOHNSTON."

Since that time I have made many experiments, and have had under my eye the effects of artificial manures on all kinds of crops, and on a great variety of soils, over 200, 300 acres, and upwards, annually. I must have been blind indeed had I been yet entangled among the ambiguities of Rothamsted.

I will first try and point out the "common centre" of error around which Mr. Lawes has attempted not only to draw all his own experiments, but all the ideas of others. I must be allowed to protest on my own account, and boldly state my reasons for so doing. He has been flickering round a dim French light, which I conceive has been the means of soiling many a goodly paragraph. Towards showing him the true principles upon which a rotation of crops must rest, I will dissect one of his articles, where he says he has "done his best to teach me," and where he "could not have been more guarded though he had foreseen all my created objections." I will, therefore, give an analysis of the latter part of Mr. Lawes' article of 3d April, supposing that I have already said enough about the first part of that article in my No. 2, of 15th May. *R. Russell, Kilwhiss.*

### LIQUID MANURING AND IRRIGATION.

No. II.

I RESUME this subject, and purpose giving practical details of the working of the system, but will first allude to some further advantages resulting from it. In depasturing Grasses, which is always most advantageously done by cows or bullocks, it is well known that the portion covered by the solid manure is untouched for a year, causing ugly patches and wastes. Now, in irrigating, we turn the jet against these masses, which are immediately fluidised, dispersed, and sunk deeply into the soil, and strange to say, that very spot hitherto avoided by cattle will almost immediately be more closely cropped than any other portion of the field. This is an immense advantage, and would be most valuable in the neighbourhood of towns, where cows are closely packed, and where Grass is coveted. The same result takes place whether they are washed with water or liquid manure.

Where sheep are folded or fed on Clovers, &c., it is well known that they, in dry weather, need a change, the feed becoming foul. A heavy shower from the jet removes all offensive smell, freshens and sweetens the feed, manures the roots, encourages growth, and stimulates the appetite. It is astonishing how much stock an acre will carry so managed; already I feel myself independent of purchased food and manures, with the power of maintaining a very large quantity of stock from the produce of the farm alone. One most striking result is the improved quality of all our produce, which formerly on our poor heath was anything but fattening; in fact, as I have said before, this system is the key to profitable farming, of which I feel now fully assured.

The *Vicissitudes of Seasons* have often a painful and unprofitable effect on agriculture. Peas and Beans are considered a "gentleman's" crop; Turnips mildew in a very dry summer; wireworm, slug, and grub, devour the crop. Now, all this is set right by the new system of irrigation, for no animalculæ can withstand the offensive ammoniacal shower; it either destroys them

or drives them away. I have seen slugs and earth-worms instantly perish under the jet. I never had my roots so free from grub, fingers and toes, or knobs, as this year, the few were under the bulb, where the liquid had perhaps not reached them. I feel convinced this irrigation will insure us a corn crop on land from which roots have been withdrawn. In general, such soils are filled with wireworm, which fall from the roots; the urine from the sheep which fold off crops prevents such destruction.

The *Seeds of Weeds* are quickly destroyed by saturation in the liquid manure tank; as a proof of it, I soaked some oleaginous Rape seeds in liquid manure for 24 hours, as a preparation for sowing, and, to my great surprise, they had speared in that short period. The maceration of our manure will tend to prevent the increase of weeds. I have no doubt that the introduction of liquefied manure hastens decomposition of the roots of the previous crop. Its great specific gravity will naturally displace water either by drainage or by forcing it to the surface, for even on undrained soils in the neighbourhood of Edinburgh it has been found beneficial.

*Invisible Solutions.*—It is evident that however pure water may appear, it often or always contains a very considerable quantity of earthy or stony matter in solution. Take, as a proof of this, the condition of our steam-boilers, in which during a month very considerable deposits are found, however clear the water; judging from the residuum, it is principally silica. We need not, therefore, wonder at the great benefits resulting to Grasses, and even to cereals, by irrigation—the silica for their use being furnished in a soluble available state. I have seen horse bones, pieces of baskets, and other matters, completely petrified by the action of clear water carrying into their pores soluble silica. We learn that flints are only marine sponges saturated with silica.

*Cost per Ton of applying Liquefied Manure.*—Although 1d. per ton would pay  $7\frac{1}{2}$  per cent. interest and all working charges, still, as there are occasional stoppages and hindrances arising from various causes, it is desirable to calculate on 1½d. to 2d. per ton. When it is considered that 100 tons per acre may be, as it were, filled into carts, carted from a half-mile to a mile, spread and ploughed in, or, what is better, deeply soaked into the soil, for from 12s. to 16s., the charge is ridiculously low in comparison with the wear and tear and cost of men, horses, carts, roads, and gates. Besides, as exemplified this season, the advantage of disposing of manure which, owing to the wet state of the land, could not be carted, is considerable. Open boarded floors are almost a necessary accessory to the irrigation. By directing a jet of water, as powerful as from a fire-engine, into the solid pudding, it flows from every shed in a lazy stream through a subterranean pipe to the great tank, whence, when still further diluted, it is propelled to the fields. It is hardly possible to appreciate the advantages of the irresistible and all-powerful jet; in five minutes it covers your buildings and yards with a torrent of rain. It is of a thousand scrubbing-brush power, cleansing every crack and cranny, washing away rats, mice, flies, and smells, and leaving at all times, but particularly in hot weather, a most refreshing sense of cleanliness. Excessively fat pigs and other animals in hot weather luxuriate in this shower-bath after recovering the first alarm. A hundred gallons of water per minute shot, as it were, out of a 22-bore muzzle would hardly be faced with equanimity by courageous soldiers, especially in close quarters. It feels, close to the jet, like a solid substance, so great is the velocity under four-horse pressure.

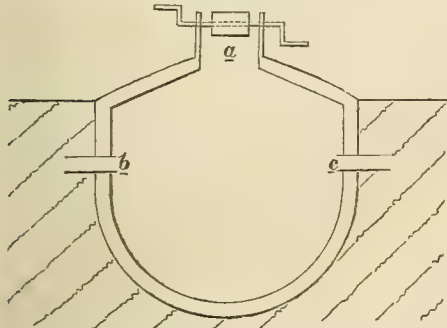
*Iron Pipes.*—My subterranean pipes are of 3 inches diameter, and it is most satisfactory to be able to state that in no instance have they choked. When it is considered that the pressure on every portion internally is 40 lbs. per inch, this may be easily conceived. The fluid is in fact a confined, rushing, irresistible stream, travelling about 120 feet per minute with an impelling force of 40 lbs. per square inch, which would of course compress or elongate any compressible substance. It is highly desirable that there should be no right angles in the pipes, all abrupt diversions proving great obstructions and causing waste of power. Easy curves are commendable, especially at the attachment of the hydrants. As a general rule, the larger the pipe the less the friction and resistance, the stream travelling more slowly. Bear in mind that it is impossible to force the contents of a large artery through a small vein without mischief. I work two jets attached to 1½-inch gutta percha pipes. When we only worked one jet there was much mischievous straining, and we were compelled to work at low speed.

Fluids pressing equally on all sides you may be irrigating, without inconvenience, the opposite or extreme points of your farm at one and the same time. In fact, on a very large farm, with an ample supply of water, it would be desirable to have larger pumps and pipes, and work several jets at the same time. The value of water as a manure during the heats of summer can hardly be sufficiently appreciated, seeing that, besides being a manure, it carries down the heat of the surface soil, warms the subsoil, and gives off abundance of steam, which, in becoming dew, protects the plants from the pinching cold of night. The cost of my iron pipes, purchased in the neighbourhood of Newcastle-on-Tyne in the spring of 1852, was about 4l. 5s. per ton. This of course allowed of no intermediate profit. Now the price of iron has greatly advanced. The joints are filled with melted lead, a circle of tarred rope preventing the lead from passing the joint.

The Tank.—Great mistakes are made in regard to



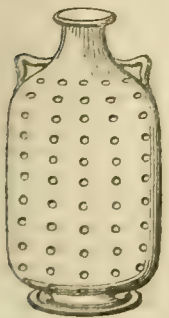
tanks, which need by no means be expensive. For instance my tank, which is 30 feet in diameter at the widest part, and 30 feet deep from the crown of the dome, is only 4½ inches thick, set in cement, the dome being of 9-inch brickwork, having a bearing or footing of 16-inch work. My tank, which holds from 70,000 to 80,000 gallons, cost only about 80*l.*, complete. All tanks should be circular, and worked from the surface downwards. For instance a band or circle of brickwork, 5 feet deep, then another excavation of 5 feet, and another circle of brickwork, and so on to the bottom. By these means there is an avoidance of those dangerous slips which are caused by the pressure of the superincumbent mass, which pressure is received by the bricked circle. I speak of heavy clays. The dome is, of course, built upwards, and loaded or banked with earth as the work proceeds, to prevent its bulging outwards. No scaffolding is needed for the dome.



*a* is the trap-door or windlass by which entrance to the tank for cleaning it out may be effected; *b* is the water-pipe; and *c*, the manure-pipe.

*Summer's Sun and Winter's Frost* must be guarded against, for on a hot day in July or August gutta percha pipes, when empty, will melt like wax; therefore a cork should be placed in the end, or, what is better still, there should be no stoppage,—one lad relieving the other at meal times. In winter your gutta percha pipes would be full of ice in the morning; therefore, to avoid this, raise the suction above the liquid in the tank, and your pumps will draw and force air through the pipes and drive out all the fluid, leaving them empty. All the subterranean pipes may be thus emptied, if necessary, or the gutta percha pipes may be emptied by the attendants on them. I may here mention that the gutta percha pipes, when nipped or injured, are repaired by removing the damaged portion and bringing the two ends together like melted wax. It is worth while to see how it is done by the Gutta Percha Company, as there will be frequent occasion for the operation.

Amongst several practical difficulties was that of preserving the fluid condition of heavy bullock manure, decomposing horse-flesh, and other substances. If we stir up a painful of such matter, the heavy particles soon subside, leaving the fluid on the surface. Now, with an abundance of manure, it became occasionally desirable to apply it to fallow land during winter in a dense semi-fluid condition. This we have successfully accomplished by agitating the contents of the tank in the vicinity of the suction vessel, by air passing with great force and velocity through a gutta percha jet, attached to a gutta percha pipe. The air is drawn in and supplied by an oscillating cylinder with piston, being alternately admitted to the cylinder through a slit in the axle on which it oscillates. The agitation or violent boiling of the fluid keeps the solid matter in suspension until drawn by the suction into the pumps. This suction causes a sharp stream to set towards the suction pipe, so violently, indeed, that solid substances are rammed in perfectly tight. The violent rushing of the suction stream is objectionable, and sadly plagued us at first, but now we have succeeded in diminishing it to a gentle



current by enlarging the area of supply. The 3-inch suction is introduced into the neck of a gutta percha bottle, about a yard long and 18 inches diameter, punched with 250 holes, of five-eighths of an inch diameter. This bottle keeps all flesh and solid matter at a respectful distance from the interior suction pipe, and by its numerous apertures admits a gentle current. Although made strong, if we attempt to draw the matter in too pasty a form, it will collapse, which is not to be wondered at, seeing that if the pumps cannot draw water they will draw air, which thus presses 14 lbs. on every square inch of the surface. I have now two such bottles, one of the size described for weak liquor, the other made much stronger and supported inside by an iron wheel to prevent collapse. The holes in this bottle are of one-inch diameter, to admit of our drawing in a thicker solution, but it must be borne in mind that the exit holes in the delivery jet must be proportionate, or you will often get them choked by solid matter. Some idea may be formed of the specific gravity of our soup when masses of solid horse-flesh will float on it like corks. Of course it may be reduced by a larger supply of water. A ton of heavy bullock pudding requires about 15 tons of water to make it comfortably available, although it

may be proper in dry weather to use much more water. In the liquefaction of the solid pudding under the boards, the jet, as from a fire-engine, cuts and liquefies the mass until it flows in a stream like melted lead to the great tank through subterranean pipes.

I attach much importance to these working details, for until we adopted them we passed through a very trying and vexatious period of hindrances and stoppages. Now we have no difficulty whatever. The gutta percha handles to the bottle I have described are very essential, because a weight is attached to the lower one to sink it, and to the upper one a cord to raise it; shake it occasionally, and thus remove any accumulation around it without stopping the action of the pumps. The Gutta Percha Company, Wharf Road, City Road, London, have been most obliging and ready to meet difficulties in this matter. By raising the suction out of the liquid and turning the two-way tap, the air is driven through a radius of 3-inch pipes, placed on the bottom of the tank, and through numerous holes in these pipes a hundred jets of air heave up, and, as it were, boil up the solid matter from below like a cauldron. The same thing takes place, to a less violent extent, by merely diverting the stream into these pipes by turning a tap, in lieu of allowing it to proceed to its destination in the field. Every half hour this should be done for two or three minutes, if your broth wants thickening. Of course the gruel may be either "thick and slab," or "thin and toast-and-water like," according to the propriety of its application. Some idea may be formed of the liquefying power of the system I have described by my stating that at one time I had in my great tank about 20 to 30 dead horses and cows, besides some 250 loads of bullock pudding, sheep and pig manure, &c., nearly all of which has flown through the jets in fertilising showers. Of course, I need hardly say that an immense quantity of water has been used in the maceration, detachment, and liquefaction of so much solid matter, probably not less than from 30 to 40,000 gallons per diem.

I know of no process of rendering the solid matters available better and cheaper than by saturation and maceration. The addition of waste steam from the engine facilitates the operation—fermentation or decomposition taking place more rapidly at a high or summer temperature. The flesh is gradually detached from the bones; the latter must ultimately be removed and digested with sulphuric acid or carbonised. So powerful is the agitation of the mass in the tank by the air jet, that it is not unusual to find round pebbles, cinders, small pieces of flesh, &c., forming part of the shower which falls on the land.

As I travel through mossy and poverty-stricken deer-parks, mostly having a command of some fine brook or stream, I sorrow that the proprietors are not sufficiently informed of, or impressed with, the new process of irrigation, which would, in a few short months, change Nature's face, and add appearance, abundance, and profit to their, at present, unfortunate owners. Although the irrigation has only been in operation for eight months, it is telling very unmistakably on the profits of my farm.

For instance, a piece of Red Clover of 8 acres, being an imperfect plant, was condemned to be ploughed up early; but on the application of the jet it produced enough to maintain 13 sheep per acre all the summer; thus setting free my other fields for hay. My young Clovers were fed until late in November. Again, so greatly has it increased my produce of roots, both Swedes and Mangold Wurzel, that with 40 young bullocks and 100 sheep, besides cows and calves, they will, unless I largely increase my stock, carry me on into June. In the mean time, owing to the liquid manure, 6 acres of Rye Grass are now in capital feeding condition on land of a miserable quality, and will evidently be a heavy crop for mowing in April, some of it being a foot long now. In fact, it requires no conjuror to foretell that now my annual balance sheet will always show a good profit; for there is no occasion to accumulate a heavy loss by large purchases of food. The power to grow bulky root crops on a single ploughing—the opportunity for forcing large grain crops after roots, the great economy in horse and manual labour, the absence of failures from seasons and insects, and the power of thoroughly manuring and improving the subsoil, fill my mind with most comfortable assurances as to profit. A small quantity of solid manure when liquefied covers a very large surface, and diffuses itself forthwith for immediate use. The importance of applying manures in a soluble or available form is most strikingly illustrated by Mr. Pusey in the Royal Agricultural Society's Journal just issued, part 2, vol. 13, page 408:—

	Superphosphate.	Turnips.
Water drilled ...	6 cwt.	13½ tons.
Dust drilled ...	6 cwt.	6½ tons.

Showing the advantage of 7 tons from the mere liquefying of the manure. The same cause in fact produced me on a 6½ acre field the enormous produce of 43½ tons per acre of Mangold Wurzel, admitted by all who saw it to surpass anything of the kind they had seen this season.

I cannot too strongly insist on the very great advantages arising from applying all the solid manure in a solution or suspension. With the exception of litter, all the animal excrements, solid and liquid, may forthwith pass through the jet; where long straw is used for litter (a system that must soon give way to the boarded floors), it may be placed in a separate covered tank, communicating with the suction tank, and the jet of water passing through it from time to time will wash away all the soluble portions, until the solid matter of the straw is

ultimately dissolved. Every agriculturist will, I suppose, readily admit that it is only in a fluid condition that manure can be absorbed by the roots of plants. With my air jet I can easily dispose of 15 tons of solid "pudding" daily, liquefied with about 120 tons of water.

I have said elsewhere that I believe irrigation to be a substitute for tillage, by the renovation of air and water in the soil. The want of oxygen, arising from a stagnation of air or of water in the soil, is productive of serious evils—such as the suspension of decay, and the formation of injurious compounds. At all events the fact that nearly one-half of the dried substance of all vegetable productions is oxygen, shows how important a free supply of it must be to the roots of plants, and how injurious is its absence. Deep and frequent tillage supplies this to a considerable extent, but irrigation on soil deeply or naturally drained aerates the subsoil to a much greater depth, and, consequently, with ammonia and other gases, supplies oxygen abundantly. It is very obvious that Grass, on poor plastic hide-bound untillied clays in our dry southern counties, must languish for want of oxygen. It is therefore to a frequent supply of water, independent of the manure, that such Grasses owe their greatly increased luxuriance and vastly improved quality. In fact, new and improved Grasses appear spontaneously after irrigation. It is probable that such considerations throw much light on the necessity for tillage and friability in all tenuous soils for all sorts of crops, for we know full well that Turnips and other crops thrive well even in poor sands or friable soils, if well manured; but no amount of solid manuring will compensate for the want of tillage in stiff clays in a dry summer.

I hope we shall never again be asked, "What has science done for agriculture?" It is impossible to see this mode of irrigation without feeling that we owe it all to science. Without mighty steam and imperishable gutta percha, without cheap iron, vain would be any attempts at such an operation. Who can help loving and admiring science, which removes the veil of ignorance, and gives us some insight to those wondrous operations of Nature, enlarging our minds, and filling them with awe and reverence?

The time is fast approaching when the farmer will receive back weekly from our towns and cities his supplies of food, altered in form, but scarcely in value. How reasonable and delightful to trace the bullock of to-day returning this day week, and passing through the jet to produce on the morrow the food for another bullock. The arterial supply and venous return will be the Harveian agricultural circulation.

We ought to be the richest agricultural country in the world. Not only do we consume all our own produce, but tax the world for necessities and luxuries; not only may the farmer demand back his bullocks and sheep, his pigs and poultry, his bread, butter, cheese, eggs, and milk, but he may claim to have them flavoured with the spices of the east, the coffee of the west, and the tea of China; port, Madeira, sherry, brandy, and liquors, the luscious Orange and juicy Grape, Turkey Figs and Arab Dates; and how thankful should he be that free trade will supply him with millions of quarters of American Maize and Baltic Wheat, hundreds of millions of French eggs, Dutch cheese, Holstein butter, and Ostend rabbits—all showering on his farm, in rich brown drops, to fill it with plenty and profit. No longer, then, should we hear of farmers feeding their animals on millions of oilcake and corn, at a certain loss of 33 per cent., for the sake of replacing that which has left their farm for ever to pass down sewers, to be food for the marine plants of the great ocean, or only to reach them again in the shape of Peruvian guano at 10*l.* per ton. Let landlords and tenants believe that town sewage and bullocks and sheep, and guano and oilcake, are identical, and then this reckless folly will be redeemed. Like the great Jenner's vaccination, it will ultimately prevail, but "my hope is in the future," and another century may teach us all agricultural wisdom; some few have learned it already. *I. J. Mechi, Tiptree, Feb. 10.*

### Home Correspondence.

*Drainage.*—Perhaps Mr. Mitchell will be kind enough to go a little into detail with his experience in draining. All that I can learn from his strictures may be summed up in a few words—that 4-foot drains are better than any other depth he tried, and that it is of no use putting them close, as those 24½ feet between dried the ground as quickly as others at 15. I always considered 25 feet quite close enough for 4-foot drains; I know of several

\* Liebig says (page 99 of his Chemistry, "Insolubility of Humus"), "All plants die in soils and water destitute of oxygen; absence of air acts in exactly the same manner as an excess of carbonic acid. Stagnant water on a marshy soil excludes air; but a renewal of water has the same effect as a renewal of air, because water contains it in solution. When the water is withdrawn from a marsh, free access is given to the air, and the marsh is changed into a fruitful meadow. In a soil to which air has no access, or at most but very little, the remains of animals and vegetables do not decay, for they can only do so when freely supplied with oxygen; but they undergo putrefaction, for which air is present in sufficient quantity. Putrefaction is known to be a most powerful decaying process, the influence of which extends to all surrounding bodies, even to the roots and to the plants themselves. All substances from which oxygen can be extracted yield it to putrefying bodies—yellow oxide of iron passes into the state of black oxide, sulphate of iron into sulphate of iron, &c. The frequent renewal of air by ploughing (or by irrigation? *I. J. M.*), especially its contact with alkaline metallic oxides, the ashes of brown coal, burnt lime or limestone, change the putrefaction of its organic constituents into a pure process of oxidation; and from the moment at which all the organic matter existing in a soil enters into a state of oxidation or decay, its fertility is increased."



fields at 30 feet between, and an excellent job. But I would ask Mr. Mitchell, does he mean to say that 4 feet is the best depth, or am I to understand the deeper the better? Because in this case I do not see why we could not go 6 feet. The cutting would be a little more expensive; but then the distance between the drains might be  $37\frac{1}{2}$  instead of  $24\frac{1}{2}$ , and there would be a saving in pipes. I wish Mr. Mitchell to answer this question, and also to let us know what depth of soil there is where he has been draining, and also whether he got through the clay, or if the pipes were laid in the clay. He might also say what fall he has got, &c. Living at a great distance from the metropolis, and where the sound of the steam-whistle has not yet been heard, we cannot have the pleasure of waiting upon Mr. Mitchell, and seeing for ourselves the result of his philosophy. I have not the least doubt for a moment of the truth of what Mr. Mitchell says, and were we to know the particulars, we should have more confidence in draining a similar field in the same way. A. T. January 31.

**South American Refuse as Manure.**—I shall be glad if any of your readers can inform me where any samples are now to be had of a manure which was, I believe, some time ago imported from South America, made from the offal and other parts of the cattle slaughtered for the skins and horns, whether it has been tried, and at what price per ton it can be supplied. W. C. Trevelyan, *Athenæum*.

**Treatment of Ewes, &c.**—I was about to send you a few observations in reference to the treatment of ewes prior to lambing time, when I found them pretty much anticipated by yours in the last *Gazette*. I have long thought it a very questionable practice to give to animals the large quantities of watery food which commonly prevails, and this wet season I determined not to give my ewes any Turnips at all before lambing time; I kept them on the pastures (which you may conceive have long ceased to yield much keep, having a stock of 200 on 50 acres) fed twice a day with chaff cut from a rick made of mixed seed, hay, and straw, at time of making. For about a month previous to lambing, I had a few Mangolds strewed about, as nearly as might be one root per head per diem. The ewes came in in good fine condition, notwithstanding the incessant rains. About one-third have dropped their lambs. I thought the lambs very good, but my bailiff, who has had a good deal of experience amongst sheep, considers them the finest lot of lambs he ever saw dropped. The only casualty we have experienced has been the premature birth of two lambs, the mothers of which have not suffered at all, and are nursing twin lambs from other ewes. I send you this information in confirmation of your advice, having heard considerable complaints in this neighbourhood, of serious losses both of ewes and lambs already this season. Though there is nothing new in the practice of mixing the materials for your chaff at hay-harvest, it is one which may be greatly extended with advantage. I form a rick either of Wheat or Barley straw, whichever happens to be the best harvested, alongside the intended site of the seed hay-stack, leaving room for a load of hay to be hauled up between. The Clovers are then brought to the rick several days earlier than they could be safely staked alone, and are mixed about half and half in building the rick. I find both cattle and sheep eat this with infinitely more gusto than ordinary chaff, and leave nothing in their troughs. One of your correspondents in the last *Gazette* asks, "whether cattle that are receiving 140 lbs. of Mangolds, or Turnips, 7 lbs. of Linseed cake, and hay *ad libitum*, per head per diem, require, for them to obtain the greatest weight of beef from the food consumed, water to drink?"—assuredly not. Why these animals have at least 120 lbs. of water per diem in this food—that is not the stuff that beef is made of. I do not object to bullocks always having water at hand; on the contrary, it is beneficial, there is no fear of their committing any excess in that way; but I strongly object to forcing it into them in the shape of 140 lbs. of roots, as something worse than sheer waste, as no digestive powers can assimilate them. I very much doubt whether any bullock should have more than from 70 to 80 lbs. of roots per diem, and I think these should be mixed as intimately as may be with chaff, that they may be consumed together. I use Moody's cutter, which slices the roots so thin, that when mixed up in a heap with the chaff the animals can hardly separate them. We want a machine to accomplish this still more effectually, and I hope our implement makers will give us one ere long, which will tear the roots into a pulp, or nearly so, instead of cutting, that our animals must necessarily take a mixture of solid meat with the roots. I would suggest to your correspondent, that a considerable diminution of roots, and those mixed with good chaff, and substituting 3 lbs. of Bean meal for 3 lbs. of the Linseed meal, would increase not only the weight, but the quality of his beef. In a late number of the *Gazette*, one of your correspondents, in discussing the comparative advantages and disadvantages of box and stall feeding, laid it down as a fact, that an animal in a box consumed three times as much straw as one in a stall, on which you observed—"As this is a very common mistake, it is desirable to have it corrected." My impressions had been very different, but I had not the means of testing it on my own farm, as my bullocks are all in boxes. I was on a visit to a friend who had his bullocks in stalls; and, on my recommending boxes, he observed amongst other things, that he could not afford the requisite supply of straw. I requested his cattle-man to set out the usual allowance of straw he allotted to each bullock, and tie it up, and weigh it, and report

the weight of it on the following morning. It weighed 30 lbs. My litter is all cut up in about six-inch lengths; and on my return home I desired my man to weigh his daily allowance for each box; and I found this was 20 lbs. In those days I allowed my bullocks two feeds a day of neat roots of  $\frac{1}{2}$  a cwt. each, and often more. I have just had the daily allowance of litter for each bullock weighed upon my present plan of feeding, and it amounts as nearly as may be on an average to 10 lbs. daily. They have water always before them, but consume very little. C. Lawrence, *Cirencester*.

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House in Hanover Square, on Wednesday last, the 16th of February; present, Mr. RAYMOND BARKER, V. P., in the chair; Mr. Barnett, Dr. Calvert, Mr. Evelyn Denison, M.P., Mr. Dyer, Mr. Brandreth, Gibbs, Mr. Fisher Hobbs, Mr. William Jones, Mr. Majendie, Mr. H. Manning, Mr. Mainwaring Paine, Mr. Pocock, Mr. Rowlandson, Professor Sewell, Mr. Shearer, Mr. Reynolds Solly, Mr. Crompton Stansfield, M.P., and Mr. Wright. Professor Eugene Risler, of the agricultural establishment at Versailles, having been engaged for some time in an extensive tour of inquiry connected with the progress of Agricultural Chemistry in the most celebrated chemical schools of Germany, and being now on a visit to this country for the purpose of continuing his inquiries, favoured the Council with his attendance at this meeting.

The names of 18 additional candidates for election, at the next Monthly Council, were received and read.

**DEODORISING SEWERAGE MATTER.**—A letter was read from the Imperial Russian Agency Office, in Pall Mall East, inviting the Council "to witness some experiments on a large scale with the sewerage of London, for the purpose of collecting the solid matter and converting it into guano." The Council ordered their thanks for this communication, with an intimation that some of their members had expressed their intention of availing themselves of the invitation thus transmitted to them.

Mr. Arthur Albright, of Birmingham, as one of the members of a sub-committee connected with an experimental Reformatory Institution for juvenile delinquents, solicited information on the subject of the best arrangements to be made for converting the drainage matter of the establishment into an inodorous and valuable manure. The Council decided, that, as many inquiries were made by the members of the Society on a similar question, Professor Way, its consulting-chemist, should be desired to favour the Council with his views on the subject, at a future meeting.

**EXPERIMENTS IN POTATO CULTIVATION.**—Dr. John Malfatti, of Kuenigberg, near Hietzing, in Austria, transmitted to the Council the following communication, dated the 20th of November last.

The Potato-disease, to the despair of the husbandman, is still a difficult problem for natural philosophers and agriculturists, all their views and attempts having hitherto, alas! proved fruitless and unavailing. When I reflected on this disease, I was struck with an idea at variance with all former views, and instead of seeking the disease in external causes only, I thought that I could discover it only in some internal principle of the plant itself. As early as the year 1848 I made some experiments at my country seat, which proved so satisfactory, though conducted only on a small scale, that I was strengthened in my opinion. But the unhappy revolution which took place interrupted me in the execution of my designs. However, as the disease in question had become worse every year since that time, and as it last year more especially, attained a high degree of malignity, I determined to renew my former experiments this year on a larger scale. These experiments have proved so successful, that I think I have discovered not only the probable cause of this disease and its propagation, but also the way to remove it. According to our views, the cause of this disease, though accounted problematical, lies in the decay and degeneracy of this plant in respect to its double sex, the twofold stock from whence it springs. During the growth of the Potato, a remarkable and instructive observation offers itself to us at once between the two most distinct acts of the double sex of the plant. The first of these acts is that of its internal principle of self propagation, and predominates particularly during the period of its development. The second act, on the contrary, is a consequence of the first, and consists in an external reproduction, and conduces to the preservation of the original stock. Whilst now the first act always takes place regularly, and indeed under adverse circumstances, knows of no disease, we perceive the disease in the second act, on the contrary suddenly break out, as if the double sex of the plant rapidly became weakness itself, and instead of being followed by reproduction, were followed by degeneracy and destruction. It has long been hoped that the disease in question would turn out an accidental and temporary one. But alas! the contrary has proved to be the case, and there is no doubt but its propagation solely proceeds from a sexual cause, whereby it assumes the distinct character of a disease of race. Though we have come to this melancholy conclusion,—a conclusion as painful in respect to the present as it is menacing for the future,—Nature, that beneficent mother, comes to our relief with a sovereign remedy,—a remedy which she has raised indeed to the rank of a law,—namely, that remedy which she has provided both as a cure and a preservative, by means of the sexual crossing of races, and that indeed as well in the vegetable as in the entire animal kingdom. This provision of nature is manifestly so excellent, that human art has endeavoured to employ it in both kingdoms, and has done so with the greatest advantage. Taking this point for granted, I endeavoured, as inoculation was a thing out of question, to remove this disease by crossing the Potato with other plants, and, indeed, as it were, by means of a sort of matrimony. The three first Potatoes on which I tried this experiment I paired and enclosed severally with the *Helianthus tuberosus*, the *Dahlia variabilis*, and the *Cyclamen europeum*. For a fourth matrimonial alliance I was indebted to chance, and although this was with the *Carduus hispanica*, which does not belong to the genus of bulbous plants, it was attended, notwithstanding, with the most interesting results. The means thus employed terminated in results which, in a most surprising manner, confirmed the truth of the principle which we first laid down. The longing of the Potato for union with some plant of a kindred sort, manifested itself in the most distinct manner. Truly we cannot be surprised, if we consider, that since the time this American plant was brought to Europe it has existed in a perfectly isolated state, without enjoying any mutual relation with kindred plants found

in our part of the vegetable kingdom; whilst, on the other hand, the art of Europeans has in all kinds of climates increased the production of the Potato to an interminable extent, carrying it even to such an extent as to exhaust its double sex. The product of this matrimonial connection was most surprising. From the pairing of two plants a third proceeded, retaining, however, a twofold character, the character of each. Their roots, bulbs, and stalks, had grown together, so as to be interwoven one with another in such a manner that it was very difficult to separate them one from another when taken out of the ground. The last Potato harvest presented the most interesting results, as will appear from what follows. Whilst in my neighbour's fields the disease prevailed as before, and I myself lost a good third part of the Potatoes which I had planted on the borders of the field in which my experiments were made, to my great surprise I found not among them a single trace of the disease, although the whole quantity amounted to seven bushels (Matzan). Together with the advantage of equal health, we obtained at the same time another benefit equally important, viz. that of a considerable improvement in the race of Potatoes. Not only was this new breed distinguished for beauty, size, and richness; but the general insipidity and mealy taste of Potatoes has been, by the communication of the aromatic flavour and peculiar taste of the plants with which they were combined, changed into something of a very different kind and of a superior quality. This was most obviously the case with the Potatoes combined with the *Carduus* (they tasted like Artichokes). In those combined with the *Cyclamen*, there was a pungent taste, as if they had been slightly peppered; in those combined with the *Dahlia*, there was a sweet taste like sugar; whilst the *Helianthus* imparted to the Potatoes combined with it its own agreeable and peculiar flavour. In respect to the management requisite in forming the four above-named species of combinations, I remark as follows:

1. The Potatoes are, as usual, cut into several parts before they are planted (according to the position of the so-called eyes), and are placed in the earth quite close to the germs of the plants with which they are to be combined. The bulbs of the *Helianthus* and the *Dahlia* are cut just in the same way as those of the Potato. The bulbs of the *Cyclamen* alone remain uncut. As the *Carduus* has nothing but a root, the cut pieces of the Potato are only planted under its root.

2. In the two harvests we perceived that the bulbs of the *Helianthus* were to those of the Potato, in respect to number, as 3 to 2, whilst those of the *Dahlia* and Potato were equal. Here we must observe that these two plants, combined with the Potato, continued growing without interruption, as usual, up to the time of blossoming, whilst the contrary was the case with the *Cyclamen* and the *Carduus*.

3. But the combination with the *Cyclamen* was the most remarkable of all. This wild plant exhibited so little of itself, that for a long time I considered the trial unsuccessful. The same thing happened with the *Carduus* and the *Cyclamen*, some single leaves of which appeared here and there close to the stalk of the Potato, but somewhat sparingly. But so much the greater was my astonishment when, in digging up the Potatoes, I found in that very part the finest and most abundant crop; as if both the said plants sacrificed their growth in favour of that of the Potato, the *Cyclamen* sacrificing still more, even its health as well. We perceived, indeed, that each of the *Cyclamens* had two, three, or even four bulbs diseased to such an extent as to be rotten. As this disease presented symptoms perfectly similar to those of the Potato disease, we were irresistibly led to inquire whether or not the *Cyclamen* had attracted to itself the very essence of the disease of the Potato. On this occasion I delayed not to inquire of skilful botanists whether the *Cyclamen*, which is generally used in feeding cattle and pigs, was subject to this disease, and the answer was a unanimous negative.

4. As I was accustomed every year to plant a great quantity of *Carduus* roots, I was induced to combine them with Potatoes, the result of which surprised me the more, because they do not belong in the least to the bulbous genus. Just for this very reason, a peculiar result followed, the combination being succeeded by a purely parasitical life. The Potatoes clung so firmly to the *Carduus* roots, that they actually grew to them, and, as real leeches suck blood, extracted out of the roots all the juice and flavour. In consequence of this, the Potatoes (like parasitical plants) not only attained the utmost development, both in respect to size and beauty, but what was very remarkable, scarcely had any roots of their own which they struck out. Here, on the hypothesis of the Potato being capable of being crossed even with plants not belonging to the bulbous genus, we may exclaim: What an extensive field is opened for the agriculturist! What singular and what useful experiments may we not make here? and that, too, were we not to reckon those experiments which might be made, and made with still greater certainty, in the extensive circle of bulbous plants.

5. All the entire crop of Potatoes resulting from the four combinations above-mentioned, I have reserved for sets in future. Should the next planting remain free from every disease, as this year's planting was, I shall consider the problem solved, I shall acknowledge the American plant as a naturalised exotic.

Mr. Rowlandson had long considered the Potato disease to arise from a deficiency of potash in the soil or manure in which the tubers were grown. He suggested the trial of sulphate of potash, to remedy this deficiency; this sulphate could be purchased in the market at 16 $\frac{1}{2}$  per ton, in the state known as the "pan sulphate," which contained about 80 per cent. of sulphate of potash, and 20 per cent. of sulphate of soda, and other salts; this was better than "granulated sulphate," which was impaired by an excess of common salt. This pan sulphate might be applied in drills, at the rate of 4 cwt. per acre. He had himself tried it with splendid effect. The state of carbonate in which the potash was found in land that had been burned was much inferior to the sulphate of the same alkali. Nor did wood ashes from Canada and other countries contain more than 14 $\frac{1}{2}$  per cent. of potash. The carbonate had a powerful effect in causing the rapid development of plants, but had no abiding and sustaining power afterwards; and they died away in consequence. The Brassic tribes took up much potash. In answer to an inquiry of Mr. Reynolds Solly, Mr. Rowlandson then favoured the Council with a detailed statement of the origin and progress of that expanding-concentric growth of fungi, occasioning what were termed "fairy rings."—Mr. Paine remarked that on some fields of his in Surrey (where particular beds of the upper green sand formation, known to be rich in potash and the phosphates, crop out), his Potatoes grew with remarkable luxuriance in the first stages of their growth, but were subsequently attacked with the Potato disease to a greater extent than those grown on other fields not containing a similar amount of potash.—Prof. Risler corroborated, from his own experience on the Continent, a confirmation of Mr. Rowlandson's views respecting the action of sulphate of potash. He remarked, that in the Vosgen sandstone, the decomposition of which formed in French Lorraine a rather great extent of very light soil poor in potash, a great quantity



of wood-ashes was employed as a manure for Potatoes. These ashes were rich in potash, and their market-price high in proportion to the amount of the soluble potash-salts they contained; but poor in the phosphates. The experience of many years on a great extent of land, had proved that the Potato disease was diminished by the use of these ashes. The farmers of that district never employed farm-yard manure to their Potato-crops, because that application was invariably found to increase the disease, a result most probably occasioned by the circumstance of the farm-yard manure being richer than wood-ashes in its amount of ammonia, and the phosphates. Professor Risler added, that the principal object of Potato-culture in the Vosgen was the production of starch; and that the general opinion of the starch-manufacturers was, that the per-centage of starch in the Potato crop was increased by the use of the ashes in question. They found that diseased Potatoes gave in general one-third less starch than sound ones; this proportion, however, varying much, according to circumstances. Professor Risler concluded his remarks, by calling the attention of the members to the analyses of Dr. Schleiden, Professor in the University of Jena, and to the opinions on the subject of the Potato disease expressed by him in his work on the Physiology of Plants and Animals and the Theory of Plant-cultivation, forming the third volume of the new Agricultural Encyclopædia, published at Brunswick, in 1850. These opinions are contained in the chapter reviewing Dr. Schulze's work entitled, "Thaer or Liebig?"

Mr. W. PATTERSON, of East Cross Causeway, Edinburgh, transmitted to the Council an elaborate paper on the Potato disease, including his own views on the subject, and chronological statements derived from various published sources, intended to elucidate the circumstances of its prevalence and progress.

**IMPROVING EFFECTS OF COUGH-GRASS.**—Mr. Miles, M.P., of Leigh Court, called the attention of the Council to the great importance of a knowledge of nutriment abstracted from the soil by weeds, especially by the *Triticum repens*, commonly known by the name of Couch or Twitch. In the last number of the Society's Journal, page 528, Mr. Hemming, the author of the elaborate paper on Agricultural Chemistry, had shown in his classification of tabulated results of analysis, how little was known at the present moment of the composition of weeds, and consequently how much still remained to be learned of the amount of their injurious effects. With regard to Twitch, in particular, which he was sorry to say was still fearfully prevalent in some parts of the country, he conceived it would be both an interesting and important inquiry to ascertain "How much a good crop of it must consume the nutriment which should feed the crops of corn—say of Wheat, Barley, or Oats." He quite agreed with Mr. Hemming in his remarks, that the present analyses rather give a general idea of the composition of weeds than are adapted to any purpose of immediate practical use; and that there is a large field open to the researches of chemists to determine what weeds are most injurious to the growing crop, as far as similarity of composition would show it, as also those that are most valuable for manure, from a like reason. Mr. Miles urged the attention of the Council to these investigations; especially to that connected with Twitch, which would, he thought, form an excellent subject for a lecture and discussion, or for a distinct communication to the Journal. The Council received these suggestions with their best acknowledgments, and ordered them to be referred for a report to Professor Way, the consulting chemist of the Society.

**OAK-SOIL.**—Mr. Adderley, M.P., of Hams Hall, Warwickshire, transmitted to the Council a communication on the subject of failure in the growth of Oak, in a portion of the old Forest of Arden, where the Oaks have retained, from centuries immemorial, their size and vigour. In a fine old Oak avenue in Mr. Adderley's Park, about 200 years old, two vacancies were filled up about 40 years ago, by young Oaks, which had grown well until the last two years, during which they had rapidly died away. Their roots were found rotten, and covered with a fungus like dry-rot; although the neighbouring Oaks were very large and fine, and an Elm filling a neighbouring vacancy in the same avenue was not infected, and its roots, close upon the rotten ones of the Oaks in question, were quite healthy. Mr. Adderley enclosed a sample of the top soil, 22 inches deep, and stated that the subsoil was red gravel to a considerable depth. The ground was dry, and did not require draining.—The Council thanked Mr. Adderley for this communication, and referred the specimen of soil to Prof. Way.

The Rev. R. J. STATHAM, of Tarporley Rectory, Cheshire, favoured the Council with a report on the success of his industrial training of the cottage boys in his central national school, in the habits and practice of manual husbandry in field and garden work, paying the boys according to the value of their work, and their superintendent about 2s. per day, with a commission upon the crops raised on the school land, subject to a strict Dr. and Cr. account: the earnings of the boys being deposited in the school saving club, as an inducement to saving habits, and bearing a high rate of interest.—Mr. Dalton, of Cardiff, transmitted a sample of Wheat from a crop sown in the last week of April, 1852, and yielding 40 clean bushels per acre on good strong loam after Turnips, from a sowing of 2 bushels per acre, the original stock having been obtained four years ago from Australia.—Mr. Learoyd, of Hudders-

field, stated that he soaked his seed-corn about 16 hours in strong old urine, allowing it to dry before sowing, with great advantage to the early growth and advancement of the plant (as well as to its removal of disease, for which purpose that application with the addition of quick-lime had so long been made to seed-corn).—Mr. J. M. Pasquier placed at the disposal of the members several samples of prepared seed-corn, with a request that they would test the merits or otherwise of the process adopted, which was intended to supersede or lessen the amount of other manuring matter to the crop.

The Council having ordered their usual acknowledgments for the communications then made to them, adjourned to the 23d. of March.

**HIGHLAND AND AGRICULTURAL, Jan. 19.—Rotation of Crops.**—(Remarks of Mr. Hope, of Fentonbarns, continued from p. 108.)—In England a crop of Wheat is almost invariably taken after Clover; doubtless the practice is correct, or it would not be so universally followed. I have twice tried Wheat after Grass, but the Oat crop was always more remunerative, besides leaving the land in better condition. Our climate is more suitable for the growth of the Oat than the greater part of England. It is said that Oats in the Lothians will yield 12 bushels the imperial acre more than similar land in Essex, which accounts at once for the preference given to Wheat in the south. Some farmers take Barley in place of Oats, at least on part of the lea. Whether or not this is profitable depends both on the nature of the land and the relative prices of each when they come to be sold. I admit that in some seasons Barley does pay best, but I am inclined to think that Oats are the safer crop, besides leaving the soil cleaner and in better condition, from the greater weight of straw which is also much more valuable as fodder for stock. The fifth crop in the rotation is Beans or Potatoes, which should be well manured. Both are sufficiently different from the preceding crops. It is true that Beans are a seed-bearing plant, yet from being drilled, horse, and hand-hoed, they are decidedly a cleaning crop, and Wheat succeeds so well after them, that on the majority of soils in East-Lothian they are reckoned the best possible preparation for Wheat. Notwithstanding this, within the last few years the quantity sown has diminished fully one-half, Potatoes having been extensively substituted for them. The principal cause of this has been the comparative exemption of that county from the disease, which has almost destroyed the Potato crop in other districts. The railways also, by improving the means of communication with the large cities of the kingdom, have not been without their influence. Potatoes exhaust the land more than Beans do, but the difference betwixt an inferior crop of Potatoes and a large one is so enormous, that besides all the farm-yard manure that can be spared to them, a dose of guano or Rape dust to the value of 50s. or 60s. an acre is found not to be misapplied. Indeed, unless this is done on ordinary soils, it is found that a crop of Beans pays better, even with a high price for Potatoes; the expenses attending the latter being so much greater than the former. When only the same quantity of manure is given to both crops, the succeeding Wheat crop after the Beans, has been found, in some instances, to be larger by about 6 bushels an acre, whilst the quality is generally finest after Potatoes. On the other hand, Beans seldom pay for any additional manure beyond the ordinary quantity. The sixth and last crop in the rotation is, as I have already stated, Wheat, for which the previous preparation with either Beans or Potatoes is admirably adapted. This six course shift is the foundation of my own practice, though I by no means slavishly adhere to it. I find it necessary to allow a portion of Grass to lie for two years, for the purpose of having a run for lambing ewes in spring. A considerable quantity of Turnips is always consumed on it, still it rarely grazes so well the second as in the first year, and the succeeding Oat crop is almost invariably inferior. The land deteriorates so much in appearance, that after the removal of the Oat crop, a stranger would estimate its value at decidedly less than its real worth. I have a notion that it would be much better to lay down a field near the homestead for permanent pasture altogether, and where it might be convenient for many purposes; and, besides, when once a turf was formed on it, I believe it would pay as well as any portion of the farm, and that when broken up, some positive benefit might be obtained from it. In order to show the effects of two years' grazing in my neighbourhood, I may mention that in valuing a farm with a friend lately, I knew at once all the land that had been Oats after two years' Grass, though not aware previously that an acre of it had been thus managed. Still one of the conditions for the let of the farm was, that all the Grass should lie two years; but this is not a common clause in leases where the six course shift is adopted. There are, however, a very considerable number of farms in what may be styled the higher district of the arable part of East-Lothian, where the tenants are all bound by their leases to follow the five course shift, or the Norfolk system, with the difference of the Grass lying two years. A particle of hay cannot be made under this restriction unless the land is pastured for a year thereafter, which I think anything but a good plan, particularly, as even when pastured and not cut the first year, it is often worthless the second. When it was possible to apply manure only to a limited extent on such farms, perhaps it was only by grazing a large portion of them that crops could be raised at all; but guano and the Turnip culture have now quite changed matters, and the more these

lands are ploughed, the better will it be for all parties interested. The expense necessary to raise crops must never for a moment be forgotten by practical men, though it by no means follows that the less expense that is incurred, the greater is the profit. In my experience I have often found the reverse of this to be true; and the object should be to try and increase every expense that will possibly leave a profit. This can only be done by having on the ground the most valuable crop it can carry. A full crop on a six course shift is more valuable than a full crop on a four course, and much more so than on a five course shift, as there is a smaller breadth of Grass and Turnips, the two crops worth least money per acre. In an interesting article on manure, just published in Morton's "Cyclopedia of Agriculture," there is an apparently fair calculation made of the quantity of manure obtained annually from land under the four, the five, and the six course rotations. The result is, by the four course 3.16 tons of manure are made annually for every acre on the farm; by the five course 2.5, and by the sixth course 3.64 tons, so that the six course produces more manure than either of the other two, notwithstanding one-sixth part of the farm in green crop (Potatoes) is annually sold off the farm; on the other hand, it should be stated, that on the four course, part of the Turnip crop is consumed on the ground with sheep; and in both the four and the five course, a larger quantity of Grass is pastured. A great and well-founded objection to these short courses is, that the same crops are too frequently repeated. On the best managed farms in Norfolk, the plan is adopted of having soft Turnips on the ground at one period, and hard ones the next, and of alternating Wheat with Barley, and also Trefoil and Cow-grass with red and white Clover. I would rather be inclined to lengthen the six course by these means, than to adopt either the four or five course; indeed, I think the six course may be judiciously increased to a seven, probably to an eighth course rotation. For the last three years I have grown part of my Potato crop after Turnips where one-half of them have been eaten on the ground with sheep, with an allowance of Linseed-cake, and what hay they could consume—the Potatoes, when planted, getting only 4 cwt. per imperial acre of guano in the drill. I have had excellent crops, which have left me at least as much money as if the land had been in Wheat, while I have been equally successful with Wheat after the Potatoes, top-dressing it, however, in spring with guano or nitrate of soda and salt. This last mixture of 1 cwt. each per acre, had a wonderful effect on the last crop. The Clover, after the Wheat, has been remarkably well planted, both where the seeds were hoed and harrowed in. The first field treated in this manner will only be Oats this season, so I have not got far on in the rotation. My object in taking two succeeding green crops was to get rid of wild Oats, which are a shocking nuisance on some farms in my neighbourhood, as well as on my own; and if it has not altogether extirpated them, it has well nigh done so. I thought the two green crops together would occasion a loss to me at first, but I am glad to say I have been a gainer by them. I tried it first on a 12-acre field, next on a 24-acre piece, then on 27 acres, and this year I intend having 47 acres of Potatoes after Turnips. It is quite possible that I may adopt this as a regular system, and which would make my rotation a seven course. It is also a question with me, but a more doubtful one, as I have never tried it, whether or not a crop of Barley could be made judiciously to succeed either the Oat crop after the Grass, or the Wheat after the Beans. A top-dressing of guano would, to a certainty, make the Barley by itself a paying crop, but then it would cause a larger proportion of the Turnips to be eaten in the courts, to convert the additional straw into good manure, thus leaving a smaller quantity to be consumed on the ground with sheep; and it is to the eating of the Turnips on the ground that I attribute much of the success of the experiment. It is also against the rules judiciously inserted in most leases, that two white crops shall not follow each other. There is seldom any such stipulation against two green crops; from the fact, that unless they are well manured, they will not pay at all, the expenses on them being so great, full crops are essentially requisite. Potatoes are also sometimes prohibited to be grown for sale; but whatever stipulations there may be in a lease, I believe that practically to the tenant, for three-fourths of its duration, in ninety-nine cases in the hundred, the rent is the principal clause it contains. I know that towards the close of a lease it is absolutely necessary to guard the landlords' interest as strictly as possible, even though the manner in which a farm is managed is of more consequence than the rotation, as with the best the farm may be in wretched order. As there is no profit in keeping a horse fit only to rumble an empty cart, however cheaply you may feed him, neither will it pay to be sparing of manure to the soil. Both horse and land will bear wonderful loads, if you do not grudge the necessary nourishment. Rotations are principally useful in getting this done cheaply. But to lay down from the beginning the exact rotation throughout the tenancy, and insist upon its being acted on, not only checks improvement, but prevents the most being made of the land. It is thus detrimental to the tenant, and, in due course, is infallibly prejudicial to the landlord. In conclusion, I have only to apologise for the length to which these plain observations have extended. The sum of the matter seems to be, that land should be kept clean and rich, as economically as possible, and that the most valuable crops should be grown that the soil and climate will admit of.



## POULTRY.

ON Thursday, the 10th, another of the great events in the poultry world "came off." We allude to the sale of Mrs. Potts's birds, better known, till lately exhibited, as Mr. Catlin's. We believe the result will settle a point hitherto undecided, as to which is the most popular strain among amateurs. Whether we look to the amount realised by the whole of the birds, or to the prices obtained by the best of them singly, it must be admitted that Mr. Andrews's birds have gone far beyond all competitors. Imagination had been busy with all who attended, and when the birds were arranged round the auction-yard the first feeling appeared to be one of disappointment. Everyone said they were not so good as they expected. When, however, sober reason resumed her empire, it was predicted by those who were accustomed to such scenes, and who noticed the continual marking of catalogues, that the sale would be a good one. "The Hen,"—Mr. Andrews's old hen was constantly surrounded, and the verdict which long since called her the best in England, was unanimously admitted. Next came "Sir Robert," described in the catalogue as "matchless in form and colour," "the Hen's Daughter," and the celebrated cock "Wellington." The anxiety to possess some of the birds of this celebrated breed may be guessed by the facts that Sir Robert sold for 40 guineas; the Hen, though an old one, for 35 guineas; Wellington, 27 guineas; and the Hen's Daughter, 22l. One hundred and twenty-one lots brought 707l.

**Dealers as Judges.**—Your correspondent "An Old Subscriber," cites a case wherein he states the preference a dealer would show to birds which had been purchased of him just previous to an exhibition, with the primary object of gaining a prize at such exhibition. This appears to me an extremely imaginary case. To what lengths will not some people allow their fancies to roam in search of arguments, which prove wretchedly untenable, to support an opposition, stubbornly adhered to, in the face of everything that is candid and impartial? Your correspondent states that the question between poultry and cattle is not analogous. Are not the best birds at the different exhibitions bought by enterprising persons, solely for the purpose of improving their strains? Certainly there might be an exception in the case of your correspondent's imaginary being. But can he inform me what there is to hinder a man from going to Mr. Jonas Webb for a tup or ewe, or to Mr. Fisher Hobbs for a boar or a sow pig under similar circumstances? And will he tell me that they would not sell their different animals for such a sum as he in the plethoric state of his pocket, might offer? But, should slander, that "foulest whelp of sin" dare to defile with its odious breath and base insinuations the fair fame of either of those gentlemen, the miserable author might go and hide his diminished head, and deservedly too, for ever. Then why this wild outcry against dealers as judges in poultry exhibitions? A *Young Subscriber*.

**POULTRY: Numerous Correspondents.** I regret as much as you can the poultry "feuds," and would willingly heal them, were it in my power. I am not aware of having in any way provoked them, nor have I intentionally caused them. The only notice I have taken of any attacks has been to declare them untrue, and that as courteously as I could. I write this against my inclination, but it would be ungrateful not to notice the many kind letters I have received. I acted as judge in the last twelve months at Lewes, Yarmouth, Newmarket, Hitchin, Hertford Agricultural, Birmingham, Dorchester, and the Metropolitan. I was invited to Dis, Wington, Penzance, Taunton, Truro, and Torquay. I am now engaged for seven shows this year. I mention this with great reluctance, but it is perhaps the best explanation I can offer to my friends. If my presence as judge were so hurtful, I think the committees would not follow a suicidal policy.—*G. D. M.* There are two methods of living by poultry—buying and breeding. There are also two markets; poultry as an article of consumption, and as a fancy. No man can breed poultry to supply shipping, as the price is only from 18s. to 21s. per dozen for fowls. They are entirely supplied with old birds, as young ones will not bear the sea voyage. Under ordinary circumstances, I do not consider it advisable to depend entirely on poultry for a livelihood, but it may be made a very valuable auxiliary. Those who live by the market do not breed but collect all round a district, and feed and kill and send up to London. This requires much experience and knowledge, that can only be acquired by long practice. It does not require much capital; the principal outlay, after taking a proper house and offices, being horses and cart, coops and crates. I do not advise you to undertake this; much more may be done, while the present demand for poultry lasts, by breeding fancy birds. The first thing to select is a spot with the best run at the least expense; for this reason, ground adjoining a common is desirable. You should not begin with less than 12 hens and two cocks, and they must be the very best prize birds you can buy. I should recommend either Cochins or Spanish. Whichever you decide on will cost a large sum to buy. You must give your whole attention to them to enable you to compete successfully; you must exhibit everywhere, and you must carry prizes; you will then find a ready and remunerating sale. Feeding these conditions you will not succeed. You must take a proper place, even at a higher rent; you must lay out a large sum for the fowls, and you must wait some months for any return. Captain Hornby is the most successful general breeder of poultry we have ever had. Messrs. Sturgeon, Pynchard, and Peck, in their particular breeds.—*F. S.* I think a frost will be beneficial to the health of poultry; but I am sure snow is hurtful, as there is no scratch or comfort for them.—*P. D.* I can only repeat, I believe nine quite as many eggs as a hen can cover well in cold weather. I may not hatch as many as you do when you set thirteen, but I shall rear as many chickens. Warmth is quite as necessary as food, and the natural heat of the hen is better than that of a forcing-house.—*M. P. P.* The poor hens you complain of as wanting to sit, although there are no eggs in the nests, have doubtless laid plenty, which have been taken from them. Give them seven eggs each to sit on, and you will not regret it. I prefer low perches to roosting on the ground: 24 inches high and about 7 inches wide. I always take a Fir pole 14 inches in circumference, saw it in half, and let the round side be uppermost.—*r.* I am hardly competent to give a description of the Brahma Pootra fowl, and therefore do

it subject to correction. I have seen only two pairs, but they were of the best; one came from the United States, sent by their great advocate, I believe, Dr. Bennett. I have read a mass of correspondence concerning them in the American papers. I cannot state their qualifications. I do not admire them; they are large, brown and white in colour, and evidently related to the Cochins. My impression was, and I still believe it, that with a white Cochins China cock and brown Malay hen I can make a Brahma Pootra fowl. *J. Bailey*, 113, Mount Street.

## Notices to Correspondents.

**AMERICAN THRESHING MACHINE: A Sub.** Application should be made to the American Paper.

**BONE-DUST: P. Q. Z.** If you have bone-dust in any quantity to apply mix it up with a little sand, and wet it with liquid manure, and let it heat, and it will in a measure become disintegrated: after which sow it broadcast. Sow guano broadcast over the land after it has been ribbed for Turnips, and after the farm-dung has been put in the furrows. Then split the drills, and cover each dung and guano to the surface.

**CHICKEN: G. Green.** Full detail is given in Blackie's "Cyclopedia of Agriculture." We know of no work specially on the subject. **DRAINING: U. S.** You seem to be doing the work very well. Collars are in our opinion unnecessary; except, perhaps, in very soft ground.—*Theory and Practice*, who wrote an article on this subject at page 107, may have a letter, which is lying for him at our office, if he will send his address.

**EWES: A Subscriber.** She goes with young 21 weeks. **GOLOSHERS FOR SHEEP: Correspondent.** The advertisement explains your failure. Your shoes were too high. **LUCERNE: Constant Reader.** Sow, in mid-April, 16 lbs. of seed in shallow rows, 12 or 14 inches apart, upon a deeply tilted loamy, and if possible, calcareous soil. Your soil will do very well. You will obtain a first cutting in August.

**NEW MANURE: G. O. L.** We do not know it. **PEAT CHARCOAL: Floughman.** The farm of Chadbury is near Ervasham, and is or was in the occupation of Mr. Randall. We do not know if it be the one described in the report to which you refer, nor do we know if that description be correct of the farm it does refer to. Peat charcoal is useful chiefly as an ingredient in composts with ammoniacal manures. If we were near peat, we should use great quantities, both as charcoal in compost with liquid and other farm-manures, and in its merely dried state in compost with lime.

**SALT AND LIME: A B.** When the action of the one upon the other is completed, the salt is converted into a much more active substance—carbonate of soda; and of that it would not be advisable to apply more than 1 cwt. or 1½ cwt. per acre, a quantity which would be produced by rather more than its weight of common salt. But the process is not completed; only a small portion of the salt becomes thus decomposed, and therefore you may apply 2 cwt. or 3 cwt. of salt per acre, along with as much lime (within 80 or 100 bushels) as you like. Our plan would be to slake the lime with brine on a covered floor, and turn over for two or three months before use.

**SUPERPHOSPHATE: J. G. M.** Add of acid about one-third the weight of the bones. It will not convert the whole; but it is probably enough for the purpose of making a very efficient superphosphate. 2 cwt. of salt, 3 cwt. of superphosphate, and 20 bushels of soil per acre, will make a first-rate compost for Grass land. About drills apply to Mr. Hornsby, of Spittlegate, Grantham, or Mr. Garrett, Saxmundham, Suffolk.

## Markets.

## COVENT GARDEN, Feb. 19.

In consequence of the severe weather which has set in, the market has not been so well supplied with Vegetables during the past week; but of fruit in season there has been sufficient for the demand. Table Peas and Apples are, however, still scarce. The former are almost entirely confined to Beurre Rance of but second-rate quality, and the latter to American Newtown Pippins, and a few old Golden Pippins. The supply of Pineapples is pretty well kept up. Forced Strawberries continue to make their appearance. Cob and other Nuts are realising fair prices. Among Vegetables, we remarked some good Green Peas of foreign growth. Both Seakale and Rhubarb are pretty abundant; and Asparagus is good, but dear. Potatoes are also a trifle dearer. Mushrooms are scarce. Cut flowers consist of Heaths, Primulas, Early Tulips, Roses, Cyclamens, Mignonette, and Camellias.

## FRUIT.

Pine-apples, per lb., 6s to 10s  
Apples, dessert, per bush, 10s to 12s  
— kitchen, do., 6s to 10s  
Pears, per doz., 1s 6d to 4s  
Lemons, per doz., 1s to 2s  
Oranges, per doz., 1s to 2s

## VEGETABLES.

Cabbages, per doz., 1s to 2s  
Brussels Sprouts, per hf. sieve, 2s to 3s  
Broccoli, per doz., 2s to 3s  
Greens, per doz., 4s to 6s  
French Beans, per 100, 4s to 5s  
Asparagus, per bunch, 5s to 9s  
Seakale, per basket, 7s to 4s  
Rhubarb, per bundle, 9d to 1s 6d  
Potatoes, per ton, 85s to 150s  
— per cwt., 5s to 9s  
— per bush, 2s 6d to 4s 6d  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 4s to 6s  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 4s to 5s  
— Spanish, per doz., 2s to 5s  
Beet, per doz., 1s to 1s 6d

## WOOL.

**BRADFORD, THURSDAY, Feb. 17.**—The opening of the sales of colonial wools in London, at an advance of 1d. per lb. on October sales, makes the holders here firm, as the cost of transit, difference in payment, and other expenses, will bring the small stock they hold to an advance of 2d., to cover expenses of replacing; but it is with difficulty the increased prices are realised. In English Wools there is but little doing; all appear holding off, and working from stock bought at the close of the year; but as this stock is daily decreasing, further supplies will be required, and a conflict between the buyers and sellers is inevitable, before any active buying will be apparent. The accounts of the doings in the country are not of a character to justify holders to press their stocks on the market. It is usual for the staplers here to move off their surplus supply prior to the opening of Bristol Fair, the first Wednesday in March, but this season is an exception to the rule, as the activity of December and January has made supplies considerably less than usual at this period of the year.

## POTATOES.—SOUTHWARK, Feb. 14.

During the past week the arrivals coastwise have been limited, but considerable from foreign ports and by railway. Trade languid at the following quotations:—York Regents, 80s. to 140s.; Lincolnshire do., 70s. to 100s.; Scotch do., 80s. to 100s.; Scotch Reds and Cups, 70s. to 80s.; French whites, 75s. to 85s.; Dutch, 60s. to 65s.

## HOPS.—BOROUGH MARKET, Feb. 18.

Messrs. Pattenden and Smith report that there is a good trade doing in Hops, with prices gradually advancing.

## SMITHFIELD.—MONDAY, Feb. 14.

The supply of Beasts is again shorter; in consequence, prices have advanced about 2d. per 8 lbs. on the average. We have a few more Sheep; however, the number is still small, and prices no lower. There are a few shorn Sheep on offer, but the weather is too cold for them, and the butchers will rather give a good price for the wool on them. Trade is slow for all descriptions of stock, but this is attributable to high prices. Good Calves are rather dearer. From Germany and Holland there are 612 Beasts, 1350 Sheep, and 125 Calves; from Spain, 83 Beasts; from Scotland, 600; from Norfolk and Suffolk, 1700; and 400 from the Northern and Midland Counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Here-	Best Long-wools... 4 8 to 4 10
fords, &c. ... 4 0 to 4 2	Do. Shorn ... 0 0 — 0
Best Short-horns 3 10 — 4 0	Ewes & 2d quality 3 10 — 4 0
2d quality Beasts 3 2 — 3 6	Do. Shorn ... 0 0 — 0 0
Best Down and	Lambs ... 0 0 — 0 0
Half-breeds ... 5 0 — 5 2	Calves ... 3 8 — 4 10
Do. Shorn ... 0 0 — 0 0	Pigs ... 3 4 — 4 6
Beasts, 3951; Sheep and Lambs, 17,690; Calves, 152; Pigs, 275.	

## FRIDAY, Feb. 18.

The supply of both Beasts and Sheep is very small, and consequently although trade is slow, Monday's prices are fully maintained. Trade is exceedingly heavy for Calves; there is a reduction of fully 2d. per 8 lbs. in the best descriptions, and rather more than that in inferior kinds. Our foreign supply consists of 45 Beasts, 1030 Sheep, and 162 Calves. From Scotland, 34 Beasts; and 90 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Here-	Best Long-wools... 4 8 to 4 10
fords, &c. ... 4 0 to 4 2	Do. Shorn ... 0 0 — 0 0
Best Short-horns 3 10 — 4 0	Ewes & 2d quality 3 10 — 4 0
2d quality Beasts 3 2 — 3 6	Do. Shorn ... 0 0 — 0 0
Best Down and	Lambs ... 0 0 — 0 0
Half-breeds ... 5 0 — 5 2	Calves ... 3 4 — 4 8
Do. Shorn ... 0 0 — 0 0	Pigs ... 3 0 — 4 6
Beasts, 780; Sheep and Lambs, 2530; Calves, 230; Pigs, 240.	

## HAY.—Per Load of 36 Trusses.

SMITHFIELD, Feb. 17.		CUMBERLAND MARKET, Feb. 17.	
Prime Meadow Hay 78s to 86s	Clover ... 90s to 105s	Prime Meadow Hay 88s to 95s	Inferior Clover ... 70s to 90s
Inferior do. ... 68 75	Second cut ... 70 90	Inferior do. ... 63 80	New do. ... — —
Rowen ... 50 60	Straw ... 27 32	New Hay ... — —	Straw ... 30 34
New Hay ... — —	E. J. DAVIS.	Old Clover ... 98 105	JOSHUA BAKER.

## MARK LANE.

**MONDAY, Feb. 14.**—The supply of English Wheat to this morning's market was small, and met an improved sale at fully last week's prices. Foreign was also in improved demand, and good business was done at former rates. The Flour trade is quiet. Barley was inquired after, and the finest samples of malting were sold at an advance of 1s. per qr. Beans and Peas are fully as dear. The Oat trade remains without alteration.

PER IMPERIAL QUARTER.		s. s.	s. s.
Wheat, Essex, Kent, & Suffolk ... White	42-54	Red ... 40-46	40-46
— fine selected runs ... ditto	44-60	Red ... 46-52	46-52
— Talavera ... ditto	54-60	Red ... — —	— —
— Norfolk ... ditto	40-58	Red ... — —	— —
— Foreign ... ditto	40-58	Red ... — —	— —
Barley, grind. & distil., 25s to 28s ... Chev.	26-35	Malting ... 27-31	27-31
— Foreign ... grinding and distilling	26-30	Malting ... 30-33	30-33
Oats, Essex, and Suffolk ... ditto	17-20	— — — —	— — — —
— Scotch and Lincolnshire ... Potato	22-24	Feed ... 17-22	17-22
— Irish ... ditto	20-21	Feed ... 19-20	19-20
— Foreign ... Poland and Brew	19-22	Feed ... 16-20	16-20
Rye ... ditto	29-32	Foreign ... — —	— —
Rye-meal, foreign ... ditto	32-34	Harrow ... 32-34	32-34
Beans, Mazagan ... 30s to 32s ... Wind	39-41	Longpod ... 30-34	30-34
— Pigeon ... 33s 36s ... Small	32-37	Egyptian ... 32-34	32-34
— Foreign ... ditto	32-37	Suffolk ... 40-42	40-42
Peas, white, Essex and Kent ... Boilers	30-31	Suffolk ... 32-42	32-42
— Maple ... 32s to 35s ... Grey	30-33	Foreign ... 32-42	32-42
Maize ... ditto	32-34	Yellow ... — —	— —
Flour, best marks delivered ... per sack	38-48	— — — —	— — — —
— 2d ditto ... ditto	28-38	Conntry ... 23-38	23-38
— Foreign ... per barrel	24-28	Per sack ... 36-40	36-40

**FRIDAY, Feb. 18.**—There were a few samples of Essex Wheat fresh up to this morning's market, which met a ready sale at Monday's prices. Foreign Wheat in moderate request on the same terms. The value of all descriptions of spring corn is fully supported. Flour is a slow sale, and prices are unaltered. Floating cargoes of Wheat from the south of Europe are freely offered, and would be obtainable 1s. below late rates.

## ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ... Qrs.	1510	2650	2720	2460 sacks
Irish ... Qrs.	—	—	2940	—
Foreign ... Qrs.	2420	590	8500	880 sacks

## IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 8 ... s. d.	46 0	29 8	18 6	29 1	34 8	32 9
— 15 ... s. d.	46 10	29 10	18 7	30 8	34 8	32 6
— 22 ... s. d.	45 8	30 5	18 7	32 6	34 11	30 7
— 29 ... s. d.	46 0	31 2	18 7	32 2	34 9	31 9
Feb. 5 ... s. d.	46 1	31 8	18 7	31 11	34 7	31 5
— 12 ... s. d.	45 2	31 5	18 5	30 11	34 10	31 9
Aggreg. Aver.	45 9	30 8	18 6	31 2	34 9	31 8

## Duties on Foreign Grain 1s. per qr.

## FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Jan. 8.	Jan. 15.	Jan. 22.	Jan. 29.	Feb. 5.	Feb. 12.
46s 1d	...	...	...	...	...	...
46 0	...	...	...	...	...	...
46 0	...	...	...	...	...	...
45 10	...	...	...	...	...	...
45 8	...	...	...	...	...	...
45 2	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, Feb. 15.**—The arrivals of grain and Flour this week are limited. There has been daily activity in our market during the week, attention being directed principally to Wheat and Flour as a fair speculation, and prices have materially improved. The buoyant tone observable in our trade during the week was somewhat checked to-day by a general slackness of demand, and prices were scarcely so good as on Friday. The advance on last Tuesday's quotations, however, must be called 1d. to 2d. per bushel on Wheat, 6d. per barrel and sack on Flour, and 6d. per load on Oatmeal. Other articles of the grain trade were without alteration of price.—**FRIDAY, Feb. 11.**—The arrivals of foreign grain and Flour the last three days were on a reduced scale. The Corn Exchange this morning was well attended by town and country millers. Both Wheat and Flour were in active demand, and several large parcels of the former changed hands on speculation. Prices advanced 1d. per bushel on red and 2d. per bushel on white Wheat, and Flour 6d. per sack and barrel over those obtainable on Tuesday last. Oats dull sale. Oatmeal in fair retail demand. Indian Corn in better request, at full prices. Barley, Beans, and Peas unaltered in value.



## AGRICULTURAL PUPILS.

**THE ADVERTISER**, who farms his own Occupation, proposes taking TWO or THREE PUPILS for INSTRUCTION in FARMING. The situation would offer advantages to those who have just left school, as the Advertiser, having had considerable experience in Tuition, would be able to forward their instruction in practical Land Surveying, Farming Accounts, and Agricultural Chemistry. They would be treated in every respect as members of the family, and strict attention paid to their morals.—Apply (if by letter prepaid) to Mr. E. C. NUTT, Secretary to the Diss Farmers' Club, Thrandeston, Scole, Norfolk.

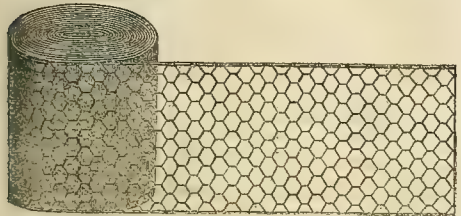
**THE MISSES COLEBROOKE THOMPSON** will be happy to forward a Prospectus of their Establishment to parents seeking a school for their daughters, where the highest educational advantages are combined with maternal attention to the health and comforts, as well as the religious and moral well-being of the pupils. The house is situated on high ground, and near the Kensington Gardens. The system of education develops the intellectual faculties without overtaxing the memory. The course of instruction is extended, and includes lessons from Professors in Music, English Literature, Drawing, Sketching from Nature, Singing, Chemistry, Mineralogy and Geology, the German, French, and Italian Languages, Hery, and Gallician Exercises. A French lady resides in the house. The detailed prospectus containing the plan of study, and the names of the Professors, who are among the first in the metropolis, may be had on application. Number of pupils limited to 12.—25, Eastbourne Terrace, Hyde Park.

**HALL'S GARDEN NETS**, the best Protection from Frosts, &c. A very durable and cheap article; more required than in any former year.—Sold by the principal Nursery and Seedsmen.

**TANNED NETTING**, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh Sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 60s. Waxed Netting for Aviaries, &c., at 8d. per square yard. Scrim Canvas, for Wall Fruit.

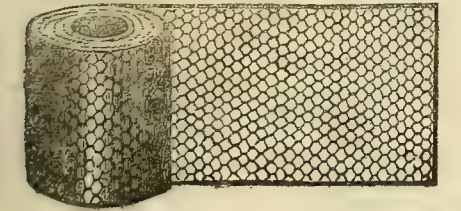
At **BOGINGTON & CO.'S**, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may also be seen erected Emigrant Tents in great varieties on their latest improved principles.

**GEORGE ARTINGSTALL AND CO., LATCHFORD**  
WIRE WORKS, WARRINGTON,



Manufacturers of Improved Strong  
**RABBIT-PROOF WIRE NETTING.**  
12 inches high ... 4d. per yard.  
18 ditto ... 6d. "  
24 ditto ... 8d. "  
All other widths at proportionate prices.  
Wire Works for Aviaries, Conservatories, Fencing, &c. &c.; also extra strong Wire Kiln Floors for drying Grain, &c. &c.  
N.B. Wire Work Galvanised on very advantageous terms.

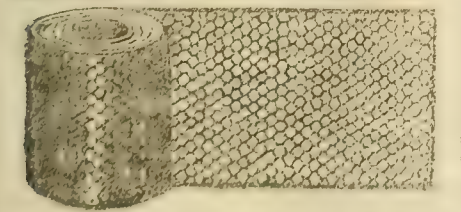
**GALVANISED WIRE GAME NETTING.**  
7d. per yard, 2 feet wide.



	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 "	6 1/2 "
2-inch " extra strong "	12 "	9 "
1 1/2-inch " light "	8 "	6 "
1 1/2-inch " strong "	10 "	8 "
1 1/2-inch " extra strong "	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasants, 3d. per square foot. Patterns forwarded post free.  
Manufactured by **BARNARD & BISHOP**, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

**CHEAP WIRE GAME & POULTRY NETTING,**  
5d. per running yard.  
**GALVANISED DITTO,** 7d. per running yard, 2 feet wide.



	Galvanised.	Not Galvanised.
24 in. wide, 2 in. mesh, 7d. per yard.	...	5d. per yard.
30 in. " 2 in. " 9d. "	...	6d. "
36 in. " 2 in. " 10 1/2d. "	...	7d. "
42 in. " 2 in. " 11 1/2d. "	...	10d. "

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its tight and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Game Netting, 2 feet high, 14d. and 2s. 3d. per yard.  
Also a description of various Trainers, Dabbling Ducks, Golden Arches, Barbed Wire, Flower Sticks, Tying Wire, Trellis Work, (available) Wire Fencing, Barbed, and very description of Wire Work for Horticultural purposes. Illustrated Catalogues of Patterns forwarded post free on application to T. H. FOX, City of London Wire Work and Iron Fence Manufacturer, 41, Skinner Street, and 6 and 8, Snow Hill, London.

# JAMES PHILLIPS & Co.,

## 116, BISHOPSGATE STREET WITHOUT.

PRICES OF  
**HARTLEY'S PATENT ROUGH PLATE GLASS**  
FOR CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTORIES  
SKYLIGHTS, &c.

Packed in Crates, for Cutting-up of the sizes manufactured.	1/2 inch thick.			3/4 inch thick.			1 inch thick.		
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
30 inches wide and from 40 to 50 long	0 5 1/2	0 7	0 9	0 6	0 7 1/2	0 9 1/2			
Or 20 " " above 70 " "	0 6	0 7 1/2	0 9 1/2						
In Squares cut to the sizes ordered.									
Under 8 by 6	0 4	0 5	0 6	0 4 1/2	0 6	0 7	0 5	0 6	0 8
8 by 6 and under 10 by 8	0 4 1/2	0 6	0 7	0 5 1/2	0 7 1/2	0 8 1/2	0 6 1/2	0 8 1/2	0 9 1/2
10 by 8 " 14 by 10 "	0 5 1/2	0 7	0 8 1/2	0 6 1/2	0 8 1/2	0 9 1/2	0 7 1/2	0 9 1/2	0 10 1/2
14 by 10 " 1 1/2 ft. sup., if the length does not exceed 20 inches	0 5 1/2	0 7	0 8 1/2	0 6 1/2	0 8 1/2	0 9 1/2	0 7 1/2	0 9 1/2	0 10 1/2
1 1/2 ft. sup. " 3 ft. sup., or if above 20 inches long and not above 30 inches long	0 6	0 7 1/2	0 9	0 6 1/2	0 8 1/2	0 9 1/2	0 7 1/2	0 9 1/2	0 10 1/2
3 " " 4 " 20 " 30 "	0 6 1/2	0 8	0 9 1/2	0 6 1/2	0 8 1/2	0 9 1/2	0 7 1/2	0 9 1/2	0 10 1/2
4 " " 5 " 30 " 40 "	0 7	0 8 1/2	0 10	0 7 1/2	0 9 1/2	0 10 1/2	0 8 1/2	0 10 1/2	0 11 1/2
5 " " 6 " 40 " 50 "	0 7 1/2	0 9 1/2	0 10 1/2	0 8 1/2	0 10 1/2	0 11 1/2	0 9 1/2	0 11 1/2	0 12 1/2
6 " " 8 " 50 " 60 "	0 8 1/2	0 10 1/2	0 11 1/2	0 9 1/2	0 11 1/2	0 12 1/2	0 10 1/2	0 12 1/2	0 13 1/2
8 " " 10 " 60 " 70 "	0 9 1/2	0 11 1/2	0 12 1/2	0 10 1/2	0 12 1/2	0 13 1/2	0 11 1/2	0 13 1/2	0 14 1/2
10 " " 12 " 70 " 80 "	0 10 1/2	0 12 1/2	0 13 1/2	0 11 1/2	0 13 1/2	0 14 1/2	0 12 1/2	0 14 1/2	0 15 1/2
12 " " 15 " 80 " 90 "	0 11 1/2	0 13 1/2	0 14 1/2	0 12 1/2	0 14 1/2	0 15 1/2	0 13 1/2	0 15 1/2	0 16 1/2
15 " " 20 " 90 " 100 "	0 12 1/2	0 14 1/2	0 15 1/2	0 13 1/2	0 15 1/2	0 16 1/2	0 14 1/2	0 16 1/2	0 17 1/2
20 " " 25 " 100 " 120 "	0 13 1/2	0 15 1/2	0 16 1/2	0 14 1/2	0 16 1/2	0 17 1/2	0 15 1/2	0 17 1/2	0 18 1/2
25 " " 30 " 120 " 150 "	0 14 1/2	0 16 1/2	0 17 1/2	0 15 1/2	0 17 1/2	0 18 1/2	0 16 1/2	0 18 1/2	0 19 1/2
Quarries	0 6	...	...	0 6	...	...	...	...	...

PACKED IN BOXES OF 50 FEET EACH.  
6 by 4 and 6 1/2 by 4 1/2 ... 10s. 6d. 7 by 5 and 7 1/2 by 5 1/2 ... 12s. 0d.  
8 by 6 and 8 1/2 by 6 1/2 ... 13s. 6d. 9 by 7 and 10 by 8 ... 15s. 0d.  
JAMES PHILLIPS & Co., Horticultural Glass Merchants, 116, Bishopsgate Street Without, London.

# HORTICULTURAL GLASS

## OF EVERY DESCRIPTION.

**THOMAS MILLINGTON'S WAREHOUSE,**  
87, BISHOPSGATE STREET WITHOUT,  
LONDON.

**GLASS FOR CONSERVATORIES ETC.**  
**HETLEY AND CO.** supply 16-oz. SHEET GLASS of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES AND SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.  
See *Gardeners' Chronicle* first Saturday in each month.

**TO AMATEUR GARDENERS,**  
**LOCAL BOARDS OF HEALTH, & SANITARY WORKS.**  
**PATENT GLASS TUBES,** Iron Coated with Glass, Gutta Percha, Comminated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of **FREEMAN ROE**, Hydraulic Engineer, 70, Strand, and Bridgefield, Wandsworth.

P.S. Important to Farmers, &c.—F.R. begs leave to call attention to his New Water Power, which in many cases will supersede the use of the Steam Engine.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

**ALFRED KENT'S PATENT WEATHER-PROOF**  
**GLAZING WITHOUT PUTTY.**—For Horticultural Buildings in Wood or Metal.  
Horticultural Building Works, Chichester.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

**CLARKE'S PREPARATION FOR DESTROYING**  
**MEALY BUG, SCALE, THIRP, &c.**, without injuring the Plant, also for dressing Grape Vines, Peach Trees, &c. Sent out in quart and pint bottles, secured for travelling, on receipt of 9s. and 6s. in stamps or otherwise; full directions how to apply it in every case sent with each bottle. It has been thoroughly tested in the Gardens of the Horticultural Society, and pronounced in the *Gardeners' Chronicle* as follows:—"Clarke's Preparation for Killing Mealy Bug has succeeded perfectly; it has been tried on various plants at different times, and has invariably answered." See 1st May, 1852, p. 279.  
Address—**CHARLES CLARKE**, Waltham Green, Fulham.

**OXLEY AND CO.'S ASBESTOS FILTER** enlarged.  
Price 80s. each; small size, 15s.  
**TAYLOR & PEARCE**, 8, George Yard, Lombard Street.  
Twenty Gallons of Pure Water per diem. All Mineral and noxious matters entirely separated by this process.  
See *Lancet* and all the standard journals as to the value of ASBESTOS in filtration.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such dry mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 45 hours it becomes as hard as a rock. Vegetation cannot grow through upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.  
Manufacturers of the Cement, **J. B. WHITE & BROTHERS**, Millbank Street, Westminster.

## Sales by Auction.

## HER MAJESTY'S ROYAL FORESTS' OAK BARK FOR SALE.

One Thousand Nine Hundred Tons of Timber, Flittern, and Sapling Bark, in Stack, situated in the New Forest, Dean Forest, Whittlewood and Salecy Forests, Wychwood Forest, and at Hainault.

**MESSRS. DRIVER** have been honoured with instructions from the Right Hon. T. F. Kennedy, the Commissioner in charge of Her Majesty's Woods and Royal Forests, to offer to public competition, at the Auction Mart, Bartholomew Lane, London, on THURSDAY, the 3d day of March, at 12 o'clock, in Lots, about 1900 Tons of excellent Timber, Flittern, and Sapling Bark, of good quality, and a considerable portion in capital condition from Timber and Saplings felled last spring, all of which is in stack in the following respective Forests, viz.:

About 183 tons in the New Forest, in the County of Southampton.  
" 1025 tons in the Forest of Dean, in the County of Gloucester.  
" 266 tons in the Forest of Whittlewood, in the County of Northampton.  
" 43 tons in the Forest of Salecy, in same County.  
" 238 tons in the Forest of Wychwood, in the County of Oxford.

158 tons at Hainault, in the County of Essex.

All of which will be divided into lots suitable for the accommodation of all classes of purchasers, and sold at per ton. The Bark in the New Forest may be inspected on application to Mr. L. H. CUMBERBATCH, Deputy Surveyor, New Park Farm, Lymington, Hants; that in the Forest of Dean on application to Mr. E. MACHEN, Deputy Surveyor, Whitewater Park, Coleford; that in Whittlewood and Salecy Forests on application to Mr. LINNELL, Deputy Surveyor, Hartwell Lodge, Salecy Forest, Northampton; that in Wychwood Forest on application to Mr. LINNELL and Mr. R. MORRIS, Asst. Burford, Oxfordshire; that in Hainault on application to Mr. JOHN McCLERTCHIE, of Little Heath, Barking, all of whom printed Catalogues, with conditions of sale, may be had; also at the Office of Her Majesty's Woods and Forests, 2, Whitehall Place; at the Auction Mart, Bartholomew Lane, London; of Messrs. CLUTTEN, 8, Whitehall Place; and of Messrs. DRIVER, Surveyors and Land Agents, 5, Whitehall, London.

## GRANTCHESTER NURSERY, CAMBRIDGE.

**MESSRS. PROTHEROE AND MORRIS** are instructed by the Proprietor, who is declining the Nursery business, to Sell by Auction, on the premises, on TUESDAY, March 1st, 1853, and following day, at 11 o'clock, the whole of the Valuable NURSERY STOCK, consisting of an excellent assortment of Evergreens and Deciduous Shrubs, 7000 Standard, half-Standard, and Dwarf Roses of all the leading kinds; 2000 Herbaceous and Alpine Plants, Roses in Pots, a few fine specimens of Coniferous Plants, and a quantity of smaller sizes; Camellias, Ericas, Epacris, and other hard-wooded Plants.—May be viewed prior to the Sale. Catalogues had, 6d. each, returnable to purchasers, on the premises, 21, King's Parade, Cambridge; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

Also in May, the entire Stock of soft-wooded Plants, consisting of Dahlias, Geraniums, Cinerarias, Bedding Plants, &c., with the newly-erected Greenhouses, Pits, Frames, and utensils-in-trade.

**BANBURY, OXFORDSHIRE.**  
**TO NOBLEMEN, GENTLEMEN, NURSERYMEN, RAILWAY CONTRACTORS, & PLANTERS GENERALLY.**  
**IMPORTANT AND EXTENSIVE SALE OF VALUABLE NURSERY STOCK.**

**THOMAS PERRY, NURSERYMAN**, Banbury, begs to inform the Nobility, Gentry, and others, that he has commissioned Messrs. DANNY & CALES to offer for public competition, on TUESDAY and WEDNESDAY, the 22d and 23d of February, about one million of fine healthy FOREST TREES of nearly every description, including a very superior Stock of the TRUE ENGLISH ELMS, 200,000 Evergreens and Flowering Shrubs, Fruit Trees in great variety, one million of Thorn Quicksets, and a large quantity of fine Specimen Plants well adapted for new Pleasure-grounds; Catalogues of which may be obtained from Mr. PERRY, the Proprietor, or the Auctioneers, Banbury. J.P. begs to call particular attention to his unrivalled Collection of Roses.

The above Stock may be viewed the mornings of Sale till 10 o'clock, at which time the Auction will commence. There are now two Railways opened to Banbury—viz, the Great Western and the London and North-Western. A punctual attendance at the time mentioned is requested, in consequence of the great Number of Lots, and the shortness of the days.

## COCHIN CHINA FOWLS.

**MR. J. C. STEVENS** begs to notify that the next periodical Sale of FANCY POULTRY will be held at his Great Room, 38, King Street, Covent Garden, on TUESDAY, March 1, at 12 o'clock precisely. The Cochin China Fowls are many of them very choice, including Prize and Commended Birds at the Metropolitan and Provincial Shows, from the Stocks of Mr. John Mason, of Norwich, Mr. H. W. Colkinson, of the Borough, and Mr. T. H. Fox, of Skinner Street.—Catalogues will be forwarded, on receipt of a stamped/directed envelope, enclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

\* These Sales will be continued on the First and Third Tuesdays in every month. Forms of entry and particulars forwarded by directing as above.

**COCHIN CHINA FOWLS' EGGS**, from very choice Birds, bred from Mr. Sturgeon's Stock. They are Birds of great merit, all light coloured, and well feathered. Price 12s. 6d. per dozen. Carriage paid to London on receipt of Stamps, or Post Office Order, payable to **ARTHUR HORNCASTLE**, Grays, Essex.

**COCHIN CHINA EGGS.**—An Amateur, who has some very handsome Cochin China Fowls, of a pure breed, Cinnamon and Buff, is willing to dispose of some Eggs, at 7s. per dozen.—Address, X. Y., Post Office, Farnham, Surrey.

**COKE BRICKS.**—Any person having for disposal a quantity of them, described some time since in the *Weekly Times*, which account was copied into the *Gardeners' Chronicle* of 1852, p. 631, may hear of a purchaser by addressing a letter to M. M., at the Office of this Paper.

## FANCY POULTRY AND EGGS.

**BUFF AND CINNAMON COCHIN-CHINA FOWLS**  
2 1/2, 3 1/2, 4 1/2, and 5 1/2 per pair; splendid Pullets 2 guineas each; a few very fine ones from superior strains and selected, 5 guineas each; Cockerels, 10s. each; 3 guineas, 8 and 10 guineas; Black ones, 3 and 8 guineas per pair; Black Spanish, 2 1/2, 3 1/2, and 5 1/2 per pair; pure bred and white faced; Gold Pouter, 12 guineas, and Black ditto, 2 1/2, 3 1/2, per pair; Gold and Silver Pencilled Hamburgs, 15s., and selected ones, 20s.; White Silky Fowl, 2 guineas per pair; Dorking, 5s. each; a very superior Cochin Malay Cockerel and Pullet, 30s.; a few ditto Pullets, 15s. each; a pair of Spanish Cochins, 20s.; Spanish Dorking Pullets, 7s. 6d. each; Golden Sebright Bantams, 20s. the pair; Cochin Eggs, 10s.; ditto selected from Birmingham prize birds, 21s.; Spanish and Silver Hamburg Eggs, 6s.; Dorking, 4s. per dozen; Box, 1s.—Post Office Orders payable to **GEORGE BOOTHBY**, Louth, Lincolnshire. All letters to contain a stamped and addressed envelope.



4, GREAT RUSSELL STREET, COVENT GARDEN, 1853.

## JOHN KERNAN,

IN OFFERING TO HIS FRIENDS AND THE PUBLIC THE ANNEXED

## LIST OF VEGETABLE AND FLOWER SEEDS,

WHICH INCLUDES EVERY NOVELTY INTRODUCED UP TO THE PRESENT SEASON,

BEGS TO ASSURE HIS CUSTOMERS THAT HE HAS SPARED NO TROUBLE IN SECURING EVERY ARTICLE AS GOOD AS IT COULD POSSIBLY BE PROCURED.

PEAS. Per qt.—s. d.		CRESS. s. d.		Seakale plants, according to age, per 100, 5s. to 10s.		Per packet.—s. d.		Per packet.—s. d.	
Early Emperor	1 0	Plain, per pint	0 6	Dulley's Early Scarlet Admirable Rhubarb, per root, 1s.		Hollyhock, fine mixed	0 3	Eurothera Sellowii	0 3
Shilling's new early Grotto	1 0	Curled	0 1	Myatt's Victoria do. (the largest in cultivation), 1s.		Ipomoea Burdickii	0 6	" Drummondii	0 6
Bishop's new long-podded	1 0	American, per oz.	0 3	Mushroom Spawn, per bushel, 5s.		" quamoelit	0 6	" densiflora	0 6
Fairbeard's Champion of		Water, per paper	0 6	Cornwell's Victoria Raspberry, per dozen, 2s. 6d.		" hybrida Kerme-		" macrocarpa	0 6
England	1 0	Mustard, per pint	0 6	All the fine new Raspberries, 2s. 6d. to 3s. per dozen.		sina	0 6	And others	0 3
Fairbeard's Surprise	0 9			Seeds of all the new Strawberries, Raspberries, Gooseberries, and		And others	0 6	Papaver marcellii	0 3
British Queen	1 0			Currants, per paper, 6d.; with Tree Seeds recommended to		Ipomopsis elegans	0 6	" nudicaulis	0 3
Knight's dwarf green and				Emigrants.		Isotoma axillaris	0 6	Poppy, carnation, mixed	0 8
tall	1 0					Jacobaea, double crimson	0 3	Feas, sweet, all the colours	
Scimitar	0 9					" purple	0 3	separate or mixed	0 3
Woodford or Nonsuch	0 9					" new lilac	0 3	Pentstemon, of sorts	0 6
Victoria Marrow	0 9					Kaulfussia amelloides, for		Phlox Drummondii, various	
Dwarf green Mammoth	1 6					edging	0 3	shades	0 6
Tall white	1 6					HANDSOME ORNA-		" Drummondii, white	0 6
With all other varieties						MENTAL GRASSES.		" Leopoldii (new)	1 0
worth cultivating.						Lagurus ovatus (Hare's		" new, scarlet	0 6
						tail Grass)	0 6	" oculata	0 6
						Agrostis pulchella	0 6	Picotee, from named flowers	1 0
						Briza gracilis	0 6	Platystemon californicus	0 3
						" maxima	0 6	Potentilla Garnieriana	0 3
						Stipa pinnata	0 6	" Russelliana	0 0
								" Thomasii	0 3
								Polyanthus, fine mixed	0 6
								Portulacca splendens	0 6
								" Thellusonii	0 6
								" grandiflora	0 6
								" striata alba	0 6
								" Gilliesii	0 6
								" yellow	0 6
								Primula sinensis (white	
								fringed)	1 0
								" lilac	1 0
								" large crimson	1 0
								" cortusoides	0 6
								Rhodanthus Manglesii	0 6
								Salpiglossis, new scarlet	
								" very fine	2 6
								" fine mixed	0 6
								" new yellow	0 6
								Salvia, of sorts	0 6
								Sanvitalia procumbens	0 6
								Saponaria, calabrica	0 6
								" ocyroides	0 6
								Schizanthus Hookerii	0 6
								" Grahamii	0 6
								" retusus alba	1 0
								" humilis	0 3
								" Priestii	0 3
								" venustus	0 3
								Schizopetalon Walkerii,	
								very sweet	0 6
								Sphenocoryne speciosa	0 3
								Streptocarpus Rexii	0 6
								Silene Schaffa	0 6
								" compacta	0 6
								Stock, white pyramidal	0 6
								" Buck's Intermediate	
								16 out of 20 will	
								come double	0 6
								" Chapman's Scarlet	
								Ten-week	0 3
								" Shepherd's White	0 3
								" Purple	0 3
								Sedum caeruleum, for rock-	
								work	0 3
								Sultan, yellow	0 3
								" white and purple	0 3
								Tagetes signata	0 3
								Thunbergia (see Climbers).	
								Tropeolum (see Climbers).	
								Viscaria oculata	0 3
								" new dwarf	0 3
								" white	0 6
								Violet, Russian (ever-	
								flowering)	0 0
								Verbena, a mixture of best	
								sorts	0 6
								Wallflower, blood red	0 3
								" Double German,	
								of sorts	0 6
								" changeable	0 6
								8 vars. of Im-	
								ported German	2 6
								Zinnia elegans coccinea	0 6
								" purpurea	0 6
								" aurea	0 6
								" mixed from 20 se-	
								parate varieties	0 0
								Ornamental Trees and Shrubs of all descriptions.	
								Cedrus Decidua, Cryptomeria japonica, Taxodium sempervirens,	
								2s. 6d. to 10s. 6d. each.	
								Named Double Anemones and Ranunculuses; Gladioli genda-	
								vensis, Queen Victoria, ramosus and floribundus; Tigridia	
								pavonia and conchiflora; with many other flowering Bulbs	
								and Herbaceous Plants, which may be planted out till the	
								middle of May.	
								Carnations, Picotees, and Pinks, per pair, from 1s. to 3s. 6d.	
								All the better named Heartsease from 6s. to 30s. per dozen.	
								Fine named Dahlias, per dozen, 12s.	
								" Chrysanthemums, new kinds, 12s.	
								Standard Dwarf and Climbing Roses, 1s. to 2s. 6d. each.	
								Rivers' Miniature Fruit Garden, with directions for culture and	
								root-pruning, 2s. Rivers' Orchard House, 2s.	
								Rivers' new edition of the "Rose Amateur's Guide," 6s.	
								Rivers' new Fruit Catalogue, 6d.	
								Paxton's "Cottage Calendar," 3d., which ladies and gentlemen	
								should distribute to cottagers.	
								Collection of 24 Annuals, mixed, recommended by Dr. Lindley as	
								suitable for Shrubberies, 5s.	
								Seeds for distribution by Gentlemen to their Tenants and Cot-	
								tagers on the most liberal terms.	
								24 papers of Hardy Annuals, 5s.	
								Seeds selected and carefully packed for Australia, North and	
								South America, India, and New Zealand, in the most secure	
								way to arrive safe at any of the above places. A most benefi-	
								cial thing to be taken by emigrants is "Onion seed."	

Ladies and Gentlemen relying upon the judgment and experience of JOHN KERNAN, instead of being supplied (as is often the case) with what is neither useful nor ornamental, may depend upon having a selection of the most useful and indispensable Vegetables to any amount named, by the parties forwarding him their orders. The same economy will be observed in the choice of Flower Seeds. J. K. feels it almost needless to observe that the liberality of discount will be with the amount.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL CAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 9.—1853.]

SATURDAY, FEBRUARY 26.

[PRICE 6d.

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**HORTICULTURAL SOCIETY OF LONDON.**—At the Meeting, in Regent Street, at 3 o'clock, P.M., March 1, the subjects for SPECIAL EXHIBITION may be CHINESE PRIMULAS (shown in pairs in 9-inch pots); HIMALAYAN PRIMULAS, in pots; STRAWBERRIES (one dish only shown by each Exhibitor); NEW GRAPE.

**NATIONAL FLORICULTURAL SOCIETY.** 21, REGENT STREET.—THE SECOND ANNIVERSARY GENERAL MEETING OF THE NATIONAL FLORICULTURAL SOCIETY will be held at the Society's Rooms, 21, Regent Street, on THURSDAY, the 3d of March next, at 1 o'clock precisely, for the ELECTION OF OFFICERS for the ensuing year, and on other business.

By Order, JOHN EDWARDS, Hon. Sec. NOTICE.—The Members of the Committee are requested to attend at half-past 11 o'clock precisely, to arrange the necessary preliminaries for such Anniversary General Meeting.

The Exhibition days during 1853 and 1854 are Thursday, March 24; April 7, 21, May 5 and 23; June 16 and 30; July 14 and 28; August 4 and 25; Sept. 8 and 22; Oct. 6; Nov. 17; Dec. 8, 1854; Jan. 14, Feb. 11; and Anniversary, March 4. THE NATIONAL GARDEN ALMANACK AND TRADE DIRECTORY for 1853, by JOHN EDWARDS, may be had through CHAPMAN AND HALL, 193, Piccadilly. Price One Shilling, or free by post for 1s. 6d.

**SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.**

TREASURER.—ROBERT SELDON, Esq. COMMITTEE FOR 1853.—Messrs. Bushell, Coppock, Chapman, Davison, Dutton, Ginger, Gray, Wm. Hodgson, W. E. Hodgson, How, Jewitt, Machin, Murdoch, Newhall, Secretan, Trahar, and Venables, with power to add to their number.

Subscription for Members, 20s. per annum; Honorary Members will be admitted at 10s. per annum. Both Members and Honorary Members will have the privilege of admission for themselves and two friends to all Shows of the Society.

Florists desirous of becoming members are requested to make application to W. TABERN, Esq., Kensington Gore, and JOHN BUNNELL, Esq., Lower Kensington Lane, the Honorary Secretaries, pro tem., who will lay the same before the Committee, and a Ballot take place at the monthly meeting subsequent to such application.

The following Circular has been addressed to Metropolitan Florists:—

“Horns Tavern, Kennington, Feb. 1853.

“Sir,—A considerable number of the subscribers to the Royal South London Floricultural Society having succeeded in forcing upon the Committee of that Society, in opposition to the majority of Amateurs elected for 1853, a person who had exhibited flowers as his own growth which were believed not to have been grown by him; the undersigned, considering that the fact of such a person being on the Committee would seriously compromise and degrade the Royal South London Floricultural Society, have been reluctantly compelled to secede from it. Being anxious, however, to promote the success of floriculture and to encourage fair and open competition amongst florists, the undersigned, with the assistance of their friends, have formed an Amateur Society, to be called ‘The South London Society of Amateur Florists,’ the Rules and Regulations of which are based upon those of the Royal South London Floricultural Society, but will be wholly under the management of Amateurs, who having no personal interests to serve, can more fully carry out the principle of strict impartiality and justice. Prizes will be offered for all descriptions of Florists' Flowers and for such others as the Committee from time to time may direct; Certificates granted for Seedlings of merit; and in other respects the Society will be conducted with a view to the best interests and advancement of Floriculture. The undersigned solicit the patronage and assistance of Amateurs and Florists in general, and trust that you will feel inclined to give your support to this Society, which is formed with no other object than the promotion of Floriculture in all its branches upon the principle of full, fair, and open competition.

“Robert Seldon, late Treasurer.  
“W. S. Ginger, John Chapman, Wm. Dutton, Wm. Trahar, J. W. Jewitt, John Bushell, J. W. Newhall, J. W. How, W. E. Hodgson, late of the Committee.

“Jas. Davison, Josh. Venables, Wm. Hodgson, late Auditors.”

**WARWICKSHIRE AND MIDLAND COUNTIES**

**HORTICULTURAL & FLORICULTURAL SOCIETY.** THE FIRST EXHIBITION of the above SOCIETY will be held, by the kind permission of the Committee, in the JEPHSON GARDENS, LAMINGTON SPA, on the 24th of MAY, under distinguished patronage. Rules and Regulations, and Copies of the Schedule of Prizes for the above Exhibition, may be had on application to the Secretary.

THE SECOND AND THIRD EXHIBITIONS will be held about the middle of JULY and end of SEPTEMBER.

64, Russell Terrace, Leamington. JOHN EVANS, Sec.

**COUNTY OF GLOUCESTER AND CHELTENHAM HORTICULTURAL SOCIETY.**—THE THREE EXHIBITIONS of this Season will take place in CHELTENHAM on TUESDAY, May 17th; TUESDAY, June 14th; and on the 12th of JULY, being the Tuesday in the week of the Royal Agricultural Meeting at Gloucester, for which occasion the Society are now making arrangements for uniting with it a Grand Horticultural Exhibition of All Nations.

Schedules may be obtained on application to the Honorary Secretary. Schedules in the French Language for Foreign Exhibitors will shortly be published.

J. H. WILLIAMS, Hon. Sec. Committee Room, 382, High Street, Cheltenham.

**AMERICAN NURSERY.**

**GEORGE BAKER, Windlesham, near Bagshot, Surrey,** Exhibitor of American Plants at the Royal Botanic Gardens, Regent's Park, begs to inform the nobility and public that he has published a Descriptive CATALOGUE of AMERICAN PLANTS, Conifers, Roses, Ornamental Shrubs, &c. &c., and may be obtained by enclosing two postage stamps. Near Staines Station, Windsor Branch, South-Western Railway.

**DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.**—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

**HORTICULTURAL AND AGRICULTURAL SEEDS.**—The above Seeds can be supplied to any amount, of pure English growth. CUTHILL'S Pamphlet, containing the Belgian Prize Essay on the Potato, with elaborate articles upon new ways of producing for the miller, Asparagus, Sea-kale, Rhubarb, Melons, Cucumbers, &c.; also Market Gardening round London, giving a full description how everything is so finely grown. Price of Potato Pamphlet, 2s., by post; the Market Gardening one, 1s. 8d.—JAMES CUTHILL, Camberwell, London.

**A. VERSCHAFFELT, NURSERYMAN, Ghent (Belgium),** respectfully informs the amateurs and the trade, that his NEW CATALOGUE for the Spring, 1853, may be had free of his Agent, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London.

**VAN HOUTTE'S (Establishment, Ghent, Belgium)** GENERAL PRICE CURRENT OF PLANTS AND SEEDS (No. 48), and a SUPPLEMENT (No. 49), are to be had of Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London.

**SALPIGLOSSIS COCCINEA.—NEW SCARLET SATYPIGLOSSIS.**—Price per ounce can be had on application. 1s. per packet. J. G. WAITE, Seed Establishment, 181, High Holborn.

**A DESCRIPTIVE PRICED CATALOGUE OF SELECT VEGETABLE AND FLOWER SEEDS,** post free on application.

W. DRUMMOND AND SONS, SEEDSMEN, Stirling. N.B. Seeds forwarded carriage free to the principal Shipping Ports and Railway Stations throughout the kingdom.

**FLOWER SEEDS FREE BY POST.**—50 Packets of Annuals, 8s. 6d.; 25 do., 4s. 6d.; 12 do., 2s. 6d. 25 Packets of Superior Annuals, 5s. 6d.; 12 do., 3s. 25 Packets of Perennials and Biennials, 5s. 6d.; 12 do., 3s.

Also every variety of KITCHEN GARDEN SEEDS of the best quality.—Apply to ROBERT WESTMACOTT, Florist and Seedsman, Stuart's Grove Nursery, Fulham Road, Chelsea.

**NEW AND CHOICE FLOWER SEEDS FREE**

BY POST.—Collections of the most superior FLOWER SEEDS can be obtained (in Ayre and Moore's descriptive labels), of the Subscribers, as follows:—100 superior sorts, 14s.; 50 ditto, 8s.; 25 ditto, 5s.; and 10 ditto, 2s. 6d. Also every variety of Vegetable Seeds equally cheap. A large Collection of Hardy Herbaceous Plant Seed from their unrivalled Stock always on hand.

Apply to HENRY MAY the Hope Nurseries, Bedale, Yorkshire.

**RANDALL'S PROLIFIC RHUBARB.**—

This article is the best of its kind; the stock limited. Year old plants 24s. per dozen, to be had of E. RANDALL, Longborough Gardens, Brixton, Surrey; J. CUTHILL, Denmark Hill, Camberwell; and the principal Seedsmen in London.

Allowance to the Trade. Post Office Orders made payable at Camberwell Green.

**NEW & SELECT PLANTS FOR THE SPRING.**

**THOMAS BARNES** has now ready his Annual Catalogue, containing descriptive lists of Dahlias, Fancy Dahlias, Fuchsias, Verbenas, Petunias, Chrysanthemums, Phloxes, Bedding and Miscellaneous Plants, &c. &c., which may be had on application. Dane Croft Nurseries, Stowmarket.—Feb. 26.

**WANTED.**—A quantity of PRIVET, HOLLY, or QUICK HEDGING, from 2 to 6 feet high.—Apply, stating full particulars, to J. SPENCE, 10, Spital Square, London.

**ASH-LEAF KIDNEY POTATOES for immediate** Sale.—One Hundred Sacks, of first-rate quality and excellent size for Seed.—Apply to Mr. BENJAMIN CANT, Nursery Seedman, Colchester, Essex.

**ASH-LEAF KIDNEY POTATO SETS for SALE,** warranted true and sound, and good size; price, 12s. per cwt. To the trade, and parties taking half-a-ton and upwards, 10s. per ton; delivered at the Station of this Great Northern Railway, and Lancashire and Yorkshire Railway. Remittance or Telegrams from unknown Correspondents required. Address—EDWARD HAWKE, Knottingley, Yorkshire.—Feb. 26.

**EXCELLENCE AND ECONOMY COMBINED. SUTTON'S COLLECTIONS OF GARDEN SEEDS THE BEST YET OFFERED.**

**KITCHEN GARDEN SEEDS.** No. 1. A complete Collection for one year's supply of a large Garden ... £ 2 10 0 No. 2. A complete Collection, in smaller quantities ... 1 10 0 No. 3. Ditto ditto ditto ... 1 1 0 No. 4. Ditto ditto ditto ... 0 12 0

A List of the sorts and quantities contained in each Collection will be sent Post Free in return for one postage stamp; and if some of the sorts are already possessed, increased quantities of others will be given in lieu of those to be omitted.

**HARDY AND SHOWY FLOWER SEEDS, (POST FREE),**

\* Which may be sown where they are intended to bloom. No. 5. A Collection of the best 50 sorts known ... £0 10 0 No. 6. A Collection of the best 36 sorts known ... 0 7 6 No. 7. A Collection of the best 24 sorts known ... 0 5 0

BOKHARA CLOVER, BORAGE, AND OTHER SEEDS FOR BEES. Carriage Free by Rail to almost all parts of the Kingdom. Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**SCOTCH FIRS—LARGE SURPLUS STOCK.**—

The SUBSCRIBERS have more than FIVE HUNDRED THOUSAND Scotch to clear from their grounds immediately, and can supply three years old Transplanted Scotch at 8s. per 1000, and three years old Seedlings at 4s. per 1000.

Samples will be forwarded on application to WILLIAM E. RENDLE & CO., Nurserymen, Plymouth.

**CHOICE FLOWER ROOTS FOR SPRING PLANTING.**

RANUNCULI, superb, named and mixed. ANEMONES. GLADIOLI ramosi and grandævense varieties. LILIIUM LANCIFOLIUM, album and rubrum. TIGRIDIA (or Tiger Iris), 4 superb varieties. For assortments and prices of the above, see Advertisement in *Gardeners' Chronicle* of Jan. 29, and Feb. 5 and 12; and also for List of Bulbs for Spring Planting, see our Seed and Plant List for 1853, page 96.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

**NEW SHRUBBING CALCOLARIAS, CONSISTING OF ABOVE 100 VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.**

**J. WEEKS AND CO., CHELSEA,** have now to offer a most splendid and superb Collection of SEEDLING SHRUBBING CALCOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all Shrubby they are perpetually in flower; and from the great variety and brilliancy of their colours, they are invaluable for the conservatory or bedding-out.

J. WEEKS & CO., King's Road, Chelsea, London.

**AMERICAN PLANTS.**

**JOHN WATERER** begs to announce that his CATALOGUE of the above plants, Roses, Conifers, &c., is now published, and may be obtained by enclosing two postage stamps. The colours of all the Rhododendrons worthy of cultivation are described, in order to facilitate purchasers in selecting. \* \* \* The Rhododendrons, Azaleas, &c., annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

The American Nursery, Bagshot, Surrey, three miles from Blackwater Station, South-Eastern Railway, and four miles from Farnborough, South-Western Railway.

**JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.**

**ARTHUR HENDERSON AND CO.** have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine, at 7s. 6d. and 10s. 6d. each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25, 1851.

Fine Apple Plant, London.—Feb. 26.

**SUPERB NEW MELON.**

**AUSTEN'S "INCOMPARABLE" GREEN FLESH,** 2s. 6d. per packet; larger do., of 15 seeds, 5s.; Golden Ball Green Flesh, do., 1s. 6d.; Bromham Hall, do., 1s.; &c. "CAPTIVATION" & "PHENOMENA" CUCUMBER, The Two Finest Black Spines in Cultivation, in packets at 2s. 6d. each; Lord Kenyon's Favourite Cucumber (true), 2s. 6d. per packet; Victory of Bath, do., 1s.; and other good varieties. A packet of Austen's "Incomparable" Melon, a packet of Golden Ball, and one of either of the above Cucumbers will be forwarded to any part on receipt of 5s. in penny postage stamps. For further particulars of the above, see *Gardeners' Chronicle* of Feb. 5.

HOLLYHOCK SEED, selected from one of the best collections now in cultivation. 1s. 6d. per packet.

**FIRST PRIZE GERMAN ASTER SEED.**—This is unequalled in quality of bloom for exhibition, the seed having been saved from varieties that have taken from 40 to 50 first prizes within the last 10 years; 1s. 6d. per packet.

**SWEET WILLIAM SEED,** saved from upwards of 50 distinct dwarf and superb varieties; 1s. per packet.

**ANTIRRHINUM SEED,** from all the best shaped, striped, spotted, and brilliant varieties; and if sown now, will produce plants for blooming through the whole of the season; 1s. per packet.

Also Seed of that very scarce and delicious vegetable CROWN

GOURD or CUSTARD MARROW, 1s. per packet. N.B. A remittance must accompany the order from all unknown Correspondents, in penny postage stamps, when the whole or any quantity of the above will be forwarded free to any part.

EDWARD TILEY, NURSERYMAN and SEEDSMAN, 11, Abbey Churchyard, Bath.



## PERMANENT PASTURE.

**H. R. SMITH**, of Eastling, Faversham, Kent, is now prepared to send out his mixtures of the Natural Grasses and Perennial Clovers, to lay down land to permanent pasture. The greatest attention is given in apportioning the various sorts, that the mixture sent may be suitable to the particular soil, &c., of the buyer.

Three bushels of Seed are supplied to the acre, the price of which, including every expense to his nearest railway station, in England, is 2s. per acre, and for a three years' lay, 21s. per acre. The Seeds are gathered principally under the superintendence of the Advertiser. The various species of Grasses can be had either separately or in mixtures for lawns and top dressings.

## THE BLACK BARBAROSSA.

"A GRAPE THAT DON'T KNOW HOW TO SHANK."

**JOHN BUTCHER** begs to inform Grape-growers (requiring late Grapes), through January, February, and March, that the above will be in fine condition for table during the above months. Fruiting Plants, 10s. 6d.; Good Plants, 5s. 6d. each. May be obtained of Messrs. DAVE, COTTELL, & BENHAM, 36, Moorgate Street, London; and **JOHN BUTCHER**, Nurseryman, Stratford-on-Avon.

Samples of Berries sent upon receipt of 12 postage stamps.

## UCKFIELD NURSERY, SUSSEX.

ESTABLISHED FOR UPWARDS OF EIGHTY YEARS.

**JAMES CAMERON**, in returning thanks to his numerous friends and customers, begs to state that he has a fine strong healthy stock of Mannington's Pearmain, from the original, as well as all the other leading kinds of Apples, at 12s. per dozen. Also trained Peaches, Nectarines, Apricots, Pears, Plums, and Cherries, with a very extensive stock of Standard and Dwarf Roses, Evergreen and American Shrubs, from 2 to 6 feet; Forest Trees, from 2 to 6 feet, with large specimens from 8 to 16 feet high, several times transplanted, for giving immediate effect.

**SUPERB HOLLYHOCK SEED.**—Well ripened Seed warranted to be saved exclusively from Comet, Elegance, Obscura, Mr. C. Baron, Penelope, Rosea grandiflora, Meteor, Walden Gem, Magnam Bonum, Spectabilis, Safranot, Delicat, Enechantress, Picta, Queen, Bicolor, Dido, Charles Turner, Formosa, Hebe, Model of Perfection, Rosa Alba, Sulphurea Perfecta, White Perfection, Blue Beard, Mulberry Superb, Snowball, and Queen of England.

A good mixture of the above, in packets containing upwards of 200 seeds, will be forwarded post free, upon the receipt of 2s. 6d. worth of postage stamps.

Also R. B. B. begs to offer plants of his superior Seedlings of 1851 and 1852, which received certificates at the National Floricultural Society, Regent Street, London, and met with universal approbation wherever exhibited. Catalogues sent upon pre-paid application.

R. B. BIRCHAM, Hedenham Rosary, Bungay, Suffolk.

## NEW ROSES.

**PRINCE ALBERT (PAUL'S)**; the finest Bourbon Rose yet raised. Colour of the richest scarlet crimson, outline a perfect circle; a robust but compact grower, and most abundant bloomer. Strong Standards, 10s. 6d. each. (Figured in "Turner's Florist" for Nov. 1852.)

**QUEEN VICTORIA (PAUL'S)**; an entirely new style of Hybrid Perpetual Rose, of the colour of the Celestial, white, shaded with the softest peach, large and full as "La Reine." Strong plants, Standards, 7s. 6d. each; Dwarfs, 5s. (Figured in the "Florist," Oct. 1851.)

**ROBERT BURNS (PAUL'S)**; Hybrid Perpetual, light vivid carmine, colour of Chénédol, a good autumnal climbing Rose, and one of the latest bloomers. Dwarf Standards, 3s. 6d. each.

\* \* The above have received first-class certificates from the National Floricultural Society, and have been admitted and purchased by many of the leading Nurserymen and Amateurs.

The Subscribers also beg to offer—  
12 Standard Roses, superior varieties and fine plants, for 18s.  
12 Dwarf Standard, or Dwarf do. do. do. 12s.  
12 Hybrid Perpetual and Tea Roses, extra size for forcing, 18s.

Weeping Roses for Lawns, handsome specimens, 3s. 6d. each.  
A fine stock of all the leading sorts, Standards and Dwarfs, still on hand. Carriage free to London. Priced Descriptive Catalogues free by post on application.

A. PAUL & SON, Nurserymen, &c., Cheshunt, Herts, near London.

## NEW HOLLYHOCKS.

**CRIMSON PERFECTION (PAUL'S)**.—Rich bright crimson, good shape, splendid spike, and rather dwarf habit, a fine show flower; 7s. 6d. each. **CROCEA (PAUL'S)**.—Buff and yellow, a bold flower of a distinct and desirable colour, large and full; 5s. each. **ENCHANTRESS MAJOR (PAUL'S)**.—Deep rose, superb form, larger, darker, and finer spike than the old variety, and decidedly a first-rate show flower; 2s. 6d. each. **FIREBALL SUPERB (PAUL'S)**.—Brilliant rose crimson, larger, brighter, more double than the original, and with a finer spike; 2s. 6d. each. **MRS. TAIT IMPROVED (PAUL'S)**.—Large peach, soft and pleasing colour, and most desirable for its novelty and beauty; 2s. 6d. each. **SHYLOCK (PAUL'S)**.—One of the deepest and richest scarlet crimson, and a good show flower; 5s. each.

The Subscribers, who obtained during the past year the Silver Cup for Hollyhocks at the Edinburgh Grand Open Show, Four first Prizes from the Royal South London Floricultural Society, Two first-class Certificates from the National Floricultural Society, and numerous other prizes, beg to offer 12 first-rate and distinct Hollyhocks, show varieties, for 30s.; 12 Superior do. do. do. 18s.; 12 Good do. do. 12s.; 100 Good mixtures for Borders, do. do. 30s.

CARRIAGE FREE TO LONDON. Priced descriptive Catalogue free by post.

A. PAUL & SON, Nurserymen, &c., Cheshunt, Herts, near London.

## COLE'S SUPERB CRYSTAL WHITE CELERY.

**W. M. COLE**, Dartford, Kent, begs to inform his friends and the public, that he is ready to send out a new White Celery, which he has every confidence in recommending as being decidedly superior to his Superb Dwarf Red, sent out, with universal satisfaction, three years back. The Crystal White is a dwarf kind, rarely exceeding (under the best management) 18 inches in height; it is very solid, crisp, and fine flavoured, and if sown at the same time as the red variety, will come into use a month earlier, and continue good a month later. It has been seen by some of the first gardeners in the country, and pronounced to be a superior article. It may be obtained of W. C., as above, or from the following agents, at 2s. 6d. per packet, free by post:

London: Messrs. Hurst and M'Nulton, Leadenhall Street; Messrs. Dawe, Cottrell, and Benham, Moorgate Street; Messrs. Minier & Co., 60, Strand; Mr. Duncan Hairs, St. Martin's Lane, Charing Cross; Mr. Denyer, Gracechurch Street; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. J. and J. Fairbairn, Clapham; Messrs. Garaway, Mayes, and Co., Bristol; Mr. Bunyard, Maidstone; Mr. Turner, Slough; Messrs. Downie and Laird, Edinburgh; Messrs. F. and J. Dickson, Chester; Messrs. T. and J. Dickson, Manchester; Messrs. J. and J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Veitch and Son, Exeter; Messrs. Finney & Co., Gateshead; Mr. A. Pouley, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westham, Kent; Messrs. Lumbe, Pines, & Co., Exeter; Messrs. Edmondson & Co., Dublin; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Mr. Brown, Norwich; W. B. Jeffries & Co., Ipswich; R. F. Darby, Cirencester.

## BASS AND BROWN'S SEED AND PLANT LIST

FOR 1853, free, for three penny stamps. Also, the AUTUMN CATALOGUE for three penny stamps, which contains the Roses, Herbaceous Plants, Hollyhocks, and other select Hardy Plants and Shrubs, Fruits, &c.; also the Cinerarias, Azalea Indica, &c.

## VEGETABLE SEEDS.

ASSORTED COLLECTIONS OF THE FINEST QUALITY. Time of sowing and other information is furnished in the Catalogues, also the sorts and quantities of the No. 1, 2, and 3 Collections. If any sorts are not wished for, enlarged quantities of others furnished to make up the amount.

No. 1. Collection of largest quantities of choice and new sorts	£ s. d.
No. 2. Collection of smaller quantities	2 10 0
No. 3. Collection of do.	1 10 0
No. 4. Collection of fine and esteemed sorts	1 0 0
No. 4. Collection of fine and esteemed sorts	0 10 6

## FLOWER SEEDS—BEST ASSORTMENTS.

Free by post, with cultural instructions. The Catalogue gives height, colour, months of flowering, hardiness, duration, &c.

For an Abridged List of New Varieties, with a few not included in the Catalogue, see *Gardeners' Chronicle* of January 29th and February 12th.

100 varieties, select showy Annuals, including the newest 150 new sorts	s. d.
50 varieties, 8s. 6d.; 30 varieties, 5s. 6d.; 20 varieties	4 0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, &c., 7s. 6d.; 12 varieties	5 0
20 varieties choice Greenhouse Annuals	7 6
12 varieties do. do.	5 0
20 varieties choice Greenhouse Perennials	10 6
12 varieties do. do.	7 6
20 varieties choice hardy Biennials and Perennials	7 6
12 varieties do. do.	5 0

## IMPORTED GERMAN SEEDS, in separate colours, very double.

24 superb varieties Dwarf Stocks, 4s.; 12 varieties	2 6
10 superb varieties new large flowering Stocks	2 6
18 superb varieties Wallflower-leaved do.	3 6
New white Wallflower leaved, very fine, 6d.; large pkt.	1 0
6 superb varieties Autumn Brompton Stock	1 6
8 superb varieties Emperor Stock	2 0
New White Emperor do, very choice, per packet	1 0
12 superb varieties German Aster	2 0
12 superb varieties Globe flowering	2 0
12 superb varieties Pyramidalis	2 0

Also superb double imported Wallflower, Larkspur, Balsam, Senecio elegans, Cock's-comb, Sweet William, &c. See Catalogue. Remittances requested from unknown Correspondents. Post Office Orders payable to STEPHEN BROWN, or the Firm.

In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods to the amount of 20s. and upwards, free to all the Stations in London; also free, as before, to all Stations on the London and Norwich Line, via Colchester.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## JAMES MANLEY (LATE HEMBURY), ORANGE MERCHANT.

CHART, 41, Watling Street, Cheapside, London, begs to intimate to the Nobility and Gentry that he has a Large Stock of the first quality ORANGES, in quarter and half-quarter chests, at wholesale prices.

Orange and Lemon Juice warranted. Genuine Foreign and English Fruits of all descriptions. No charge for packages.

## FOREST TREES.

**PETER LAWSON AND SON**, of Edinburgh, having a large stock of the finest quality of the following, are enabled to offer them at very reasonable prices:—

SPANISH CHESTNUT—	WALNUT, 2 ft.
Do. 1 year seedling	Do. 3 to 4 ft.
Do. 2 years do.	THORN ACACIA, 4 to 5 ft.
Do. do. transplanted, 2 ft.	ALDER, 4 to 5 ft.
Do. do. do. 3 to 4 ft.	LARCH, 3 to 3½ ft.
Do. do. do. 5 to 6 ft.	SCOTCH FIR (Braemar), 1½ to 2 ft.
EXETER ELM, 2 ft.	
Do. do. 3 to 4½ ft.	

Samples and Prices furnished on application either direct to Edinburgh, or through their Agent, J. C. SOMMERS, 159, Fenchurch Street, London.

## SELECT FLOWER SEEDS.—

Marigolds, finest double dark French.	Post FREE.
Do. do. striped Unique French.	Aster, Reine Marguerite (the best variety in cultivation).
Do. do. true dwarf French.	Saponaria calabrica, var multiflora.
Do. do. new dark Pigma.	Eschscholtzia californica alba.
Do. do. new yellow Pigma.	Nemesia versicolor.
Do. do. double orange African.	Centa turbinata.
Do. do. double lemon African.	Mignonette, new large variety.

The above MARGOLDS are well known in the locality, having obtained First Class Awards at several Provincial Exhibitions; all own saved from carefully selected double flowers, and can be recommended with confidence. In packets of about 1000 seeds each. The Marigolds separately, 3s.; the whole collection of 13 packets, 5s.

Collections of all the most approved Annuals (own growth) 60 packets, 10s.; 30 do. 5s.; 15 do. 2s. 6d., in descriptive and cultural labels. Catalogues may be had on application.

JOHN SLATER, The Nurseries, Malton, Yorkshire.

## THOMAS CRIPPS, NURSERYMAN, &amp;c., Tunbridge Wells.

Wells, having still on hand a large and healthy stock of Roses, amongst which are the following varieties, respectfully offers them at the prices annexed, viz:—

PERPETUALS.	Stds. Dwfs.	PERPETUALS.	Stds. Dwfs.
Auguste Mie	5 0 3 6	Victorine Helfenstein	5 0
Baronne Hallez	3 6 2 0	Souvenir l'Empire	5 0
Caroline de Sausal	3 6 2 6	Gen. Drouet, moss	3 6 2 6
Gen. Cavaignac	2 6 2 0	Herman Kegel, do.	3 6 2 6
Comte Bobrinsky	2 6 2 0		
Miss Meymott	7 6 7 6		
Madame Flory	7 6 7 6		
Robert Burns	3 6		
Souvenir de la Reine	2 0 1 6		
des Belges	7 6		
Deranger	5 0		
L'Enfant du Mont	2 0		
Carnel	5 0		
L'Etendard du Grand	7 6		
Homme	7 6		
Mere de St. Louis	7 6		
Queen Victoria	5 0		

Standard Weeping Roses, with fine strong heads on stocks, 4 to 7 feet in height, 30s. per dozen, or 2s. 6d. to 3s. 6d. each.

Union Standard Roses, having two choice varieties of opposite colours on one stem, 2s. 6d. to 3s. 6d. each.

Standard Roses, in finest variety, 15s., 18s. to 24s. per dozen.

Dwarf do. do. do. 6s., 9s. to 18s. per dozen.

Dwarf Géant des Batailles, either on the Manetti or Briar Stock, 15s. per dozen.

A remittance or reference is respectfully requested.

## TO AGRICULTURISTS AND HORTICULTURISTS.

**THE SUBSCRIBERS** have a few Tons of POTATOES, the produce of their prepared cuttings, to spare.—York Regents, 6s.; American Native, 6s.; Cambridge Radical, 6s.; Soden's Early Oxford, 8s.; True Ash-leaved Kidney, 8s.; and Early Ebbington Kidney, at 10s. per bushel, all in first-rate condition.

They have also still a few of their celebrated Early No. 1 Pea, 2s. 6d. per quart, and Prince of Wales Early Scarlet Rhubarb, 5s. each.—Post Office orders to be made payable at the Borough Post Office to the firm of HAY, SANGSTER, & Co, Newington Butts, London.

## CARNATIONS, PICOTEES, PINKS, PANSIES, ALPINES, AURICULAS, POLYANTHUSES, PRIMROSES, ETC.

**JOHN HOLLAND**, Bradshaw Gardens, Middleton, near Manchester, respectfully informs purchasers of Florist Flowers that his Catalogue is now ready, containing Descriptive and Priced Lists of every variety of the above worth adding to a collection, at extremely low prices, and may be had on application.

A few packets of very choice Pansy Seed of 1852, selected from best varieties grown, at 1s. and 2s. per packet.

**TRUE READING ONION SEED.**—This favourite mild White Onion can only be obtained in perfection from seed grown in or near Reading, in which case the crop is fully equal to imported Spanish Onions. Price of Seed, 6d. per ounce, or 5s. per pound.

Also SUTTON'S superior Solid CELERY, 1s. per packet; and SUTTON'S Superb LETTUCES, 1s. per packet, post free.

We have annual demands for large quantities of Seed from all parts of the kingdom. Mr. James M'Intosh, Gardener to the Duke of Buccleuch, at Drumlanrig, whom we have the honour to supply annually, says:—"Your Onion is particularly fine."

From Mr. Perry, Gardener to E. Wells, Esq.

"Wallingford, November 25, 1852.

"I cannot speak too highly of your Solid White Celery; it surpasses others, under the same treatment, in quickness of growth and solidity. I had sticks weighing between 6 and 7 lbs., free from mould and roots, the first week in September."

From Mr. Butler, Gardener to R. Mangles, Esq.

"Sunninghill, November 8, 1852.

"The Celery in particular was very fine. The like was never seen here before."

From James Kingsford, Esq.

"Sydenham, November 5, 1852.

"My Gardener gained the prize at Sydenham Show for your Solid White Celery."

We had the honour of supplying the Horticultural Society's Garden, at Chiswick, with the above-mentioned Lettuce Seed, in Feb. 1849; and in March, 1850, the Editor of the GARDENERS' CHRONICLE, in a critique on Lettucses, says of the first of these:—

SUTTON'S "SUPERB WHITE" LETTUCE.—"This is the very best Cos Lettuce, very large, light green, leaves hooded at the top, so that they close in without tying, blanching white, crisp, so excellent that one would suppose no higher degree of perfection could be attained, as regards a summer Lettuce." And of the other two, he further says, "SUTTON'S SUPERB GREEN COS.—This very much resembles the preceding, but is of a darker green, and hardier, therefore is preferable for sowing early in spring, and also for autumn use. In warm, sheltered situations, it will stand the winter, if the latter prove mild. For the generality of winters, however, a harder Cos is required; such is the following: SUTTON'S BERKSHIRE BROWN COS.—This is the best Cos for standing the winter; it is large, and of good quality, blanching very crisp; therefore its brown outside should not be considered objectionable."

Address, JOHN SUTTON & SONS, Seed Growers, Reading.

## INGRAM'S HYBRID WHITE SPINE

CUCUMBER (offered and described in the *Gardeners' Chronicle* of Dec. 18 and 25, 1852, and Jan. 1, 1853) is now being sent out post free, of 2s. 6d. per paper, upon receipt of the amount in postage stamps, or post-office order, by GEORGE WHEELER, NURSERYMAN, Warminster, Wilts. It is considered by good judges to be the best long Cucumber known; in length 2 feet and upwards, firm in flesh, of excellent flavour, and fine green colour without any tint of yellow.

Also ready, carriage free, on receipt of the value in postage stamps or post-office order, sound and strong blooming Bulbs of the following kinds of TIGRIDIAS, at per dozen, viz:—

T. WHEELERII, yellow ground, with richly-spotted centre and scarlet sepals, 4s.

T. CONCHIFLORA, yellow, finely-spotted centre, 4s.

T. PAVONIA, straw, and dark-mottled centre, with red sepals, 2s. 6d.

Calceolaria Seed, from a fine collection of spotted kinds, 2s. 6d. per paper. Seedling Plants of the above fine kinds of Calceolaria, to bloom well this season, at 6s. per dozen. Cineraria Seed, from a fine collection, per paper, 1s. Chinese Larkspur Seed, perennial, but will bloom this year, of various shades of colour, from white to dark blue, per paper, 1s.

## BEARFIELD'S NEW CUCUMBER &amp; MELON SEEDS.

**E. P. DIXON** has purchased the entire Stock of the above named seeds, raised by the late Mr. BEARFIELD, and from their known excellence has great pleasure in offering them to the Public. In a letter received from him some time ago, in answer to his enquiries, he writes:—

"Dear Sir,—In answer to yours, I will describe the Melon and Cucumber, as near as I possibly can. The Melon is green fleshed, handsome shape, thin rind, and very highly flavoured, and a good heavy weight, when well grown, from 4 lbs. to 6 lbs. (I cut a fruit this year 8 lbs., and another 7 lbs.). The Cucumber is a Hybrid, grows strong and healthy, foliage large, great bearer, producing fruit from 24 to 30 inches long, very handsome, spine black, short neck, swelling well out from the stock, and fine flavoured; I have grown every new kind these last 7 years against it, but none that I have ever seen can compare with it. I have always taken first Prizes with this sort, whenever I have exhibited it; my reason for not sending it out earlier has been to prove it well; it is a very shy seeder. Every gentleman and gardener who has seen it growing has pronounced it the finest and handsomest Cucumber they ever saw. I can strongly recommend them as being good and well worth your having, otherwise I would have said nothing about them."

"I remain, dear Sir, yours respectfully,

"WM. BEARFIELD, Gardener to E. H. Renard, Esq.

"Sunderlandwick, near Driffield."

Bearfield's Sunderlandwick Hybrid Cucumber, in Packets containing five Seeds, 2s. 6d.; 12 seeds, 5s. Bearfield's Sunderlandwick Hybrid Melon, in Packets containing 12 Seeds, 2s. 6d.—May be had here, or of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street, London; or of Messrs. HURST & M'NULTON, 6, Leadenhall Street, London.

E. P. D. begs also to offer choice Pansy Seed, saved from the very best flowers, by a most successful grower, at 2s. 6d. and 5s. per packet; Bearfield's Hardy Brown Cos Lettuce, 1s. per packet; splendid French, African, and Pigmy Marigolds, six papers, 2s. 6d.; imported German Asters, 20 varieties, 5s.; German 10 week Stocks, 18 varieties, 4s.; German Wallflowers, 8 varieties, 2s.; Zinnias, 8 varieties, 2s.; Splendid Cauliflower Seed, in packets, 1s.; Reid's Superb Dwarf Curled Parsley, in packets, 6d., all of which I can confidently recommend.

Horticultural and Agricultural Seed Establishment, 57, Queen Street, Hull.



# AGRICULTURAL SEEDS, FLOWER SEEDS, AND SEEDS FOR THE KITCHEN GARDEN, Delivered Carriage free by Railway.

**J. C. WHEELER AND SON, SEEDSMEN TO THE**  
GLOUCESTERSHIRE AGRICULTURAL SOCIETY, beg to state  
that their new Seed List for this season will be forwarded free by  
post on receipt of one postage stamp.

To those desirous of buying the best varieties in cultivation,  
their List will be found extremely useful.

## SELECTED GARDEN SEEDS.

J. C. WHEELER & SON beg to offer the following Collections of  
Garden Seeds:—  
No. 1. A complete Collection suitable for a large garden 2 10 0  
No. 2. A Collection of equally choice varieties, but  
smaller quantities ... 1 10 0  
No. 3. A Collection suitable for a small garden ... 0 15 0  
No. 1 and No. 2 Collections will be sent free to any Railway  
Station in England.

J. C. WHEELER & SON, Seedsmen, Gloucester.

## GRASS SEEDS.

**J. C. WHEELER AND SON, SEEDSMEN TO THE**  
GLOUCESTERSHIRE AGRICULTURAL SOCIETY, beg  
to offer the following GRASS SEEDS, which have been  
well harvested, well cleaned, and which they can warrant  
to be of the very best quality.

We have for some time paid considerable attention to Grass  
Seeds, and especially to mixing them in such proportions as the  
nature of the soil and other local circumstances may require, so  
as to form fine pastures. Having had much experience in this  
branch of our business, and the Grass Lands we have laid down  
having given great satisfaction, it is with much pleasure that we  
can recommend a fine mixture of the best Grasses and Clovers,  
suitable for the formation of a rich permanent pasture, from  
25s. to 30s. per acre.

For improving the quality of Grasses already laid down, we  
can supply a good mixture at 1s. per lb.

For the information of those gentlemen who would prefer  
buying the varieties separately, and mixing them themselves,  
we have given a short description of some of the best sorts.  
About two bushels of the larger or light seed, and 12 lbs. of the  
small or heavy seed, is the quantity usually sown to the acre.

**ITALIAN RYE-GRASS**, imported seed, per bushel ... 7s. 6d.

Too much cannot be said in favour of this excellent Rye-grass.  
Compared with any other of the varieties of common Rye-grass,  
the Italian affords a stronger blade, arrives sooner at maturity,  
has a greater abundance of foliage, and of a lighter and more  
lively green colour; grows considerably taller, is more upright, or  
less inclined to spread on the ground. Another of its distinguish-  
ing characteristics is, that it is much preferred by cattle to any  
of the common sorts, and is greedily eaten by them, whether  
green or dry.

**PERENNIAL RYE GRASS**, per bushel ... 6s.

**MEADOW CATTAIL, or TIMOTHY GRASS** (Phleum  
pratense), per lb. ... 10d.

The Timothy Grass possesses the advantage of affording double  
the quantity of nutriment when its seeds are ripe, that it does if  
cut when in flower. On strong, tenacious, and rather moist soils,  
it is entitled to a precedence almost to any other, and should at  
least form a considerable portion of the mixture employed for  
sowing down such, either for alternate husbandry or permanent  
pasture.

**MEADOW FOXTAIL GRASS** (Alopecurus pratensis),  
per lb. ... 1s. 6d.

This is one of the earliest and best of Pasture Grasses, but not  
so well adapted for hay, as it produces but few stalks; its root  
leaves are very broad, long, soft, slender, and grow rapidly when  
cut, or when sown down by the stock. It requires two or three  
years after sowing to arrive at full maturity.

**ROUGH COCKSFOOT** (Dactylis glomerata), per lb. ... 1s.  
Is a valuable Grass in cultivation, on account of the great  
quantity of produce which it yields, and the rapidity with which  
its leaves grow after being cut. It is well adapted for growing in  
shady moist places under trees, as in orchards, &c.

**MEADOW FESCUE GRASS** (Festuca pratensis), per lb. ... 1s.

This is an excellent Grass, either for alternate husbandry or  
permanent pasture; but more particularly the latter. It is well  
liked by all kinds of domestic herbivorous animals.

**SHEEP'S FESCUE** (Festuca ovina), per lb. ... 10d.

This Grass forms the greater part of the Sheep pastures of the  
Highlands. In quantity of produce it is much inferior to the  
other cultivated Fescues; but, from being well liked by Sheep, it  
should always enter into the composition of mixtures for lands  
on which they are to be pastured. In fact, on the authority of  
Limons, these animals have no relish for hills and heaths which  
are destitute of this Grass.

**HAIR FESCUE GRASS** (Festuca arvensis), per lb. ... 1s.

Will thrive on a great variety of soils, and is found to resist  
the effect of severe drought in summer, and to retain its verdure  
during winter, in a remarkable degree. From the fineness of its  
foliage and greenness in winter, it is well adapted for sowing in  
Parks, especially for Sheep pasture.

**WOOD MEADOW GRASS** (Poa nemoralis), per lb. ... 1s. 3d.

Its habit of growth is delicate, upright, close, and regular.  
There is no Grass better adapted for Pleasure Grounds, parks,  
lawn under trees, as it will not only grow in such places, but  
forms a fine sward where few of the other fine Grasses can exist.  
It produces a considerable deal of foliage early in spring.

**ROUGH-STALKED MEADOW GRASS** (Poa trivialis),  
per lb. ... 1s.

This is a valuable Grass as a mixture for Pasture Lands, par-  
ticularly on damp soils. Its habit of growth fits it for mixing  
along with the upright growing sorts, such as the Italian Rye-  
grass.

**SMOOTH-STALKED MEADOW GRASS** (Poa pratensis),  
per lb. ... 1s.

This Grass yields a large quantity of herbage at a very early  
period of the season.

**SWEET-SCENTED VERNAL GRASS** (Anthoxanthum  
odoratum), per lb. ... 2s. 6d.

This Grass yields but a scanty portion of herbage, yet, on the  
whole, permanent pasture should not be without a mixture of it,  
particularly in Park and Pleasure Grounds, where it is for no other  
reason than its pleasant scent, not only when cut for hay, but  
also when its seeds become nearly ripe.

**CRESTED DOGSTAIL GRASS** (Cynosurus cristatus),  
per lb. ... 1s.

From this Grass forming a close turf, and having rather fine  
foliage, it may be advantageously sown on Lawns and other  
places, to be kept under by the scythe.

**LAWN GRASS SEED**, per lb. ... 1s.

By sowing this Grass a fine sward may be obtained in a short  
time, at one quarter the expense of laying down turf. It is a  
selection of the finest Grasses, and is entirely free from weeds.  
We can strongly recommend it to those about to form Lawns or  
Pleasure Grounds.

\* \* \* For some of the above descriptions we are indebted to  
Messrs. "The Gardener's Manual."

J. C. WHEELER & SON deliver their Seeds CARRIAGE FREE  
to most of the principal Railway Stations in England.

J. C. WHEELER & SON, Nurserymen, Gloucester.

# SUPERB DOUBLE HOLLYHOCKS. SAFFRON WALDEN NURSERY.

**WILLIAM CHATER** has now ready a large stock  
of fine Plants, not to be excelled in the trade, of all the  
leading and best varieties in cultivation. He being the first who  
sent out this superior class of Hollyhocks, has been careful to  
add none but those which have decided merit as to quality and  
dissimilarity, to his original collection, the greater part of which  
still stand unequalled. To those who are desirous of obtaining a  
fine bloom this year of these splendid flowers, W. C. offers strong  
plants of the finest show varieties, dissimilar, at 2s., 1s. 10s., or  
1s. per doz. Good showy varieties at 12s. and 9s. per dozen.  
Good border sorts, 6s. per dozen, or 30s. per 100.

Hints on their cultivation given to purchasers if required.  
Plants warranted true to name. Carriage free to London, and  
plants added to compensate for the remaining distance. Catalogues  
sent by post on receipt of a postage stamp.

W. C. can supply seed of his improved **QUILLED GLOBE**  
**ASTER**, the most compact variety in cultivation. Packets con-  
taining eight separate sorts, 1s. 6d., or mixed, 1s. per packet.  
Hollyhock Seed, saved from best show flowers, 2s. 6d. per  
packet; from border sorts, 1s. per packet.

Fine Fruiting Peach, Nectarine, and Apricot Trees, established  
in pots, for Orchard-house, 5s. each.

Post Office orders payable at Saffron Walden.

**THE LARGEST, BEST BEARING, AND FINEST**  
**FLAVOURED PEA** yet introduced, is **HAIR'S DEFI-**  
**ANCE** (KNIGHT'S) PEA. It grows about 4 feet, remarkably  
strong in habit, is earlier than the taller growing varieties, and  
should be planted 4 to 6 inches apart in the rows.

Plant February to April, 2s. 6d. per quart.

**HAIR'S DWARF MAMMOTH** (KNIGHT'S) PEA has been  
so extensively grown and approved that D. H. does not think  
anything need be said in confirmation of its established character.  
Sow 4 inches apart.

Plant February to May, 1s. 6d. per quart.

**BISHOP'S LONG-POD PEAS**, 1s. ditto.

**BURBIDGE'S ECLIPSE PEAS**, 1s. ditto.

Garden, Agricultural, and Flower Seeds, wholesale and retail,  
embracing every article connected with the trade upon the most  
reasonable terms.

Potatoes, all the best kinds, for seed.

Catalogues furnished upon application.

DUNCAN HAIR, Seedsmen, 109, St. Martin's Lane, Charing Cross.

## FIRST CLASS SEEDLING FUCHSIAS.

TO BE SENT OUT THE 30 WEEK IN APRIL, IN STRONG PLANTS.

**GEORGE SMITH**, in offering the following Six  
Seedling FUCHSIAS, begs to assure the admirers of this  
beautiful flower that Glory, Lady Franklin, and Mrs. Patterson,  
are unequalled as plants for exhibition, they being first-rate. In  
habit the two former approach nearest to perfection of any that  
has been shown in or near London. Mrs. Patterson is extra-  
ordinarily large, and demands attention. Beauty, Brilliant, and  
Vesta, although not so much claim as the above, are superior to  
any in the same class, and may be added to the choicest collec-  
tions. For description of Glory and Lady Franklin, see the  
opinions of the press.

"Gardener's Journal," June 12.—"Mr. Smith's Fuchsia Glory  
(Banks), we have previously described, and which we may now  
safely pronounce as a first-rate variety; it is of good habit, the  
sepals elegantly reflexed, and the corolla is like a roll of rich deep  
purple velvet."

The *Gardener's Chronicle*, June 19, in a report of the National  
Floricultural Society, says:—"For Fuchsia Glory a first-class  
certificate; a fine bold flower, with violet purple corolla and  
brilliant crimson sepals, much reflexed."

The *Gardener's Journal*, Sept. 18, in reporting the Royal  
South London Floricultural Society, says:—"First-class cer-  
tificates were awarded to Mr. Smith for two Seedling Fuchsias  
Glory (Banks); a fine variety, with scarlet tube and sepals well  
reflexed, of good substance, corolla violet purple, smooth and even  
on the edge, and stout. Also for a light variety named Lady  
Franklin, with white tube and sepals well reflexed and stout,  
corolla a purplish crimson, of good substance and very smooth."

The Editor of the *Gardener's Chronicle*, Sept. 25, in a report of  
the North London Floricultural Society, says, in reference to  
Fuchsias:—"First-class certificates were awarded to Glory and  
Lady Franklin, both from Mr. George Smith. The former is a  
glorious scarlet, the latter a fine approach to purple and white, so  
much needed for contrast, our lights at present running mostly  
with scarlet corollas."

It is needless to say more than that every floricultural work  
has spoken in praise of them. For illustrations of Glory, see  
Turner's "Florist" for December last.

**GLORY (BANKS)**—Six first-class certificates and first prize as  
the best dark Fuchsia; 10s. 6d. each. When three are ordered  
four will be sent.

**LADY FRANKLIN (SMITH)**—Six first-class certificates and  
first prize as the best white; 10s. 6d. One over with three.

**MRS. PATTERSON (PATTERSON)**—Tube and sepals white  
and stout, expanded, the largest light, violet purple corolla, free  
growing and fine habit; 10s. 6d.

**BEAUTY (SMITH)**—A beautiful variety, in the way of Sedonia,  
but much better form and habit. Mr. Glenn, speaking of  
Fuchsias, says:—"Smith has one which is an improvement on  
our great favourite Sedonia; it is called Beauty, and is nearly  
the same colour, but the petals are broader." Colour, tube and  
sepals bluish, corolla light purple, form good; 5s.

**WILHELMINE (PATTERSON)**—Waxy scarlet tube and sepals,  
very stout, reflexed back to the tube, corolla rose purple, fine in  
all respects; 5s.

**VESTA (PATTERSON)**—White tube and sepals, very stout,  
reflexed, corolla a beautiful rosy pink, excellent habit; 5s.

## NEW VERBENAS.

The following Eight Varieties are warranted to give satisfac-  
tion, being fine in form and decided in colour, with large compact  
trusses. To be sent out on April 20, at 30s. the Set, or 5s. per  
Plant, viz.

**ELIZABETH (YOUNG)**—Light ground, lemon eye, tinged  
with pink, flower round and globular. This is one of the most  
beautiful Verbenas yet raised.

**MRS. KIRKPATRICK (YOUNG)**—Deep rose, with bright  
crimson centre, pip and truss very large, flat, and of great sub-  
stance. This flower will prove excellent for bedding as well as  
for exhibition.

**GLORY (YOUNG)**—Crimson scarlet, eye white, flower  
truss large, in the way of Defiance, of better form and fine habit.

**VESTA (YOUNG)**—A pure white flower, round and large, of  
beautiful habit, the finest white Verbena yet offered.

**GARLAND (SMITH)**—Pure white eye, bright cherry, truss  
very large, of beautiful compact habit for pot culture or bedding.

**ARESTES (SMITH)**—Lilac eye, crimson purple flower, large,  
new in colour, of good habit.

**LADY FRANKLIN (SMITH)**—Large white, with a large  
purple centre, in the style of Madame Beunzod. Every bloom  
coming perfect, extra fine for show or bedding.

**MIDDLESEX RIVAL**—Pink, the eye surrounded with  
purple, the largest Verbena yet raised, very smooth and flat,  
extra fine.

**DISCOUNT (SMITH)**—The nearest approach to blue, of fine  
habit for bedding. Given in with the set.

G. S. A. Priced Catalogue of Verbenas, Fuchsias, Geraniums,  
Dahlias, Chrysanthemums, &c. &c., is now ready, and can be  
had in exchange for one postage stamp.

Splendid illustration of Fuchsia Glory forwarded on the  
receipt of eight postage stamps.

Tollington Nursery, Homsey Road, Islington, near London.

## THE BEST PEA FOR SECOND SOWING.

**SUTTON'S EARLY GOLIAH**, which is also the  
VERY BEST FOR SOWING IN JULY TO GATHER IN OCTOBER.  
Price 1s. per quart; 3s. 6d. per gallon, or 24s. per bushel.

Mr. R. Thompson, of the Horticultural Society, in his Notes on  
Peas grown at the Society's Gardens at Chiswick last summer,  
says of this Pea:—

"Sutton's Early Goliath Pea, sown May 17th, fit for  
use July 18th, 4 feet high; a very good, early, and pro-  
ductive Pea." (See Journ. Hort. Soc. vol. vii., pt. iv., p. 260.)

And the Reporter for the *Gardener's Chronicle*, who honoured  
our sample ground with a visit in Nov. last, in his report says:—

"Upwards of 30 varieties of Peas had been grown here,  
but they were cleared off, with the exception of Sutton's  
Goliath, which was still producing pods and blossom,  
although it was sown on the 22d of August. It is, there-  
fore, a good Pea for a late crop, and it appears to be  
very productive; its flavour resembles that of Knight's  
Marrowfat." (See *Gardener's Chronicle*, Nov. 27, 1852.)

Having a good stock of the above, we have affixed a moderate  
price to them, but they are decidedly the best Pea we are  
acquainted with for the second and the last sowing.

Priced Lists of other choice Garden Seeds may be had in return  
for one postage stamp.—Address,  
JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## The Gardeners' Chronicle.

SATURDAY, FEBRUARY 26, 1853.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, February 23	Geographical ... 8 p.m.
	Horticultural ... 8 p.m.
	Medical and Chirurgical (Annu.) 4 p.m.
TUESDAY, March 1	Linnean ... 8 p.m.
	Civil Engineers ... 8 p.m.
	Pathological ... 8 p.m.
WEDNESDAY, —	Society of Arts ... 8 p.m.
	National Floricultural (Annu.) 1 p.m.
THURSDAY, —	Zoological ... 3 p.m.
	Antiquarian ... 8 p.m.
	Royal ... 8 p.m.
FRIDAY, —	Botanical ... 8 p.m.
SATURDAY, —	Royal Institution ... 8 p.m.
	Asiatic ... 2 p.m.

The arguments that a botanist can produce in  
support of the opinion that the CEDAR OF LEBANON  
and the DEODAR are varieties of one common species  
have been ably stated by our Indian correspondent  
at page 99, who has indeed exhausted the subject  
in the form in which he has put it. But here, as in  
so many other cases, the question resolves itself into  
one of words. If it is maintained that these trees  
have descended from one common stock, in the lapse  
of ages, and are therefore specifically the same, we  
have nothing to object. The negro and the white,  
the game cock and the jungle fowl, the lapdog and  
the bloodhound—the dog himself, indeed, and the wolf  
—have all, in turn, been pronounced by competent  
authority to be of identical origin; and we are very far  
from questioning the soundness of such opinions.  
The same kind of reasoning which justifies such  
conclusions would undoubtedly lead irresistibly to  
the inference that the Scotch Rose, the Dog Rose, and  
the Gallic Rose, nay, even the China Rose itself,  
have a common origin; for are they not traceable  
the one into the other by insensible gradations and  
innumerable intermediate forms?

But although a wolf may be specifically the same  
as a Maltese spaniel, no one would, we imagine,  
feel inclined to confound the two, or to consider  
them strictly allied, except from a theoretical  
point of view. Such, we conceive, is the manner  
in which the Deodar question must be practically  
considered. Botanists may trace unsuspected re-  
semblances; the differences by which the plants  
are popularly separated may be shown to be trifling  
and unimportant in the eye of pure science, but the  
fact remains that great differences do exist; and if  
they are permanent in a general sense, then the  
distinction of the two is unaffected. Let us see  
what counter-proofs can be produced in support of  
the essential (we will not say specific) differences of  
these two trees.

In the first place it is to be observed, that if the  
Cedar of Lebanon and the Deodar are sown in  
mixture, the seedlings are unmistakably different.  
One is green, stiff, and erect; the other is glaucous  
and drooping. No one, we believe, ever saw a  
Cedar of Lebanon with its seedling stem turned  
downwards; no one a Deodar in any other state.  
This, then, is not a mere difference of colour, but of  
physical constitution. The two are as distinct, *ab-*  
*incunabilis*, as negro and Caucasian infants.

In advanced age, the difference is preserved; the  
Cedar of Lebanon may become glaucous, but it does  
not droop; the Deodar may become green, but it  
will not straighten its leader; the one is always  
stiff and massive, the other light and graceful.

According to Dr. ROYLE, the wood of the Deodar  
is particularly valued for its durability; and Major  
MADDEN quotes Baron CHARLES HÜGEL as one of  
those who eulogise "the incorruptible Himalayan  
Cedar, the invaluable Deodar." Without insisting  
too much upon these expressions, it is fair to remark  
that they are in no way applicable to the timber of  
the Cedar of Lebanon, which is soft and of little  
value in this country; Major MADDEN says that  
even on its native mountains it affords timber, little  
if at all superior to the coarse, soft, warping wood



of English specimens. Pococke, who saw the Cedars on Lebanon itself in 1744-5, asserts that their wood does not differ from white Deal in appearance, and is not harder. The specific gravity of Deodar wood is reported to be 680, while that of Cedar of Lebanon is 618 (Madden).

If we look to the fructification, another striking difference is apparent. In form the cones are no doubt similar; but those of the Cedar of Lebanon never separate the scales spontaneously, as far as we have observed, while the cones of the Deodar as constantly fall to pieces.

Such differences then, existing between these trees, we are unable to acquiesce in their union under one specific name. That they are extremely unlike is admitted on all hands. The precise value of their differences is just as indeterminable as the word species is undefinable, and that point will probably be settled about the time when the circle shall have been squared.

On Atlas is found a third Cedar, now called in our gardens the Silver Cedar, by some botanists *Cedrus atlantica*. That plant, indeed, differs from the Cedar of Lebanon in little except colour, in which particular it resembles the Deodar. All that can be ascertained from an examination of detached fragments is that its cones are not above half the size of a Cedar of Lebanon. Nevertheless M. DECAISNE, one of the most experienced and judicious of French botanists, has just pronounced in favour of its being also a distinct species. We quote his words:

"M. P. JAMIN, director of the nursery at Biskara, to whom I had applied for information concerning the Atlas Cedars, writes, under date of Dec. 17, 1852, that he has just returned from a journey of 18 days to Batna, Lambessa, and the Peak of Toumour, taken for the express purpose of obtaining information concerning the tree, and that he visited carefully the latter locality in company with the keeper of the forests. He there found two species of Cedar. The peak on which they grow is about 1800 yards above the sandy soil which borders it; the more remarkable plants found at the foot of the mountain by M. JAMIN were, as might have been anticipated, Mediterranean species.

"Cedars began to appear at three-quarters up the slope of Toumour, where they produce a magnificent effect, and form a thick forest up to the very summit of the peak. It is not uncommon to find specimens 40 yards high and 1½ yard in diameter at the butt. The two species lie together, but they are distinguished at first sight. The Silver Cedar was covered with ripe cones; on that of Lebanon they were more behind, and flowers were still visible on some of the branches. The habit of the Silver Cedar is that of the Silver Fir, it is pyramidal, and its foliage is silvery; while that of the Cedar of Lebanon is dark green, and its branches horizontal, as we all know. The number of trees is estimated at 20,000; the finest are on the northern face of the peak. M. JAMIN saw many dead of old age, or struck by lightning. While he was writing the ground was covered two yards deep with snow; nevertheless *Asphodelus albus* and *luteus*, *Ranunculus flabellatus*, Violets, and a Retama (*Spartium monospermum*), were already in flower in sheltered places."

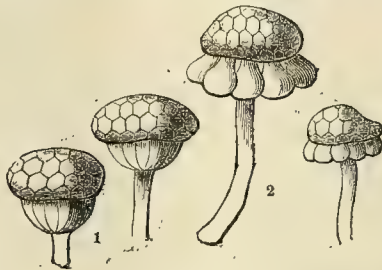
Thus, adds M. DECAISNE, horticulture is finally proved to have gained a new species, notwithstanding the doubts that have been expressed concerning it.

THE curious parasite from the summit of Parus Nath, to which we lately called the attention of our readers, though interesting from the effect produced upon the organs which it attacks, has no pretension to beauty when examined under the microscope. That, on the contrary, which we have now before us is extremely beautiful, and is besides most attractive as presenting a second species of a new genus confined hitherto to South Carolina. The pods of a species of *Acacia* in the Dunwah Pass, leading to the great valley of the Soane, were marked with large brown patches surrounded by yellowish shreds of cuticle, and consisting, even under a common pocket lens, of glandular-looking bodies. In every case the opposite side of the pods had a corresponding patch, and though the valves were easily separable in other parts, in these they were closely united. On examination the glandular bodies consist of a large umbrella-shaped dark cap, often  $\frac{1}{30}$  of an inch across, composed of a number of closely-packed cells, supported by a long, hyaline, delicate, and apparently compound stem, round the top of which are suspended a circle of elongated hyaline bodies, calling to mind, in point of arrangement, the appendages in some species of *Medusa*, or in general appearance the fruit of some *Marchantia*.

In the South Carolina species, on the contrary, the peduncle is shorter, and the appendages are united

by their sides into a solid mass. The American species is constantly found on the leaves of different species of *Tephrosia*, so that at present the genus is confined to Leguminous plants. We do not know any other genus of Epiphytall fungi in which the spores attain so great a diameter. It is well known that the worst cases of mildew in Wheat occur when sudden damp succeeds to a very dry state of the atmosphere, and some such cause may favour the development of this luxuriant parasite. The common notion, that a uniformly damp state of the weather is favourable to such growths, is contradicted by a variety of circumstances; like malaria, these diseases delight often in exposed situations, where the surface dries rapidly, rather than spots constantly saturated throughout with moisture.

In connection with the occurrence of the *Ustilago* on Parus Nath, it should be remarked that the vegetation there is very peculiar, and the climate is of much the same character, till the foot of the pass is reached, making due allowance for decrease of height above the level of the sea. "Plants eminently typical of a moist atmosphere," says Dr. HOOKER, in his excellent paper on the district, published by the Asiatic Society, "appeared in uncomfortable association with such dry climate genera as *Kalanchoe*, *Pteris*, *Asplenium* and the dwarf *Phenix*; add the Berberry, *Clematis*, *Thalictrum*, 27 Grasses, *Cardamine*, &c., and the mountain top presents a mixture of the plants of a damp hot, a dry hot, and of a temperate climate in fairly balanced proportions. The prime elements of a tropical flora were, however, wholly wanting on Parus Nath, where are neither Peppers, *Pothos*, *Arum*, Palms (except the starveling



*Phoenix*, tree Ferns, Scitamineæ at this season (Feb.), *Guttifera*, *Vitis*, or *Laurineæ*."

We have given representations of the forms of *Ravenelia glandulosa*, Berk. and Curt. (1), and *Ravenelia Indica* (2). M. J. B.

THE Fellows of the Horticultural Society, who are desirous of witnessing the working of Mr. M'GLASHAN'S APPARATUS for transplanting very large trees, and which attracted so much notice in Edinburgh some weeks since, will have an opportunity of doing so next Saturday, March 5. On that day, in the Society's Gardens at Turnham Green, at half-past 12 o'clock, Mr. M'GLASHAN proposes to lift a tree, the ball of which will weigh more than 10 tons, and to remove it to another situation by his patent apparatus.

There will be the usual free admission on the occasion to Fellows of the Society, and visitors introduced by them.

#### GESNERA OBLONGATA.

WHEN managed this is decidedly a handsome plant, and it is more accommodating in its habits than most varieties of the genus, growing and flowering as it does for months in succession during winter. It is readily increased by means of cuttings, which may be obtained in spring from young growing plants. Firm short-jointed well-ripened pieces should be selected for the purpose, inserting them in sandy peaty soil, covering with a bell-glass, and plunging in a gentle bottom heat of from 70° to 80°, where, in the course of a month or six weeks, they will be sufficiently rooted to bear potting off singly in small pots. It will be necessary to place the young plants in a rather close moist warm situation until they have become well established, when they may be removed to a cooler position, and allowed more light and air. During summer they cannot have better accommodation than a cold frame, kept moist and rather close, and shaded from the forenoon's sun; here they will make rapid progress, and must be shifted as may be requisite to afford sufficient space for the roots. In order to secure a dwarf compact form it will be necessary to stop the leading shoot occasionally; and if thrips make their appearance, and this plant when kept growing during the early months of summer is rather subject to them, tobacco-smoke should be applied the moment they are perceived, and as often as is required to eradicate them. As soon as damp cloudy weather occurs in autumn remove the plants to a situation near the glass in a house or pit, where the night temperature can be kept at about 50° or 55°, which will be sufficiently warm to promote active growth. The plants may be allowed to remain here till about Christmas, when it will be advisable to remove them to

a temperature some 10° lower, giving water very sparingly, in order to afford them a season of rest; but this sort must not be treated, when in a dormant state, like the tuberous rooted varieties which require no water during that period; a small allowance, however, will be sufficient, merely enough to prevent the soil from becoming excessively dry.

If the plants are wanted to flower during the winter months (and with early propagation, and good management afterwards, nice sized specimens are easily obtained in two seasons), it will be advisable not to excite them into growth till towards the beginning of June, when they may be placed in a rather close, moist situation, near the glass, in a pit or frame where they can be slightly screened from the mid-day sun. See that the soil is got into a moist healthy state; and it will also be advisable to examine the roots, giving a small shift to such as require more pot room. Maintain a moist atmosphere; keep the plants clear of insects; and stop the leading shoots occasionally, in order to induce compact bushy specimens. Towards the middle of July a second shift will probably be required, and this should be into the flowering pots; and as the plants are intended to continue growing and blooming throughout the winter a liberal shift should be given. Water cautiously, and keep the atmosphere moist and rather close till the roots have got hold of the fresh soil, when air may be admitted rather freely, shutting up early in the afternoon with a moist atmosphere. In September they should be removed to where the temperature can be kept to about 55° at night, and light and air afforded to mature the wood, and induce the production of blossom. The best situation for the flowering specimens during winter is one where they will receive all the light possible, and where the temperature may average from 45° to 50° at night, allowing it to rise some 5° before giving air; and if properly supplied with water, and kept clear of insects, they will present, as I have already stated, a very pleasing appearance for some three or four months—a longer period than most plants remain in blossom.

When the flowers begin to be produced too thinly to be effective, the plants should be removed to a cool, shady situation, sparingly supplied with water, and allowed a season of rest; this ought to be attended to before they cease to produce flowers, which would not take place until the health of the specimens would be greatly injured. My practice is to remove them to a cool shady situation in April, and when the weather becomes mild and settled, say about the middle of June, to place them against a north wall, where they are safe from rain and drip, giving them very little water. Shortly after allowing the plants to go to rest, the shoots should be thinned and cut back, so as to secure a dwarf bushy habit of growth at the commencement of next season. Early in August they should be removed to a situation similar to that recommended for their growth last season, but they may be previously turned out of the pots; and if the soil is sour or in an unhealthy state, reduce the balls sufficiently to clear away the bad soil, repotting in the same sized or smaller pots; a moderate shift should also be given, either now or in the course of a few weeks, to such as require it. In the case of plants, the balls of which have to be considerably reduced, a rather higher temperature should be afforded them until they are fairly established in their pots; and plants that are at all pot-bound will be greatly benefited by an occasional watering with weak clear manure water. With careful management, and occasionally reducing the balls, so as to afford the roots a portion of fresh soil, the plants will last in good condition for many years; but it is advisable to keep up a supply of young ones, as these are more easily managed than old specimens.

Good rich turfy peat and light sandy turfy loam in the proportion of two of the former to one of the latter, with a liberal mixture of silver-sand, and broken potsherds or charcoal, form an excellent compost for the growth of this plant. The peat and loam should be carefully broken up with the hand, and only the best pieces selected, and it should be well intermixed with the sand, &c., before use. *Alpha*.

#### TRADE MEMORANDA.

A NEW Peoria perennial Turnip, concerning which wonderful things are announced, has been advertised in the columns of a contemporary by "Messrs. James Murray and Co." Can any one say who Messrs. James Murray and Co. are? and does anybody know what the thing is for which they require money beforehand? or who Mr. Smith, of Monkshood Den, is, who is said to have raised it?

#### Home Correspondence.

*Space and Protection for Bedding Plants.*—Notwithstanding the cheapness of glass, hundreds of gardeners are still much straitened for want of it, especially those who have to propagate and prepare a great number of bedding plants. Here we propagate, annually, many thousands for the flower garden; and every year we have had great difficulty in finding room for them. Last season, however, I hit upon an easy and excellent way of accommodating them. In the beginning of April, when all our small pots were filled, we had about 1500 rooted cuttings to pot off. Unwilling to send for more pots, we went to a sunny, sheltered part of the garden, and there cast out a trench 4 feet wide, 18 inches deep, and 15 yards long—more or less. The bottom of this trench was soon covered, 3 inches



thick, with a mixture of loam, leaf, and Mushroom-bed material, into which we straightway planted 1000 *Verbena* plants, those which had been first potted. At night, and when the weather was cold, we threw over the trench a thin covering which had been used for shading the conservatory, and which was sufficient protection for *Verbenas*. Now, the point that I want to come at is this, viz., that by this expedient we found not only pots and room for the cuttings unpotted, but we discovered that the plants in the trench thrived much better than those under glass; in fact, I never saw plants at the beginning of May half so good. They were then removed with large balls, and without sustaining any perceptible injury, to the beds and banks of the flower garden, over which they began at once to spread. This year it is my intention to deposit the greater part of our bedding plants in trenches like the one I have just described. I will thus set the frames at liberty five weeks sooner than I have hitherto done, for the reception of Melon plants, &c. But the important point is, not merely obtaining pots or space, but getting the beds of the flower garden covered early in the season. *A. Pettigrew.*

*The Weather.*—The extraordinary difference which a few miles made in the temperature on the night of the 14th inst. is worth marking. It was here what is called a wind frost; wind very brisk, almost boisterous, and N.E. by E. My thermometer, hanging 5 feet from the ground, on the N.E. side of a tree, registered 10°, or 22° of frost. In East Suffolk, as given by "T. H.," p. 118, it registered 3°, or 29° of frost. At Chiswick in the same night 18°. The extreme east of Suffolk is about 90 miles due east from here, so that we have the following facts. The wind in travelling 90 miles attained 7° of warmth, and in passing from here over part of London to Chiswick, about 30 miles due west, 8° were added. We thus have East Suffolk, 3°; Sawbridge-worth, 10°; and Chiswick, 18°. It will be of interest to learn its increase of temperature as it progressed to the west. Under all ordinary circumstances my register of the temperature here tallies with that at Chiswick. We have at the present moment 1 foot of snow and sharp frost. On the night of the 19th we had 20° of frost, for such was my register yesterday morning. *Thomas Rivers, Sawbridge-worth, Feb. 21.*

*New Asparagus Fungus.*—Will you oblige me by correcting a typographical error in your paper of Saturday last (p. 115, a b), in the article by "M. J. B.," on a fungus lately noticed by me on the roots of *Asparagus* and other garden plants at Ely. The local name by which the pest is known should have been printed "copper web," and not "coffee web." These vulgar names are often so appropriate and express so exactly and concisely the peculiar character of the plant intended, that I confess to a greater affection for a correct nomenclature with regard to them, than to the most grandiose cognomen the scientific botanist can invent. In the instance referred to the mycelium of the new fungus spreads over the corms and invests them with a web of downy fibres, of a copper-red colour: hence the very appropriate name of "copper web." The local name for the *Anacharis alinastrum*—"Water Thyme," which the bargemen gave to it immediately on its appearance in these rivers—is another and recent instance of a most appropriate appellation, improvised at sight. *W. Marshall, Ely.*

*Aquilegia glandulosa.*—How am I to keep this plant? I can raise plenty of seedlings, but I invariably lose them the first winter, under every mode of culture I have tried. I do not find other persons much more successful, and I think it is one of the handsomest herbaceous perennials we have. Is not the difficulty of keeping it the reason it is not seen at the exhibitions in London? *A. R.*

*Underwoods* (see p. 20).—Absence from home and numerous engagements have prevented my replying sooner to the questions of your Surrey correspondent as to the proper distance of planting Scotch Fir for Hop-poles. In this neighbourhood various distances have been tried, and 2 feet each way found the best for Larch. Scotch Firs are never planted in this district for Hop-poles, the Larch being so much superior and growing equally well. In Holland and part of Prussia the Fir seed is sown broadcast on the land intended for woods, the seed being slightly covered by mould spread over the land in making small trenches at regular distances. The cost is trifling, and it might answer in England for Scotch Fir on wastes and commons. I shall be happy to give your correspondent any information I can in answer to a private communication. *W. C. Selley, Ightham, near Seven Oaks.*

*Effect of Artificial Light on Plants.*—It has been observed in your columns that the light of the moon may have some beneficial influence on vegetation, and that the *Crocus* expands its blossoms under the light of candles; this has called to mind an old project which might now be worth a trial, namely, the effect in green and hothouses of lighting them artificially. The notion of such an experiment originated on having observed the great power of light without much heat in the north of Prussia. There flower seeds obtained from England were sown whilst some snow was still on the ground; they produced plants of rapid growth, and of dimensions far exceeding those usually attained in this country. The effect of artificial illumination might be easily ascertained; but it would be essential to fairness of experiment that means should be provided for carrying off the air vitiated by combustion, so that it should not come in contact with the plants. *M.*

Rain which fell at Thurston, near Dunbar, N.B., between 1841 and 1852, both inclusive. Thurston is

280 feet above the level of the sea, and two miles distant from it.

Annual amount	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.
January	1.4	4.6	1.2	2.0	2.4	2.0	2.2	0.8	3.0	0.7	4.1	2.4
February	1.8	1.6	0.8	2.8	1.0	1.3	1.4	6.0	0.5	3.2	1.1	3.4
March	1.1	3.8	1.4	4.0	1.3	2.1	2.0	2.6	0.3	0.8	3.4	0.2
April	0.9	0.0	1.6	0.1	0.9	1.4	1.0	1.5	4.0	2.9	1.8	0.4
May	0.6	1.4	2.8	0.0	1.1	2.0	2.8	1.3	3.3	4.1	2.2	1.6
June	1.1	1.9	0.9	0.8	3.0	4.0	1.3	5.4	3.2	1.3	2.6	4.1
July	1.8	1.5	4.1	2.1	3.9	2.0	1.3	2.4	1.0	0.8	0.9	0.9
August	2.5	1.5	2.6	2.1	3.7	1.1	1.4	1.2	2.3	0.8	3.8	3.6
September	3.8	2.8	2.1	4.2	4.1	7.0	1.2	2.1	2.3	3.1	2.3	3.3
October	5.5	1.3	5.0	2.3	2.1	3.6	2.3	5.1	2.3	1.3	0.8	4.4
November	3.4	2.0	4.1	3.6	2.3	0.7	1.7	2.4	1.5	2.2	0.1	6.8
December	2.5	1.4	2.6	1.4	1.2	0.8	2.2	2.4	1.4	0.3	0.4	8.7
Annual	27.4	23.3	29.2	26.3	24.4	31.5	23.2	29.2	26.3	20.8	25.3	33.8

—*R. Mossman.*

Rain at Osweston, Doncaster, in 1852:—

January	2.50	August	1.80
February	1.05	September	2.73
March	0.44	October	2.30
April	0.03	November	5.41
May	0.78	December	3.40
June	3.34		
July	1.27		25.5

The following is the state of the weather in January, 1853:—

	Extreme Cold.	Heat at 1 o'clock.		Extreme Cold.	Heat at 1 o'clock.
	Deg.	Deg.		Deg.	Deg.
1st	45	50	17th	34	41
2d	42	49	18th	33	42
3d	38	46	19th	45	54
4th	39	50	20th	41	52
5th	39	46	21st	35	53
6th	32	40	22d	33	42
7th	34	44	23d	36	40
8th	31	40	24th	32	42
9th	34	49	25th	30	40
10th	39	43	26th	35	42
11th	37	44	27th	33	40
12th	36	49	28th	32	40
13th	35	48	29th	38	41
14th	32	44	30th	34	43
15th	31	43	31st	30	44
16th	31	40			

We have the frost severe at present, with not much snow; the lowest point was 21° on Monday morning, the 14th inst. *W. Gardham.*

*Temperature of January, 1838.*—In the *Gardeners' Chronicle* of January 15, 1853, you state the average temperature of January, 1838, to have been 27.79°. I kept a register of that month 10 miles south-east of London, the thermometer hanging at a first floor west window, the face of the thermometer to the north, the back against a piece of wood 1 inch thick, put up purposely to hang it against. My average is considerably below yours, and on the 20th (the very cold day) my thermometer was not so low as many I heard of—mine stood at 1° below zero. I understood that at Knowle, Sevenoaks, it was 5° below zero; at Sundridge, 9° below, on the ground; at Chislehead (all in the same neighbourhood), 8° below, the thermometer being 3 inches from the ground in the latter place. Subjoined is my daily register of the said month (Jan., 1838). The first column indicates the lowest point during the night; that is, from 12 o'clock at night on the 19th till 8 o'clock A.M. on the 20th; the second line, the height at which it stood at the latter period (8 o'clock A.M. 20th). *W. P.*

	Night Temp.	8 A.M.		Night Temp.	8 A.M.
	Deg.	Deg.		Deg.	Deg.
1st	36	43	17th	20	29
2d	36	43	18th	20	29
3d	38	42	19th	19	20
4th	30	32	20th	—1*	1†
5th	31	31	21st	18	20
6th	29	30	22d	33	35
7th	32	32	23d	26	30
8th	27	27	24th	25	25
9th	26	22	25th	24	25
10th	21	22	26th	26	26
11th	14	18	27th	26	27
12th	9	9	28th	28	28
13th	12	12	29th	34	34
14th	20	21	30th	34	34
15th	6	10	31st	34	34
16th	19	29			

\* One degree below zero in the night.

† One degree below zero at 8 A.M.

[This shows how much temperature is influenced by locality. The accuracy of our returns is unquestion-

able, for the place where they are made; but we very much question the amount of cold which our correspondent's instruments have indicated. As to the thermometer having fallen 8° below zero, that we find incredible.]

*Preserving Timber.*—I have seen the following mode practised by ship carpenters. They had a large quantity of timber for ship-building placed below the sea—say at low water, so as not to be carried off by the tide; it remained in that condition for twelvemonths, sometimes much longer. This they considered preserved the timber from rot, &c.; but then, be it observed, the experiment was only practised on wood for ship-building. *J. M. D.*

*Early Forcing of Vines.*—We sometimes hear of Vines in the early house not setting their fruit well. At one time I attributed this shyness to deficiency in the parts of fructification, as in some instances the male organ is barren, or at least in its natural state incapable of inducing reproductiveness. This evil may be remedied by collecting the pollen and distributing it over the shy setting sorts. But there is derangement of the system, which in early forcing is equally productive of bad results, arising from the want of giving a stimulus to the root in proportion to the excitement the top receives; hence the necessity that exists for employing bottom heat to arouse the vital forces and counteract the demand that the leaves and branches are making at this period; without the aid of this stimulus the roots are liable to a suspension of their functions, the bad results of which I need not portray; nevertheless the bloom expands freely enough, and may perform its functions, but just when the fruit should begin to swell, it all, or the greater part of it, falls off, and this is the case with all crops where the branches and leaves are stimulated, and the roots left to be influenced only by natural conditions. The shrivelling of Grapes and immature fruits is attributed to this cause by the late Mr. Knight. We have four Vineries at Raby Castle. They have been planted six years, and this is the fifth crop forced in them. The early house, the roof of which is not at all adapted for early forcing, has set its fruit and begun to swell (in fact thinning is commenced), and I never saw Grapes set better at any period; they consist of Black Hamburgh, Black Prince, White Sweetwater, White Muscat, and Grizzly and White Frontignans. From the commencement they have been subjected to a steady bottom heat, and with the best results. *G. B., Raby Castle.*

*New Mode of Potting Plants for Bedding out.*—Much I know has been written by way of remark, and also suggestions for a long time past as to the mode of transplanting from pots to the open ground. As to single or strong woody plants, there is but little inconvenience or danger, except the unsightly crowding of the roots in the small end of the pot; but as to delicate seedlings, annuals, and the like, raised with artificial heat, and often very crowded in a pot of moist loose earth, there is so much danger of destruction of the tender plants, and especially injury to the tops by inverting the pot or taking out half with the trowel, that the ball of plants sometimes tumbles in pieces, or if not the tender roots suffer so much that if the weather be very hot, dry, or windy, they are much retarded in growth instead of growing vigorously. Another very great objection to the common flower-pots that get smaller towards the bottom is, that, if from unavoidable delay or bad weather the tender and spindling plants are kept too long in the pots, the delicate roots are so matted together as to suffer much by being pulled in pieces to single out. To avoid this, I ordered to be made for me some flower-pots open at both ends. When for sowing seeds, fill them pretty solid and firm from the wide end, and either with or without the aid of a piece of tin or flat plate, invert them quickly upon a piece of board, putting on as many as the board will hold. Sow your annuals or choice seeds the thickness you wish at the top (now the small end), and cover with sand or fine soil, and put your board or boards wherever you wish to force by heat. When fit for putting out, make a hole in the garden bed with your trowel the depth of the particular pot to be emptied, tilt it on one side, to put the wide end of the pot into the hole; and lifting with thumb and finger leaves the ball of earth and plants uninjured, to be simply earthed round, and there is this great advantage, that even if kept too long in the pots the roots are spreading in the wide end, not matting and twisting together in the narrow end. If the crop of plants is too thick pull out the centre ones with finger and thumb; and though there is a little more trouble in sowing a dozen small pots instead of two large ones, the gardener is amply compensated in the putting out in the beds where all trouble and anxiety of shading, watering, and protecting, is unnecessary, the plants, both tops and roots, being intact and uninjured, and therefore not checked in their growth, but on the contrary, by getting out of prison, they make a vigorous push. This mode of transplanting may be of use, not merely for seedlings in spring and summer, but for plants at all times; for instance, this last December, by reason of incessant rains and a new bed in the garden, not being fully prepared, I had some bulbs in these pots, which I found had made good progress and nice roots when put out, and the pots lifted without injuring a single root. *F. W., Hushwaite.*

*Weeds and Sulphuric Acid.*—At page 102 a correspondent makes inquiry as to the efficacy of sulphuric acid in the destruction of Thistles, &c. Several years since, when resident in the south of Scotland, I applied the acid in question to a number of large Scotch



Thistles, which grew too near my house. I first cut them off about two inches above the surface of the ground, and then poured into the hollow of the stump two to six drops of acid. In the course of a few hours the cavity was filled with liquid of a colour nearly approaching carmine, and soon began to overflow. After the lapse of some days, on the application of small pulling force, the woody part of the root came up, leaving the rotted integuments in the ground. I need not add that the destruction of the Thistles thus treated was complete. The stem of the common field Thistle is so slightly hollow, if at all, that the acid would find no lodging-place in it, and the effect would be merely superficial; the same with the Dock, Dandelion, &c. But if a small scoop, the size of a quill, were applied either to the crown of the root, or, in such plants as admit of amputation an inch or two above the ground, to the section of the stem produced by the amputation, and the acid dropped into the hole or wound thus made, I do not think any plant could possibly survive: the whole substance of the root must become disorganised by the action of the acid. A.

**Pyramid Pruning.**—I never see anything like proper pyramid pruning in this country. Having given attention to the mode pursued by our brother gardeners in France, permit me to give critically the mode so followed; that those who like to have trees of that character may, by time and attention, easily supply themselves with them in this country. The process consists in shortening the first year's shoot of the Apple or Pear tree, called the graft shoot, to one foot at a full bud. The first year, on pushing out in spring, rub off all laterals except four or five at the bottom of the stem, to garnish it with a first tier of branches for future years. Train the leader to a stick quite perpendicular. The next winter proceed as before, by shortening the leader to 12 inches at a full bud. Remove all intermediate buds as before down the leader, and leave those at the bottom to form a second tier of laterals; and shorten the lower tier to an outside bud. After the second year shoot, the summer pruning consists in rubbing off the laterals, forming now the lower tier, above and below the branch, so as to keep them as horizontal as possible. Strengthen those which grow horizontal, by pinching off the ends if necessary. Each tier should be, as near as may be, 12 or 13 inches, one above the other; and if possible, the branches of each succeeding tier should be so grown as to be above the intervals of the tier below. Thus, as we see in France, this training makes a beautiful symmetric tree; which, without blousing the borders, may, when planted at distances of 20 or more feet, adorn the flower beds of a geometric garden, with presenting to the eye of taste the offerings of Flora and Pomona at one and the same time. *Wm. Mason, Necton, Norfolk.*

**Sugar Beet in Ireland.**—I observe a quotation in your columns, p. 67, which runs thus—"They also display a great tendency to throw out flower-stalks, which well-grown seed does not." I have no practical knowledge of the variety of Beet best suited for the production of sugar, but I expect it does not differ very much in its habits of growth from some of the varieties of our Mangold Wurzel or field Beet, regarding which I have had some experience, and I know that no ordinary care in the selection of plants will yield seed the produce of which will not run to flower-stalks under certain circumstances. In some districts all the varieties have a tendency to run to seed-stalks, even from the most select stocks of seed of English, Dutch, French, or of Prussian growth, and it is notorious that the same description of seed that yields a crop deteriorated by a fourth or fifth part running to flower-stalks in North Britain, will in South Britain yield a crop with little or no appearance of flower-stalks. If any mode of saving seed has a tendency to produce this evil, I should of course suppose it to be that of taking seeds from those roots that shoot prematurely, but as all such are considerably spent the first year without maturing seeds, plants of this sort are not profitably employed even in yielding a quantity of seed. I should feel obliged by information on this subject, giving a detail of how seeds may be saved to prevent the plants running to flower-stalks. Y. Z.

**Vine Disease in the South of France.**—There is a dearth of wine in the country, and old is scarcely to be met with, at least in proprietors' hands, though of course at Certe it is at once manufactured of any year you ask for. The common wine of last year, which is detestable, is selling at 140 f. per muid. In trimming the Vines, throughout the whole of this district, it is evident that they are still suffering from the Oidium; and, owing to the extreme mildness of our winter, it is more than probable that we shall have it again with increased intensity. One of our savans is writing to prove that "la maladie de la Vigne" is divided into four separate categories (each, of course, with learned names), and I have no doubt he will do so entirely to his own satisfaction, which will be a great relief to the suffering Vineholders; whilst the learned professor, as a reward for such relief, will have his ribbon of chevalier changed into that of officier de la Legion d'Honneur. How ridiculous are all the reports hitherto made upon this subject by order of Government! As far as my own unscientific observation goes, confined, it is true, to my vineyard of about 30 acres, the Oidium is a species of vegetable cholera for which there is neither preventive nor cure; at least, such as have been pointed out have been tried by me most scrupulously, but in vain. Like the cholera, too, it is most irregular in its march, and what it attacks in one locality it spares in another;

thus, with me, it fell almost exclusively upon my Terrets, and in rows where they principally were the few other sorts mixed with them were not affected. My friend \* \* \*, who superintends my property and who is mayor of our commune, tells me that throughout the commune its effects were equally bizarre, and in no two vineyards the same. What may be worth remarking to you is, that where the Oidium fell upon the Grape, it was at once completely shrivelled; when upon the leaves only, they became red, but did not fall off; that the Grape did ripen to a certain extent, though not fully; and that, instead of its regular colour, it became of a sort of mahogany hue. The value of houses and land is constantly on the increase, whilst produce of every sort was never higher than at present; the same of provisions. I have just paid 16 sous per lb. for pork for salting; eating oil, 22 f. per 10 litres; burning do., 16 to 18 f. per do. *J. R., The Herald, Feb. 4.*

## Societies.

**LINNEAN, Feb. 15.**—R. BROWN, Esq., in the chair. Dr. Powell was elected a Fellow. Mr. Yarrell exhibited a specimen of the Sooty Tern (*Sterna fuliginosa* of Latham, Wilson, Bonaparte, Audubon, and Nuttall). This bird is not only new to the British fauna, but also to that of Europe. It was shot in October last near Burton-on-Trent, and had been sent to Mr. Yarrell by W. Desboeux, Esq., to whose collection it belonged. Mr. S. Stevens exhibited specimens of the flowers and fruit of *Banksia grandis*, R. Br., *B. Menziesii*, R. Br., *B. Prionotes*, Lindl., *B. littoralis*, R. Br., and *B. attenuata*, R. Br.; the fruit of *Xylomelum occidentale*, R. Br., and seeds of *Macrozamia Preissii*, Lehm., all collected in the neighbourhood of Swan River by Mrs. Duffield. Mr. Stevens also exhibited a case of insects from Assam, in which the smaller insects were attached to the larger ones. The large forms consisted of very fine specimens of the stick-insect (*Bacteria sarmentosa*), and were covered with the curious leaf-insect (*Phyllium siccofolium*). The collection contained the male *Bacteria*, which, on account of its very small size, as compared with the female, had been described as a new species. Mr. Newport read some notes in continuation of his memoir on the alimentary canal of the Ichneumonidae. The conclusion of Dr. Hance's paper on the islands and flora of Hong Kong was read. The greater part consisted of lists of plants. In drawing a comparison between the flora of Hong Kong and other parts of the world, the author stated that only two species were identical with that of Australia, and that the greatest resemblance was with the floras of Cochin China and Japan.

**MICROSCOPICAL, Feb. 16: Anniversary Meeting.**—G. JACKSON, Esq., in the chair. Reports from the council and auditors were read. The members had increased during the past year, and the finances were in a satisfactory condition. The President gave an address, which will be printed in the Transactions published in the Microscopical Journal. The following gentlemen were elected: G. Jackson, Esq., President; N. B. Ward, Esq., Treasurer; Prof. Quekett, Secretary; and Mr. J. Williams, Assistant-Secretary. Dr. Lee and Messrs. Gillett, Warington, and Wenham were elected on the council. In the evening a soirée was held, at which 250 persons were present.

**ENTOMOLOGICAL, Feb. 7.**—E. NEWMAN, Esq., President, in the chair. The President returned thanks for his election in the room of Mr. Westwood, whose term of office had expired. Donations to the library were announced from the Society of Arts, the Great Exhibition Committee, the Royal Society of Madrid, and the Entomological Society of Stettin. Mr. Westwood exhibited, on behalf of Mr. Hanbury, specimens of a species of *Coccus*, from China, with the young insects, which produce the celebrated Pe-ls, or white wax, the real origin of which has been so long doubtful. Mr. Hanbury exhibited some very fine specimens of the wax itself, and gave an account of its chemical properties, differing very materially from other insect waxes (such as bees'-wax), and the uses to which it had been applied. A copy of a Chinese drawing, with the native account, was also exhibited, which latter stated that at a certain period of the year the insects secrete a purplish envelope, which becomes as large as a fowl's head, which contains the eggs and young, and which are transferred in this state to the young trees, so as to propagate the species. The *Ligustrum lucidum* had been stated to be the tree on which this was produced, but Mr. Fortune (*Gardeners' Chronicle*, August 21, 1852) had proved that such was not the case, and Mr. Hanbury has found a leaf among the specimens agreeing with those of the tree brought home by Mr. Fortune, as that on which the insects are produced.—Mr. Oswell, who had accompanied Captain Vardon to Central Africa, exhibited specimens of a small fly called *Tsetse* by the natives inhabiting the country east of the Limpopo, and which infests the country of Sebitoani. It is extremely venomous, and seizes on cattle and horses, which rarely survive its attacks, dying in about three weeks, the stomach and intestines remaining healthy, but the heart, lungs, and liver being affected: the heart, especially, resembling a piece of flesh soaked in water, and the blood thick and albuminous, and not spotting the hand when immersed in it. The insect had been

described by Mr. Westwood in the Proceedings of the Zoological Society, under the name of *Glossina morsitans*.—Mr. Spence communicated a notice by Herr Schmidt of the discovery of two more blind insects from the caverns of Carniola, belonging to the remarkable genus *Leptodirus*; although destitute of eyes, however, they appear to be in some degree sensitive of the light, retreating to darker parts of the cave when brought towards the mouth. Mr. Baly described a plan of cleaning insects covered with fine hairs when saturated with grease and dirt, by immersion in soap and water. The Rev. J. Green noticed the excellent plan of collecting the chrysalids of moths by digging at the roots of trees in winter; by this means he had obtained hundreds of specimens. He also noticed that some specimens of the peacock butterfly discovered in their winter quarters had made a distinct although faint hissing noise, their wings being slightly moved at the time. Mr. G. R. Waterhouse stated that the Rev. F. W. Hope had reared vast numbers of moths from chrysalids taken in the manner described by Mr. Green. He had found it best to place them in mould covered with moss, which was kept slightly damped, by which means the earth did not become clogged. Mr. Waterhouse also stated that Mr. Charles Darwin had noticed a species of butterfly, in South America, which makes a noise; he also read an extended memoir on new genera and species of exotic Curculionidae; and Mr. W. W. Saunders read a memoir containing descriptions of new Longicorn beetles, brought from China by Mr. Fortune.

**BOTANICAL OF LONDON, Feb. 4.**—A. HENFREY, Esq., in the chair. Mr. R. Bardin presented a collection of plants collected by him on the last expedition sent in search of Sir John Franklin. Mr. A. Irvine exhibited a specimen of *Asplenium fontanum*, collected at Ashford, near Petersfield, Hants. The Curator stated that the distribution of British duplicates, comprising 20,000 specimens, including 1150 species and varieties, would take place this month. He also read a paper, being "Notices of the Localities of Rare Plants in the Neighbourhood of London."

## Reviews.

*Narrative of the Voyage of H.M.S. Herald, during the Years 1845-51.* By B. Seemann, F.L.S., Naturalist to the Expedition. Two vols. 8vo. Reeve & Co.

MR. SEEMANN is known to the public favourably by various contributions to English Natural History publications, and by the commencement of his Botany of the Herald, noticed by us *ante* pp. 278 and 547, 1852. He is always a lively and agreeable companion, and has the merit of directing the attention of the general reader to applied natural history rather than to questions only interesting to the student of pure science. He now appears as the narrator of an important circumnavigation of the globe, under the command of Captain Kellett, R.N., and we think has accomplished his task as well as the means at his disposal would permit. The first year and half of the voyage, occupying about 140 pages of the first volume, relates to the proceedings before Mr. Seemann joined; he therefore chiefly relies for that part of the journal upon Lieutenant, now Captain, Trollope's memoranda. Upon this point we think it necessary to remark, that the absence of more extensive materials is not satisfactorily accounted for. Captain Wood, who commanded the Pandora, has withheld his diary, and Captain Kellett's absence from England is mentioned as the reason why that officer's assistance has not been obtained; but we are left wholly in the dark as to the reason why no advantage has been taken of the journal and collections of Mr. Edmonston, the naturalist originally belonging to the expedition, and whose unfortunate death produced the vacancy which Mr. Seemann afterwards filled.

The author tells us that he joined the Herald at Panama, in January, 1847; and therefore about half the first volume and all the second are to be taken as his personal narrative. Of course, the nature of his appointment obliged him to confine his attention principally to the botany of the countries he visited; and it is only justice to say, that he appears to have made an industrious use of the opportunities at his disposal. Much, no doubt, of the freshness of his remarks has been destroyed by his previous publications; but the scientific reader will still find something to glean, and to the general reader it is probable that everything will be new. We must endeavour to find room for a few extracts.

**"The Manchined Tree.**—Some of the carpenters of the steamer were blinded for several days at this place, from having cut down Manzanilla-trees (*Hippomane Manzanilla*, Linn.), and got some of the poisonous milk of that plant into their eyes. Not being aware that salt water is an efficacious remedy, they had to suffer very great pain. A boat's crew of the Herald, when surveying on the coast of Darien, had the same misfortune from having lighted a fire with the branches; and I myself, I may mention, having gathered specimens of the tree for the herbarium, lost my sight for more than a day, and had to endure a smarting of the most acute nature, coupled with the fearful thought that I was never to see daylight again."

**"Peruvian Cure for Rheumatism.**—A gentleman from Lima, who had come to Piura to get cured of rheumatism, a disease for which the climate and the sand-hills of the neighbourhood are said to be excellent remedies.



The patients are buried for nine days in the hot sand of the desert, with all save their heads covered, and afterwards have to lie in bed an equal space of time, constantly drinking decoctions of sarsaparilla."

"*Vegetation of the Andes.*—We now commenced ascending the principal chain of the Andes. The temperature became lower, the air purer, and the vegetable and animal kingdoms displayed the most diversified forms. Yellow Calceolarias were growing amidst scarlet Salvias and blue Browallias; humming-birds were resting on the twigs of Fuchsias; butterflies and beetles were swarming about, while little black snakes leaped dexterously among the stones. What a profusion of life! what a contrast of colours! Really the aspect of a tropical forest is grand; but that of the Andes a few thousand feet above the sea is beautiful—the whole seems a garden."

"*Peruvian Fruit-trees.*—About noon we entered a forest, consisting of Chirimoya-trees (Anona Cherimolia, Mill.), which were loaded with delicious fruit. The Pine-apple, the Mangosteen, and the Chirimoya are considered the finest fruits in the world; I have tasted them in those localities in which they are supposed to attain their highest perfection,—the Pine-apple in Guayaquil, the Mangosteen in the Indian Archipelago, and the Chirimoya on the slopes of the Andes,—and if I were called upon to act the part of a Paris, I would without hesitation assign 'the Apple' to the Chirimoya; its taste indeed surpasses that of every other fruit, and Hünke was quite right when he called it a 'masterpiece of nature.'"

"*Fetid Odours* appear to be as agreeable to Panamanians as Garlic in Europe or Assafetida in Persia. "The most important however of all the aromatics to the Panamanian cook is the Culantra (*Eryngium foetidum*, Linn.); it imparts a flavour difficult for a foreigner to relish; but the inhabitants consider it indispensable, and are quite distressed when in the soups and sancoches their favourite condiment has by some accident been omitted."

"*The Panaman method of determining Altitude* is ingenious. "In order to ascertain the height of an object, a peculiar method of measurement is in use. In measuring the height of a tree, for instance, a man proceeds from its base to a point where, on turning the back towards it, and putting the head between the legs, he can just see the top. At the spot where he is able to do this, he makes a mark on the ground, and then paces the distance to the base of the tree: this distance is equal to the height. This method, in which, from constant practice, the Indians have attained a skill almost approaching to geometrical accuracy, answers the common purposes of life, and is universally practised by the Spaniards of Veraguas."

"*Mexican Cauliflowers* would astonish our purveyors for Covent Garden market. We are told that at Durango "the Peach and Vine succeed well, and of culinary vegetables none excel the Cauliflower, which attains such a size that a single head measures 18 inches to 2 feet in diameter, and makes a donkey-load. The gigantic Cauliflower is not distinct from our European species, but is solely produced by a cultivation which necessity has dictated. Being one of the northern vegetables that degenerate, or bear no seed, if not annually procured from Europe, it is propagated by cuttings. After the heads have been gathered, the stubs are allowed to throw out new shoots, which are again planted, and have to grow two years, producing in the second the enormous heads."

"*The Durango Orange* (*Casimiroa edulis*), seems to be well introduced to our gardens. This "is a tree which has a remarkable tendency to accommodate itself to different climates; it grows from the coast-region up to an elevation of 7000 feet, producing everywhere an abundant harvest of delicious fruit. It was well known to the Aztecs, who termed it Iztactzapotl, and also Cochitzapotl; the former name is composed of the words iztac, white, and tzapotl, Sapota. Tzapotl, from which comes the Spanish corruption zapote, and the English Sapota, signifies a succulent fruit containing large hard seeds, as, for instance, that of Lucuma, Anona, Acharas, &c., a word for which our present botanical terminology has no equivalent expression. The second name, cochitzapotl, is derived from cochi, to make sleepy, and tzapotl, Sapota, as the fruit when eaten acts as a soporific."

These extracts will show of what matter Mr. Seemann's book consists. Let us add, that here and there are scattered bits upon climate which, considering the author's quickness of observation and skill at practical application, might have been advantageously extended without in the least impairing the interest of his volumes. And why is there no index? Why is there no index? Half the value of the book is destroyed by its absence; in such works it is indispensable.

### Garden Memoranda.

**CHELSEA BOTANIC GARDEN.**—There is little attempt in this ancient physic garden, and especially at this season of the year, to keep up a display of flowers, the design of the garden being rather to supply materials for the instruction of medical students during the lecture season. We, nevertheless, found many curious and interesting plants in flower in the hothouses, and the collections of in-door plants, which just now, alone, admit of examination, are considerably improved in appearance since we last noticed them. Owing to the smoke-polluted atmosphere of this part of London, it is here found that greenhouse plants, requiring of course considerable ventilation at all seasons, suffer con-

siderably during the winter portion of the year, when the atmosphere of the garden is scarcely ever free from chilly fogs. Stove plants succeed better, and the collection, though over-crowded, is now in good health. In the stoves we noticed, among many interesting specimens of the plants used in medicine, several novelties more or less in flower. One of these, *Brilliantia ovariensis*, an Acanthad, recently introduced from Sierra Leone by Mr. Whitfield, is a novelty which promises to be of some interest. It is a soft-stemmed herb, rather coarse and straggling in its natural habit, and has opposite hairy serrated leaves, of which the extremity is broad and ovate, becoming suddenly narrowed into a wing-like margin to the mid-rib at the base; the flowers form a panicle at the ends of the branches, and are violet-purple, with a buff or orange-coloured spot at the base of the upper lip; in the development of the flowers those which are terminal to the little branches of the panicle first expand in succession, and afterwards the lateral ones, and when these latter are in bloom the inflorescence is certainly showy. Whether the habit can be modified to any considerable extent is a problem for cultivators, but if not, the remarkable aspect of the plant will secure its admission in collections, where the perennial charm of diversity of foliage is at all considered. Some other Sierra Leone plants, also introduced by Mr. Whitfield, are showing for bloom, one of them a Melastomaceous shrub, with good-looking foliage. From the same source was also obtained a very desirable and free-blooming species of *Crinum*, with pure white Yucca-like flowers, named *Crinum petiolatum*. Several Araceae plants were flowering, and among them the true *Dieffenbachia seguinii*, or Dumb Cane, which is quite different from the plant which generally bears this name in collections. The latter plant exists in gardens in a green and variegated condition, and here we found the variegated form known as *Dieffenbachia maculata* producing several of its pale green spathes, from which the waxy-looking spadices were protruding. Another of the same race, in flower, was the *Colocasia odora*, a noble plant for a damp stove, a single inflorescence of which is sufficient to perfume a whole house with an odour something like that of *Mignonette*. *Metrodorea nigra*, a robust-looking Rutaceous shrub, was just going out of flower, but its divaricate panicles of chocolate-coloured stars are really very pretty when in perfection. *Barbacenia sanguinea* was coming into flower, and is found to be a very desirable stove plant, especially remarkable for the rich purple-maroon colour of its hexapetaloid blossoms. The two variegated *Dracenas*, *ferrea* and *terminalis*, were conspicuous from their coloured foliage. In the same house, a well constructed span-roofed structure, we saw a very healthy and vigorous specimen of the *Cinchona Calisaya*, and good plants of Pimento, Clove, and Cinnamon, the latter of which, though only grown in a moderate-sized pot, was stated to flower profusely every season. Another small stove contained a nice collection of exotic Ferns of small size, the building not admitting of their being grown large. Some species of this tribe were pointed out as not yet existing in any other collection. One of these was a remarkable looking *Lastrea*, named *pilosissima* by Mr. J. Smith, but apparently identical with the *Aspidium subquinguefidum* of Palisot de Beauvois. Other rarities in the tribe were *Asplenium sinuatum*, a fine simple-fronded species, with the margins of the fronds undulated; and *Adiantum cultratum*, which had been received from the continental gardens as the *A. pentadactylon*. In another stove was a plant of the celebrated Upas tree, *Antiaris toxicaria*, becoming almost too large for its position; this remarkable tree has its branches articulated with the stem, from which, when they separate, they appear to drop as out of a socket. There is a good collection of Aloes, most of which are kept in a separate house, and some of the larger ones are about to blossom; the smaller kinds blooming, as they do with certainty, every summer, are deserving of far more general attention than they receive. The two fine old Cedar trees, for which this garden is remarkable, are suffering much from the bad atmosphere of the locality.

### FLORICULTURE.

**EARLY TULIPS.**—These are now everywhere beautifully in bloom, and for the amateur of limited means they are a valuable tribe of spring-flowering plants. They are cheap, and easy to cultivate, requiring but little attention, and while they annually adorn the flower-clump, or sitting-room window, their numbers will increase, until the only difficulty will be to find room for them. During April and May they add an inexpressible charm to the flower-border, and do not withdraw their unequalled colours and sweet perfume until their place can be supplied with the usual bedding-out plants; from February till May they are also easily had in flower for the window. In forming a collection, the following varieties are suitable to begin with:—*Van Thol*, single and double; *Rex Rubrorum*, *Tournesol*, *Florentine*, and *Marriage de ma Fille*. The outlay for a dozen of each of these varieties will not exceed the cost of one dozen of first-class *Hyacinths*, and while the latter have to be bought annually, these will last for years. I would advise one-half the quantity obtained to be planted in autumn in the flower-border, where they will bloom in spring, and will be in a fit state for potting for the window next season. The soil in which they are planted should be rather light and rich, and ought

to be well loosened to the depth of 15 inches at least; for although they will grow and flower if stuck into any soil, they will yearly become weaker and fewer in number, until they ultimately disappear altogether. In planting, the roots should be placed about 5 inches apart, and covered about 2 inches with soil. They require no protection, and no further care, except a few stakes to support the taller growing sorts, and to have the surface of the soil stirred occasionally. As soon as the leaves decay, the roots may be taken out of the ground, and placed in a dry place for a time, in order that they may get thoroughly dry before they are put into their winter quarters. Any cool dry place will answer for this purpose; but mice are apt to make sad havoc among them, so keep your eye upon them. I also find it necessary to guard them against the ravages of these vermin in the ground. It is often necessary to remove them as soon as they have done flowering; and in this case I lift carefully, retaining as much soil with their roots as I can, and place them in a shady situation, covering them with soil to about the depth they formerly occupied. If the weather is dry give them a little water; here they will ripen their growth, and will receive little injury from their removal. These ought to change places with the portion which has flowered in the window, as they will be found apt to become weak under pot culture, and if the same roots are used two successive seasons, they will probably be of little account the second; this will not, however, be a necessary consequence, but is generally the result of using small pots, and otherwise treating the plants unnaturally. For window decoration, plant in pots as soon as the bulbs are procured, using 7-inch pots for the purpose; put in each five roots of *Van Thol*, or three of the other sorts. After potting they should be placed in some spare corner out of doors, and covered about 2 inches deep with coal-ashes, or any material which can be easily removed. Here they may be allowed to remain till about Christmas, when a portion may be removed to the greenhouse, to forward their blooming season. The *Van Thol* is the earliest, and ought to be treated as such, except variety is desired; in that case, take *Rex Rubrorum* and *Tournesol*; these will be in flower in February, and, if properly tended with water, &c., will retain their gaiety for at least a month. Of course provision must be made to keep up a succession of bloom. When done flowering, early Tulips must not be turned out of doors, nor otherwise maltreated; they must be allowed a place in a frame or greenhouse, where they can go gradually to rest. It will not be necessary to give them much water after flowering; but do not allow them to be without it until the leaves show symptoms of decay, then gradually withhold it altogether. Afterwards give them the treatment directed to be given those grown in the flower-border. C. F.

**AZALEA:** *W. G.* Pretty enough; but not equal in shape to many of the same colour.

**CATALOGUES** received from Mr. George Smith, Tollington Nursery, Hornsey Road; from Mr. Turner, Royal Nursery, Slough; and from Mr. Salter, Versailles Nursery, Hammer-smith.

**CINERARIAS:** *J. W.* The plum-coloured variety is dense and rich; the petals of the single bloom are much too narrow; this is evident on comparing it with the plum-coloured sort. We would not advise you to incur the expense which your proposition involves.

**PRIMULA SINENSIS:** *J. Jennings.* Of good colour; but the petals overlap each other, and are too much indented; size, medium.

**H. C.** The pink sort is large, high coloured, and well worth preserving. The white kind is also handsome.

**RECEIVED:** The Rules of the Warwickshire and Midland Counties Horticultural and Floricultural Society; also the Schedule of the Handsworth and Lozells Floral and Horticultural Society, whose show days for 1853 are May 16, June 28, July 26, and August 23. The shows of the Newbury Horticultural Society take place this year on June 24 and September 2.

**ROSES:** *Rosa.* You had better order your "fresh faces" now and direct the plants to be sent to you as soon as the weather has become at all favourable; presuming your "quarter" to have been well trenched and manured, plant at 6 feet apart in your case, not in the soil, rather say on it, securing each standard to a stake, and then cover the roots well with dry, well broken, and rich compost; each tree will thus be on a little hillock or mound; press all firmly (the new compost being dry), and let them take their chance for the next month or six weeks, when you may prune them closely in; should the soil become loose after planting, let it be gently pressed to be made firm. When warm weather shall have set in, give copious root waterings; and mulching, if it can be done conveniently, will prove beneficial; this, together with a good dressing of manure in autumn, will so raise the general surface that next season the hillocks, or mounds, will have disappeared; your Dahlias will also flourish in proportion to the attention you bestow on your Roses.

### Miscellaneous.

*On the Influence of Coal Gas upon Vegetation.* By G. H. Ulex.—The introduction of lighting by gas upon the promenades of Hamburg has exhibited the injurious influence of coal-gas upon vegetation in a very vexatious manner. The gas-pipes are placed, at a depth of 3 feet, in the middle of avenues 50 feet wide, planted principally with Elms, but with a few Lime trees. Since its introduction, a great number of trees, previously healthy and vigorous, has quickly perished. The alburnum becomes rotten, the bark detached, and the tree dies in a few days, without any alteration taking place in the wood. Wherever this malady appeared, the roots were found to be decomposed, and the soil impregnated with the odour of coal-gas, showing that the cause of this destruction must be the escape of gas from the pipes. M. Ulex mentions several other localities where similar facts have occurred, so that there can no longer be any doubt as to the injurious influence of coal-gas upon vegetation. We must not, however, conclude from these circumstances that this is a necessary consequence of the introduction of gas-lights. In Leipzig, for instance, the gas-pipes pass through the promenades



without any appearance of injury to the trees. This arises from the junction of the pipes being much more carefully effected than at Hamburg, so that escapes of gas are much more rare. From these observations it follows, that it is as well to allow gas-pipes to pass as far as possible from plantations of trees, and that when this cannot be managed, great care must be taken to render the junction of the tubes as perfect as possible. *Journ. für prakt. Chemie*, lvi. p. 257. *Annals and Magazine of Natural History*.

*The Thrips*.—I find the following an effectual remedy for this destructive insect. Place the plant in a house and fill it with the strongest common Tobacco-smoke three nights successively, syringing them well on the following mornings. My Azaleas suffered a good deal this spring with the red and black thrips, but by the above means I have effectually destroyed them, as I have proved by placing them on a white sheet of paper. I have found the red insect more easily destroyed than the black one. *S. T., in Turner's Florist and Garden Miscellany*.

## Calendar of Operations.

(For the ensuing week.)

### PLANT DEPARTMENT.

As house plants generally are now commencing their spring growth, light and a well-regulated supply of air are more necessary at this stage of their growth than any other—the future health and appearance of plants depending in a great measure on a vigorous start, best promoted by the above important elements—while the reverse is sure to entail a feeble, overdrawn habit, even with the best assistance in other respects. To assist some of the more delicate growing species, they may be raised on inverted pots, to afford them a rather larger share. Let the management and training of specimen plants have constant attention as the shoots advance; when left too long to themselves they are more difficult to manage, without producing a formal appearance; this is especially necessary with climbing or trailing plants grown on trellises, in pots, where, we think, a more natural habit should be studied in training plants than what is generally seen, and at the same time the form of the trellises or wires themselves is oftentimes objectionable and ill-adapted for showing the plant's natural habit. The general potting season will soon arrive, and where the stock is extensive may take place with some of the most hardy things immediately. No certain rules can be laid down as to the precise time when the operation should take place, the state of the roots and habit will be the safest guide. Let the potting take place in a shed of the same temperature as the house (or nearly so) in which the plants grow, and avoid exposing them to the cold in conveying them to the potting shed. We have before adverted to the importance of having the ball in a medium state of moisture when being potted. Camellias are now in full beauty, and if at all underpotted, the bloom will be finer by frequent waterings with clear liquid manure. Keep the atmosphere of the house in which they bloom rather dry, to prevent the bloom from spotting. After Camellias have done flowering, keep them in a rather cool temperature for a few weeks, to restore their energies, and enable them to break regularly; during this period they should be damped with the syringe daily, unless the weather is very cold. Chinese Azaleas will require manure water now and then to help the advancing buds. The application, however, of stimulants to pot plants, must at all times rest on the condition the plant is in to receive it; as a general rule apply it only when the pots are full of roots, and to plants of a sufficiently strong habit; to newly-potted plants, and such as are of weakly habit, the practice is highly injudicious. Allamandas, Combretums, Clerodendrons, Echites, and similar plants, which have been wintering in a somewhat cool house, may now be pruned in, and placed in more heat, preparatory to shifting them next month. Tall Cacti or Epiphyllums may likewise be brought forward, if an early bloom is desired.

### FORCING DEPARTMENT.

**PINERY.**—As the general stock will want repotting next month, be prepared, by carrying under cover a sufficient quantity of loam, to get dry. The best loams for Pines are those of a soft soapy texture, and should have been stacked sufficiently long for the turf to become partially decayed. We rarely ourselves add anything to the above except a little soot at the time of potting, but some soils may require the addition of a well decomposed manure. To assist the young plants to make a start (in addition to the directions given in our last Calendar), the linings may be turned over, adding sufficient new material to give a little extra heat to the pit. If, however, the stock is grown in hot-water pits, the thing is more easily managed, and a slight increase in the day temperature will suffice; by getting the plants on the move before repotting them, they take to their new shift more freely than when potted in a dormant state. Keep the glass of Pine pits and other forcing houses clean at this season, to admit the full amount of light. **VINERY.**—Where a stock of Vines in pots is required, either for planting or fruiting in pots, the present is a favourable time for propagating them. Select from well ripened wood, from productive plants. In forming cuttings leave half an inch of wood on each side the eye, removing by a clean cut the bark from the

lower side. Insert the buds in large 60 pots, the eye uppermost, barely covering it with the compost; dry turfy loam and leaf soil will be the best material to start with. The pots will require plunging in a bottom-heat of 85° near the glass. Damp them occasionally, and when growth commences allow air in favourable weather. When the pots become filled with roots shift the plants to larger, and transfer them to the shelf of a Pine pit or forcing house, where the shoots can be trained near the glass as they advance. By attention in shifting into larger pots as they require it, they will form canes of considerable strength, either for planting or fruiting in pots the following season. Those who are anxious to grow a selection of fruit trees in pots, and who have not yet obtained plants—should procure the requisite number and kinds, and pot them at once. Maiden or one-year-old plants are preferable, as they are more easily brought into a proper form. Some kinds, as Peaches, Nectarines, and Apricots, will require growing under glass one summer before fruiting, the more effectively to get furnished with bloom-buds; while if room under glass is an object, Cherries and Plums may be plunged at the foot of a south wall, where, by care in stopping the summer's wood at the proper time, an abundance of fruit buds may be obtained. Now orchard houses are becoming so plentiful, the cultivation of fruit trees in pots presents many advantages, and is a novel and interesting branch of gardening, and one especially adapted for amateurs. **STRAWBERRIES.**—A supply for succession should be kept plunged in a little bottom heat. The early crop in bloom will require a temperature of 70° by day, with reduced moisture. Supply air moderately at all times.

### HARDY FRUIT GARDEN.

If the planting of fruit trees was not finished during the autumn, lose no time in completing it before the rising of the sap; for although when care is taken by mulching and watering, fruit trees will succeed planted much later than the present, yet all the more hardy kinds should be got in without delay. Open standards will require to be securely staked to keep them firm, and half a barrow load of litter placed over their roots, to protect them from the drying winds of March. The trenching and renewing of wall tree borders, if intended to be planted this present spring, should be taken in hand immediately. In making new borders, the principal points to attend to are, a bottom drained sufficiently to carry off the excess of rain water, with the addition of a chalk or rubble bottom, a foot or more deep, if the subsoil is bad, to keep the roots from entering; let the border when finished slope away from the wall. If a good turfy loam of medium quality can be procured, it will require no manure, but strong heavy loams should be mixed either with the scrapings of roads, old mortar, or a more sandy soil for Peaches and Apricots; heavy soils suit Pears and Apples the best, provided the borders are not too deep, while Plums and Cherries require a soil free from manure, and of medium quality.

### KITCHEN GARDEN.

In our last Calendar we hinted that ground should be got in readiness for planting Asparagus, Sea Kale, &c., which, from being plants of a permanent character, require a soil prepared to maintain them in productive-ness for some years, with the occasional addition of top dressings. Both Asparagus and Sea Kale thrive best in deep sandy loams, which their roots penetrate to a great depth; therefore, stiff soils intended for their growth, should have a dressing of road scrapings, or sand, in some shape or other, mixed with them. Trench from 2 to 3 feet in depth, according to the nature of the soil, adding a good portion of rotten dung between each layer of earth; near the coast sea-weed is a valuable assistant, and both Asparagus and Kale derive benefit from its application. After trenching, the ground may remain thrown up rough for two or three weeks, when the whole should be turned back, mixing the manure and earth well together; the addition of this quantity of dung will raise the ground above its usual level, which, if inconvenient, a portion of the worst earth should be removed during the operation. Before planting the crop, a top-dressing of well decomposed manure, or leaf-soil, should be lightly worked in. This process may appear tedious and expensive, but, considering the value and permanency of the crops to be grown, will be found more economical than when less pains are taken. On plots prepared in the above manner, Asparagus, Kale, Rhubarb, Globe Artichokes, &c., may be grown successfully: the details for planting these will be given in future Calendars. Look at back numbers and bring forward anything yet in arrear, as the next month will bring more than its usual amount of labour in this department.

### STATE OF THE WEATHER NEAR LONDON,

For the week ending Feb. 24, 1853, as observed at the Horticultural Gardens, Chiswick.

FEBRUARY.											
Feb.	Moon's Age.	BAROMETER.		TEMPERATURE.						Wind.	Rain.
				Of the Air.			Of the Earth.				
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.			
Friday..	18	29.530	29.491	36	16	26.0	35	35.4	N.	.00	
Satur...	19	29.710	29.550	34	19	26.5	34.4	35.4	N.E.	.00	
Sund...	20	29.802	29.444	35	25	29.5	35	35	N.	.00	
Monday	21	30.094	30.050	38	19	28.5	35	35	N.W.	.00	
Tues...	22	30.010	29.870	38	30	34.0	34.4	35	S.W.	.08	
Wed...	23	29.629	29.540	43	25	34.0	34.4	35	W.	.02	
Thurs...	24	29.754	29.305	40	32	36.9	34.4	35	N.W.	.09	
Average		29.789	29.607	37.8	23.4	30.5	34.7	35.1		.19	

Feb. 18—Frosty, with brisk north wind; snow showers; clear.  
 — 19—Dry frosty air; clear; sharp frost.  
 — 20—Frosty; white clouds with slight snow; clear and frosty.  
 — 21—Clear and frosty; fine; clear.  
 — 22—Frosty; rain, uniformly overcast.  
 — 23—Drizzly; fine; clear and boisterous at night.  
 — 24—Very clear; overcast; rain at night.  
 Mean temperature of the week 6 deg. below the average.

### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending March 5, 1853.

Feb. and March.	Average Height of Baromet.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27	48.0	34.7	41.3	17	0.51 in.	4	2	4	2	4	2	4	2
Tues. 28	48.9	34.7	41.8	15	0.20	4	2	4	2	4	2	4	2
Wed. 29	47.4	35.4	41.4	11	0.23	4	2	4	2	4	2	4	2
Thurs. 30	45.6	34.1	41.9	12	0.62	4	2	4	2	4	2	4	2
Friday 31	45.9	34.1	41.0	12	0.62	4	2	4	2	4	2	4	2
Satur. 1	48.1	31.7	39.9	9	0.40	4	2	4	2	4	2	4	2

The highest temperature during the above period occurred on the 28th, 1846—therm. 64 deg.; and the lowest on the 5th, 1845—therm. 13 deg.

### Notices to Correspondents.

**BOOKS:** P.D. Ten parts of Mackintosh are out, completing Vol. I. They have appeared with perfect regularity. Your bookseller has imposed upon you.—*A Lady*. There is a natural arrangement of wild plants in Hooker and Arnott's "British Flora," or in Babington's "Manual." A. Gray's "Manual of the Botany of the Northern United States" includes the hardy American plants. But there is no general work on the natural classification of mere hardy plants; nor is it probable that there will be.

**CYCLAMENS:** J.F. We will see what can be done; but we cannot promise to spare time at this busy season.

**DRIED CRYPTOGAMS:** Constant Reader. Amongst the more important collections of dried specimens of European Cryptogams may be mentioned those of Mongeot and Neesler, Desmazieres, Kuhn, and Rabenhorst, and Madame Libert, all of which are voluminous; that of Desmazieres alone extending to more than 40 quarto numbers. In England similar works have been published by Ayres, Baxter, Berkeley, &c. We ought to have noted, under our remarks on Ravenel's Fungi, the American Mosses of Drummond, though published in England, and the collection of Sullivan, M. J. B.

**EMIGRATION:** G.J. We do not know whether gold has really been found abundantly in New Zealand; but if you consult a pamphlet called the "Gold District of New Zealand," published for 3d. by Saunders and Co., 6, Charing Cross, you can judge for yourself upon the subject, and learn what you would require for an outfit.

**FERTILISING PEACHES:** K.P. The blooms of early-forced Peaches, &c., should be frequently "dusted," in order to effect complete fertilisation, by dispersing the pollen over the parts where it is required. Later in the season, when the atmosphere is drier, the pollen will disperse itself without employing artificial means, or through the agencies of insects; but, at this early period, "dusting" makes the setting of the crop more secure.

**FRUIT TREES:** F. The following varieties of Peaches are most likely to succeed, on a south wall, in West Lothian: Acton Scott, Noblesse, Royal George, Mountaineer, Bellegard, and Royal Charlotte. Apricots: Breda, Royal, Moorpark, and Turkey. The Pêche d'Abrirot, or Abrirotée, is a large melting sort, but only of second-rate quality; and besides it would not suit you, for it does not ripen till October, even in the neighbourhood of London.

**ICE-HOUSES:** A.S. If you mix salt with your ice, it will eventually melt faster than ever.

**INSECTS:** An Apivarian. The Entomological Society's prize, for the best Essay on the Longevity of the different individuals composing the Hive, has been awarded to Mr. Desborough, of Stamford, J.V.

**KITCHEN GARDENS:** A Constant Subscriber. Under the circumstances mentioned by you, we should ascribe the badness of your produce to the badness of your gardening. Read "The Manse Garden" upon this subject.

**LIMES:** J.C.L. Your plants probably require some bottom heat when in flower, in order to enable them to set their fruit. Grafting can do no more than accelerate flowering, which in your case is unnecessary, the plants having already reached the flowering state.

**NAMES OF PLANTS:** J.ard. *Ecosais*. 2, *Euphorbia jacinthiflora*; 1, *Euph. splendens*. Pray do not paste up your specimens as if they were state secrets. Consider—that our time is precious.—*A. J.* *Siphocampylus manetiflorus*; 2, apparently some *Selago*; 3, no flowers; we cannot attend to mere leaves.—*S.R.* *Hypericum elatum*.—*W. Skellon*. *Euryops virginicus*.—*F.M.* We are unacquainted with the seeds; unless they belong to *Cassia fistula* or something allied to it.—*Sub.* 1, *Cyrtanthium maculatum*; 2, *Oncidium reflexum*; 3, *Cata-sium semipalmatum*; 4, *Zygopetalum crinitum*.—*H.W.F.* *Juniperus sinensis mas.*, *Abies Picta*.

**ORANGE TREES:** P.C. Turn them out of the pots they are now in. Shake the soil carefully from their roots, and repot into fresh material, well drained; then plunge them in a gentle bottom heat in the Vinery you are commencing to force, and otherwise treat them well, and they will doubtless soon get into better health.

**TOAD-STONES:** A.P. We trust you will excuse us for expressing our belief that you have been misinformed. Stones are not found in the head of toad unless they are previously put there.

**VARIEGATED PLANTS:** A.B. Try the following: *Pittosporum Tobira* variegatum, *Variegated Orange*, *Nerium oleander* variegatum, *Coronilla glauca* variegata, *Clethra arborea* variegata, *Variegated Italian Myrtle*, *Daphne odorata* variegata, *Sempervivum arboreum* variegatum, *Euonymus Japonicus* variegatus; also some of the variegated Alocs and *Felagou-niums*.

**VINES:** J.G. You state that last year you had a very heavy crop, which did not however ripen, in consequence of the destruction of the leaves by the red spider; that this year, previously to commencing forcing, you painted the Vines with the following composition, in order to destroy the red spider: "4 oz. twist tobacco, 1 oz. arsenic, and 1 lb. soft soap; these were boiled 30 minutes in soft water, and when cold enough, 1 lb. of flowers of sulphur was added." You farther state that you have invariably found this composition to answer. It must therefore be inferred that you did not use it last season; and for more than one reason you had better not have used it this year, for it has probably been the cause of two of your Vines dying nearly to the ground. Why employ in gardens such a dangerous substance as arsenic? It may adhere to the wood, till disturbed by some accident, and then small portions may fall on the fruit. Any further comment is surely quite unnecessary!

**VIOLETS:** A.R. What are called flowerless Violets always seed best. They are merely flowers without petals, all the other parts remaining perfect. Your seed thus produced is quite good.

**MISC:** C.P. If your *Acacia* has finished flowering, you may head it back a little now. The *Allamanda* should be pruned back to the well-ripened wood, which will then push more vigorously.

\* As usual, many communications have been received too late, and others are undoubtedly detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

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AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

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*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

PERUVIAN GUANO, guaranteed the genuine importation of Messrs. A. GIBBS & SONS, 9l. 10s. per ton, or, in quantities of five tons and upwards, 9l. 5s. per ton in dock. A constant supply of LINSEED and RAPE CAKE.

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Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
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**PEAT CHARCOAL**, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenny.

Mr. JOHN ANNETT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

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**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

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Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 2 10 0  
Larger sizes if required.

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**GUTA PERCHA GOLOSSES**, to be had of JOHN JONES & Co., Inventors, Patent Works, Sheffield. Sold to the Farmers at 3d., 4d., 5d., and 6d. each. Price of the powder in tin cases, 2s. 6d. each, sufficient for 100 sheep.

Directions for use.—Bind round the ankle some tailor's listing, which prevents too much pressure, at the same time keeps out the dirt; dip the upper part of the shoe into very hot water, then stretch up the material when soft to the height required. Full instructions are sent with each order.

Agent for London: Mr. F. HAINES, 22, Lime Street, Leadenhall Market.

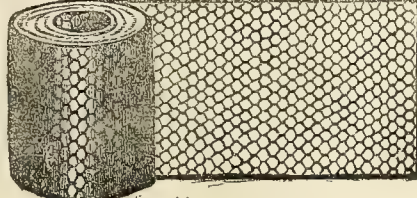
## TANNED NETTING, for the protection of Fruit

Trees from frost, blight, and birds, and for the security of fresh Sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Waxed Netting for Aviaries, &c., at 3d. per square yard. Scrim Canvas, for Wall Fruit.

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## GALVANISED WIRE GAME NETTING.—

7d. per yard, 2 feet wide.



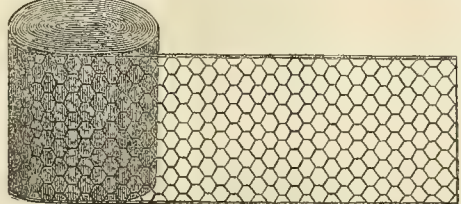
	Galvan- ised.	Japanned iron.
2-inch mesh, light, 24 inches wide ...	7d. per yd.	5d. per yd.
2-inch " strong " ...	9 " "	6½ " "
2-inch " extra strong " ...	12 " "	9 " "
1½-inch " light " ...	8 " "	6 " "
1½-inch " strong " ...	10 " "	8 " "
1½-inch " extra strong " ...	14 " "	11 " "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

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18 ditto ... ..	6d. " "
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To save trouble, the manufacturer begs to state that the articles alluded to are large and rather expensive—the usual prices for new work being from five to twenty guineas. The abatement proposed at the present time will vary from 20 to 30 per cent., according to the condition of the article.

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For particulars, see MESSRS. SUTTON'S NEW CATALOGUE, on the last Page of the present Number of the *Gardeners' Chronicle*.

## The Agricultural Gazette.

SATURDAY, FEBRUARY 26, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 2—Agricultural Society of England.  
THURSDAY, — 2—Agricultural Imp. Society of Ireland.  
WEDNESDAY, — 9—Agricultural Society of England.  
THURSDAY, — 10—Agricultural Imp. Society of Ireland.

THE ADVENT OF THE LAMING SEASON, a period of great importance and anxiety to flock-masters, reminds us that we shall render more service to our readers by postponing for a week the continuation of our observations on the diseases produced by the long continuance of wet weather, in favour of some practical remarks on the "Management of a Flock during the Laming Season," which will be found in another column.

THE following is the substance of one portion of a correspondent's note-book who has just concluded a railway excursion from the Capital as far north as Aberdeen, going by the Great Northern line and returning by the London and North-Western:—

Along both lines of railways above-mentioned the present state of the provinces indicates a very imperfect state of drainage. The northern counties seem better drained than those south of the Humber, and the difference which exists between the two cannot be wholly accounted for from natural causes, such as the declivity and porosity of the soil, but from a difference in the investment of capital for draining purposes on the one hand, and the obstruction which mills present on the other, to the flow of rivers and their tributaries. Art has done more in the north towards draining the soil and less to counteract it by the injudicious throwing of weirs, bridges, &c., across rivers or but small inclination, than in the south. Innumerable examples are quoted in support of the conclusions here given, one of which we shall advance. For instance—"from St. Neots to Huntingdon the valley of the Ouse was one sheet of water; in many cases as high as the tops of the hedges. On the left of the railway crossing the river northwards, horses and carts were proceeding homewards from a mill, wading half rib deep in the water on the middle of the mill road. This is a fine fertile district of country, and the loss on both arable and Grass lands must be very heavy." Along the Great Northern line many similar examples are quoted of lands being flooded, occasioned sometimes by mill-dams, but as often by the imperfect state of the channels of the rivers. And the same state of drainage is to be found in the manufacturing districts of the west in the journey homewards near Carlisle, Preston, Stafford, and Rugby. But little has been done towards the great or arterial drainage of the country. Not only has art done nothing to assist drainage, but she has done a great deal to hinder it, by mill-dams, narrow bridges, &c. In the broad and fertile valleys of the Trent, the Nene, and Ouse, with their network of tributaries, the water may be seen flowing in the identical channels which they had scooped out for themselves, as our skin-clad forefathers beheld them prior to the days of the Romans.

This difference between the south and north as to the state of drainage and obstructions by mills is easily accounted for; for in the former there is not only a greater extent of Grass-lands on the banks of rivers, but a greater population, requiring therefore more water-power for machinery, while the water-power available is actually less. On the other hand, the lands in the latter are more inclined, and



hence suffer more when flooding takes place. The grand question at issue, however, is the proper drainage of both, and how the progress of science and discovery of steam-power have changed the relative positions of the north and south. In the comparatively level provinces of the south the steam-engine ought to supersede the waterfall. No doubt a waterfall fetches a few hundreds of rent; but what of that, if the landlord loses thousands from the consequent imperfect drainage of his estates. The straightening and embanking of rivers, and the giving to their channels that uniform capacity throughout to carry off the greatest floods, is doubtless a great undertaking, requiring legislative interference, as well as a large investment of capital; but while we are continually dunning Parliament to do something for agriculture on the one hand, and spending millions annually in poor-rates on the other, we do not see why such a work should not be progressing towards completion.

Field-drainage on the parallel system is proceeding at about an equal pace both south and north, but not with that energy which the wants of the country demand; while in but a very few instances were the drains removing the whole of the surface water. So long as the water continues to flow upon the surface, demanding open furrows, thorough under-draining cannot be said to have been accomplished. On heavy tenacious clay lands, it is no doubt a difficult task to drain off the whole of the flood-water under the battering rains lately experienced, but this forms no argument for giving up such a task as a hopeless impossibility; it should rather excite to a more careful investigation of the subject experimentally. Where soils of this kind have been got to a state capable of growing Turnips, it must always be an injudicious plan to attempt to eat off these with sheep. Several examples of this kind are noticed by our correspondent, where the difference between the drained and undrained lands is comparatively trifling; the top soil in the one case, as in the other, becoming so impervious from the puddling of the feet of the sheep that the whole of the droppings were carried off the ground with the flood-water. Even on dry porous soils, the best adapted for this system, the trampling of the feet of the sheep, with the action of the vegetable matter in such soils in a state of decomposition, and hence possessing a powerful affinity for water, counteracted in many instances percolation uniformly over the surface; for in many cases the droppings were washed down into the hollows, thus manuring them too heavily, while it robbed the ridges and heights of their just share.

We cannot close these observations on the general drainage of the country, without referring to the difference of enterprise between the agricultural and manufacturing and commercial classes, which is generally enlarged upon to the disparagement of the former. "We hardly recognised the scenes with which we were familiar enough but a few years ago," says our correspondent, "so great is the revolution in all our manufacturing and commercial districts during the last 10 years. Here steam carries us triumphant over the very tops of the houses of our forefathers, under hills and over valleys and rivers; obstructions of every kind fleeing before it. Had our manufacturing and commercial towns discovered an improvement such as furrow-draining is in agriculture, how different would the face of the country have appeared before now; how pleasant an excursion through the provinces even at this inhospitable season of the year." We do not altogether agree in this remark—for if our merchants and manufacturers should turn farmers they would probably find that the contest between spirit and prudence would land them pretty nearly where others of Anglo-Saxon stock and English energy, also, have found themselves. And yet it is difficult not to believe that the extraordinary vigour displayed by manufacturers as compared with farmers arises not solely from the circumstances and nature of the two professions, but in some measure from the character of the men engaged. "I have travelled between Liverpool and Manchester," says a correspondent, "and hardly seen a solitary labourer in the fields, while on approaching the latter city I have seen a single building pour forth its thousand!"

#### LAND DRAINAGE.

In your Number of January 22 (p. 60), you have a communication from Mr. Hewitt Davis, headed "Experience in Draining," in which he attempts to account for certain failures in draining. The article is too long for quotation, and I must, therefore, refer such of your readers as are interested in the subject to the article itself; but must give his explanation of the cause, in order to put in an explanation of my own. He says, "I am now able to account for a defect in draining which has not unfrequently attracted my notice, which I do thus:—where the pipes discharge without running full, there is a vacuum above the

stream, and free access to it from the exterior of the pipes, that causes fissures in the soil above which extend to the surface; but where the pipes run full the soil around them is kept saturated and closed, and without the fissures that drained land always has, so that the water from the surface having no vent below, has no escape, and the land is undrained, so far as the pipes below be full of water. That this is the right explanation I have tested," &c.

Mr. Hewitt Davis will pardon me if I say that I think this is not the only explanation that can be given, and I trust he will not consider me impertinent if I relate some facts which have come under my own observation, which appear to me to explain the difficulty in a more satisfactory manner.

The works with which I am connected here are in many parts warmed by hot water; and in putting up the apparatus and setting it to work, we were surprised and annoyed to find that, although there was a fall of 16 feet between the hot-water cistern and the boiler, the water would not circulate. After various ineffectual attempts to discover the cause, I desired the mechanic who had put up the pipes to carefully level them from one end to the other, and ascertain if the fall was continuous; he did so, and discovered that at one joint there was a slight elevation, and of course a quantity of air imprisoned, the pressure of which was quite sufficient to impede the circulation, although the elevation (and of course the quantity of air) was so small as only to be discovered by the use of the spirit level; this was rectified, and the water circulated properly without further trouble. Take another case:—A gentleman of my acquaintance, in fact your correspondent "Y.," put down some pipes to supply his village with water, as he had plenty of fall (16 feet) between his spring-head and his service reservoir; he did not hesitate about allowing the pipes to follow the undulations of the ground, to avoid the expense of deep cutting, which would have been required if he had kept a regular and continuous fall; but when all the pipes were laid to his service reservoir, he was mortified to find that no supply of water would come through, notwithstanding his 16 feet of head pressure; he therefore set a workman to bore a small hole wherever there was a bend (syphon) in the pipes, to allow the escape of the air, and when the man had finished the last between the head and the reservoir, the water rushed out with such force as to knock off his hat, and sent up a jet 16 feet high, and has flowed freely ever since, merely requiring that the small taps he has inserted where these holes were bored, should be opened for a few seconds whenever the water has been turned off, to allow the escape of the air.

If we apply these facts to Mr. Hewitt Davis's draining, is it not more probable that, instead of the fault arising from the pipe being laid too low, it is owing to a joint being too high, and the air (being imprisoned there by the return of the clay into the drain) being compressed by the pipe filling with water, prevents the flow of the water. At all events, this appears to me to be the true explanation, and I give it the more readily, because I can suppose that other parties laying down pipes (both for hot and cold water) may have suffered some inconvenience from ignorance of such facts as those I have mentioned.

There are so many infallible rules for draining laid down by the authorities on that subject, that I think it is a great pity you cannot give us a digest of them all; or, what would be still better, give us your own opinions on the subject. One says shallow draining is worth nothing at all; another says he finds drains of 2 feet deep of more service than those of 4 feet; a third says, drains of 24 feet distance dry the land as quickly and efficiently as those of 16 feet; and a fourth, that those of 10 to 12 yards distance apart have disappointed him. If every writer in giving his opinion were to confine himself to his own land and his own experience, there would be fewer differences of opinion and less dogmatism, which, in the present state of our knowledge on the subject, might be well spared, in my opinion.

Happening to have on the small farm here very different qualities of soil and subsoil, and having drained, or attempted to drain them all, I find that what is exceedingly well suited in depth and distance for one soil is quite unfit for another. For instance, in a field with a stratum of gravel at the depth of 5 feet, I laid the land perfectly dry by going to that depth, and putting the drains 50 feet distance from each other; in another field, having a tenacious but stony clay, with a rotten watery stratum at the depth of 40 inches, the land is laid quite dry by drains of 3 feet 6 inches deep, 30 feet apart from each other; whilst, in a third field, which consists of an indurated clay, so filled with limestone pebbles that it has to be drained with the pickaxe entirely after the first cutting (of the sod), the water during the late rains stood in pools close to the drains, which were 5 feet deep, and 30 feet apart, and this land seems to me to be so difficult to lay thoroughly dry that it would take half the value of the fee-simply to drain this land effectually, as it is all to work out with the pickaxe, and there does not seem to be a vein of sand or gravel even to 30 feet deep. Can any of your correspondents give me any information how to go to work with such land?

Some of your correspondents say 4 feet is the best depth to go to, but in some of the land here there is a vein of gravel at the depth of 5 feet, and if this is not bottomed, the capillary attraction is not overcome, and the land is not thoroughly drained; but when this gravel is fairly cut through, the land is laid dry for a great

breadth, as I have stated above, that at the distance of 50 feet the drainage was perfect.

The results of my experience in draining convince me that whenever a porous stratum can be found within a practicable distance from the surface, and this stratum can be cut through, the drainage will be perfect whether the depth be 3 feet or 6 feet, whatever may be the soil above (I do not mean to say that 3 feet drains may be put as far asunder as 6 feet). I also believe that if the porous stratum be 6 feet deep, the 4 feet drains will not dry the land nor overcome the capillary attraction that will exist with a watery stratum 2 feet below the bottom of the drain. I believe, also, that in land where the subsoil is an indurated clay filled with pebbles (and consequently admitting of little or no contraction by drying), the cost is so great, and the advantage of deep draining so problematical, that the draining of such land should not be engaged in rashly, and without careful experiments on a small scale; at least, I confess to be beaten by such subsoil, and will feel much obliged to any of your correspondents who will enlighten me on the subject. In the draining of plaster or brick clay, I have had no experience, and therefore am unable to give an opinion.

Your correspondent "Economist" asks what my mode of cultivation is for Wheat? Deep ploughing (12 inches), manuring the ground with night-soil and ashes before sowing the seed, and sowing 2 cwt. of nitrate of soda and 2 cwt. of salt per acre upon the Wheat as soon as it is fairly out of the ground. I sow 2 bushels per acre (which, I believe, is too much by half), and get my seed in as early in September as I can get the land ready. T. G. Clitheroe.

#### MANAGEMENT OF A FLOCK DURING THE LAMBING SEASON.

The first point connected with our subject is *Shelter*. As we have before remarked, sheep are now more valuable than they formerly were, in consequence of their larger size and improved form; it is, therefore, of greater importance to save as many as possible during the critical period of lambing. The nature of the shelter must depend very much on the size, character, and conveniences of the farm. A large covered shed, fitted with rack and manger for hay and roots, closed on one side, but, with the exception of hurdles, open on the other, will be the most convenient building; and close adjoining there should be a hovel protected on all sides, for the purpose of receiving ewes with weakly lambs, or, in severe weather, to accommodate the lambs as fast as they fall, until they get a little strength. The sheds will, of course, open into the lambing-yard, which should be situated as near as possible to the shepherd's cottage. The yard should face to the south, and should be well bedded with earth, and then littered up with straw, so as to ensure cleanliness and afford warmth and comfort to ewes. In the absence of any permanent building, considerable shelter can be afforded in the open field by means of thatched hurdles, to break the force of the prevalent wind (more particularly the east), and also overhead, to keep out the rain or snow. It would also answer well on farms where large flocks are kept to have moveable lambing-houses, such as can be readily taken to pieces and erected again without much trouble.

2. *Attendance*.—When the flock is large, the shepherd should have assistance in addition to his boy, as by such means attendance can be given both by day and night. The saving of a single ewe by prompt assistance will repay the expense of such additional aid. Of course, if the flocks are kept in the field, either a hut or a house on wheels will be provided for the shepherd, so that he may not only have shelter for himself, but a fire likewise, with the aid of which he can warm gruel for an exhausted ewe, or prepare any convenient remedy that may be required. The ewes should be visited from time to time during the night, so as to afford assistance when really required, but not to do so officiously, for although in many cases lambs are lost for the want of assistance, yet in others the ewes are sometimes destroyed by unnecessary interference. One rule of importance should be borne in mind, which is, that manual assistance should be rendered to assist, and not to control or oppose the efforts of nature. When, therefore, some degree of force is used in removing the lamb, it should be rendered during the labour pains, and it is often needful to wait for their recurrence. The cases most frequently requiring assistance are those where the presentation of the lamb is unfavourable, and where the lamb is dead. The ordinary presentation, it is well known, is with the fore-feet first, and the head next, resting on the fore legs—the parts thus presenting themselves in the form of a wedge. Sometimes the head, and at others the legs are bent back, or the four feet may be coming together, or the lamb may lie on its back. These are false presentations, and the object should be by means of a small hand and skilful manipulation to turn the lamb, or push back or bring forward the parts that are misplaced. In some cases this cannot be done without destroying the lamb, but it is much preferable to lose the lamb than the ewe. Sometimes the hind parts present first, and then the labour is difficult. Although, as previously advised, officious assistance should always be avoided, yet it is well that the shepherd should be furnished with some small but strong cord, a few small hooks, and a knife. With regard to medicine, the following may be given in difficult cases, more particularly when there is much



exhaustion:—Opium powdered, 4 drachms; spirit of nitrous ether, 6 ounces; water, 2 ounces. Mix. To be well shaken, and a teaspoonful given as a dose with gruel, in which there has been previously mixed a teaspoonful of the following powder:—Ginger, 2 ounces; Gentian, 2 ounces; Cascarella bark, 2 ounces. Mix. Where there is much fever the latter may be omitted.

Puerperal fever, or heaving after lambing, is a very dangerous disease; indeed the cases of death preponderate over those of recovery. Sometimes the womb is in a state of the highest inflammation, but at others the mischief is principally located in the nervous system, and seems to arise from irritability and exhaustion of the nervous system, induced by the laborious efforts of parturition. Inflammatory cases, where there is little exhaustion, may be treated by a copious bleeding at first, and afterwards by sedatives and aperients; but where there is much exhaustion all we can do is to endeavour to rally the efforts of the nervous system by giving the medicine recommended above.

In a preceding article we attributed the many cases of abortion that have recently occurred to the long continuance of excessive wet weather that has prevailed during the preceding autumn, and we recommended the free use of Turnips for heavy ewes to be avoided as much as possible. Whilst still of opinion that the advice was good, we are yet free to confess that, even at the present time, instances of very bad success have occurred where Turnips had not been given, and other instances of good luck attending where Turnips had not been denied. Although, however, it is extremely difficult to explain in each case why one instance is fortunate and another altogether the reverse, yet the result of many facts enables us to assign as the cause of warping and water-bellied lambs the consumption of extremely watery food. With regard to the treatment of abortion, it is a point of much importance to remove the dead lamb as soon as possible; assistance should therefore be given the ewe at each recurrence of the labour pains, and in other respects the treatment should be the same as in parturition.

One point is also deserving of much attention, which is, that few things contribute more to the health and well-doing of ewes in lamb than by causing them to take a fair amount of exercise every day. If their feeding can be so arranged that they may be driven daily from one part of the farm to another it will be very advantageous. W. C. S.

#### STRAW AS MANURE.

In last week's Number of your Paper, there appear two articles, one apparently deprecating the idea of consuming straw as food, the other questioning, on economical grounds, the propriety of using it as litter. The universal practice in this district is to consume a very large proportion of the straw as litter, with the sole object of converting it into manure. Such, however, is not my own practice; and I have felt convinced that in certain circumstances such a use of straw is a waste of it, and that if it cannot be nearly all consumed as food on the farm, it should be sold, so long as 2*l.* per ton can be obtained for it.

In Mr. Goodiff's article at p. 91, he casually remarks: "When peat-mould is easily obtainable, I would have less hesitation in parting with my straw." These are the circumstances I have alluded to. On my farm, and thousands of others, there is an unlimited supply of peat at command, while, at the same time, the practice is to waste the straw. I concur in the sentiments expressed in an article which appeared several weeks ago in your paper, to the effect that a ton of well decomposed moss is equal as manure to a ton of rotted straw, and that while moss can be obtained for 5*s.* a ton (and I have it for 1*s.* a ton), it is folly to use as manure straw which can be sold for 2*l.* a ton. Now, it has appeared to me that if this statement be correct, it is a very important one, and worthy of being brought prominently before the agricultural community in your columns. In acting in conformity with these principles in my own case, I do not sell any straw, because having a considerable extent of permanent pasture on my farm, the summer stock consumes all the straw as food in winter, excepting what is absolutely necessary for litter. In other circumstances, however, and where the best peat mould is obtainable, and a large proportion of a farm is under grain, the stock will not be able to consume all the straw, and therefore what is not eaten may be sold. The point to be determined, then, is simply this: Does a ton of decomposed and pulverised peat-mould act as a manure in a similar manner, and to an equal extent with a ton of rotted straw? Chemically considered, moss and decayed straw are understood to be similar; and, as an absorbent of ammonia, I believe the former is preferable to the other, as it has in a high degree the acknowledged property of fixing the ammonia absorbed; while during the decomposition of the straw, the ammonia absorbed by it is particularly volatile. In turning a manure heap previous to its application to the soil, with a view to the thorough mixing of its ingredients, and the partial fermentation of the moss, an immense quantity of ammonia is given off into the atmosphere and lost, in a heap in which straw in a state of rapid decomposition forms an important element; whereas, it is almost entirely absorbed and retained by the moss, where that material is substituted for straw. Again, when the moss is thoroughly decayed and pulverised by exposure to the atmosphere for 12 months (a process to which it should always, be

subjected) it is more minutely divided, and more easily mixed with the manure, than straw is, as usually applied in an early stage of decomposition.

It appears, then, that moss or peat-mould acts at least as important and useful a part as a constituent of a manure-heap as straw does, and I consider its influence to be equal, weight for weight; but if it should not, if a ton of the one is not equal to a ton of the other, it is obvious, from their relative values being in my case, and in the case of thousands of farmers, in the proportion of 1*s.* to 40*s.*, the point at issue, viz., the expediency and profit of substituting moss for straw, would not be affected. These are my opinions upon this important subject; and with a view of carrying them out in their full extent, I am at present making arrangements for having my cattle put upon boards; but, if any of your numerous correspondents should take a different view of the subject, I shall be happy to see their experience and opinions given in your columns, as I conceive it to be a point which, if fully established and confirmed, would lead to very important results to a large proportion of the agricultural body, to whose interests your columns are so eminently devoted. G. G. M.

REVERTING to the subject of the use of straw in making manure, I confess that I cannot see in your comment any satisfactory explanation of the difficulty. It matters not for what purpose straw is bought, so long as a market for it exists. And that farmers will give the use of straw in exchange for the manure arising in the use of it, when they might sell the straw, proves nothing as to the economy of such a transaction, unless the money price of the manure received in exchange would at least equal the money value of the straw. Possibly this may be the case, where such transactions are common, inasmuch as they usually take place between farmers and stable-keepers, and these last not only make a first-quality manure, but usually a manure containing straw in small proportion. Again, you demur to the assumption that only 5 tons of manure result from the use of a ton of straw. That assumption was taken from your own answer to a correspondent, and though in your own practice more may result, still, from observation and inquiry, I am of opinion that your answer was pretty nearly correct. But, unless there is truth in the speculations of your correspondent Mr. Goodiff, which attribute a high effective value to decaying straw in its action on the soil, it would appear to be of little consequence whether 5 or 10 tons of manure are the result of the use of a ton of straw of the market value of 30*s.* In either case the straw itself is reduced to a manurial value not exceeding 5*s.*, and leaves a balance of 25*s.* to be accounted for. Now unless it can be contended that these 25*s.* are reimbursed by an equal return consequent on its expenditure, either from the land by an increase of crop, or by improvement in the stock, or by a saving of labour in attending on the stock and removing the manure, or in two or more of these modes combined, then manifestly loss is incurred to whatever extent the return does not equal the expenditure. We do not perceive this loss, because, in most cases, we grow our own straw; and even, where straw is partly bought by farmers, unless accounts are kept in exact detail the loss escapes observation. But I think that to one who investigates the subject, the use of straw as litter in districts where a fair marketable value for straw exists, must appear very costly, and must suggest the inquiry in what manner it can be dispensed entirely, or economised in the greatest degree. No doubt manure must be had, but it does not follow that manure must be made by what is called "treading down straw," nor even necessarily by beasts at all, unless we can feel a comfortable assurance of a profitable result when we charge the selling price of straw against the beasts and their faecal product. What will a ton of straw do towards manuring an acre of land apart from the faeces it conveys? It is in fact little more than a very expensive package for the conveyance of other matter to the soil. But 30*s.* worth of guano will alone secure a good crop of almost anything of which the quality of the land justifies the cultivation. Let the lavish use of straw be retained in those remote regions in which its bulk deprives it of a fair saleable value; but let a different practice prevail in more favoured districts where, even if the price fell one half, from the introduction of less limited supplies, the straw of a Wheat crop will still represent a money value of from a fourth to a third of the rent of a farm. Above all, let attention be turned more than it has been to those crops, and products, and modes of manuring, which the peculiar demand and facilities of our varied and ever varying localities should suggest, instead of following one another without counting the cost in a too great uniformity of practice. Alex. Hall Hall, Waterygate, Feb. 17, 1853.

#### Home Correspondence.

*Disease in Swedish Turnips.*—Permit me to join in the opinion of your correspondent Mr. Taylor, at page 107 of the last week's Paper, who has to a certain extent attributed the progress of mildew to the time of sowing the seed; indeed, experience has convinced me that such is the case in many instances: and early in the season (when the seed may be got in to advantage on strong soils), if sown on light soils the consequence would be (no matter how much care might have been bestowed) that mildew would set in to a fearful extent. I may here adduce one proof in favour of late sowing on light

sandy soil, the surface of which had been improved by marl. On 28th May last we got a few acres of Swedes sown, in order to have them come in for early use; the quantity of manure applied was at the rate of 12 tons best fold-yard dung, and 2½ cwt. Peruvian guano, per acre. The necessary care was bestowed on the young plants by keeping the weeds down, frequent hoeings, &c., until such time as the leaves covered the entire surface, and would admit of no further operation being performed. About the end of September, however, mildew had set in to a serious extent, causing the leaves to wither and fall off, thereby impeding the future development of the plant; the bulbs were taken up and stored in October. Notwithstanding the great injury which the effects of the disease must have produced, the crop of dressed roots yielded about 30 tons per acre; of course they were deficient in nutritious properties. The next sowing was our general crop of Swedes, which was got in during the first week of July. The soil was rather lighter in texture than the one just alluded to, but the manuring and the rest was performed in a similar manner to the first. The result is an excellent crop of Swedes, free from disease. P. Deane, Houghton, Brough, Yorkshire.

*Rooks.*—Your correspondent "J. W., Peterborough," has taken up the cudgels against the rooks and birds generally; and although I admit the damage done by them to the Wheat fields, yet in the case of the rooks I think their benefits to the farmer so far exceed the injuries they do him, that I am of opinion that, with the exception of the stock he keeps on his farm, there is no live animal which comes upon it which benefits him as much as the rooks. I admit that they eat grain both at seed time and harvest, and that they are destructive to Potatoes; but for how many weeks in the year does "J. W." imagine they are fed upon the produce of the farmer? Suppose we say two months (which is a liberal allowance, seeing that at the time they are eating Wheat and Potatoes, they are also feeding upon other things when they can obtain them), what does "J. W." suppose they feed upon the remaining ten months? What but grubs, worms, insects, and their larvæ. I once endeavoured to estimate the amount of insect food destroyed by the rooks in a rookery near the town where I was born (belonging to W. Vavasour, Esq.), where it was supposed there were 10,000 rooks. I reckoned that each bird eat a pound of food per week, so that for five-sixths of the year they lived entirely upon worms, insects, and their larvæ; here, then (assuming my data to be correct), there is no less a quantity than 200 tons of destructive vermin eaten by the birds of a single rookery; and when we consider that the larvæ of some of these insects (those of the cockchafer and some others) are in the larva state for three years, and are devourers of the farmers' crops the whole of that time, we may find it difficult to realise the amount of destruction which is prevented by the rooks. In some countries they are eaten up by the grubs of the cockchafer, but here (thanks to the rooks) it is not even known as a destructive insect. The first Lord Ribblesdale was a great friend to the rooks, and I have heard this partiality accounted for in the following way: It is said that many years ago a flight of locusts visited Craven, and threatened to do much damage, but that the rooks came by thousands from all parts of the country and attacked the locusts so vigorously and successfully that they were soon exterminated. "J. W." is an enemy to the rooks because he can perceive the mischief they do; but he cannot perceive the benefit: and I hope and believe that when he comes to reflect on the great portion of the year during which they eat nothing but insect food, he must admit that the benefits they confer upon the farmers in the aggregate much exceed the injuries they inflict. It is true that benefit is sometimes much diffused, whilst the injury is concentrated; and if "J. W." is the sufferer in such a case, no wonder he is a little sore about it; but let his bird-boy be a little more diligent, and then he will reap the benefit without receiving the injury. T. G., Clitheroe.

*As to fattening Calves, or vealing them,* I should like to know whether it is advisable to cram them with balls composed of flour, linseed, or any other meal, at mid-day, allowing the calf to suck morning and evening; this may be regarded as a supplemental meal. Looking at the case of fat lambs, the practice pursued in relation to them would justify the same course with calves. The lamb is always taking the food of its mother, or its auxiliary from a trough; but with the calf, as practised in the part of Essex where I reside, the practice is to allow the calf to suck morning and evening, but to starve during the interval. A. B.

*Transplanting Wheat.*—Now that all hopes are lost, February being far advanced, and no opportunity offers for sowing spring Wheat with any certainty of success, "transplanting" may still be resorted to in March (not later) with certain hopes of obtaining even a larger produce than by the ordinary process of sowing. If the weather, then, should prove dry, no fears need be entertained, as nothing grows freer from transplanting than Wheat. The more the land is trodden, before and after the process, the better; in short, it should be persisted in. We repeat, and confidently assert, that our experience justifies the propriety of thinning what are commonly called full crops of Wheat, for the purpose of being transplanted on well prepared land. The expense of dibbling will be fully made up by the saving of seed, and the extra produce of both the crops which are thus thinned and transplanted. We trust that farmers will lend attention to this repeated



admonition, for their own interests and the welfare of the country at large. More corn must be grown in this country by hook or by crook, or the exigencies consequent on free trade in corn may be still more sensibly felt than at present. *Hardy and Son, Maldon, Essex.*

**Agricultural Machines.**—I think it very desirable that the attention of agricultural implement-makers should be directed to the following intimation, which appears in the report of the judges of implements at the Lewes Show, in 1852. In awarding the prize to Messrs. Richmond and Chandler, for the best chaff-cutter, the judges say (*vide Journal of the Royal Agricultural Society, No. 30, p. 326*):—"The judges beg to commend the machine of Messrs. Smith, of Stamford, for a side lever, by which the feeder can reverse the action of the machine (even if both hands should be caught in the rollers) by pressing his body against the lever. They are of opinion, from the number of accidents that have occurred, that all machines driven by horse or steam-power should be perfectly under the control of the feeder, under all circumstances, and suggest that in future none be eligible for prizes that are not so arranged." As the knowledge of this intimation may be of some value to those manufacturers who purpose exhibiting their chaff-cutters at the Gloucester Meeting, perhaps you may think it worth while to give it a place in your columns. *A. B.*

**Some Account of a Cheap and Profitable Mode of Supplying Labour in Prisons and Workhouses.**—The difficulty of providing labour for prisoners in separate confinement, and for the poor in our workhouses, particularly labour of such a kind as in some degree may relieve the ratepayer from the heavy tax which is levied for their maintenance, is universally acknowledged. To accomplish this without injury to health, or to free labour, increases the difficulty of this problem of the day. From a trial of the dressing of steeped Flax straw, formerly made at my suggestion in our county gaol, I was convinced that both the steeping of the straw, and the dust raised in the process of scutching, present insurmountable objections to the working of that process in prisons, and the first objection would equally apply to many of our union workhouses. I have therefore contrived a simple mode of dressing Flax straw, without steeping or scutching, as a means of affording labour to prisoners in separate confinement, and to paupers in workhouses, which labour, from the personal inspection of an eminent physician (formerly one of the Government inspectors of prisons), I am enabled to state is perfectly healthy, and well adapted for either a separate cell, a room, or a shed in a yard. It is also amply remunerative, and the process is so simple that it may be learned in one hour. Men, women, and boys may be profitably employed in the work. The tools are very portable, and neither the produce nor the tools are easily injured. There can be no doubt that a ready market for Flax straw is the chief obstacle to the cultivation of this valuable plant in this country, and I confidently rely on the prompt and hearty co-operation of the farmer, if I can prove that such a market may be tendered to him. As to the cost and profits of this mode of labour, I will briefly state some facts. Good coarse Flax straw can be bought at 3*l.* per ton after the seed is taken off, or even less. With the two simple implements which I have lately contrived for the purpose, a man can clean about 12 lbs. weight of unsteeped Flax straw in six hours, producing in that time from 2 to 3 lbs. weight of Flax ready for the manufacturer, a sample of which Flax has been valued by a London agent at 35*l.* to 45*l.* per ton; so that in every ton of Flax straw cleaned by the inmates of the gaol or workhouse, there will be a net profit to the establishment of about 4*l.* to 5*l.* 15*s.*, exclusive of waste tow and chaff. Each man can earn about 8*d.* in six hours. The waste tow makes good matting, &c., and the finer part of the chaff, being of an oily nature, is readily eaten by cattle if mixed with other food. These surplus substances will fully pay for any extra charge, such as carriage, and commission on sale, &c. With regard to the cost of tools, a complete set can be supplied for 50*s.*, from which others can be made by any rough carpenter in or about the establishment. The material will cost no more than 1*l.* I trust it will appear from the above statement that the labour I propose, though amply remunerative in prisons and workhouses, can in no way compete injuriously with free labour; indeed every rate-payer will benefit by the saving which may be effected in the county and poor rates by this means. The farmer will reap the further benefit of a ready market for his Flax straw worth fully 6*l.* per acre, exclusive of seed, which is worth from 6*l.* to 8*l.* per acre, and the harvesting of this crop will afford him the means of keeping his hands profitably employed until required for Wheat harvest—no mean advantage, if we look to the imports of Flax, Linseed, and oil-cake, and also to the emigration returns for the last three years. The prisoner while employed in healthy labour is armed against the dangerous pressure of solitude; nor can the work of permanent reformation be said to stand still while both the prisoner and the pauper puts on the habit, and the power of obedience to the first law of his Maker, which may incline and aid him to earn an honest living. This simple work may be easily adopted for any industrial establishment, or even lunatic asylums; but for industrial schools having water available for steeping, the Belgian process introduced by Mr. Warnes will be found more remunerative in general, and the practice acquired of dressing Flax will afford a ready means of employment, as such knowledge is increasing in demand. *G. M.*

**Deep Draining.**—I have a few acres drained at 15 yards interval, and 5 to 5½ feet deep. Part of the land so drained has a clay subsoil with beds and "packets" of sand intervening, and here and there with shakes or divisions in the clay, showing a very thin surface of sand over the divided portions of the clay. The other part, after the yellow clay which prevails immediately beneath the soil is passed, lies on a very hard and stiff blue clay. The field is quite "dry." After the heaviest of the very heavy rains of the past five months, in the course of a few hours the surface water had gone (the field was miserably wet before the draining was executed), and the clay part appears as dry as the rest of the field. Adjoining this lies another small field, drained 8 yards (or thereabouts) wide, and 3 feet 3 or 4 inches deep. Except where this has been dug 12 ins. deep, or trrenched 20 to 24 inches deep, it has been through the autumn and winter very wet indeed, the subsoil being everywhere like that in the other field, i. e. clay with beds of sand, and sandy cracks permeating it in almost every part. I may say further that, seeing the wet state of much of this field, I have put in some additional drains 5 to 6½ feet deep, according to surface irregularities. These have already shown their influence in drying the wet surface and enabling me to plough 9 inches deep, where in November it was so wet I could hardly draw my Carrots, many of which had rotted in the ground. *A.*

**Draining.**—My remarks on this subject have been controverted. An anonymous correspondent, to prove the value of deep draining, states, it is generally known the roots of corn plants penetrate to the depth of 4 or 5 feet in favourable circumstances—a stiff clay being the subject under consideration. Mr. Mitchell contrasts my statements with this gentleman's, and terms my notions antique—that I want experience—eulogises science and practice, and in my opinion repudiates both at the end of his letter, by what he states with regard to the intervals between the drains, and his declaration of being a 4 feet drainer in all clays. I am obliged, by his invitation, to see the draining he is superintending for Mr. Davis; but I have known the London clay many years; in 1818, and subsequent years, I drained many acres near London. In the Weald of Kent 4 feet drains have been tried in several instances and failed, and the work redone at 2½ feet successfully, and in some instances the shallow drains have been made directly over the deep one, and have answered well. I have property in the Weald, and am therefore attentive to what can be efficiently accomplished—not merely what is desirable, but what is practicable. We shall all, most likely, be eventually satisfied that the depth of drain must depend on the texture of the subsoil—clays varying so much in their degree of porosity—and that the proper depth will be at that point where saturation is arrested—the water ascending more rapidly than it descends from this point during rain. This can only be ascertained by persons of experience; but the inexperienced may very easily and cheaply acquire it by having three short drains made early in the autumn, one of 2½, one of 3, and one of 4 feet deep. The drain that first discharges the water after rain will be at the proper depth for that soil. Water ought not to be suffered to remain on the surface of the soil a day, or even an hour. Quickness of escape of the water is the soul of draining. *W. C. Selby, Ightham, near Seven Oaks.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House in Hanover Square, on Wednesday last, the 23d of February; present: Colonel CHALLONER, Trustee, in the chair; Mr. Evelyn Denison, M.P., Mr. Druce, Mr. Gadesden, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Majendie, Mr. Mainwaring Paine, Mr. T. W. Pocock, Mr. Eugene Risler (of the late Agricultural Establishment of Versailles), Mr. Rowlandson, Prof. Simonds, Mr. Simpson, Mr. Augustus Smith, Mr. H. A. Smith, and Mr. Reynolds Solly.

**CABBAGE CULTIVATION.**—Mr. James A. Legard, of Lenton Hall, near Nottingham, favoured the Council with the following account of his management of the Cabbage crop.

The great difficulty I found in producing a good Cabbage consisted mainly in the uncertainty of being able to get good seed or good plants. They varied so much in quality, that it was impossible to place any dependence upon them. It therefore occurred to me some four or five years ago to turn my attention to improving the character of my Cabbages. With this view, I selected the stocks of the best plants, when they had arrived at maturity, for seed; choosing those of the closest texture, with the least disposition to burst or run to seed, and with short stems. The stocks were removed to the garden, and the seed collected the following year. I have done this for several years, each year selecting still the best; till, at last, my crop has become almost uniform in its character and excellence. The Cabbages were last year grown in the same field and by the side of my Yellow-Globe Mangolds, sown 30 inches apart in the rows and produced nearly 30 tons to the acre without tops and bottoms. The soil was strong loam, not clay; the manure, eight one-horse cart-loads of good farm-yard manure and two loads of gas-lime to the acre, put on early in the spring, after a West stubble, which was sheaved, and the long stubble ploughed in in the autumn, to keep the land hollow and exposed as much as possible to the atmosphere during the winter. The land was twice ploughed, with the ordinary amount of cleaning and hoeing, and the estimated cost of the Mangold was 5*s.* 6*d.* per ton. The Cabbage stocks were planted in the garden for seed on the 28th Oct., 1850. The seed was cut on the 4th July, and sown in the seed-bed the 25th August, 1851. The plants were pricked out from the seed-bed the 25th September, 1851, and planted out in the field the last week in April, 1852. The weather being very dry at that time, they were watered with liquid manure from the farm-yard three times, at

intervals of five or six days. They were planted at a yard apart. I will here mention a piece of economy which is practised at no cost, in the mode of planting. The usual mode of planting a yard apart is to set the plants in rows one yard from each other, the plants being a yard apart in the rows, and planted alternately; but by this method, as plants grow in circles and not in squares, there is a loss of space. The plants should stand at the angles of a series of equilateral angles; and this mode of planting is applicable as well to trees and all large plant's, the perpendicular drawn from the vertex of such a triangle to the middle of one on the opposite side representing the distance between the rows, while the hypotenuse (or either of the other two sides), will represent the required distance between each plant, such perpendicular and hypotenuse bearing to each other, in round numbers, the proportional lengths of 7 and 8 respectively. If it is, therefore, required to set plants 4 feet apart, they must be that distance from each other in the rows, but only 3½ feet between the rows; by which means about one-eighth of the land is saved, and an acre of land is made to grow 5445 plants at a yard apart, instead of 4840 planted in the usual way. My crop last year was exceedingly level. I took an equal quantity of the largest and smallest Cabbages, and weighed them; they weighed from 21 lbs. to 35 lbs., the average being 29 lbs., and this, with 5445 plants on the acre, gives the enormous weight of upwards of 70 tons. I should mention, however, that not having a sufficient number of Cabbages, I planted by the side of these other Cabbages, obtained from a nurseryman, which certainly did not average a third of the weight above stated, but were very irregular in quality and size, run to tops, burst at the heart, and made but a very moderate crop, so that I attribute the whole advantage I gained to that care in the selection and management which was given at so little or no cost. My neighbour Mr. Paget, whose opinion on all questions in practical agriculture carries the highest authority, finds it essential to put the manure into land a long time before the Cabbages are planted, if possible in the autumn; mine were manured in the spring, but the manure was comparatively stale. The plants should not be kept long enough in the seed-bed to draw one another, because it makes them stalky, and the sap-vessels are restricted in size, as a short-stalked Cabbage will always be found to be a thick-stalked one.

Mr. Fisher Hobbs favoured the Council with a statement of the successful manner in which the cattle Cabbage was cultivated in the eastern counties. He had himself found it a most invaluable green food for his stock. He considered, however, that it was a particular point to sow the seed in the year previous to the one in which the crop was required; he had constantly found such plants very superior to spring-raised seed. He sowed the Drumhead variety in August, transplanted it in November, and planted it out in the field in April, each plant at a yard apart. He had also several acres constantly under cultivation with early Cabbages, such as the early York, Sugar-loaf, large Devonshire Paignton, and large late York; and he could obtain from his Cabbage crops not only fresh nutriment from his stock through the harvest, but by care in the succession he could if he liked obtain for them from the same source an abundant supply of green food up to Christmas. He had also early Yorks planted in November, which in May would be ready, and of sufficiently fine quality to send to Covent Garden. He had not found it necessary to make the selection of plants referred to by Mr. Legard, having never been disappointed in the seed supplied him by Messrs. Thomas Gibbs and Co., the seedsmen to the Society, which he had constantly found to be of first-rate quality.—Colonel Challoner could fully confirm Mr. Fisher Hobbs's testimony to the value of this green crop. Since he had huddled his pigs during summer in the cool shady places of his woods, and supplied them with water and Cabbages, they had not only lost that tendency to deterioration which he had previously observed in them, but on the contrary had increased one-third in value. He had been led to adopt this mode of management from having witnessed, during his residence in Italy, the striking effects of that pasturing of herds of swine in the Chestnut groves of Sorrento, to which he had alluded on a former occasion when the same subject was under the consideration of the Council.—Mr. Mainwaring Paine agreed with Mr. Fisher Hobbs that there appeared no necessity to make a selection of plants for the purpose of ensuring good Cabbage crops. He had himself obtained his seed from the same source as Mr. Hobbs, and could bear his testimony to its excellent quality. He had from 20 to 30 acres planted with Drumhead Cabbage, from seeds sown at different times for the purpose of ensuring a succession in the supply. He found it admirably suited for his pigs, sheep, and oxen. Many of his Cabbages were found on trial to weigh 30 lbs. each.

**RAPE-CULTIVATION FOR OIL.**—Mr. William Brotherton, of Waudsworth, Surrey, favoured the Council with a communication, strongly urging on the attention of the members the increasing value of Rape as an agricultural crop, in a commercial point of view, for the purpose of yielding seeds from which could be obtained that supply of oil which the increasing demands of machinery on the one hand, and the decreasing or uncertain amount of olive and other foreign oils, rendered so essentially important at the present time. He supported his opinion on this subject by numerical details, and pointed out the serious obstacle to the cultivation in question, occasioned by the prohibitory clause inserted in many leases expressly interdicting, or in a great measure limiting, its adoption, under the impression of its exhausting nature.—Mr. Rowlandson stated to the Council the results of his own experience connected with the Rape-cultivation in Lincolnshire. He condemned the waste occasioned by burning the refuse of this crop, which gave, on decomposition, to the atmosphere what ought, as well as those fixed substances which were left in the ashes, to be given back to the soil. He knew few crops less impoverishing than Rape, provided the stalks were rotted and applied to the land; it might, on the contrary, be made by judicious management exceedingly profitable as manure; but in Lincolnshire they did not nurse these things, although, he believed, they reckoned the Rape crop better for



them than Wheat. The mere abstraction of the oil from the seeds would not of itself, he thought, exhaust the amount of fertility, if the other constituents of the plant were but returned in various shapes back into the land. With regard to the oil, although depreciated by its colour and odour, it was used extensively for preparing inferior cloths, and for the purpose of lighting; Olive oil was well known to be adulterated with it. Colonel Challoner remarked that he grew the Gold-of-Pleasure Flax with great advantage on his land, which seemed peculiarly adapted to its cultivation; while from Linseed, he could not get back out of the ground one quarter of the seed he put into it for sowing. He put the straw into his boxes with the cattle, and found that it made a litter much superior as manure to that obtained from common straw; the seed he gave in winter to his bullocks and milch cows.—Mr. Druce, of Eynsham, stated that he found Rape better on strong arable land than Tares. He had a crop of 20 acres of it every year. He sowed for it in April, and it came up in about 10 weeks, when he soiled and ploughed it in. He only sowed the dwarf Rape. He considered feeding off with Rape as the best preparation for Wheat on strong land.—Mr. Majendie had observed at Caen and Rouen that in November they sowed Colza after Wheat, and that the plants in the following summer were transplanted in the most simple manner by merely turning a furrow.—M. Eugène Risler favoured the members with a statement of his own experience on the continent connected with the subject of Rape cultivation. The Rape, he observed, required a fertile soil, from which it extracts a large amount of manuring matter. It was, however, considered by the majority of farmers in northern France, in Belgium, and in Mecklenburgh and other parts of Germany, as the most profitable crop for their rotations. He believed that this favourable opinion arose from their estimate of the following circumstances: 1. The price of Rape seed on the continent. 2. The high value of Rape-cake for fattening cattle, in the same manner as the Linseed-cake in England. 3. The use of Rape straw for the purpose of litter. When the farmers sell their seeds to the oil crusher, they generally make it a condition of the contract that the cakes left after the extraction of the oil shall be returned to them. The straw, he remarked, being very porous, absorbs with great facility the liquid manure with which it comes in contact; but being a hard litter, if not already broken, it is, before employment for that purpose, spread out in the farm-yard and trodden by the cattle, and then carried into the stables, generally forming the first or lowest bed of the litter, over which a layer of Wheat-straw litter is placed. The cultivation of Rape, he stated, required a soil more strong than light, a loamy one being that which was best suited for the purpose. The rotation was generally the following one:—1. Turnip or Beet, well manured; 2. Oats or Barley; 3. Clover or Grass; 4. Generally Rape-seed, with a half-manuring; 5. Wheat, which succeeds very well after Rape. In Mecklenburgh, the Grass is kept till May, and once pastured by sheep before being ploughed in. In strong soils, a half-fallow between Midsummer and autumn is considered as a requisite means for cleaning the land. The Rape is sometimes first sown during June in a nursery, and planted out in the field during August; one acre of such nursery-ground being sufficient to furnish plants for five acres of field-planting. At other times, the Rape is in the first instance sown in the field where it is to form the crop; it being, however, in this case, sown in the month of July. In some years the first method succeeded the best, and in others the second, according to the temperature; but in a farm of any considerable extent, it was found convenient, for the distribution of labour, to cultivate one portion of the crop on the first of these plans. The seeds were generally drilled in. He then referred to the great injury inflicted on the Rape crop by insects in the early part of the spring of the following year; the only escape from which appeared to arise from planting the Rape in well-manured ground, so that the development of the plants from such amount of fertility might be more rapid than the destruction effected by the insects.—Colonel Challoner threw out the suggestion whether there was any reason to suppose that the insects in question were peculiar to the Rape crop, or merely transferred to it from the Grass which had been previously ploughed up.—M. Risler then proceeded to state that the harvest of the Rape crop was the first harvest in the year, and occurred in June; it was often difficult, however, in dry weather, to get in this crop, in consequence of the pods becoming very rapidly dried up, and shedding their seed before the whole could be gathered in; a loss of produce thus taking place in the seed, which being left on the ground, only interfered as a weed with the ensuing Wheat crop. For these reasons it was found best not to sow all the Rape at once, but portions only of it in succession, so that maturity might ensue at different times; also, when the seeds had not become entirely black, but only brown on one side, to cut the plants with a sickle as early as possible in the morning, not during the heat of the day; allowing the crop when thus cut to lie on the field for a few days, until the seeds had fully ripened, a little rain in the case of Rape, or in that of Oats, being rather beneficial than otherwise. The Rape, when thus ripe, is either carried home in waggons provided with rick cloth; or, as in France and Belgium is oftener the case, threshed out in the fields, by being spread over cloths placed on the ground to receive the seed, and beat with short wooden rods.—Mr. Fisher Hobbs remarked, that he cultivated for particular purposes three different

varieties of Rape, namely, an early dwarf Rape obtained for him by his bailiff from Dorsetshire, the common Rape, and the Irish Rape. For early feed, he preferred a mixture of the dwarf Rape with an early variety of Turnip; this he sowed in the first week in May, and in 10 weeks got very excellent food for fat sheep, which being fed off, the land was ploughed, and the season not too late for sowing a green-top yellow Scotch Turnip he had met with in the Lothians, and which gave him a very good crop of roots ready for use in November.—Captain Stanley Carr was the first contributor who communicated to the Society a statement of the management of the Rape crop in Mecklenburg, a district in North Germany situated in the same latitude as Yorkshire, with a climate, however, warmer and drier in summer, but colder in winter. He remarks in his Prize Essay (Journal, I., 125): "Where the land has a sufficient proportion of clay, Rape seed is sown broadcast in the end of July or beginning of August; this crop is greatly benefited the following spring by dusting gypsum over it, about 100 lbs to the English acre. In July the seed is ripe, and as the weather is generally fine, is trodden out by horses, very expeditiously, on large canvass sheets in the field. The oil of this seed, when purified, is without smell, gives a brilliant clear-burning flame, and is universally used all over Germany, in the saloon and the cottage. The value of the crop is very precarious, because it is subject to so many contingencies; the Turnip-fly, slug, and caterpillar make war upon it when young, and when in flower a small beetle (*Halicta nemorum*) often eats away the blossom-bud, or lays its minute larvæ in the petals, ultimately furnishing every pod with a maggot, which either eats the seed away, or, forcing the pod open when nearly ripe, causes it to fall out. When sowed all these calamities it is, however, a very remunerating crop, worth from 10*l.* to 20*l.* an acre, especially if there is a foreign demand. The straw is generally burned, and the ashes scattered over the field; it is sometimes sold to the soap-boilers, who value it highly. Two furrows are then given for Wheat, sown broadcast in September."

The Council having ordered their usual acknowledgments for the communications then made to them, adjourned to their monthly meeting on the 2d of March.

## Reviews.

*Remarks on the Enfranchisement and Improvement of Copyhold and Life-Leasehold Property.* By Arthur Scratchley, M.A. 12mo. Mitchell.

THE object of the author of these remarks is to show that it is desirable that societies, in the nature of friendly societies, should be formed for the enfranchisement of copyhold property, and for the improvement of it after enfranchisement. For the principles on which the societies should be formed, and for the means which ought to be taken, in order that they may "present as secure a channel for investment as any in the kingdom," we must refer our readers to the remarks themselves.

*A Suggestion for the Abolition of the Law of Settlement.* By W. B. West. Rogerson. Pamphlet.

THE amendment of the Poor-laws is a matter of such importance, and will probably be so soon attempted, that any plan proposed by a person who is practically acquainted with and has turned his attention specially to their actual state and working, deserves consideration. This matter was, however, noticed at such length in a former number, when we laid before our readers an outline of Mr. Pashley's work on Pauperism and Poor-laws, that we do not think it necessary to do more than call attention to Mr. West's pamphlet and the plan proposed by him.

"The plan proposed in this paper differs from every other: while not denying that the assessment of property requires adjustment, it proposes to separate the two questions, and to treat of persons without touching property; and to confer an advantage upon the artisan, agriculturist, and the necessitous, without injury to the landed proprietor, tenant farmer, or any existing interest. The proposition is to abolish settlement and removal, and to render relief to the necessitous whenever and wherever it may by them be required; and this it proposes to accomplish equitably, without a national or uniform rate, or any modification of the present law into union instead of parish settlement. The proposition will accomplish its object without change in the executive department, or any increase of the officials now engaged throughout the country in the working of the law. It proposes to continue the authority of, and the administration of relief by, boards of guardians. It proposes to maintain the rate-payers' right of electing boards of guardians. It proposes to continue in all parishes in the kingdom their various privileges, and the right, now in practice, of providing the funds for the maintenance of the poor, and to preserve that right in conformity with the custom in each locality, which is essential for the upholding of an effectual control over the levying and outlay of local taxation. It proposes that the expenditure shall be open to inspection and objection, and to hold the guardians accountable, in the way they now are, for the disbursement of the rates. In preserving these rights it is expected that each locality will devise means for future economy and check; and thus centralisation in any form will be averted. It proposes to adjust itself to the wants of an increasing or diminishing pauperism. It enters not into the merits of the question of rating—or the in-

equalities of any existing assessment—nor with what property in future may or not be eligible to contribute towards the support of the necessitous. These being distinct questions will, when separated from the law of settlement and removal, be more equitably negotiated. In this proposition the monetary portion is not a primary motive; but the plan will nevertheless effect a saving estimated at about half a million annually, and a much larger sum contingent."

## POULTRY.

*Poultry: Old Subscriber.* Pure Cochon-China fowls should have yellow legs, and be feathered to the toe. I have often noticed much difference in the colour of the eggs laid by the same bird. I cannot account for it, but I have always seen them lighter in cold weather than in hot. I have never seen any quite white, and if I had I would not sit them; I should have my doubts of their purity.—*J. A. Dublin.* I suppose you mean the roup, as it is very common now, from long wet and then snow. Wash their faces and eyes well with vinegar and water. Give them a dose of castor oil (a table-spoonful), and then feed with bread and ale every morning and evening. During convalescence I have found a tea-spoonful of cod liver oil per day do great good.—*G. F.* If they suffer no check, I certainly think a February chicken is more likely to get a prize than one hatched in April; but it is astonishing to notice the rapid growth of May chickens.—*G. W.* I cannot tell you whether the Cochon Chinas are falling in public estimation, but Mrs. Potts' sale is a proof that they are not lessened in value.—*Mary.* I believe for the first 12 hours after hatching, warmth is more to chickens than anything else, and I never feed them during that period.—*Competitor.* You are not sure to breed prize birds from prize birds; much depends on your management of your chickens. But all the management in the world will not produce first-rate fowls from bad stock. *J. Bailey, 113, Mount Street.*

## Miscellaneous.

*Agricultural Dulness and Commercial Activity.*—Being an Englishman, I like fair play. The eternal refrain of "agricultural ignorance and dulness" is becoming, if it has not become, like the "organ grinder," a little annoying. A wise man has said "Comparisons are odious." That of class against class is peculiarly so, and shows bad taste. There are plenty of ignorant and unsuccessful tradespeople, as our bankrupt courts show. Mr. Heywood has said that there is a national loss of 3,000,000*l.* a year in our town sewage, and added, "This is a farmer's question," as if the farmer were to be the pioneer in the sanitary improvement of towns. If Sheffield were to make its 84,000*l.* worth of waste matter into a good and cheap portable manure, it would soon find customers for it. It is usual to make an article before offering it for sale; and I, as a simple-minded farmer, think that the sharp men of Sheffield will do this for the sake of both pocket and lungs, when they can see the professor's profit. I don't want to go to Peru for ammonia, I can assure you. *Geo. A. May, in Sheffield Paper.*

*The Kirtling Drainage.*—Much attention having of late been drawn to the great improvement to be made in heavy land, by deep draining, the following account of the works now being carried on upon the Kirtling and Ashley estates, the property of the Hon. Mr. North, may be interesting and acceptable to those landlords and agriculturists who are desirous of improving their property in like manner. The work in question is effected by means of a Government loan, under the direction of Mr. Hewitt Davis, the inspector under the Government Commission. It has been found by minute calculation that the outlay will not exceed 5*l.* per acre, and the loan being to be paid off by 22 instalments, in annual payments of 6½ per cent., the charge per annum to pay the interest and repay the cost will not exceed 6*s.* 6*d.* per acre. This the tenants, who have their farms on leases, are most willing to pay. The soil is diluvial deposit, principally strong clay mixed with flints and gravel, in many parts to be found in strata. The drains are all 4 feet deep, and placed at a distance of from 33 feet to 37 feet apart; and, instead of the old system of turf draining, tile pipes have been adopted, which in every instance effectually carry off the water. A tile kiln has been erected in the centre of the estate, by means of which a regular supply of a superior article is furnished to the tenants at three-fourths of the prices usually charged, and with an important saving of expense in carriage. These pipes are manufactured by Mr. Clayton's patent double action machine, that took the prize at the Great Exhibition, and at the principal agricultural shows in the country, and from their true cylindrical form, are far superior to those in ordinary use. The effects of the deep draining already completed have been so satisfactory, that the prejudices of the tenants against deep draining have been entirely removed; they are now very anxious to have their lands so drained as quickly as possible, and several are willing to subject themselves to considerable sacrifice to expedite the work, fetching their pipes 12 or 15 miles, rather than wait another year for a supply from the kiln at home. It is not going too far to say that in many instances the whole cost of the draining, where done this year in time, will be amply repaid by the first year's crop, for never has the Wheat crop promised better than upon those soils which have been rendered dry by draining, while not half the lands intended for Wheat, upon wet soils, have been planted, and much of what has been planted will have to be resown. A work of such paramount importance must be fraught with great interest and benefit both to landlords and tenants, and as information is often better conveyed by observation than in any other way, they would derive great benefit were they to avail themselves of the kindness of Mr. Innes, the resident agent, who permits any one to inspect the works; and we would advise those in favour of thorough draining to



visit Mr. Fisher's farm at Silverley, who has had above 100 acres drained this winter, and from whose experience and knowledge they would receive valuable information on the subject. As the advantages from draining become better understood, so the desire and necessity for laying the land dry would increase; for the fact is undeniable that the occupiers of undrained farms will find it impossible to compete with those whose operations are unimpeded and crops uninjured by the wet, their land being fertilised, drained, and warmed by the descent of the rain, in lieu of being impoverished and chilled by its discharge at the surface. *From the Bury and Norwich Post.*

### Notices to Correspondents.

**BONES:** *Small Farm.* Reduce them by breaking with a hammer, if you have no better plan; and after that, still further, by the use of acid.

**CHERRY:** *A. B.* If transplanted, it must be done when very young. We have done so to some little extent; but they did not when so treated succeed very well.

**DISEASE IN EWES:** *W. E. S.* The cases appear to be apoplectic in their character. We should advise bleeding (but, in the case of heavy ewes, it must be very moderate), after which some aperient medicine may be given with cordial combined. *W. C. S.* **ECONOMICAL MANURE:** *J. C.* We do not know it, and must leave the inventor to advertise himself.

**GUANO:** *Investigator.* You had better not mix your seed with it, notwithstanding its dilution with earth. Mix it with earth to ensure its uniform distribution, but sow the seed independently. — Lucerne is good for milk cows. You must not let it get into flower, and then there will be no complaints of woody fibre.

**GUANO FOR PASTURES:** *D. J. M.* Apply as soon as mild weather sets in 3 cwt. per acre broadcast, having first mixed it with a lot of fine mould, to enable its uniform distribution.

**KANSING:** *G. O.* Please to communicate your address.

**POULTRY:** *A. M.* You need not fear that we shall disregard the interests of advertisers. The Stamp Office would take care of that, if we did not.

**WATER-TIGHT LEATHER:** *W. P.* In answer to "W. P.'s" inquiry, I believe that, in combination with "resin and mutton fat," bees'-wax is the proper ingredient to complete the mixture for "paying" his shoes with. The best proportions he would soon find out by trying it once or twice. It is essential that the snout or tallow should have no salt in it. — *H. W.* says, "I pint of drying oil, 2 oz. of yellow wax, 2 oz. of spirits of turpentine, and 1 oz. of Burgundy pitch, melted over a slow fire. With this composition new shoes or boots are to be rubbed, at a distance from a fire, as often as they become dry, till they are fully saturated. The leather then is impervious to wet, and lasts much longer."

### Markets.

#### COVENT GARDEN, FEB. 26.

In consequence of the continued coldness of the weather, the supplies of Vegetables during the past week have been but limited, but of fruit in season there has been sufficient for the demand. Table Peas and Apples are, however, still scarce. The former are almost entirely confined to Bourd Rance and the latter to American Newtown Pippins, which are good but dear. The supply of Pine-apples is pretty well kept up. Forced Strawberries continue to make their appearance. Cob and other Nuts are realising fair prices. Among Vegetables, we remarked some good Green Peas of foreign growth, and from France we have new Potatoes, Horn Carrots, Asparagus, Radishes, and Lettuce. Both Seakale and Rhubarb are pretty abundant. Potatoes are a trifle dearer. Mushrooms are scarce. Cut flowers consist of Heaths, Primulas, Early Tulips, Roses, Cyclamens, Mignonette, and Camellias.

#### FRUIT.

Pine-apples, per lb., 6s to 10s  
Apples, dessert, p. bush, 10s to 12s  
— Kitchen, do., 6s to 10s  
Pears, per doz., 1s 6d to 4s  
Oranges, per doz., 1s to 2s  
— Seville, p. 100, 14s to 24s

#### VEGETABLES.

Cabbages, per doz., 1s to 2s  
Brussels Sprouts, per hf. sieve, 2s to 3s  
Broccoli, per doz., 2s to 3s  
Greens, per doz., 4s to 6s  
French Beans, per 100, 4s to 5s  
Asparagus, per bundle, 5s to 9s  
Seakale, per basket, 2s to 4s  
Rhubarb, per bundle, 9d to 1s 6d  
Potatoes, per ton, 85s to 150s  
— per cwt., 5s to 9s  
— per bush, 2s 6d to 4s 6d  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 4s to 6s  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 4s to 5s  
— Spanish, p. doz., 2s to 5s  
Beet, per doz., 1s to 1s 6d

#### WOOL.

**BRADFORD, THURSDAY, FEB. 24.**—The sales now progressing in London maintain the firmness with which they opened, and this being spread through the country, gives a tone of firmness. The dealers hold for prices which cannot be given to come to this market. The business doing here is very languid; the spinners have shown more disposition to look, but the prices sought deter them from buying. In noils and brokes there is but little change.

#### COAL MARKET.—FRIDAY, FEB. 25.

Wallend Stewarts, 21s.—Ships at market, 89. Little or nothing doing.

#### HOPS.—BOROUGH MARKET, FEB. 25.

Messrs. Patenden and Smith report that the demand for Hops continues unabated at improving prices.

#### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, FEB. 24.**  
Prime Meadow Hay 84s to 90s  
Inferior do. ... 75 80  
Rowen ... 50 60  
New Hay ... 32 36  
E. J. DAVIS.

#### CUMBERLAND MARKET, FEB. 24.

Prime Meadow Hay 93s to 97s  
Inferior do. ... 75 86  
New Hay ... 30 34  
Old Clover ... 95 105  
JOSHUA BAKER.

#### WHITECHAPEL, FEB. 24.

Fine old Hay ... 84s to 90s  
Inferior do. ... 60 80  
New Hay ... 30 34  
Straw ... 28 32

#### SMITHFIELD.—MONDAY, FEB. 21.

The supply of Beasts is rather shorter; however, prices on the average are no better. The number of Sheep is also smaller,

and in a few instances higher prices are realised. Trade is slow for everything. Calves are not so plentiful, and good ones rather dearer. From Germany and Holland there are 541 Beasts, 1830 Sheep, and 103 Calves; from Scotland, 450 Beasts; from Norfolk and Suffolk, 2000; and 400 from the Northern and Midland Counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. ... 4 0 to 4 2  
Best Short-horns 3 10 to 4 0  
2d quality Beasts 3 2 to 3 6  
Best Downs and Half-breds ... 5 0 to 5 2  
Do. Shorn ... 0 0 to 0 0  
Beasts, 3894; Sheep and Lambs, 17,270; Calves, 130; Pigs, 305.

FRIDAY, FEB. 25.

We have a large supply of Beasts, and trade is very dull for them, at a reduction of 2d. per 8 lbs. Several inferior qualities remain unsold. There is about an average supply of Sheep; the demand is not so brisk as on Monday, and it is with great difficulty that the quotations of that day are supported. Although the number of Calves is not large, trade is so heavy that prices are lower. Our foreign supply consists of 68 Beasts, 550 Sheep, and 69 Calves. From Scotland, 180 Beasts; and 105 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. ... 3 10 to 4 0  
Best Short-horns 3 8 to 3 10  
2d quality Beasts 3 0 to 3 4  
Best Downs and Half-breds ... 5 0 to 5 2  
Do. Shorn ... 0 0 to 0 0  
Beasts, 931; Sheep and Lambs, 3210; Calves, 142; Pigs, 220.

MARK LANE.

**MONDAY, FEB. 21.**—The supply of English Wheat from Essex and Kent this morning was small, and disposed of at the extreme rates of this day's market. Foreign met a fair retail demand from consumers at fully former prices. The Flour market is inactive, and prices are unaltered. Barley, Beans, and Peas met a fair inquiry at fully last week's prices, and fine qualities of the latter brought rather more money. The Oat trade is firm, without any alteration in prices.

**PER IMPERIAL QUARTER.**  
Wheat, Essex, Kent, & Suffolk ... White 42-54 Red 40-46  
— Talavera ... 44-60 Red 46-52  
— Norfolk ... Red 46-52  
— Foreign ... 40-58  
Barley, grind. & distil., 25s to 28s ... Cheviot 26-35 Malting 27-31  
— Foreign, grinding and distilling 26-30 Malting 30-33  
Oats, Essex, and Suffolk ... 17-20  
— Scotch and Lincolnshire ... Potato 21-23 Feed 17-22  
— Foreign ... Poland and Brew 19-22 Feed 16-20  
Rye ... 29-32 Foreign ...  
Rye-meal, foreign ... 32-34  
Beans, Mazagan ... 30s to 32s Tick 32-34 Harrow 32-34  
— Pigeon ... 33s to 36s Winds 39-41 Longpod 30-34  
— Foreign ... Small 32-37 Egyptian 32-34  
Peas, white, Essex and Kent ... Boilers 38-41 Suffolk 40-42  
— Maple ... 32s to 35s Grey 30-33 Foreign 32-42  
Maize ... White ... Yellow ...  
Flour, best marks delivered ... per sack 38-46  
— 2d ditto ... ditto 23-38 Country 23-38  
— Foreign ... per barrel 24-28 Per sack 36-40  
ARRIVALS IN THE PORT OF LONDON LAST WEEK.

	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas.
Flour 12854 sks						
1301 brls						
English ...	2688	4236	7578	690	431	264
Irish ...			53	2940		
Foreign ...	5402	1130		10029	306	124

**FRIDAY, FEB. 25.**—The arrivals of grain and Flour this week have been unusually small. To-day's market was very thinly attended, and sales of all descriptions of corn were confined to the most limited scale. In prices we observe no alteration from our last quotations. Floating cargoes from the Mediterranean are freely offered without attracting much attention. We quote Galatz and Ghirka 43s. to 45s.; Polish Odessa, 41s. to 43s.; a fair business has been done in Beans and Barley, the former at about 30s., the latter 20s. to 21s. per qr., cost, freight, and insurance. The Flour trade is exceedingly heavy. Although Wheat met a fair sale here on Monday for consumption, and has rather improved in value in the agricultural markets of the East Coast, the trade throughout the rest of the kingdom has been flat, and in Liverpool was quoted 1d. to 2d. cheaper. Flour is also generally neglected, and purchasable on easier terms. Peas attracted rather more attention, and obtained our extreme quotations. In other descriptions of spring corn we observe no alteration.

#### ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 2480	Qrs. 1150	Qrs. 360	1040 sacks
Irish ...		600	700	
Foreign ...	950		570	1790 brls

#### IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Jan. 15	45 10	29 10	18 7	30 8	34 8	32 5
— 22	45 8	30 5	18 7	32 5	34 11	30 7
— 29	46 0	31 2	18 7	32 2	34 9	31 9
Feb. 5	46 1	31 8	18 7	31 11	34 7	31 5
— 12	45 2	31 5	18 7	30 11	34 10	31 9
— 19	44 6	31 1	17 9	29 3	34 5	31 2
Aggreg. Avar.	45 6	30 11	18 5	31 3	34 8	31 5

#### Duties on Foreign Grain 1s. per qr.

#### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

Prices.	Jan. 15.	Jan. 22.	Jan. 29.	Feb. 5.	Feb. 12.	Feb. 19.
46s 1d	...	...	...	...	...	...
46 0	...	...	...	...	...	...
45 10	...	...	...	...	...	...
45 8	...	...	...	...	...	...
45 2	...	...	...	...	...	...
44 6	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, FEB. 22.**—The arrivals from Ireland and coastwise during the past week have been small, owing to contrary winds; and for the same reason our foreign supplies are quite insignificant, comprising 730 qrs. of Wheat, 620 qrs. of Barley, 625 qrs. of Indian Corn, 100 sacks and 1000 barrels of Flour. — **FRIDAY, FEB. 18.**—The frost continues, with fine, drying, and healthy winds. The trade since Tuesday has been steady for Wheat and Flour, both in price and demand, but this demand is local or for shipment to Ireland, our current values being too high to attract buyers of any moment from the interior. The attendance at our Corn Exchange this morning was slender, and the general demand languid. Holders steadily adhered to the rates as quoted on Tuesday for Wheat, Flour, and all other articles of the Trade, and patiently await good demand, which they anticipate must come upon us before long.

### Sales by Auction.

#### GRANTCHESTER NURSERIES, CAMBRIDGE.

**MESSRS. PROTHEROE AND MORRIS** are instructed by the Proprietor, who is declining the Nursery business, to Sell by Auction, on the premises, on TUESDAY, March 1st, 1853, and following day, at 11 o'clock, the whole of the Valuable NURSERY STOCK, consisting of an excellent assortment of Evergreens and Deciduous Shrubs, 7000 Standard, half-Standard, and Dwarf Plants of all the leading kinds; 2000 Herbaceous and Alpine Plants, Roses in Pots, a fine specimen of Coniferous Plants, and a quantity of smaller sizes; Camellias, Ericas, Epacris, and other hard-wooded Plants.—May be viewed prior to the Sale. Catalogues had, 6d. each, returnable to purchasers, on the premises, 21, King's Parade, Cambridge; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

Also in May, the entire Stock of soft-wooded Plants, consisting of Dahlias, Geraniums, Cinerarias, Bedding Plants, &c., with the newly-erected Greenhouses, Pits, Frames, and utensils-in-trade.

#### TO GENTLEMEN, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, March 4, at 12 o'clock, about 200 CHOICE DOUBLE CAMELLIAS, from 18 inches to 5 feet, comprising all the approved kinds, beautifully furnished with bloom buds; 100 very strong Camellia Stocks; also a choice assortment of Standard and Dwarf Roses; a fine collection of American Plants, comprising Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Magnolias, Andromeda floribunda, &c.; 5000 superb mixed Ranunculuses (from a celebrated grower); choice Dahlias in dry roots; Peonias, &c.—May be viewed the morning of sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

#### TO GENTLEMEN, NURSERYMEN, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** have received instructions to submit to an unreserved Sale by Auction, on the premises, Green Lane Nursery, Hereford Road, Westbourne Grove, Paddington, near the Princess Royal, on MONDAY, March 7th, 1853, at 11 o'clock, by order of the Proprietor (in consequence of the land being let for building), the whole of the NURSERY STOCK, consisting of Evergreens and Deciduous Shrubs, including green and variegated Hollies, Aucubas, Arbor Vitae, Red Cedars, Berberies, Irish and common Yews, Portugal and common Laurels, Euonymus, Green Box, Lilacs, Dwarf Roses, Syringas, Privets, Guelder Roses, &c.; also Ornamental Fruit and Forest Trees, Box Edging, &c.—May be viewed one week prior to the Sale; Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone.

**TO BE SOLD, at Messrs. TATTERSALL'S, Hyde Park Corner, on the 21st March, TWO THOROUGH-BRED SUFFOLK STALLIONS, rising Three Years Old, the property of T. BEALE BROWNE, Esq., of Hampen, Gloucestershire. By the Horse that took the first Prize at Exeter, and which the Emperor of Russia bought; each out of pure Suffolk Mares—one belonging to Mr. Weaver, of Lamish, and the other to Mr. Ruffell, of Melford, near Sudbury, Suffolk.**

#### NORTH DEVON.

#### RARE OPPORTUNITY TO AGRICULTURISTS AND OTHERS.

**TO BE LET, for a Term, a FARM, called Abbot's Hill, or Woodhouse, and Great and Little Warham, in Bedford, near the North Devon Railway, 4 miles from Torrington, and 12 from Bideford, about 300 acres (land tax redeemed). It is in a high state of cultivation, and occupied by a gentleman, obliged to leave on account of irrecoverable ill health, so that the Stock, Implements, and Furniture may be taken at a valuation. The Bailiff at the Farm will show the Premises, and full particulars may be had from Mr. WILLIAM LAMBERT, Solicitor and Proctor, 9, Queen Street, Exeter.**

**COCHIN CHINA EGGS.**—An Amateur, who has some very handsome Cochin China Fowls, of a pure breed, Cinnamon and Buff, is willing to dispose of some Eggs, at 7s. per dozen.—Address, X. Y., Post Office, Farnham, Surrey.

**COKE BRICKS.**—Any person having for disposal a quantity of them, described some time since in the *Weekly Times*, which account was copied into the *Gardeners' Chronicle* of 1852, p. 631, may hear of a purchaser by addressing a letter to M. M., at the Office of this Paper.

#### DO YOU WANT LUXURANT HAIR WHISKERS, &c.?

—EMILY DEAN'S CRINILENE has been many years established as the only preparation that can be relied upon for the restoration of the Hair in Baldness from any cause, preventing the Hair falling off, strengthening weak Hair, and checking Greyness, and for the production of Whiskers, Moustachios, Eyebrows, &c., in three or four weeks with certainty. It is an elegantly scented compound, price 2s., and will be sent, post free, on receipt of 24 postage stamps, by MISS DEAN, 37 A, Manchester Street, Sunday's Inn Road, London. At home daily, from 11 till 7, Sundays excepted.—"I have used your Crinilene, and have now a good pair of Whiskers," J. L. Higgs, Dudley.—"I found your Crinilene efficacious in stopping my Hair from falling out," Miss FORBES, Chirbury.

#### RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.

**ALL Sufferers from this alarming complaint** are invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free, with full instructions for use, on receipt of 6d. in postage stamps, cash, or Post Office order, payable at the General Post Office, to Dr. HERBERT LESLIE, 37A, Manchester Street, Gray's Inn Road, London, where he may be consulted daily, Sundays excepted, from 11 till 1, mornings, and 5 till 7 evenings only.—NOTICE. All letters of inquiry must enclose two stamps for reply, or they will not be noticed.

#### METCALFE AND Co.'s NEW PATTERN TOOTH-PASTE.

**BRUSH AND SMYRNA SPONGES.**—The Tooth-Paste has the important advantage of saving the teeth thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, & Co.'s Sole Establishment, 130 B, Oxford Street, one door from Hall Street, London.

**MR. METCALFE'S ALKALINE TOOTH-POWDER, 2s. per box.** CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.



116, BISHOPSGATE STREET WITHOUT, LONDON.

**ROWLANDS' MACASSAR OIL** has, from its intrinsic worth, enjoyed an unexampled extent of celebrity and patronage, and the successful results of the last half century have proved beyond question that it is endowed with singularly nourishing powers in the growth and restoration of the human Hair, and when every other known specific has failed. It insinuates its balsamic properties into the pores of the head, nourishes the Hair in its embryonic state, accelerates its growth, cleanses it from Scurf and Dandriff, sustains it in maturity, and continues its possession of healthy vigour, silky softness, and luxurious redundancy to the latest period of human life. Its operation in cases of baldness is peculiarly active, and in the growth of WHISKERS, EYEBROWS, and MUSTACHES, it is also untiring in its stimulative operation. For children it is especially recommended, as forming the basis of a beautiful head and hair. Price 2s. 6d. and 7s. 6d. in family bottles (each for four or six weeks), the 6s. 6d. double that size, 21s. 6d. for the 12 weeks' use of each bottle are the words "Rowlands' Macassar Oil," in two lines. The same are engraved on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLANDS & SONS, 29, Hatton Garden, London, and by all Chemists and Perfumers.

**R**OWLAND'S MACASSAR OIL has, from its intrinsic worth, enjoyed an unexampled extent of celebrity and patronage, and the successful results of the last half century have proved beyond question that it is endowed with singularly nourishing powers in the growth and restoration of the human Hair, and when every other known specific has failed. It insinuates its balsamic properties into the pores of the head, nourishes the Hair in its embryo state, accelerates its growth, cleanses it from Scurf and Dandruff, sustains it in maturity, and continues its possession of healthy vigour, silky softness, and luxurious redundancy to the latest period of human life. Its operation is the most efficacious and peculiarly active, and the most gentle of WHISKY, EYE-DROPS, and MUSCARIUS, &c. also outdistinguishes its stimulating operation, for the purpose of restoring the Hair to its natural growth, and the possession of a beautiful head of hair. Price 3s. 6d. and 7s.; for family bottles (equal to four smalls), 5s. 6d.; double that size, 21s.

**CAUTION.** On the wrapper of each bottle are the words "ROWLAND'S MACASSAR OIL," in two lines. The same are engraved on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by all Chemists and Perfumers.



## GREAT WESTERN, GREAT NORTHERN, SOUTH-WESTERN, AND SOUTH-EASTERN RAILWAY SEED ESTABLISHMENT, READING, BERKS.

For Supplying SUTTON'S Home-grown Seeds, Carriage Free, to any Railway or Packet Office in London, Liverpool, Birmingham, Norwich, Bristol, Gloucester, Carmarthen, Swansea, York, Oxford, Exeter, Southampton, Dover, Canterbury, or to any other Station on the above-named Railways.

## NATURAL GRASS SEEDS, CLOVERS, TURNIPS, MANGOLDS, &c., GROWN AND SOLD BY JOHN SUTTON AND SONS, SEED GROWERS, READING, BERKS.

OUR SEEDS having been grown last summer (1852), from our own selected STOCKS, may be confidently relied on, not only as of the best kinds, but perfectly free from mixture of old Seeds, which we have always scrupulously refrained from as being unjust towards the Purchaser, and subversive of the real interest of the Seller.

Being fully impressed with the importance of Root Crops in Agriculture, we have for many years in our Sample Ground tested the comparative merits of each sort, and selected the best for sowing Seed.

A Gentleman in connexion with the GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE, who is in the practice of inspecting the principal Horticultural and Agricultural Establishments in the Kingdom, for the purpose of reporting the peculiar features of each, in that valuable Journal, has recently honoured us with a visit, and published a highly complimentary report, from which we present the following extract (see Gardeners' Chronicle, Nov. 27, 1852):—

"MESSRS. SUTTON AND SONS, READING, BERKS.—This important Seed Establishment is situated in the Market Place of the fine old town of Reading, which is easily and speedily reached by the Great Western Railway. The shop is fitted up with all the appliances and conveniences for despatch which an extensive business demands. This Firm have given up the sowing of Rye, Vetches, and seed corn, in order that undivided attention may be given to the finer seeds, such as those of Turnip and Grass. Of the latter, examples of all that are valuable to the farmer, or for forming permanent pastures, are collected here, and correctly labelled, so that an opportunity is afforded of inspecting their different characters while growing in the same soil and under precisely the same treatment. Of Agricultural Crops, a compartment was allotted to Turnips, containing about 40 varieties of Swedish, Hybrid, and other kinds. Of the former, the best appeared to be Sutton's Purple-top and Rivers' Stubble Swede. Among Hybrids, Sutton's, Skirving's, Dale's, and Rivers' Yellow Stone, are all especially worthy of mention. Chivas' Orange Jelly was particularly fine, both as regards smoothness and colour; and Ballantine's Yellow is likewise a promising kind. The largest Turnip in the grounds was the New Lincolnshire Red, so-called from its being brought originally from that county by Philip Pusey, Esq., who presented the stock to Messrs. Sutton. Of Mangolds and Beets (which were of great size), we noticed a large red variety, called the Elvetham Long Red—a new sort introduced by Messrs. Sutton; also very finely formed Yellow Globe Mangold, besides the large Crimson Beet, and the White Silesia Sugar Beet. There were also Kohl Rabi, Drumhead, and other Cabbages, White Belgian Carrots, and a very large new red variety, which seemed likely to vie with the White Belgian itself for size."

\* \* \* Purchasers of large quantities will be supplied at considerably reduced prices, if ordered immediately.

### AGRICULTURAL BEET.

NEW LARGE CRIMSON; nearly as large as Mangold, contains 50 per cent. more saccharine matter ... 3 6  
WHITE SILESIA SUGAR BEET; present price ... 1 0

### CARROT.

White Belgian Carrot and Mangold Wurzel are necessarily higher than last year, and will probably be dearer as the season advances, but the QUALITY of that we have now to offer is as good as of any former season.  
WHITE BELGIAN, the heaviest cropper and most certain ... 2 0  
YELLOW BELGIAN; more saccharine, but scarcely so large as the white ... 2 0  
LARGE RED ALTRINGHAM; very large and much more nutritious than the white ... 1 3

### MANCOLD WURZEL.

FROM SELECTED ROOTS.

YELLOW GLOBE (or Orange Globe) suitable for any soil ... 1 0  
RED GLOBE; suitable for any soil ... 1 0  
LONG RED; this sort requires good deep soil ... 1 0  
LONG YELLOW; very similar to the preceding in shape ... 1 0  
ELVETHAM LONG RED; this is a very superior new variety, exclusively in our possession, raised on the estate of Lord Calthorpe, at Elvetham, Hants; our stock of Seed is limited this season ... 1 9

From Charles Paget, Esq., Riddington Grange, Feb. 16, 1852.  
"The difference was so great between the Elvetham and the other Long Red Mangold that I should have preferred it at three times the price of the other."

From Mr. Houghton, Steward at Lord Calthorpe's, Elvetham, Hants.  
"Respecting Elvetham Mangold Wurzel, it is the best sort we ever had here, nothing else will go down here and all the way to Guildford; I certainly should use nothing else, except on poor and thin land, where the Yellow Globe would be more suitable."

Mangold Wurzel Seed may be had cheaper in quantities of half a Cwt. and upwards, if ordered immediately.

### KOHL RABI.

LARGE GREEN; Turnip-rooted Cabbage.  
LARGE PURPLE; scarcely so large as the preceding.  
There are many varieties of Kohl Rabi, varying materially in size. From them we select the above as most worthy of cultivation.

### TURNIP SEEDS.

A GALLON OF TURNIP SEED WEIGHS 6 LBS.

	Bush.	Gall.	Pound
ASHCROFT; very large, hardy, and of quick growth, yellow flesh with reddish top. (See Mr. Hickman's Letter below) ...	35	5 0	1 0
SKIRVING'S LIVERPOOL ...	25	4 0	0 9
FETTERCAIRNE, a fine Swede with bronze top ...	35	5 0	1 0
LAING'S SWEDE; fine shape, purple top ...	25	4 0	0 9
PURPLE TOPPED YELLOW SWEDE (Sutton's fine stock) a heavy cropper, good form, hardy, and stores well ...	25	4 0	0 9
RIVERS' STUBBLE SWEDE; a large and first-rate sort in every respect, especially for late sowing ...	50	8 0	1 6
DALE'S HYBRID, green-topped yellow Turnip ...	25	4 0	0 9
SUTTON'S PURPLE TOPPED YELLOW HYBRID, the hardiest, largest, and most nutritious of all Hybrid Turnips ...	35	5 0	1 0
GLOBE, Red, Green, and White ...	24	3 6	0 8
LINCOLNSHIRE RED GLOBE, a superior variety, presented to us by Philip Pusey, Esq., M.P., being more solid and larger than any other. (See remarks by reporter of Gardeners' Chronicle, as above).	35	5 0	1 0
TANKARD; Red, White, and Green ...	24	3 6	0 8
YELLOW TANKARD; (or Tankard Swede) ...	30	4 6	0 10
SUTTON'S EARLY SIX WEEKS, very early and large ...	30	4 6	0 10
GREEN-TOPPED & PURPLE-TOPPED YELLOW ABERDEEN ...	24	3 6	0 8
ORANGE JELLY (new seed will be ready in July); grown from seed received from Mr. Chivas ...	50	8 0	1 6
GREEN ROUND, and other old sorts; at lowest market prices.			

Mr. K. HICKMAN, of Brimpton House, near Newbury, alluding to the Ashcroft Swede, in a letter dated February 1, 1853, says:—"Being fond of experiments, I have grown all sorts, and did not confine myself to the Ashcroft alone, till I was fully convinced that it was by far the best, which it certainly is, not only in weight per acre but also in hardness and in shape, having less neck than the Liverpool and only one tap root; they also store remarkably well. I must also mention the Six Weeks

TURNIP as the best sort I have ever seen for earliest and latest sowing. I have grown them several years, and have invariably found them to produce more feed in less time than any other Turnip. I have had them after Wheat, of a good size, within six weeks from the time of sowing."

### PARSNIP.

COMMON CATTLE ... 1 0  
NEW LARGE GUERNSEY, altogether a superior kind, some of the roots weighing seven pounds each ... 1 9

### COW CABBAGE.

LARGE DRUMHEAD, from fine selected plants.  
THOUSAND-HEADED, very productive, tall, branching.  
SMALL EARLY CATTLE; this, if planted 18 inches asunder, produces a very heavy crop, and in a short time.

### CLOVERS.

Common Red (or broad) ... Trifolium incarnatum  
White (or Dutch) ... Red Suckling (Trifolium minus)  
Marl (or Cow Grass) ... Alsike Clover  
Trefoil (or Hop Clover) ... True Perennial Red Clover  
CLOVERS.—Notwithstanding the scarcity this season, we have succeeded in procuring a fine stock of each of the above kinds of Clovers. We do not ourselves grow Clover Seeds, but these are obtained direct from the growers, and can be warranted genuine, unadulterated Seeds, as we always prefer sacrificing what little we have left each year, rather than mix it with the new; and if others offered us mixed seed we could easily detect it. Our cash price, this year, for this fine quality, is 8d. per lb. for best Broad Red, and 9d. best White Clover.

### RYE-GRASSES.

TRUE ITALIAN RYE-GRASS ... Per bushel.—s. d.  
DITTO (SUTTON'S IMPROVED) ITALIAN ... 6 0  
DITTO (DICKENSON'S IMPROVED) ITALIAN ... 8 0  
PACEY'S PERENNIAL RYE-GRASS ... 7 0  
ANNUAL RYE-GRASS, or COMMON RAY ... 4s. to 5 0

### MISCELLANEOUS.

Gold of Pleasure ... Per lb.—s. d.  
Keen's Forty-day Maize ... 1 0  
Lucerne (fresh imported) ... 1 0  
Furze, for fence and cover ... 1 0  
Broom ... 1 0  
Dwarf Rape, or Cole ... 0 4  
White Mustard ... 0 4  
"BISHOP'S LAST AND BEST" PEA, for DOUBLE CROPPING, 15s. PER BUSHEL.

## NATURAL GRASSES, PERENNIAL CLOVERS, &c.

(Genuine and pure Seeds.)

The following sorts of NATURAL and ARTIFICIAL GRASSES MAY BE HAD SEPARATE, at moderate prices. All the best and most suitable of them are contained in Messrs. SUTTON'S Mixtures for the several purposes described below:—

Achillea millefolium  
Agrostis stolonifera  
Anthoxanthum odoratum  
Alopecurus pratensis  
Avena flavescens  
Cynosurus cristatus  
Dactylis glomerata

Festuca duriuscula  
Festuca loliaeca  
Festuca ovina  
Festuca rubra  
Festuca pratensis  
Festuca elatior  
Festuca heterophylla

Festuca tenuifolia  
Glyceria fluitans  
Glyceria aquatica  
Holcus avenaceus  
Holcus lanatus  
Lolium perenne  
Lolium perenne sempervirens

Lolium perenne Paceyuanum  
Lolium perenne Stickneyuanum  
Lolium perenne tenue  
Lolium italicum  
Lotus corniculatus  
Medicago lupulina  
Pheum pratense

Poa nervosa  
Poa nemoralis  
Poa pratensis  
Poa trivialis  
Poa angustifolius  
Poa fertilis

Poa sempervirens  
Trifolium minus  
Trifolium pratense perenne  
Trifolium repens  
Trifolium hybridum  
And many other kinds.

### Mixtures for Laying down Land to Permanent Meadow or Pasture.

These will be mixed expressly to suit the land, according to whether it is very heavy, light, or medium.

The sorts contained in these Mixtures are grown in different localities, and gathered separately by the hand expressly for this purpose, by which means all noxious weeds are excluded; they consist of the most nutritive kinds of Fescues, Poas, Sweet Vernal, Perennial Clovers, Loliums, &c., and each sort being kept separate, they are subsequently mixed in such sorts and proportions as are most suitable to the soil to be laid down. The annually increasing demand has enabled us on a larger scale to collect the Natural Grass Seed at less expense than formerly; so that a mixture which, a few years since, would have cost 40s. or 50s. per Acre, can now be supplied for 24s. to 30s. per Acre, according to the sorts which the soil may require. The quantity we usually supply is 2 bushels of light Seeds and 12 lbs. heavy Seeds per Acre, WHICH, OF SUCH SEEDS, IS ABUNDANTLY SUFFICIENT—BUT WHERE COARSER KINDS ARE SUPPLIED, IT IS NECESSARY TO SOW MUCH MORE IN BULK.

### Renovating Mixture for Improving Old Pastures.

Many old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers, and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting; if these seeds are sown early in the season, the improvement in the Pasture will be very considerable, and at a small expense. Quantity of Seed required, 8 lbs. to 12 lbs. per Acre. Price 1s. per lb.

### Mixture for Reclaimed Marshes or Heath Lands.

Many acres of Land of this description have been successfully laid down to Permanent Pasture by us, with Seeds which we have found invariably to thrive on such soil; and the cost for this purpose is very moderate.

### Mixtures for Laying down Water Meadows.

In this department also we have been very successful, many customers having expressed their great gratification at the effect of these Seeds; one of these, an eminent Agriculturist, and Member of the Council of the Royal Agricultural Society, has contributed a valuable essay on the subject, which has recently been published by that Society in their Journal (Vol. X., part II., page 463). Cost of Seeds for this purpose, 24s. per Acre.

### Mixtures to Lay down New Park Lawns.

For this purpose, all coarse growing kinds are carefully excluded, and the Sward will at all seasons present a luxuriant verdure so desirable in Parks contiguous to the Mansion. The cost of Seeds for this purpose will vary according to the nature of the soil, and other circumstances.

### Mixtures for Laying down Chalky or Gravelly Uplands and Sheep Downs.

For this purpose Grass Seeds are annually collected from dry and hilly districts, where they are found growing spontaneously; and, after many years' experience, we can confidently assure our friends that a good and permanent Sward may be obtained on any upland, from this mixture. Price, 30s. per acre.

### Fine Grass Lawns in Flower Gardens, &c.

The great expense of cutting and carting turves from a distance may be avoided, and a superior turf produced in a few weeks, by sowing SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds. Price 3s. per gallon, 21s. per bushel, or 1s. 3d. per pound. Quantity required per acre, 24 bushels; or for improving Old Lawns, half a bushel to one bushel per acre.

### Mixtures of Clovers, Rye Grass, Fescues, &c.

For one, two, or three years' lay, to sow with Barley or Oats. These we can supply, of the very best quality, at 14s., 16s., and 18s. per acre.

### Permanent Evergreen Grasses for Churchyards and Cemeteries.

We have had the honour of supplying many Clergymen and others with Grass Seeds for Churchyards and Cemeteries, which have given great satisfaction. Price of Seed, 1s. per lb. From many similar Letters we extract the following, recently received.

From Mr. C. Judd, Gardener to his Grace the Archbishop of Canterbury.

"The Grass Seeds received from you succeeded admirably, and, although sown late, the growth was such that we were enabled to mow the churchyard in the autumn, and it has now the appearance of an established lawn of some years' standing; and my employer, the Archbishop of Canterbury, is quite satisfied with its appearance.—Addington Park, January 7, 1853."

\* \* \* Sacks and Bags are charged at cost price only, and the full amount allowed if they are returned.

ADDRESS, JOHN SUTTON AND SONS, SEED GROWERS, READING, BERKS.



# THE GARDENERS' CHRONICLE

AND

## AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 10.—1853.] SATURDAY, MARCH 5. [PRICE 6d.

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**HORTICULTURAL SOCIETY OF LONDON.**—At the Meeting, in Regent Street, at 3 o'clock, P.M., March 15, the objects for SPECIAL EXHIBITION may be HYBRID RHODODENDRONS (one pot only to be shown by each Exhibitor); STRAWBERRIES in pots, in threes; the best and most varied SALAD.

**UNIVERSITY COLLEGE, LONDON.**—ELEMENTARY COURSE OF BOTANY.—Professor LINDLEY will commence a Course of LECTURES ON BOTANY, to a Junior Class, on Monday, March 14, at 8 o'clock, A.M. Subject: "The Distinctions between the Principal Natural Classes and Orders of Plants belonging to the Flora of Europe." The Lectures will be delivered, with the exception of the Easter vacation, daily at 8 A.M., until the 1st of May; and afterwards on Tuesdays, Wednesdays, Thursdays, and Saturdays, from a quarter past 10 to a quarter past 11. The Course is adapted to persons commencing the Study of Botany.—Fee, 2s.

The Course to the Senior Class will commence on the 3d of May. WILLIAM SHARPEY, M.D., Dean of the Faculty of Medicine. JOHN HOPKES, Ph.D., Dean of the Faculty of Arts and Laws. CHAS. C. ATKINSON, Secretary to the Council. March 5, 1853.

**NEW SHRUBBY CALCEOLARIAS,** CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

**J. WEEKS AND CO., CHELSEA,** have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. From the sorts being all Shrubby they are perpetually in flower: and from the great variety and brilliancy of their colours, they are invaluable for the conservatory or bedding-out.

J. WEEKS & Co., King's Road, Chelsea, London.

### AMERICAN NURSERY.

**GURGEY BAKER, Windlesham, near Bagshot,** Surrey, Exhibitor of American Plants at the Royal Botanic Gardens, Regent's Park, begs to inform the nobility and public that he has published a Descriptive CATALOGUE of AMERICAN PLANTS, Conifers, Roses, Ornamental Shrubs, &c. &c., and may be obtained by enclosing two postage stamps.

Near Staines Station, Windsor Branch, South-Western Railway.

**N. GAINES** begs to inform Amateurs and the Public in general, his NEW LIST of Dahlias and Geraniums, containing Seedlings and many novelties for this season, can be had by applying at the Nursery, Surrey Lane, Battersea.

**CHARLWOOD AND CUMMINS** beg to announce that they have received their importation of AMERICAN TREE and SHRUB SEEDS. Catalogues of which, as also of Agriculture, Garden, and Flower Seeds, will be forwarded on application.

14, Tavistock Row, Covent Garden, London.

### GRASS SEEDS SEPARATE OR MIXED, EXPRESSLY TO SUIT THE SOIL.

On the last page of last week's CHRONICLE will be seen Sutton's Catalogue, with Prices, &c. &c.; and any other particulars required will be readily afforded in reply to applications by post or otherwise.

Address—JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

### PERMANENT PASTURE.

**H. R. SMITHE, of Eastling, Faversham, Kent,** is now prepared to send out his mixtures of the Natural Grasses and Perennial Clovers, to lay down land to permanent pasture. The greatest attention is given in apportioning the various sorts, that the mixture sent may be suitable to the particular soil, &c., of the buyer.

Three bushels of seed are supplied to the acre, the price of which, including every expense to his nearest railway station, in England, is 24s. per acre; and for a three years' lay, 24s. per acre. The seeds are gathered principally under the superintendence of the Advertiser. The various species of Grasses can be had either separately or in mixtures for lawns and top dressings.

### SALE OF NURSERY PLANTS.

**PETER BOOTH, NURSERYMAN, Falkirk,** is selling off, at very cheap prices, a large general stock of TRANSPLANTED and SEEDLING NURSERY PLANTS; and, in particular, a very large stock of TRANSPLANTED LARCH TREES, of various sizes, of most excellent quality, and cheaper than at any other Nursery.

N.B. As the Advertiser wishes to retire from business, a lease of all his Nursery Grounds (which belong to himself), and every engagement would be given to a purchaser of the above stock and the goodwill of the business, which has been carried on by his relatives for more than 70 years past, and with great success, should a purchaser not be found, a Partner, with some capital, and a good knowledge of the business, would be agreed with.

### PRESENT PRICES OF AGRICULTURAL SEEDS.

**SUTTON'S AGRICULTURAL SEED CATALOGUE FOR 1853** will be seen on the last Page of the *Gardeners' Chronicle* of Saturday last.

Early Orders will have the preference of scarce sorts.

### CHOICE FLOWER ROOTS FOR SPRING PLANTING.

**RANUNCULI**, superb, named and mixed.

**ANEMONES**

**GLADIOLI** ramosus and grandævensæ varieties.

**LILIUM LANCIFOLIUM**, album and rubrum.

**TIGRIDIA** (or Tiger Iris), 4 superb varieties.

For assortments and prices of the above, see Advertisement in *Gardeners' Chronicle* of Jan. 29, and Feb. 5 and 12; and also for List of Bulbs for Spring Planting, see our Seed and Plant List for 1853, page 96.

**RASS & BROWN, Seed and Horticultural Establishment,** Sudbury, Suffolk.

### DERBY.

#### CHOICE FLOWER SEEDS, POSTAGE FREE.

36	Packets first-rate ANNUALS	...	6s. 6d.
24	do. do. do.	...	4s. 6d.
12	do. do. do.	...	2s. 6d.
24	do. BIENNIALS and PERENNIALS	...	5s. 6d.
12	do. do. do.	...	3s. 6d.

For Culinary Seeds, see Catalogue, which will be forwarded, post free, on application to **EVAN PAUL, Nursery and Seedsman, Derby.**

#### FLOWER SEEDS FREE BY POST.

50 Packets of Annuals, 8s. 6d.; 25 do., 4s. 6d.; 12 do., 2s. 6d.

25 Packets of Superior Annuals, 5s. 6d.; 12 do., 3s. 2s. 6d.

25 Packets of Perennials and Biennials, 5s. 6d.; 12 do., 3s. 2s. 6d.

Also every variety of KITCHEN GARDEN SEEDS of the best quality.—Apply to **ROBERT WESTMACOTT, Florist and Seedsman, Stuart's Grove Nursery, Fulham Road, Chelsea.**

#### SALPIGLOSSIS COCCINEA.—NEW SCARLET

**SALPIGLOSSIS.**—Price per ounce can be had on application. 1s. per packet.

J. G. WATTS, Seed Establishment, 181, High Holborn.

#### IMPORTED GERMAN ASTERS.

10	Splendid varieties, Globe mixed	...	6d. per packet.
10	do. do. Dwarf, 6 inches	...	6d. "
30	do. do. Pyramidal	...	6d. "
30	do. do. Tall Queen	...	6d. "

King John Balsam, new extra dwarf double, particularly adapted for pot culture, 1s. per packet. Selected Potato Seeds, early or late, round or kidney, 6d. per packet of 4000 seeds. All post free.

Hardy's "Treatise on the Practical Culture of the Potato," &c. Second edition, 6d. General Priced Retail Seed Catalogue, free on application.

**ABRAHAM HARDY & SON, Seed-growers, Maldon, Essex.** Remittances requested, which may be made in stamps, or by Post Office order on Maldon.

#### SELECT FLOWER SEEDS.—POST FREE.

Marigolds, finest double dark	Aster, Reine Marguerite (the best variety in cultivation)
French.	Saponaria calabrica, var multi-flora.
Do. do. striped Unique French.	Echscholtzia californica alba.
Do. do. true dwarf French.	Nemesia variicolor.
Do. do. new dark Egluay.	Centa turbinata.
Do. do. new yellow Egluay.	Mignonette, new large variety.
Do. do. double orange African.	
Do. do. double lemon African.	

The above MARGOLDS are well known in the locality, having obtained First Class Awards at several Provincial Exhibitions; all own saved from carefully selected double flowers, and can be recommended with confidence. In packets of about 1000 seeds each. The Marigolds separately, 3s.; the whole collection of 13 packets, 5s.

Collections of all the most approved Annuals (own growth) 60 packets, 10s.; 30 do. 5s.; 15 do. 2s. 6d., in descriptive and cultural labels. Catalogues may be had on application.

**JOHN SLATER, The Nurseries, Malton, Yorkshire.**

#### FOREST TREES.

**PETER LAWSON AND SON, of Edinburgh,** having a large stock of the finest quality of the following, are enabled to offer them at very reasonable prices:

<b>SPANISH CHESTNUT</b> —1 year seedling	<b>WALNUT, 2 ft.</b>
Do. do. 2 years do.	Do. 3 to 4 ft.
Do. do. transplanted, 2 ft.	<b>THORN ACACIA, 4 to 5 ft.</b>
Do. do. do. 3 to 4 ft.	<b>ALDER, 4 to 5 ft.</b>
Do. do. do. 5 to 6 ft.	<b>LARCH, 3 to 3 ft.</b>
<b>EXETER ELM, 2 ft.</b>	<b>SCOTCH FIR (Braemar), 1½ to 2 ft.</b>
Do. do. 3 to 4 ft.	

Samples and Prices furnished on application either direct to Edinburgh, or through their Agent, J. C. SOMMERS, 159, Fenchurch Street, London.

#### FOREST TREES AND EVERGREENS.—

Per 1000.—s. d.	Per 1000.—s. d.	Per 1000.—s. d.
Ash, 2 ft. ... 9 0	Fir, Larch, 1½	Fir, Silver 2 to
Do. 2½ to 3 ft. ... 10 6	Do. 2 to 2 ft. ... 8 0	Do. 2½ ft. ... 25 0
Do. 3 to 4 ft. ... 12 0	Do. do. 3 to 3 ft. 10	Oak, 1½ to 2 ft. 15 0
Do. 4 to 4½ ft. ... 15 0	Do. do. 3 to 4 ft. 12	Do. 2 to 2½ ft. 18 0
Beech, 2 to 2½ ft. 20 0	Do. do. 4 to 4 ft. 25	Poplar, of sorts 30 0
Birch, 1½ to 2 ft. 20 0	Do. Scotch, 2½ ft. 14	Privet, 2 ft. ... 21 0
Chestnut, Horse, 4 to 6 ft. ... 35 0	Do. Spruce, 1 to 1½ ft. 12	Sycamore, 1½ ft. 10 0
Do. do. transplanted, 2 ft. 4 to 6 ft. ... 50 0	Do. do. 1½ to 2 ft. 15	Do. 2 to 3 ft. 14 0
Do. Spanish, 4 to 7 ft. ... 50 0	Do. Silver, 1 to 2 ft. ... 21 0	Do. 3 to 4 ft. 20 0
	Do. 2 ft. ... 21 0	Willow, of sorts 25 0

N.B. As the Advertiser wishes to retire from business, a lease of all his Nursery Grounds (which belong to himself), and every engagement would be given to a purchaser of the above stock and the goodwill of the business, which has been carried on by his relatives for more than 70 years past, and with great success, should a purchaser not be found, a Partner, with some capital, and a good knowledge of the business, would be agreed with.

Skerton, near Lancaster, March 5.

### AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his CATALOGUE of the above plants, Roses, Conifers, &c., is now published, and may be obtained by enclosing two postage stamps. The colours of all the Rhododendrons worthy of cultivation are described, in order to facilitate purchasers in selecting.

\* The Rhododendrons, Azaleas, &c., annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

The American Nursery, Bagshot, Surrey, three miles from Blackwater Station, South-Eastern Railway, and four miles from Farnborough, South-Western Railway.

### A DESCRIPTIVE PRICED CATALOGUE OF SELECT VEGETABLE AND FLOWER SEEDS, post free on application.

**W. DRUMMOND AND SONS, SEEDSMEN, Stirling.**

N.B. Seeds forwarded carriage free to the principal Shipping Ports and Railway Stations throughout the kingdom.

### NEW AND CHOICE FLOWER SEEDS FREE

BY POST.—Collections of the most superior FLOWER SEEDS can be obtained (in Ayre and Moore's descriptive labels), of the Subscribers, as follows:—100 superior sorts, 1s.; 50 ditto, 8s.; 25 ditto, 5s.; and 10 ditto, 2s. 6d. Also every variety of Vegetable Seeds equally cheap. A large Collection of Hardy Herbaceous Plant Seed from their unrivalled Stock always on hand.

Apply to **HENRY MAY, the Hope Nurseries, Bedale, Yorkshire.**

### DOUBLE ITALIAN TUBEROSE ROOTS, 4s.

per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 13, Pall Mall.

N.B. Printed regulations for treatment sent, also, just arrived, very moist and open Parmesan Cheeses.

### SCOTCH FIRS—LARGE SURPLUS STOCK.

The Subscribers have more than FIVE HUNDRED THOUSAND Scotch to clear from their grounds immediately, and can supply three years old Transplanted Scotch at 8s. per 1000, and three years old Seedlings at 4s. per 1000.

Samples will be forwarded on application to **WILLIAM E. RENDEL & Co., Nurserymen, Edinburgh.**

### A. VERSCHAFFELT, NURSERYMAN, Ghent (Belgium), respectfully informs the amateurs on the trade,

that his NEW CATALOGUE of the SEEDS &c. may be had free of his Agent, Mr. R. SHERRER, 1, Ivy Lane, Great Tower Street, London.

### CARNATIONS, PICOTEES, PINKS, PANSIES, ALPINES, AURICULAS, POLYANTHUSES, PRIMROSES, ETC.

**JOHN HOLLAND, Bradshaw Gardens, Middleton,** near Manchester, respectfully informs purchasers of Florist Flowers that his Catalogue is now ready, containing Descriptive and Priced Lists of every variety of the above worth adding to a collection, at extremely low prices, and may be had on application.

A few packets of very choice Pansy Seed of 1852, selected only from best varieties grown at 1s. and 2s. per packet.

### BEAUTIFUL NEW SEEDLING SHRUBBY CALCEOLARIAS.

**MR. HENRY MAJOR, Knowsthorpe, near Leeds,** begs to announce that his Descriptive Lists of beautiful new Seedling Shrubby Calceolarias, is now ready, and may be had on prepaid application.

Very select CALCEOLARIA SEED, 2s. 6d. per packet.

Do. PANSY SEED, 2s. 6d. per packet.

24 First-rate SHOW PANSIES, 2s., post free.

### CARNATIONS.

#### PICOTEES, DAHLIAS, PANSIES, PINKS, ETC.

**JOHN SCHOFIELD AND SON** have now ready a Descriptive Catalogue of the above Flowers. Strong healthy plants at the following rates:—Pansies, 4s. 15s. per dozen; Carnations and Picotees, 10s. to 24s. per dozen plants; Pinks, 4s. to 12s.; Dahlias, 6s. to 12s. per dozen; Verbenas, 4s. to 12s. per dozen. Also a few plants of Pansy FEARLESS (SCHOFIELD), 5s. 6d. each. Fearless obtained a first-class certificate at the National. A few pairs of Picotee ANN (SCHOFIELD), extra fine, medium red edge, 10s. 6d. per pair. Pansy Seed, selected from Show Flowers, 2s. 6d. per packet. Hollyhock Seed, from the finest show varieties, 2s. 6d. per packet. The Catalogue sent free. Early orders will secure strong plants.

Knowsthorpe, near Leeds, Yorkshire.

### GLOXINIA IMPERIALIS (HENDERSON'S).

**EDWARD GEORGE HENDERSON AND SON** are now prepared to send free by post, at 7s. 6d. each, the above new and beautiful Gloxinia, which they can with confidence recommend. It is a fine large bell flower, of good form, and first-rate habit; the lips are of a delicate lavender white, with a deep purple centre. The usual discount to the Trade, and one Gratis when three are ordered.

E. G. H. & S. will forward their new Seed Catalogue, post free, on application, containing all the novelties of the season.

Wellington Nursery, St. John's Wood, London.

### ASH-LEAF KIDNEY POTATOES for immediate

Sale.—One Hundred Sacks, of first-rate quality and excellent size for Seed.—Apply to **MR. BENJAMIN CAMP, Nursery Seedsman, Colchester, Essex.**

### ASH-LEAF KIDNEY POTATO SETS for SALE,

warranted true and sound, and good size; price, 12s. per cwt. To the trade, and parties taking half-a-ton and upwards, 10s. per ton; delivered at the Station of this Great Northern Railway, and Lancashire and Yorkshire Railway.

Remittance or Reference from unknown Correspondents required.

Address—**EDWARD HAWKE, Knottingley, Yorkshire.** March 5.



### SUPERB DOUBLE HOLLYHOCKS

SAFFRON WALDEN NURSERY.

**WILLIAM CHATER** has now ready a large stock of fine Plants, not to be excelled in the trade, of all the leading and best varieties in cultivation. He being the first who sent out this superior class of Hollyhocks, has been careful to add none but those which have decided merit as to quality and dissimilarity, to his original collection, the greater part of which still stand unequalled. To those who are desirous of obtaining a fine bloom this year of these splendid flowers, W. C. offers strong plants of the finest show varieties, dissimilar, at 2l. 1l. 10s. or 1l. per doz. Good showy varieties at 12s. and 9s. per dozen. Good border sorts, 6s. per dozen, or 30s. per 100.

Hints on their cultivation given to purchasers if required. Plants warranted true to name. Carriage free to London, and plants added to compensate for the remaining distance. Catalogues sent by post on receipt of a postage stamp.

W. C. can supply seed of his improved **QUILLED GLOBE** **ASTER**, the most compact variety in cultivation. Packets containing eight separate sorts, 1s. 6d., or mixed, 1s. per packet. Hollyhock Seed, saved from best show flowers, 2s. 6d. per packet; from border sorts, 1s. per packet.

Fine Fruiting Peach, Nectarine, and Apricot Trees, established in pots, for Orchard-house, 6s. each.

Post Office orders payable at Saffron Walden.

### GRASS SEEDS.

**J. C. WHEELER AND SON, SEEDSMEN** to the **GLOUCESTERSHIRE AGRICULTURAL SOCIETY**, beg to offer the following **GRASS SEEDS**, which have been well harvested, well cleaned, and which they can warrant to be of the very best quality.

We have for some time paid considerable attention to Grass Seeds, and especially to mixing them in such proportions as the nature of the soil and other local circumstances may require, so as to form fine pastures. Having had much experience in this branch of our business, and the Grass Lands we have laid down having given great satisfaction, it is with much pleasure that we can recommend a fine mixture of the best Grasses and Clovers, suitable for the formation of a rich permanent pasture, from 25s. to 30s. per acre.

For improving the quality of Grasses already laid down, we can supply a good mixture at 1s. per lb.

For the information of those gentlemen who would prefer buying the varieties separately, and mixing them themselves, we have given a short description of some of the best sorts. About two bushels of the larger or light seed, and 12 lbs. of the small or heavy seed, is the quantity usually sown to the acre.

**ITALIAN RYE-GRASS**, imported seed, per bushel ... 7s. 6d. Too much cannot be said in favour of this excellent Rye-grass. Compared with any other of the varieties of common Rye-grass, the Italian affords a stronger braird, arrives sooner at maturity, has a greater abundance of foliage, and of a lighter and more lively green colour; grows considerably taller, is more upright, or less inclined to spread on the ground. Another of its distinguishing characteristics is, that it is much preferred by cattle to any of the common sorts, and is greedily eaten by them, whether green or dry.

**PERENNIAL RYE GRASS** (Alopecurus pratensis), per lb. ... 10d.  
**MEADOW CATTAIL, or TIMOTHY GRASS** (Phleum pratense), per lb. ... 10d.

The Timothy Grass possesses the advantage of affording double the quantity of nutriment when its seeds are ripe, that it does if cut when in flower. On strong, tenacious, and rather moist soils, it is entitled to a precedence almost to any other, and should at least form a considerable portion of the mixture employed for sowing down such, either for alternate husbandry or permanent pasture.

**MEADOW FOXTAIL GRASS** (Alopecurus pratensis), per lb. ... 10d.  
This is one of the earliest and best of Pasture Grasses, but not so well adapted for hay, as it produces but few stalks; its root leaves are very broad, long, soft, slender, and grow rapidly when cut, or when eaten down by live stock. It requires two or three years after sowing to arrive at full maturity.

**ROUGH COCKSFOOT** (Dactylis glomerata), per lb. ... 1s.  
Is a valuable Grass in cultivation, on account of the great quantity of produce which it yields, and the rapidity with which its leaves grow after being cut. It is well adapted for growing in shady moist places under trees, as in orchards, &c.

**MEADOW FESCUE GRASS** (Festuca pratensis), per lb. ... 1s.  
This is an excellent Grass, either for alternate husbandry or permanent pasture, but more particularly the latter. It is well liked by all kinds of domestic herbivorous animals.

**SHEEP'S FESCUE** (Festuca ovina), per lb. ... 10d.  
This Grass forms the greater part of the Sheep pastures of the Highlands. In quantity of produce it is much inferior to the other cultivated Fescues; but, from being well liked by Sheep, it should always enter into the composition of mixtures for lands on which they are to be pastured. In fact, on the authority of Linnaeus, these animals have no relish for hills and heaths which are destitute of this Grass.

**HARD FESCUE GRASS** (Festuca duriuscula), per lb. ... 1s.  
Will thrive on a great variety of soils, and is found to resist the effect of severe drought in summer, and to retain its verdure during winter, in a remarkable degree. From the fineness of its foliage and greenness in winter, it is well adapted for sowing in Parks, especially for Sheep pasture.

**WOOD MEADOW GRASS** (Poa nemoralis), per lb. ... 1s. 3d.  
Its habit of growth is delicate, upright, close, and regular. There is no Grass better adapted for Pleasure Grounds, particularly under trees, as it will not only grow in such places, but forms a fine sward where few of the other fine Grasses can exist. It produces a considerable deal of foliage early in spring.

**ROUGH-STALKED MEADOW GRASS** (Poa trivialis), per lb. ... 1s.  
This is a valuable Grass as a mixture for Pasture Lands, particularly on damp soils. Its habit of growth fits it for mixing along with the upright growing sorts, such as the Italian Rye-grass.

**SMOOTH-STALKED MEADOW GRASS** (Poa pratensis), per lb. ... 1s.  
This Grass yields a large quantity of herbage at a very early period of the season.

**SWEET-SCENTED VERNAL GRASS** (Anthoxanthum odoratum), per lb. ... 2s. 6d.

This Grass yields but a scanty portion of herbage, yet, on the whole, permanent pasture should not be without a mixture of it, particularly in Park and Pleasure Grounds, were it for no other reason than its pleasant scent, not only when cut for hay, but also when its seeds become nearly ripe.

**CRESTED DOGSTAIL GRASS** (Cynosurus cristatus), per lb. ... 1s.  
From this Grass forming a close turf, and having rather fine foliage, it may be advantageously sown on Lawns and other places, to be kept under by the scythe.

**LAWN GRASS SEED**, per lb. ... 1s.  
By sowing this Grass a fine sward may be obtained in a short time, at one quarter the expense of laying down turf. It is a selection of the FINEST Grasses, and is entirely free from weeds. We can strongly recommend it to those about to form Lawns or Pleasure Grounds.

\* For some of the above descriptions we are indebted to LAWSON'S "Agriculturist's Manual."

J. C. WHEELER & SON deliver their Seeds **CARRIAGE FREE** to most of the principal Railway Stations in England.

J. C. WHEELER & SON, Nurserymen, Gloucester.

**ARTHUR HENDERSON AND CO., NURSERYMEN**, Pine-Apple Place, Edgware Road, London, beg to submit the following **LIST OF NEW AND BEAUTIFUL PLANTS**, to be sent out on the 1st of April, 1853.

### SEEDLING CALCEOLARIAS.

**MODEL**—Rich brown, shading off to orange yellow at the edges; size and shape of Sultan, with the same dwarf and sturdy habit. 7s. 6d.

**MAGNIFICENT**—Rich crimson, with yellow crown, the same as Vivid; a large, fine-formed, and very splendid flower, quite distinct from anything yet out. 7s. 6d.

**CRIMSON KING**—Deep crimson, much darker and richer than Sultan, and does not fade; habit dwarf and robust; flowers large; shape good. 5s.

**BRILLIANT**—Rich shining bronze red; good shape and size; habit of Kentish Hero; a very distinct and beautiful variety.

**MAGNET**—Fine shining coppery brown, spotted and veined with deep crimson; flowers large; habit good. 5s.

The set 25s.

### SEEDLING GERANIUMS.

**COUNTESS (BEATON'S)**—Ground colour pure white, delicately veined and spotted with rosy purple in the upper petals; habit dwarf and compact; a very free blooming and distinct variety. This will form quite a gem among bedding plants. 10s. 6d.

**KINGSBURY PET.**—Bright rosy salmon; trusses large, flowers perfectly round and flat, habit dwarf and compact, with dark horse-shoe leaves. For pot culture or bedding out, this is one of the most beautiful and desirable Geraniums ever raised. 10s. 6d.

**SKELTONI**—Pure white, sometimes fading to delicate pink; trusses large, flowers round and flat, habit dwarf and compact, with dark horse-shoe leaves; a most profuse bloomer. 10s. 6d.

**MISS EMILY FIELD**—Delicate pink, with the habit of the two former varieties. 5s.

The set 30s.

**GLOXINIA WHITE PERFECTION (VICKERY'S)**—This beautiful and distinct Gloxinia has the habit of a Sinningia, with deep green shining leaves. Flowers of fine form; colour pure white, with delicate pink stripes in the throat, and, from its peculiar habit, continues to flower for several months. This will prove a valuable acquisition to this useful tribe of plants. 10s. 6d.

**PHLOX DRUMMONDII KILBURNI**—Colour fine purple, with dark centre, surrounded by a ring of pure white; habit dwarf and compact; a very distinct and beautiful variety. 5s.

A. H. & Co. have much pleasure in offering the above to their patrons and the public, as they can recommend them with the fullest confidence, having proved them all to be distinct and superior to anything yet out in their respective classes. They will prove valuable acquisitions to any collection.

The following new and rare plants they possess a good stock of, and beg to offer them at the annexed prices:—

**DILLWYNIA CINNABARINA**.—A neat evergreen shrub from New Holland. Its beautiful cinnabar or vermilion-coloured flowers, thickly set on robust stems, which are clothed with dark green foliage, render it a most desirable plant for exhibition and decoration purposes. 10s. 6d. to 15s.

**DILLWYNIA DRUMMONDII**.—A neat evergreen shrub, of slender habit, producing freely its pea-shaped blossoms of colour, buff and red, with yellow centre. This is one of the most beautiful of the many fine plants introduced from Australia. 10s. 6d. to 15s.

**DILLWYNIA SCABRUM**.—A neat evergreen shrub from New Holland. Its beautiful pea-shaped blossoms of rich scarlet, edged with bright yellow, form in clusters of from 9 to 12, with which its stems are thickly studded, render it a very striking and beautiful plant. For exhibition and decorative purposes it will be found a valuable acquisition. 10s. 6d. to 15s.

**GASTROLOBUM OVALIFOLIUM, SYN. DRUMMONDII**.—A compact greenhouse shrub, with glaucous foliage. Its flowers of deep orange, with purple centre, are borne in spikes of the greatest profusion; each spike being from 2 to 3 inches in length. A very beautiful and desirable plant for exhibition. 10s. 6d.

**GLORIOSA PLANTII**.—This will be found to be a most valuable acquisition to our collections, as, from its dwarf habit, freedom of flowering, and brilliant colours, it entirely surpasses anything in its class yet introduced. Small plants in 4-inch pots flowered here during the last season, and won the admiration of all who saw them. "The petals are much broader than those of Gloriosa Superba." Centre very bright rich orange, with the outer half of the petals bright scarlet. 10s. 6d. to 21s.

**GLOXINIA TRICOLOR**.—Clear waxy rose, softening off to bluish at the edges, with a beautiful purple tinge in the throat; flower large, and of fine form. 5s.

**GREVILLEA LAVANDULACEA, SYN. ROSEA**.—This has been justly described by Dr. LINDLEY as the handsomest of all the Grevilleas. In habit and style of flowering it most resembles Rosmarinifolia, but has a much more elegant appearance. Its rich rose-coloured flowers are produced in the greatest profusion. 15s.

**GERANIUM WHITE UNIQUE**.—Foliage and habit superior to the old Unique; it produces abundantly its trusses of white flowers, which being of a globular form, each truss is a bouquet in itself. For pots, vases, or bedding out, this will be found a very desirable plant. 5s.

**PHLOX DRUMMONDII THOMPSONI**.—Colour rich crimson, with dark centre; habit dwarf and compact; a most profuse bloomer. A bed of this Phlox has a fine effect in the flower garden. 2s. 6d.

**PHLOX DRUMMONDII MAYII VARIEGATA**.—Flowers striped with rosy lilac and white. One of the prettiest Phloxes ever yet raised. For pot culture or bedding out, this is a most valuable plant, as it continues in perfection the whole summer and autumn. 3s. 6d.

**FULTONIA ERICOIDES**.—A very distinct and pretty-flowering evergreen greenhouse shrub, having small leaves similar to an Erica. Flowers yellow and rosy purple, produced in bunches on the apex of the branches; habit dwarf and compact. 7s. 6d.

Amherstia nobilis, 5l. 5s.

Araucaria Bidwillii, 3l. 3s. to 5l. 5s.

Cookii, 5l. 5s.

Berberis Nepalensis, 1l. 1s. to 3l. 3s.

Cephalotus follicularis, 3l. 3s.

Cissus discolor, 10s. 6d.

Dracena nobilis, 10s. 6d. to 3l. 3s.

Echites Harrisii, 3l. 3s.

Genetylis tulipifera, 10s. 6d.

Ipomoea palmata, 5s.

Pandanus javanicus variegata, 1l. 1s.

Rhodolia championii, 2l. 2s.

### THE SCARLET SALPIGLOT, SALPIGLOSSIS COCCINEA.

A. H. & Co. have the honour of offering to their Friends and Customers the seed of this new and beautiful Annual. It differs from other Salpiglots most materially in colour, which is here of a clear vivid tender scarlet, charmingly relieved by short veins of a deeper colour. As a garden plant it possesses high claims to distinction, for there are few annuals that equal it. The whole of the seed of this valuable annual has been purchased by A. Henderson & Co., of the celebrated Mr. Burridge, of Colchester, to whom the floricultural world are already indebted for many new and choice seeds; and A. Henderson & Co. will be prepared immediately to send out packets of the seed at 2s. 6d. each.

A. H. & Co. beg leave to inform their Patrons and Friends that their stock of Vegetable and Flower Seeds (containing many choice and new kinds) is now ready for sending out.

Their seeds may be fully relied on as being in every respect of first-rate quality, and true to their sorts. Catalogues may be had on application.

Pine Apple Place, Edgware Road, London.

### THE BEST PEA FOR SECOND SOWING.

**SUTTON'S EARLY GOLIAH**, WHICH IS ALSO THE VERY BEST FOR SOWING IN JULY TO GATHER IN OCTOBER. Price 1s. per quart; 3s. 6d. per gallon, or 24s. per bushel.

Mr. R. Thompson, of the Horticultural Society, in his Notes on Peas grown at the Society's Gardens at Chiswick last summer, says of this Pea:—

"**Sutton's Early Goliah Pea**, sown May 17th, fit for use July 18th, 4 feet high; a very good, early, and productive Pea." (See Journ. Hort. Soc. vol. vii., pt. iv. p. 260.)

And the Reporter for the *Gardeners' Chronicle*, who honoured our sample ground with a visit in Nov. last, in his report says:—

"**Upwards of 30 varieties of Peas had been grown here, but they were cleared off, with the exception of Sutton's Goliah, which was still producing pods and blossom, although it was sown on the 22d of August. It is, therefore, a good Pea for a late crop, and it appears to be very productive; its flavour resembles that of Knight's Marrowfat.**" (See *Gardeners' Chronicle*, Nov. 27, 1852.)

Having a good stock of the above, we have affixed a moderate price to them, but they are decidedly the best Pea we are acquainted with for the second and the last sowing.

Priced Lists of other choice Garden Seeds may be had in return for one postage stamp.—Address,

JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

### NEW WHITE BROCCOLI—ROYAL-VICTORIA.

**EDWARD TILEY** begs to announce that he has purchased the whole Stock of Seed of the above **BROCCOLI**, which has proved the hardiest growing and mildest flavoured variety yet offered to the public. Its superiority may be judged by the following: "Grown by an amateur for the last four years, whose grounds lie in a cold, northerly aspect, where no other variety would succeed as the above has done, with certainty, it being equal to any grown in southern or warmer neighbourhoods. Its dwarf and hardy habit will prove a great desideratum to growers whose ground may be shallow and exposed to cold and cutting winds, having stood the most severe frosts, &c., and not being in any way affected by it, or inclined to run similar to other Broccolis before grown in the same situation. Weight generally from 6 to 8 lbs., and will keep its colour and flavour equal to the Cauliflower after its being cut several days." Packets of  $\frac{1}{2}$  oz., 1s. 6d.;  $\frac{1}{4}$  oz., 2s. 6d., or 1 oz. for 4s. E. T. has no hesitation in saying that this Broccoli will give as great satisfaction as all other new varieties sent out on former occasions.

A remittance must accompany every order in penny postage stamps to the amount or otherwise.

EDWARD TILEY, Nurseryman and Seedsman, 14, Abbey Church Yard, Bath.

### SUPERB NEW MELON.

**AUSTEN'S "INCOMPARABLE" GREEN FLESH**, 2s. 6d. per packet; larger do., of 15 seeds, 5s.; Golden Ball Green Flesh, do., 1s. 6d.; Bromham Hall, do., 1s.; &c.

"**CAPTIVATION**" & "**PHENOMENA**" CUCUMBER.

The Two Finest Black Spines in Cultivation, in packets at 2s. 6d. each; Lord Kenyon's Favourite Cucumber (true), 2s. 6d. per packet; Victory of Bath, do., 1s.; and other good varieties. A packet of Austen's "Incomparable" Melon, a packet of Golden Ball, and one of either of the above Cucumbers will be forwarded to any part on receipt of 5s. in penny postage stamps.—For further particulars of the above, see *Gardeners' Chronicle* of Feb. 5.

**HOLLYHOCK SEED**, selected from one of the best collections now in cultivation; 1s. 6d. per packet.

**FIRST PRIZE GERMAN ASTER SEED**.—This is unequalled in quality of bloom for exhibition, the seed having been saved from varieties that have taken from 40 to 50 first prizes within the last 10 years; 1s. 6d. per packet.

**SWEET WILLIAM SEED**, saved from upwards of 50 distinct dwarf and superb varieties; 1s. per packet.

**ANTIRRHINUM SEED**, from all the best shaped, striped, spotted, and brilliant varieties; and if sown now, will produce plants for blooming through the whole of the season; 1s. per packet.

Also Seed of that very scarce and delicious vegetable **CROWN GOURD** or **CUSTARD MARROW**, 1s. per packet.

N.B. A remittance must accompany the order from all unknown Correspondents, in penny postage stamps, when the whole or any quantity of the above will be forwarded free to any part.

EDWARD TILEY, NURSERYMAN AND SEEDSMAN, 14, Abbey Churchyard, Bath.

### THE BEST BROCCOLIES IN CULTIVATION.

**MITCHINSON AND CO., SEED MERCHANTS, TRURO**, Cornwall, have much pleasure in offering two superior **BROCCOLIES**, which, having been carefully saved under their own inspection, are warranted to give satisfaction.

**MITCHINSON'S PENZANCE, or EARLY WHITE BROCCOLI**, is invaluable for its earliness, coming into use in February. It is a full sized handsome head, of excellent quality, but a shy seeder. Offered in sealed packets of about 500 Seeds, at 1s. 6d. per packet, postage free.

**MITCHINSON'S TRURO, or SPRING WHITE BROCCOLI**, is the most perfect Broccoli in cultivation, having every characteristic of perfection. The plant is robust, without coarseness, moderately dwarf, smooth leaves, with silvery ribs, handsome compact heads well protected. Many gardeners and others who saw them growing on our grounds last season pronounced them to be the best they had ever seen. The stock is limited; price 1s. 6d. per packet, or two packets for 2s. 6d. Postage stamps should accompany orders. General Catalogues, &c., forwarded on application.—Seed Establishment, Truro, March 5.

### CHOICE SORTS OF VEGETABLES.

**TRUE READING ONION SEED**.—This favourite mild White Onion can only be obtained in perfection from seed grown in or near Reading, in which case the crop is fully equal to imported Spanish Onions. Price of Seed, 6d. per ounce, or 5s. per bushel.

We have annual demands for large quantities of Seed from all parts of the kingdom. Mr. James McIntosh, Gardener to the Duke of Buccleuch, at Drumlanrig, whom we have the honour to supply annually, says:—"Your Onion is particularly fine."

Also **SUTTON'S SUPERIOR SOLID CELERY**, 1s. per packet; **SUTTON'S IMPERIAL CABBAGE**, and **SUTTON'S SUPERB LETTUCES**, 1s. per packet, post free.

Mr. Newton, Gardener to John Harvey, Esq., of Icklebury House, near Biggleswade, says:—"Sutton's white Cos Lettuce is the best I have seen; it was fit for table ten days in July before *Adly's Cos*, *Paris Cos*, *old Drumhead*, or *Bath Cos*. All had the same care. It grows upright, and wants no tying. Six Lettuces, grown in the space of one yard, weighed on the average 4 lbs. each."

"I tried 20 of the best old and new kinds of CABBAGES, which were treated all in the same way, in order to see which was the best. Sutton's Imperial was the best Cabbage to cut early; it is large, mild in flavour, and, if left, will cut a good second crop in summer."

The above choice Sorts are all included in each of **SUTTON'S COLLECTIONS OF KITCHEN-GARDEN SEEDS FOR ONE YEAR'S SUPPLY**.

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however, a month after the article appeared in the *Economist*, a considerable change took place. Beet-root sugar and French colonial sugar were placed on a par, the first being charged with 50 f. per 100 kilos, and the latter with 44 f., the cost of transport being, we imagine, considered to be equal to 6 f.; some other alterations of minor importance were also made. Nevertheless, 23 new factories are reported to have been opened, and this is taken as conclusive proof that it has been profit, irrespective of protection, which has rendered the Beet sugar manufacture a prosperous branch of French industry. But it is to be observed that we know nothing of the financial condition of these enterprises, and moreover that although French colonial sugar enters the market on the same terms as Beet-root, or better, yet that other colonial sugar is stopped by high protective duties. It is not very easy to make out the real amount of this protection, in consequence of the complicated distinctions between foreign colonial sugar imported in French and foreign bottoms, or from Asia and America, but it varies from 56 fr. up to 76 fr. per 100 kilos, to which must be added the cost of transport. And this is a very important fact, because of the small quantity of French colonial sugar which reaches Europe. According to a return furnished by Mr. JAMES COOK to Dr. URE, out of 738,000 tons of sugar brought into the markets of the world in the year 1838, only 100,000 were French colonial; a small portion only of which would reach France. But the lowest calculation that can be made of the annual consumption of sugar in France fixes it at 130,000 tons, and the greatest quantity of Beet sugar ever produced in France does not seem to have much exceeded 61,000 tons (in 1850-51); so that there must be a large demand for highly-taxed foreign sugar, the effect of which will necessarily be to keep up prices.

Another question for determination is, whether a ton of Irish Beet will yield as much sugar as a ton of Austrian, Flemish, or French Beet. All calculations of profit and loss must be fallacious, unless founded upon an exact determination of this point. It would seem from Sir R. KANE's report that Ireland labours under no material disadvantages in this respect. Messrs. SULLIVAN and GAGES report favourably of the result of their analyses, as far as they went. Since, however, they were limited to 118 roots, we cannot safely assume them to represent a general fact, to say nothing of their having been laboratory experiments. When 118 acres shall have been converted into sugar in an ordinary factory, we shall be in a better position to form an opinion upon this matter. Sugar, like all other vegetable secretions, is the result of the joint action of light, heat, and vitality upon the fluids contained in the vegetable system. The more light, the more warmth, within certain limits, the greater the quantity of sugar which the Beet-root should form. We are unacquainted with the mean summer and autumn temperature of the south of Ireland, but it may be assumed to be 60° in the summer and 50° in the autumn, with a hazy atmosphere. Now, French Flanders, where some of the greatest Beet-sugar factories exist, has certainly a higher temperature in summer of from 4° to 5°, and in autumn of from 2° to 3°, and brighter skies. But the Irish chemists seem to attach no importance to this circumstance.

At p. 20 of Sir R. KANE's report, it is stated that, according to HERMANN, and at least in Russia, geographical position has but little influence upon the per centage of sugar. If this were really so, Beet-root would offer a striking exception to a very general rule; but upon turning to the evidence collected by Mr. HERMANN, we find that while the per centage of sugar in Beet grown in lat. 48° is 12.13, that from Omsk, in lat. 55°, is only 6.7, so that extremes of climate do in fact represent extremes of productiveness, for the two cases above quoted constitute the maximum and minimum obtained by HERMANN. It is true that the southern Beet was grown in the famous black soil of southern Russia, and without manure, while the northern crop was from "rich black loamy soil," containing 1 per cent. more organic matter than the former, "freshly and heavily manured;" but we cannot believe that such circumstances could alone, if at all, produce such a very large sugar difference as HERMANN found. It is difficult to suppose that the heavy manuring spoken of caused the reduction in the per centage of sugar, for DUBRUNFAUT long ago showed that the quantity of sugar is not so affected, and all succeeding writers on the cultivation of the plant recognise the same truth. It is indeed pointed out by Messrs. SULLIVAN and GAGES, in their report at p. 36. Without insisting too much upon this point, we certainly think it can hardly be said to give the cultivator increased confidence.

Since we have no intention to say more on this question than what the public interest demands, we

shall limit our further remarks to two or three more points.

The first is the value of the leaves of the Beet crop, which Mr. SULLIVAN estimates at 3s. 4d. per ton, at which rate he includes them in his calculation of the money value of this crop. In one instance he sets them at 2l. 3s. 4d. per acre, in another at 2l. Now, even Mr. E. RAYNBIRD, the author of a paper on the cultivation of Beet (*Roy. Agr. Journal*, viii. 217) does not reckon them worth more than 19s. 8½d., and we know that some experienced cultivators deny that they ought to be looked upon as representing any value as food, in consequence of their scouring quality. If to be converted into manure, by remaining on the ground to be turned in, then their value would be so low as to be undeserving notice in any calculation of such mere probabilities as Beet-sugar making. All that M. GASPARI, who is disposed to assign them some value, is able to say in their favour of his own knowledge is that, when he cautiously fed his animals with Beet leaves, the former did not fall off (*ne dépérissaient pas*).

Then, as to rate of produce. Mr. SULLIVAN takes it as lying between 16 and 52 tons of roots per acre; a wide difference. According to DUMAS the mean produce per hectare in France is 30,000 kilos, or less than 12 tons per acre. But we have reason to know that such a crop is only procurable on land capable of yielding at least 30 bushels of Wheat per acre. Irish farmers can tell how far they are likely to realise such returns. It is also to be recollected that Beet is a most exhausting crop, and that there are not at present any known means, except resting, by which land can be made to bear it for a long continuance. And after all, the weight of the crop may not, and probably will not, represent its saccharine value, which varies, according to Mr. SULLIVAN, from 3.553 to 10.591 per cent.

A great deal is expected from improved methods of manufacture, from economising one kind of product and increasing another. It must be admitted on all hands, that the sugar industry of the continent exhibits one of the most beautiful examples of practical science; nothing can be more admirable than the process by which continental chemists have improved the quality and increased the quantity of their Beet sugar. But are these operations profitable as well as admirable? Do these beautiful results produce a gain to the capitalist? We have reason to know that great doubts are entertained upon the subject; and that some of the largest continental manufacturers believe that the old processes of DUBRUNFAUT are preferable in a mercantile point of view, although much less brilliant examples of applied science.

It has appeared to us necessary that this Beet question should be viewed from a point different from that on which some sanguine writers have stood; and that it would very well bear having its dark, as well as its light side shown. For although, on the one hand, we should be sorry to discourage in any way the attempts that are making to improve the industrial resources of Ireland; yet we are bound, on the other, to point out the uncertainty which beyond all question must attend speculations such as that of sugar-making. No doubt it may succeed; there is a possibility, perhaps, of Ireland succeeding as well as continental Europe: but great losses must be incurred in the attempt; failure cannot but attend the enterprise, unless in very skilful business-like hands, so that the final result is not one to which a prudent man would look with too much confidence.

Among the various acquisitions to science which have resulted from Dr. HOOKER's mission to India, none perhaps are more interesting than those which have been made in FUNGALS. The beautiful series of drawings prepared in the midst of incredible labours of other kinds, and the rich collection of specimens which is in wonderfully good preservation, notwithstanding the continual rains of perhaps the wettest climate in the world, under which far the larger portion was gathered, have afforded the materials for the description of a multitude of forms, which comprise some of the very finest species amongst the fleshy fungi which have yet been discovered.

Other materials, however, were collected of less interest, as regards external appearance, but more immediately connected with a subject which properly takes its place in a horticultural and agricultural journal, viz., the diseases of plants so far as they are produced or accompanied by parasitic fungi. We purpose to draw attention to two of these, as of very peculiar interest; neither, however, from the Sikkim or Khasia districts, which are so very rich in the higher fungi. On the contrary, both come from the hilly districts north of Calcutta, where, though hot and damp in the rainy season, a com-

paratively low temperature is combined with great dryness of atmosphere in winter. The first, like most of the species which attack cereals or other Grasses, produces a very curious effect on the matrix; the other will be reserved for a separate notice.\*

It is well known that when plants are attacked by parasitic fungi, various changes often take place analogous to those which are produced by the punctures of insects. In the case before us, in which a Grass, whose genus we are not able at this moment to ascertain, is the subject of attack, the germen, or, as we believe, more properly its upper portion, is elongated into a fillet-shaped process clothed with soft hairs, with the remains apparently of the stigma in the shape of a scarious pointed or jagged apex, and resembling very strongly at first sight an ergot, though by no means solid or fleshy. At the base is a little black pouch filled with dark spores of various sizes, but averaging  $\frac{1}{1000}$  of an inch in diameter, and for the most part globose or subglobose, perfectly even as far as we have observed; sometimes furnished with a very short peduncle, but more frequently without any trace of the point by which they were attached to the mycelium. Amongst the dark perfect spores are abundance of younger hyaline bodies in every stage of growth. We know of no species at all resembling this; and the transformation of the germen is very singular. There is always some difficulty attendant on the examination of dried specimens of such objects; at present we have found no remains of any stamens or of scales at the base of the germen, nor do the spikelets in which there is no parasite appear to have perfected their fruit. It is therefore just possible, though we are inclined to take the view of the matter stated above, that the fillet-shaped body may be an elongation of the base on which the germen rests, in which case the remains of the germen itself and the attendant stamens would be carried up to its tip. The change, however, is too great to leave any traces by which the point could be determined. In the analogous case of ergot, it is the ovule which is transformed, and the scale at the tip of the ergot consists of the ruptured walls of the ovary, and the stigmas with which it is crowned.

We have given figures of a portion (a) of the diseased panicle, (b) a separate spikelet slightly magni-



fied, (c) the transformed germen removed from the glumes, and (d) the spores magnified 250 diameters. The species may be named *Ustilago vittata*. It is possible, however, that, as M. TULASNE suggests, it may eventually prove congeneric with *Tilletia sorghi vulgaris*, which is certainly a doubtful *Tilletia*. It occurred near the summit of Parus Nath, in Behar, about 4000 feet above the level of the sea; the temperature of the summit, as compared with the cotemporaneous temperature of Calcutta, at 3 p.m., Feb. 4, being 54° to 74.4°, and the degree of saturation 0.326 to 0.262. About a thousand feet lower down a species of *Uredo* was abundant on the leaves of Clematis, the sori of which were themselves infested with a parasitic *Puccinia*. *Ravenelia indica* also occurred in nearly the same locality, on the pods of a species of *Abrus*. M. J. B.

#### HOVEA CELSI.

This is universally admitted to be one of the most beautiful of greenhouse plants; but it is also one of the most difficult to induce to form what is termed a handsome specimen. It is easy enough to grow the plant to a considerable size, but its straggling habit, and tendency to run up without producing lateral branches, render it no easy matter to make it anything approaching a compact, well-furnished specimen. Well propagated, dwarf bushy plants must be got to begin with. They must not be pot-bound or stunted, for it is

\* The second species has accidentally appeared first.



almost impossible to form handsome specimens of plants that have not been well attended to from the first; size is of little importance, but whether small or large, the plant selected to form a specimen of should be in vigorous health and furnished with branches in proportion to its size. Supposing plants of this description to be procured about this season, the first thing is to examine the shape of the roots; and if these are abundant and healthy, shift into pots a size larger. Potting is a very simple operation, but in the case of this plant, as in that of many others, future success very much depends upon the manner in which it is performed, especially during early stages of growth. Efficient drainage should be carefully provided by means of a proper arrangement of a moderate quantity of potsherds, covering these with a thin layer of fibry pieces of the soil, intermixed with plenty of sharp sand. After potting, the plants should be placed where they will not be exposed to drying currents of air, and water must be very cautiously administered till the roots strike into the fresh soil. In the meantime, however, a moist atmosphere, and a sprinkling overhead with the syringe morning and evening, will be beneficial. Nothing is more injurious to this plant than allowing it when young to suffer for want of pot room; but beginners must avoid the one-shift system, otherwise they will probably find this extreme more ruinous than the opposite. By giving a small shift as early in spring as it may be necessary to do so, and a more liberal one—but this must be regulated by the vigour and wants of the plants—early in June, both extremes will be avoided. When the plants attain a useful size one shift in a season will be sufficient, and when in large pots, with a careful and liberal supply of water at all seasons, and an occasional watering with weak clear manure water while making their growth, they will be found to do very well for several seasons without shifting.

Immediately after potting means must be used to secure a compact bushy habit of growth, and the best method I have ever found of effecting this is removing the more prominent buds by cutting back the shoots, and bending and pegging down the more vigorous ones, so that the buds directed to start into growth may be on the highest part of the shoot; this, with attention during the growing season, to regulate the growth by stopping over-luxuriant shoots, and bending them down, will be found to effectually correct the naturally straggling habit of this otherwise first-rate plant; and if these trifling attentions are commenced early and persevered in, well-formed specimens will be the result. During the spring months the plants will enjoy a situation close to the glass, where the night temperature may average about 50°, and 10° or 15° higher by day; and where a moist atmosphere can be maintained, and air admitted freely on every favourable opportunity, without exposing the plants to cold currents. When mild weather sets in, they should be removed to a cold frame, which will be found an excellent situation for encouraging active robust growth during the summer; but some attention will be necessary to guard against a sudden change of temperature to which the plants might be exposed, especially if cold cloudy weather occur immediately after their removal to the cold frame; this, however, will be easily managed by keeping the lights close, and covering at night, or admitting air, according to the state of the weather. Unless the frame occupies a position shaded from the mid-day sun, a thin screen should be thrown over the glass for a few hours in the middle of bright days, and air must be freely admitted day and night, merely putting on the lights during fine summer weather to assist in maintaining a moist atmosphere, by shutting them down for an hour or two, after syringing in the evening, and to protect the plants from heavy storms of rain. They must be well attended to with water, and they should be sprinkled over-head with the syringe morning and evening, unless during cold cloudy weather; it should, however, always be ascertained before syringing whether the soil requires water, as the moisture on the surface occasioned by the syringing is very apt to deceive persons not much accustomed to the management of plants, and the ball is thus unknowingly allowed to become much too dry. Care must be exercised to get the wood properly ripened in autumn, and shading should be discontinued in August, and the plants fully exposed to sun and air, merely using the lights to protect them from heavy rains. They should be removed to a light airy situation in the greenhouse by the end of September, and kept cool, and very carefully supplied with water during the winter months.

Plants thus treated would probably blossom profusely in spring, but allowing them to do so would be a considerable loss of time, and those who aim at making large handsome specimens in the shortest possible period should cut back the shoots early in spring, so as to remove the blossom-buds, and this should be done at least a fortnight previous to removing them to a situation to encourage growth. This will allow time for the buds left to swell, and they will break more regularly and freely than if the cutting back were deferred until the plants were placed in a growing temperature. If the directions for stopping and training have been so far properly practised, nothing farther in this way will be necessary at present; but when active growth commences, the same attention will be required this season as last, and the plants should be treated in every way as recommended for last season. If all goes on well they will be nice sized plants before winter, and may be allowed to blossom in

spring. While in flower they are well worth shading, which prolongs considerably the duration of the blossoms. When done blossoming the shoots should be pruned back to wood buds, and thinned out if necessary by cutting out weakly ones, and staking or pegging out the others, and when the buds start into growth a moderate shift may be given.

For soil take three-fourths rich turfy peat, one-fourth turfy sandy loam; break these into small pieces, add about one-quarter sharp silver sand, and a sprinkling of clean potsherds, and intimately mix the whole together. *Alpha*.

### Home Correspondence.

*The Deodar and Cedar of Lebanon.*—Your correspondent shows the probability that the Cedar of Lebanon and the Deodar are the same species, merely distinguished by a difference of habit, certainly not greater than that of many known varieties, which come generally true from seed. The horizontally-branched variety of the Italian Cypress may perhaps be taken as a good instance. The Irish Yew is, I think, a monstrosity, and never does come true from seed; but the chief peculiarity of the Deodar, by which it is distinguished from the Cedar of Lebanon, is its drooping habit of growth, a habit for which many other Himalayan Conifers have a tendency, especially when young. Has any one yet attempted to give any explanation why the young plants of the Abies Smithiana, Pinus excelsa, Gerardiana, Abies brunniana, and Cupressus torulosa, all turn their heads down more than those nearest allied to them from other parts of the world? Many plants that have sometimes been called distinct species are only the same kind permanently altered in habit, from growing in some peculiar locality, as the many instances amongst British plants, in which growing near the sea induces a more succulent habit, with fewer and larger flowers. Has the climate of the Himalayas any effect of this kind on the growth of these Conifers? *G. Strickland, Heldeney, Halton.*—The difference between the Cedars named in your leading article at p. 131, being purely a botanical question, will induce most folks to keep quiet, in case they "burn their fingers." But as botanists themselves seem to differ about the matter, a fact or two bearing upon the subject can do no harm. I can show anyone thousands of each of the kinds growing near one another, of from one to nine years' growth, all of them having been raised from seeds on the same spot; and I will venture to affirm that no botanical or gardening knowledge is required to distinguish them, or I will take at random 100 of each, 3 feet high promiscuously, and mix them, and I will guarantee that any bricklayer's labourer will separate them without an error. Well, I shall be told that is no proof; but I think it shows conclusively that they differ as much from one another as do the three metals, gold, silver, and copper. They are as easily separated in the seedling state as at 4 feet high. There is, however, another important fact, of which I have endless proof, bearing materially on the question at issue. Six years ago I sent a few plants of *C. atlantica* to Scotland; they got distributed, some on the eastern and western coasts, others in the interior; at that time it was known as *C. africana*; the very name, in spite of my assertion to the contrary, induced every person to look upon it as tender. It has turned out that when planted with the Lebanon and Deodar, the Lebanon is stunted and makes no headway, the Deodar gets scorched, and often loses parts of its branches and foliage; whereas the *atlantica* neither becomes injured nor stands still, but grows away most vigorously. Now, I should like to ask one question of botanists, viz., Can plants of one species sustain—all circumstances being the same—different degrees of temperature? Since the *C. atlantica* has been so satisfactorily proved to be harder than either of the others in the north, I have sent some thousands there. *R. Glendinning.*

*Spring Treatment of Bedding Plants.*—I beg to add my testimony in favour of the plan pursued by Mr. Pettigrew for obtaining "space and protection for bedding plants" early in the spring, as I had myself practised, with success, a method somewhat similar, but having this difference; instead of sinking a trench for the reception of the young plants, I placed them on the level surface. More frequently, however, I raised a slight embankment, which I think the better plan of the two. In either case I have prepared a material for the purpose of planting the young plants in, composed of two parts leaf-mould, one of sand (it matters not whether it is white or red, so that it is pure), and one of the soil of the garden. This is laid in small trenches previously made about 5 inches wide by 4 deep, to contain a single row of plants of the most robust kind; trenches of less dimensions will suffice for the others. In such a compost the plants will be found to make their roots "near at home" in a dense cluster, adhering closely to the soil, and therefore they admit of being transplanted with greater facility and probability of success. Mr. Pettigrew's method, apparently, has an advantage over mine in convenience of protection, as the sides of his trench form a support for mats or other covering. But, then, this is compensated for by the more healthy and dry atmosphere the plants naturally enjoy when on the surface of, or slightly elevated above the surrounding soil. They are extremely liable to damp off when planted in a trench, where they are, necessarily, encompassed by soil, which, whether it is light or heavy, is invariably cold and damp in the early part of spring. As a means of protection, sticks, which

are a little pliant, should be bent over the plants, and firmly fixed in the ground at each end. These should be made to stand about a foot or 18 inches apart. A string should then be stretched along the top (the whole length) of these, taking a turn or two round each stick, by which means they will be held steadily in their places, and will then constitute an excellent support for mats, or other covering most at command. In order to prevent the detrimental effects of cold winds, Spruce Fir boughs, or in their absence Laurel cuttings, may be stuck into the ground close together, in a row on each side of the plants. The trouble incurred by this plan of protecting will very little exceed, if any, that of making a trench. In this way I have successfully preserved, out of doors, struck cuttings of Petunias, Calceolarias, Verbenas, Cupheas, Salvias, Scarlet and variegated Geraniums, Anagallis, and others, from the beginning of March; and from the beginning of April Heliotropes, Cælestinas, and Phlox Drummondii. It is but right to mention, however, that this plan cannot be adopted with any reasonable hope of success in all seasons; and in some localities I very much doubt its practicability at all. *Chas. Lucas, Brentwood.*

*Our Calendarial Directions.*—In your No. for Feb. 19, I observe in the "Calendar of Operations" that your readers are directed to "take advantage of the present frosty weather to renew old worn-out beds, &c., with fresh compost;" and, again, to "proceed actively during the present frosty weather with wheeling manure, trenching, digging, &c." Now, I do not know in what part of the country your correspondent who undertakes this department may reside; but here, in Suffolk, we have the ground covered with snow of a considerable depth, and until the frost disappears it must remain so. I do not see, therefore, how it is practicable to comply with such directions. Probably, however, he may write from some part of the Continent, or possibly may reside in another planet, for I should imagine in no favoured spot of England would it be practicable to "trench" and "dig" the ground this weather. There is no notice whatever of the existence of snow, it is altogether ignored. How is this to be explained? Are these contributions to the "Calendar of Operations" prepared and sent some time beforehand? I think there should be more reality in them. *A. Craven, Speckhall Rectory, Halesworth.*

—If Mr. Craven will refer to p. 40 of the present year's volume, he will find it stated under the head "General Remarks," that my instructions are in a measure to be considered as general ones, which may require to be varied, or suspended occasionally, as circumstances require, as it is evidently impossible with our fickle climate at all times to give absolute directions a week, or even a few days beforehand, for work requiring to be done, which an alteration in the weather, either general or local (as in the present instance), might prevent. Although subsequent reports speak of great falls of snow in the north and east of England, and even further west than this, yet we have had very little in this neighbourhood, and that lay on the ground but a short time. The lowest point the thermometer has reached here has been 19°, and that on one occasion only; 24° and 26° being the average night temperature; this anomaly is explained by Mr. Rivers's remarks at p. 133, as I write about 90 miles west from Chiswick. Further, the "Calendar of Operations" is, of necessity, made up two or three days before the day of publication; and as a proof of their "reality," they are based on the actual practice carried out under my immediate superintendence. *The Writer of the Calendar.* [We beg to inform Mr. Craven that our Calendar is furnished by one of the most intelligent and experienced men in England, in charge of the garden of a noble lord, whose visitors bear testimony to the excellence of his gardener's practice.]

*On Changing the Names of Fruits.*—Pray, Mr. Editor, raise your voice against the alteration in the names of fruits, as you have done against other innovations; let us by all means adhere to the last edition of the Horticultural Society's Catalogue. I ask this because, on recently looking over "British Pomology," published in 1851, I find Norfolk Beaufin Apple (in old times it was a "good end," or finishing Apple), made Beefing, from the similarity the dried fruit presents to raw beef; pray, who would buy beef looking like a baked Apple? it would to a certainty be brown beef. Then we have our dear old Jenneting or Juneating made into Joannetting, perhaps because it was the favourite of Joan, the wife of Darby: at least, this seems as good a derivation as any given. In the good old times of warm summers, when, according to Langley, the May Duke Cherry ripened in May (old style), this Apple ripened in June, and was a June-eating Apple, dear to every boy as a Jenneting; let us, therefore, throw over Joan entirely. Again, the King of the Pippins is made Golden Winter Pearmain; now, this Apple is so generally diffused under the former name that the attempt to adopt the latter will lead to infinite confusion—we have no business with Dr. Diel's German name; besides, the Catalogue of the Horticultural Society is the best authority for all English pomologists, and we must make it our sole authority, if we wish to avoid much trouble and confusion; there are a few errors in it which will doubtless be corrected in a future edition, at present let us adhere to it, and our good old names. *Pyrus.* [We must say that such changes as our correspondent alludes to, or any such silly alterations, reflect no credit upon the judgment of the author of "British Pomology," and throw distrust over anything that may be good in his book.]

*Deodars in Morayshire.*—The fall of snow which occurred here in a calm, during a few hours on Friday, the 11th of February, formed a regular cover on the



ground fully 9 inches in depth. This snow was immediately succeeded by a violent hurricane, which, unfortunately, has snapped the top shoot of one of my Deodars on the lawn. I herewith send you the shoot as a specimen of Morayshire growth. [It measured nearly 2 feet in length, the wood being well ripened and furnished towards the base with vigorous laterals. *Ed.*] It is broken off within an inch or so of its junction with the former year's growth. That sent is the sixth year's shoot of the plant from seed. The length of the growth of the former year (1851) is 27 inches, which portion of the tree has become so stout (about an inch in diameter at the low end) that it did not bend under the snow with sufficient elasticity to save the top. The plant, however, fortunately possessed a competing shoot fully 18 inches long, which now forms a good leader, but before the casualty occurred it stood 7 feet 10 inches high, and the diameter of the space overspread by its branches, at the surface of the ground, is nearly equal to its height. In reference to the specific difference between the Lebanon and Indian Cedars, I expect the cones of these trees are in some respects very dissimilar. A friend of mine, a few years since, sent me a few branches of the Deodar from the Himalayas, with a number of ripe cones on them. On their arrival I found that only two or three of the cones were perfectly safe; the others had either wholly or partially fallen to scales during the journey, leaving the axis of the cones adhering to the branches. I found that the pressure of the hand was sufficient to disfigure and demolish the cones, so that the seeds might be picked out. With Cedar of Lebanon cones, the case is very different indeed, so much so, that the use of a blacksmith's vice and other tools have been recommended as the most speedy method of extracting the seeds in safety. It would therefore appear that the scales of the Deodar cones are deciduous, while those of the Cedar of Lebanon are persistent. *J. Grigor, Nurseries, Forres.*

*Temperature of January, 1838* (see p. 133).—Your correspondent "W. P." seems to have taken a long nap, and has just woke up to send you a register of January, 1838. His somnolency is the most remarkable effect of that severe winter we have yet heard of; but somnolency is catching, and a certain friend of ours, generally wide-awake enough, seems to have for a moment sympathised in the nod. We ourselves nodded also, and were on the point of sending off a special messenger to Knowle and Chipstead to inquire into the strange phenomena in our immediate neighbourhood, so unlike our own experience, when we discovered "W. P." was meditating on 1838, not 1853. If "W. P." will take the trouble of looking to the tables of temperature for 1838, he will see that his minimum temperature for each day is above Chiswick, instead of below it. His observation at 8 A.M. is, of course, valueless, as it is neither a maximum nor a minimum, and before he occupies your columns with his lucubrations, he had better acquire some distinct ideas upon the subject he writes about. His mean minimum for January, 1838, is 24.25 by his own showing. The mean minimum of Chiswick being 22.72 for the same month, and on the coldest night, *i.e.*, that of the 19th and 20th, his minimum is  $3\frac{3}{4}$  above Chiswick, his minimum being  $-1^{\circ}$ , Chiswick being  $-4\frac{1}{2}^{\circ}$ . This present February has afforded some singular local phenomena, the amount of snow here exceeding that of the neighbourhood, but the thermometer has differed very little from the observations at Chiswick. This is remarkable, principally, inasmuch as our mean winter temperature is higher than Chiswick, whereas that of the past month has been lower. *J. R., Seven Oaks, March 1.*

*Slate Tubs.*—My gardener informs me that he has seen instances in which plants in slate tubs have been chilled, and made little or no wood, whereas, in the same houses under similar treatment, in wood or earthenware pots, they were in vigorous health. May I inquire if this has been observed by any of your correspondents? *L. O. C.*

*The Weather in the Far North of Scotland.*—Up to the middle of January we had very wet weather and an unusually high temperature. Vegetation had in many instances (up to the 12th ult.) been aroused into action, and it had made a fair commencement for another year's growth; Banksian, China, and other Roses had pushed fully an inch and a half; Apricot and Pear-buds were also very forward; when, alas! on the evening of that day a sudden and severe fall of temperature has left its disastrous effects more than has been experienced here for many years. A snow-storm of several inches deep fell about the 10th ult. On the morning of Saturday, the 12th, the thermometer registered  $18^{\circ}$  of frost (that of the previous night), but at daylight the mercury had risen considerably, and snow again commenced falling in large flakes, which continued until nearly 1 o'clock, when it changed to a bright and clear atmosphere, the frost then setting in with great intensity, and by 9 o'clock P.M. the mercury had fallen as low as  $10^{\circ}$ . This sudden change of temperature had a singular effect on the water of springs and the river Spey: about sunset the moisture arising from the latter could be seen as visible as steam from a tea-kettle, being nearly as dense as a London fog. This severe frost was of short duration, for by 10 P.M. of the same day the mercury had receded to  $13^{\circ}$ , and by daylight on the 13th, to  $27^{\circ}$ ; so sudden a change of temperature I should consider very uncommon, and taking place after so mild a period its disastrous effects may easily be conceived. Old pillar and trellis Roses of China, and other sorts, are all killed to the depth the

snow had mulched them. Other new hybrid sorts have also suffered severely; forward buds of Apricots have become blackened, and many more injuries, not yet discovered, will doubtless make their appearance when a general thaw takes place, of which there is no prospect here at present. *J. W., Gordon Castle, Fochabers, March 1.*

*Sugar Beet* (see p. 134).—Permit me to suggest that there are other causes besides the seed being bad, which may induce this plant to "run" early in autumn. If the time of sowing is not regulated to suit the nature of the soil and situation, the effect complained of would be produced, and were this even strictly attended to the season might make a great difference; if the latter should prove a favourable one, with due care and attention, very few plants would be found to run to seed, but if, on the contrary, a dry season should set in, it would, no matter however well the seed might have been saved, produce this or some other effect equally bad, either causing the plants to shrivel up and wither, or ultimately making them "run." I have not grown the variety of Beet alluded to, but having some knowledge of the habits of both garden and field varieties, I am of opinion that the difference in the seed or in raising it is very trifling compared with the season and other local circumstances. Nevertheless, good seed should at all times be preferred, and in selecting it care should be taken that it is the true variety, and does not exceed one year old; this point can be attained by dealing with respectable seedsmen. *P. Deane, Houghton, Brough, Yorkshire.*

#### The Weather in the Midland Counties.—

Date.	Temperature of the Air.			Temperature of the Earth.		Barometer.	Wind.	Rain.
	Max.	Min.	Mean.	Min. on Surface.	1 foot below Surface.			
1853.						About 9 A.M.	Direction.	In. or Parts.
Feb. 18	Deg.	Deg.	Deg.	Deg.	Deg.	Ins.		
" 19	34	21	27.5	20	31	29.07	N.	00
" 20	34	17	25.5	11	30.7	29.05	N.	00
" 21	34	21	27.5	18	30.7	29.27	NWN	01
" 22	36	24	30.0	21.5	31	29.57	N.	00
" 23	37	23	30.0	18	31	29.45	SW.	00
" 24	40	31	35.5	32	31	29.12	NW.	16
" 25	38	23	30.5	23	31	29.27	NWN	08
Average	36.1	22.8	29.5	20.5	30.9	29.25		25

The register is noted down about 9 A.M., and represents the state of the barometer and of the wind at that time; the maximum heat is that of the previous day, and the minimum is that of the night just passed; the minimum on surface is taken by a thermometer laid on the Grass of a lawn; the situation is probably about 500 feet above the level of the sea, and the mercury in the barometer is, consequently, half an inch lower than it is at Chiswick. I have found the temperature on the Grass, on a clear calm night, to be generally about  $6^{\circ}$  below that of the air; but it is much influenced by the heat of the earth. On the evening of the 31st January, I placed a thermometer on several folds of carpet laid on a small tray, so as to form rather a concave surface. The temperature in this hollow sunk  $17^{\circ}$  below that of the air; the latter being  $26^{\circ}$  and the former  $9^{\circ}$ ; thus exhibiting in miniature the ice-producing process used in India. A series of experiments might be made by thermometers thus isolated on the effect of radiation in the day-time; it might also be tried by moonlight, for if, as Sir J. Herschel says, the heat of the moon has a tendency to clear away our clouds, it must have a cold-producing effect on the earth by causing radiation, unless it has also a considerable direct heating effect on our surface. It would be interesting to know to what extent night radiation affects the air, by a series of thermometers placed on clear calm nights at different levels—say from 1, 2, 6, 12 feet above the surface—they would probably gradually exhibit higher temperatures as the level rose. Experiments on radiation, as the original cause of all our cold, cannot fail to be interesting; but those suggested may have probably been already made, though my limited knowledge has prevented my meeting with them. *S., Edgbaston, Birmingham.*

#### Meteorological Observations at Holkham.—

1853.	Protected from Radiation.			Unprotected.	Direction of Wind.	Rain and Snow.
	Temperature at 9.	Max.	Min.	Min.		
Feb. 14	Deg.	Deg.	Deg.	Deg.		Ins.
" 15	22.4	35.0	20.8	16.0	SW.	.02
" 16	31.8	31.7	14.4	8.4	NW.	.0
" 17	35.2	35.6	30.8	22.6	NNE.	.0
" 18	35.3	39.0	27.3	21.0	N.	.04
" 19	29.5	36.5	27.8	23.5	N.	.61
" 19	14.5	36.5	7.2	6.0	NNW.	.00
" 20	31.8	36.2	14.5	19.0	NW.	.08
" 21	31.8	36.2	29.5	25.5	NW.	.09
" 22	30.8	40.6	18.0	17.5	WSW.	.09
" 23	34.8	39.2	30.5	22.0	NW.	.01
" 24	32.2	38.2	25.5	24.5	NW.	.15
" 25	35.6	37.0	32.0	27.8	NW.	.28
" 26	35.0	39.0	30.0	25.2	SSW.	.26
" 27	34.2	38.2	31.8	28.0	NE.	.17
" 28	32.2	37.9	28.5	20.0	NW.	.015

These readings were all taken at 9 A.M. on the day named, and the maximum and minimum are those of the previous 24 hours. The coldest weather here was on the 19th, at Chipstead on the 20th, and near Doncaster on the 23d; and in the latter part of the month the cold has been much more intense here than at the latter place or Chiswick. The rain at Holkham in 1852 was 30.635 inches,  $3\frac{3}{4}$  above the average, but only 0.32 in. above the fall in the previous year. The days

on which rain fell were 173 against 171 in 1851; average 177. *S. S., Holkham, March 1.*

*The Consequences of Prosecuting a Swindler.*—As many of your readers may not know what they must pay to be a public benefactor, I enclose, for your perusal, a bill of the costs incurred by Messrs. Lane in prosecuting James Bradley, amounting to 32l. 4s., of which the county pays 13l. 14s. 6d., leaving Messrs. Lane 18l. 9s. 6d. to pay. The most curious part of the business is, that Messrs. Lane having asked their neighbours, Messrs. Rivers and Paul to assist (?) them, incurred additional charges of more than 10l.; the items are as follows:—"Case of forging and uttering to Mr. Rivers, &c., &c., 3l. 19s. 5d." "Case of forging and uttering to Messrs. Paul, &c., &c., 3l. 19s. 5d.," and then came attendant charges, 2l. 2s. 9d. Messrs. Lane may say with justice "save me from my friends;" surely there must be something wrong in all this, but I suppose it belongs to our system; the wonder is that the lawyers did not also enlist Messrs. Groom, Ivery, Halley, Loddiges, and several other victims, because each being "bled" to the amount of 5l. or thereabouts, would have made a nice little bill. *T. R.*

*Temperature of Bromley and Chiswick.*—Having observed, at p. 133, that one of your correspondents, living 10 miles S.E. of London, finds a great difference of temperature between his own locality and Chiswick, I beg to say that I live 10 miles S.E. of London (Bromley, Kent), and often observe a considerable discrepancy on particular days. But having added up the temperature of the last 16 weeks, I find the average runs tolerably close. The daily maximum at Chiswick averages  $1.4^{\circ}$  higher, and the minimum  $0.3^{\circ}$  higher than this place, and the difference is easily accounted for by the fact that Bromley has an elevation above the sea of about 200 feet, and has the further disadvantage of being on the northern slope of an inclined plane, as the face of the country rises considerably for many miles towards the south. *G. S., Feb. 28.*

"Sir,"  
"Delamere Forest, Chester,  
February 28, 1853."

"The Crown Woods and the deficiency of revenue derived therefrom forms the leading article of your publication of the 19th inst. (which a friend has lately sent me); and in your remarks thereon you especially adduce this forest as a striking instance, showing that for the three years 1849, 1850, and 1851, the average net surplus revenue was only 389l. 7s. 7d. Now as I have had the management of the forest for the last 17 years, you must allow me to say a few words in my own defence, and to request you to look back to the same annual printed reports of the Commissioners on which the statement is grounded, for the previous years, and you will there find that for the four years ended Jan. 1849 there was a clear net surplus revenue of 1300l., which I had an opportunity of showing in my examination before Lord Duncan's Committee of the House of Commons, in April, 1849; see Report of the Commissioners of 17th July, 1849, No. 513.

"As you would of course wish to show impartial justice in your strictures, I trust you will admit that the remark of 'coming events casting their shadows before them,' does not apply to the Deputy Surveyor of Delamere Forest, as the above statement shows a comparison to the contrary effect, and that a fair revenue was obtained previously to 1851.

"The writer of the article in question may not, perhaps, be aware that the present Forest of Delamere is of recent date, being a series of plantations in various stages of growth from the year 1815, when the first tree was planted, to the present time; consequently the produce consists merely of thinnings of Larch and Scotch poles, together with some fittern bark from the Oak thinnings—Oak forming about one-third of the forest. The amount annually realised must necessarily, therefore, vary much, and depend on accidental circumstances; for instance, in one of the years quoted by him there was no fittern bark stripped at all, and the demand for Larch and Scotch having at the same time fallen off, with the price vastly reduced, the result for that year was consequently a deficiency instead of a surplus. "I am, Sir, your obedient servant,  
"W. LIPSCOMB,  
Deputy Surveyor."

"To the Editor of the Gardeners' Chronicle,  
Covant Garden, London."

## Societies.

*HORTICULTURAL, March 1.*—Sir Philip de Malpas Grey Egerton, Bart., M.P., in the chair. Mrs. Barchard, the Rev. Lord J. Thynne, D. D. Heath, H. G. Bohn, J. Crowley, Esqs., and M. Auguste Van Geert, of Ghent, were elected Fellows. Owing to the severity of the weather on this occasion, snow falling thickly all day, few subjects of exhibition were produced. Mr. Barnes, of the Camden Nursery, Camberwell, sent six plants of the charming terrestrial *Orchis longicornis*, for which a Banksian medal was awarded. When grown in large masses this is truly a handsome plant, and, in addition to its great beauty, it has the merit of being emphatically an *Orchis* for the million, requiring, as it does, about the same treatment as an *Auricula*. A similar award was also made to Mr. Gaines, of Battersea, for *Camellia Wilderii* (rose), and Mrs. Abbey Wilder (white), two varieties of American origin. Both have small, round, nicely-cupped flowers, which cannot fail to secure their introduction into every collection. A certificate of merit was awarded to Mr.



Gill, of Westbourne Grove, Bayswater, for a rose-coloured Pelargonium, named Queen of February. Its flowers are not so finely formed, indeed, as those of the florists' crack varieties; but then their deficiency in this respect is made up by their brightness of colour and profusion.—Messrs. Henderson, of Pine Apple Place, also received a Certificate for an example of the Sikkim Rhododendron ciliare, which flowered so freely at Chatsworth and other places last year. It is quite as cultivable as a Chinese Azalea, and when grown in little heat the blooms are well coloured; but in the present instance the plant had been kept in a hothouse, and therefore they were paler than they otherwise should have been.—Mr. Young, of Milford, showed three plants of the Gowen Cypress (*Cupressus Goveniana*) two bearing quantities of ripe cones, and one in full flower. New Black Hamburgh Grapes were furnished by Mr. Forbes, gr. to the Duke of Bedford, at Woburn Abbey. They were nice bunches, not large, but beautifully coloured and bloomed, and well deserved the Silver Knightian Medal which was awarded them. Two Pine-apples, a Black Antigua 3 lbs. 5 oz., and a Queen 2½ lbs., were produced by Mr. Davis, of Oak Hill, East Barnet.—Of Vegetables, Mr. Lewis Solomon, of Covent Garden, sent a collection, consisting of bundles of very good white Asparagus and green "screw" from Paris, excellent green Peas from Toulouse, Ash-leaved Kidney Potatoes, and Horn Carrots from Paris, and Globe Artichokes, not very good, from Avignon. He also contributed Cos and Cabbage Lettuces, Endive, and Radishes, all from the neighbourhood of Paris, and as fresh and fine as could possibly be wished for. A Banksian Medal was awarded.—Some Tea seed furnished by H. Winch, Esq., of Seacombe, Cheshire, was distributed to such Fellows as wished to receive it. It was stated to have been sent to this country by Dr. Bowring, and that if it came from the north of China (as it was believed it did), the produce would be about as hardy as a Camellia.—The Hon. W. F. Strangways again furnished examples of the mild climate of Dorsetshire in the shape of cut specimens of *Primula Palinuri* (which is supposed to be the parent of our garden Auricula), the rare *Helleborus abechianus*, *Euphorbia mellifera*, the charming blue *Lithospermum rosmarinifolium* (a shrub well worth a place in a greenhouse when it will not flower out of doors), the fragrant *Iris reticulata*, and other interesting plants which are at present in blossom in the open garden at Abbotbury.—From the Garden of the Society came plants of the fringed white, single white, double white, fringed red, single red, and cut-petalled red varieties of Chinese *Primulas*, *Rogeria Roezlii*, a promising pink-flowered species; *Centradenia floribunda* and *rosea*, *Diosma ambigua*, the handsome *Berberis nepalensis*, not so finely in flower as it was last year, but, nevertheless, showing what a beautiful thing it is; the brilliant early blooming *Azalea obtusa*, some *Heaths* and *Epacris*, and a cut branch of *Acacia Riceana*, covered with its lovely yellow inflorescence.

Cuttings of fruit trees and the usual packets of garden seeds annually given away about this time to Fellows were distributed. The former consisted of Haling's superb Plum, an American sort, equal in size to the Washington, and of first-rate flavour; Belle Andigeeoise, Monstreuse de Bavy, or Reine Hortense, and Como Cherries. The first and second named sorts are said to be large and excellent, but their merits in this country have not yet been sufficiently ascertained. The last comes from the lake of Como, and is stated by Mr. Clare, who sent it to the Society, to have "all the richness of the May Duke, with a fine acid," and to be about the size of the Flemish Cherry. It has not, however, yet fruited in the garden.

## Books Received.

*The Coming Budget* (Mitchell), is a pamphlet full of advice to the Chancellor of the Exchequer, containing nothing new or important.

*Portune's Tea Countries of China* (2 vols., 8vo, Murray), is a cheap edition, somewhat abridged, of the author's wanderings. It is beautifully got up, and will be most welcome to those unable to afford the price of the original work.

*Norrmann's Farmers' Manual of Agricultural Chemistry* (Knight and Sons, Foster Lane), may be spoken of favourably as a convenient guide to the farmer in chemical questions. It is, however, increased in bulk and price one-third by a treatise, accompanied by barbarous woodcuts, on the diseases of Cereals, concerning which we have nothing favourable to report.

To Mr. Henfrey's translation of *Mohl on the Anatomy and Physiology of the Vegetable Cell* (8vo, Van Voorst), we hope to draw attention speedily. In the meanwhile, we recommend its perusal to the study of all who are desirous of becoming acquainted with the foundations of vegetable physiology. It is an invaluable treatise, extremely well translated.

## Garden Memoranda.

**HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN.**—In the Orchid-house the White Butterfly-plant (*Phalenopsis amabilis*) is just coming into flower again after having been cut back, and some *Dendrobies* and *Oncids* are also in blossom. The most conspicuous among the latter was *O. luridum guttatum*, which is certainly producing a noble spike of brown and yellow flowers. An example of *Tropaeolum Triomph de*

Gand, trained up the latter of an adjoining greenhouse, is still exhibiting a few stray orange-scarlet blooms. Whether in a pot in a cold house, on a pillar, or up a rafter, this must be regarded as one of the most ornamental winter plants we have, as it blossoms continuously the whole winter through, and then its colour is so brilliant as to render it the admiration of everybody.

The noble *Lælia superbiens* in the large stove is now out of flower; but the great plant of the Showy *Dendrobe* in another house is still in full beauty, and will continue so for some time to come. It is certainly a most striking object; each of its many large horn-like pseudo-bulbs producing one, and often two charming spikes of beautiful pale yellow flowers. Although this is undoubtedly the "lion" at present, there are, nevertheless, other Orchids in flower which deserve attention; foremost among which is the variety of *Dendrobium nobile* called *Blandyanum*, an extremely beautiful sort, having deeper and much better coloured flowers than any of its class. *Cœlogyne cristata* is also covered with snow-white blooms, stained in the lip with yellow; and the rare *Cattleya pallida* is an object of great beauty and value, its blossoms lasting long in perfection. Several species of *Lycaste* were, likewise, in flower; as was also the terrestrial Orchid, *Spiranthes cernua*, a dingy yellow species, more interesting than beautiful, but whose variegated leaves are pretty in summer, after the flower stems which precede the foliage have died down. *Begonias* were very showy in all the stoves, as they generally are all the winter, and more especially the scarlet *B. Fuchsoides*, which, when well flowered, as it was here, is unquestionably a striking plant. The two *Centradenias floribunda* and *rosea* were both in bloom; the former is the better of the two, its blossoms being larger and better coloured than those of the latter.

In connection with Orchids it may be mentioned that although they have thriven well in coke-dust, guano water, however weak, has been found to disagree with them, causing the outer parts of the pseudo-bulbs to turn brown and scale off; and in the case of *Dendrobies* with stem leaves, the latter drop off, although green and apparently healthy. At first they appear as if they like it, but afterwards the result is what has just been stated.

The *Allamanda cathartica* which bloomed so beautifully last year when left to scramble as it liked on the roof of the propagating house, has been pruned, shifted, and its branches rearranged; and *Hoya imperialis* has been substituted for *Dipladenia urophylla*, which is now trained on a trellis in a pot. Indeed, these three plants have always been kept in pots, and therefore the one can be substituted for the other, or removed altogether at any time when such may be desired.

Of Chinese *Primulas*, the garden possesses a nice collection, which is at present distributed chiefly along the shelves of the great conservatory and in the little hardy greenhouse near the carpenter's shop. We also remarked in the latter some nice *Hyacinths*, the most attractive of which were *Nimrod* and *Amicus* single blues, and *Anna Maria* double cream.

In the Rose house the plants look exceedingly well; they have been slightly pruned, and are just beginning to grow away nicely, and, owing to its being kept very dry, they have escaped mildew. Next season they may, therefore, be expected to make a good display.

In the large conservatory, the fine tree of *Acacia Riceana*, mentioned last month, is still beautifully in flower, as is also *Luculia gratissima*. The latter has bloomed very splendidly this season, owing, doubtless, in some measure to its having had fresh soil put carefully to its roots last spring. *Camellia elegans* is at present covered with magnificent blossoms, which are almost as large as the crown of a man's hat, but the rest of the sorts are not yet in flower. The variety just mentioned had, we believe, its buds thinned out, so that no two might stand together, a good plan where fine flowers are wished for.

Out of doors, it is satisfactory to find how little has suffered from frost, notwithstanding that on one occasion there were no less than 16° of it in the garden. With the exception of considerable injury being done to the young shoots of unprotected Mountans, and the browning of a leaf or two on the Nepal *Berberis*, little else among plants has been harmed. The Californian *Evergreen Plum*, and Messrs. Veitch's *Dracena indivisa*, are as yet unscathed. Among vegetables, Lettuces on ridges and unprotected have been much cut up; Bath Cos, *Laitue Gotte Lente* à monter (not properly a winter Lettuce), *Romaine Verte d'Hiver*, and *Snow's Compact*, have all sustained much injury, while the hardy *Hammersmith* has proved itself, as it always does, one of our very best winter Lettuces. The *Artichoke* leaved has not been so much injured as some of the other Cos sorts. Among Endives the green curled has stood pretty well on open ridges sloping to the south, as has also the white *Batavian*. Spring Cabbages in "quarters" are flagging; but they will of course recover, and some of the very white *Broccolies*, as the Hampton Court, &c., which differ but little from Cauliflower, also show the bad effects of the frost, the previous mild wet weather having rendered them ill-fitted to resist it. We had nearly forgotten to mention that some of the half-hardy plants placed in Mr. Ewing's glass walks to ascertain how far they were capable of withstanding cold, if they were kept dry, have suffered in foliage and stem; but whether they will die or live remains to be seen. At present the worst appear to be *Fuchsias*, *Bignonia australis*, *Halimolobos*, *Campanula Vidalii* (dead ?) and one or two others, while the yellow-flowered *Chilim Edwardsii*, associated with

them, is in blossom. The large *Passiflora Cattleayanum* also appears to be much hurt, the walls, during a continuance of severe, dull weather, being quite as cold as the outside air; but now, when the sun shines briskly during the day, sufficient heat is retained to keep them a few degrees above the night temperature outside.

As regards improvements, Messrs. Weeks and Co. are putting up a new boiler (their tubular one), and a flow and reception 4-inch pipe, to furnish top heat for the pits belonging to the kitchen garden department, the old pipes with which they were formerly warmed being still employed for bottom heat. Two long pits are thus efficiently heated by one boiler, and if at any time it is desired that only one shall be worked at a time, the water can be turned off the other by means of a valve, of Messrs. Weeks' invention, and which is stated not to be so liable to get out of order as other valves. The square iron tanks have been removed from the early Vinery; although cleaned last year, they show a large deposit of oxide of iron. This invariably happens where air is admitted above the water, but it only takes place to a very small extent in round pipes that are full of water.

We may just mention, in conclusion, that Mr. McGlashan's tree lifting apparatus had arrived (Monday last), and that preparations were being made for a trial of it, in removing a large Poplar this day (Saturday). We also remarked in the reading-room a notice to the effect that Dr. Lindley would deliver a lecture to the young men in the evening on "Heat and its relation to Vegetation."

## FLORICULTURE.

**THE FUCHSIA AND ITS CULTURE.**—Notwithstanding all that has been written respecting the cultivation of the Fuchsia, it is seldom that we see well grown specimens of it, more especially about London; but in the midland counties matters are managed somewhat better. We there find *Fuchsias* such as they should be, both as regards form, size, and profusion of bloom. Few, we think, who have been in the habit of attending the Birmingham shows will question the truth of this assertion. We trust, therefore, that the following remarks respecting this useful flower, by Mr. Mayle, of that city (as given in the "Scottish Florist" of the present month), will be read with interest. King Charming and Incomparable are both sorts, we believe, of Mayle's raising, and we are also indebted to him for many other fine varieties. He has paid much attention to this favourite flower, and therefore his instructions respecting it may be followed with confidence. He says, "the soil best adapted for healthy growth is rich sandy loam from the top spit of a meadow, one part; real turfy peat, rubbed through a coarse sieve, two parts; and dung from a hot-bed rotted into mould, one part. As soon as you have brought your plant from the nursery, turn it out of the pot, and if it is already in light soil put the ball just as it is into a pot a size larger. If it is in stiff soil, soak it in water until you can wash all the soil out; and in repotting carefully spread the roots, and see that the soil is well thrust through every portion, so that it may be solid. Let the plants be placed in the greenhouse until they begin to move, and then make up your mind whether they are to grow pyramically or shrubby; if the former, let the main shoot go up, and regulate the side ones; if the latter, stop the shoot back, using the top for a cutting. If the shoot be long, it may be cut into lengths; one joint below the soil, and one or two above, are quite enough to strike. In the summer, a handglass on a common border will be found a sufficient shading from the sun. When the plants have struck, let them remain out of doors, or in a cold frame, but shade them from the mid-day sun. By these means, the dark varieties will be improved, and make handsome plants. The light ones will not bloom white; they will have a pink tinge on them, and will scarcely be recognised; and therefore it is better to bloom them under glass. There are, however, two or three rules to be attended to under all circumstances; first, to shift them whenever the roots appear through the soil; secondly, to give all the air possible in mild weather; thirdly, to water them thoroughly when watering; fourthly, to stop all rambling shoots; fifthly to shade them during the heat of the day when in bloom; and sixthly, to let them rest during the greater part of the winter. In saving seed, never calculate on good flowers from coarse varieties; cross the fine ones with the large flowers if you will, but I recommend those of fine texture and habit. I herewith annex a few first-rate varieties raised and sent out in this part of the country; at the public exhibitions they have invariably taken the lead. White varieties: *Illebo*, *Diadem of Flora*, *Bride*, *Lady Dartmouth*, *Purity*. Dark varieties: *Champion of England*, *Standard of Perfection*, *Prince of Wales*, *Scarlatina reflexa*, *Game Boy*, *Defiance*, *Roseola*. But the above fine varieties must bow to those which are coming out from this quarter this season."

**WINTER FLOWERS FOR COTTAGERS.**—To those who are fond of winter flowers, and who cannot afford the luxury of a glass structure for their production, I would strongly recommend *Hyacinths* in Tye's bottles and supports. I have tried a number of them in these bottles this winter, and I am fully satisfied that any cottager, however humble, may ornament the windows of his dwelling with a perfect display of these beautiful flowers during the dull months of winter. I have now in the window of my sitting-room, in as full perfection as I



ever saw produced under any mode of treatment, a show of Hyacinths which attract the admiration of all who pass by. My treatment is simply to fill the bottles with rain-water, put in the bulbs, and place them in a warm cupboard in the kitchen; when they have grown about an inch, and made plenty of roots (which requires about six weeks), I gradually expose them to light, and as soon as they begin to have a tinge of green, I place them in the kitchen-window, where they remain until the flowers begin to open. I then remove them to my sitting-room window, being a few degrees colder than the kitchen, where the flowers gradually unfold. One has been in full bloom for the last five weeks, and to all appearance it will last a few weeks longer. I have heard some cultivators recommend the water to be changed once in four days, but this is quite unnecessary; the plants change the water sufficiently often themselves. When coming into flower they consume nearly half a pint in three days.

G. B.

**ANTHRINUMS:** *Enquirer*. Primrose Perfection, yellow; Brilliant, crimson scarlet; and Hendersonii, striped, will possibly suit you. **CARNATIONS AND PICOTEES:** *J. J. C.* Do not even commence pitting yet, much less continue the operation. We will possibly have something to say on the subject soon.

**CATALOGUE** received from Mr. Thomas Barnes, Danecroft Nursery, Stowmarket, Suffolk.

**DOUBLE DAISIES:** *Enquirer*. There are some good new ones of English origin, which you should add to your collection; their flowers are bold and distinct, varying from white to very dark crimsons.

**RANUNCULUSES:** *J. J. C.* Plant your tubers now, placing them 5 inches apart, 1 1/2 inch deep, and pressing the claws somewhat firmly in the soil. Do not leave them "lightly covered in;" it is a common plan to firm the soil round the stems as the foliage develops itself above ground.

**TULIPS:** *William D.*—s. The growth will be strengthened by allowing occasional mild showers to fall on the bed; but too much wet enhances canker, while frost damages the blooms by splitting the edges of the petals, &c.

## SEEDLING FLOWERS.

**AZALEA:** *J. D.* Colour softest carmine, dense, glowing, and uniform; surface smooth, size full, texture middling, outline deficient.

**CINERARIAS:** *J. H.* Lady Holmsdale is a flower of average merit. —*T. K.* 1, pretty; 2, ditto; 3, worthless; 4, not so good as Alba Magna; 5, nothing new; 6, not so good as Hammersmith Beauty. —*W. H. F.* Lady Hume Campbell has finely formed flowers, but its habit is not the best. —*F. T.* We do not object to single blooms; but they do not convey any idea of habit. —*W. C.* 1 and 2 dull coloured and deficient in form.

## Calendar of Operations.

(For the ensuing week.)

## GENERAL REMARKS.

SOME of our previous directions will have been suspended, in consequence of the heavy fall of snow in some districts, attended with more or less frost. Where such has been the case our late Calendars should be consulted, and when a change takes place in the weather, put in hand everything left in arrear, whether in-doors or out. In the meantime lose no chance of preparing every thing which can be done beforehand, to be in readiness when a favourable state of the weather will enable gardening operations to proceed.

## PLANT DEPARTMENT.

**CONSERVATORY.**—The earliest started hybrid Rhododendrons and Azaleas; if now opening their flowers, should be placed in the conservatory, where they will add much to make the house more than usually gay, by the large masses of colour which good specimens of these showy plants present. During the period of blooming, they must not be allowed to suffer for want of water, as the flowers always droop when such is the case; to make room for the above, and other forced plants, any Camellias in pots which are going out of bloom may be removed to a cool house to rest (see last Calendar). Keep up a supply of the various kinds of Roses, Lilacs, Weigelas, and the general stock of forced shrubs and bulbous plants. The more forward Cinerarias should now be added as they come into bloom. These useful spring-flowering plants are equally valuable for cut flowers as for show. In addition, do not forget to have a large share of scented plants, as forced Sweetbriar, Aloysia citriodora, Oranges, Daphnes, Mignonette, and Violets, plants which are at all times in request. As extra frays have been necessary the last week or two, the borders and pot plants will require a rather larger quantity of water; in applying which to borders, and large specimens, take care the roots are thoroughly moistened. Where any difficulty exists, a blunt-pointed stick or iron rod should be thrust through the ball in different directions, to permit the water to moisten equally the whole mass of roots.

## FORCING DEPARTMENT.

**VINERY.**—Strong young Vines, the first year of bearing, when left any considerable length, are difficult to break regularly; bind them backwards to an horizontal position, to allow the eyes at the lower end to break equally with the topmost, after which they may be trained in their proper position; if the top eyes get the lead, the space at the lower end of the Vine will always be the weakest. The succession Vineries must have the requisite disbudding and training, and other houses brought forward, to be in time for supplying the expected demand for Grapes; the outside borders will in all likelihood require renewing, as the late cold weather will have checked, in some measure, the fermenting of the covering material. In turning them over, add sufficient fresh stable litter to cause a moderate warmth; this will be more necessary with the first and second houses, which should on no account be exposed to the risks of a

check to their roots at this stage of their growth. **PEACH-HOUSE.**—The wood in the early house may remain to grow 4 or 5 inches in length before it is tied in. Syringe this cold weather only in the forenoon, and close early, to have the benefit of a little extra sun heat. Gradually raise the night temperature to 55°, with a proportionate increase by day. In disbudding and thinning the fruit, do everything by degrees, as we have before observed. The second house now in bloom should be kept dry, and air supplied liberally when the weather permits; we have before stated, a gentle circulation by night should be kept up as well. The outside borders must be looked to, and effectually secured from frost. **STRAWBERRIES** now in bloom will require watching; a week of damp unfavourable weather will oftentimes prevent the finest blooms from setting. We have found that gradually raising the temperature to 70° in the forenoon, with a dry atmosphere, and a rather free admission of air, the best treatment in unfavourable weather; with a bright sun the chances of a crop are much increased. Bring on successions to succeed; attend them regularly with water when dry, but we do not allow ours to stand in water till after they are set, and then only later in the season.

## FORCING GROUND.

Cucumbers and Melons will require much care this present cold weather. Nail a piece of gauze over the admissions for air, and maintain a steady temperature. Where the above are grown by hot-water, not much difficulty will be found in managing them; but with dung frames constant care is requisite to keep the beds to a proper heat. Earth up the earliest crop of Potatoes, and secure well from frost. Asparagus as before.

## FLOWER GARDEN.

A general look over the stock of bedding plants should be made, noting down such kinds of which a sufficient number has not been provided. As there are few places with pit-room enough to winter a sufficient quantity of autumn-struck plants, the principal supply of Verbenas, Petunias, Lobelias, &c., will have to be obtained the present spring. At page 104 we noticed a cheap and simple way of managing spring cuttings. Where frames are available for the purpose, by this plan the cuttings, when rooted, may remain till wanted for planting, and the expense and labour of pots and potting are saved. Where, however, this cannot be carried out, remove the plants requiring to be increased to any of the forcing-houses, to form a new growth for cuttings, which, when properly inserted in striking pans, will root freely in a dung frame, plunging in a gentle bottom-heat. In propagating these and other plants for summer decoration, be sure to have an extra number struck, to supply failures, &c. The different kinds of bedding Geraniums, as Lady Mary Fox, Unique, and the variegated leaved kinds, will require growing in pots, as well as the above, and other plants intended to occupy vases, tazzas, &c.; for the latter, the plants should be grown into good-sized bushy specimens before they are turned out, and will perhaps require a shift, and the points of their shoots stopped, to get them into the proper forms. Any Scarlet Geraniums, Heliotropes, &c., yet standing in their striking pans, should be potted off at once, to get established before May; keep them a week or two in a warm house to start them, as their roots will have been disturbed by moving them out of their cutting pots; cuttings may yet be planted for late bloom. Plunge in a little bottom heat the roots of Dahlias and Salvia patens, to furnish cuttings. A few annuals, including German 10-week Stocks, may be sown in pots thinly, for transplanting to the open borders in April for an early bloom; more especially as many autumn-sown annuals will have perished. Any Anemones yet remaining out of ground should be planted when the ground will permit, and the same directions will serve for any other bulbs yet unplanted. Carnations, Picotees, and half-hardy plants generally wintering under glass, will, from this time, require the lights taken off daily, unless the weather is wet or frosty. Well clean the surface soil, and attend to watering them regularly, as the new growth advances. If the frames are required for other things, some of the more hardy may be planted out in the borders, or placed for a time where a temporary shelter can be afforded them, should frost occur. Roses yet unpruned may now be finished, except for very late blooming; and the Teas and Chinas, which may be left for a few weeks.

## FLORISTS' FLOWERS.

The weather has been so bad for the past three weeks that little in this department could be done, still it has been a good time for sweetening compost heaps; and if the requisite attention has been given, every particle ought to have been thoroughly frozen. As soon as a thaw takes place, and the surface of the soil has become somewhat dry, all beds of Pinks and Pansies should be gone over and carefully fastened; the frozen points of the latter also should be removed. It will also be found too often that the frost has raised the small wooden pegs on which the names are written; great confusion often arises if these are not carefully replaced. Tulip beds, if not protected as we have previously recommended, must be done so forthwith, and those bulbs which had protruded their foliage above ground should be carefully examined, and, if cankered, the parts affected must be cut away. Get the compost for Carnations and Picotees well turned and examined; of course it is under cover.

## HARDY FRUIT GARDEN.

Apricots, Peaches, &c., if not previously covered, should have the protecting material put on, quite as

much, for the present, to retard the opening of the flowers, as afterwards it will be required to protect them from frost. The longer the opening of the flowers can be kept back the greater the chance of a crop.

## KITCHEN GARDEN.

The work in this department will much depend on circumstances. Whenever the ground is in a fit state for working no time must be lost, as the season for sowing and planting spring and summer crops is fast approaching, and we fear a deal of land is yet unprepared for them; however, if the present month proves dry, much may yet be done; when the weather will permit sow a few more early Radishes and horn Carrots on a warm south border; on the same conditions, a row or two of Long-pod Beans, and early Warwick and Champion Peas, should be put in; attend to Cauliflowers, Lettuce, &c., in frames; take the sashes off each fine day, and allow air by night, to harden them for planting out in a week or two; keep the spring raised plants near the glass, to prevent drawing; these and other vegetables we advised in back Calendars to be sown under glass will prove valuable for planting, to succeed the autumn plants: when large enough prick them out thinly in a cold frame. As soon as the ground is dry enough draw a little earth to Cabbage plants, and to the windward of Peas and Beans, if these latter are above ground. Nothing can be planted just yet, but every means should be taken to forward the preparation of the land.

## STATE OF THE WEATHER NEAR LONDON,

For the week ending March 3, 1853, as observed at the Horticultural Gardens, Chiswick.

Feb. and March.	Moon's Age.	BAROMETER.					TEMPERATURE.				Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	Of the Air.	Of the Earth.	1 foot deep.	2 feet deep.		
Friday.. 25	17	29.73	29.45	40	29	34.5	34.5	35			N.	.15
Satur.. 26	18	29.82	29.06	44	30	37.0	37.0	35			W.	.09
Sunday.. 27	19	29.72	29.41	39	22	30.5	35	35			N.	.00
Monday.. 28	20	29.30	29.89	40	24	32.0	35	35			N.W.	.00
Tues.. 29	21	29.66	29.62	39	24	31.5	35	35			S.W.	.27
Wed.. 30	22	29.53	29.39	45	27	36.0	35	35			N.W.	.10
Thurs.. 31	23	30.07	29.80	40	21	30.5	36	35			N.E.	.00
Average..		29.693	29.55	41.0	25.2	33.1	35.0	35.2				.61

Feb. 25—Cloudy; white clouds; overcast.

26—Boisterous with rain; slightly overcast at night.

27—Frosty; clear and frosty.

28—Clear and frosty; clear and cold with dry air; frosty.

29—Snowing; sleet; rain; frosty at night.

30—Uniformly overcast; fine; overcast.

31—Clear; fine; clear, with sharp frost at night.

Mean temperature of the week 8 deg. below the average.

## STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending March 12, 1853.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6	47.8	32.7	40.2	9	0.25 in.	1	3	7	1	1	1	1	1
Monday 7	48.0	32.9	40.4	10	0.17	1	3	6	1	1	1	1	1
Tues. 8	49.7	32.5	41.1	9	0.47	2	2	6	1	1	1	1	1
Wed. 9	50.2	32.5	41.3	7	0.47	2	2	6	1	1	1	1	1
Thurs. 10	50.6	33.0	41.7	12	0.69	1	1	6	1	1	1	1	1
Friday 11	50.1	32.3	41.2	10	0.70	1	1	6	1	1	1	1	1
Satur. 12	50.9	32.6	41.7	12	0.23	1	1	6	1	1	1	1	1

The highest temperature during the above period occurred on the 9th, 1826—therm. 63 deg.; and the lowest on the 10th, 1847—therm. 7 deg.

## Notices to Correspondents.

**BOOKS:** *J. W. Lindley's* "Theory of Horticulture" will possibly answer your purpose.

**COFFEE:** *Ceylon.* We much doubt whether, under the circumstances stated by you, 1500 plants per acre would produce more than 1000; and we should expect more from 750 than from either. A free circulation of air is as much needed by the Coffee as by any other plant. At the same time it must be owned that this is theory, untested, in the case of Coffee, by experiment; and the Coffee planters should investigate for themselves. In Europe no such experiment is possible; and it may turn out that 1000 per acre is known by practice to be exactly the true mean between two uncertain quantities. We cannot, however, suppose that any such rule is uniform, because we presume that there is no absolute uniformity in the soil and climate in which the shrub is grown. If the Coffee plants, in your case, really attain their full size, 1000 being planted on an acre, and only touch, without crowding, then 1000 is probably right.

**COLZA:** *Diss.* See Morton's "Encyclopedia of Agriculture," vol. i., page 322. You will find that Colza is the Brassica campestris; a very distinct plant from B. Napus, our Rape or Coleseed, which is often mistaken for it. It can be grown wherever Rape is sown.

**GRAPES:** *A Constant Reader.* We know nothing of a "Black Hamburg improved."

**GREEN GINGER ROOTS:** *G. Try* the great London nurserymen. We should think that some of them could supply you with them fresh and in a state to vegetate.

**GREENHOUSE:** *W. H.* You had best glaze with Hartley's patent rough plate glass. There can be little objection to the top sashes being constructed to open instead of to slide, provided they open sufficiently to admit air enough. The squares must not exceed a foot in width.

**INSECTS:** *G. C.* We believe the insect's eggs sent to be those of the vapourer moth (*Orgyia antiqua*). *W.*

**MELONS:** *F. W.* We are unacquainted with Golden Perfection.

**NAMES OF PLANTS:** *E. M.* 1, A Potentilla unknown to us; 2, Broken to pieces, seems to be digitate, not pinnate, and if so may be *P. argrophylla*; 3, Potent. Geranioides, certainly; 4, Broken to pieces, no flowers, apparently *Rubus pentagonus*, *W. H.* Certainly not acuminatus, *Smith*; 5, *Pastinaca sativa*. *W. B. W.* 1, *Dendrobium speciosum*, well flowered; 2, *Vanda furva*, a rarity.—*J. W.* *Casuarina equisetifolia*.—*J. S. M.* *Constranthus macrosporus*, *altis* *Valeriana*.—*C. J.* *Paronychia argentea*.—*Emma Jane*, 1, *Pittosporum bicolor*; 2, a *Trixis* unknown to us.

**ROOT SECRETIONS:** *S. N.* What is known on this subject is fully explained in De Candolle's "Physiologie Végétale;" of course the secretions vary with the nature of the plant producing them. They are, however, by no means what the Swiss physiologists supposed, and seem to be unimportant. See Lindley's "Introduction to Botany," edit. 4, II., pp. 182, 183. Upon the other question, you should consult some experimental chemist. *Misc. Apprentice.* If you will refer to our Number for Feb. 12, you will find that both your questions have been answered—one at p. 104, the other at p. 110.—*A. G.* Try the following on your wet island:—Willows, Alders, Dogwoods, and Deciduous Cyresses.



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Aucubas, 2 ft.	12	0		
Cedar, Decid., in pots, 1½ to 2 ft.	18	0	Berberis aquifolium, 1½ to 2 ft.	20 0
Cedar of Lebanon, in pots, 2 to 3 ft.	18	0	Box, Tree, 3 to 4 ft.	50 0
Cotoneaster microphylla, 2 ft.	6	0	Fir, Spruce, 4 to 5 ft.	20 0
Daphne pontica, 2 ft.	6	0	" Larch, 6 to 8 ft.	20 0
Holly, Green, 5 to 7 ft.	48	0	" Weymouth, 4 to 5 ft.	25 0
" Variegated, 1 to 2 ft.	15	0	Holly, Green, 2 to 3 ft.	40 0
Spiræa Lindleyana, 4 ft.	9	0	Laurel, Common, 4 to 5 ft.	50 0
" Reevesii, 4 ft.	6	0	" Portugal, 1 to 2 ft.	30 0
Ribes, Red, 4 to 5 ft.	6	0	Lilacs, Purple or White, 3 to 5 ft.	40 0
" White, 4 to 5 ft.	9	0	Laurustinus, fine, 2 ft.	40 0
Snowberry, 5 ft.	6	0	Oak, Evergreen, in pots, 2 to 3 ft.	60 0
Taxodium sempervirens, 5 to 6 ft.	42	0	Rhododendron ponticum, fine, 1 to 2 ft.	75 0
Yew, English, 4 to 6 ft.	42	0	Laburnum, 10 ft.	50 0

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For particulars, see MESSRS. SUTTON'S NEW CATALOGUE, on the last page of the *Gardeners' Chronicle* of Saturday last.

**ROYAL AGRICULTURAL SOCIETY OF ENGLAND.**

LECTURE.—Prof. WAT'S Lecture on Discoveries connected with the Absorption of Ammonia by Soils, will be delivered before the Governors and Members in the Council-room of the Society, on Wednesday, the 16th of March, at 12 o'clock at noon.—By order of the Council.

12, Hanover Square, London. JAMES HUDSON, Sec.

**The Agricultural Gazette.**

SATURDAY MARCH 5, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 9—Agricultural Society of England.  
THURSDAY, — 10—Agricultural Imp. Society of Ireland.  
WEDNESDAY, — 16—Agricultural Society of England.  
THURSDAY, — 17—Agricultural Imp. Society of Ireland.

To the honour of our manufacturing population, it may be affirmed that scarcely one discovery in natural science, at all bearing upon any process in the arts and manufactures, has been suffered to pass without an attempted application of it to practical use. Motive powers of all sorts have been put to every imaginable and before inconceivable species of work: chemical and electrical discoveries have been taken advantage of in the most unexpected manner; and ingenuity continues to invent and employ innumerable contrivances for effecting most startling and unsuspected, yet simple and easy results. We cannot deny the fact, that the farmers of Great Britain—enterprising and learned in their art as numbers are—possess no claim to an equal renown. Only of late years has the agricultural

community begun to show itself strong and swift to run alongside the engineering and manufacturing classes. The steam-engine, it is acknowledged by all cultivators of the soil, may be made a far more mighty agent for producing food than it now is. It may do for the land what it has done for cotton, wool, silk, and iron; but, of all these, the land hitherto has made the least by it. It was not a farmer who so cunningly observed the kettle-lid lifted by the steam; not a threshing-machine that was first set in motion by the wondrous new engine. Looms and furnaces, mills, ships, and vehicles, all took their turn before farm implements in becoming independent of wind, tide, gravitation, nerve, and muscle for their sustained and regular movements. Long after the steam-engine has been made to do almost all kinds of handicraft, we have succeeded at last in getting some ten or fifteen thousand engines to separate grain from straw before the same power extracts flour from the grain. We are now assiduously endeavouring to steam-irrigate our farms with manure in solution; to steam-pump water for the flooding or draining of our meadows, as the case may be. We are preparing our plough-prejudices, and our veneration for ancestral harrows, to bear the shock of an approaching steam-cultivator or seed-bed scarifier. But, at the very time we are getting busy about this steam machinery, the old labourer Steam himself is beginning to be fearful lest he should be paid off—a new hand now promising to do the same work for less money. What is this new notion? No farmer or machinist has thought of making a first trial of the new motor in conjunction with an operation of husbandry. No; the "caloric engine" has been tested in a ship, or rather, first of all, in a foundry.

As agriculturists have not been the foremost in bringing to perfection great inventions of world-wide importance, neither have they hitherto been the smartest and readiest in seizing upon methods found successful among their neighbours. Are one-horse carts completely universal? Are under-drains running into all our ditches? How eager are our manufacturers after the slightest new improvement! how they tax investigation and constructiveness to surpass home or foreign rivals! Can English farmers in no way copy foreign cultivators to advantage? Many who compared agricultural implements of different countries in the Great Exhibition—who mistook, for a bad clod-crusher, the Egyptian *threshing machine*—may conclude too hastily our superiority in all points. But have we nothing to learn of reaping-machines from America; nothing of manure managing from Flanders, of dairying from Switzerland, of artificial draining from Holland? But it is in many small things that we may derive considerable aid from the practices of others; in such little items of management as make a difference in the *quality* rather than the amount of our produce—aye, even in the working up of butter, or fixing the meal times of a fatting ox. Once it was found that the only thing by which our silk manufacturers excelled all others in the fine colour and gloss upon some of their goods, was the substitution of glass for metal rollers in a portion of their machinery. If, as farmers, we really have been less diligent, less speculative in our science and art than others of our fellow-countrymen in their pursuits, the discredit perhaps ought to fall rather upon circumstances in which we have been placed, than upon ourselves. Necessity has proved, in the history of those with whom we are contrasted, to be the fruitful parent of invention; and, having now to battle our own way without help, we may be found doing great things for ourselves and country. One of the most urgent of our necessities at the present time is undoubtedly a better drainage. A few remarks, therefore, respecting general artificial, and more particularly *steam* drainage (as hinted on a previous occasion), may be of interest and value to many of our readers. I. A. C.

**INFLAMMATORY DISEASES OF THE CHEST** and the air passages are occasionally produced by wet weather and its undue continuance. Catarrh or cold consists of inflammation of the membrane lining the nostrils, throat, and windpipe, and is usually attended by a cough and discharge from the nostrils. If the disease is of a mild type, it usually runs its course in about 10 days or a fortnight, though sometimes it lingers on for several weeks. Shelter and careful treatment will always be required, but if the symptoms are more severe, the disease may extend to the lungs, and, taking the form of bronchitis, become extremely dangerous. In addition to the symptoms before mentioned, there is more fever, accelerated pulse and respiration, and diminution of appetite. Treatment should now be adopted, even if it were not had recourse to before. In some cases bleeding from the neck may be practised with advantage, but the weak-



ness of the animal and the discharge from the nostrils generally forbid it. The following, however, should be given each sheep, dissolved in gruel:

Sulphate of magnesia, half an ounce; tartarised antimony, half a drachm; nitrate of potash, 1 drachm.

And if there is much weakness, half a drachm each of gentian and ginger will be a useful addition. This medicine may be repeated several successive days without the sulphate of magnesia. Setons in the brisket are useful in this disease.

Inflammation of the lungs may either be confined to the membrane lining the chest and the lungs, and is then called pleurisy; or it may attack the substance of the lungs, and then takes the form of pneumonia. The symptoms in each case are increased and disturbed respiration, quickened pulse, and diminished appetite; but in pleurisy there are also symptoms of pain. The treatment should consist of early and copious bleeding from the neck, the administration of the medicine previously advised for catarrh, and setons in the brisket.

The foot-rot is a sadly troublesome disease, and in some seasons seriously diminishes the manufacture of mutton, for the pain it produces not only robs the animal directly of that which would otherwise increase its weight, but prevents it from moving about sufficiently to take a proper supply of food. It is produced by the constant application of moisture to the feet, and thus is generally rife during wet weather, and subsequently, and particularly on wet retentive land, and also on loamy soils when there is long-continued wet weather. The sheep is naturally a native of high and dry localities; and when kept in situations precisely opposed to those which Nature assigns it, the horn of the foot is first softened by moisture, and the thin portion which joins the skin, and is first secreted, becomes blanched and weak, particularly that between the claws. When the animal lies down, the feet are removed in some measure from the moist soil, and then reaction takes place, and from being previously wet and cold, they now become hot and inflamed. This inflammation attacks the vascular parts which secrete the horn, and pus or matter is often formed, which, insinuating under the horn, detaches it; and thus the foot is denuded, and fungus or proud flesh is secreted instead of horn, and the case becomes very troublesome indeed. In the first place it is necessary to make an opening at the lower part of the foot, so that the matter when formed should escape, for if no vent is thus given to it, it rises upwards, and finds an exit between hair and hoof; previously, however, undermining the foot so much, that the whole of the horn is sometimes cast off.

If the matter can thus escape by a low depending orifice, it is better that this opening should not be large, so as not to expose much of the denuded surface to the contact of moisture. The principal reason why the foot-rot is so troublesome to cure, is, that whatever dressing may be applied, it is generally washed off the foot in the course of a day or two, and the naked surface being exposed to moisture, diseased growth goes on, and the case becomes as bad as ever. The cure, therefore, does not depend on the virtues of some sovereign specific so much as in keeping the feet dry whilst the cure is going on. There are many applications that have been successfully employed for this disease. Our object, after giving vent to the matter that may be formed, is to check diseased growth, to stimulate the denuded surface, and cause it to secrete healthy horn. For this purpose we may, in the first place, touch the diseased surface with caustic, such as the muriate of antimony or hydrochloric acid; after which the following ointment may be applied to the foot every day, taking care that the foot shall be secured from moisture either by some covering or by keeping the sheep in a dry place.

Stockholm tar, 8 oz.; tallow, 4 oz.; to be melted together, and when nearly cold the following should be well stirred in:—Sulphate of copper, finely powdered, 1½ oz.; acetate of copper, ½ oz.

The following has also been employed, with much success:—Stockholm tar, ½ lb.; hog's lard, ½ lb.; to be melted together over a slow fire, and when incorporated, add carefully, oil of turpentine, 1 oz.; sulphuric acid, 1½ oz.

It has been suggested, and practised likewise, to employ gutta percha boots, in order to preserve the feet from moisture and foot-rot, but besides the expense of the material, which for a large number would be somewhat considerable, there is a great liability to chafe or injure the skin. To avoid the latter objection, felt made water-tight on one surface has also been adopted, but as the thin water-tight surface would soon be worn through, the objection on the score of expense would be greater than in the former case. These aids, however, though objectionable for general use, would certainly be

very useful in cases of foot-rot, in preserving the foot in a dry state while the cure was going on.

There has been much debate and difference of opinion as to whether the foot-rot is infectious or otherwise. We believe that it is so, but to become propagated it is essential that the soil should be in a wet state, so as to soften the horn and blanch the skin of the feet of healthy sheep, and thus render them apt subjects for the effects of contagion. People are too much in the habit of ranking themselves either as contagionists or non-contagionists. In the one case, considering that contagion alone is the cause of certain diseases, and in the other that such diseases are not contagious, forgetting altogether that the same disease may be propagated by contagion or by other causes; and where a virulent malady is produced by some floating poison in the atmosphere, these poisonous particles are likely to receive great accession from the emanations from those animals that are suffering under its influence.

#### LOIS-WEEDON WHEAT GROWING.

How to grow wheat with profit.—When the profitable production of the staple crop of old England had become to the hypochondriac farmer among the things that had been, when even the most cheery were filled with doubts and dismay—how to grow wheat with profit, was the proposition with which Mr. Smith started; and has he not fully demonstrated the practicability of it? At a time when low farming had become ruinous, and when high farming was but a forlorn hope; when despair sat on every brow; when to encourage a hope against hope, the *Times* commissioner was fain to bring forward a farm under the most favourable circumstances for his purpose that a farm could be under—a most liberal landlord, with a tenant every way qualified to make the most of the means at his disposal, with inexhaustible supplies of sea manure (the best of all manures for certain crops), in a most favourable climate, at a very low rent, and, after all, dependent for its profitable economy on one-fourth of the land being under a crop, which at the same time that it was one of the highest marketable value, realising some 16l. an acre, was also, from its liability to disease, hazardous.—Mr. Smith addressed himself to “the stout British farmer,” not to the squeamish caviller, ready to find a difficulty everywhere, even though he were compelled to look for it in the questionable womb of futurity, and showed him—practically showed him—that he might, with one-third of the capital employed by Mr. McCulloch, secure by a peculiar tillage of his old, favourite rent-paying crop, double the profit that was realised at Auchness. He showed him that wheat, under his system, may on any farm become what the Potato is on Mr. Caird's model farm, the great profit item that makes the whole produce of the farm bear a high figure. Has he not been most successful? Does his system require for a crutch that the questions of “An Economist” be answered in the affirmative? And yet, that no hook may remain for the most querulous to hang a doubt on, I will endeavour to show that they may be.

“Can it be generally adopted?” This question is got rid of very cavalierly.—“At present the adoption of the plan is simply impossible, from the want of labourers to dig the ground.” Is this so? By Mr. Smith's calculation (page 45, tenth edition of “A Word in Season”) it will take only 12½ men to dig the intervals in his 100 acres, in 4½ months. Is there a parish in England that cannot find, during the winter months, 12½ idle men on 400 acres of its area? And if there be, have our crowded towns not enough of wretched beings who would rejoice in an earning of 2s. a day? But Mr. Smith, in his benevolence, regards this employment as so tending to raise the labour market, that the drain of emigration will no longer operate; and the profits of his system will allow of a labour rate that shall equal that of those countries which now attract our labourers from their homes. For all other of the manual operations in the other parts of the year, surely idle days may be found; indeed I think it will be a happy thing for the farmer to be able so to find a profitable employment for hands he so much requires at haytime and harvest. But I will, for the nonce, even admit this “want of labourers.” The system has life in itself—it may be separated from the *modus operandi*. Much of the labour may be safely dispensed with. On referring to page 19,—I wish not to travel out of the work—it will be found how large an amount of the inorganic constituents of wheat are rendered available to the crop by the exposure of a very few inches of the subsoil to atmospheric action. The annual double diggings, then, are not absolutely necessary to the system; for one double digging will bring up enough of the crude material to supply inorganic matters for very many crops, perhaps a single man a year will be sufficient for the double digging of the hundred acres. Some light stirrings, to break the crust as often as it forms on the surface, and so to admit the inflow of the atmosphere to work on the crude material so brought up to the surface, may be all that is absolutely necessary to the success of the system. It can, then, be generally adopted, even were there not labourers to do all, as Mr. Smith proposes.

“Will it be more productive and more profitable than any other plan of cultivation?” This is rather demanding an insight into futurity a little beyond even the clairvoyance of “Economist.” I believe there may be a more productive and more profitable plan, when our

farmers shall possess the knowledge and the capital to work it out, when they shall really be in every respect “stout British farmers,” and I believe the Hardys are upon the scent; but the labour objection will stand more in the way of it than it does in that of Mr. Smith's. In the meanwhile, the question will be answered, and in the affirmative too, by a reference to that farm which has been put forward, *par excellence*, as a most profitable one under high farming and liberal covenants. If, then, under the favourable circumstances of this crack farm, and the advantages which a great command of capital gives, Mr. Smith's plan is found more productive and more profitable, what must it not be to the farmer with a deficient capital and a poor landlord? To this man—and recollect in this man we recognise the position of a vast majority of the farmers of England—it offers a wondrously productive and profitable employment of his humble means. To him Mr. Smith is really a Godsend. Let us suppose him to have but sufficient capital to high farm only a small portion of his land, with the rest on the old plan of outfield, neglected, uncared for, scarcely productive of its rent and maudlin expenses. He farms, then, such portion as he can on the best possible system, and he throws the rest of his land under this ever-producing Wheat plan, which not only pays right well, perhaps better than his petted fields, but gives him an abundance of straw to assist his highly farmed portion. It is not a question that requires four acres more to be put under high farming, with a working of the soil equal to that of the four acres in hand; and by what magical process this is to be effected will tax “Economist” to discover without a reference to Mr. Smith; but whether the farmer will not find it more within his reach, and more productive and more profitable, to till wheat at a cost of 3l. or 4l., or perhaps for 2l., with a rent-paying farmer's net profit of 6l., 7l., or 8l. an acre, than to high farm at a cost of 10l., 15l., or more, an acre, with a profit of 3l. or 4l., and which, as “Economist” says in another case, “is simply impossible” for him. “Economist” shows he has much to learn in the row tillage of grain, when he calculates on an increase of produce by drilling his field all over at 1 foot apart; indeed, from the luxuriance, which all who have visited Mr. Smith's farm describe his wheat to possess, I think he has a row too many. Of this I feel quite certain, that were he to sow the additional two rows in his intervals, he would be more likely to reap under 28 bushels than over 32.

It is true, a produce of six quarters may now and then be found on some lands, but, I make bold to say, no farmer can reckon on it; and I think few can say they have reaped it every year, even though it came but once in a six years' rotation, for the last six years.

Is wheat, or is it not, the most valuable crop we can grow, taking into account labour, manure, and other expenses? Can the farmers of England say that, during the period Mr. Smith has been clearing an average profit, after deducting rent, interest of capital, and all other expenses of about 6l. an acre, they have made a net profit of 3l. or even 2l.? If they can, they might have excused Mr. Smith the necessity of telling them “How to grow wheat with profits.” They cannot; or, with their outcry on free trade prices, they are the greatest humbugs that the earth ever produced. *J. M. Goodfif.*

#### KILWHISS v. ROTHAMSTED.—No. IV.

##### THEORY OF ROTATION OF CROPS.

MUCH has been said by Mr. Lawes throughout his later writings on plants giving off nitrogen during their growth; he has been led to believe that this gas results from ammonia being decomposed by plants in the fixation of certain non-nitrogenous products. The views of Draper have been put forth, that certain plants “emit a volume of nitrogen equal to that of the oxygen consumed;” hence Mr. Lawes has considered that a theory of rotation of crops can be founded on, or materially illustrated by, an obscure and problematical experiment of this chemist. Somehow or other every pound of starch, oil, or sugar can only be assimilated by plants at the expense of a certain amount of ammonia taken as a manure. It is in consequence of this supposed law that the starchy wheat requires 5 lbs. of ammonia as food to produce 1 bushel of wheat—nearly 4 lbs. of ammonia are thus wasted in its production. The assimilation of oil, sugar, and starch is attended in like manner with a great waste of nitrogenous manure; if such were really the case, it is clear that all plants having products of this peculiar nature could not be grown as fallow crops.

The “Gramineaceous family” are chiefly composed of plants having starchy seeds, and Mr. Lawes on this account classes them as exhausters in his theory of rotation. The cereals all belong to this family as well as “Rice, Maize, the Sugar-cane, and others, besides the natural Grasses of our pastures.” The non-exhausting qualities of Leguminous plants are explained by Mr. Lawes, from the fact that their products are nitrogenous, and little waste of ammonia takes place in the formation of such substances. But more than this, Mr. Lawes supposes the “resources of their growth are also widely different;” the Leguminous plants relying more on the atmosphere for their nitrogen, the Gramineaceous on the soil. If the chemical circumstances and resources of growth within two great families were such as Mr. Lawes has represented, much credit and fame would have accrued to him for having made a discovery



of such importance; but, unfortunately, having had some reason from his experiments to believe that this was true in regard to Wheat, he has generalised freely on this instance. Nature, however, rises up against such a supposition; practice is against it, and our science of agriculture will never obtain stability and consistency until this hypothesis is entirely abandoned.

I have formerly given my ideas of the principles upon which plants can be held as more or less exhausting. Mr. Lawes does not seem to be aware how naturally they explain many points connected with the rotation of crops, when his own principles lead him into insurmountable difficulties. Our simple method readily adapts itself to many facts which he has misstated and inverted. It is a pity Mr. Lawes knows so little of the facts of agriculture, otherwise he would not have theorised so far and so fast as he has done. I place my own opinions on the right, and those of Mr. Lawes on the left, and I shall leave our readers to judge of the "flexibility" of the two methods, in explaining some important points connected with the theory of a rotation of crops.

"Let it once be recognised in agricultural science, that there is a definite expenditure or consumption of the nitrogenous bodies derived through the roots, connected with the fixation and elaboration of certain constituents of plants, and that this is greater or less according to the sources of the exact composition or state of elaboration of the products, and one important step will be gained towards a clearer conception of the principles involved in the alternation in a course of cropping of plants of varying products and habits of growth."—*Mr. Lawes, Journal of the Royal Agricultural Society, Vol. XII., page 32.*

"It is known that when the Turnip is grown for its natural seed product—oil, a heavier soil, richer manuring, and during a considerable period of the growth of the plant, a much higher temperature are required than when the bulb is produced. In these circumstances the organic manures should contain more nitrogen and less carbon."—*Mr. Lawes, Agricultural Gazette, April 3, 1852.*

Now I will first take the case of Maize, which Mr. Lawes has excluded from the fallow crops. If there were any truth in his theory it should no doubt be so. Professor Way has told us that "the grain of Maize closely assimilates to that of Wheat" in composition, and Bousingault gave the same account of it. On this point there is no dispute. It also "requires a higher temperature than the Turnip bulb;" and it actually yields at least double the amount of produce that Wheat does. It is rather curious that Bousingault does not discuss the exhausting qualities of Maize, and I might point out a passage in his "Rural Economy" which has probably misled Mr. Lawes. I am informed by Mr. Lawes that so great an authority as M. Dumas has given his assent to his speculations on rotations. If he has done so, I will say of him what Arthur Young said of a "French writer" of his day, who condemned the culture of Maize, "that this great point of the arrangement of crop is as little understood by the enlightened world of France as by the peasants themselves." Mr. Lawes never would have penned the first paragraph of his article in the Horticultural Society's Journal, if he had been aware that "Wheat—Maize," is the most productive rotation in the south of France. If the mineral theory does not do here, the "Graminaceous" or non-nitrogenous one is much farther from the truth. Take my simple method until you get hold of another that will explain the facts of the case as well. But hear our own countryman, whom I have already mentioned: "From Calais to Creissensac, in Quercy, you never once get quit of fallows; but no sooner do you enter the climate of the Maize than fallows are abandoned, except on the poorest soils; this is very curious. A country whose soil and climate admit of the course of—1, Maize; 2, Wheat; is under a cultivation that perhaps yields the most food for man and beast that is possible to be drawn from the land; for as to Potatoes, it is idle to consider them in the same view, as an article of human food." The Maize still furnishes "a rich meadow for a considerable part of the summer, the leaves being stripped regularly for oxen;" not only in the south of France, but over wide tracts of the American continent. In America it is known to grow fine crops after the land is too poor for the cultivation of Wheat.

That the Maize approaches nearer the mineral theory than the Bean there can be little doubt. It is because this plant is developed and grown under a "higher temperature" than Wheat, and because "its vegetative powers coexist with its flowering and seed-forming processes," that it requires less ammonia to yield an equal weight of produce than Wheat. Bousingault informs us that Wheat ripens in France about the middle of July; but the Maize only develops its stems and leaves under the fervid heat of June and July, for at "Bechelrann in 1836 the Maize which was sown on the 1st of June was gathered on the 1st of October." The Maize can patiently drink in the rays of the glorious sun of France throughout the summer, but the Wheat hastily runs its course; and under the cutting winds of March

and the inconstant weather of April, with the exhausting moisture of the spring, we could scarcely expect that Wheat can render so faithful an account of the pabulum of the dungheap. But does the connection between the "higher temperature" required by the Maize and its less exhausting qualities furnish a rule that we can walk by, or is it a mere exception to the Rothamsted philosophy? I shall contend for the rule, and leave Mr. Lawes to point out the exceptions, as I do not know of any.

The Rice, too, has been placed among the proscribed. That plant has also been classed as one of the carnivora of the vegetable kingdom. Its seeds are starchy enough, and they likewise demand all the powers of Phœbus to bring them to maturity. According to the Rothamsted philosophy, this vegetable should be an enormous exhauster. The fallacy of such a doctrine, however, has been long known in Fife. Old Adam of Kirkaldy told us, 80 years ago, in his "Wealth of Nations," that "a Rice field produces a much greater quantity of food than the most fertile corn field. Two crops in the year, from 30 to 60 bushels each, are said to be the ordinary produce of an acre."

That the Cane should require manure richer in nitrogen than the Turnip bulb, because it yields the non-nitrogenous substance, sugar, seems to me altogether doubtful; but I will afterwards touch on this question when I lay bare the other mistakes into which I think Mr. Lawes has fallen, and endeavour to substitute a few simple principles that readily explain the rationale of some of our agricultural practices. In the meantime it may be mentioned that sugar cannot be increased by nitrogenous manures in Beet; these are adverse to the secretion of this substance and are avoided. The Potato affords a somewhat parallel instance, as it becomes waxy and less starchy on being dressed with animal manures.

But next come the oil plants, and to them Mr. Lawes has triumphantly appealed as affording incontestable evidence of the truth of his theory of rotations. Here he is still more unfortunate. The Oleaginous plants actually supply me with beautiful instances of the principles for which I am contending. The illustrations which these furnish can be applied to the utter confusion of Rothamsted. When Mr. Lawes makes his "continental tour," which he told us of, he will find, as I did, in some of the wide champaigns of the north of France, that the oily Poppy occupies the fallow break where the heat is insufficient to ripen the starchy Maize. The Maize and the Poppy in their growth follow similar monthly curves of temperature—their "vegetative powers coexist with their flowering and seed-forming processes, as is the case with the Grasses." It is these coincidences and resemblances which determine their place in the rotation—the products which they yield have nothing to do with it. At that period of the year, in the north of France, when the Cole has ripened its seed and its stalks are already reduced to ashes—the Poppy is in flower and covering the fields in one white flush, and patiently bearing the hot sun of July. The Cole has even outstripped the hasty Wheat; and it would be wholly opposed to my principles if that plant could derive much from the atmosphere, when it had actually flowered long before the Oak dared to put forth its foliage. The same law which has just been indicated above applies to all the other Oleaginous plants.

Mr. Lawes has made a capital blunder in ascribing as one cause of the exhausting qualities of Turnip when grown for seed, that it requires "a much higher temperature during a considerable period of its growth than when bulb is produced." But the contrary is the fact; and according to our principles it is an important element which goes to constitute its exhausting qualities, that it can only obtain a much lower temperature for seeds than for bulbs. Is the temperature not much lower from the 1st of March to the middle of June, when the seed is grown and matured, than from the middle of June to the end of October, when the bulb is grown? *R. Russell, Kilwhiss, Fife.*

(To be continued.)

### Home Correspondence.

*Tullion Husbandry.*—I was glad to see last week "An Economist" enter the field against the Rev. S. Smith. Not that I think him right; but because it will induce your readers to think; and, perhaps, to act. I am also glad the Royal Agricultural Society intends giving the rev. gentleman's system "fair play" at the Gloucester meeting next July. Where does the secret lie? Is it in the season? In the soil? In the situation? Or in the system? I write more particularly to ask those persons who tried the system last year in different parts of the country, to give a correct account of what they have grown (Wheat) per acre. I own the subject is often alluded to; but the farmers want "precept upon precept, line upon line." Some may think it premature to write upon the subject; but I think it will take the eight months between this and seed-time, for the farmers to swallow and digest the *Lois-Weedon* medicine. 'Tis no good talking to faithless farmers upon the subject; and very little good their reading Mr. Smith's book. I wish they would go and see the plan with their own eyes, as I have done these last two years, just before harvest. I am sure Mr. Smith will be pleased to give them every possible information, and they will find everything comes up to the mark (Mr. Smith's book), which I am sorry to say is not always the case with respect to amateur or crack farmers. By way of contrast with Mr. Smith's book, I will mention another

book called "Spade and Fork Husbandry," by a person not 100 miles from Saxmundham, in Suffolk, who advertises he can and has saved 50*l.* a year from two acres of land, besides keeping his wife and family, and paying 1*l.* 1*s.* per acre for rent (or interest of money), and taxes. I don't know who would not buy such a book. However, I did. Well, then, I trained some of the way, and coached the rest, to see this wonderful farm; yet I saw nothing wonderful but weeds. His excuse, "I am building a cottage, and have not time to pull them up." This was just before harvest 1851. I valued as well as I could, and I think what was on the ground, and what had been taken off, viz., Cabbages, Potatoes, Beans, and Wheat altogether, I should think there is 100*l.* difference between his published account and what I saw—no small item on 2 acres of land. The same person writes a good deal about keeping cows, and he published another book about "fattening pigs." After looking over his farm, I said, "Let me look at your cows."—"Oh!" he said, "milk has sold bad of late, so I turned to keeping pigs."—"Well, let me see them, then."—"Oh!" said he, "pork sold so bad last year in London that I now keep ducks and chickens." This man's cottage was like a lawyer's office; full of letters from all parts of the kingdom, asking advice, &c. Now I am writing, I would just inform your readers that I know a person who grew roots on Mr. Smith's plan with great success last year. He set first Potatoes in rows 4 feet apart—sold them 15*s.* per acre; then between the Potatoes he grew Swedes; they are not all sold yet, but I expect he will make 1*l.* or 12*s.* per acre of them, in all at least 26*s.* per acre. Suppose we take out 8*l.* for rent and expenses, then there will remain a tolerable good profit per acre. I forbear mentioning his name, fearing his agricultural neighbours might call him a black sheep, or a speckled bird, or something of that sort. *J. D. P., Colne Engaine.*

*Predatory Birds.*—One pound of the same sort of common arsenic as that used in dressing seed-Wheat is to be mixed with two gallons of hot water; when not more than milk-warm, put into this mixture half a bushel from the same bulk of Wheat, Barley, Beans, &c., as was planted, and is being injured by rooks or larks; mix it up for a day and a half or two days, then, with a little basket, wash the poison off the outside of the grain by a dip of the basket in clean cold water, sow the poisoned grain thinly, broadcast, over the ploughed ground. Take away the bird-boy to draw Turnips, and in three or four days go and look at the field: if then Mr. "J. W.," so far as birds are in question, you do not find yourself alone in your glory, I am much mistaken; if I am, you will be pleased to say so after trying the dose. *B. Careful.*

*Forking Land.*—I was so well satisfied with this operation last season that I have forked 18 acres this autumn—say in November, December, and January—and there it lies on the ridge, exposing to view and to atmospheric influences as vile and various coloured a subsoil of plastic clay as could be found; and yet I know that it has produced and will again produce abundant crops with proper management. Although a tenacious soil, no water has been seen on these forked lands; all filtrates. What an agreeable evidence in favour of cultivation and drainage! I shall soon saturate these fields with torrents of liquid manure. The forking, as usual, has been done with Winton's Parkes' digging forks, and they maintain their superiority. Twelve acres were forked 11 inches deep, and thrown on to the ridge at 2*d.* per rod, or 1*l.* 6*s.* 8*d.* per acre. It was not a good job for the men, but I regret to say that in spite of emigration they would gladly have done three times the extent. The wet weather was against them in these birdlime-like yellow plastic clays, which exhibit every shade of pale drab and yellow, with most ferruginous tendencies. How delightful to afford the unemployed labourer with the means of existence with a profit to one's-self. We must all feel much obliged to the Rev. Mr. Smith, of Lois-Weedon. The Wheats after Mangold Wurzel on the forked lands plant well, and the land dries more quickly than on ploughed land. I am convinced this forking is much cheaper and more effective than the same amount expended in ploughing. *I. J. Mechi, Feb. 11, 1853.*

*Drainage.*—I beg to inform your correspondent, "A. T.," that I do not consider 4 feet the utmost limit for the depth of drains in all soils or under all circumstances. I am convinced that in many soils, subject to a limit, the deeper the more abundant the drainage; but I think that drains 4 feet deep are the most remunerative, and consequently the best suited for general adaptation; and for this reason, that all cuttings over 4 feet deep add in a compound ratio to the expense. A very simple diagram, giving the sections of the two drains, will show that a drain of 6 feet deep will cost more than double the amount of another at 4 feet deep, in consequence of the greater amount of soil to be moved, and of the extra expenditure of manual power required to lift a considerable portion of the soil above 4 feet, the horizontal line of the arm. Again, even if drains were as effective at the wider intervals, "A. T." suggests he would have little saving in the cost of pipes, as he would have to increase the size of his pipe in proportion to the greater volume of water his wider intervals and deeper cuts would collect. I cannot precisely state what depth of soil there is in the case of the drain alluded to; the general character is a strong London clay (perhaps the least permeable of any clay in the kingdom), with a stratum of only 8 or 10 inches of more friable soil on the surface; my fall has varied from a level to an incline of about 1 in 25. It may be of interest to "A.



T." if I state a particular case. A plot of about 25 acres, where the fall is 1 in 30, and the drains 600 yards in length, 24½ feet between, and 4 feet deep; the pipes, laid in stiff clay, produced the following result. On the 17th December last, immediately after a heavy rain, I tested the discharge from one of those drains, and it was 11 quarts per minute. Trusting this explanation may be of use to "A. T.," I would at the same time beg to suggest the propriety of an experienced and skilful supervision; the want of which is one, if not the greatest, source of disappointment and waste of money in draining operations. *P. Mitchell.*

*Carelessness.*—When you see hedges growing 10 feet wide and 15 feet high—when you see fences full of gaps, and the cattle ranging all over the farm—when you see the young cattle and cows standing at the meadow-gate in January—when you see all the headlands on a farm unploughed—when you see a shallow ditch full of stagnant water—when you see the liquid manure running riot, and the brood sow wallowing in the "jaw hole"—when you see a lea ploughed one day and sown the next—when you see farm horses turn out like ghosts in the spring—when you see cows turned out to Grass as lean as rakes, with a filthy coat on each hip—when you see the stacks unthatched at Martimas—when you see the stack-tops growing green after being thatched—when you see the head of a gate forming a circular drain—when you see Turnips horse-hoed after the leaves have closed in the drills (?)—when you see Rushes growing in the meadow and pasture land—when you see lime laid on wet, undrained land—when you see draining going on (at any depth) without the aid of trial trenches—and when you see grain taken to market in sacks mended with wisps of straw—you may safely conclude that the farmer is a sluggard. *J. C.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held at the Society's House in Hanover Square on Wednesday last, the 2d of March. The following members of Council and Governors of the Society were present:—MR. PUSEY, Trustee, in the chair; Lord Camoys, the Hon. Robert Henry Clive, M.P., Sir John Villiers Shelley, Bart., M.P., Sir Thomas Dyke Acland, Bart., M.P., Sir John V. B. Johnstone, Bart., M.P., Sir Montagu Cholmeley, Bart., Sir Robert Price, Bart., M.P., Mr. Raymond Barker, Mr. Barnett, Captain Stanley Carr, Mr. W. G. Cavendish, Colonel Challoner, Mr. Crosskill, Mr. Evelyn Denison, M.P., Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hornsby, Mr. Hudson of Castle Acre, Mr. Lawes, Mr. Mainwaring Paine, Professor Simonds, Mr. Simpson, Mr. Slaney, Mr. Crompton Stansfield, M.P., Mr. Thompson, Captain Vyner, Professor Way, and Mr. Wilson of Stowlangtoft.

The Earl Somers, of Eastnor Castle, Herefordshire, was elected a Governor of the Society.

The following new members were elected:—

Washbourn, William, Mayor of Gloucester  
Collins, Henry, Duffryn, Newport, Monmouthshire  
Fawcett, H. H., Tudor Villas, Peckham, Surrey  
Hopper, William, Cuthbert, Rectory, Wells, Norfolk  
Walker, D. M., Gloucester  
Evans, John, Altynadno, Carmarthen  
Collin, George, Nettswell Bury, Harlow, Essex  
Walker, George, Newbold Grange, Rugby, Warwickshire  
Downing, John, Gloucester  
Perry, Frederick Charles, Dunston, Penkridge, Staffordshire  
Watson, George B., the Hall Farm, Longdon, Shrewsbury  
Stedman, William, Bedston Hall, Ludlow, Salop  
Bride, Samuel B. R., Spain's Hall, Finchingham, Essex  
Kendall, John, Gloucester  
Wilson, Edward B., Post's Corner, Westminster  
Crompton George, Drayton Grove, Old Brompton  
Paterson, Richard, Leesons, Chiswell, Kent  
Young, George, 27, Mark-lane, London  
Whitear, R. B., Martyr-Worthy, Winchester  
Williams, Edward, Celyn, Northop, Flintshire  
Ferrabee, James, Phoenix Iron Works, Stroud  
Crump, Joseph, Woollershill, Tewkesbury, Gloucestershire  
Wilson, William, Ashbocking, Ipswich, Suffolk  
Morley, John, Broughton Lodge, Manchester  
Impey, Robert, Street, Glastonbury, Somerset  
Heath, Douglas Denon, Kilbards, Dorking, Surrey  
Milward, Rev. Henry, Paulton Vicarage, Bristol  
Ferrabee, Henry, Phoenix Iron Works, Stroud  
Snowdon, Thomas, Middlesborough-on-Tees, Durham  
Reed, J., Uckington, Cheltenham, Gloucestershire  
Knowles, James, Earl's Court, Old Brompton  
Maude, William Edward, Harrington Street, Liverpool  
Pelle, Thomas Williamson, Repton School, Staffordshire  
David, Edward, Fairwater House, Cardiff, Glamorganshire  
Forde, Matthew, Manor House, Maghull, Ormskirk  
Jones, E. J., Bainton, Hereford  
Gillett, Thomas, Kilkenny, Witney, Oxon  
Cater, J. W., West Lodge, Barnet, Hertfordshire  
Cuff, J. H., 10, Smithfield Market, London  
Fawcett, A., Riggsville, Killacan, Ireland  
Evans, E. Middleton, Llwynbarried, Rhayader, Radnorshire  
Lawrence, Thomas, Churchdown, Gloucester  
Humphrey, Thomas, Pershore, Worcestershire  
Calthorpe, John, Stanhoe Hall, Rougham, Norfolk  
Bowly, Samuel, Gloucester  
Stewart, William, jun., Kington, Bedford  
Duncalf, G. H., Newport, Salop  
Perry, William, Cholstry, Leominster  
Blake, Ethelstone H., Remyle, Letterfrack, County Galway  
Darby, Abraham, High Sheriff of the County of Bucks  
Hughes, Hugh, Kinnell Park, Denbigh  
Stapilton, Philip, Hummerston, Chester  
Lee, John, Wexley, Worcester  
Whitehead, Jeffery, R. A. College, Cirencester  
Furniss, Edward, jun., Endcliffe Place, Sheffield.

**FINANCES.**—Mr. Raymond Barker presented to the Council the report of the Finance Committee, from which it appeared that the current cash-balance in the hands of the bankers, including the Gloucester subscription and special composition-balance, was 3572l. He also laid before the members detailed balance-sheets

connected with the different departments of the Society's country meeting held last year at Lewes.

**LECTURE ON FLAX.**—Mr. Pusey reported the recommendation of the Journal Committee, that Professor Wilson's offer to deliver a lecture before the members, "On the treatment and application, agricultural as well as technical, of Flax," should be accepted, and that the proposed lecture should be delivered in the Council-room of the Society on Wednesday, the 13th of April next, at 12 o'clock at noon. This recommendation was adopted by the Council.

**FINES FOR NON-EXHIBITION.**—Col. Challoner, chairman of the Fines' Committee, presented the following report to the Council on the subject of the fines connected with non-exhibition at the Lewes meeting:—

The Fines Committee beg to report as follows:—

1. That they have examined all the pleas transmitted in excuse for the non-payment of fees claimed, and have compared the various points set forth, with the exemptions stated in the rule, instructing the Secretary to inform the parties whose pleas are disallowed that they will be required to pay the fines stipulated.
2. That the Secretary be directed by the Council to address a second application, and those parties who have neither paid the fines to which they are liable, nor have replied to the circular letter already addressed to them, informing them that if payment is not made by that day fortnight, their respective cases will be placed in the hands of the solicitors, requesting the recovery of the fines in question, by usual process in the Westminster County Court.

**FARM POULTRY.**—Mr. Fisher Hobbs, Chairman of the Farm Poultry Committee, reported to the Council the unanimous recommendation of the Committee, after deliberate consideration, that the Council should adopt, without alteration, the schedule of prizes for improving the breed of farm poultry, suggested by the Society's three judges in that department at the Lewes meeting last year, namely, the Hon. and Rev. Stephen Willoughby Lawley, of Eserick; Mr. Thomas Barber Wright, of Birmingham; and Mr. John Bailey, of London. These gentlemen, in their report to the Council, make the following remarks on the schedule proposed:—"We have conferred together on a poultry prize-list, which we consider suitable for the Gloucester Meeting of the Royal Agricultural Society of England. The list transmitted to the Council has our unanimous approval, and it has, we beg to assure the Council, been very carefully considered by us. It is strictly practicable; no longer than is absolutely necessary; and well calculated, as we think, to stimulate farmers to improve the stock of their poultry-yards, an object which the Society has given evidence already that it is anxious to support. The arrangements required in the show-yard will be very simple; and the prize-list now submitted will not have reference, like the more extended shows at Birmingham, to feather and properties, but will be of a different character, being intended to encourage the breeding of those varieties which are most valuable for the table, or the supply of eggs. Independently of any other consideration, it would be much better for the farmer to keep a pure breed, instead of a lot of miserable crosses; as the pure-bred birds arrive much earlier at maturity, and the value of live birds of a distinct breed is much greater than that of mongrels." The Council adopted the schedule proposed by the judges, and recommended by the committee; ordering their best thanks to be transmitted to the judges for the favour of their report, and the trouble they had kindly taken on this subject. The schedule in question is divided into 13 classes, comprising 45 prizes, amounting in value to 108l.

**GENERATION OF STEAM.**—Colonel Challoner, chairman of the Implement Committee, reported to the Council the recommendation of that committee, that the Society should have a portable steam-boiler for the purpose of generating steam for the trial of the fixed engines at its country meetings. The contract for the construction of such boiler, and its requisite fittings, to be offered by public notice to the tender of engineers, agreeably with detailed specifications to be drawn out by the committee, with the aid and under the advice of the consulting-engineer of the Society. The Council adopted this recommendation.

**GLOUCESTER MEETING.**—The following report from the General Gloucester Committee was received and adopted:—

The General Gloucester Committee beg to make the following report of their proceedings since the last monthly meeting of the Council:—

1. They have elected Mr. Raymond Barker the Vice-Chairman of their Committee, to preside over their meetings in the absence of the Earl of Duce, their chairman.
2. They have, agreeably with the reference of the Council, provided the land requested by the Rev. Samuel Smith, for illustration to the members, at the Gloucester meeting, of the system of cultivation practised by him at Lois-Woodon, in Northamptonshire.
3. They have made the requisite arrangements with Mr. Jones, the Secretary of the Gloucester Local Committee, for the supply of Wheat and Barley in the straw, for the trial of implements and machinery.
4. They have instructed Mr. Henry Manning, the contractor of Works to the Society, in the prosecution of the several works connected with the meeting, and they lay before the Council his report on that subject.

**CERTIFICATES.**—On the motion of Mr. Brandreth Gibbs, a committee was appointed, consisting of the stewards of the cattle yard, Mr. Fisher Hobbs and Mr. Brandreth, to revise and recommend some improvements in the form of the certificates sent in for live stock.

**VALE SHEEP.**—Mr. Holland, of Dumbleton Hall, Evesham, placed at the disposal of the Council the sum of 50l., as the amount of further prizes for sheep bred in the district of the Society's Country Meeting at Gloucester, in July next. The Council ordered their best thanks to Mr. Holland for this instance of his

liberality, and his desire to promote the objects of the Society at their Gloucester meeting; referring his communication and offer to the General Gloucester Committee, to decide how far the present prize-list would admit of Mr. Holland's wishes being carried into effect.

**DRAINS: COTTAGERS' WELL AND PUMP.**—Mr. Slaney regretted to find that the implement prize-sheet had been finally closed at the previous monthly Council, and its distribution made; otherwise he should have been glad to renew his offer of a prize for a plough to fill in the soil cast out of drains. He hoped, however, to offer it again in time for next year's meeting; in the meantime he trusted the attention of implement-makers would continue to be directed to the invention of so useful an implement. He took that opportunity of giving notice, that he should make a statement at a future Council Meeting, connected with the construction of a cheap well and pump for cottagers, on a new principle, and which he had found to answer remarkably well. The Council adjourned to their weekly meeting on Wednesday, 9th March.

**ROYAL INSTITUTION, Feb. 25.**—An exceedingly interesting and instructive lecture on *Ploughs and Ploughing* was given by JOHN WILSON, Esq., F.R.L.S., &c. He referred to the history and present condition of the implement, and to the various attempts which have been made to supersede both it and the ordinary animal power which has hitherto been employed in working it. The necessity of an increased employment of machinery in agriculture was argued from the immense emigration of agricultural labourers at a time when an increasing demand for their services was arising for the various works of drainage, improved tillage, &c. The ultimate influence of machinery in improving the agricultural labourer was argued from the fact, that more of skill though less of mere muscular power was rendered necessary in its management. The origin of the plough, probably in the mere curved branch of a tree, hardened at the point, and used as a scratcher of the surface, with its first use as a hand implement, and its ultimate employment as a tool to be drawn, were adverted to. The further history of the plough as given by sacred historians and by those of Greece and Rome was detailed. Various of the maxims of the Latin agricultural writers, especially those which related to the operation of ploughing, were quoted and commended. The condition of the soil proper for the operation, and the direction of the implement in order to the right performance of the operation, were discussed. The Roman plough was described: it included the parts of which the implement now consists, and it was after a rough fashion, a double mould-boarded implement, acting as a common plough in turning only one furrow slice by a particular method of holding it, on the part of the ploughman. The improvements exhibited in the English plough of two or three centuries back, when compared with the Roman implement, consisted in the two handles, the wheels, the single mouldboard, and the broad share. The old English writers, Sir A. Fitzherbert (1532), Barnaby Googe, and others were then referred to. Walter Bligh, or Bliih (1669), was especially named as speaking of "plaine ploughs," wheel ploughs, double ploughs, of light one-horse ploughs, capable of getting over 8 acres a day by the aid of one man and two teams; of ploughing by contract, 100 acres having in one instance been contracted for at 5d. an acre. The further improvements on the implement as imported from Holland by Bligh, and altered by Small, who gave its sharp straight mouldboard greater curvature, and further improved by other plough-wrights, were then detailed. The attempts made to imitate the operation of the spade—to unite the quality of the work by the one with the quantity done by the other—were alluded to. Mr. Parson's digging machine, of which a model was shown, was mentioned, and its operation exhibited. The various attempts to employ steam were detailed. Lord Willoughby D'Eresby's efforts, and those of the Marquis of Tweeddale, were acknowledged; and the present position of the latter on the road towards success was stated in some detail. It appears that two steam-engines are employed by his lordship, and four ploughs, two of which are in operation at a time. The recent trial of this machine was referred to. It appears that in an ordinary working day of ten hours, the steam-plough is capable of ploughing 6 acres of land, 15 inches in depth, at a cost of—

Coke 5s., coal 2s. ....	£ s. d.
Five men, at 2s. each ....	0 7 0
Oil and sundries ....	0 10 0
	0 3 0
	1 0 0

To this must be added the cost of wear and tear, and capital. Usher's steam plough, in which the traction principle is abandoned, and that of rotation is adopted, was spoken of somewhat more hopefully, and the writings of Mr. Hoskyns upon the question were quoted from. The lecture concluded with a statement of the statistics of the subject, on data furnished by Mr. Caird, from which it appeared how large was the national interest in the subject, and what a margin existed for agricultural economy in this one operation of ploughing, by the employment of more efficient and cheaper methods.

## Reviews.

*Journal of the Royal Agricultural Society of England.*  
Vol. XIII. Part 2. John Murray.

The greater part of this volume is occupied with a very valuable report on agricultural chemistry, by Mr.



T. Hemming, entitled "On the Neglect of Chemistry by Practical Farmers; its Causes and its Remedies." We refer to it here as containing the fullest compilation of accumulated results of analyses in agricultural chemistry in existence. One hundred and thirteen pages full of matter in small type, giving analyses of corn crops, root crops, hay crops, miscellaneous crops; of manures, solid, special, refuse, and liquid; of articles used in feeding, of weeds and of trees, of minerals, rocks, earths, and soils, form a vocabulary of the whole subject of agricultural chemistry such as must in itself greatly tend to remedy some of that neglect of the subject of which the author complains.

The other articles in the present volume include full reports on the Lewes show of implements and live stock, a valuable statement by Mr. Pusey of the natural history of cubic saltpetre, a report on inoculation for leuro-pneumonia, by Professor Simonds; and beside the shorter papers, a continuation of Mr. Dickinson's valuable report on the farming of Cumberland. Of these probably the most important is Mr. Pusey's report on cubic saltpetre, or the nitrate of soda. This is especially the case under the present circumstances of the Wheat plant. Sown late, or, where early sown, suffering from the unusual weather of the past two or three months, the Wheat crop will need unusual attention if it is to yield an average crop at harvest time. And the subject of top-dressings for grain crops is this year thus of unusual importance. We therefore give the result of the experiment which appears to have led Mr. Pusey to draw up his valuable paper on the source and supply of cubic saltpetre, salitre, or nitrate of soda, and its use in small quantities as a restorative to corn crops:—

"Last spring, finding that about 10 acres of Barley, sown very early, that is, in February, had suffered severely by frosts unusually sharp for the season, I determined to try the experiment of applying as a restorative some nitrate of soda, but to use it, as the land was in good order, in a much smaller dose than was ever given before—42 lbs. only per acre. It was accompanied with twice the quantity, 84 lbs., of common salt, which does not act as a manure, at least not on this land, yet seems necessary for correcting the luxuriant vegetation caused by the nitrate. A long strip (perhaps half an acre) was left undressed on one side, to serve as test. Small as was the dose, it acted immediately, and the Barley so treated soon recovered its colour; and acted thoroughly, for until harvest the Barley stood half a foot higher than on the undressed portion. The result on threshing out was most satisfactory, for, while the undressed portion gave only 40 bushels, the remainder, though so gently treated, yielded 47 bushels per acre. The cost of the dressing was, 6s. for the nitrate, 4d. for the salt—6s. 4d. in all; the value of 47 bushels gained was 26s., and the profit, therefore, 10 per cent. Indeed, I might justly assume a yet larger profit, for, contrary to former experiments with trage, the nitrated corn was superior to the unnitrated quality also, to the amount of about 2s. a quarter, which would give a further profit of 10s. on the other 40 bushels, or a total return of 36s. per acre for an day of 6s. 4d., to say nothing of the straw, which glt cover the trifling labour. It will be admitted at this at least was no garden experiment, being a r-sized trial upon a whole ten-acre field. The result is beyond my own expectations; and not the least serious question on the action of the manure is the reason, how so small a quantity of any salt could be read equably, sown by hand as it was, or by any machinery even, so as to act uniformly upon the entire crop. Of the quantity used the weight gives of course a distinct notion, but I find that 42 lbs. weight of nitrate are not more than will three times fill a man's bush, and certainly it is marvellous that three hatfuls of substance should increase so much and so regularly the corn upon a whole acre of land."

Elements of Agricultural Chemistry and Geology. By J. F. W. Johnston; 6th edition. London and Edinburgh: Blackwood.

The works at the head of this article are almost removed from the pale of criticism, by the numerous editions through which they have passed. They appear to have received their public, and therefore stand in little need of our commendations; and we should not have noticed them further than we did, in the short but decided note of approbation awarded to them on their first appearance some weeks ago, were it not that we find, upon a careful perusal, that the first of them has been in great measure rewritten, and so much enlarged as to make it almost a new work. Those of our readers who possess the earlier editions will find some ten additional chapters, and a hundred pages of new or revised matter in the present edition. Chemistry in its application to agriculture is yet in its infancy. The field of observation is so large, that notwithstanding the past efforts of able men at work upon it, new discoveries are made almost daily; and of these and of his own chastened and extended experience Professor Johnston has availed himself in such a way as to make his Elements a picture of the present amount of knowledge arrived at in scientific agriculture.

Our readers it is hardly necessary for us to express a word, in favour of combining science with practice in the management of their farms. If it were, it might point with conclusive force, which even the so-called "practical" men would find it difficult to stand, to the periodical reports in our columns of

the monthly discussions at the meetings of the Royal Highland and Agricultural Society of Scotland, where the shrewd high-rent paying farmers of the Lothians show by their admirable debates that it is to their scientific knowledge, combined with their practical skill and experience, that they owe their distinguished position in the van of the tenant farmers of the kingdom. The remarks of the learned professor on this point, in his Introduction, are so just, that we here transcribe them: "I may remark, however," (says he) "that if agriculture is ever to be brought to that comparative state of perfection to which many other arts have already attained, it will only be by availing itself, as they have done, of the many aids which science offers to it. And if the practical man is ever to realise upon his farm all the advantages which science is capable of placing within his reach, he must become so far acquainted with the connection which exists between the art by which he lives and the sciences, especially of chemistry, geology, and chemical physiology, as to be prepared to listen with candour to the suggestions they are ready to make to him, and to attach their proper value to the explanations of his various processes which they are capable of affording." Such being the case, there is no better introduction to the knowledge required than the book now under review.

In addition to the new letterpress, we observe a number of new woodcuts throughout the work.

The Catechism, although an unpretending little work, contains a vast amount of information, and has gradually worked itself into the position of a text book, not only for Europe, but the New World also. It is copiously illustrated with excellent woodcuts, and is so clear and intelligent in its arrangement, and yet so comprehensive, that no person of ordinary intelligence could rise from its perusal without having acquired a considerable knowledge of the properties of all the bodies which enter into the composition of our soils, or in the structure of the plants which grow upon them, so far as these are known to the highest chemical authorities of the day.

Both works deserve a place on the book-shelves of every intelligent farmer in the kingdom.

#### POULTRY.

POULTRY: A.H.I. The purchase of teal is a very easy affair; there will be plenty for sale in London very shortly, and if they come over to this weather, little choice is necessary, as they are sure to be in good feather and condition. Summer and winter teal are alike very wild birds, and if you cannot put them in a pond entirely fenced in, I recommend you to give up the idea of keeping them. If you can safely confine them, they will become tame, but they will make their escape through any defect in fence, or through a rat's hole. Feed them on Barley, Buckwheat, Hempseed, and bread. These are favourite food, and they will learn to look for it; this will domesticate them. The price of them is about 9s. or 10s. the pair; and after they are tamed, Barley alone is food enough, but it is good to give a little bread daily, and always at the same hour.—*Selby Villa.* Your treatment has been very good, but a brick fence is most injurious to chickens, and almost always causes cramp. I should recommend you to remove them, or if you cannot conveniently do so, cover the floor with gravel and wood-ashes, at least six inches deep, and I would discontinue feeding on worms. As the sun gets warm, I would put the hen under a rip in a dry place, and let the chickens have an hour every day; but they must be watched, as they must not, after having artificial heat, be exposed to a shower or to snow.—*F.N.* I have often said, and I repeat, that the comb has nothing to do with the purity of a Dorking fowl. I believe I may say with truth, that two prize hens at Birmingham, one rose, one single-combed, were from the same parents.—*G.S.* Not being able to pry into the future, I cannot tell you whether Cochins China fowls will hold their price during the year. So long as the present demand exists, good birds will command a good price.—*J. Baily, 113, Mount Street.*

#### Miscellaneous.

Mangold Wurzel Crop on a Wheat Stubble.—(Expenses per acre.)		
Rent	£	s. d.
Tithe, Poor-rates, &c.	2	0 0
30 27-bushel carts of manure—carted, filled and spread	0	10 0
One 12-inch digging, at 2d. per rod	1	6 8
Or, One trench ploughing with two ploughs, 14s.		
Two scarifiers in spring	0	4 0
Two harrows and rollings	0	3 6
3 cwt. superphosphate of lime, at 8s.	1	4 0
Seed and drilling	0	3 0
Three deep horse hoeings, with Garrett's horse hoe	0	3 0
Two hand-hoeings, singling, &c., at 3s. 6d.	0	7 0
Pulling, topping, filling into carts, stacking, thatching, and earthing 30 tons (by contract)	0	9 0
Carting	0	12 0
£8 2 2		

No charge made for farm-yard manure, as the roots are all consumed. *Mr. Mechi's Second Paper.*

Price of Water for Irrigation.—The price at which water is sold to the cultivators on the canal of Caluso is a point of considerable interest. From 1760 to 1800, the price varied from about 7l. to 9l. per cubic foot per second; or, assuming this quantity of water to be sufficient for the irrigation of 50 acres of land, from about 2s. 10d. to 3s. 7d. per acre. At the present time the cost of a permanent supply of water is between 7l. and 8l. annually per cubic foot per second, or very nearly 3s. per acre. The price, of course, varies somewhat with the demand, but the preceding statements give a fair general idea of the value of water in this part of Piedmont. It is a little less than twice the amount charged in Northern India, where irrigation is given at a cost to the cultivator of about 1s. 3d. per acre, regard being had solely to the price of the water. *Italian Irrigation, by Captain Smith.*

#### Notices to Correspondents.

ALPACA: *Inquirer.* There are not many in this country. The Earl of Derby was the largest owner. Mr. Salt, of Bradford, owns a good many, we believe. Mr. Bell, of Lichfield, county Kerry,

was also an owner very lately. We do not know the prices they fetch.

BOX-FEEDING: *Inquirer.* Lentils and Linseed are better than either. If your roots have gone, give 12 lbs. of hay and 12 lbs. of straw cut up into chaff, with 4 lbs. of Bean-meal or Lentil, and 2 or 3 lbs. of Linseed-meal; this last boiled into a salt, thin soup, which may be thrown over the chaff.

FARM ACCOUNTS: *J.P.* The subject was discussed last year. You had better procure and study the little work on Book-keeping published by Chambers. The English Agricultural Society have published a set of books.

FARM MANURE: *An Old Subscriber.* To expose it, whether in cold or dry air, by spreading after fermentation, is wasteful. All ammoniacal manure should be mixed with the soil as rapidly and perfectly as possible. In dry weather the waste is greater than in wet, and in warm weather than in cold.

FOOD: *Sub.* Four of Indian Corn would contain about 28 of starchy matters and 48 of nitrogenous matters. Two of Peas and 1 of Swedish Turnips would together contain 1.2 of starchy matters or their equivalent, and 50 or thereabouts of nitrogenous matters. We should prefer the former.

GLASS AND IRON: *Ploughman.* We do not know if roofs so constructed have anywhere been used to any extent in the erection of farm buildings. It would no doubt much exceed the cost of timber and tiles. So far as serving the purposes of a roof is concerned, it would no doubt answer perfectly.

HAY FOR FARM HORSES: *Cambrensis.* 18 to 20 lbs. of hay and 10 lbs. of Oats is ample daily allowance.

IVY: *M.D.* The Ivy does not abound with us, and we have never known it given to sheep. We imagine its nauseous taste will prevent its being partaken very freely, so that probably it neither does good nor harm. *W.C.S.*

PASTURE LAND: *Sigma.* All pastures ought to be completely eaten off at some period between Midsummer and Michaelmas, so that no old Grass may remain for the winter.

PRESERVING TIMBER: *G.O.* Perhaps you will communicate your address to Mr. Frideaux, Chemist, Plymouth, who will be glad to correspond with you on this subject.

ROOFING: *C.V.* K asks if any one has had any experience of devices for rendering a too-flat tiled roof, water-tight by painting, gas tar, or otherwise.

SWELLED NECK: *Caesern.* A seton should be passed through the tumour. *W.C.S.*

TUNING-CRUSING MACHINE: *A Mechanic* should correspond directly with the gentlemen he names. We fear his patent would not pay; though, if on exhibiting at Gloucester he should obtain the approval of the Society's judges, he might obtain a profitable sale of the implement.

\*As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

#### Markets.

COVENT GARDEN, March 5.

In consequence of the continued severity of the weather, the supplies of Vegetables during the past week have been but limited. Table Peas and Apples are, of course, still scarce. The former are confined to Beurré Rance, and the latter to American Newtown Pippins. Pine-apples are realising good prices. Forced Strawberries fetch 5s. an ounce. Cob and other Nuts bring fair prices. Among Vegetables, we remarked Green Peas, new Potatoes, Horn Carrots, Asparagus, Radishes, Globe Artichokes, and Lettuces, all of foreign growth, and very good. Both Seakale and Rhubarb are pretty abundant. Potatoes are a trifle dearer. Mushrooms are scarce. Cut flowers consist of Heaths, Primulas, Early Tulips, Roses, Cyclamens, Mignonette, and Camellias.

#### FRUIT.

Pine-apples, per lb.	6s to 10s	Lemons, per doz.	1s to 2s
Apples, dessert, per bush.	10s to 12s	Almonds, per peck.	5s
— kitchen, do.	6s to 10s	— sweet, per lb.	2s to 3s
Pears, per doz.	1s 6d to 4s	Nuts, Barcelona, per bush.	20s
Oranges, per doz.	1s to 2s	— Cobs, 110s	
— Seville, p. 100.	14s to 24s	Chestnuts, p. bush.	8s to 20s.

#### VEGETABLES.

Cabbages, per doz.	1s to 2s	Leeks, per bunch.	3d to 4d
Brussels Sprouts, per hf. sieve,	2s to 3s	Shallots, per lb.	6d to 8d
Broccoli, per doz.	2s to 3s	Garlic, per lb.	6d to 8d
Greens, per doz.	4s to 6s	Lettuce, Cab., per score.	4d to 6d
French Beans, per 100.	4s to 5s	— Cos, per score.	1s to 2s
Asparagus, per bundle.	5s to 9s	Radishes, per doz.	2s to 2s 6d
Seakale, per basket.	2s to 4s	Endive, per score.	1s 6d to 2s 6d
Rhubarb, p. bundle.	1s 3d to 1s 6d	Small Salads, p. pun.	2d to 3d
Potatoes, per ton.	85s to 150s	Horse Radish, p. bundle.	1s to 3s
— per cwt.	5s to 9s	Mushrooms, p. pott.	3s to 3s 6d
— per bush.	2s 6d to 4s 6d	Sorrel, per hf. sieve.	6s to 1s
Turnips, per doz.	3s to 4s	Artichokes, Jer., do.	1s to 1s 6d
Cucumbers, each.	4s to 6s	Fennel, per bunch.	2d to 3d
Celery, per bundle.	9d to 1s 6d	Savory, per bunch.	2d to 3d
Carrots, per doz.	6s to 8s	Thyme, per bunch.	2d to 3d
Spinach, per sieve.	2s to 3s	Farsley, p. doz. bunches.	2s to 3s
Onions, per bushel.	4s to 5s	Mint, green, p. bunch.	4d to 6d
— Spanish, p. doz.	2s to 5s	Basil, per bunch.	3d
Beet, per doz.	1s to 1s 6d	Marjoram, do.	2d to 3d
		Watercresses, p. 12 bun.	8d to 10d

#### WOOL.

BRADFORD, THURSDAY, March 3.—The transactions throughout the week have been limited, the prices sought acting as a barrier to business; the spinners having anticipated, with the great dullness that has existed, a corresponding decline in prices. But so dear has the stock in the market been generally bought, and no ease can be had now from the growers, that there is no disposition to sell, except at rates bearing no proportion with the current price for yarns. The closing sales of colonial and the Fair at Bristol yesterday were both marked by great firmness, at prices far too high for their destination.

COLONIAL WOOL SALES.—The series of sales, which during the last three weeks has been in progress in London, closed yesterday. There has been no variation in price from the commencement to the close; but great firmness has been maintained throughout, and the advance quoted at the commencement fully sustained to the last.

COAL MARKET.—FRIDAY, March 4.

Holywell, 12s.; Eden Main, 20s.; Walstead Biddell, 18s. 6d.; Walstead Hutton, 21s.—Ships at market, 7s.

HOPS.—BOROUGH MARKET, March 4.

Messrs. Pattenden and Smith report that the Hop market is still in a very healthy state, with prices gradually on the advance. Some choice lots of Sussex have realised 6l. per cwt. The demand for old Hops is also very extensive.

POTATOES.—SOUTHWAKE, Feb. 28.

During the past week there have been no arrivals coastwise or by rail, but a few cargoes have come up from France, which have met a ready sale at advanced prices. There is a considerable fleet of French cargoes at sea, that have been detained in the Channel by north-east winds. The following are this day's quotations:—York Regents, 110s. to 150s.; Lincolnshire do., 90s. to 120s.; Scotch do., 30s. to 110s.; Scotch Reds none; French whites, 90 to 105s.; Dutch, none.

HAY.—Per Load of 36 Trusses.

SOUTHFIELD, March 3.		Clover	
Prime Meadow Hay	85s to 95s	1st cut	95s to 105s
Inferior do.	75 80	Second cut	80 90
Rowen	50 60	Straw...	33 36
New Hay	— —		E. J. DAVIS.



**WATERPROOF PATHS.**—Those who would en-  
rich their Gardens during the winter months should consti-  
tute their walks of **PORTLAND CEMENT CONCRETE**, which  
is formed thus:—Screen the gravel of which the path is  
present made from the loam which is mixed with it, and to every  
part of clean gravel add one of sharp river sand. To five parts  
of such equal mixture add one of Portland Cement, and incorpo-  
rate the whole well in the dry state before applying the water.  
It must then be laid on 2 inches thick. Any labourer can  
spread it. No tool is required beyond the spade, and in 24  
hours it becomes as hard as a rock. Vegetation cannot grow  
through or upon it, and it resists the action of the severest frost.  
It is necessary, as water does not soak through it, to give a  
drain from the middle of the path towards the sides.

Manufacturers of the Cement, **J. B. WHITE & BROTH**  
Millbank Street, Westminster.



**HORTICULTURAL POTTERIES,**  
ADJOINING THE NURSERIES, STAPLETON ROAD,  
BRISTOL.

**MAULE AND SONS** are Manufacturers of all kinds of FLOWER-POTS of the most approved shapes and best designs for the cultivation of Plants, and which they are enabled to supply on reasonable terms.

List of Prices and Sizes forwarded on application.

The Nursery Trade supplied on most advantageous terms.—The above are securely packed in crates, and forwarded any distance. In large quantities arrangements are made to forward them loose in Railway Trucks, or Holds of Vessels, to Sea-ports.

**IMPROVED GRASS-CUTTING AND ROLLING MACHINE** FOR CUTTING THE GRASS OF LAWNS, &c. NEW AND POWERFUL DOUBLE-ACTING LIFT AND FORCE PUMP

FOR LIQUID MANURE AND GARDEN AND GENERAL PURPOSES. Drawings, particulars, and testimonials forwarded free on application to WILLIAM DODDS & Co., 102, Leadenhall Street, London.

**GREENHOUSE & CONSERVATORY BUILDING ESTABLISHMENT.**

HOT-WATER APPARATUS MANUFACTORY,  
KENSAL GREEN, HARROW ROAD, LONDON.

**JOHN TAYLOR** begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he had been extensively engaged.

**HOTHOUSES AND CONSERVATORIES.**

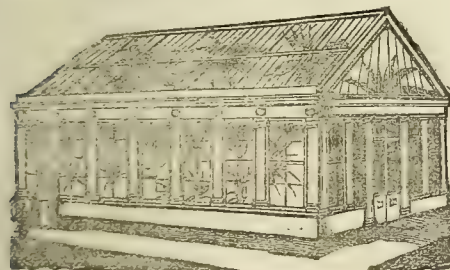


**JAMES WATTS, Hothouse Builder, Claremont Place, Old Kent Road,** has 200 CUCUMBER and MELON BOXES and LIGHTS of all sizes, ready for immediate use, made of well-seasoned materials, packed and sent to all parts of the Kingdom.

**HOTHOUSES, CONSERVATORIES, &c.,** made and fixed complete at a considerable reduction, and Garden Lights of every description. References may be had to the Nobility, Gentry, and the Trade, in most of the counties of England.

**HORTICULTURAL BUILDING AND HEATING BY HOT WATER.**

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



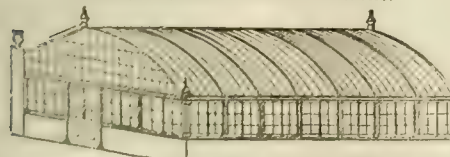
**GRAY AND ORMSON, Danvers Street, Chelsea,** London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

**HORTICULTURAL BUILDING AND HEATING BY HOT WATER.**

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



**J. WEEKS AND CO., King's Road, Chelsea,** Horticultural Architects, Hothouse Builders, and Hot-Water Apparatus Manufacturers.

The Nobility and Gentry about to erect Horticultural Buildings, or Hot-Water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that alady or gentleman can select the description of House best adapted for every required purpose.

The HOT WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Hothouses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the above.

The splendid collection of Stoves and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of Young Grape Vines in pots, from 6s. to 12s. each.

Plans, Models, and Estimates of Horticultural Buildings; at a Catalogue of Plants, Vines, &c., forwarded on application. J. Weeks & Co., King's Road, Chelsea, London.

**JAMES PHILLIPS & Co.,**  
116, BISHOPSGATE STREET WITHOUT.

**HARTLEY'S PATENT ROUGH PLATE GLASS**  
FOR CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTORIES  
SKYLIGHTS, &c.

Packed in Crates, for Cutting-up of the sizes manufactured.

	3 <sup>rd</sup> inch thick.	2 <sup>nd</sup> inch thick.	1 <sup>st</sup> inch thick.
30 inches wide and from 40 to 50 long	0 5 1/2	0 7 0	0 9 0
Or 20 " " 50 " 70 " "	0 6 0	0 7 1/2	0 9 1/2
above 70 " "	0 6 0	0 7 1/2	0 9 1/2

In Squares cut to the sizes ordered.

	3 <sup>rd</sup> inch thick.	2 <sup>nd</sup> inch thick.	1 <sup>st</sup> inch thick.
Under 8 by 6	0 4 0	0 5 0	0 6 0
8 by 6 and under 10 by 8	0 4 1/2	0 6 0	0 7 0
10 by 8 " 14 by 10	0 5 0	0 6 1/2	0 8 0
14 by 10 " 14 ft. sup. if the length does not exceed 20 inches	0 5 1/2	0 7 0	0 8 1/2
1 1/2 ft. sup. " 3 ft. sup. or if above 20 and not above 30 inches long	0 6 0	0 7 1/2	0 9 0

3 " " 4 " 20 "	30..	0 6 1/2	0 8 0	0 9 1/2
4 " " 5 " 30 "	35..	0 7 0	0 8 1/2	0 10 0
5 " " 6 " 35 "	40..	0 7 1/2	0 9 0	0 10 1/2
6 " " 8 " 40 "	45..	0 8 0	0 9 1/2	0 10 1/2
8 " " 10 " 45 "	55..	0 8 0	0 9 1/2	0 10 1/2
10 " " 12 " 55 "	65..	0 8 1/2	0 10 0	0 11 0
12 " " 15 " 65 "	75..	0 9 0	0 10 1/2	0 11 1/2
15 " " 20 " 75 "	90..	0 10 0	0 11 1/2	1 0 0
20 " " 25 " 90 "	100..	1 0 0	1 1 1/2	1 1 1/2
25 " " 30 " 100 "	120..	1 1 1/2	1 3 0	1 3 0
Quarties .....	0 6 0	0 7 1/2	0 9 1/2	1 0 1/2

PACKED IN BOXES OF 50 FEET EACH.

6 by 4 and 6 by 4 1/2 .. 10s. 6d. 7 by 5 and 7 1/2 by 5 1/2 .. 12s. 0d.  
8 by 6 and 8 1/2 by 6 1/2 .. 13s. 6d. 9 by 7 and 10 by 8 .. 15s. 0d.

JAMES PHILLIPS & Co., Horticultural Glass Merchants, 116, Bishopsgate Street Without, London.

**ESTABLISHED MORE THAN 100 YEARS.**

**THOMAS MILLINGTON, Importer and Dealer in GLASS FOR CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.**

WAREHOUSE, 57, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not Squares in boxes, 100 feet each.

	Under 6 by 4	6 by 4, 6 1/2 by 4 1/2	Under 9 by 7
16 ounces ... 3d. per foot.	...	...	...
21 ounces ... 4d. "	...	...	...
26 ounces ... 5d. "	...	...	...
32 ounces ... 7d. "	...	...	...

Large Sheet of No. 16, very superior, packed in cases of 100 200, and 300 feet, at 2d. to 2 1/2d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick; Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Glass Plate, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured; Glass Shades, round, oval, and square, for Clocks and Ornaments; Fern Shades and Dishes.

**GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.**

**HETLEY AND CO.** are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 100 feet
From 6 by 4	Under 6 by 4	1 1/2d.	150 12 6
7 " 5	7 " 5	2d.	0 16 8
8 " 6	8 " 6	2 1/2d.	0 18 9
9 " 8	9 " 8	3d.	1 0 10
10 " 8	10 " 8	3 1/2d.	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3 1/2d. per square foot, according to size.

21 oz. " 3 1/2d. to 5d. " " "

26 oz. " 3 1/2d. to 7 1/2d. " " "

**PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS** for Horticultural purposes, at reduced prices, by the 100 square feet.

**GLASS TILES AND SLATES** made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

**PATENT PLATE GLASS.**—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

**GLASS SHADES,** as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half.

List of Prices and Estimates forwarded on application to **JAMES HETLEY & Co., 35, Soho Square, London.**

**TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.**

**PATENT GLASS TUBES, Iron Coated with Glass,**

Gutta Percha, Combined into, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Stucco Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of **FREEMAN ROE, Hydraulic Engineer, 70, Strand, and Bridgefield, Wandsworth.**

P.S. Important to Farmers, &c.—F.R. begs leave to call attention to his New Water Power, which in many cases will supersede the use of the Steam Engine.

**STOUT SHEET GLASS, consisting of 13, 16, 21, and 28 ounces.**

In squares—8 by 6, 8 1/2 by 6 1/2, 9 by 7, 9 1/2 by 7 1/2, 10 by 8, at 1 1/2d. per ft.

10 1/2 by 8 1/2, 11 by 9, 12 by 9, at 1 3/4d. per ft.

Also Crown, English, and Foreign Sheet Glass, Sheet Lead, Pipe, White Lead, Oils, Colours, &c., at low prices, at **G. FARMILOR & SON'S, 118, St. John Street, West Smithfield.**

**BY HER MAJESTY'S ROYAL LETTERS PATENT.**

**ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.**—For Horticultural Buildings in Wood or Metal.

Horticultural Buildings, Churches, &c.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

**BAKER'S FOUNTAINS.**

THE PRESENTLY, BEAUFORT STREET, KING'S ROAD, CHELSEA.

**MESSRS. BAKER** can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

**Oxley and Co.'s ASBESTOS FILTER enlarged.**

Price 30s. each; small size, 15s.

**TAYLOR & PEARS, 8, George Yard, Lombard Street.**

Twenty Gallons of Pure Water per diem. All Mineral and noxious matter entirely separated by this process.

See *Lancet* and all the standard journals as to the value of ASBESTOS in filtration.

**H. WALKER'S NEEDLES** (by Authority the

"Queen's Own") with large eyes, are easily threaded, even by the blind, and have improved points, temper, and finish.

The labels are correct likenesses of the Queen and Prince Albert in relief on coloured grounds. Sent free by post by any respectable dealer on receipt of 13 stamps for every 1s. value. H. Walker's Royal, Palace, or Million Needles are cheaper, but of excellent quality. H. Walker's Drilled Dorcas are 25 for 1d., and his Regal 12 for 1d. Patentes of the Penelope Crochet, maker of Improved Fish Hooks, Hooks and Eyes, Steel Pens, &c.

H. WALKER'S Cab Fare Map of London shows any fare correctly, price 1s. coloured, post free, 1s. 2d.

1, Gresham Street West, London.

**MECH'S PAPIER MACHE TEA-TRAYS** are

decidedly the most unique and elegant ever manufactured.

The designs are various, as well as the prices, and the economical may be suited as easily as those whose wealth entitles them to seek for the most *riche* articles which art can produce.

The Papier Mache Work-tables, Work-boxes, Tea-caddies, Writing-cases, Inkstands, Hand-screens, Card-boxes, &c., are really superb. MECH has a stock of Dressing-cases not to be surpassed; also an immense assortment of Writing-desks, Table Cutlery, Sheffield Plated Ware, &c. His Cushioned Bagatelle Tables are renowned for their superior construction.

Manufactory, 4, Leadenhall Street, London.

**HEAL AND SON'S ILLUSTRATED CATALOGUE**

of BEDSTEADS, sent free by post, contains designs and prices of upwards of One Hundred different Bedsteads, and also their priced List of Bedding. They have likewise, in addition to their usual stock, a great variety of PARISIAN BEDSTEADS, both in wood and iron, which they have just imported.

HEAL & SON, Bedstead and Bedding Manufacturers, 196, (opposite the Chapel), Tottenham Court Road.

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# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 11.—1853.]

SATURDAY, MARCH 12.

[PRICE 6d.

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For particulars and Catalogues, apply to WILLIAM EDGEMORE BENDLE & Co., Seed Merchants, Plymouth.

ESTABLISHED MORE THAN HALF A CENTURY.

## EXCELLENCE AND ECONOMY COMBINED.

**SUTTON'S COLLECTIONS OF GARDEN SEEDS**  
THE BEST YET OFFERED.

**KITCHEN GARDEN SEEDS.**  
No. 1. A complete Collection for one year's supply of a large Garden ... £ s. d.  
... .. 2 10 0

No. 2. A complete Collection, in smaller quantities ... 1 10 0

No. 3. Ditto ditto ditto ... 1 1 0

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A List of the sorts and quantities contained in each Collection will be sent Post Free in return for one postage stamp; and if some of the sorts are already possessed, increased quantities of others will be given in lieu of those to be omitted.

## HARDY AND SHOWY FLOWER SEEDS,

(POST FREE).

Which may be sown where they are intended to bloom.  
No. 5. A Collection of the best 50 sorts known ... £0 10 6

No. 6. A Collection of the best 34 sorts known ... 0 7 6

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BOKHARA CLOVER, BORAGE, and OTHER SEEDS FOR BEES.  
Carriage Free by Rail to almost all parts of the Kingdom.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**NEW PLUMS.**—Although H. DOWLING has been patronised by Noblemen, Gentlemen, and others to an extent far beyond his most sanguine expectations, still he has, of two sorts, Angelina Burdett and Woodstock Black Gage, several fine trees to offer, and which, from their being grown in an exposed situation, he feels confident can be removed with safety throughout the present month. By reference to the *Garden of Chronicle*, Nov. 13, 1852, and subsequent dates, full particulars may be seen of the fruits, relative to size, colour, flavour, productiveness, and period of ripening, together with testimonials of unexceptionable authority. Descriptive circulars to be obtained of Mr. HENRY DOWLING, Woodstock Lane, Southampton.—March 12.

## STRAWBERRY PLANTS.

**CUTHILL'S BLACK PRINCE**, 5s. per 100; Cuthill's Prince of Wales, 20s. per 100; fine Lisianthus plants, 3s. 6d. to 5s. each; Cucumber Plants, &c. Cuthill's Pamphlet on the Potato, &c., 2s., or by post 2s. 4d. Cuthill on Market Gardening Round London, 1s. 6d.; by post 1s. 8d. Cuthill's Gas Stove can be had of Hood and Co., Iron Merchants, Earl-street, Blackfriars, London. Price 15s. Post-office orders on Camberwell-green.—JAMES CUTHILL, Camberwell, London.

## PELARGONIUMS AND NEW PLANTS.

**HENRY GROOM**, Clapham Rise, near London, by appointment FLORIST to HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the Nobility, Gentry, and Amateurs, that his Spring CATALOGUE of PELARGONIUMS AND NEW PLANTS is ready, and will be forwarded by post on application.

## SEED LISTS.

FOREST TREES, FRUIT AND ROSE TREES, &c.

**PETER LAWSON AND SONS' PRICE LISTS** of the above, suitable for this season, are now ready, and may be had free by post, or on application from their agent—J. C. SOMMER, 159, Fenchurch Street, London.

## MOSS ROSES.

**WILLIAM MARTIN AND SON**, South Street, Isleworth, beg to offer for sale 2000 Crimson Moss Roses, good strong two-year bedded plants, at 15s. per 100. Post Office orders on Brentford punctually attended to.

## AMERICAN NURSERY.

**GEORGE BAKER**, Windesham, near Bagshot, Surrey, Exhibitor of American Plants at the Royal Botanic Gardens, Regent's Park, begs to inform the nobility and public that he has published a Descriptive CATALOGUE of AMERICAN PLANTS, Conifers, Roses, Ornamental Shrubs, &c., &c., and may be obtained by enclosing two postage stamps. Near Staines Station, Windsor Branch, South-Western Railway.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his CATALOGUE of the above plants, Roses, Conifers, &c., is now published, and may be obtained by enclosing two postage stamps. The colours of all the Rhododendrons worthy of cultivation are described, in order to fix the purchase in selecting. The Rhododendrons, Azaleas, &c., annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

The American Nursery, Bagshot, Surrey, three miles from Blackwater Station, South-Eastern Railway, and four miles from Farnborough, South-Western Railway.

**CHARLWOOD AND CUMMINS** beg to announce that they have received their importation of AMERICAN TREE AND SHRUB SEEDS. Catalogues of which, as also of Agriculture, Garden, and Flower Seeds, will be forwarded on application.

14, Tavistock Row, Covent Garden, London.

## CHOICE FLOWER ROOTS FOR SPRING PLANTING.

**RANUNCULI**, superb, named and mixed.

**ANEMONES**

**GLADIOLI** ramosus and gandavense varieties.

**LILIUM LANCIFOLIUM**, album and rubrum.

**TIGRIDIA** (or Tiger Iris), 4 superb varieties.

For assortments and prices of the above, see Advertisement in *Gardeners' Chronicle* of Jan. 29, and Feb. 5 and 12; and also for List of Bulbs for Spring Planting, see our Seed and Plant List for 1853, page 96.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

## LAST OFFER OF SELECT NURSERY STOCK THIS SEASON.

**THE SUBSCRIBERS** beg to point out the great advantage in purchasing from these extensive Nurseries, situated in an exposed and cold part of the country, from which goods have given great satisfaction throughout the kingdom for many years.

12 Very best hardy Azaleas, 2 ft., bushy, with flower buds	18
12 Standard Berberis dulcis, with fine heads, do.	40
12 Abies Douglasii, 3 feet	80
12 do. Morinda, 3 to 4 feet, true and fine plants	20
12 do. Menziesii	20
12 Cedar of Lebanon, 2 to 3 feet, fine plants	20
12 Pinus Cembra, 3 feet, fine specimens	20
12 Pinus excelsa, 2 to 3 feet, do. do.	20
12 Scarlet Arbutus, 2 to 3 feet, in pots	18
12 Fancy Esculents, 5 to 6 feet, handsome plants	12
12 Handsome Rhododendrons, 2 to 3 feet, scarlet, crimson, purple, white, and all shades of colours, selected from more than 100 sorts	20
100 Rhododendrons, hardy scarlet, 2 feet	50
100 do. campanulatum, from seed, extra, transplanted, seven years old, stout and bushy	60
100 Cedar of Lebanon, 14 to 2 feet, extra, transplanted	60
100 Flowering and Evergreen Shrubs, two of a sort	20
100 Fine double Hollyhocks	20
100 Showy and best Herbaceous plants	40
100 Dwarf Roses, splendid prize varieties, two of a sort	30
100 do. good mixture	20
100 Standard Roses, splendid prize varieties, 31 ft., stem fine	60
100 Evergreen Privets, 2 to 3 feet, strong, for game coverts	30
1000 Laurels, 3 feet	100
1000 Green Hollies	30
1000 English Oaks, extra, transplanted, 4 to 6 feet	40

## FRUIT TREES.

per doz.—s.  
Apples and Pears, standards, 4 to 5 feet, stem very fine  
" dwarf, &c., trained  
Cherries and Plums, standards, 5 feet  
" dwarf, &c., trained  
Nuts, of sorts, large plants, 3 to 4 feet  
Rhubarb, best sorts, true, per 100  
All orders should be sent as soon as possible; and a reference is respectfully solicited from unknown correspondents.  
WILLIAM JACKSON & Co., Gedale, Yorkshire.

## GLOXINIA IMPERIALIS (HENDERSON'S).

**EDWARD GEORGE HENDERSON AND SON** are now prepared to send free by post, at 7s. 6d. each, the above new and beautiful Gloxinia, which they can with confidence recommend. It is a fine large hold flower, of good form, and first-rate habit; the lips are of a delicate lavender white, with a deep purple centre. The usual discount to the Trade, and one Gratis when three are ordered.

E. G. H. & Son will forward their new Seed Catalogue, post free, on application, containing all the novelties of the season. Wellington Nursery, St. John's Wood, London.

## FLOWER SEEDS FREE BY POST.

50 Packets of Annuals, 8s. 6d.; 25 do., 4s. 6d.; 12 do., 2s. 6d. 25 Packets of Superior Annuals, 5s. 6d.; 12 do., 3s. 25 Packets of Perennials and Biennials, 5s. 6d.; 12 do., 3s. Also every variety of KITCHEN GARDEN SEEDS of the best quality.—Apply to ROBERT WESTMACOTT, Florist and Seedsman, Stuart's Grove Nursery, Fulham Road, Chelsea.

## HEPATICAS.

**WILLIAM FIELD, FLORIST, Flookersbrook**, Chester, begs to offer strong three and four year old Plants of the Single White, Blue, and Red HEPATICA, at 26s. per 100, or 10l. 10s. per 1000, which will make a good show this spring; plants added for carriage.

N.B.—A remittance or reference from unknown correspondents; catalogues of Herbaceous Plants gratis, on application. Flookersbrook, March 12.

## TWO OF THE LARGEST AND BEST MARROWFAT PEAS EVER INTRODUCED.

**WAITE'S KING OF THE MARROWS** and **FAIRBEARD'S WILL WATCH**, 21s. per bushel; for quantities not less than 1 peck. J. G. WAITE, Seed Merchant, 181, High Holborn, London.

## PARSON'S GREEN, FULHAM.

**T LOCKHART, FLORIST AND SEEDSMAN**, has removed from 84, Fleet Street, to his premises as above, where he requests all former orders may be addressed.—50 Finest Herbaceous Plants, 25s.; Myatt's and other Strawberry Plants, 4s. per 100; Dahlia Seed, saved from 50 best sorts, warranted, 2s. 6d. per packet; Hollyhock, of the finest quality, 1s. per packet; 50 Packets of Choice Annuals, 8s.—A Dahlia List, free by post, for one penny postage stamp.

## MAGNIFICENT NEW ANNUALS.

**J. CARTER, SEEDSMAN AND FLORIST**, 236, High Holborn, London, begs to inform amateurs and the trade in general that he has now received the new GOMPHRENA, imported by him from Western Mexico, which he can recommend as the most striking novelty of the season. The plant resembles the Gomphrena globosa, or Globe Amaranthus, but is decidedly a new and finer species. The flowers, of a brilliant orange, with bright yellow stigmas, literally cover the stems. To be had in packets at 1s. and 2s. 6d. each; trade packets 10s. and 20s. each, or per ounce. Also a superb new SCHIZANTHUS, from Colchagua, Andes; habit similar to Schizanthus tenuis, but a new species; flowers large, and from the specimens received, apparently of a rich blue. This will also prove a great acquisition. Price 1s. and 2s. 6d. per packet; trade packets 10s. each.

JAMES CARTER, Seedsman and Florist, 238, High Holborn.

## IMPORTED GERMAN ASTERS.

10 Splendid varieties, Globe mixed ... 6d. per packet.  
10 do. do. Dwarf, 6 inches ... 6d. "  
20 do. do. Pyramidal ... 6d. "  
30 do. do. Tall ... 6d. "  
King John Balsam, new extra dwarf, double, particularly adapted for pot culture, 1s. per packet. Selected Potato Seeds, early or late, round or kidney, 6d. per packet of 4000 seeds. All post free.

Hardy's "Treatise on the Practical Culture of the Potato," &c. Second edition, 6d. General Priced Retail Seed Catalogue, free on application.

ABRAHAM HARDY & SON, Seed-growers, Maldon, Essex. Remittances requested, which may be made in stamps, or by Post Office order on Maldon.

**MR. WICKS' collection of CAPE BULBS**, comprising many thousands of new and rare species, will be sold for the highest offer before March 25; they may be seen, on application to J. RAWLINGS, 89, Bridport Place, New North Road, London.

## RHUBARB.

**FOR SALE**, at 30s. per 100, **VICTORIA, ALBERT**, or **LINNEUS**. Any quantity of the above description can be had in splendid condition.—Apply to Mr. WM. HARNETT, the Cottage, New Cross, Kent, adjoining the Brighton and Croydon Railway Station.

**LIME TREES**, 8 to 12 feet high.—Several Thousands of the above for Sale, at 30s. per 100.

Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

## A LARGE QUANTITY OF ONE YEAR SEEDLING LARCHES.

**WILLIAM WOOD AND SON** have a fine Stock of the above to offer to their Friends.—Prices (which are moderate) will be furnished on application. Woodlands Nursery, Marshfield, near Uckfield, Sussex.

## TO THE SEED TRADE.

**FROM 12 TO 15 QUARTERS OF PICKED WOODFORD MARROW PEAS**, direct from the farmer, and growth of 1852.—Sample and price may be had of Mr. JOHN BLACK, Salesman, Covent Garden Market, London.

**ASH-LEAF POTATOES**, all good set size, 5s. per bushel. Jackson's Improved Kidneys, ditto. Early Show and Early Prolifics, 2s. 6d. per bushel.—Apply to Mr. B. CANN, Nurseryman, Colchester, Essex.

## FLOUR BALL POTATOES FOR SALE.

Of first-rate quality, in quantities of not less than 10 pecks, at 2s. per peck.—Application to be made to WILLIAM BERRY, Welham, Retford, Notts.

Post Office orders, made payable at Retford, must accompany all orders.



# YOUELL & CO. BEG TO OFFER THE FOLLOWING:—

## FRUIT TREES.

**APPLES**, standard, on stems, 5 to 6 feet, bushy, 12s. per dozen.  
 dwarf trained, strong, 30s. per dozen.  
 Pears, standard, on stems 5 to 6 feet, good heads, 18s. per dozen.  
 dwarf trained, strong, 30s. per dozen.  
 Cherries, standard, on stems 5 to 6 feet, 15s. per dozen.  
 dwarf trained, strong, 42s. per dozen.  
 Apricots, dwarf trained, very strong, 3s. 6d. to 5s. each.  
 Peaches and Nectarines, do. do., 3s. 6d. to 5s. each.  
 Plums, do. do., 2s. 6d. each.

**THE TRUE FASTOLFF RASPBERRY**, first introduced to the horticultural world by us, still maintains its superior qualities over every other Red Raspberry in cultivation, can be supplied in strong canes at 15s. per 100. Usual discount to the Trade.  
 Large white Raspberry, of unequalled size and flavour, admirable for the dessert, 24s. per 100.  
 Gooseberries, the finest prize sorts, selected for size and flavour, in strong bushes, 4s. per dozen.  
 Currants, all the most approved sorts, viz., New White Dutch, Ruby Castle, Black Naples, &c., in strong bushes, 4s. per dozen.  
 Strawberries, all the finest varieties, 3s. 6d. per 100.  
 Rhubarb, strong undivided roots of Myatt's Victoria and Linnaeus, 8s. per dozen.  
 Figs, Brown Ischia, strong, 2s. 6d. each.  
 Asparagus (Giant), 3 years, per 100, 3s. 6d.; 2 years, 2s. 6d. per 100.  
 Seakale, very strong, 6s. per 100.  
 \*Owing to the luxuriant growth the latter make in our sea-coast nursery, the roots are very fine and healthy.

## CONIFERÆ (In Pots).

**Aracaria imbricata**, the massive appearance and unique character of this tree, joined to its extreme hardiness, entitle it to the first place among hardy trees. We possess a large stock, and beg to offer it as follows:—

12 to 15 inches	...	30s. per dozen.
2 feet	...	51s. "
3 feet	...	15s. each.

Fine large specimens, 4 guineas each.  
**Cedrus Deodara**, the sacred Cedar of the Himalayas.—  
 1 year, from seed ... 20s. per 100  
 2 years, do. ... 30s. "  
 15 to 18 inches, do. ... 12s. per dozen.  
 18 inches to 2 feet, do. ... 24s. "  
 24 to 3 feet ... 42s. "  
 3 to 4 feet, splendid plants ... 60s. "  
 5 to 6 feet, fine specimens ... 15s. each.  
 6 to 7 feet ... 21s. "

**Irish Yews**, 2 to 3 feet ... 9s. per dozen.  
**Taxus pyramidalis**, or new upright Yew, 12 to 15 ins. 18s. "  
 " *adpressa*, 6 inches ... 12s. "  
 " *Dovastonii*, or weeping Yew ... 18s. "  
 " Gold variegated ... 12s. "  
**Thuja pendula** ... 18s. "  
 " *Doniana* ... 5s. each.  
**Cupressus Lambertiana**, 15 to 18 inches ... 2s. 6d. "  
 " *Goveniana*, 18 inches to 2 feet ... 3s. 6d. "  
 " *Funebris*, 15 inches ... 3s. 6d. "  
 " *Umbellata*, 9 to 12 inches ... 12s. per dozen.  
 " 14 to 2 feet ... 18s. "  
**Juniperus Bedfordiana**, 9 to 12 inches ... 9s. "  
 " 2 to 3 feet ... 3s. 6d. each.  
 " *squamata* ... 9s. per dozen.  
 " Irish, a very ornamental species, of most symmetrical form, 1½ to 2 feet, very strong ... 12s.  
**Pinus excelsa**, or tall growing, this fine Fir, from the Himalayas, has long silvery foliage, and is of very rapid growth. It merits a place in even the smallest collections.

6 inches, in pots	...	6s. per dozen.
12 to 18 inches, bushy	...	9s. "
18 inches to 2 feet	...	12s. "
3 to 4 feet, very strong	...	30s. "
5 to 6 feet, fine specimens	...	60s. "
6 to 9 inches, bedded	...	4s. "
18 inches to 2 feet, bedded	...	40s. per 100.

**Pinus Gerardiana**, a very robust dwarf species, from the Himalayas; it makes a pretty object in situations where very tall trees are not desirable, its maximum height being 50 feet.  
 Strong bushy plants, 6 inches ... 40s. per 100; 6s. per dozen.  
**Pinus Cembra**, 2 to 3 feet ... 30s. "  
**Cedrus Libanus**, 18 inches to 2 feet ... 12s. "  
 " 2 to 3 feet ... 24s. "  
 " *Atlantica*, the Silver Cedar of Mount Atlas, 12 to 20 inches ... 3s. 6d. each.

**Picea Pinowir**, this fine species of silver Fir recommends itself by its very long foliage and robust habit, closely resembling *P. Webbiana*, 4 to 6 inches, strong ... 3s. per dozen.  
**Picea Pinsapo**, from the mountains of Spain; the leaves of this species are strong and rigid, and arranged on the stem in the manner of a bottle brush, a very distinct and beautiful species. 3 years, from seed, strong ... 18s. per dozen.

Fine specimens, 2 to 3 feet in height, and as much through ... 15s. to 21s. each.  
**Picea cephalonica**, 15 to 18 inches ... 2s. 6d. "  
**Abies morinda**, a fine robust species of Spruce, of a weeping habit, from the Himalayas, 2 to 3 ft. 30s. per dozen.  
 9 to 12 inches ... 6s. "

**Abies Menziesii**, a very distinct species of Spruce, with foliage silvery on the underside, 12 to 18 inches, 12s. per dozen; 18 to 24 inches ... 2s. 6d. each.  
**Abies Pumila**, dwarf species of Spruce, forming a dwarf compact shrub ... 12s. per dozen.  
**Abies orientalis** (true), another dwarf species, very ornamental, 6 to 9 inches, bushy ... 18s. "  
**Cryptomeria japonica**, from seeds 1½ to 2 feet ... 60s. "  
 " 2 to 3 feet ... 24s. "  
**Podocarpus Totara**, 12 to 18 inches ... 24s. "  
**Dacrydium Franklinii** ... 2s. 6d. each.

## HARDY SHRUBS AND TREES.

**Quercus Fordii**, a hardy and very ornamental evergreen Oak, with twisted foliage, 12 to 15 inches, 12s. per dozen.  
 Do. do., 18 inches to 2 feet, 18s. per dozen.  
 Do. do., 2 feet to 3 feet, 30s. per dozen.  
**Quercus rotundifolia**, 1½ to 12 inches, 3s. 6d.  
 " *ballota*, 9 to 12 inches, 2s. 6d.  
 " *sempervirens grandifolia*, 3s. 6d.  
 " *flex var. Humel*, a very fine variety of the evergreen Oak with very broad foliage, 18 inches to 2 feet, 3s. 6d. each.  
 Do. do., 2 to 3 feet, 5s. each.  
**Standard Thorns**, 1s. 6d. to 2s. 6d. each.  
 Weeping Ash, on 8 to 10 feet stems, very strong and bushy, fine specimens, 2s. 6d. each.

**Forsythia viridissima**, 14 to 2 feet, strong and bushy, 12s. per doz.  
**Weigela rosea**, 2 to 3 feet, bushy, 18s. per dozen.  
**Eunonymus japonicus foliis var.**, one of our best variegated shrubs, of dwarf and compact habit, 9 to 12 inches, bushy, 9s. per dozen.  
 Do. do., 12 to 18 inches, do., 12s. per dozen.

**Ilex latifolia**, this variety, with fine Laurel-like foliage, is quite unique among Hollies; strong plants, 12 to 18 inches, 18s. p. doz.  
**Ilex Sheppardii**, a fine variety, with very broad foliage, remarkable for the size and profusion of its flowers, 12s. per dozen.  
 Bays, 1½ foot, 5s. per dozen.  
 " *ucuba*, 1½ foot, 6s. per dozen.

**Standard Thorns**, 1s. 6d. to 2s. 6d. each.  
 Weeping Ash, on 8 to 10 feet stems, very strong and bushy, fine specimens, 2s. 6d. each.

**Forsythia viridissima**, 14 to 2 feet, strong and bushy, 12s. per doz.  
**Weigela rosea**, 2 to 3 feet, bushy, 18s. per dozen.  
**Eunonymus japonicus foliis var.**, one of our best variegated shrubs, of dwarf and compact habit, 9 to 12 inches, bushy, 9s. per dozen.  
 Do. do., 12 to 18 inches, do., 12s. per dozen.

**Ilex latifolia**, this variety, with fine Laurel-like foliage, is quite unique among Hollies; strong plants, 12 to 18 inches, 18s. p. doz.  
**Ilex Sheppardii**, a fine variety, with very broad foliage, remarkable for the size and profusion of its flowers, 12s. per dozen.  
 Bays, 1½ foot, 5s. per dozen.  
 " *ucuba*, 1½ foot, 6s. per dozen.

**Standard Thorns**, 1s. 6d. to 2s. 6d. each.  
 Weeping Ash, on 8 to 10 feet stems, very strong and bushy, fine specimens, 2s. 6d. each.

**Forsythia viridissima**, 14 to 2 feet, strong and bushy, 12s. per doz.  
**Weigela rosea**, 2 to 3 feet, bushy, 18s. per dozen.  
**Eunonymus japonicus foliis var.**, one of our best variegated shrubs, of dwarf and compact habit, 9 to 12 inches, bushy, 9s. per dozen.  
 Do. do., 12 to 18 inches, do., 12s. per dozen.

**Ilex latifolia**, this variety, with fine Laurel-like foliage, is quite unique among Hollies; strong plants, 12 to 18 inches, 18s. p. doz.  
**Ilex Sheppardii**, a fine variety, with very broad foliage, remarkable for the size and profusion of its flowers, 12s. per dozen.  
 Bays, 1½ foot, 5s. per dozen.  
 " *ucuba*, 1½ foot, 6s. per dozen.

All Orders of £2 and upwards are delivered Carriage Free to London and Hull, as well as to any Railway Station within 150 miles of the Nursery.

Post Office Orders to be made payable to YOUELL & CO., Royal Nursery, Great Yarmouth.

Roses, a fine collection of the most approved varieties for summer and autumn blooming; standards, per dozen, 18s.; half do., 15s. per dozen; dwarf on own roots, 6s. per dozen.  
 Ayrshire and other Roses, very strong, for thicket planting, 20s. per 100.  
 Rose, Paul's Queen Victoria, standards and half standards (buds), 3s. 6d. each.

**Catalpa syriaca**, 2 to 3 feet, 9s. per dozen.  
**Escallonia macrantha**; our experience of last season proves this to be one of the most handsome, hardy evergreen flowering shrubs that we possess; 1s. each.  
**Erica ciconoides**, fine hardy variety, like *Arborea*, but better, 1s. 6d. each.  
 " *Mediterranean*, 6s. per dozen.

## HARDY CLIMBERS.

**Hedera Regemiana**, or Giant Ivy, 1s. 6d. each.  
 " *silver-striped*, 1s. each; *palmated*, 1s. 6d. each.  
 " *Irish*, 6s. per dozen.  
**Jasminum revolutum**, very strong, 1s. 6d. each.  
 " *nudiflorum*, 1s. each.

**Clematis**, sweet-scented, 9s. per dozen, very strong.  
 " *montana*, 12s. per dozen.  
 " *Sieboldii* and *azura grandifolia*, 18s. per dozen.  
 " *florida* and *ditto*, double, 1s. each.  
 " *Hendersonii*, 1s. each.

**Honeysuckle**, Scarlet Trumpet, &c., 1s. each.  
**Bignonia radicans superba**, 1s. 6d. each.  
**Passiflora cærulea**, 1s. each.  
**Pyrus japonica**, 9s. per dozen.  
**Escallonia rubra**, 12s. per dozen. **Pyraeantha**, 9s. per dozen.  
**Wistaria sinensis**, 1s. 6d. to 3s. 6d. each.

**Boursault**, Ayrshire, Noisette, and other climbing Roses, in strong plants, 4s. per dozen.  
**Ceanothus americanus**, hardier than *C. azureus*, 12s. per dozen.  
 " *rigidus*, the hardiest and best of the new Californian species, 2s. 6d. each.

**Cotoneaster myophylla**, admirable for walls; its white flowers and coral berries form a striking contrast to its dark green foliage; 9s. per dozen.

## GREENHOUSE PLANTS.

**Camellias** of the finest varieties, set with buds, in good strong plants, 30s. per dozen; without buds, 21s. per dozen.  
**Ericas**, fine blooming bushy plants, in large 48s, 12s. per dozen; smaller do., 9s. per dozen.

**Epacris**, nice plants, in small 48s, in many fine varieties, 9s. p. doz.  
**Cinerarias**, choice kinds and showing flower, new varieties, 9s. per dozen.  
**Mandevilla suaveolens**; this fine creeper, of robust habit, produces numerous bell-shaped, highly fragrant flowers, of the purest white, in large clusters; strong plants, 1s. 6d. each.

**Passiflora racemosa cærulea**, the hardiest and best for a greenhouse, producing in abundance its pretty purple flowers; strong plants, 1s. 6d. each.

**Passiflora Bellotti**, a fine peach-coloured new variety, 2s. each.  
**Mitrasia coccinea**; this fine new shrub produced its fine scarlet bladders freely in our nursery last season, on plants in 48s. We confidently recommend it as highly ornamental; it makes a beautiful specimen; strong plants in large 48s, 1s. 6d. each; a few fine specimens, 3s. 6d. to 5s. each.

**Philadelphus mexicanus**, a neat dwarf shrub, producing flowers as fragrant as the Orange, 12s. per dozen.  
**Aphelaxis**, fine varieties, flowering plants, 1s. each.  
**Crassula Louis Napoleon Bonaparte**, new deep scarlet variety, strong, 1s. 6d. each.

**Statice puberula**, the prettiest, perhaps, of the genus, producing its pretty blue and white flowers nearly through the season; strong plants, 9s. per dozen.  
**Leschenaultia formosa**, 12s. per dozen.

**Sollya Drummondii**, a neat blue flowering creeper, suitable for trellises, 18s. per dozen.  
**Burchellia cæspitosa nana**, this fine old favourite, 12s. per dozen.  
**Acacia armata** and *linearis*, fine plants, full of flower, 9s. p. doz.

**Geraniums**, White Unique (Henderson's), 3s. 6d. each.  
 " *Moore's Victory*, 1s. each.  
 " *triste*, 1s. 6d. each; *bicolor*, 2s. each.  
 " *echinatum roseum*, 1s. 6d. each.  
 " *ardens major*, 9s. per dozen.  
 " *quinquevulnerum*, 2s. 6d. each.  
 " *Bagshot Park*, 1s. 6d. each.  
 " *curate*, 1s. 6d. each; *Blandfordianum*, 1s. 6d. each.  
 " *fine fancy varieties*, 9s. per dozen.

**FINE STOVE CLIMBERS**, viz.: **Passiflora alata**, 1s. 6d. each; **P. Bonaparteana**, 1s. 6d. each; **P. principis**, 2s. 6d. each; **Ipomoea mutabilis** and *Leardi*, 1s. 6d. each; **J. Lee's Hybrid**, 2s. 6d. each; **Stephanotis floribunda**, 2s. 6d. each; **Stigmaphyllon ciliare**, 1s. 6d. each; &c. &c.

**Epiphyllum truncatum Bridgesii**, Ruckerii, violacea, and *Russelliana*, 1s. 6d. each. These are most beautiful, flowering through the dull months of winter.

**Gloxinias**, of the newest and best kinds, 9s. per dozen.

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**Gladioli insignis**, a fine robust species, producing during the summer and autumn months long spikes of glowing scarlet flowers, almost too dazzling to look upon, 6s. per dozen.  
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**Dielytra spectabilis**; this fine hardy herbaceous plant ranks among the most beautiful plants received from China; strong plants, 12s. per dozen.  
**Peonies** (herbaceous), in 20 fine new varieties, 1s. each.

**HOLLYHOCKS**, the following superb varieties, 12s. per dozen, viz.: **Walden Gem**, **Magnum Bonum**, **Comet**, **Mr. C. Baron**, **Obscura**, **Rosa rubra**, **Princess Royal**, **Bicolor**, **Eclipse**, **Queen**, **Conspicua**, **Delicata**, with other fine varieties.

Seed saved from the above, 2s. per packet.  
 New Belgian Daisies, in 50 finest varieties, 4s. per dozen.  
**Berberis Darwinii**, 18s. per dozen.  
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**Lily of the Valley**, fine strong roots, 4s. per 100.  
**Oxalis floribunda**, one of the finest of our hardy perennials, producing its pretty pink flowers in profusion through the summer and autumn, 6s. per dozen.  
**Oxalis elegans** and *elegans major*, two pretty species, very free bloomers, 9s. per dozen.

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**Pansies** (our collection comprises all the known varieties of merit), strong plants, 6s. to 12s. per dozen.  
**Rockets**, double white, 3s. per dozen; double purple, 6s. per dozen; crimson, 18s. per dozen.

**Primroses**, the old double scarlet or maroon; we are fortunate in possessing a good stock of this rare though fine old plant. Strong plants, 12s. per dozen; double white, 3s. per dozen; lilac, 4s. per dozen; purple, 6s. per dozen.

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**SAMUEL FINNEY** and Co. are now sending out choice selections of the most showy and hardy Flower Seeds, such as they are certain will succeed well with the most ordinary management in cold and exposed situations. Per 100 packets, 14s.; 50 ditto, 7s. 6d.; 25 ditto, 4s.; 12 ditto, 2s. 3d.

Their Seed Catalogue, containing descriptive lists with prices of the best and most approved Garden, Agricultural, and Flower Seeds, may be had free on application. Also their descriptive priced Catalogue of Florist's Flowers and Bedding-out Plants. They have a fine lot of Seedling Calceolarias and Cinerarias, raised from the best varieties in cultivation, strong healthy plants, in 4-inch pots, at 6s. per dozen, basket and package included.—Gateshead Nursery, Newcastle-upon-Tyne, March 12.

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**NEW VEGETABLE SEEDS**, all Free by Post, SOLD BY

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**COLE'S CRYSTAL WHITE CELERY**.—This is a Dwarf kind, rarely exceeding 18 inches in height, is very solid, crisp and fine flavoured, and if sown at the same time as the Red variety, will come into use a month earlier, and continue good a month later. See Mr. Cole's advertisement in this Paper. 2s. 6d. per packet, or small ones 1s. per packet.

**BROCCOLI—COMING'S RELIANCE SUPERB, LATE WHITE**.—This variety is for the first time introduced to the public, the entire stock having been procured from Mr. Coming. It was thus recommended by Mr. Newman, Gardener to the Right Hon. the Earl De La Warr, of Bourn Hall;—"I beg to inform you that I consider it the best late Broccoli I ever saw. It has given me great satisfaction. I have exhibited it at many Horticultural Shows, and won the first prize at Cambridge. It is of a dwarf habit, and the leaves form round the head, so that it is quite protected from the rays of the sun. I have cut it very good the first week in June." Mr. Coming says—"I am very much pleased with your Wilcove Broccoli, and have strongly recommended it to many Gardeners, but you will find that my variety is quite a fortnight later." We have only a limited quantity on sale at 2s. 6d. per packet.

**RENDLE'S SUPERB WILCOVE**.—This is acknowledged by all the leading Horticultural writers and growers to be by far the best Spring Broccoli in cultivation. Six heads were exhibited in London in May last, weighing more than 80 lbs. We have no hesitation in saying that this is the best late Broccoli in existence. We have a good stock of seed of OUR OWN SAVING. 1s. per packet.

From a Forester and Gardener in Aberdeenshire  
 "I have been very successful with your Wilcove Broccoli in taking all the prizes offered by the Aberdeenshire Horticultural Society."

**PARSELY—Rendle's Treble Garnishing**. This has been proved by the London Horticultural Society to be the best variety they have met with. It is described in their Journal as being "beautifully curled, and an excellent variety." 6d. per packet.

**Do, Mitchell's Winter Matchless**. A very superior curled variety, and will stand the winter well, being peculiarly hardy. It can be highly recommended. 6d. per packet.

**CABBAGE—Enfield Market**. This variety is called by some the "King of the Cabbages," and well does it deserve the name. It is undoubtedly one of the best varieties now in existence. 6d. per packet.

**LETTUCE—New Crystal Cos**. This is a very desirable new variety. 6d. per packet.

**CUCCUMBER—Cuthill's Black Spine**. A very superior variety, saved by Mr. Cuthill, of Camberwell. 1s. per packet.

**BEAN—New Silver Curled**. 1s. per packet.  
**Do, Early Blood Red Turnip**. From France. 1s. per packet.  
**Do, Small Deep Red Castlemaudray**. A new Continental variety. 1s. per packet.

**Do, Bassano**. 1s. per packet.  
**LEEK—Large Musselburgh variety**. Procured direct from Scotland. 6d. per packet.

**TURNIP—Robertson's Golden Ball**. This is a most excellent new variety of Yellow Turnip. 6d. per packet.  
**Do, Orange Jelly**. This is a most valuable sort, and can be well recommended. 6d. per packet.

**Do, Early Finland**. A capital sort, of a bright yellow. It is of good shape, with a small spill root. It is a very clean grown and good variety. 1s. per oz.

**Do, Golden Globe**. An excellent new sort. 1s. per packet.  
**N.B.** The above four varieties of Turnips should be grown by all who have gardens.

**ONION—New Deep Blood Red**. A recent importation from the Continent, said to be most excellent. 6d. per packet.  
**Do, very large Flat Madeira**. A variety of immense size, and highly recommended. 6d. per packet.

**Do, Pear-shaped Blood-red**. Quite new. 6d. per packet.  
**Do, Pear-shaped White**. Quite new, from France. 6d. per packet.

**PACK-CHOI**.—A new sort of Chinese Cabbage. 1s. per packet.  
**PE-TSANG**.—A new sort of Chinese Cabbage. 1s. per packet.

**LETTUCE—Sunteed Hoosang Shanghai**. 1s. per packet.  
**Do, Hoosang**. 1s. per packet.

These two Chinese varieties of Lettuce were procured from the London Horticultural Society.  
**Do, White Bruno Cos**. A very large sort, quite new. 1s. per packet.

**Do, Green Paris Cos**. The true variety, direct from Paris. 6d. per packet.  
**Do, large Imperial Cabbage**. A Continental variety, new. 1s. per packet.

**Do, Oak-leaved**. 1s. per packet.  
**Do, Artichoke-leaved**. 1s. per packet.

**BROCCOLI—Gillespie's White**. A variety introduced from Scotland. 1s. per packet.  
**SAVOY—New Victoria Curled**. New. 6d. per packet.

**CARROT—White Turnip-rooted**. 1s. per packet.  
**Do, Pure White, or Transparent**. This is quite new, being a very short variety. 1s. per packet.

**Do, Orange Green-top Belgian**. New. 6d. per packet.  
**RADISH—Yellow Turnip Summer**. New. 6d. per packet.  
**Do, Yellow Small Early**. New. 6d. per packet.

**Do, Olive Deep Scarlet**. New. 6d. per packet.  
**Do, Purple Spanish**. 6d. per packet.  
**Do, Red Autumn**. 6d. per packet.

**CALIFLOWER—Stadholder**. Fine large late variety. 1s. per packet.  
**BORECOLE—Variegated Green Curled**. 6d. per packet.  
**Do, Lacinated Variegated**. 6d. per packet.

Two new Continental varieties.  
**CELERIAC—Turnip rooted**. 6d. per packet.  
**LOVE APPLE—Cherry shaped**. 6d. per packet.  
**Do, Pear shaped**. 6d. per packet.

**MELON—Orange Cantaloupe**. 1s. per packet.  
**Do, Honfleur**. Large netted. 1s. per packet.  
**Do, Tiley's Bromham Hall**. A very superior green-flesh variety. 1s. per packet.

**Do, Nonsuch**. Green-flesh; a most excellent sort. 1s. per packet.  
**Do, Victory of Bath**. Of great merit. 1s. per packet.  
**Do, Camerton Court**. Very good variety. 1s. per packet.

**Purchasers' Selection of 20 packets of the above for 10s., free by post.**  
**WILLIAM EDGUMBE RENDLE & Co.**, SEEDSMEN, PLYMOUTH.  
**ALL THE ABOVE SEEDS SENT FREE BY POST.**







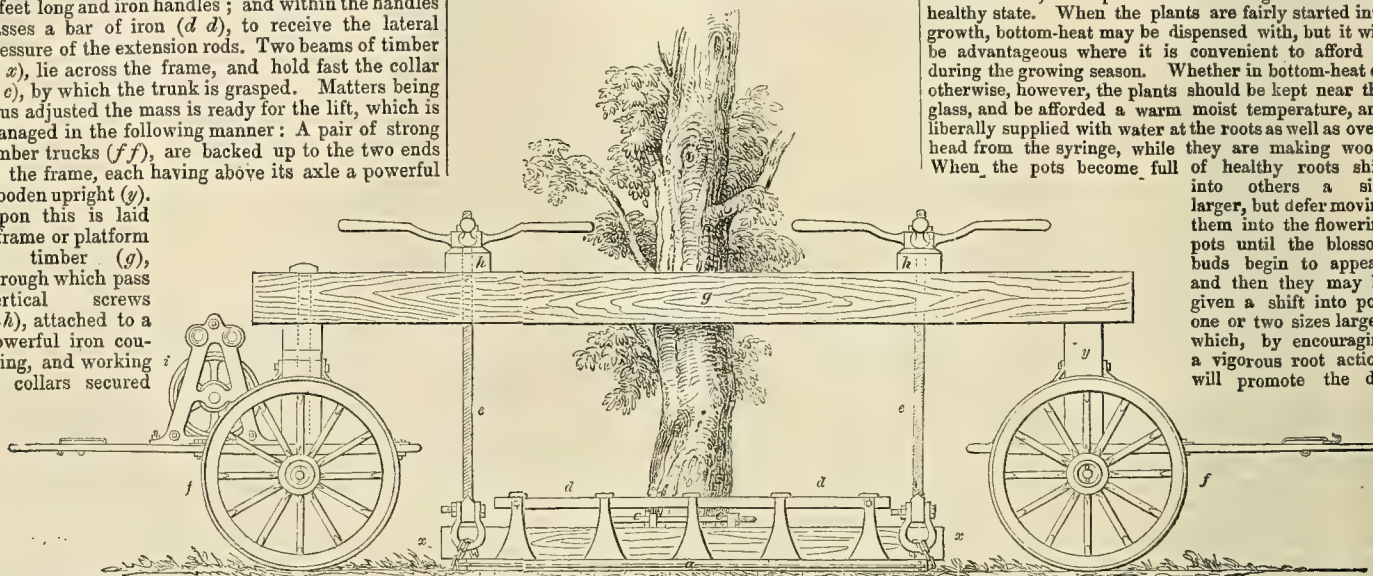
will be converted from a cube into a wedge with the point downwards, by which means the earth becomes secured within the four spade blades. After this a collar is fixed to the stem of the plant, and to the two opposite sides of the iron frame (*a*), grasping the plant firmly and preventing its slipping. The next point is to attach to the four corners of the iron frame as many hooks (*d*), through which is passed a pair of handles, such as are used for a sedan chair (*e*); and then the plant is ready to be lifted, which is done by two or more men raising the plant by its handles. Thus raised, it can be removed to any other place without disturbance, and a hole having been previously prepared, left there by unfastening the collar, withdrawing the spades, and uncoupling the iron frame.

The time consumed in this operation need not exceed 10 minutes for an apparatus worked by four men.

In the case just described, the lift is taken by two or four men acting upon a pair of horizontal bearers. But when great weights have to be moved, then mechanical power is applied, as shown in the accompanying representation of the machinery actually employed on Saturday. In this case the frame (*a*) is of very strong T iron. The spades (*b*) have blades 3 feet long and iron handles; and within the handles passes a bar of iron (*d d*), to receive the lateral pressure of the extension rods. Two beams of timber (*x x*), lie across the frame, and hold fast the collar (*c c*), by which the trunk is grasped. Matters being thus adjusted the mass is ready for the lift, which is managed in the following manner: A pair of strong timber trucks (*f f*), are backed up to the two ends of the frame, each having above its axle a powerful wooden upright (*y*). Upon this is laid a frame or platform of timber (*g*), through which pass vertical screws (*h h*), attached to a powerful iron coupling, and working in collars secured

lifting a tree and keeping it upright while being transplanted, instead of being broken and bruised by being thrown on its side, as is invariably the case in all other modes of transplanting; and in preserving the earth round the roots, either wholly or for the most part. A good deal of earth, no doubt, fell out on Saturday from within the spade-blades, owing to the excessively soft, wet state of the soil; but Mr. M'GLASHAN, in his specification, expressly declares that in some cases, in order to prevent the crumbling away of earth, it is necessary to enclose in a wooden box the lower part of the apparatus, after it is lifted.

The objections to it may be stated to be the necessity of cutting through all roots which spread beyond the area enclosed by the spade-blades; but we think that very little ingenuity will get over this difficulty, even if increasing the size of the apparatus should be impracticable. A greater objection is the inability of spade-blades, driven perpendicularly, to pass through gravel; and, unless forks are substituted for broad blades, it is not clear how this is to be surmounted. It is to be remembered, however, that Mr. M'GLASHAN'S apparatus has never yet been applied to practical use; and we entertain no doubt that it will receive very im-



to the platform. The screws are finally connected with the lower apparatus which secures the roots of the tree by chains passed through the couplings. This done the machine is ready for work. The lift is taken by means of the screws (*h*), which are worked by men standing upon the platform. When the mass is raised out of the ground the trucks are chained together, and may be moved in any direction required. On one of the trucks a crab (*z*) is shown; this is for the purpose of moving the machinery by means of a block and tackle secured to some tree or post, when circumstances are favourable to its employment.

The tree, earth, and machinery moved on Saturday were computed to weigh something more than 12 tons. The tree, a black Italian Poplar, was 55 feet high. In half an hour the tree was lifted out of the ground, without swerving; and in the course of the afternoon was safely drawn to a hole 40 feet off, into which it was so lowered as to be placed perpendicularly, although when taken out of the ground it was very considerably out of the upright. Had the tackle been better far less time would have been consumed; but the screws were bad and difficult to turn, and the horizontal arms by which they were worked were inconveniently placed, all which caused a needless waste of time.

The spectators admired the principle of Mr. M'GLASHAN'S plan, and were gratified at the successful manner in which his work was done. For ourselves, we are disposed to believe that this method of transplanting is susceptible of modifications which will render it generally useful. The inventor desired to test his power as severely as was possible, and for that purpose he selected a tree very much larger than it is often necessary to remove. The world, in general, requires a smaller and less cumbersome apparatus; which can, of course, be constructed with strength proportioned to the weight that has to be lifted. For example, a pair of strong barrows might be substituted for the timber drags, everything else being reduced in proportion; or the apparatus need not be stronger than can be worked by hand labour; and this it was evident that the gardeners thought would be most generally required.

The advantages of the apparatus consist in its

portant improvements as soon as it comes into the hands of those who are conversant with the removal of trees.

Since the above was written, we have been informed that a machine similar to Mr. M'GLASHAN'S was contrived some years ago by Mr. STRUTT.

Among the signs of improvement in Ireland is the establishment of a Horticultural Society and Garden in Tipperary. A piece of land has been hired on lease, and is now being enclosed for a garden, to be laid out as a pleasure-ground, in which the Society is to hold exhibitions. The work is proceeding under the direction of Dr. HEMPHILL, of Clonmel, who is procuring handsome trees with which to plant it. We understand that he has received some contributions of Araucarias, Deodars, Cryptomerias, Paulownias, and the like, from persons in the neighbourhood, and that he hopes to be further supported by such assistance.

We have now before us the schedule for 1853 of the "County of Tipperary Horticultural Society." It is skilfully framed, with a view to the wants of the neighbourhood, and is calculated to do much good. The judges are Mr. Moore, of Glasnevin, and Mr. BAIN, of Trinity College Garden, than whom better and more independent men cannot be found.

#### APHELANDRA CRISTATA.

ALTHOUGH this plant has been common in collections for very many years, and is by no means difficult to manage, yet it may frequently be met with in gardens, anything but well grown.

Moderately firm cuttings of the young wood, planted in light sandy soil, covered with a bell-glass, and afforded a brisk bottom heat, root very speedily. The best time for getting cuttings is in spring, after the old plants have fairly started, and when it is generally necessary to thin the shoots, which should be slipped off with a heel. The tops of the shoots of young plants, which require stopping in spring to render them bushy, also strike

readily, and will flower in small pots the same autumn. When well rooted, the cuttings should be potted singly in small pots, and placed in a close, moist, warm situation, until they have become well established, when they may be allowed a freer circulation of air. A situation near the glass in a warm pit, with sufficient pot-room, and plenty of water at the roots, and also frequent syringing, is all that they require the first season. Means should be used to get the wood well ripened previous to winter, and when this is effected the plants may be stowed away in the warm end of a greenhouse, or indeed in any place where they can be kept cool and dry, without exposure to a lower temperature than that of an ordinary greenhouse; keeping the plants in a warm situation, and supplying them with water in winter, is a frequent cause of failure.

About the end of January or beginning of February cut them back to the lowest joint, shake the soil from their roots and repot in fresh material, using smaller pots, if the roots after trimming admit of this; plunge then in a gentle bottom-heat, as near the glass as possible, where a warm moist temperature is maintained, and sprinkle them overhead frequently with the syringe. Here they will soon push freely, but if green fly or thrips make their appearance—and the Aphelandra is rather subject to these pests in the early stage of its growth—apply tobacco-smoke or tobacco-water as often as may be necessary to exterminate them, and preserve the foliage in a clear healthy state. When the plants are fairly started into growth, bottom-heat may be dispensed with, but it will be advantageous where it is convenient to afford it during the growing season. Whether in bottom-heat or otherwise, however, the plants should be kept near the glass, and be afforded a warm moist temperature, and liberally supplied with water at the roots as well as overhead from the syringe, while they are making wood. When the pots become full of healthy roots showing into others a size larger, but defer moving them into the flowering pots until the blossom buds begin to appear, and then they may be given a shift into pots one or two sizes larger, which, by encouraging a vigorous root action, will promote the de-

velopment of large flower-spikes. It is advisable to expose the plants to a rather dry atmosphere, in which there is a free circulation of air, after they have made about five pairs of leaves, if necessary, to induce them to show flower. When in blossom, a dry light situation should also be given them, as the blossoms are very apt to be injured by damp, and they should be afforded plenty of light to colour the flowers; plants flowering early in September will have the season of beauty prolonged by protection from the noon's sun during bright days. As soon as the flow withers, keep the plants rather dry at the roots, when the wood is well ripened, remove them to a dry situation, giving little water until they are wanted to start into growth the following spring, when treatment already recommended will be proper for them. Large old specimens should be considerably rooted, and no more shoots should be left upon them than may be required to form the desired sized specimen.

Good rich turfy loam, with about one-third thoroughly decayed cow-dung, mixed with sharp silver-sand—if the loam inclines to be tenacious, a portion of leaf-soil added—will form a suitable compost for the growth of this noble Acanthad. *Alpha*.

#### TRADE MEMORANDA.

We cannot assist inconsiderate persons who will absurdities from strangers, of whom nothing is known except what they choose to say of themselves. The every year an inroad of adventurers who profess to find things for a trifle, and who really sell rubbish at high prices. It is, however, hopeless to stop the press so long as society abounds in simpletons who have more money than wit.

#### Home Correspondence.

*The Deodar.*—The judicious remarks in your last article of Feb. 25 have sufficiently set at rest the question as to whether this noble plant is henceforth to be known by its own appellation, or to rank under the title of "Cedar of Lebanon." And though the inquiry regarding the specific identity of the two is certainly interesting, there can be little doubt that if they are distinct species, they are very distinct plants. For practical purposes, therefore, they may as well continue to be called by separate names. Excluding, however, as the subject now appears to be, there is a light in which it does not seem to have been and which, from its importance, may deserve notice.



Like the Cedar of Lebanon, the Deodar is chiefly valuable as an element in landscape composition; and its character in relation to this point has hitherto, I think, not been pointed out. The extremely rigid habit of the Cedar of Lebanon, its strictly horizontal branches, and, especially, that peculiar flatness of head which is so remarkable in older specimens (those at the Chelsea Botanic Gardens, for example), and which painters have so much and so happily introduced into their pictures, combine to render it what may be called an architectural tree; and the comparatively dark hue of its foliage contributes to heighten that character. It is, in fact, singularly adapted for associating intimately with buildings in the Grecian, Roman, or Italian styles of architecture; or, indeed, with any structure in which the lines are principally horizontal. With the Deodar the case is widely different. It is essentially a garden or lawn plant. Its drooping branches, pyramidal or conical form, and the extreme paleness of its almost glaucous foliage, quite unfit it for blending with architectural objects, and demand that it should stand out alone and unaccompanied. Nothing can be more graceful than its appearance, thus isolated, on a lawn or in a park, particularly when in the neighbourhood of the darker-foliaged Coniferous plants, as in a Pinetum. It is true that, like its kindred Cedar, it is an appropriate ornament in architectural gardening, where it makes a delightful avenue. But it will not bear to be brought too near a house, much less into contact with it, having nothing in its aspect or habit that would at all harmonise with any style of building. Its expression, in short, is the very opposite of that demanded in an architectural accompaniment, and which is so admirably realised in the Cedar of Lebanon. Of course, I speak only of such plants as are known in this country; and it would doubtless be gratifying to many, if some of your correspondents who have been in India would state whether the Deodar ever acquires a greater stiffness of habit, with more horizontal heads and branches, than it has yet been seen to possess here. There is one other circumstance, of much less moment, which, while these Cedars are under discussion, deserves a hasty mention. Although it appears almost a profanation of its glorious character, to use the Cedar of Lebanon in a mixed plantation, it is by no means unfitted for this purpose; as, from the rapidity of its growth (it having, I believe, outtopped every other description of tree at Kenwood, after more than half a century's trial), and its disposition to form a flat or clustering head of branches, it is thus, when surmounting the rest of the plantation, extremely effective and striking, and becomes a valuable auxiliary in general planting. The Deodar, however, as far as it is known to us, has no such qualities, and loses nearly all its interest and beauty unless allowed to retain the whole of its branches to the very base, permitting no encroachment from its neighbours without being seriously damaged. *Edward Kemp, Birkenhead Park.*

**Weeds and Sulphuric Acid.**—Being interested in the destruction of Thistles, and desirous that the plan proposed for making use of sulphuric acid for this purpose may have a fair trial, I would make the following suggestion, for the purpose of obviating the objection that may be urged against it, founded on the danger attending the use of a corrosive acid in glass vessels by common labourers, especially boys and girls. I propose that the vessels employed for holding the acid be made of gutta percha, capable of containing the quantity required during a day, and that they be furnished with two apertures, one large and carefully secured for pouring in the acid, the other very small and capable of emitting only a single drop at a time, like that of the dropping bottle used by chemists. *B. D. T.*

**Preparation of Ground for Onions.**—Living near the sea in a very damp climate, where Furze after being cut soon rots from excess of moisture, I procure a few cart-loads of it (about the middle of winter) in a half-decayed state, and dig it into the ground where my Onions are to be grown the ensuing year, leaving the soil as rough a state as possible. The ground remains in this condition until the time of sowing arrives, which is about the second week in February. It then receives a good coat of well decomposed stable and cowhouse dung, mixed with sea-sand, and is again dug very shallow, just deep enough to bury the dung; afterwards gets a slight sprinkling of sea or other sand, in order to prevent the soil from sticking to the shoes. Beds are then marked out 4 feet wide, with foot alleys between them. Each bed is now trodden all over, the surface moved with a rake, and a little soil drawn out to the alleys with the back of the rake. On this slightly loosened surface the seed is sown, and the soil which was taken from the bed, with the rake, is thrown thinly over them—just sufficient to cover the seed. The beds are then neatly raked lengthwise. In ground managed in this way Onions can scarcely fail to succeed. *F. Symons, Carelew, Cornwall.*

**Levels.**—In making roads, sloping banks, &c., I have used the following description of level very useful. I took a piece of well seasoned oak, 5 inches square, and 1 inch in thickness. From the centre of this I cut out a piece 4 1/2 inches square by half an inch deep, leaving half an inch of margin all round. In this I placed a thin brass plate, upon which half a circle of degrees was engraved. In the centre of the plate I fixed a pivot for a thin steel point or hands to move on, and which ran in four right angles at the pivot. To the hand which worked on the plain half of the brass plate above alluded to, I fixed a weight which moved the other three hands as might be required, the whole covered in with

a strong piece of glass, so that it might be carried in the pocket at any time with safety. On the top of the wooden frame are two small brass plates with two sights in them, through which might be levelled any object at any distance. At the back of the instrument is a brass socket to fix a stick, or other support, should such be required. I have found this simple contrivance very useful in fixing frames, &c., to any angle, and when complete it costs only 15s. *J. Daniels, Woodside House, Frant, Sussex.*

**Planting Railway Slopes.**—It appears that there is a great want of Willows and Osiers, for basket-making, in this country, owing to a quantity of the land being required for other purposes. An immense number of plantations has been destroyed, consequently Willow-roses, &c., used in the basket trade, are very scarce, and in great demand, and prices will, in all probability, be doubled. Under these circumstances I would suggest, as the embankments and slopes on railways are generally moist, serving as they do to drain the surrounding land, that these might be planted with profit and advantage. Planting would answer two purposes—the roots would keep the soil from constantly crumbling down, and the plants would be ornamental. The second year after planting, the stools might be cut, and they would afterwards yield an annual revenue. The outlay in the first place would be trifling, as a cutting might be put in at 3 feet apart every way, all over the land at once. All the preparation required would be to turn the turf down with a spade to the extent of a square foot, insert the cuttings, tread the ground firmly round it, and the operation is finished. May I therefore direct the attention of railway managers to this suggestion. *J. R.*

**Destroying Mice.**—Having tried Peas, steeped in bitter aloes, arsenic, &c., without effect, I was induced to seek some other remedy, for my early Potatoes in frames were being carried away nightly; my French Beans and Strawberries were eaten off, and this week my Peaches (nearly as large as Walnuts), were eaten on the trees, so I began to fear that my Orchids and Grapes would share the same fate, and in my difficulty I applied to a chemist in Worcester for advice, who recommended me Battle's Vermin Killer, to be used as follows: Sprinkle a little of the killer on pieces of bread well buttered, pass a knife over the surface, so as to mix the killer well with the butter on the bread, particularly round the edges, and lay the pieces of bread and butter in the places most frequented by the mice at night. This I found perfectly effectual, for mice were lying dead near every piece of killer that was laid down; 23 were destroyed the first night. I can, therefore, certainly state with confidence that too much cannot be said in its praise, and I would recommend it to all who are troubled in the way I have been. *E. Bennett, Perdiswell.*

**Coffee-leaf Tea.**—By the India mail just arrived, I have received a newspaper called *The Overland Singapore Free Press*, dated the 3d ult.; and as it contains a letter of a novel character, describing the use of the leaves of the coffee-tree in the domestic form of tea, and giving a detailed account of their preparation, I have forwarded to you the printed extract. I resided for many years in the Indian Archipelago, and am somewhat familiar with all the valuable products of those interesting countries; as well as the habits of the natives; but I never heard of this beverage having been obtained from the coffee-shrub or tree before. Padang, whence the writer dates his letter, is an important Dutch station on the west coast of Sumatra, about the centre, and in 1° south latitude. I take this occasion to mention that, when engaged in a long voyage in the Red Sea and Egypt many years ago, I found among the Arab merchants at Moka, Hodeida, and Jeddah, a general taste and preference for the husk of the Coffee-berry, prepared by a short decoction, and served up to every guest and visitor, as the universally admired Coffee of Mocha is made and enjoyed. [This is also the case in Nubia; what is named the husk is the parchment which invests the seed, or bean.] After several trials of the husk so prepared, I was obliged to abandon it, for the odour and flavour bore a strong resemblance to diluted urine. I may add, that the Coffee-berry when in decoction is called Kawi, and the husky fluid Kishur. *An Old Subscriber.*—The following is the extract alluded to:—“The Coffee plant in a congenial soil and climate exhibits great luxuriance in its foliage, throwing out abundance of suckers and lateral stems, especially when from any cause the main stem is thrown out of the perpendicular, to which it is very liable from its great superincumbent weight compared with the hold of its roots in the ground. The native planters, availing themselves of this propensity, often give the plant a considerable inclination, not only to increase the foliage, but to obtain new fruit-bearing stems, when the old ones become unproductive. It is also found desirable to limit the height of the plant by lopping off the top, to increase the produce and facilitate collecting it, and fresh sprouts in abundance are the certain consequence. These are so many causes of the development of a vegetation which becomes injurious to the quantity of the fruit or berry unless removed; and where this superabundant foliage can be converted into an article of consumption, as hitherto the case in Sumatra, the culture must become the more profitable; and it is clearly the interest of the planters of Ceylon, by supplying the leaf on reasonable terms, to assist in creating a demand for an article they have in abundance, and which for the want of that demand is of no value to them. It ought to be mentioned also that the leaves which become ripe and yellow on the tree and fall off in the course of Nature, contain the largest portion of extract and make

the richest infusion, and I have no doubt, should the Coffee leaf ever come into general use, the ripe leaf will be collected with as much care as the ripe fruit. The mode of preparation by the natives is thus: The ends of the branches and suckers, with the leaves on, are taken from the tree and broken into lengths of from 12 to 18 inches. These are arranged in the split of a stick or small bamboo, side by side, forming a truss in such a manner that the leaves all appear on one side, and the stalks on the other, the object of which is to secure equal roasting, the stalks being thus exposed to the fire together and the leaves together. The slit being tied up in two or three places, and a part of the stick or bamboo left as a handle, the truss is held over a fire without smoke, and kept moving about so as to roast the whole equally without burning, on the success of which operation the quality and flavour of the article much depends. When successfully roasted the raw vegetable taste is entirely dissipated, which is not the case if insufficiently done. When singed or overdone the extract is destroyed and the aroma lost. When the fire is smoky, the flavour varies with the nature of the smoke. The stalks are roasted equally with the leaves, and are said to add fully as much to the strength of the infusion. By roasting, the whole becomes brittle, and is reduced to a coarse powder by rubbing between the hands. In this state it is ready for use, and the general mode of preparing the beverage is by infusion, as in the case of common Tea. If the testimony of one who has been long personally accustomed to the use of an infusion of the Coffee leaf thus prepared, can be of any avail in recommending the article to public notice, I freely offer mine in support of it ‘as forming an agreeable, refreshing, and nutritive article of diet.’ While I find the use of an infusion of the berry for a few days invariably to produce on me, as on many others, the effects of nervousness and bilious obstruction, I drink a strong infusion of the leaf daily, with evident benefit to my health and strength. As a restorative on exhaustion from the severities of labour, or of the weather, from heat, or cold, or long exposure to rain, I know nothing superior to it. It has also the advantage of being a powerful disinfectant, so far as neutralising foetidity goes, and a solvent of the viscid fluids which obstruct the circulation, often to the extent of becoming laxative, if taken in extra quantity. Of its nutritive power, no proof can be stronger than that it suspends hunger, and enables the labouring man to pursue his work for hours after he would be otherwise unable. That it would soon become a most valuable article of diet amongst the labouring classes, and on ship-board particularly, if once brought into use, there can be no doubt. The Coffee tree can be grown to advantage for the leaf in the lowlands of every tropical country, where the soil is sufficiently fertile; whilst it requires soil and climate to produce the fruit. *An Old Sumatran.* [We have omitted some references in the original to Dr. Gardner, the late superintendent of the Botanic Garden, Ceylon, the writer having mistaken for him Dr. John Gardner, of Mortimer Street, London, who exhibited roasted Coffee leaves at the Great Exhibition in Hyde Park. As to those leaves, an infusion of which we tasted, the tea prepared from them appeared to us as nauseous as Senpa tea.]

**Price of Mustard Seed.**—One party can supply the seed at 13s. per bushel, which, being reduced to pence, is something like 2d. per lb.; another offers the same article at 9d. per lb.; a third sells at 1s. per lb.; while a fourth (a jobbing gardener) can furnish the seed in question at 1d. per oz. I make these statements from having my ears rung with ‘our seedsman imposes upon us to the amount of 100 per cent, and shall not employ him.’ Now if you can elucidate this knotty matter, you will confer a boon on *Veritas*. [No great elucidation is necessary. Go to the tailor, the cutler, the wine merchant, to any tradesman, and, if you except the necessities of life, there are the same differences. A jobbing gardener, who probably obtains his seed without purchase, or perhaps through Messrs. Bromley & Co., and who has no rent, no taxes, no expenses to defray, can of course undersell the shopkeeper.]

**Stocks for Fruit Trees.**—In reference to Mr. Rivers's “Miniature Fruit Garden,” permit me to offer a few observations on the “working” and culture of those very popular fruits, the Peach, Nectarine, and Apricot. First, then, I would state that, in whatever way we may be engaged, if we do not begin rightly, we cannot hope to get on prosperously, more especially in matters relating to horticulture; for so long as we continue to act in contradiction to Nature's laws, just so long will she surely turn round and upbraid us for our folly. You must, therefore, pardon me if I tell all whom it may concern, that we must first learn how to make our trees, and then talk of their cultivation. That there is something very wrong in this, the first and great principle, no man of observation can question; and hence in no small measure may be attributed the poor objects in the form of trees—the victims of gout, gum, canker, and numerous other ills, too often seen in the walled gardens throughout the United Kingdom. There are but few nurserymen who really understand this business, and I am afraid that there are still fewer gardeners who know anything about it. Some two years ago I remember hearing it stated that Mr. Rivers had unfortunately lost a large quantity of the Stanwick Nectarine, from its being budded upon a stock the nature of which did not agree with the Stanwick. From all that I have heard respecting this valuable variety, I am inclined to think that it is something like “Duc de Tilly” in its nature. I do not mean in form, size, or colour, but in



A small edition of *Vanity Fair*, neatly got up in single volume, has just been issued by Messrs. Bradburn & Evans.



Garden Memoranda.

HOLLAND HOUSE, KENSINGTON.—The grounds about this fine old Elizabethan building have been considerably altered during the present Lord Holland's time; nevertheless, some care has been taken to preserve many of their original characteristics. In former days the principal carriage drive used to lead direct to the south front, but now it terminates in a large gravelled square on the east side, surrounded by steep sloping grassy banks of about 5 feet deep; the ground having to be excavated that much to suit the door entrance to the house. In the course of this work some trees of considerable size had to be moved, and among them a fine Weeping Ash, which has been transplanted with perfect success by Mr. Scobie, the gardener, in the following manner:—Two trenches were dug on two sides of the tree, and when they had reached sufficiently far down the ball was tunneled under till a platform on rollers could be introduced. The other sides or supports were then removed, and the ball safely lowered to the wooden table below it. A sloping road was then cut for it to move out, and another for it to run into its new hole. Thus, by means of rollers under a platform a large tree of this description, with a ball of earth weighing some 7 or 8 tons, was moved in an upright position to a place a considerable distance from where it previously stood, and now it is making shoots as vigorous as if it had never been transplanted. The coach turning formed here is cut off from the broad terrace walk and lawn on the north side of the house by a "screen-wall," the screen consisting of ornamental Staffordshire bricks. This wall is furnished in its centre with a folding iron gate, which is reached by short flights of steps. On the south front of the house a broad terrace promenade has been formed, consisting chiefly of Grass, with a small fountain and basin in the middle, and bounded by a fine gravel walk immediately within a dwarf terrace wall which cuts it off from the park. In the summer time this wall is ornamented with stone vases, which when full of Tom Thumb Geraniums and other flowering plants have a pretty effect. On the east side of the house is a geometrical flower garden made up of beds on gravel and margined, and in some cases even embroidered in an interesting manner with Box. That portion of this garden nearest the mansion has been recently laid out in large Rose beds surrounded with narrow Box borders, which, in summer, are filled with bedding plants. The centre piece of the series of beds below this is an oblong square traversed by diagonal walks 6 feet wide, with a gilded sun-dial at their intersection, and surrounded by long borders, in some cases composed of a series of circles chained together as it were with Box. Farther down is a small compartment cut off from the rest by closely shorn Yew and Box hedges. This contains three Hollies of different kinds, clipped nearly as round as balls; also a fine bust of Napoleon the Great, a small fountain, and against the wall opposite is a seat where Rogers is said to have sat and meditated on his "Pleasures of Memory." This garden, which in summer is one blaze of Verbenas and other high colour plants, is bounded on the north side by a brick wall, and on the east by a high arched wall, clothed with luxuriant Ivy. In front of this latter boundary is a small geometrical terrace garden, and beyond that a sloping Grass lawn. On the south side the stables used to stand, but they have recently been removed, the yard laid out into a small flower garden, the horse pool converted into an ornamental fish pond, and the stables themselves, which are said to be as old as the time of Oliver Cromwell, made into an Orangery, Conservatory, and ball room; over the whole of which, as well as above a covered passage which leads to them, is an open colonnade, from which a fine view of the intricacies of the surrounding garden and grounds can be obtained. Let us now revert to the Orangery, which contains about 20 of the finest trees of the kind in England. These are in square wooden tubs, 3 feet in the side. The tallest tree is about 18 feet high (tub included), and some of the stems of the others measure 2 feet round, surmounted by splendid heads 9 feet through. On their arrival in this country these fine trees were all fresh tubbed by Mr. Scobie, who partially root-pruned them, and gave them a mixture of loam, calf-mould, and peat, in which they have thriven admirably. In the conservatory, which is formed by a canopy to the arched walls of the dark roofed orangery, are examples of the Myrtle-leaved, double white and double-striped Camellias, some of which are at least 10 feet high, and at present one mass of blossoms. Associated with them are also fine specimens of the tree Clethra and Rhododendrons, and among smaller subjects Chinese Primulas, the old but extremely useful Coronilla glauca and Epacris mainly in no inconsiderable amount of gaiety all through the early spring months. On the south-west of the conservatory just mentioned, but at various distances from it, y detached kitchen-gardens, orchards, and framing or arcing-grounds. Some new walls have been built, against which are some fine Peaches and Apricots, the former on a concreted border, which is being prepared to receive early Peas, at present coming on under glass in turf. We observed here that some of the Peaches were beginning to burst their flower-buds; the Apricots are not quite so forward. Some of the cold frames were full of bedding plants, such as decolorias, Verbenas, &c., not in pots, but which were taken out into the old Cucumber beds last autumn for the Cucumbers were done with. These winter

safely in such places without heat or more protection than the glass lights which are put over them in unfavourable weather; and when the latter becomes very severe, straw coverings are placed on the glass. In the case of the Verbenas the tops are being taken off now and pricked out in the shape of cuttings, to further augment the supply—the various flower-beds, some of which are very large, requiring great quantities of such things. In a short time these rooted cuttings will be taken up, potted, forwarded a little in a trifling heat, and then hardened in cold turf pits, previously to being planted out. This permits the frames to be prepared for Cucumbers. We also noticed here a series of Mushroom-beds, which are made in this way:—The material is put up in long ridges like Potato-pits or "clamps," and when it has sufficiently cooled down the ridges are spawned and soiled. The only covering they afterwards receive is a little hay, and over that straw-frames or protections; and from such contrivances, in the open air, Mr. Scobie gathers plenty of Mushrooms all through the winter. We had nearly forgotten to mention the fine Cedars of Lebanon which are scattered here and there over the soft undulating lawn on the north side of the house. One of the largest of these measured 15 feet round the trunk, at 3 feet from the ground. We likewise remarked an old Elm, which had the fracture of a large limb, near the bole, covered with sheet lead, to keep out wet and prevent decay. This measured 17 feet round, at the same distance from the ground. There are also many other large and fine trees here, which give nobleness and grandeur to this famous and ancient suburban retreat.

FLORICULTURE.

NATIONAL FLORICULTURAL SOCIETY, March 3.—Anniversary Meeting. E. FOSTER, Esq., President, in the chair.—At least 40 of the leading members were present on this occasion. The Second Annual Report from the committee was read and adopted, and officers elected for the ensuing year. Some new members were also elected, and several candidates nominated. The treasurer's report shows an income of 1271. 19s. 10d. against an outlay of 1217. 5s. 1d., leaving a balance in hand of 61. 14s. 9d. Part IV. of the Society's Transactions has just made its appearance. It contains among other things the following list of flowers to which first class Certificates, Certificates of Merit, and Labels of Commendation have been awarded in 1861 and 1862; but which, for the sake of brevity, we have represented by the numbers 1, 2, 3. **ARIZONIANUM:** Primrose Perfection, 1; Modestum, 1. **AURICULA:** Beauty of Bath, 1. **AZALEA:** India picturata, 3; India vittata, 3. **CALCEOLARIA:** Araminta, 3; Fascination, 3; Fireball, 3; Heywood Hawkins, 3; Wellington Hero (shrubby). **CAMELLIA:** Countess of Ellesmere, 1. **CARNATION:** General Monk, 3. **CHRYSANTHUM:** Versailles Defiance, 2. **CINERARIA:** Alba magna, 2; Beauty, 3; Beauty of Hamilton Terrace, 3; Christabel, 3; Field Marshal, 3; Formosa, 3; Julia, 3; Lady of the Lake, 3; Lord Stamford, 3; Loveliness, 3; Marguerite d'Anjou, 1; Marianne, 2; Model of Perfection, 3; Nonsuch, 3; Orpheus, 2; Picturata, 2; Prince Arthur, 3; Purity, 3; Queen of Beauties, 2; Rosalind, 2. **CYCULAMEN:** Persicum rubrum, 3. **DAELIA:** Amazon, 2; Beauty of the Grove, 2; Bob, 2; Brilliant, 2; Douglas Jerrold, 2; Dr. Frampton, 3; Dr. Frampton, 1; Globe, 3; Laura Lavington (fancy), 1; Lilac King, 1; Lord Byron, 1; Miss Caroline, 1; Miss Mathews (fancy), 3; Miss Ward (fancy), 1; Morning Star, 3; Morning Star, 1; Nancy (fancy), 2; Phantom, 2; Queen Victoria, 2; Queen Victoria, 1; Sir F. Thesiger, 2; Sir John Franklin, 1; Triumphant, 1; Una, 2; Unanimity (fancy), 3; Wonderful (fancy), 3. **DELPHINIUM:** Hendersonii, 2. **ERICA:** Jasminalia rubra, 1; Maroonkiss, 2; tricolor Eppsii, 1; tricolor splendens, 2. **FUCHSIA:** Diamond, 2; Dr. Lindley, 2; Glory, 1; Lady Montague, 3; Nil Desperandum, 2; Nonsuch, 2. **GLADIOLUS:** Afro-roseus, 3; Gein, 2; Josephine, 2; Mrs. C. Beale, 1; Mrs. Wilmore, 1; National, 3; Psittaculus superbus, 3; Wellington, 2. **HOLLYHOCK:** Charles Lidgard, 1; Cream of the Valley, 1; Crimson King, 2; Crimson Perfection, 2; Daniel O'Rourke, 3; Joan of Arc, 3; King of Roses, 2; King of Yellows, 3; Lavinia, 2; Macon, 3; Meteor, 3; Model of Perfection, 1; Pandora, 2; Pillar of Beauty, 1; Pourpre de Tyre, 1; Purity, 3; Remus, 2; Rosamund, 2; Safranot, 3; Safranot, 1; Swansdown, 1; Triumphant, 1; White Globe, 1. **MULE PINK:** (—), 3. **PANSY:** Fearless, 1; Joe Miller, 2; Kosuth, 2; Mrs. Rose, 2; National, 1; Pandora, 2; No. 2, 3; Sir J. Cathcart, 1; Sir J. Paxton, 2; Swansdown, 2. **PELAGONIUM:** Advance (fancy), 1; Arethusa, 2; Ariadne, 2; Ariel (fancy), 3; Astrea, 3; Attraction, 3; Beauty of St. John's Wood (fancy), 3; Calliban (fancy), 2; Chieftain, 2; Cloth of Gold, 2; Diadematum variegatum (bedding), 3; Elise, 1; Empress, 2; Enchantress, 2; Fireball (fancy), 3; First of May, 3; Formosissimum (fancy), 1; Ganymede, 1; Gipsy Queen (fancy), 2; Hobe (fancy), 3; Herald, 3; Incomparable, 3; Kingsbury Favourite (bedding), 3; Lady Emma (fancy), 3; Magnet, 1; Magna Bonum (fancy), 2; Mirandum (fancy), 2; Miss Emily Field (bedding), 3; Mount of Light, (variegated), 1; Nil Desperandum (fancy), 2; Novelly, 3; Odoratisimum punctatum (bedding), 2; Optimum, 1; Purple Standard, 2; Queen of the Fancies (fancy), 3; Richard Cobden (fancy), 2; Rubens, 2; Wonder, 2; Zaira, 2. **PENTSTEMON:** Variabile, 3. **PTUNIA:** Lady Cullum, 3. **PHLOX:** Drummondii Mayii (variegated), 3; Spencerii (herbaceous), 2. **PICTOTE:** Christabel, 2; Duke of Rutland, 2; Mary, 2; Prince Arthur, 3; Ophelia, 3; Victoria Regina, 2. **PINK:** Colchester Cardinal, 1; Esther, 2; Koh-i-noor, 2; Perfection, 2; Optima, 1. **POTENTILLA:** Alpha, 3. **RHODODENDRON:** Superbissimum album, 2. **ROSE:** Prince Albert (Bourbon), 1; Queen Victoria (H. perpetual), 1; Robert Burns (Climbing perpetual), 1. **STATICE:** (—), 1. **THEIRIDIA:** (—), 1. **TULIP:** Juliet (breeder), 3. **VERBENA:** Eliza Cook, 3; Koh-i-noor, 3; National, 2; Orlando, 2; Purple Kival, 2.

**HOLLYHOCKS:** *Orange.* Mr. Downie recommends the following in the "Scottish Florist," as being well adapted for exhibition in the shape of spikes:—Charles Lidgard (Bragg), colour salmony flesh, large and fine form, guard petals very smooth, high centre; Cream of the Valley (Bragg), colour, cream, a distinct and well-formed variety, throws a remarkable spike, and one from which a fine single bloom can be cut; George Lightbody (Downie and Laird), a rich, dark purple, smooth guard petals, high centre; General Buns improved (Downie and Laird), this is a seedling from General Buns, similar in appearance to the original in every way, but the flowers are much more compact, and closer set on the spike; Joan of Arc (Parsons), delicate bluish, probably the finest formed Hollyhock in cultivation, beautiful spike; King of Roses (Bragg), colour light pink, perfect form, good exhibition variety either as a spike or single flower; Lady Graybrooke (Chater), colour rosy crimson, a very compact and beautiful variety, fine spike; Lady Dalrymple (Downie and Laird), colour rosy purple, exquisite form, fine either as a spike or single flower; Mrs. Moulton (Chater), colour creamy white, margined in the way of a Pictée with pink, very attractive; Pourpre de Tyre (Bridson), colour rosy purple, close set spike, flower, well formed and large, tinged or shaded with pink,

quite new in character from any in its class; Fuller of Beauty (Parsons), colour, bright rosy crimson, large and fine, if grown too strong the flowers are apt to get paele; Sir D. Dundas (Downie and Laird), dark chocolate, good form, fine variety for exhibition either as a single flower or spike; Safrano (Parsons), pinkish salmon and buff, close set spike, fine exhibition variety; Triumphant (Parson), pale primrose, occasionally shaded with pink, fine spike; Uncle Tom (Downie and Laird), colour shining black, guard petals very smooth, and in fine proportion to its high centre, will show well either as a spike or single flower; Watford Surpris (Lanc), colour white and purple, flowers well formed, throws a fine spike; Yellow Model (Bridham), colour primrose and chocolate, of excellent form, throws a fine close set spike; Widen Gem (Chater), colour deep rosy crimson, fine spike; Rosa Grandiflora (Barton), colour, light shaded pink, requires a warm situation; when caught, very fine.

SEEDLING FLOWERS.

**AZALEA:** *Adonis.* 1, carmine self with obtuse petals, smooth on their surface and edge; 2 was quite withered, and past recovery. **CINERARIAS:** *ITIT.* *Blackburn.* The deeper marked variety is far the better of the two, and is a neat and chaste-looking flower; the form of the petals is first-rate, with cheerful colours, but the disposition to reflex mars an otherwise good seedling. Of the other flower we have nothing to say; you were fortunate in obtaining such good seed.—*H. F.* The white self has a fine purple disk, and some quality of petal, but like the purple self accompanying it, it was so withered from insufficient packing that we dare not speak more positively respecting it.—*S. J. T.* 1. Purple, of exquisite colour; the petals, however, are so jagged that no other qualities can overcome so great a defect; 2. Blue, of average general character, colour pale, and texture thin; 3. Violet, petals cupped and smooth, but too narrow at their ends to form other than a starchy outline.—*T. C. & Co.* All more or less inferior to kinds possessing the same colours already in cultivation. Nos. 1, 2, 3, 4, and 5, are what is termed rough and loose, but their large quantity of purple, or rather Plum-coloured flowers on a truss, makes them very attractive for ordinary purposes; 6 and 7 are promising; 8 is a good white, but it should have had a dark centre.

Miscellaneous.

*Acrophyllum venosum.*—Although this beautiful plant has been introduced to our greenhouses from New Holland since the year 1836, it has by no means become common; but when grown in the shape of a nice dwarf bushy specimen, I am not acquainted with anything among hard-wooded plants more generally admired than this, with its beautiful white bottle-brush-like flowers, and light bronzy leaf most beautifully serrated round its edge. From the very few plants of it exhibited at our great exhibitions, it may be supposed that it is a plant very difficult to cultivate, but such is not the case. By paying attention to the following practical remarks, any grower of it may meet with perfect success. In the first place, procure a bushy plant from any respectable nurseryman, or it can be propagated readily from cuttings, by selecting some half-ripened pieces with a hard heel, and introducing them into pots prepared for cuttings, and filled nearly full of nice sandy peaty mould, upon the top of which place half an inch of sand; press it down closely, insert the cuttings under bell-glasses, and place them in a little bottom heat, where they will strike readily; but a young plant, if healthy and clean, would be preferable, and save much time in the formation of a fine specimen. When you have succeeded in obtaining a plant, supposing it to be in spring, the first thing to be attended to is to examine the roots, and if fresh and healthy, prepare some light heathy peat mould; break it well up, and add to it half the quantity of nice sharp sand with a portion of broken potsherds. Mix these well together, and thoroughly drain your pot; then take your plant, place the mould all round it, and press down firmly. One thing to be borne more especially in mind, when under the operation of potting, is never pot deep, but keep the collar of the plant elevated above the ball of earth, so that no water may at any time lodge there. When finished potting, place it in a close pit, where it is not exposed to cold cutting winds or currents of air; shut the pit up in good time in the afternoon, and syringe the plant overhead with clean tepid water, when it will soon begin to grow vigorously; and any long straggling loose shoots that may make their appearance should be removed in order to keep the plants round and bushy. If they do well, they will want another shift about the month of July. Be very particular in examining the roots; and as soon as it is perceived that they have filled their pot, give another shift, as I have found it to be a plant that very much dislikes to meet with a check when it is disposed to grow. At the same time I should not advise shifting too late in the season, say not after July, as in this case it might receive as much injury as by letting it alone; therefore always calculate, when you think of shifting it, whether there is sufficient time to allow it to fill the pot with roots before the growing season is finished, which is generally in August, as I scarcely ever found plants make much growth after that time; and by making a point of giving it the last shift for the season in July, there will be sufficient time for it to get well established in its new pot before the season arrives to prepare it for winter. About the middle of August (if the weather is settled and fine), place it in a sheltered rather shady situation out of doors for a few weeks, where it will gain strength and check its growth in a great measure; but as soon as any sudden change in the weather takes place, such as heavy drenching rains, lose no time in removing it into the greenhouse, as nothing is so injurious to this plant as permitting the mould to become wet and saturated at this season, when its roots are in a state of torpidity. When in the greenhouse set it in a light airy place, as close to the glass as possible. Water through the winter with great care, rather let it get too dry than too wet; but always act as near as you can upon the bounds of moderation in each case—neither too wet nor too dry. Here it will ripen its wood, and soon begin to show bloom-buds



and in April and May it will expand its beautiful bloom. When out of flower, it should be judiciously pruned by cutting back to a symmetrical shape, and then placed in a close pit, syringing it overhead, and shutting up close early in the afternoon. It will soon begin to throw out shoots with great vigour and strength. When well broken examine its roots, as by this time it ought to require another pot; but by no means attempt to shift it after you have pruned it back until it has broken again, as the severe check upon the top, and disturbing the root at the same time, would have, in most cases, a fatal effect. By following this practice, and treating the plant through the growing season by shifting it when in need, and attending to the wintering of it, there will be no difficulty in becoming the possessor of a splendid specimen, such as would do credit to the most select collection. *W. Barnes, in Turner's Florist, Fruitist, and Garden Miscellany.*

*Mexican Oaks and their Silk-worms.*—As soon as this Norte-period is over, the Oaks begin to blossom. In the course of a few days they assume a splendid gold-coloured tint, owing to the countless aments which cover all the branches; the young leaves burst forth simultaneously, and scarcely eight days have elapsed before the trees again assume their rich fresh foliage. It is a brief but a distinctly marked spring, which in this manner unfolds itself. While this spring lasts in this and the preceding region, large cocoons of silk, of an ell in diameter, are seen hanging down from the branches of the Oaks. They derive their origin from a gregarious sort of silkworm, which spins itself into a large common habitation, which gradually increases in circumference. The worms leave the cocoons at night and spread over the Oak, in order to devour the young foliage, drawing a thread of silk along with them, which is fixed at one end on the outside of the cocoon; towards morning they return again to their home, which is now enlarged by the addition of a new thread from each worm. In this manner about 800 silkworms associate together in one common cocoon, which thus becomes augmented at the rate of 1600 threads each.—*Liebmann, in Hooker's Journal.*

## Calendar of Operations.

(For the ensuing week.)

### PLANT DEPARTMENT.

THE weather having become milder, fire heat may be dispensed with for hard-wooded greenhouse plants, unless the night temperature falls below 35°. At this time, however, and for a few weeks to come, let the necessary waterings and cleaning be done sufficiently early in the day for the air of the house to become dry before evening, when less danger will arise to the plants by a low night temperature than when they are exposed to it surrounded with a damp atmosphere. Pelargoniums, Calceolarias, and similar things of a soft growth, should be kept in a night temperature of 45°, which may be increased a few degrees if the plants are wanted to bloom early. Keep them near the glass, and at a sufficient distance apart to admit the light freely to their lower leaves, which otherwise will turn sickly and fall off. ORCHIDS.—Although the shifting and fresh dressing of the general stock will, in most cases, be completed, yet when the stock is extensive, and contains a number of duplicate plants, they should not all be started at the same time, as it is more desirable to have a succession of plants for blooming than a glut at one season, unless special reasons sanction a contrary practice; as this tribe is now mostly commencing growth, a gradual increase of temperature, accompanied by atmospheric moisture, should take place, to encourage the utmost development of the present season's growth, as the future health and value of the specimens will depend on this being secured. Care must be taken that at this critical period of their growth the young shoots are neither rotted off by water being allowed to lodge round them, nor yet destroyed by slugs or insects; these latter should be trapped, and a nightly examination made by candle-light for the former, till a riddance is effected. In arranging the plants to make their season's growth, pay attention to the habits of the various species, accommodating each, as far as possible, with the amount of light, heat, and humidity which is found to suit them best. Stove plants which have been pruned in, and have made a few inches of new wood, should be potted. Large specimens of Clerodendrons, Allamandas, Vincas, &c., should be partly shaken out and moderately disrooted; after potting plunge in a mild bottom-heat, and syringe frequently, to promote a healthy growth. Water must only be moderately applied to recently potted plants, until they get established; night temperature 65°, with an increase of 10° to 15° on bright days.

### FORCING GROUND.

Keep up a succession of French Beans in small pots for transferring to larger, as room falls in hand. The shelves of the Pine stove furnish an excellent place to grow them for the present, as they delight in heat and moisture. Pot them in very rich soil, and supply well with liquid manure while in bearing. Syringe often, using at times a little sulphur in the water to keep down red spider, if it appears. Melons require daily watching; if grown on trellises they must be stopped when of sufficient length to furnish laterals to fill their allotted space—four shoots will generally be found enough. Add more soil to the hills as the roots advance, which should have been in the house a day or two previously to become aired. Temperature from 70° to 85°. Give air daily, but with caution. Cucumbers the

same. Supply the crop in bearing with weak manure water. Keep the bottom-heat steady at 85° or thereabouts.

### FLOWER GARDEN AND SHRUBBERY.

The mixed and picturesque styles of gardening being those most generally adopted in places of moderate extent, and for situations where a more formal style would not harmonise with other objects; herbaceous plants should always form a principal feature in gardens of the above description, and especially where the proprietor is resident the greater part of the year. To those who have hitherto grown only the usual bedding-out plants and annuals, and who have to wait till mid-summer for a display of flowers, we recommend that they procure a selection of the more showy Delphiniums, Campanulas, Phloxes, Dianthus, and other ornamental herbaceous plants, Lilioms, &c.; for planting among shrubs, borders, and for mixed beds, they are invaluable, while the fact of their affording a succession of blooms from early spring to near Christmas ought to obtain for them a more general introduction, particularly where cut flowers, and a continuous show of blossoms, are essential: the improvement in habit and colour which is annually taking place in the above, and other genera of herbaceous plants, is an additional inducement for growing them. Gravel walks should be well rolled, to consolidate them after the late frosts. The present time will be a favourable one for scarifying the surface of such walks as are worn down, and require a coating of new material. We are unfavourable to turning walks solely for the purpose of destroying weeds, as they ought to be removed by the application of remedies on the surface, or by hand labour. In pruning Roses, be guided by the habit of the variety; some kinds only require thinning the shoots, and being moderately cut back, as many hybrid Chinas and Bourbons; while others require to have their shoots cut back to two or three eyes. Some of the many treatises on Roses should be consulted on this point. When the above is finished, let the lawns be well swept and rolled, to be in readiness for the scythe, which, from present appearances, will not be required very early this spring.

### HARDY FRUIT GARDEN.

Premising that the pruning, training, &c., of trees and fruit bushes is now complete, and the ground properly forked over between them, attention should be directed to the Strawberry plantations, which with us appear to have suffered severely. The beds should be cleared of weeds, and a dressing of rotten manure spread between the rows; it may afterwards be forked in very lightly, so as not to injure the roots. In doing this, spread a little soil up to the crown of the plants, which will assist the growth of new surface-roots. Last season's runners should be gone over, and those made firm in the soil which are thrown up by the action of the frost. After which mulch the surface. Last season's leaves (although turned brown) should remain on the old plants for some time yet, to protect the new growth from the cutting winds and frost.

### KITCHEN GARDEN.

As the land becomes dry, turn back with the fork the plot intended for Onions and Carrots, that it may become pulverised and open before sowing. The most useful kinds of Onions for general purposes are the White Spanish or Portugal, Strasburg or White Globe, with a few of James's Keeping for late use; under-ground Onions are useful for affording bulbs till the general crop is ready, and the true Silver-skin for pickling. The autumn-sown plants should now be transferred to a warm rich border, to furnish an early supply, and at the same time a few of the smallest bulbs of last year for the same purpose. The main crop of Onions should be sown in drills a foot apart, when the ground is duly prepared. The most profitable Carrots for small families are the Scarlet Short-horn, and the Short Orange or middle Carrot; a few of the Long Red may be added, as they keep somewhat better. Prepare a sheltered border for sowing a small crop of Cauliflowers, Cabbages, Brussels Sprouts, Savoy, and Leeks; these latter, to have them fine, should be sown under glass in a little heat, and afterwards pricked out. Winter Spinach and Parsley will be much improved by a dressing of soot on the first wet day. Protect the crowns of Rhubarb, particularly the early kinds, by straw placed over them each night, or place a hand-glass over them. Seakale in the open ground should be earthed up to blanch. When the soil is sandy and light it may serve, but should be broken down fine before placing over the crowns, that the heads may not grow crooked. On heavy soils old tan, decayed leaves, or coal-ashes are useful substitutes for blanching.

### STATE OF THE WEATHER NEAR LONDON.

For the week ending March 10, 1853, as observed at the Horticultural Gardens, Chiswick.

March.	Moon's Age.	TEMPERATURE.									Wind.	Rain.
		BAROMETER.		Of the Air.			Of the Earth.					
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.				
Friday..	4	31.13	29.82	46	35	40.5	36	35	S.	.02		
Satur..	5	29.84	29.83	49	39	44.0	37	36	S.W.	.12		
Sunday..	6	29.87	29.82	45	44	45.5	35	33	S.W.	.02		
Monday..	7	29.87	29.97	54	34	44.0	42	39	S.W.	.11		
Tues..	8	30.43	29.92	50	29	39.5	42	40	S.W.	.03		
Wed..	9	30.53	30.14	56	36	46.0	40	41	S.	.00		
Thurs..	10	30.19	30.51	55	27	41.0	42	41	S.W.	.00		
Average ..		30.025	29.974	52.1	34.8	43.5	39.5	34.8		.30		

March 4—Fine; slight rain at night.  
5—Rain; heavy rain at noon; drizzly at night.  
6—Cloudy; overcast; slight rain.  
7—Rain; densely clouded; foggy.  
8—Uniformly overcast; rain; foggy.  
9—Foggy; fine; overcast at night.  
10—Overcast; very fine; clear; slight frost.  
Mean temperature of the week 3 deg. above the average.

### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending March 19, 1853.

March.	Average Height of Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13.	50.5	34.3	42.4	10	0.10 in.	12	12	12	12	12	12	12	12
Mon. 14.	51.2	35.3	43.3	10	0.70	12	12	12	12	12	12	12	12
Tues. 15.	50.7	34.3	42.5	14	0.26	12	12	12	12	12	12	12	12
Wed. 16.	51.5	35.0	43.3	10	0.49	12	12	12	12	12	12	12	12
Thurs. 17.	50.2	33.5	42.0	7	0.86	12	12	12	12	12	12	12	12
Friday 18.	50.1	33.6	41.9	6	0.19	12	12	12	12	12	12	12	12
Satur. 19.	51.4	33.9	42.7	6	0.33	12	12	12	12	12	12	12	12

The highest temperature during the above period occurred on the 19th, 1836—therm. 63 deg.; and the lowest on the 17th, 1845—therm. 16 deg.

### Notices to Correspondents.

ASPARAGUS: *Sub.* Salt is a good manure for Asparagus. The proper way is to apply it now, making the beds quite white, and again in July.

BOOKS: *A Country Bookseller* writes to say that Mr. McIntosh's work has not appeared with perfect regularity, and that if it had the volume would have been completed two months ago, the first number having been published March 1st, 1852. We can only say in reply, that we have not observed any irregularity in the delivery of our own copy.

CHERRIES: *T.S.* Six sorts for a wall—May Duke, Elton, Knight's Early Black, Late Duke, Bigarreau, and Florence.

EMIGRATION: *E.* We really cannot undertake to advise you in a matter of so much importance as this. You should make yourself acquainted with what has been published on the subject, and then judge for yourself.

FRUIT TREES: *W.L. Essex.* The shoot of your Apple-tree has been severely attacked by the American blight (*Aphis lanigera*). When this insect infests even the young shoots, you can only get rid of it by means of a garden engine. The mechanical force of the water will wash down the insects, and, at the same time the leaves will be refreshed and the health of the tree will consequently improve.

FUNGI: *Constant Reader.* With the exception of the fourth Fasciculus, which is still to be had at Pampin's, in Frith Street, Soho Square, Berkeley's "British Fungi" cannot be procured. Ayres' "Dried Fungi" may probably still be obtained at Pampin's, and will in some measure supply what you want. There is no work especially devoted to what are properly called parasitic fungi. *M.J.B.*

GLADIOLUS: *A.H.* We have always understood that *G. gandavensis* is one of the hybrids from *G. cardinalis*; to the other question no answer can be given till the subject is taken up by some trustworthy experimentalist.

GLAZED WALLS: *Henry.* In order that Peaches and Nectarines may become well coloured and richly flavoured, they require, of course, a certain amount of heat; but this is only one essential agent, which, however adequately afforded, will not alone insure perfection. Abundance of light is also necessary. Full perfection can only be obtained where the climate is such as to admit of the fruit being exposed to the open sky; and if the climate require the aid of glass for warmth, then the fruit must be grown near the glass, for the farther from it, the less effective are the rays of light. Your sashes may be placed a foot from the face of the wall at top, and 3 feet at the bottom, and let the glass reach near the ground. If you were to allow 4 feet at bottom, and attempt to grow trees in pots, you would have trouble and expense for no gain, for the trees at back would be deprived of just as much light as those in front would receive.

IRIS: *A.H.* As this genus seeds naturally and abundantly, there would seem to be no difficulty in the artificial setting of the flowers. The pollen sticks readily to the dorsal cleft. As to existing hybrids, we do not know if any certain ones could be found; but there is reason to believe that such plants as *I. Irida* and *ambucina* may have had such an origin.

NAMES OF PLANTS: *Adoxa.* Plants not in flower cannot be named.

PEAR TREE: *G.H.C.* The Brown Beurré is not well adapted for bearing as a standard. Boring a hole through the stem can be of little use. Neither this operation, nor ringing, nor root-pruning seems necessary, as the tree blossoms abundantly. The best thing you can do is to cut it back in autumn, and graft it with a harder sort next spring.

PLANTS ON GRASS: *Victorina.* If from a Grass plot a small portion of the turf is removed, and a Dahlia is planted, and the plot is restored to its former state by covering the earth with the turf round the stem of the plant, it will thrive, provided care is taken to water it in hot dry weather. The best liquid manure for flowers is a clear decoction of good guano, but it should only be used when they are in full growth, and very sparingly, for in general manures cause all flowering plants to run to leaf. If soil is good no manure is required except for fancy flowers, and not often for them.

POTATOES: *A.H. G.J.* What can we say respecting Dr. Malfatti's statements? except that they will be trustworthy when supported by something more than hardy assertion. The language, the insane reasoning, the pretended facts, are of such a nature that we cannot but express our surprise that the Royal Agricultural Society should lend itself to their promulgation. We hope it is clearly understood that we do not hold ourselves in any way responsible for the reports of the proceedings of the R. A. S., which are sent to us officially, and printed without alteration.

ROOT SECRETIONS: *S.N.* The passages are too long for extract, and will not bear curtailment. It is probable that we do not use the words root secretions in the same sense as yourself. If by the term you intend to include all the matters which roots give off, then you must study what physiologists have said about the general functions of the skin of plants. Carbonic acid appears to be given off in large quantity. A fungus lifts a large stone in consequence of the great strength and expansibility of its cells.

SALSIFY AND SCORZONERA: *Rev. D.E.* Sow these towards the middle of April, and it is advisable to make a second sowing near the end of April, in case the first should run to seed—in shallow drills a foot apart, in rich, rather light soil.

VINE DISEASE: *W.A.C.* The white mould which you found on the roots of your Vines, in a concreted border, is probably connected with the Oidium, and may have been encouraged by excessive dryness. As your Vines are breaking, all you can do at present is to stir the soil and introduce some lime and sulphur near the roots; and apply sulphur frequently to the Vines inside the house.

MISC: *Clonmel.* A list of ornamental trees would fill our columns. Your best way will be to open a communication with some great nurseryman, and take what he recommends; if his character stands high, he will not deceive you, either in the trees or their price. The public gardens of this country have such numerous demands upon them, that they are constrained, for their own protection, either to confine their distributions to those who support them, or to require an ample exchange. The noise used in Chiswick for Oranges from gas-works, broken down into small fragments; we should not expect that charcoal to answer; it is much too compact. In England every gardener abounds in potsherds, and no one thinks of going for their beyond his own place. Are not garden-pots used in Tipperary as much as on this side the Channel, or are they better made, and not so liable to break?

\*As usual, many communications have been received too late and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



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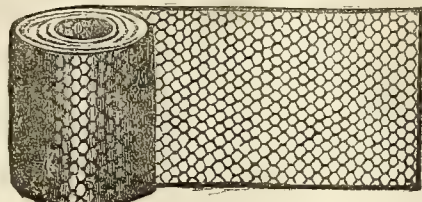
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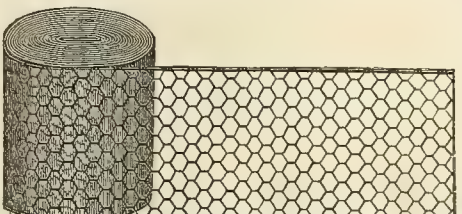


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 Do. do. for 2 and 3 years' lay.  
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Daphne pontica, 2 ft. ... 6 0		" Larch, 6 to 8 ft. ... 20 0	
Holly, Green, 5 to 7 ft. ... 48 0		" Weymouth, 4 to 5 ft. 25 0	
" Variegated, 1 to 2 ft. 15 0		Holly, Green, 2 to 3 ft. ... 40 0	
Spiræa Lindleyana, 4 ft. ... 6 0		Laurel, Common, 4 to 5 ft. 50 0	
" Reevesii, 4 ft. ... 9 0		Portugal, 1 to 2 ft. 30 0	
Ribes, Red, 4 to 5 ft. ... 6 0		Lilacs, Purple or White, 3 to 5 ft. ... 40 0	
" White, 4 to 5 ft. ... 6 0		Laurestinus, fine, 2 ft. ... 40 0	
Snowberry, 5 ft. ... 6 0		Oak, Evergreen, in pots, 2 to 3 ft. ... 60 0	
Taxodium sempervirens, 5 to 6 ft. ... 42 0		Rhododendron ponticum, fine, 1 to 2 ft. ... 75 0	
Yew, English, 4 to 6 ft. ... 42 0		Laburnum, 10 ft. ... 50 0	

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 Nursery Kingston Surrey

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**YELLOW GLOBE MANGOLD WURZEL.**—The undersigned having a large Stock of White Belgian Carrot and Yellow Globe Mangold of home growth, can supply them at moderate prices. Purchasers of large quantities will be served liberally. Applications by post, stating quantity required, will be promptly replied to.—Address, **SUTTON & SONS**, Seed Growers, Reading, Berks.

**THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1853.**—The Fifth Great Annual Exhibition of CATTLE, SHEEP, PIGS, and the various kinds of DOMESTIC POULTRY, will be held in **BINGLEY HALL, BIRMINGHAM**, on the 13th, 14th, 15th, and 16th of December next.

The PRIZE LISTS and any further information may be obtained from **JOHN MORGAN, Jun.** Secretary. Offices—No. 2, Insurance Buildings, Union Passage, Birmingham.

## ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

LECTURE.—Prof. WAT'S Lecture on Discoveries connected with the Absorption of Ammonia by Soils, will be delivered before the Governors and Members in the Council-room of the Society, on Wednesday, the 16th of March, at 12 o'clock at noon.—By order of the Council.

12, Hanover Square, London. JAMES HUDSON, Sec.

## The Agricultural Gazette.

SATURDAY, MARCH 12, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 16—Agricultural Society of England.	
THURSDAY, " 17—Agricultural Imp. Society of Ireland.	
WEDNESDAY, " 23—Agricultural Society of England.	
THURSDAY, " 24—Agricultural Imp. Society of Ireland.	

It is necessary to the completeness of our remarks on Mr. SMITH'S system of WHEAT growing that we extract from his pamphlet the instructions he offers those who would adopt it. And the present is by no means an improper season of the year to commence operations in. The land on which his methods of cultivation and of harvesting are to be exemplified at Gloucester is still a grassy sward. It has to be levelled, dug, and comminuted yet, before the Rye is dibbled in, on which, in July next, instruction to be received by members of the English Agricultural Society in connection with this subject, will be founded. So far as all the other grain crops, therefore, are concerned, instructions offered now are in quite sufficient time, and even as regards the Wheat crop the first steps to be taken are taken best in spring.

We extract the following from the ninth edition



of the pamphlet. It relates especially to the Wheat crop, and it supposes the system preceded by a summer fallow—the land to be ploughed one inch below the usual staple—this will be concluded by August. The whole field is then to be marked by channels 5 feet apart. The three rows of seeds at 1 foot intervals are to be sown early in September, and covered in with the crusher, or rough roller. As soon as the rows are up, the intervals are to be dug 2 spits deep, a few inches only below the cultivated soil in the first year, deepening gradually year by year thereafter. Early in spring the ridged intervals are to be levelled with the fork; and in dry weather, after that, the roller is to be used. The spaces between the rows are to be stirred during spring and summer as often as the surface becomes crusted over. These are the main points to be attended to. They are stated in greater detail in the pamphlet from which we extract them.

As regards the quantity of seed Mr. SMITH's practice has already been stated; and if the land be ready for commencing the process during the coming spring seed-time, we see no reason why, as at Gloucester, Rye or Barley should not be put in the place of Wheat for the first year, every attention being paid, between the braiding of the seed and the flowering of the plants, to that thorough cultivation of the intervals between the rows on which the whole depends.

If we could form an accurate estimate of the areas of land in this kingdom which are now, or have been lately, suffering from the inability of their main channels to insure good drainage, we should probably be surprised at their extent. Of course, we hear no complaints of dropsical weakness in the soil, from the downs, and wolds, and hill ranges; they feel only the lack of water in dry weather—the drainage of a "watershed" is naturally complete. The valleys, however, which, receiving their brooks, transmit them downwards toward the rivers and lowest grounds upon the coast, have been almost everywhere in a miserable plight. Scarcely a single line of railway which, for the sake of a level, seeks the flattest valleys, champaigns, and plateaus, has escaped a drowning at some point of its length: all our chief rivers have been burlesquing the Nile and Jordan, and overspreading the wide meadows and flats bordering their course, inasmuch that the daily press, generalising the innumerable floodings, have reported a whole county as lying under water—of course, referring merely to a certain line throughout that county. The marshes next the shore, upon which these swollen streams descend, have heavily suffered; not so much from simple overflow of the rivers passing across them, or the retention of their own drain-water, as from the bursting of embankments and the yielding of works; for systematic drainage has fortified our fens and marshes against the rising of upland freshes, which so readily inundate the defenceless inland valleys. But the increased and unwonted hydrostatic pressure has caused some of these works to fail; so that in some districts farmers have been seen boating over their fields and fishing up their stores of Carrots and Mangold Wurzels with hooks; the country folk have found their dwellings converted into stationary arks; and even rats have been seen clinging upon the tops of half-drowned gate-posts, and hares have taken refuge on the roofs of houses. Upon these low lying lands are to be found the great drainage works which must form the models for imitation over our innumerable ramifying upland valleys in their present emergency.

We have no precise information as to the extent of surface comprising our wet valleys; it must, however, amount to a vast space, because of the immense number and universality of such spots. Concerning one river, the Nene, we know that 15,000 acres, or more, which are so flat as to accompany the river on each side with a fall of only 2 to 5 feet per mile, are to be rendered capable of perfect subsoil drainage by new works. The Ouse, Severn, Thames, and all our principal arteries, have similar fringes of greater or less extent, waiting for similar measures of improvement. The first point for consideration in the work now pressing for accomplishment is the capability of the outfalls. It is because its outfall is so perfect that the upper valley of the Nene is now obtaining relief. To discharge additional quantities of water upon the marshes and deltas around our shores, without providing for their safe issue into the sea, would be of no use of the lowlands. As both the high and low grounds are interested in obtaining an efficient outlet for the streams that should drain them, they ought mutually to co-operate in the work. Now, to what extent may our river mouths and seaward channels be pronounced equal to the emission of our drainage?

This inquiry, thanks to the necessities and energies of our fen-men, may be easily answered. Some of our

Scotch friths and English estuaries, as those of the Tay, the Humber, the Thames, and Severn, may naturally need but little assistance from art to render them adequate embouchures for the rivers they discharge; but they nearly all require an amendment of their tidal channels for many miles upward from the sea. But, in too many cases, the rivers meet with the greatest obstruction to their outflow at the very extremity of their course, where they mingle with the ocean. This statement will be assented to by those who have witnessed the broad sands of the Solway, over which the drainage of an extensive area is carried; who have seen the Dee struggling with difficulty to escape through its muddy half-choked estuary; the waters of the Kent and Sussex marshes contending with the battling waves and shifting shingle of the Channel; the east Norfolk streams dependent upon engineering skill to clear them from the moving sands of the coast; the Ouse, Nene, and connected rivers, issuing in channels, which men have excavated for them, through the slimy mud-banks of the Wash. Among the instances we have mentioned are examples of rivers in a neglected state, grossly, but not irremediably, landed up—of rivers, where engineers are engaged in a struggle against impeding sands and tides; and rivers which have been pushed boldly and successfully out into deep water, needing, however, continual labour for their preservation. Which, then, are the maritime districts that have long and laboriously improved their river outlets, and how far have their efforts succeeded? for it is our knowledge of what they have done that must guide us in our endeavours to complete the uninterrupted desiccation of our more inland tracts: like fortresses at the mouths of our rivers, they have the power to shut up, or maintain open, the traffic of our export floods. Their achievements or remissness affect the well-being of every valley and brook-bounded meadow in our island.

Upon the geological map these tracts are marked as "alluvial;" they lie, wide and horizontal, below the level of the ocean at high-water; and though of humble extent when compared with our native sheepwalks or untrimmed woodlands, yet their incomparable richness and fertility, as well as their important relation to the drainage of all other portions of the kingdom, give them a far greater interest than we might at first sight imagine. We intend to notice very briefly the principles upon which our fen-men, and those of other countries, have proceeded in their great works of general drainage.

I. A. C.

#### LIQUID MANURE AND IRRIGATION.—No. III.

As it is not possible, except where water or gravitation is available, to work out the system without the aid of steam power, I purpose in this paper to enter generally on a consideration of the agricultural steam-engine—its advantages as an economic agent, but more particularly the care, anxiety, vexation, trouble, and expense arising from the want of a proper knowledge of its management and requirements. There can be no doubt but that very shortly every agriculturist must use steam power if he is to stand his ground in the race of agricultural competition. The want of it is already felt, if not seen, by those who have not the means or the inclination to use it. The time is approaching when it will be as common as the drill or threshing-machine, although, like them, it has to pass through the ordeal of disbelief, doubt, and prejudice.

Now, the very introduction of steam power is a monitor of intelligence and progression. It increases the farmer's care, attention, and responsibility; it stimulates and enlightens the labourer. Unlike the two pieces of stick called a flail, with its one idea for the labourer and farmer, the steam-engine has almost a vitality; its 3000 or 4000 bolts, rivets, nuts, screws, brasses, straps, cogs, valves, slides, springs, flues, bars, water-gauge, steam-gauge, joints, packing, and a hundred other little matters, keep you always on the *qui vive*, and in a state of hopeful care and anxiety. You feel that you have under your care a monster or volcano ready to avenge your neglect, by sending you and your buildings flying into space, like a shower from Etna or Vesuvius. It throbs and pants in placid regularity; but neglect to lubricate its numerous bearings, and your ears will be assailed by screams of complaint and distress. Nothing perplexes and bewilders an ordinary farmer, from a backward district, so much as the apparent complication of bands and pulleys, and the various connections of the steam-engine. I honestly believe that the annual agricultural shows, with their now numerous machines in operation, are doing much to withdraw the agricultural mind from its obscurity. How much more quickly would this be done, could agriculturists investigate the great economic applications of steam in our factories, workshops, mines, and steam-vessels! The railway locomotive is itself, perhaps, the greatest travelling monitor we have; and much was done by the machinery department of the great Exhibition. Let us hope that in the new Crystal Palace a more calm and less hurried opportunity may be likewise afforded and availed of by the million. As I see by recent accounts that the Marquis of Tweed-

dale has succeeded perfectly in working ploughs by steam power, we must all soon square our fields, knock down our fences, get rid of our prejudices about hedgerow timber, and learn our lesson about steam.

By-the-bye, how odd it seems that, whilst our railway companies manage to have an effective, neat little fence (trimmed and cultivated during winter), the infection has never spread to the adjoining farms. The commentary is sufficiently lengthened and general to point its moral in every county; but the seed does not vegetate, although abundantly sown. Cannot you favour us some day with an explanation? But pardon the digression, and let us return to *nos moutons*.

Our agricultural engine-makers will pardon me when I say that they have had much to learn and improve upon during the last three or four years. When you first think of having an engine, your mind is racked with doubt whether it shall be vertical or horizontal, high pressure, low pressure, or expansive. But suppose this settled; then comes the number of horse-power—four, six, eight, or ten; then the size, form, and thickness of boiler—whether flue, ordinary, Cornish, or tubular. In fact, the use of a steam-engine is a sort of experimental school of improvement and alteration. It is a great chance but that, having decided upon your engine, you do not quite know whether you had better drive with cogs or bands; and whether the latter shall be of leather or of gutta percha, or of both—the gutta percha representing the slice of ham in a sandwich of two leathers, which is the latest and best improvement.

Now, as I have had to buy my experience, and undergo the sentiments of doubt, plague, and mystery which I have just expressed, I consider it a public duty to communicate the results of my lesson for the benefit of such of my brother agriculturists as have a desire to be informed. It is not only in agriculture that this information is needed, for I can see in almost every town evidence of most costly mismanagement and waste.

The first and most general mistake is in having too small an engine, and particularly too small a boiler; always have an engine two horse-power larger than you think you shall require, as you are almost sure to impose some extra work upon it ultimately. It is a false economy to go to a cheap maker, or to sew down the estimate. A boiler should contain 25 cubic feet of space for each horse-power, which they seldom do, but which was a rule laid down by the memorable Watt and Tredgold; remember that the power is in the boiler, not in the engine, the quantity and pressure of steam being the measure of power. Mine is a flue boiler, three-eighths of an inch thick, which answers very well. The Cornish ones are good, but it is considered by many, and I think justly, that the most useful and economical is a simple cylindrical boiler, of ample length and dimensions, suspended or supported over the fire without flues, the greater portion of the boiler being exposed to the action of the fire, as in an arch. In such a case a high shaft is not necessary, there being slow and natural combustion. In my own case, with a flue boiler, I keep the greater part of the boiler exposed to the action of the fire, and the steam is taken from a high dome on the top, which prevents water priming or spirting into the cylinder of the engine. I attach great importance to the dome, which is like those on the locomotives.

Now, with regard to flues and chimneys or shafts, enormous mistakes are made, especially with flue boilers. Your engineer leaves you, as he did me, all trim and clean, with an assurance that steam flues keep themselves clean, and free from soot, and require no cleaning. There never was a greater mistake than this. The consequence is, that you go off admirably the first two or three weeks, when you gradually require more coals, more stoking, and get less and less steam. Your temper gets soured, and all goes wrong (this was precisely my case), so I broke open the brickwork at the back of the boiler, and found the bricked flues and the flue of the boiler almost choked with fine sand or inorganic matter, which being the incombustible residuum of the coal, was carried along by the draught, and deposited gradually, like drifted snow or sand. The result of this obstruction was what we see almost daily—a black suffocating line of smoke spreading its nuisance far and wide, a sure indication of waste and mismanagement. I forthwith established iron trap doors at each end of every flue, and also wherever there was a bend or turn, so that once in a week or ten days every flue and corner may be cleansed of the sand, which often amounts to one or two sacks full. By this and some other arrangements the smoke is converted into gas; we generate steam easily and abundantly, and little or no smoke issues from the chimney.

The importance of cleaning boilers inside and out is great, seeing that iron loses its conducting power when coated with inorganic earthy matter. Another very important matter is to have ample depth and space under the furnace bars, so that an abundant supply of cold or oxygenated air may enter; otherwise your bars will be frequently melted and destroyed, and you will be tormented by an undue accumulation of vitreous masses or clinkers, which, adhering to the furnace bars, obstruct the draught of air which ought to pass between them, and without which there cannot be perfect combustion. I have also a contrivance for admitting cold air at the end or back of the bridge or furnace bars. We get smoke instead of gas, because we do not admit cold air in sufficient quantity. I am satisfied that cold air should be admitted at the two sides of the ash-pit, as well as in the front; the colder the air the more oxygen it contains in a given space, and the more clear



liant will be the fire. A water-gauge and steam-  
both essential, the former of glass, like those  
railway engines, packed with vulcanised India-  
rings, or you will always be breaking them. If  
you always see the water playing or boiling in the  
glass, we should not hear of those melancholy  
explosions.

I have two steam-gauges—one a spring one, the other  
of quicksilver, like a barometer. This is a more correct  
and safe indicator than the former, the difference being  
very considerable, say 25 per cent., owing, no doubt, to  
the mode of fixing the spring. We work, at high  
pressure, say 40 lbs. to the inch (sometimes 50 to 60),  
which is more economical in fuel than lower pressure;  
of course, every attention should be paid to the safety-  
valve. We keep our boiler about three-fourths full of  
water; the fire is banked up at night, so as to be ready  
for a start in the morning.

Before I proceed to the very important consideration  
of brasses and bearings, or supports, I would remark  
that our old tumble-down farmeries are by no means  
adapted for so mighty a power as steam, which would  
reck them to pieces. It is essential that the foundation  
for the engine, and the walls or supports for the axles  
or shafting, should be so strong as to allow of no move-  
ment, trembling, or vibration, which would cause a  
serious loss of power and increase of wear and tear. It  
is only those who have witnessed steam machinery that  
can properly appreciate the immensity of its forces.

Having now your shaftings sufficiently strong with  
bearings at close intervals, take especial care to have  
the brasses long enough, which thus diminishes the  
ratio of pressure by increasing its area. Take care that,  
while your brasses are screwed sufficiently close to  
prevent play or oscillation, they do not press on the  
shafting. Most woful mistakes are made in this respect,  
as I know from annoying experience. Remember that  
if you screw the brasses tightly to the shafting, it acts  
like a skid on a wheel or a break on a railway carriage  
—the lubricating oil is excluded; you get heated bear-  
ings, enormous friction, and most likely breakage or  
injury to your machinery by obstruction. Where we  
depend, as we must do, on agricultural labourers for  
our engine-drivers, it is highly essential to watch over  
and instruct them in these matters. It is no uncommon  
thing to see them pouring or wasting oil into the holes  
of the brasses without previously removing or picking  
out the dust or dirt, consequently the oil does not enter  
between the shaft and the brass, and they get hot  
and abraded.

In all rapid movements, such as the threshing-machine  
drum, which in my case makes 1200 revolutions per  
minute, a most vigilant attention to the brasses is in-  
dispensable. The brasses should be examined after  
each day's threshing; and if fluted or worn should be  
cross-filed with a half-round smoothing file, so as to  
permit the lubricating oil to traverse. Good machine  
makers have often sad reason to complain of the gross  
negligence and clumsiness of farm management of their  
engines, acting injuriously alike to all parties. As I  
look upon the highly-finished and smoothly-working  
engines at our great shows, attended by their vigilant  
makers and managers, hoping to receive the prize for  
economy in fuel and execution of work; when I subse-  
quently examine the judges' reports, and read of 4 or  
5 lbs. of coal per horse per hour, I ask myself, how will  
all this be altered when we find them on a farm, with  
foul flues and boilers, worn brasses, hot bearings, and  
careless management. When we, as agriculturists,  
more fully appreciate the value of steam as an economic  
agent, we shall be less plagued than we have been, for  
there will grow up amongst and around us a race of  
engineers and engine-drivers, from whom we can readily  
be supplied. They naturally appear where there are  
engines in use, and of course not where they are not.  
Seven years ago, when I was almost alone in this county  
with a steam-engine, it was awkward indeed; now we  
have two young engineers within five miles. While  
speaking of "brasses," I forgot to say that they are  
much improved by an insertion of amalgamated white  
metals of less cutting properties.

The cost of engines in the south of England may be  
taken at 25*l.* per horse power, to which it will be safe  
to add 25*l.* more for threshing, chaff-cutting machines,  
grinding mill, Turnip cutter, shafting bands, &c.; so  
that you get all paid in a six-horse power engine for  
about 350*l.* to 400*l.*, which will cover bricklayers' and  
carpenters' work in ordinary cases.

The annual cost of repairs to machinery, brasses,  
driving-bands, and occasional fractures, may be set down  
for the whole machinery at 5*l.* per horse power, or 30*l.*  
for a six-horse engine—assuming, of course, that it is  
worked all day long, and every day up to its full powers.  
The consumption of coals, with clean flues and good  
management, will be 6 to 7 cwt. per day, or 10 to 11 lbs.  
per horse per hour. As a matter of detail, you will  
require for your steam horses Rape oil for bearings,  
Russian tallow for cylinder, white and red lead and soft  
hempen cord for packing, and leather thongs or rivets  
for your bands. Your engine-man should have a vice,  
anvil, forge, hammers, two half-round and two square  
files, pliers or blacksmith's tongs, spanners, screw  
hammers, &c. I prefer an intelligent agricultural  
labourer as my engine-driver, and give him 10*s.* a week,  
except at harvest, when he has double pay. I ought to  
say that all riggers or driving-wheels should be turned  
smooth, which causes the driving-band to cling to them  
by excluding air. If left rough from the casting, as  
mine were originally, the driving bands slip.

In conclusion, let me remark, if I have not been

already too tedious, that horse power may not be com-  
pared with steam power. Horse power is very variously  
estimated by engineers, according to the size and  
keep; but assuming it to be the power of raising  
33,000 lbs. a foot high each minute, remember that four  
hours of such labour would constitute a day's horse  
work; whilst so long as you feed your steam horse  
with coals and water, you may work it night and day.  
I have seen it stated that one-half the population of the  
whole globe would be required to turn out our manu-  
facturing quota, by manual labour. If we used horses,  
instead of steam, we had need sow every acre with Oats  
and hay. We should want millions of grooms and  
whole cities of stables. If we should succeed in getting  
a few hundred thousand farriers and horse-doctors,  
where the hides would come from for harness I really can  
form no idea. Let our non-steaming agricultural friends  
imagine that one of our ocean steamers of 1600 horse  
power would require, working night and day, four relays  
of horses and two relays of men—that would be 6400  
horses; one man to every four horses would be 1600  
grooms and attendants, to say nothing of hay, straw,  
corn, water, for 14 days, with 6400 sleeping stalls for  
the horses, with beds and provisions for the attendants.  
Noah's ark or Smithfield would be nothing to it. This  
is ridiculously though truthfully illustrative, but not  
more so than to oppose long custom and the flail to  
science and steam.

Let us not for a moment suppose that steam displaces  
manual labour. It has had the reverse effect in manu-  
factures, and so it will in agriculture; for it brings with  
it general improvement, progression, abundance, and  
cheapness.

I may probably in another number say a word or  
two about pumping and pumps. *I. J. Mechi, Tiptree  
Hall, March 3.*

### Home Correspondence.

*Mitigation of Pain.*—I have great respect for any  
person who is anxious to mitigate animal pain. "W. C.  
S." is unnecessarily troublesome in the details when he  
advises the opium with nitric ether, as common laudanum  
answers equally as well, the dose being the same. The  
gentian and cascarrilla I have no hesitation in pro-  
nouncing injurious. Heaving is in all cases curable by  
a teaspoonful of laudanum given in gruel, or injected  
into the "shape" every half hour, it being spasm of  
the womb, whereas puerperal fever is inflammation of  
the same organ. *F. D.*

*Land Drainage.*—A correspondent signing himself  
"T. G. Clitheroe," in an article on land drainage, says,  
"In some of the land here there is a vein of gravel at  
the depth of 5 feet, and if this is not bottomed the capil-  
lary attraction is not overcome, and the land is not  
thoroughly drained." I shall feel very much obliged by  
being told the meaning of "overcoming the capillary  
attraction." I have studied the subject of capillary  
attraction in soils rather closely, and as far as my  
experiments and observation have gone, I think that he  
might as well try to overcome the rotation of the earth.  
I can assure him that mine is no idle question. I shall  
moreover be much obliged to any one for information  
on this subject. *J. C. C., Winchester.* [The capillary  
force is able to keep without loss by drainage the water  
contained in a mass of wet earth, say 3 feet high. If  
the mass of earth be higher than this, then the weight  
of water it contains is able to "overcome" the capillary  
force, which would retain it, and the heap begin to  
"weep" at its base. That no doubt is "T. G.'s" mean-  
ing. The term used seems to be appropriate enough.]

*Carbonised Peat,* generally termed peat charcoal, has,  
for at least eight years, become, through the zeal of  
Mr. Jasper Rogers, a subject of much interest. In con-  
sequence of the severe epidemic fever which has lately  
visited the extensive and increasing town of Croydon,  
commencing with the period when the insidious river  
Bourn began to send forth its underground feelers below  
the surface of the lower parts of the neighbourhood, and  
attaining its virulence about the 25th and 26th of  
December, it became a serious duty to inquire into the  
traceable or probable causes of a visitation so terrific.  
As I had attended the earliest meeting which led to the  
formation of a local board of health in 1849, and had  
furnished all the meteorological data that, soon after,  
were acknowledged by the authorities of Gwydir House,  
I could not shut my eyes to the importance of those  
operations which had been undertaken in order to pro-  
vide an adequate supply of water of first-rate quality,  
and so effectually cleanse the town and suburbs of those  
fecal nuisances in which they had long superabounded,  
by a system of glazed-stone pipes laid very deep, rami-  
fying as an arterial net-work, and terminating in a  
filterer at the lowest south-west side of a place close by  
a bank of the river Wandle. For a time, lime had been  
employed to correct any offensive exhalations from the  
solid feculent remains of the sewage; but that, as a  
practice, was chemically improper, and carbonised peat  
has since been substituted. It is a notorious fact that  
every measure adopted by the local board has been met  
with malignant prejudice, and stigmatised accordingly.  
As a perfectly independent inhabitant, desirous to meet  
and remove every cause of suffering or offence, I almost  
immediately, after learning that the charred peat had  
been employed, applied for a fair sample of it; and  
fortunately obtained, through the kindness of a friend  
and the surveyor, a very ample supply of the article,  
*bona fide* used to deodorise the sewage of the locality.  
In the "Transactions of the Highland Society," pub-  
lished March, 1851, there is a remarkable "Report of  
the Economical Uses of Peat," by Dr. Anderson, chemist

to the Society, pp. 549 *et seq.* (Quarterly Journal, Edin-  
burgh), wherein there are numerous and conclusive  
experiments, some of which I have just verified. It  
will not be desirable to enter minutely into the series,  
but I am bound to state, first, that the charred peat  
used here is of a very complicated nature, so abounding  
in constituents as to justify the list given by Prof. Phillips,  
and published by the Irish Amelioration Society; and  
hence, that the peat of Croydon is true and genuine:  
2d, great stress has been laid upon the power of char-  
coal (wood charcoal and that of peat among the rest)  
as an absorbent of ammonia to the extent even of 95  
times its volume! Dr. Anderson repudiates the fact,  
and that upon incontrovertible data. Our peat  
charcoal appears not to possess this absorptive  
power, so far as respects the pure liquid ammonia  
of the chemist, for, after drying off the moisture which  
it held, I found that one-tenth of the weight had been  
lost. From this dry part, when supplied with pure  
ammonia of 0.97 specific gravity, and saturated with  
filtered rain water till drops passed through it, no sensible  
diminution of the ammonia could be traced either by  
taste or smell, by test paper or muriatic acid vapour,  
Dr. Anderson's first experiment may now be cited as  
bearing upon the question. Experiment 1: "A glass  
tube, about half an inch in diameter, had a piece of  
cloth tied over its lower end, and was filled to the depth  
of about 12 inches with Irish peat charcoal and a solu-  
tion of ammonia" (most likely the carbonate or smelling  
salts), "containing 2.42 grains to the cubic inch, poured  
into it. The first drop of fluid which filtered through  
was as distinctly alkaline as the original fluid, indicating  
that no rapid or abundant absorption had taken place." In  
my experiment the filtered fluid was returned more  
than once over the peat, so as to extend the duration of  
the experiment; and therefore it appears evident that  
this carbonised substance, if it absorb ammonia at all,  
possesses but low absorptive power when acting upon  
that alkali. As a deodoriser, Dr. Anderson fully admits  
its efficiency, for in Experiment 5 he says, "500 grains  
of peat charcoal were mixed with 1 cubic inch of putrid  
urine; the putrid odour immediately disappeared, but  
the smell of ammonia remained distinct, and the mixture  
showed an alkaline reaction to test paper suspended in  
the upper part of the vessel in which it was contained." I  
have tried the percolation of a compound fecal and  
urinous foul liquid through a considerable mass of the  
peat, and have obtained several ounces of a fluid, clear  
and inodorous as fine rain water! Other experiments  
are in progress, the results of which cannot yet be alluded  
to; but if ammonia remain unabsorbed, though colour  
and foul odour be attracted and fixed, what will become  
of the hypothesis which claims ammonia and its fixation  
by soil as the pabulum, the *sine qua non*, of vegetable  
nutrition? If foul and putrid odour be the cause, as  
some assert, of epidemic fever, then carbonised peat  
will be an effectual preventive. *John Towers, Experi-  
mental Chemist, Member of the Royal Agri. and Hort. Soc.*

*With respect to Iry,* sheep will eat it very readily.  
In the storm of Dec. 26, I had a plentiful supply, and at  
first feared to give it to a small flock of my own, but  
knowing it to have been collected in severe winters for  
deer, I at last gave it to my ewes, which have ever  
since received a daily quantity, and now look greedily  
for it as the usual hour arrives. It saves hay, and the  
ewes that have yeaned (which, by the bye, do not now,  
since lambing, come in for their share), have done very  
well. *E. S.* [About meadows next week.]

*Sundries.*—Having occupied my leisure, during the  
late storm, in grubbing among some old books on farm-  
ing, I fell in with some plans which are new to me, and  
about which I request information from such of your  
readers as have any experience relating to them. The  
first is a plan of covering roofs with sheathing or package  
paper, dipped in or covered with tar, detailed in  
"Farmers' Magazine," vol. ix., page 73. This species  
of roof is there stated to be equal to slates in durability,  
and to be executed at half the expense. Another  
account of this plan of roofing, differing very little from  
that above referred to, is given in the Journal of the  
Royal Agricultural Society of England, vol. xi., page  
268, as a quotation from the "Plough." If this roof  
possesses the advantages attributed to it, it would be  
desirable that it were better known. The other plan is  
that of an addition to the plough for the purpose of  
pulverising the furrow while in the act of being turned  
over, and leaving it in such a state that less harrow-  
ing will be required before and after sowing. An  
instrument for this purpose called a "wheel-brake,"  
consisting of a sort of circular harrow, with radiating  
prongs bent at the extremities, bearing a resemblance  
to one of the rowels of Crosskill's Norwegian harrow,  
is described—"Farmers' Magazine," vol. xv., p. 470.  
It is stated to be of use in collecting Couch-grass, raising  
Potatoes, and pulverising the soil. Mason's pulverising  
plough, figured and described in the third volume of the  
Royal Agricultural Society's Journal, p. 356, appears  
well adapted for breaking down the soil, and it would be  
desirable to know whether it continues in use. Farming  
a light soil in Aberdeenshire, I have sown the greater  
part of my grain crop with the English corn drill for  
the last two seasons, and I find the only disadvantage  
attending it to be that it increases the horse work  
during the busy period of spring, when our staple and  
almost only grain crop, Oats, is sown. Any contrivance,  
therefore, that would diminish the harrowing necessary  
for reducing our two or three year old leas, would be  
very acceptable. *B. D. T., March 4.* [We know of a  
case in which roofing with tarred paper over cement  
has been successfully adopted.]



ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House, in Hanover Square, on Wednesday last, the 9th March. Present: Lord ASHBURTON, President; Hon. John Jervis Carnegie, Mr. Barugh Almack, Mr. Raymond Barker, Mr. H. Raymond Barker, Dr. Calvert, Mr. W. G. Cavendish, Colonel Challoner, Mr. Dyer, Mr. C. C. Ferard, Mr. Gadesden, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. K. G. Key, Mr. Majendie, Mr. W. Napier, Mr. Mainwaring Paine, Mr. Pocock, Mr. Powell, Mr. Risler, of Versailles; Mr. Rowlandson, Professor Simonds, Mr. Augustus Smith, Mr. Reynolds Solly, and Captain Vyner.

**DARTMOOR BARLEY.**—Mr. G. W. Fowler, of Dartmoor, transmitted to the Council a sample of his Barley, grown at 1100 feet above the level of the sea, on land which four years ago was dotted over with large granite rocks. It was sown about the middle of March last year, after a crop of Swedes, which were all carted off. He thought the yield would be about 5 qrs. per acre.

**WHITE BELGIAN CARROTS.**—Mr. Edward Smith, of Isabel Mead, Harbledown, near Canterbury, favoured the Council with the following account of his cultivation of the White Belgian Carrot.

I beg to offer a few remarks on the cultivation of the White Belgian Carrot, and the system I have followed for several years in Wales upon a poor stony shallow soil scarcely six inches deep. I plough the land early after harvest, either Wheat, Barley, or Oat stubble, and in November, if dry weather, balk or ridge up the land to remain for the winter. About the middle of April, if the ground will work well, harrow and pick off all the Couch or Grass, and again strike out the furrows from 20 and 24 inches apart, and haul or cart in the balks about 20 loads of dung, and cover in the same as for Turnips. I have found this plan answer so well that I have adopted it in preference to the usual way of putting the dung on either in the autumn or spring, and ploughing it in, and have always found the Carrots free from scab, and quite straight, and have had far better crops. Upon the ridge I draw with a small hoe a shallow furrow, and sow the seed by hand, with a tin two feet long made like a funnel. I have had a much better plant by sowing by hand, which amply pays for the extra expense. The seed is then covered in by a boy following with a rake. I find from the middle of April until the first week in May the best time for sowing the seed. I do not approve of too early sowing, as the young plants are apt to be cut off by the spring frost, and much stunted and injured, and never appear to thrive so well after. I find about 4 lbs. of seed sufficient for an acre, and I wet the seed a week before sowing, mixed with a little sand. As soon as the Carrots appear above the ground, so as to be seen in the rows, I take advantage in dry weather to hoe between the drills, to give air to the plants. When the Carrots come out into second leaf, and to be clearly seen from the weeds, I have boys to pull the weeds in the rows by hand twice before I thin any of the Carrots, as it gives an opportunity of seeing where they should be left. I leave the Carrots about 4 or 5 inches apart, and never allow the hoe between the plants, as they can be much better done by hand, and without injury. I do not use the horse-hoe until the Carrots get up strong, as the earth is apt to fall upon the crown. I have found by taking the earth from the Carrots after they are about half grown they have been much larger. I usually commence digging the roots about the middle of November, and I lay them in lumps about 40 bushels on the field, or cart them off into clamps and put a good covering of straw first and well thatched afterwards. I find they are better left without earth, unless very sharp frost. I have had the white Carrot keep in this way up to the middle of May, and have been quite sound and as good as when first put in, which is a great advantage in the spring for sheep and other stock, when the Swede Turnip is not so good late in the season. I think the white Carrot might be grown with much success on many soils, in addition to the Swede, as there is sometimes a failure in one where there may not be in the other.

**GUTTA-PERCHA TUBING.**—Mr. Key, of Newgate Street, stated that he had taken the earliest opportunity, as a member of the Society, of submitting to the notice of the Council an essential improvement just effected in the manufacture of elastic tubing for the purposes of raising water by suction and distributing liquid manure over the surface of land. This improvement consisted in the peculiar form given to the surface of the tubing, which, instead of being that of a revolving plane of uniform diameter, as in the case of ordinary glass or metallic tubing, was recurved throughout its length, by the introduction of a spiral process of alternate convex elevations and concave depressions. Mr. Key exhibited to the members a specimen of the plane tubing two inches in diameter and two yards long, which was found to admit of only a very slight flexure, and on being forcibly bent into a rectangular shape, it became doubled up at the angle like the inner bend of the elbow-joint, its internal diameter being considerably contracted, and its value as a conduit for liquid almost entirely destroyed. He then produced gutta-percha tubing, of the same diameter and length, but of the improved spirally-grooved shape; and this specimen, unlike the former one, was found to possess perfect flexibility and uniform curvature in every contortion to which it was subjected, leaving the internal bore of the tubing unaffected by such circumstance. Mr. Key further explained that the recurved shape of the tubing conferred upon it great power of resistance against lateral pressure; and that among the immediate purposes to which such elastic waterproof piping was applicable, he might refer to the suction and deliveries of portable manure-pumps and fire-engines. It might be made of any diameter or length, and formed in the first instance into either longitudinal or fixed angular tubes, and it admitted of being most easily repaired by a common labourer, whenever a flaw was discovered or injury sustained.—Mr. Mainwaring Paine stated that he had made trial of the principal means proposed for the suction and delivery of liquid manure, but he had found none so effectual as those which this improvement furnished for the purposes in question; the tubes were less liable to be out of order, and when they were so the simplest application in the hands of a common workman

was sufficient to render them again effective. He had also found that by the application of Urwin's lift and force pump he could convert this flexible tubing into siphons, by means of which water or other liquids could easily be raised to different altitudes, or conveyed in continuous flow from a higher to a lower level over walls, turnpike-roads, or other intervening eminences. The drainage from his live-stock was received into tanks, and the liquid manure distributed, by tubing in lengths of 350 yards from each farm-centre, over his Grass, Hops, and other crops.—The President remarked that every facility afforded for the distribution of liquid manure was a subject of interest and importance to the practical agriculturist.

**POULTRY DUNG.**—Mr. Tollet, of Belley Hall, Staffordshire, called the attention of the Council to the great importance of collecting and preserving the valuable manure furnished by poultry. The following is an extract from the letter with which he favoured the Council at this meeting.

"Keeping a large number of Cochins China Fowls, I began, the autumn of last year, to collect the dung of my poultry yard, and am now possessed of two or three tons of it. The poultry are fed with a regular proportion of animal food, Hemp-seed also being a considerable part of their diet, together with corn of the best quality. I thought the dung produced might compete with the deposits of the sea-birds in the south-sea islands. It is collected twice a-week, and is secured from the wet by being put into sugar hogsheads. Being convinced of the importance of the Society's objects in endeavouring to obtain new supplies of guano, and also to discover such substitutes for it as would in a great measure render us independent of foreign supplies, I shall do everything in my power to promote these objects. I am therefore putting myself in communication with Professor Way, the consulting chemist to the Society, in order to procure an analysis of the poultry manure thus collected in my management of the Shanghai poultry. The result of this analysis will show how far this practice is likely to become a branch of our rural economy. The collection of the manure is effected at a trifling expense, and the health and cleanliness of the poultry are thereby greatly promoted."

**WELSH FARMING.**—The Rev. Thomas Williams of Tir-y-Cwm, in Glamorganshire, having favoured the Council with various suggestions connected with the determination of prizes for the South Wales district, the following extracts from that correspondence, having a general interest connected with the ensuing Country Meeting of the Society to be held at Gloucester in the middle of July next, were read to the members at this weekly meeting of the Council.

**General Character.**—South Wales labours under many disadvantages which militate against good farming as it is conducted in England and the lowlands of Scotland, among the principal of which may be cited a humid and uncertain climate, much uncultivated, common land, absenteeism, inefficient agents (who with a few exceptions are attorneys), and a language in which no useful knowledge is propagated. With such obstacles, it is not surprising that we are, generally speaking, very far behind England and Scotland. The soil in most of the counties is a stiff, adhesive, and in the mineral district comprising nearly the half of South Wales, a ferruginous clay. In Brecknockshire, Monmouthshire, and part of Carmarthenshire, the old red sandstone predominates; Cardiganshire and Radnorshire are on the slate formation. About five-sixths of the country is either mountain uncultivated or consists of hilly farms, with a right of grazing on the adjoining mountains. On the sea-coast there is a border of better land, and many districts well cultivated, the whole country being intersected by narrow valleys, the rivers and sides of which are here fertile. On account of these circumstances of a humid climate, undulating surface, with hills and valleys dove-tailed into each other, and a stiff clay soil, I am decidedly of opinion that South Wales is eminently constituted for breeding stock and dairy farming; particularly the former, for stocking the large districts of uncultivated mountains, ranging from 1000 to 2500 feet above the level of the sea. Adjoining this farm, situated at an elevation of 800 feet, rises one of these ranges, which is 14 miles by 8, and highest elevation 2600 feet; on this, to which the cattle of my farms have a right of grazing, my stock feed from the middle of April to the middle of November. I keep all the enclosed land in hay, excepting about 40 acres, which I plough for the sake of Turnips and Oat straw, to help out the hay; and I force the aftergrass with manure, in order to have a good supply of Grass after the stock comes from the mountains.

**Cattle.**—The stock of the country is inferior to those of the three principal classes to which the Royal Agricultural Society of England gives prizes at its Annual Country Meetings; I do not think that either the Hereford or the short-horn breed flourish here, as they do in more inland districts. I have observed that they all degenerate. The Devons have not bred so fair a trial; but were I to change my stock, I would prefer in this country animals of that breed to either short-horns or Herefords. There are only two local breeds of cattle in South Wales, the brown Glamorgans and the black Pembroke. In the lowlands adjoining the coast these animals are large, with many good points, more resembling the Devons in make and character than any other cattle, and both no doubt originally derived from the same stock. Good representations of them have been given in the Farmers' Series, published by the Society for the Diffusion of Useful Knowledge. I would take the liberty of suggesting that the Royal Agricultural Society of England should encourage the improvement of these breeds. His Majesty King George the Third preferred the Glamorgans to any other cattle, and sent his ballif every spring to select stock from them for Windsor. The farming of the country is not sufficiently advanced to support Herefords or short-horns in anything like the perfection to which they attain in England. I know, however, that it may be said, that there are Herefords in some parts of Brecknockshire equal to any animals of that breed in other parts of the kingdom; there is, indeed, on the banks of the Wye and the Usk, a small district of excellent land where first-rate cattle are bred, but I have not seen such animals anywhere else in our districts. The Glamorgans and Pembroke have always contended for superiority, and both are favourites in the English grazing counties; the opportunity of the meeting at Gloucester might, by bringing the best animals of the two breeds into competition, decide for that occasion their respective merits. An inferior description of the same cattle is the stock of the hills, which, by inferiority of keep and inclemency of climate, has degenerated from the character of the lowland cattle. I have always thought the cattle of the western highlands best suited for the mountainous districts of Wales, and I have known them to succeed in cases where they have been tried. I would suggest a prize for the cattle best adapted for the hills of Wales, being bred in the district.

**Welsh Ponies.**—The Principality generally, and South Wales in particular, has always I believe been celebrated for its breed of ponies; and it is extraordinary that the breed has not degenerated, as no care or attention is devoted to these valuable animals. They run wild on the mountains, nobody taking the trouble to select a stallion; they take their chance. I have for some years paid much attention to the Welsh pony, being of opinion that animals of this breed will pay more on the same keep than either

cattle or sheep, and no ponies can be imported from the district of Ilic, America, or the Mediterranean. Double the number of ponies can be kept longer on the same number of acres on the highland than in the case of cattle; there is always a ready sale, and thousands are annually exported to other countries. A year-old pony is worth more than a yearling mountain-steer, and I have given a prize, and promised to continue it for three years, at the Brecon Agricultural Society for the best true-bred Welsh mountain pony stallion and mare. There is a great difference between a Welsh pony and a small horse; in law, anything not exceeding 13 hands high is a "pony;" but the Welsh pony is evidently a thorough-bred one, with handsome small head, clean sinewy legs, without more hair on them than an English blood-horse. A small cob, such as is called a pony in England, could not live on the hills, the steep sides of which can only be trodden securely by a genuine Welsh pony, a goat, or wild sheep; his courage and activity enable him to brave the storms, and the rugged and almost perpendicular sides of the high hills, where he is sure to be found during the winter months. The Welsh pony will become more valuable every year, as the improvements of roads has made it as easy for him to drag a farmer's wife, &c., &c., to market, as it was a few years ago for one of the plough horses to accomplish the same task. Possessing hills so extensive, and in a climate so wet and variable, where Grass flourishes, but where corn starves, this breeding of Welsh ponies, if pursued with proper and moderate attention, would form the most lucrative branch of farming in this part of the kingdom; all that is required is, a good selection of stallions and better winter keep. At present the pony only gets what he can pick up, and that is easily to be obtained in that neglected but valuable food Gorse. On one of my farms I feed every winter 40 ponies and 20 head of cattle on bruised Gorse and straw, a food which I also give instead of Oats to my cart-horses. I intend, should my life be spared, to have enough Gorse in a few years to maintain 100 ponies during the winter months. I hope that the Royal Agricultural Society of England, which has already directed public attention to this subject by its prizes for Essays on the cultivation of Gorse and machinery to effect the due bruising of the plant, will continue to encourage its cultivation; and by its prizes at Gloucester, the improvement of that most neglected but valuable animal the Welsh pony.

**Condition of Competition for Ponies.**—I beg to suggest that the prizes for ponies should be so defined that only those ponies that are bred on such high mountains as our Welsh ponies are, shall be qualified to compete. Of course, the motive for giving prizes for ponies is to encourage the breed of such animals as can support the climate, and keep in tolerable condition on heath and such coarse Grasses as grow on mountains 2000 feet above the level of the sea, and on such ground and in such a climate as deer-stalkers would expect to find a stag in the Highlands of Scotland. Unless such condition is made, any horse—a small Arab or duc-decimo Suffolk punch—can compete; and as such ponies under certain circumstances are in themselves valuable, the judges might award the prizes to ponies of this class, though such would in the dog-days be starved on the mountains where our Welsh mountain-ponies thrive even through the winter, excepting when the snow is too deep. All my ponies have been during the whole of last month (February) on some heath land more than 1000 feet above the sea, having now and then a mouthful of hay and chopped Gorse supplied to them; and I have seen some of our ponies that have not been off the hills, nor had a morsel given to them during the winter. Where Highland deer can live so can the Welsh ponies; not so, however, can the English dwarf cobs, which though valuable to carry an alderman of 15 or 16 stone, four miles an hour, are accidental abortions. I saw one of these some time ago carrying an elderly Dan Lambert, and of course he was worth a mint of money to such an owner, but if a stallion of that kind was offered to me gratis, I would not accept him, as I know I should be under the necessity of carrying food to him, whilst our real Welsh mountain-pony goes in search of his. In conclusion I trust that such entries will be required as may exclude all crosses, accidental dwarf cobs, and duc-decimo punches.

**Sheep.**—The Welsh farmer is fonder of his sheep than anything else; because, as he will tell you, "it gives him no trouble." He turns them out on the hills in May, where they roam at pleasure. About the 20th of June, there is a grand day: the hills being divided by brooks into districts, on each of which there is a large fold surrounded by small ones, each owner having a right to that part of the hill who possesses one of the smaller ones; no sooner are the sheep in the large fold than every sheep-owner rushes after them, and seizes those sheep which have his own ear-mark, and throws each of them over the wall into the smaller fold, from whence they are taken to the river and washed; being shorn the next day, as the shepherds are obliged to watch these wild creatures night and day, to prevent their being off, as otherwise they would assuredly be, to their accustomed haunts; when turned loose they soon find their way again to the hills. The farmers have two or three of these gatherings during the summer, and they are regarded as high holidays. There is no preparation made for the winter; nor, as the hills are generally commons, are parts preserved for the winter as is the case in Scotland. The lambs are sent for the first winter to be wintered near the sea-coast, the farmers there taking them in to graze the stubbles and hedge-banks at a charge of about 2s. 6d. each. I think it may be considered, that there are only two breeds of hill sheep in Wales, namely, the Radnor Forest sheep, and that generally known as the Welsh sheep. The former is larger, has finer wool and more of it, is tamer, and requires more attention than the Welsh sheep, on which account this very good mountain sheep has not travelled southward in the Principality. Some years ago, I introduced some black-faced Highland sheep into South Wales; but I found the unwillingness for change, even as I conceived for the better, too great to establish the new breed in the district. As I am myself also, I trust (although not prejudiced against improvement from whatever quarter it may come), a true Cymro, I shall feel proud and happy to find that any suggestions of mine may have contributed to the carrying out of those objects of the Royal Agricultural Society, at its Gloucester meeting, that have special reference to the improvement of the husbandry of the Society's "South-Wales District."

**MORTALITY AMONG EWES.**—Mr. Fisher Hobbs took that opportunity of calling the attention of the members to the extensive losses taking place during the last few weeks among the flocks of lambing ewes in Cambridge-shire and other parts of the country. He reminded the members of the veterinary privileges they enjoyed on the one hand of making application, through the Secretary, to the veterinary committee of the Society, and of the aid, on the other hand, they had in their power to bestow in promoting the general good of the community by sending to the Royal Veterinary College, either alive or dead, such animals as had become affected with disease, and enabling the Professor of Cattle Pathology in that establishment to investigate more closely and satisfactorily the exact character of diseases occurring from time to time among the live-stock of farmers. The printed list of the privileges he referred to, and the schedule to be filled in on making application for professional aid, were to be obtained on addressing a letter to the Secretary of the Society. A year or two ago Mr. Hobbs's own pigs were seized with a fatal distemper, connected with ulcerated sore-throat and fever, and he believed that he should soon have lost the whole of his stock, had it not been



for the timely arrival of Professor Simonds, to whom he professionally applied under those circumstances, and who at once ascertained on the spot the cause of the malady in question, and advised such measures to be taken as prevented the further loss of a single animal. Seeing that gentleman at that time present, he desired to inquire of him his opinion on the nature of the prevalent malady among the lambing ewes.—Professor Simonds stated that the disease to which Mr. Fisher Hobbs had alluded was dependant on atmospheric influence acting on the general functions of the body, producing unhealthy secretions, and resulting in a vitiated state of the whole mass of the blood in the system, and functional derangement of the brain; there was also a deficiency of blood, while the ewes, at the time of parturition (especially in the case of twin lambs), required not only a healthy circulating mass of such fluid, but a larger amount of it. The premonitory symptoms were—loss of appetite, diarrhoea succeeded by constipation or torpid state of the bowels, vertigo or dizziness, with that want of nervous energy which superinduced a stupidity or apathy in the animal, leading it to wander about vacantly, and only to eat its food when actually placed within its mouth. He recommended that the animals should be supplied with vegetables of a less succulent character than ordinary, and that an increase should be made in the use of such food as contains a large amount of nitrogenous matter, such as crushed corn and chopped hay, with a little Linseed, but no bran. He pointed out the importance of careful attention being paid to the secretions of the animals, as it was through the secretory parts of the body that the disorder was most likely to be carried off. He regretted the difficulty that existed in getting farmers to supply the Royal Veterinary College with animals. He had applied to a veterinary surgeon in Norfolk to procure "subjects" for the purpose of investigation, but he had not yet been able to induce a single farmer to comply with his request. If those members of the Society who would kindly aid in these inquiries would communicate with the College, an arrangement as to expense of carriage, keep, &c. (in the case of living animals), could always be made. He further remarked that in many diseases where causes had been long in operation, immediate benefit could not be immediately expected in diminishing the extent of disease, but preventive measures might in all cases be taken, and by investigation into the cause of disease practice would be modified by an increasing knowledge of such cause. He had found the Leicester sheep bear up better against the prevailing disease than the downs, but for reasons unconnected with the question of short or long wool.—Lord Ashburton expressed his willingness at once to take measures, on his own part, as well as on that of his tenants whom he hoped to induce to join with him in this important object, that Professor Simonds should be supplied with animals for the purposes of his observation and investigation.—The Hon. J. J. Carnegie, Mr. Raymond Barker, and Dr. Calvert also favoured the Council with remarks on this subject.

The Council then ordered their usual acknowledgements for the various communications submitted to them at that meeting; and adjourned to 12 o'clock on Wednesday next, when Professor Way would deliver before them and such other members of the Society as would favour them with their attendance, his lecture on recent discoveries connected with the absorption of ammonia by certain mineral substances.

Calendar of Operations.

FEBRUARY.

DORSET FARM, Feb. 28.—Since our last report we have had some sharp weather, more than for the last seven years put together. We have had snow from 4 to 5 inches deep, and very keen frosts for nearly a month; and although it has happened during our lambing season, we cannot say that it has done us any harm so far as the sheep are concerned, but it has caused the consumption of more hay than we calculated on. Our ewes have nearly all lambed, and have done very well; the losses have been small, and the lambs never looked better, and we have plenty of them. But I believe this is by no means general. There is a serious complaint of ewes slipping, or having dead lambs when nearly full sized, and when this is the case the ewes are frequently lost, and there has been very serious losses in this way, which may be in some degree accounted for by the very wet time we had during December and part of January, and the least harm has been done where the flock depended mostly on hay during that time. We have suffered only with the young sheep, which had Turnips through the season; the rest, that had only hay, with very little Grass, have done extremely well. And since the frost set in we have found the great advantage of having a good supply of Mangel-Wurzel for them, as it is a root that produces a good supply of milk; and being so full of moisture, induces them to eat their hay better. But perhaps the reason of the older sheep doing best is that they were nearly all lambed before the cold weather set in, and the lambs were well up and able to take care of themselves better; whereas the young ones have come in during the coldest period, and some of them have caught cold, which has produced mortification. We have kept them in a well-sheltered yard during the night until they lambed, but I do not think that much of this does good, because they must be let out in the day-time, and after lying all night warm they are more likely to catch cold when let out by day. I think we ought not to employ too much artificial shelter, but provide them with such shelter as nature teaches them to take advantage of. Putting sheep under no thriven so fast as in ordinary seasons, but still they have done better than could be expected. Hogs seem to have suffered most, and though they have kept in fair condition, they have not come up to the size that we should have expected in a time season. Every kind of fat stock have sold well lately, and there is every prospect that they will continue to maintain their value. There have been down wethers sold in our markets at 75s. each; they were certainly superior, but any fat sheep will bring more than 74s. per lb., and they are hardly to be had at any price. Fat hogs are selling from 9s. to 10s. per stone, and pork has risen from 7s. 6d. to 8s. per stone. The season for engaging agricultural hands is about finished, and at present there seems to be an adequate supply, but it is not likely that the extra hands required also in hay-making and Turnip hoeing season will be forthcoming; they have been falling off for the last two

years, especially in harvest, and we may soon, willing or unwilling, be forced to put the reaping machine in operation; but it is well that such means are brought to bear at a time when there is every probability of their being required. We cannot say that the Wheat looks very well as yet; in some places it was sown late, and before it had time to establish itself well, the frost set in to check it, but it may do very well yet if the weather become favourable. We are now getting the ploughing up for Barley and Oats, and there will be more spring corn sown this year, many having been obliged to give up sowing Wheat owing to the wet state of the land. Grass has been a little cut by the frost, but still we are likely to have an average supply. The water meadows have more in them than there has been for many years, and the frost has rendered them safe, and many are now beginning to stock them with their ewes and lambs. G. S.

Notices to Correspondents.

BOOKS: A. B. Do you refer to the book published by the Useful Knowledge Society, written by Mr. Youatt? It will answer your purpose very well.—J. Learner. "A Word in Season, &c." 10th Edition, James Ridgway, Philadelphia.  
Box AND STRAW: F. B. Farmer in Gloves. We do not think you quote us fairly. Our experience was to the effect, that in box feeding more straw was used as litter than in stall feeding; and in any estimate of the requirements of the two, we should proceed upon that experience still. Where have you found the words you quote? The nearest we can find to them, are—"box feeding does not need three times the litter that is used in stalls."  
EGGS: J. K. Your letter has been sent to Mr. Bailly.  
FARM BUILDINGS: George. There is no public act for the advance of money for buildings in Great Britain. The provisions of the drainage acts only extend to works of drainage, trenching, and fencing. "The General Land Drainage and Improvement Company" have powers under their act to advance money by way of loan for the erection of farm buildings; but whether their terms are now such as to make it desirable to employ them we cannot say. Their office is at 52, Parliament Street, Westminster.  
FLAX: Mr. G. H. Bengough asks our correspondent "G. M." who wrote in the Gazette of the 26th ult., to communicate a little more detailed account of his process of dressing flax. [The "Belgian" process introduced by Mr. Warnes] is described in Mr. Warnes' work on Flax Culture.  
TENANT RIGHT: Diss. The whole discussion, with Mr. Kinnear's paper, has been published in a pamphlet by Adam & Charles Black, Edinburgh.

Markets.

COVENT GARDEN, MARCH 12.

The weather having become more favourable, the supplies of Vegetables during the week have been sufficient for the demand. Table Peas and Apples are, however of course, still scarce. The former are confined to Bouré Rance, and the latter to American Newtown Pippins. Pine-apples are realising good prices. Forest Strawberries fetch 3s. an ounce. Cob and other Nuts bring fair prices. Among Vegetables, we remarked Green Peas, new Potatoes, Horn Carrots, Asparagus, Radishes, Globe Artichokes, and Lettuces, all of foreign growth, and very good. Both Sea-kale and Rhubarb are pretty abundant. Potatoes are a trifle dearer. Mushrooms are scarce. Out flowers consist of Heaths, Primulas, Early Tulips, Roses, Cyclamens, Mignonette, and Camellias.

FRUIT.

Pine-apples, per lb. 6s to 10s  
Apples, dessert, per bush, 10s to 13s  
— kitchen, do., 6s to 12s  
Pears, per doz., 1s 6d to 4s  
Oranges, per doz., 1s to 2s  
— Seville, p. 100, 7s to 14s

VEGETABLES.

Cabbages, per doz., 1s to 2s  
Brussels Sprouts, per hf. sieve, 2s to 3s  
Broccoli, per doz., 2s to 3s  
Greens, per doz., 4s to 6s  
French Beans, per 100, 2s to 3s  
Asparagus, per bundle, 5s to 9s  
Sea-kale, per basket, 2s to 2s 6d  
Rhubarb, p. bundle, 1s 3d to 1s 6d  
Potatoes, per ton, 85s to 150s  
— per cwt., 5s to 9s  
— per bush., 2s 6d to 4s 6d  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 1s 6d to 3s  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 4s to 5s  
— Spanish, p. doz., 2s to 5s  
Beet, per doz., 1s to 1s 6d  
Lemons, per doz., 1s to 2s  
Almonds, per peck, 6s  
— sweet, per lb., 2s to 3s  
Nuts, Barcelona, per bush., 20s  
— Cobs, 120s  
Chestnuts, p. bush., 8s to 20s  
Cauliflower, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d  
Garlic, per lb., 6d to 8d  
Lettuce, Cab., p. doz., 1s to 1s 6d  
— Cos, per score, 1s to 2s  
Radishes, per doz., 2s to 2s 6d  
Endive, per score, 2s 6d to 3s  
Small Salads, p. pun., 2d to 3d  
Horse Radish, p. bundle, 1s to 3s  
Mushrooms, p. pott., 1s 6d to 2s  
Sorrel, per hf. sieve, 6d to 1s  
Artichokes, Jer., do., 1s to 1s 6d  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. doz. bunches, 2s to 3s  
Mint, green, per bunch, 1s  
Basil, per bunch, 1s  
Marjoram, do., 2d to 3d  
Watercresses, p. 12 bun, 3d to 10d

WOOL.

BRADFORD, THURSDAY, March 10.—The transactions throughout the week have been limited, the prices sought acting as a barrier to business; the spinners having anticipated, with the great dullness that has existed, a corresponding decline in prices. But so dear has the stock in the market been generally bought (and no case can be had now from the growers), that there is no disposition to sell, except at rates bearing no proportion with the current price for yarns. The closing sales of colonial and the Fair at Bristol yesterday were both marked by great firmness, at prices far too high for their destination.

ILOPS.—BOROUGH MARKET, March 11.

Messrs. Patten and Smith report that the market is very firm at full prices for new Ilops, with a steady improvement for old ones, which are in great demand. The export of Ilops and malt liquors is going on to a large extent.

POTATOES.—SOUTHWARK, March 7.

Since our last report the supply has been very limited both coastwise and foreign, owing to strong easterly gales, and the hard weather the last three weeks preventing shipments. The following are this day's quotations.—York Regents, 110s. to 150s.; Lincolnshire do., 90s. to 120s.; Scotch do., 100s. to 110s.; Scotch Reds 90s. to 100s.; French whites, 95s. to 105s.; Dutch (none).

HAY.—Per Load of 36 Trusses.

SMITHFIELD, March 10.  
Prime Meadow Hay 88s to 92s  
Inferior do. ... 75 84  
Rowen ... 45 67  
New Hay ... ..  
... 95s to 100s  
... 80 92  
... 30 34  
... E. J. DAVIS.

CUMBERLAND MARKET, March 10.  
Prime Meadow Hay 94s to 98s  
Inferior Clover ... 80s to 90s  
New do. ... ..  
New Hay ... ..  
Old Clover ... 95 105  
... JOSHUA BAKER.

SMITHFIELD.—MONDAY, March 7.

In consequence of a large supply and the warm damp weather, trade is very slow for Beasts, at rather lower rates. Several remain unimp. Although there is again a decrease in the supply of Sheep, trade is very dull, and notwithstanding we retain 5s. 4d. as quotation for the choicest Downs, it must be considered an extreme one. There is a considerable increase in the number of Calves over those of last Monday; prices on the average are consequently lower. From Germany and Holland there are 628 Beasts, 1270 Sheep, and 117 Calves; from Scotland, 490 Beasts;

from Norfolk and Suffolk, 2800; and 300 from the Northern and Midland Counties.

Per st. of 8 lbs.—s d s d Per st. of 8 lbs.—s d s d  
Best Scots, Here- Best Long-wools... 4 6 to 10  
fords, &c., ... 3 10 to 4 0 Do. Shorn ... 0 0 0 0  
Best Short-horns 3 8 — 3 10 Ewes & 2d quality 4 10 — 4 4  
2d quality Beasts 3 0 — 3 4 Do. Shorn ... 0 0 0 0  
Best Downs and Lambs ... 0 0 0 0  
Half-breds ... 5 0 — 5 4 Calves ... 3 6 — 4 8  
Do. Shorn ... 0 0 0 0 Pigs ... 3 8 — 4 4  
Beasts, 4407; Sheep and Lambs, 16,140; Calves, 148; Pigs, 165.

FRIDAY, March 11.

We are moderately supplied with Beasts to-day, and there is a good attendance of buyers, consequently Monday's quotations are fully realised, and a fair clearance is effected. The number of Sheep is very small, so also is the demand; trade is slow, but prices are nearly the same as on Monday. Trade for Calves is very dull, at rather lower rates. Our foreign supply consists of 154 Beasts, 870 Sheep, and 165 Calves; and 120 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d Per st. of 8 lbs.—s d s d  
Best Scots, Here- Best Long-wools... 4 6 to 4 8  
fords, &c., ... 3 10 to 4 0 Do. Shorn ... 0 0 0 0  
Best Short-horns 3 8 — 3 10 Ewes & 2d quality 4 10 — 4 4  
2d quality Beasts 3 0 — 3 4 Do. Shorn ... 0 0 0 0  
Best Downs and Lambs ... 0 0 0 0  
Half-breds ... 5 0 — 5 4 Calves ... 3 6 — 4 6  
Do. Shorn ... 0 0 0 0 Pigs ... 3 8 — 4 4  
Beasts, 805; Sheep and Lambs, 2960; Calves, 231; Pigs, 210.

MARK LANE.

MONDAY, March 7.—The supply of English Wheat at this morning's market was moderate, and the condition bad; factors consequently found a difficulty in realising it at barely the terms of this day's night. Fine foreign red was inquired for at last week's prices, but other qualities were neglected and the turn cheaper. For fine malting Barley there is a ready sale, at our extreme quotations; other descriptions are unaltered. Beans and Peas remain as last quoted. The Oat trade is slow, and to effect sales it is necessary to submit to a reduction of 6d. per qr. Flour is unaltered in value.

PER IMPERIAL QUARTER. s. s. s. s.  
Wheat, Essex, Kent, & Suffolk...White 42-54 Red ..... 40-46  
— fine selected runs...ditto 44-60 Red ..... 46-52  
— Talavera ..... 54-60  
— Norfolk ..... Red .....  
— Foreign ..... 40-58  
Barley, grind. & distil., 25s to 28s...Chev. 26-35 Malting 27-31  
— Foreign...grinding and distilling 26-30 Malting 30-33  
Oats, Essex, and Suffolk ..... 17-20  
— Scotch and Lincolnshire...Potato 22-24 Feed ..... 17-22  
— Irish ..... Potato 21-23 Feed ..... 19-20  
— Foreign.....Poland and Brew 19-22 Feed ..... 16-20  
Rye ..... 23-32 Foreign .....  
Rye-malt, foreign ..... 32-34 Harrow ..... 32-34  
Beans, Mazagan ..... 30s to 32s...Tick 32-41 Longpod ..... 30-34  
— Pigeon ..... 35s...Wind 32-41 Longpod ..... 30-34  
— Foreign ..... Small 32-37 Egyptian 32-34  
Peas, white, Essex and Kent...Boilers 38-41 Suffolk 40-43  
— Maple.....32s to 35s.....Grey 30-33 Foreign 32-42  
Maize ..... White ..... Yellow .....  
Flour, best marks delivered.....per sack 38-46  
— 2d ditto .....ditto 23-38 Country 23-38  
— Foreign .....per barrel 24-28 Per sack 36-40

FRIDAY, March 11.—The arrivals of grain and Flour this week have been moderate, as was also the attendance at market, including several buyers from a distance. The demand for Wheat was not active, but a fair business done in good Dantzic and red Baltic on the terms above noted; for secondary and ordinary qualities the trade was dull. Of the numerous arrivals on the coast several cargoes have been disposed of at a reduction of 2s. per qr., but buyers are now holding off for a further decline. In Spring Corn of any description there is very little business doing, and prices remain unaltered.—This week great dullness appears everywhere to have pervaded the Wheat trade. The condition of English Wheat having suffered materially, lower prices have been necessarily accepted for such, which, combined with good arrivals from abroad in Liverpool and Scotland, has not been without its influence on foreign, excepting here, where the town millers have been tolerably free buyers of the best red Baltic qualities at 52s. to 54s. 6d. lbs., and 55s. to 56s. for fine Dantzic, or within 2s. of the highest rates current this winter.

ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 2410	Qrs. 1350	Qrs. 1890	1070 sacks
Irish ...	—	—	8840	—
Foreign ...	3400	—	—	7600 bbls

IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 29 .....	s. d. 46 0	s. d. 31 8	s. d. 18 7	s. d. 32 2	s. d. 34 9	s. d. 31 9
Feb. 5 .....	46 1	31 8	18 7	31 11	34 7	31 5
— 12 .....	45 2	31 5	18 5	30 11	34 10	31 9
— 19 .....	44 6	31 1	17 9	30 9	34 5	31 2
— 26 .....	45 2	31 3	18 4	30 4	34 5	31 6
March 5 .....	45 9	31 7	18 3	30 9	34 8	32 6
Aggreg. Aver.	45 5	31 4	18 0	30 11	34 7	31 8

Duties on Foreign Grain 1s. per qr.

FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Jan. 29	Feb. 5.	Feb. 12.	Feb. 19.	Feb. 26	March 5.
46s 1d	...	...	...	...	...	...
46 0	...	...	...	...	...	...
45 9	...	...	...	...	...	...
45 2	...	...	...	...	...	...
45 0	...	...	...	...	...	...
44 6	...	...	...	...	...	...

LIVERPOOL, TUESDAY, March 8.—Upon a change of wind we have had a fair supply of Oats and Oatmeal coastwise and from Ireland, with smaller parcels of other produce thence since Friday last. During the same time the imports from the United States have been increased to 10,735 qrs. of Indian Corn, and with part in bags, nearly 50,000 barrels of Flour. From Europe we have also to note a few parcels of Beans and Maize, with 4529 sacks of French Flour; and from Egypt a moderate quantity of Wheat and Beans. Many of the corn ships expected from the south of Europe having at length appeared at Cork and Falmouth, the precursors of further supplies from the same direction, have caused a very sluggish business for most articles in the trade at our corn exchange to-day, which was only moderately attended; the sales of Wheat were chiefly in retail at a reduction of 1d. per 70 lbs. from the rates of this day week. The large supply of Flour caused a depression of 6d. to 1s. per barrel, and little business could be done. Egyptian Beans maintained the late advance. Oats and Oatmeal were neglected at a decline of 4d. per bushel and 6d. per load. For Indian Corn the spot we reduce our quotations 1s. per qr.—FRIDAY, March 4.—The frost is leaving us, and we have now spring-like weather, with the plough in active operation in this locality. At our market this morning there was more desire to purchase Wheat than on Tuesday, and in the fair business transacted the full prices of that day were obtained. Flour was sold, taken from the quay, at a decline of 6d. per barrel, and all other articles of the trade met a dull sale at easier prices.



## SHEET GLASS.

**JAMES PHILLIPS AND CO., 116, Bishopsgate Street Without,** have a quantity of SHEET GLASS in 100 feet Boxes, which they offer

At 10s. PER BOX:  
SIZES—4 inches by 3, 4 by 3, 5 by 3.

At 12s. 6d. PER BOX:  
5 by 3, 6 by 3, 7 by 3, 7 by 4, 8 by 4.

## CROWN SQUARES,

At 12s. 6d. PER BOX:  
6 by 4, 6 by 4, 7 by 5, 7 by 5.

At 14s. PER BOX:  
8 by 6, 8 by 6, 9 by 7, 10 by 8.

## FOREIGN SHEET GLASS,

PACKED IN CASES OF 200 FEET EACH:  
34s., 36s., and 38s., Case included.

Boxes charged 2s. each, but full price allowed if returned free of expense.—116, BISHOPSGATE STREET WITHOUT.

## ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON, Importer and Dealer in GLASS FOR CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.**

WAREHOUSE, 67, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long.

Squares in boxes, 100 feet each.  
Under 6 by 4 ... 12s.  
6 by 4, 6 by 4 ... 13s.  
7 by 5, 7 by 5 ... 15s.  
8 by 6, 8 by 6 ... 20s.  
9 by 7, 8 by 8, 12 by 9, 12 by 10 ... 20s.  
13 by 10, 14 by 10, 15 by 10 ... 20s.

Large Sheet of No. 16, very superior, packed in cases of 100, 200, and 300 feet, at 21d. to 24d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick; Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments; Fern Shades and Dishes.

## CROWN, and 13, 16, 21, and 26 oz. HORTICULTURAL SHEET GLASS, in 100 feet boxes.

Of sizes—8 inches by 6 inches. Of sizes—9 inches by 7 inches.

" 8 1/2 " " 6 1/2 " " 10 " " 8  
" 9 " " 7 " " 10 1/2 " " 8 1/2  
" 9 " " 7 " " 11 " " 9

At 1 1/2d. per foot. At 1 1/2d. per foot.

Also Crown and Sheet Glass in crates. British and Patent Plate, Sheet Lead, Pipe, White-lead, Oils, Turpentine, Colours, &c. G. FARMILOE & SON, 118, St. John Street, West Smithfield, London.

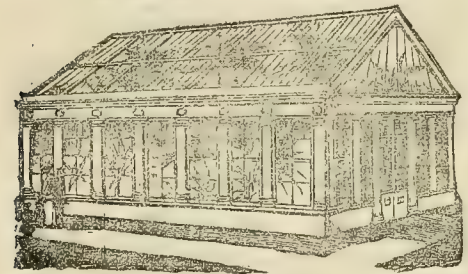
## GLASS FOR CONSERVATORIES ETC.

**HETLEY AND CO.** supply 16-oz. SHEET GLASS of British Manufacture, at prices varying from 2d. to 3d., per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to Messrs. HETLEY & Co., 85, Soho Square, London.

See *Gardener's Chronicle* first Saturday in each month.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



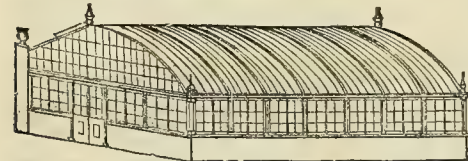
**GRAY AND ORMSON, Danvers Street, Chelsea,** London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



**J. WEEKS AND CO., King's Road, Chelsea,** HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collections of Stoves and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & CO., King's Road, Chelsea, London.

## BY HER MAJESTY'S ROYAL LETTERS PATENT.

## ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.—For Horticultural Buildings in Wood or Metal.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

## FOOT-ROT IN SHEEP

PREVENTED AND CURED BY THE EARLY USE OF THE

**GUTTA PERCIA GOLOSHEES**, to be had of JOHN JONES & Co., Inventors, Patent Works, Sheffield. Sold to the Farmers at 3d., 4d., 5d., and 6d. each. Price of the powder in tin cases, 2s. 6d. each, sufficient for 100 sheep.

Directions for use.—Bind round the ankle some tailor's listing, which prevents too much pressure, at the same time keeps out the dirt; dip the upper part of the shoe into very hot water, then stretch up the material when soft to the height required. Full instructions are sent with each order.

Agent for London: Mr. F. HAINES, 22, Lime Street, Leadenhall Market.

## TO THE NOBILITY, GENTRY, AND NURSERYMEN.

**EDWARD AND A. WEEKS** (late with J. WEEKS & Co.), Horticultural Builders, and Hot Water Apparatus Manufacturers, Park Cottage, King's Road, Chelsea. The best materials and workmanship warranted at the lowest possible price. Plans and estimates furnished free.

## TURF AND LOAM.

**TO BE SOLD**, about 1 1/2 acre of excellent TURF, fit for laying down on gentlemen's lawns. Also a quantity of LOAM, of superior texture, for the growth of greenhouse plants.—Apply to M. JACKSON, Nightingale Place, Moles Hole, Wansted, Essex.

**TO BE SOLD**, at Messrs. TATTERSALL'S, Hyde Park Corner, on the 21st March, TWO THOROUGH-BRED SUFFOLK STALLIONS, rising Three Years Old, the property of T. BEALE BROWNE, Esq., of Hampden, Gloucestershire. By the Horse that took the first Prize at Exeter, and which the Emperor of Russia bought; each out of pure Suffolk Mares—one belonging to Mr. Weaver, of Larnish, and the other to Mr. Raffell, of Melford, near Sudbury, Suffolk.

**TO BE DISPOSED OF** (in consequence of the Land being required for building purposes), about 300 fine straight well furnished TURKEY OAKS, averaging 10 to 12 feet in height. They have been thrice transplanted, and would remove with fine roots. Also two to three thousand common HOLLY, from 13 to 36 inches in height, and several thousands of BEECH and SPRUCE FIRS, from 3 to 5 feet, thrice transplanted, and well rooted.—Application to be made to T. & G. SWALES, Nurserymen, Beverley, Yorkshire.

**COKE BRICKS.**—Any person having for disposal a quantity of them, described some time since in the *Weekly Times*, which account was copied into the *Gardener's Chronicle* of 1852, p. 631, may hear of a purchaser by addressing a letter to M. M., at the Office of this Paper.

**FOR SALE**, a bargain, a neat LEAN-TO GREENHOUSE, 14 feet by 10 1/2 feet, glazed or unglazed. Inquire at No. 1, Caroline Place, corner of Plumber Street, City Road, London. Also a number of Sashes, Frames, Doors, and other Fittings for small Houses cheap.

## TO FLORISTS, SEEDSMEN, GARDENERS, &amp; FRUITERS.

**TO BE LET**, with immediate possession, those well known old established Premises, the "Islington Nurseries," situate in Manchester Terrace, Liverpool Road, Islington, where a lucrative Business has been carried on for many years. The premises consist of a spacious and elegant Entrance way, with Shop and Counting-house, large Camellia-house, stocked with fine grown Trees, two Greenhouses, Cottage, containing three rooms, stable, with man's room, and loft, and back entrance for carts, &c. The above offers a favourable opportunity to any one disposed to embark in either of the above-mentioned trades, or the whole might be advantageously combined.

For further particulars apply to Messrs. D. S. BAKER & SON, Auctioneers, &c., 107, Upper Street, Islington.

**PRIZE POULTRY EGGS.**—Eggs of the following genuine Birds for hatching:—Prize White-face Spanish, 12s. per dozen; Prize Cochins China, 12s.; Black Polish White Crest, 9s.; Gold Polish, 9s.; Pure Bred Dorkings, 6s.; Pure Aylesbury Ducks, 6s.; Schright Bantams, 6s. Also choice specimens of Fancy Poultry on sale, and two Skie Terrier Dogs. A remittance with all orders and letters and enclosed stamp for reply.

W. TANNER, Fleetpond, Winchfield, Hants.

**COCHIN CHINA FOWLS' EGGS** from very choice Birds, bred from Messrs. Sturgeon, Wingfield, and Dr. Gyne's Stock. All from light-coloured and well-feathered Birds, price 12s. 6d. per dozen, carriage paid to London.

Also a few very superior Birds for sale. Price on application, enclosing a stamped envelope. Post-office orders payable to ARTHUR HORNCastle, Grays, Essex.

**COCHIN CHINA EGGS.**—An Amateur, who has some very handsome Cochin China Fowls, of a pure breed, Cinnamon and Buff, good in weight and symmetry, is willing to dispose of some Eggs, at 7s. per dozen. Payment, by Post Office order.—Address, X. Y., Post Office, Farnham, Surrey.

## Sales by Auction.

**TO GENTLEMEN, FLORISTS, & OTHERS.** MR. JOHN WILLMER will sell by Auction, at the Mart, Bartholomew Lane, on WEDNESDAY, the 16th, Standard and Dwarf Roses, Carnations, White and Yellow Picotees, and Dahlias. Also a first-rate assortment of Lancashire Gooseberries, &c., &c.—Catalogues at the Mart, and of the Auctioneer, Sunbury, Middlesex.

## TO GENTLEMEN, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will submit to public competition by Auction, at the Mart, Bartholomew Lane, on FRIDAY, March 18th, at 12 o'clock, about 200 Choice Double CAMELLIAS, from 18 inches to 5 feet, comprising all the approved kinds beautifully furnished with bloom buds, 100 very strong Camellia Stocks, also a choice assortment of Standard and Dwarf Roses; a fine collection of American Plants, comprising Ghent and other Azaleas, Hybrid Rhododendrons, Kalmias, Magnolias, Andromeda floribunda, &c.; 5000 superb mixed Ranunculuses (from a celebrated grower), choice Dahlias in dry roots, Peonies, together with an assortment of Annual and Perennial Flower Seeds, Roots, &c.—May be viewed the morning of Sale; Catalogues at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## BROMPTON.

## TO GENTLEMEN, NURSERYMEN, BUILDERS, &amp; OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. RAMSAY (in consequence of the land being let for building), to sell by Auction on the premises, Fulham Road, Brompton, on WEDNESDAY, March 30, at 11 o'clock, without reserve, the whole of the GLASS and other ERECTIONS, consisting of five newly-built Greenhouses, several ranges of Pits, two and three-light Bays, Stoves, Sashes, and Fittings, a large quantity of Bricks, Yarn Paving and Building material, Stages, and sundry utensils; also about 200 fine Mulberry trees, a considerable quantity of Loam, Bog, Rotten Dung, &c.—May be viewed prior to the sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers American Nursery, Leytonstone, Essex.

**TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.** MR. J. RAWLINGS has received instructions, from Mr. ROBT. NEAL, to Sell by Auction without reserve, on the Premises, Wandsworth Common, on MONDAY, March 14, and five following days, at 11 o'clock (in consequence of being obliged to clear a portion of the premises immediately, and the postponement of the Sale last Autumn through the inclemency of the weather), the valuable NURSERY STOCK growing upon six acres, comprising a considerable quantity of very fine Evergreens, including some magnificent specimens, a large quantity of Fruit and Forest Trees, Deciduous and Ornamental Shrubs, several thousands scarlet and other Rhododendrons, amongst which will be found some splendid Standards, the whole well furnished with bloom buds, choice Azaleas, Kalmia, &c.; very large Araucaria imbricata, Cedrus deodara, Cryptomeria japonica, &c.; a fine collection of Standard and Dwarf Roses, with a considerable quantity of potted Plants; also about 200 Casts of Garden Pots; a quantity of Foles, Firwood, fine rich Garden Mould, &c.—May be viewed prior to the Sale. Catalogues in each, returnable to purchasers, may be had on the Premises; of the principal Seedsmen; and of the Auctioneer, 89, Bridport Place, New North Road; and Ebenezer Nursery, Shacklewell.

## COCHIN CHINA FOWLS.

SALE ON TUESDAY, MARCH 22.

**MR. J. C. STEVENS** begs to notify that in consequence of the great demand for first class Birds, he will, in addition to his usual periodical drives, hold a sale by Auction of POULTRY, on TUESDAY, March 22, at his Great Room, 38, King Street, Covent Garden, at 12 o'clock precisely. There will be many Prize and commended Birds in the Catalogue, including a selection from the renowned stock of John Fletcher, Esq., of Kensington.—Catalogues will be forwarded on receipt of a stamped directed envelope, enclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

**TO GENTLEMEN, AMATEURS, FLORISTS, AND OTHERS.** MR. ALEXANDER will Sell by Auction, at the Mart, near the Bank of England, on TUESDAY, March 15, at 1 o'clock precisely, a first-rate collection of named RANUNCULUS, the property of Mr. NEILL, comprising all the new and most esteemed varieties raised by Scotch growers; also a choice assortment of Hollyhocks by name, including all the best show kinds; Carnations, Picotees, Pinks, Herbaceous Plants, Standard Roses, &c., &c.—May be viewed on the morning of Sale; Catalogues had at the Mart; and of the Auctioneer, Shacklewell, Middlesex.

## AYLESBURY, BUCKS.

**EXTENSIVE AND IMPORTANT SALE OF VALUABLE NURSERY STOCK.** MR. GRIFFITHS is commissioned by Mr. David Ferguson (who is obliged to remove the remaining part of his stock, in consequence of his lease of the Aylesbury Nursery expiring on the 25th of March, 1853) to offer for public competition, on TUESDAY and WEDNESDAY, 15th and 16th March, at 12 for 1 o'clock precisely, about One Million EVERGREENS and FLOWERING SHRUBS, FRUIT and FOREST TREES, &c., &c.; including splendid specimen plants of Siberian and Chinese Arbor Vite, Aucuba Japonica, Red Cedars, Portugal and common Laurels, Irish Yews, Weeping Willows, Elms, Limes, Ash, &c.; Purple Laburnums, Scarlet Thorns, ditto Chestnuts, Roses, &c., &c.; forming on the whole a collection well worthy the attention of those who prefer present effect to planning for the benefit of their grandchildren.

**CARNATIONS, PICOTEES, PELARCONIUMS, ETC.** MESSRS. PROTHEROE AND MORRIS have received instructions to Sell, without reserve, on the premises, on MONDAY, the 21st of March inst., at 12 o'clock, the entire Collection of CARNATIONS and PICOTEES, together with the PELARCONIUMS and other Effects of C. P. Lochner, Esq., of Warwick House, Harrow Road, near to the Great Western Railway Bridge, Paddington. Messrs. Protheroe and Morris are fully warranted in asserting that the Collection, for quality and soundness of condition cannot be surpassed; and that the assiduous attention bestowed on their fruit and foliage, together with the well-known success of Mr. Lochner as an exhibitor, give ample security not only of their correctness to name, but to the quality of every variety; and although the past has been an acknowledged trying season, neither spot nor any other disease has been discovered. Amongst the varieties will be found from 5 to 30 pairs of the following, viz.:—CARNATIONS: Bardsley, S. B.; Bollingbroke, S. B.; Prince Albert (Puxley), S. B.; Black Diamond, C. B.; Duncan, C. B.; Falconbridge, C. B.; Jenny Lind, C. B.; Owen Glendower, C. B.; Tywyford Perfection, P. P. B.; Prince Albert, P. P. B.; Beauty of Woodhouse, P. F.; Premier, P. F.; Cradley Pet, S. F.; Dido, S. F.; Flora's Garland, R. F.; Lorenzo, R. F.; Romeo, R. F. PICOTEES: Christabel, H. R.; James II, H. R.; Mary, L. R.; Mrs. Norman, H. R.; Prince of Wales, H. R.; Alfred, H. P.; Duke of Rutland, H. P.; Gaunymede, L. P.; Jessica, H. P.; Ophelia, H. F.; Jeannette, H. R.; Mrs. Barwell, L. R.; Queen Victoria (Green), H. R.; Venus, H. R.; and also Bloomer (Sharpe), H. R.; let out this season. Among the PELARCONIUMS will be found several plants of Magnet, Ariadne, Enchantress, &c., &c. Also Pots, Sticks and Shades for Carnations, about 150 yards of superior Dutch Box, an Iron Pagoda, Wire Trellis for Sweet Peas, and other Effects.—Catalogues may be had of Mr. Turner and Mr. Bragg, of Slough; of Messrs. Henderson, of Pine Apple Place and of Wellington Road, Nurserymen; of Mr. Hamilton, of Cheapside; and of the principal Seedsmen in and around London; of the Vendor's Gardener, on the premises; and of the Auctioneers, Messrs. PROTHEROE AND MORRIS, American Nursery, Leytonstone, Essex.



## CHOICE CINERARIAS AND FUCHSIAS.

**WILLIAM RUMLEY AND SONS** having a splendid stock of the following first-rate Cinerarias can supply extra strong healthy plants for blooming immediately, 20 for 14s., 12 for 9s., or 6 for 5s., hamper included, or smaller plants, 6s. per dozen, viz.:—Attractive, Adela Villiers, Lady Hume Campbell, Effie Deans, Catherine Hayes, Resplendens, Corito, Unique, Queen of England, Any Robart, Madame Miellet, King of Crimsos, Coronet, Bridemaids, Annie, Azucra multicolor, Carlotta Grassi, Clime, Princess Royal, Newington Beauty, Clara, Albion, Beauty of Eccles, Crimson Perfection, &c.

**FUCHSIAS**—The following first-rate new varieties of 1852 are now ready, in fine healthy plants, 12 for 10s. 6d., or 6 for 6s., viz.: Crystal Fountain, Carlton, Nil Desperandum, Roi des Fuchsias, Verrio, Pendula, Pot, Nonsuch, Darling, Belladonna, Lonsia Lelandais, Hengist, Exquisite, &c. All the best varieties of previous years, 4s. to 6s. per dozen.

**VERBENAS**—Extra fine varieties, 4s. to 6s. per dozen.

The above can be forwarded immediately, hamper included, or the smaller plants can be sent free by post, if required, on receipt of a Post Office order, payable at Richmond. Our New Descriptive Catalogue of Fuchsias, Verbenas, Geraniums, Dahlias, Cinerarias, &c., may be had on application. Gilling, Richmond, Yorkshire.

## GRASS SEEDS.

**J. C. WHEELER AND SON, SEEDSMEN to the GLOUCESTERSHIRE AGRICULTURAL SOCIETY, beg to offer the following GRASS SEEDS, which have been well harvested, well cleaned, and which they can warrant to be of the very best quality.**

We have for some time paid considerable attention to Grass Seeds, and especially to mixing them in such proportions as the nature of the soil and other local circumstances may require, so as to form fine pastures. Having had much experience in this branch of our business, and the Grass Seeds we have laid down having given great satisfaction, it is with much pleasure that we can recommend a fine mixture of the best Grasses and Clovers, suitable for the formation of a rich permanent pasture, from 25s. to 30s. per acre.

For improving the quality of Grasses already laid down, we can supply a good mixture at 1s. per lb.

For the information of those gentlemen who would prefer buying the varieties separately, and mixing them themselves, we have given a short description of some of the best sorts. About two bushels of the larger or light seed, and 12 lbs. of the small or heavy seed, is the quantity usually sown to the acre.

**ITALIAN RYE GRASS**, imported seed, per bushel ... 7s. 6d. Too much need not be said in favour of this excellent Rye-grass. Compared with any other of the varieties of common Rye-grass, the Italian affords a stronger braid, arrives sooner at maturity, has a greater abundance of foliage, and of a lighter and more lively green colour; grows considerably taller, is more upright, or less inclined to spread on the ground. Another of its distinguishing characteristics is, that it is much preferred by cattle to any of the common sorts, and is greedily eaten by them, whether green or dry.

**PERENNIAL RYE GRASS**, per bushel ... 6s. **MEADOW CATTAIL**, or **TIMOTHY GRASS** (*Phleum pratense*), per lb. ... 10d.

The Timothy Grass possesses the advantage of affording double the quantity of nutriment when its seeds are ripe, that it does if cut when in flower. On strong, tenacious, and rather moist soils, it is entitled to a precedence almost to any other, and should at least form a considerable portion of the mixture employed for sowing down such, either for alternate husbandry or permanent pasture.

**MEADOW FOXTAIL GRASS** (*Alopecurus pratensis*), per lb. ... 1s. 6d.

This is one of the earliest and best of Pasture Grasses, but not so well adapted for hay, as it produces but few stalks; its root leaves are very broad, long, soft, slender, and grow rapidly when cut, or when eaten down by live stock. It requires two or three years after sowing to arrive at full maturity.

**ROUGH COCKFOOT** (*Dactylis glomerata*), per lb. ... 1s. 1s. a valuable Grass in cultivation, on account of the great quantity of produce which it yields, and the rapidity with which its leaves grow after being cut. It is well adapted for growing in shady moist places under trees, as in orchards, &c.

**MEADOW FESCUE GRASS** (*Festuca pratensis*), per lb. ... 1s. This is an excellent Grass, either for alternate husbandry or permanent pasture, but more particularly the latter. It is well liked by all kinds of domestic herbivorous animals.

**SHEEP'S FESCUE** (*Festuca ovina*), per lb. ... 10d. This Grass forms the greater part of the Sheep pastures of the Highlands. In quantity of produce it is much inferior to the other cultivated Fescues; but, from being well liked by Sheep, it should always enter into the composition of mixtures for lands on which they are to be pastured. In fact, on the authority of Linnaeus, these animals have no relish for hills and heaths which are destitute of this Grass.

**HARD FESCUE GRASS** (*Festuca duriuscula*), per lb. ... 1s. Will thrive on a great variety of soils, and is found to resist the effects of severe drought in summer, and to retain its verdure during winter, in a remarkable degree. From the fineness of its foliage and greenness in winter, it is well adapted for sowing in Parks, especially for Sheep pasture.

**WOOD MEADOW GRASS** (*Poa nemoralis*), per lb. ... 1s. 3d. Its habit of growth is delicate, upright, close, and regular. There is no Grass better adapted for Pleasure Grounds, particularly under trees, as it will not only grow in such places, but forms a fine sward where few of the other fine Grasses can exist. It produces a considerable deal of foliage early in spring.

**ROUGH-STALKED MEADOW GRASS** (*Poa trivialis*), per lb. ... 1s. This is a valuable Grass as a mixture for Pasture Lands, particularly on damp soils. Its habit of growth fits it for mixing alone with the upright growing sorts, such as the Italian Rye-grass.

**SMOOTH-STALKED MEADOW GRASS** (*Poa pratensis*), per lb. ... 1s.

This Grass yields a large quantity of herbage at a very early period of the season.

**SWIFT-SCENTED VERNAL GRASS** (*Anthoxanthum odoratum*), per lb. ... 2s. 6d.

This Grass yields but a scanty portion of herbage, yet, on the whole, permanent pasture should not be without a mixture of it, particularly in Park and Pleasure Grounds, were it for no other reason than the pleasant scent, not only when cut for hay, but also when it becomes nearly ripe.

**CRISTED BENT GRASS** (*Cynosurus cristatus*), per lb. ... 1s.

From this Grass forming a close turf, and having rather fine foliage, it may be advantageously sown on Lawns and other places, to be kept under by the scythe.

**LAWN GRASS SEED**, per lb. ... 1s. By sowing this Grass a fine sward may be obtained in a short time at one quarter the expense of better Grass turf. It is a mixture of the common Grasses, and is entirely free from weeds. We can strongly recommend it to those desirous to have Lawns or Pleasure Grounds.

For some of the above descriptions we are indebted to Messrs. Wheeler and Son, Seedsmen, &c.

For more extensive delivery, and for CARRIAGE FREE, apply to the principal Railway Stations in London. J. C. Wheeler and Son, Seedsmen, &c.

## SUPERB NEW MELON.

**AUSTEN'S "INCOMPARABLE" GREEN FLESH**, 2s. 6d. per packet; larger do., of 15 seeds, 5s.; Golden Ball Green Flesh, do., 1s. 6d.; Bromham Hall, do., 1s.; &c.

**"CAPTIVATION" & "PHENOMENA" CUCUMBERS**, The Two Finest Black Spines in Cultivation, in packets at 2s. 6d. each; Lord Kenyon's Favourite Cucumber (true), 2s. 6d. per packet; Victory of Bath, do., 1s.; and other good varieties. A packet of Austen's "Incomparable" Melon, a packet of Golden Ball, and one of either of the above Cucumbers will be forwarded to any part on receipt of 5s. in penny postage stamps. For further particulars of the above, see *Gardener's Chronicle* of Feb. 5.

**HOLLYHOCK SEED**, selected from one of the best collections now in cultivation; 1s. 6d. per packet.

**FIRST PRIZE GERMAN ASTER SEED**—This is unequalled in quality of bloom for exhibition, the seed having been saved from varieties that have taken from 40 to 50 first prizes within the last 10 years; 1s. 6d. per packet.

**SWEET WILLIAM SEED**, saved from upwards of 50 distinct dwarf and superb varieties; 1s. per packet.

**ANTIRRHINUM SEED**, from all the best shaped, striped, spotted, and brilliant varieties; and if sown now, will produce plants for blooming through the whole of the season; 1s. per packet.

Also Seed of that very scarce and delicious vegetable **CROWN GOURD** or **CUSTARD MARROW**, 1s. per packet.

N.B. A remittance must accompany the order from all unknown Correspondents, in penny postage stamps, when the whole or any quantity of the above will be forwarded free to any part.

EDWARD TILEY,

NURSERYMAN AND SEEDSMAN, 14, Abbey Churchyard, Bath.

## THE BEST BROCCOLIES IN CULTIVATION.

**MITCHINSON AND CO., SEED MERCHANTS, Truro,** Cornwall, have much pleasure in offering two superior BROCCOLIES, which, having been carefully saved under their own inspection, are warranted to give satisfaction.

**MITCHINSON'S PENZANCE, or EARLY WHITE BROCCOLI**, is invaluable for its earliness, coming into use in February. It is a full sized handsome head, of excellent quality, but a shy seeder. Offered in sealed packets of about 500 Seeds, at 1s. 6d. per packet, postage free.

**MITCHINSON'S TRURO, or SPRING WHITE BROCCOLI**, is the most perfect Broccoli in cultivation, having every characteristic of perfection. The plant is robust, without coarseness, moderately dwarf, smooth leaves, with silvery ribs, handsome compact heads well protected. Many gardeners and others who saw them growing on our grounds last season pronounced them to be the best they had ever seen. The stock is limited; price 1s. 6d. per packet, or two packets for 2s. 6d. Postage stamps should accompany orders. General Catalogues, &c., forwarded on application.—Seed Establishment, Truro, March 12.

## NEW ROSES, IN POTS, on the MANETTI STOCK.

HYBRID PERPETUAL.	s. d.	Rose de Soie	s. d.
Auguste Mie	2 6	Souvenir de la Reine des	2 6
Baronne Hialez	1 6	Belles	5 0
Comtesse Bathianay	1 6	Spotted Queen	2 6
Coco Odier	2 6	Therese de St. Remy	3 6
Docteur Julliard	3 6	William Griffiths	2 6
General Bédan	3 6		
Génie de Châteaubriand	1 6		
L'Enfant du Carmel	3 6	BOURBON.	
Le Lion des Combats	3 6	Madame Cousin	2 6
Laure Raymond	3 6	Prince Albert (PAUL'S)	7 6
Louise Odier	3 6	Paul et Virginie	2 0
Madame Andry	3 6	Souvenir de l'Exposition	5 0
"Ducher	5 0	Souvenir de l'Empire	5 0
"Fremion	2 0		
"Hilaire	3 6	PERPETUAL MOSS.	
"Rivers	2 0	General Druot	3 6
Mère de St. Louis	5 0	Herman Kegal	2 6
Queen Victoria (PAUL'S)	2 6	Moss.	
Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.		Madame Albouhi	3 6

## NEW SEEDS.

**BEEF, FLAT BASSANO**; flesh red and white, marked with zones, very sweet.

**BEEF**, flat white; flesh very rich.

**CARROT**, pure white transparent (short).

**LETTUCE**, NEAPOLITAN; heads large like a Cabbage, very close and crisp.

**LETTUCE**, SHANGHAI, from China.

**PACK-CHOI** and **PE-TSAI**; two Chinese Cabbages.

**RADISH**, Chinese, Winter; colour of flesh bright scarlet; very firm and rich flavour: a fine vegetable.

**TURPIN**, yellow FINLAND; very early; grows above ground.

**TURPIN**, RUSSIAN; flesh yellow, purple top: a curious kind. The above 6d. per packet; or the whole for 5s. 6d.

**Abrohia umbellata**, **Cochlearia acutis**, **Collinsia multicolor**, **Corocopsis nana**, **Kaulfussia alba**, **Perilla Nankinensis**, **Stenactis bellidifolia**, and many other new flower seeds.

The above 1s. per packet; or the whole for 7s. 6d.

Twenty-five varieties of beautiful hardy annuals for the border, with instructions for culture, forwarded free by post for 5s. 6d.; 12 varieties, 2s. 6d.; 12 varieties Perennials, 3s. 6d.

Address, Wm. HAMILTON, Seedsman, &c., 156, Chapside, London.

Wm. Cole's Priced and Descriptive Catalogue of Flower and Vegetable Seeds, Plants, &c., will be forwarded, on application. Also a Priced List of the best Dahlias, Seakale, Asparagus, Potatoes, Herbaceous and bedding Plants, &c., &c.

## COLE'S SUPERB CRYSTAL WHITE CELERY.

**WM. COLE**, Dartford, Kent, begs to inform his friends and the public, that he is ready to send out a new White Celery, which he has every confidence in recommending as being decidedly superior to his Superb Dwarf Red, sent out, with universal satisfaction, three years back. The Crystal White is a dwarf kind, rarely exceeding (under the best management) 18 inches in height; it is very solid, crisp, and fine flavoured, and if sown at the same time as the red variety, will come into use a month earlier, and continue good a month later. It has been seen by some of the first gardeners in the country, and pronounced to be a superior article. It may be obtained of W. C. as above, or from the following agents, at 2s. 6d. per packet, free by post:—

London: Messrs. Hurst and M'Mullen, Lendenhall Street; Messrs. Dawe, Cottrell, and Benham, Moorgate Street; Messrs. Minter & Co., 60, Strand; Mr. Duncan Hairs, St. Martin's Lane, Charing Cross; Mr. Denyer, Gracechurch Street; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. J. and J. Fairbairn, Clapham; Messrs. Garway, Mayes, and Co., Bristol; Mr. Bunyard, Malden; Mr. Turner, Slough; Messrs. Downie and Laird, Edinburgh; Messrs. F. and J. Dickson, Chester; Messrs. T. and J. Dickson, Manchester; Messrs. J. and J. Fowler, Lea Bridge, Essex; Messrs. Little and Bathurst, Cardine; Messrs. Veitch and Son, Exeter; Messrs. Finney & Co., Gateshead; Mr. A. Poxey, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Messrs. Lumbe, Plure, & Co., Exeter; Messrs. Edmundson & Co., Dublin; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Mr. Brown, Norwich; W. B. Johnson & Co., Ipswich; R. F. Darby, Cirencester.

## NEW WHITE BROCCOLI—ROYAL VICTORIA.

**EDWARD TILEY** begs to announce that he has purchased the whole Stock of Seed of the above BROCCOLI, which has proved the hardest growing and mildest flavoured variety yet offered to the public. Its superiority may be judged by the following: "Grown by an amateur for the last four years, whose grounds lie in a cold, northerly aspect, where no other variety would succeed as the above has done, with certainty, it being equal to any grown in southern or warmer neighbourhoods. Its dwarf and hardy habit will prove a great desideratum to growers whose ground may be shallow and exposed to cold and cutting winds, having stood the most severe frosts, &c., and not being in any way affected by it, or inclined to run similar to other Broccolis before grown in the same situation. Weight generally from 6 to 8 lbs., and will keep its colour and flavour equal to the Cauliflower after its being cut several days." Packets of 1 oz., 1s. 6d.; 1/2 oz., 2s. 6d.; or 1 oz. for 4s. E. T. has no hesitation in saying that this Broccoli will give as great satisfaction as all other new varieties sent out on former occasions.

A remittance must accompany every order in penny postage stamps to the amount or otherwise.

EDWARD TILEY, Nurseryman and Seedsman, 14, Abbey Church Yard, Bath.

**NICHOLSON'S AJAX STRAWBERRY**: very large and handsome, most exquisite flavour, unequalled as a Dessert fruit, and forces well.

**NICHOLSON'S RUBY STRAWBERRY**: medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period.

These unrivalled Strawberries were first sent out last autumn, and WILLIAM NICHOLSON is now offering fine plants, suitable for spring planting, at 17. 10s. per 100; 16s. for 50.

The stock of "Ruby" is only small; but W. N. will, if desired, send a few plants as a sample to parties ordering "Ajax." For W. N.'s mode of culture, &c., see *Gardener's Chronicle* for Jan. 1.

Post Office orders to be made payable at Yarm, Yorkshire.

Eggescliffe, near Yarm, March 12.

## SUPERB HOLLYHOCK SEED.—Well ripened

Seed warranted to be saved exclusively from Comet, Elegans, Obscura, Mr. C. Baron, Penelope, Rosa grandiflora, Meteor, Alden Gem, Magnum Bonum, Spectabilis, Safranot, Delicata, Enchantress, Picta, Queen, Bicolor, Dido, Charles Turner, Formosa, Hebe, Modes of Perfection, Rosa Alba, Sulphurea Perfecta, White Perfection, Blue Beard, Mulberry Superb, Snowball, and Queen of England.

A good mixture of the above, in packets containing upwards of 200 seeds, will be forwarded post free, upon the receipt of 2s. 6d. worth of postage stamps.

Also R. B. B. begs to offer plants of his superior Seedlings of 1851 and 1852, which received certificates at the National Floricultural Society, Regent Street, London, and met with universal approbation wherever exhibited. Catalogues sent upon pre-paid application.

R. B. BIRCHAM, Hedenham Rosary, Bungay, Suffolk.

## HORTICULTURAL POTTERIES.

ADJOINING THE NURSERIES, STAPLETON ROAD, BRISTOL.

**MAULE AND SONS** are MANUFACTURERS of all kinds of FLOWER-POTS of the most approved shapes and best designs for the cultivation of Plants, and which they are enabled to supply on reasonable terms.

List of Prices and Sizes forwarded on application.

The Nursery Trade supplied on most advantageous terms.—The above are securely packed in crates, and forwarded any distance. In large quantities arrangements are made to forward them loose in Railway Trucks, or Holds of Vessels, to Sea-ports.

## GRAVEL WALKS.

**WEEDS, GRASS, &c.**, entirely destroyed on Gravel Walks in from six to twelve hours, by a chemical liquid. Prepared by EDWARD REA, Manufacturing Chemist and Varnish Maker, 115, Wardour Street, Soho, London. Manufactory, Belle Isle, Battle Bridge. Sold in Gallon Bottles, at 3s. 6d. each; half gallon do., 2s. each.

## IRON HURDLES.

**STEPHENSON AND PELL**, 61, Gracechurch Street, London; and 17, New Park Street, Southwark, Manufacturers of every description of Iron Fencing, beg to call the attention of Noblemen and Gentlemen to their present prices of HURDLES:—for Sheep, 6 feet long, 3 feet high, with 5 bars, at 4s. 6d.; and for Cattle, 6 feet long, 3 feet 3 inches high, with 5 bars at 5s. each.

**FRUIT TREES, POULTRY, RABBIT, SHEEP,** AND CAT FENCING.—Worsted Netting to protect the bloom of Peach, Nectarine, and other trees, flowers, or seed-beds from frost, bird, and birds, two yards wide, 5d. per yard. New Twine Netting (tanned if required), one yard wide, 1d. per yard; two yards wide, 3d. per yard; four yards wide, 6d.; half-inch mesh ditto, two yards wide, 6d. per yard. Tanned Netting, two or three yards wide, 1d. per yard; four or six yards wide, 3d. per yard, or 5s. per 100 yards, one yard; 10s. per 100 yards, two yards; and 20s. per 100 yards, four yards wide. Elastic Hexagon Garden Net, or Serin Canvas, 4d. per square yard. Coco Nut Fibre, or Hemp Sheepfolding Net, of superior quality, four feet high, 4d. to 6d. per yard. Rabbit Net, four feet wide, 1d.; six feet wide, 2d.; eight feet, 3d. per yard. Each edge corded 4d. per yard, extra, suitable for poultry fencing. Square Mesh Cricketing Net, six ft. full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c., at W. CULLINGFORD'S, No. 1, Strathmore Terrace, Shadwell, London. Orders by post, with Post Office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Tents, Marquees, Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., made to order.

**CUCUMBER AND MELON BOXES** and LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes, ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 17. 6s. Garden Lights of every description, Conservatories, Green and Hot-houses made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties in England.—JAS. WATTS, Hot-house Builder, Claremont Place, Old Kent Road, London.

**"KNOWLEDGE IS POWER."**—The secrets of

nature, whether in their more extended or minute workings, never came more fully under observation than in our own time, and it is now characteristic of men of science, not only to observe but to control. The value of this Knowledge and Power is strikingly illustrated in the cultivation of the Human Hair, which it was reserved for modern genius to bring under the domination of science. That branch of the subject connected with its restoration was long the object of the most persevering solicitude; but now, thanks to the enterprise of C. and A. Oldridge, a preparation from the Balm of Columbia is not only produced, but distributed through most of the British possessions, by which baldness disappears, and a luxuriant growth clothes the brow that but lately bore a few faintly centered locks.

C. and A. OLDRIDGES BALM OF COLUMBIA, which produces whiskers and eyebrows, prevents the hair from turning grey, and the first application causes it to curl beautifully, frees it from scurf, and stops it from falling off. Price 3s. 6d., 6s., and 11s. per bottle. No other prices. Oldridge's Balm.

13, WILKINSON STREET, NORTH, seven doors from the Strand.



## PAGE AND CO.'S

## Composition for the Destruction of Blight upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants.

EXTRA STRONG, IN BOTTLES, 1s., 2s. 6d., AND 5s. (BOTTLES INCLUDED).—FIT FOR USE, PER GALLON, 1s. 6d. (JAR EXTRA).

DIRECTIONS FOR APPLICATION FORWARDED.

**B**RIDGEWATER PAGE AND CO., after two years' extensive trial, offer their Composition with every confidence, in corroboration of which the accompanying Testimonials have been favoured them for insertion:—*From Andrew Toward, Esq., Royal Gardens, Osborne Palace.*

Dear Sir,—In reply to your letter of the 2d inst., I have great pleasure to add my testimony to the efficacy of your Composition for the destruction of Blight, which has been used with great success on Rose Trees much affected with Green-fly.—Nov. 5, 1852.

*From W. Stride, Esq., Redbridge.*

Knowing as you do my attachment to my garden, and the interest I feel in everything connected with both fruit and flowers, I am a little astonished at your never having sought my opinion of your new Composition for the destruction of the Aphid, and of the Tree Blight generally; especially when I sent to your store for a second supply. I am sure you will be pleased when I tell you I have found it completely effective, when mixed with an equal part of water, in destroying at a single application every kind of enemy which attacks the Peach, the Fly on the Rose, and better than all, so far as I am individually concerned, a black Fly or small shiny Beetle which appears on the tender shoots of young Cherries about Midsommer, and which on Espaliers I never could annihilate till last summer, when one application effectually removed the whole community and enabled the Trees to make satisfactory progress to the end of the season. I feel assured it will prove a substitute for the expensive mixture with which gardeners generally dress the Peach-walls after spring pruning, but my communication on this point you must wait for till next year.—Nov. 5, 1852.

*From the Rev. E. T. Richard, Farlington Rectory.*

As the season is now drawing to a close, I can assert that the Blight Composition I had from you in the summer has been of the greatest benefit to my Trees; it seems to have perfectly stopped the spread of a parasitic fungus which had infested a large Vine for six or seven years; the infested leaves, although marked by the fungus, have become perfectly healthy; in short, the Vine presents a very different appearance from that of last year, at this season. I have some Plum Trees which were greatly infested with Aphides, but the Composition has restored their luxuriance.—Oct. 11, 1852.

*From J. Staples, Esq., Belmont House, Salisbury.*

I have tried your Composition, and am very much pleased with the result, my Fruit Trees having quite recovered the excessive Blight that affected them early in the season.—August 11, 1852.

*From Mr. A. Dowling, Hollyhill, Gardener to the Right Honourable Lord Henry Cholmondeley, M.P.*

Your Composition is most destructive to all Blight. My Wall Trees must have died had I not availed myself of it. I consider it applicable to all cases, as it is not the least injurious to the foliage of the most tender Plants.—May 17, 1851.

*From Mr. J. Dunmer, Gardener to the Very Rev. The Dean of Winchester, Bishopstoke.*

I have used your Composition upon Cucumbers, Melons, Roses, Pot Plants, and Wall Trees, with perfect success in every instance, and consider it the most safe, speedy, and effectual remedy ever introduced.—Oct. 22, 1852.

Besides above 600 satisfactory letters in reference to the value of this Composition, may be seen at our Offices, 37 and 38, Oxford Street, Southampton.

## B. PAGE AND CO.'S

PRICED DESCRIPTIVE PAMPHLET OF SEEDS, PRESENTED TO PURCHASERS.

## SEEDS OF FIRST QUALITY ONLY.

PAGE'S SUPERB BLOOD-RED BEET	1s. 0d. per packet.
LONG RED PRIZE MANGOLD WURZEL	0 6 per lb.
YELLOW GLOBE Do.	0 8 "
LARGE GUERNSEY HOLLOW-CROWNED PARSNIP	1 0 "
WHITE BELGIAN CARROT	1 6 "

COMPLETE COLLECTIONS OF VEGETABLE SEEDS, from 5s. to 100s.

12 PACKETS OF BEAUTIFUL ANNUALS, 1s.

COMPLETE COLLECTIONS of Do. Do. from 5s. to 100s.

FINEST MIXED PERMANENT PASTURE AND LAWN GRASSES, PAGE'S

PERENNIAL ITALIAN RYE-GRASSES.

Parties leaving England, *via* Southampton, will find PAGE & Co.'s Seed Stores (adjoining Radley's Hotel, facing the Railway Terminus, and within 20 yards of the Southampton Docks), very convenient for purchasing collections of SEEDS, from 5s. upwards, packed and ready for exportation.

**THE SPLENDID DAHLIA SCARLET KING,**

dry Roots, 10s.; business on return.  
BALSAM SEED, perfectly unequalled, 6 classes, 3s. 1d.; singly, 9d.; mixed, 1s.

Glenny's "Quarterly Review," No. 2, in the Press; advertisements must be promptly sent to 420, Strand.  
G. GLENNY, Agent.

## NEW AND CHEAP PLANTS, TO BE CLEARED OFF IMMEDIATELY.

**HENRY WALTON, Florist, &c., Edge End,** Marsden, near Burnley, Lancashire, begs to offer the following choice CINCERARIAS, FUCHSIAS, GERANIUMS, &c., at the very reduced prices annexed:—

CINCERARIAS.—Nonsuch, Mr. Sidney Herbert, Mrs. Sidney Herbert, Marianne, Mrs. Charles Kean, St. Clair of the Isles, Iago, Unique, Magnum Bonum, Orpheus, Gustavus, The Village Queen, Surprise, Alba Magna, and Queen of Beauties; the above 1s. 6d. each, or the set for 18s. Also a large quantity of the older varieties, such as Margaretta, Lady Araminta, Amy Robsart, Elsie Deans, Delicata, Electra, Lady Hume Campbell, and several others, at 6s. and 9s. per dozen; the above are all strong blooming plants.

FUCHSIAS.—Nice free-growing young plants, now ready for larger pots, viz., Nil Desperandum, Nonsuch, Gaiety, Honey Bell, Joan of Arc, Leader, Aurora, Peculiarity, Novelty, Standard of Perfection (Epps's), Standard, Vervio, Splendissima, Commodore, Gem of the Season, Pendula, Exquisite, Globosa perfecta, Darling, and Pet, the last three named ones are highly recommended as bedding varieties; the above 1s. each, or the set of 20 for 18s., or 9s. per dozen, post free.

GERANIUMS, strong blooming plants.—Prince of Orange, Constance, Nectar Cup, Fireball, May Queen, Generalissimo, Exquisite, Rowena, Sir Robert Peel, Emily, Village Maid, Lord Stanley, Prince Arthur, Flavia, Isis, and several others equally new; 15s. per dozen, 24 for 1l., or 50 for 1l. 15s. New Fancy Varieties.—Defiance, Caliban, Celestial, Bride, Torbay Hero, and Triumphant; the above six for 15s. Older Fancy Varieties.—Desirable, Prima Donna, Beauty, Albouhi, Jonny Lind, Empress, Creole, and Exquisite; the above eight, 1s. each.

Also a very choice collection of Carnations and Picotees, in strong healthy plants, at 9s., 12s., and 18s. per dozen pairs.

H. W.'s Spring Catalogue is now ready, containing all the choice Dahlias of last season, 9s. and 12s. per dozen; older varieties, 4s. 6d. and 6s. per dozen. Chrysanthemums, all the leading kinds, 6s. and 9s. per dozen. It contains also Geraniums, Fuchsias, Hollyhocks, and all the leading Florists' Flowers of the day, and may be had for 1d. stamp. Strong, healthy, well-rooted plants may be depended upon. All orders to the amount of 25s. carriage paid to Liverpool, Manchester, Leeds, and Preston; 2l. and upwards, carriage paid to Birmingham. Plants given over to compensate for further carriage. It is respectfully requested that all orders be accompanied with a Post Office order, payable at Marsden, Lancashire.

**DOUBLE ITALIAN TUBEROSE ROOTS, 4s.**

per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBNETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

**JOHN CATTELL** begs to say that Priced Catalogues of his VEGETABLE, FLOWER, and AGRICULTURAL SEEDS may be had on application, enclosing a penny stamp for each.

The following very choice SEEDS may be had, post free, at the prices annexed per packet:—Azalea, from the very choicest Indian varieties, 1s.; Anemone, single Poppy, fine mixed, 6d.; Brachycome latifolia, 1s.; Collinsia Bartsiifolia and multicolor, 1s. each; Cineraria, extra fine mixed, 2s. 6d.; Calceolaria, saved from very fine varieties, carefully impregnated, 2s. 6d.; Celsia arcturus, 6d.; Cyclamen persicum, 6d.; Geranium, from new florist and fancy varieties sent out in 1851, separate or half of each, 2s. 6d.; ditto, from choicest older varieties, separate or half of each, 1s.; ditto, from choicest scarlet, pink, and scented varieties, 6d. each; Iloeva Celsi, 1s.; Hardebergia monophylla, 6d.; Indian Pink, superb mixed, 6d.; Lupinus moritzianus, fine, 6d.; Phlox Drummondii, extra fine mixed, alba, oculata, and Leopoldina, 6d. each; ditto ditto Mayii, splendid striped, 1s.; Primula sinensis, fringed red and white varieties, extra fine, each, 1s.; Rhodanthus Manglesii, 1s.; Thunbergia alata, aurantia, and alba, 6d. each; Zinnia elegans coccinea, 6d.; German Stocks and Asters, as imported, from one of the best growers in Germany.

The following superior VEGETABLE SEEDS, post free, at the prices annexed:—

CATTELL'S dwarf early Barnes Cabbage, per oz.	1 0
" " Reliance Cabbage, per ½ oz.	1 0
" " Drumhead Savoy, do.	0 6
" " exquisite dwarf curled Parsley, do.	0 6
" " fine early Walcheren Broccoli, per ½ oz.	0 6
" " fine dwarf late Cauliflower, do.	0 6
" " fine dwarf, curled, hardy Scotch Kale, per ½ oz.	0 6
" " fine tall feathered do., per ½ oz.	0 6
" " dwarf purple-top Beet, do.	0 6
" " fine black-seeded Bath Cos Lettuce, do.	0 6
" " true white Vegetable Marrow, per doz. seeds	0 3
" " fine long Black Spine Cucumber, do.	0 6
" " " " " " " "	0 6
Cuthill's Black Spine Cucumber, do.	0 6
Chamberlain's Long prolific Ridge do., per 2 doz. seeds	0 6
Cole's Crystal White Celery, per packet	2 6

Gladioli Brechlyensis (very superior to gandavensis), flowering bulbs, free by post, at 14s. per doz.  
Payments may be made in postage stamps, or by Post Office orders drawn on Westernham.

Address JOHN CATTELL, Seedsman, Westerham, Kent.

## NEW HOLLYHOCKS.

**CRIMSON PERFECTION (PAUL'S).**—Rich bright crimson, good shape, splendid spike, and rather dwarf habit, a fine show flower; 7s. 6d. each. **GROCEA (PAUL'S).**—Buff and yellow, a bold flower of a distinct and desirable colour, large and full; 5s. each. **ENCHANTESS MAJOR (PAUL'S).**—Deep rose, superb form, larger, darker, and finer spike than the old variety, and decidedly a first-rate show flower; 2s. 6d. each. **FIREBALL SUPERB (PAUL'S).**—Brilliant rose crimson, larger, brighter, more double than the original, and with a finer spike; 2s. 6d. each. **MRS. TAIT IMPROVED (PAUL'S).**—Large peach, soft and pleasing colour, and most desirable for its novelty and beauty; 2s. 6d. each. **SHYLOCK (PAUL'S).**—One of the deepest and richest scarlet crimson, and a good show flower; 5s. each.

The Subscribers, who obtained during the past year the Silver Cup for Hollyhocks at the Edinburgh Grand Open Show.—Four first Prizes from the Royal South London Floricultural Society.—Two first-class Certificates from the National Floricultural Society, and numerous other prizes, beg to offer 12 first-rate and distinct Hollyhocks, show varieties, for 30s.; 12 Superior do. do. do., 18s.; 12 Good do. do., 12s.; 100 Good mixtures for Borders, do. do., 30s.

CARRIAGE FREE TO LONDON. Priced descriptive Catalogue free by post.

A. PAUL & SON, Nurserymen, &c., Cheshunt, Herts, near London.

**THE LARGEST, BEST BEARING, AND FINEST**

**FLAVOURED PEA** yet introduced, is **HAIRS' DEFANCE (KNIGHT'S)** PEA. It grows about 4 feet, remarkably strong in habit, is earlier than the taller growing varieties, and should be planted 4 to 6 inches apart in the rows.

Plant February to April, 2s. 6d. per quart.

**HAIRS' DWARF MAMMOTH (KNIGHT'S)** PEA has been so extensively grown and approved that D.H. does not think anything need be said in confirmation of its established character. Sow 4 inches apart.

Plant February to May, 1s. 6d. per quart.

**BISHOP'S LONG-POD PEAS, 1s. ditto.**

**BURBIDGE'S ECLIPSE PEAS, 1s. ditto.**

Garden, Agricultural, and Flower Seeds, wholesale and retail, embracing every article connected with the trade upon the most reasonable terms.

Potatoes, all the best kinds, for seed.

Catalogues furnished upon application.

DUNCAN HAIRS, Seedsman, 109, St. Martin's Lane, Charing Cross.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLER EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to THE EDITOR.—SATURDAY, MARCH 12, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 12.—1853.]

SATURDAY, MARCH 19.

[PRICE 6d.

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21, REGENT STREET.

## HORTICULTURAL SOCIETY OF LONDON. PRIVILEGED TICKETS.

The Exhibitions will take place on the Second Saturdays in May, June, and July, namely—

MAY 14, JUNE 11, JULY 9.

All Fellows who shall apply, on or before Tuesday the 26th of April, may obtain, at the rate of Three Shillings and Sixpence each, any number of tickets not exceeding FORTY-EIGHT; but no application for such tickets will be received after that day. Fellows of the Society subscribing for tickets at this price will be allowed a clear week from the 26th of April during which they may claim them. AFTER THAT PERIOD ALL THE 3s. 6d. TICKETS SUBSCRIBED FOR, BUT NOT ISSUED, MAY BE CANCELLED.

After the 26th of April, any further number of tickets will be delivered to Fellows on their personal application or written order, at the price of Five Shillings each ticket.

**SPECIAL PRIVILEGE OF FELLOWS.**—Fellows of the Society enter free at half-past 12, and can introduce two friends with tickets; or the Fellow's privilege may be transferred to a brother, sister, son, daughter, father, mother, or wife, residing in the Fellow's house, provided the person to whom the transfer is made be also furnished with a ticket signed by that Fellow. That is to say, the privilege of entering early may be transferred, but not the privilege of FREE admission.

## NATIONAL FLORICULTURAL SOCIETY, 1853.

### PRESIDENT.

EDMUND FOSTER, Esq., Clever Meadow, near Windsor.

### VICE-PRESIDENTS.

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Rev. C. Fellowes, Norwich  
Dr. Lindley, 21, Regent Street

R. Marnock, Esq., Regent's Park  
C. B. Warner, Esq., Hoddesdon  
J. Wilmore, Esq., Birmingham

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Mr. Arthur Henderson, Pine Apple Nursery, Edgeware Road, London.

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### EDITORS.

Mr. C. P. Lochner

Subscription One Guinea per annum; Gentlemen's Gardeners, Half a Guinea.

### EXHIBITION DAYS.

Thursday, March 21

— April 7, 21

— May 5, 26

— June 16, 29

— July 14, 28

### 1854.

Thursday, January 14

— Thursday, February 11

— ANNIVERSARY, MARCH 4, 1 O'CLOCK.

NOTE.—That ALL FLOWERS be eligible for examination, whether contributed by MEMBERS or NON-MEMBERS, WITHOUT ENTRANCE FEES.

NOTE.—All subjects for examination must be entered and staged before 1 o'clock; the awards made known at 3 o'clock.

March 19. JOHN EDWARDS, Hon. Sec.

### PELAGONIUMS AND NEW PLANTS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST to HER MAJESTY THE QUEEN, and to HER MAJESTY THE KING OF SARAWAK, begs to inform the Nobility, Gentry, and Amateurs, that his Spring CATALOGUE of PELAGONIUMS and NEW PLANTS is ready, and will be forwarded by post on application.

## ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY.

At an Exhibition of this Society, to be held in the Gardens of Worcester College, Oxford, on WEDNESDAY, the 8th day of June, 1853 (the day appointed for the installation of the Right Hon. the EARL of DERRY, as Chancellor of the University), in addition to the Prizes to be competed for by members, the following Prizes are offered for competition, open to all England:—

Stove or Greenhouse Plants (not Fuchsias or Geraniums), in pots, 12 varieties; first prize, 10*l.*; second ditto, 5*l.* Entrance to non-members, 7*s.* 6*d.*

Geraniums (in 8-inch pots), 12 varieties; first prize, 5*l.*; second ditto, 3*l.* Entrance to non-members, 5*s.*

Notice of intention to exhibit to be given, on or before the 1st of June, to the Acting Secretary, of whom copies of the rules of the Society, members' schedule of prizes, and other information may be obtained. W. R. HOBBS, Acting Secretary.

23, St. Giles's Street, Oxford, March 19, 1853.

## EVERGREEN GRASSES FOR CHURCHYARDS AND CEMETERIES.

SUTTON AND SONS have had the honour of supplying many Clergymen and others with Grass Seeds for Churchyards and Cemeteries, which have given great satisfaction. Price of Seed, 1*s.* per lb. From many similar letters they extract the following, recently received.

From Mr. C. Judd, Gardener to his Grace the Archbishop of Canterbury.

"The Grass Seeds received from you succeeded admirably, and, although sown late, the growth was such that we were enabled to mow the churchyard in the autumn, and it has now the appearance of an established lawn of some years' standing; and my employer, the Archbishop of Canterbury, is quite satisfied with its appearance."

"Addington Park, January 7, 1853."

SUTTON AND SONS, Seed Growers, Reading, can supply similar seeds to those sent to Addington Park, at 1*s.* per lb., or 18*s.* per bushel. Quantity required per acre, 2 bushels.

## MAGNIFICENT NEW ANNUALS.

J. CARTER, SEEDSMAN AND FLORIST, 238, High Holborn, London, begs to inform amateurs and the trade in general that he has now received the new GOMPHRENA, imported by him from Western Mexico, which he can recommend as the most striking novelty of the season. The plant resembles the Gomphrena globosa, or Globe Amaranthus, but is decidedly a new and finer species. The flowers, of a brilliant orange, with bright yellow stigmas, literally cover the stems. To be had in packets at 1*s.* and 2*s.* 6*d.* each; trade packets 10*s.* and 1*l.* each, or per ounce. Also a superb new SCHIZANTHUS, from Colombia, Andes; habit similar to Schizanthus robustus, but a new species; flowers large, and, from the specimens received, apparently of a rich blue. This will also prove a great acquisition. Price 1*s.* and 2*s.* 6*d.* per packet; trade packets 10*s.* each.

JAMES CARTER, Seedsman and Florist, 238, High Holborn.

## FLOWER SEEDS FREE BY POST.

50 Packets of Annuals, 8*s.* 6*d.*; 25 do., 4*s.* 6*d.*; 12 do., 2*s.* 6*d.* 25 Packets of Superior Annuals, 5*s.* 6*d.*; 12 do., 3*s.* 25 Packets of Perennials and Biennials, 5*s.* 6*d.*; 12 do., 3*s.* 25 Packets of all every variety of KITCHEN GARDEN SEEDS of the best quality. Apply to ROBERT WESTMACOTT, Florist and Seedsman, Stuart's Grove Nursery, Fulham Road, Chelsea.

## EXHIBITION OF CAMELLIAS.

CHANDLER AND SONS, NURSERYMEN AND SEEDSMEN, Wandsworth Road, beg to inform the public that their CAMELLIAS are now in flower, and will continue so for some weeks.—March 19.

## NEW MELON.

THE "GOLDEN QUEEN," FROM NORTH AMERICA.—The grower of this superb Melon still continues to send out Seed. Every Melon grower ought to possess the above, being far superior to anything yet known. For Testimonials see *Gardeners' Chronicle*, Jan. 29th, and Feb. 5th and 12th. Packets, 2*s.* 6*d.* each in postage stamps.—Apply to JOHN TULLY, Friends'-Retreat, York.

## TWO OF THE LARGEST AND BEST MARROWFAT PEAS EVER INTRODUCED.

## WAITE'S KING OF THE MARROWS AND FAIRBEARD'S WILL WATCH, 21*s.* per bushel; for quantities not less than 1 peck.

J. G. WAITE, Seed Merchant, 181, High Holborn, London.

## THOMAS JACKSON AND SON having a fine Stock of frequently Transplanted TREES and SHRUBS, respectfully solicit attention to their low Prices of a few of the leading kinds:—

	Per doz.—s. d.		s. d.
Arbor-vitæ, American, 3 ft. 6 in.	18 0	Yew, Irish, 3 to 4 ft., p. doz. 24 0	
" Chinese, 3 to 5 ft. ....	18 0	" " 6 to 8 ft., 7 <i>s.</i> 6 <i>d.</i> and	
Arbutus, 3 to 4 ft. ....	18 0	" 10 <i>s.</i> 6 <i>d.</i> each.	
Aucubas, 2 ft. ....	12 0		
Cedar, Decid., in pots, 1½			
to 2 ft. ....	18 0	Berberis aquifolium, 1½	
Cedar of Lebanon, in pots,		to 2 ft. ....	20 0
2 to 3 ft. ....	18 0	Box, Tree, 3 to 4 ft. ....	50 0
Cornus microphylla,		Fir, Spruce, 4 to 5 ft. ....	20 0
2 ft. ....	6 0	" Larch, 6 to 8 ft. ....	20 0
Daphne pontica, 2 ft. ....	6 0	" Weymouth, 4 to 5 ft. ....	25 0
Holly, Green, 5 to 7 ft. ....	48 0	Laurel, Green, 2 to 3 ft. ....	40 0
" Variegated, 1 to 2 ft. ....	15 0	Laurel, Common, 4 to 5 ft. ....	50 0
Spiræa Lindleyana, 4 ft. ....	9 0	Portugal, 1 to 2 ft. ....	30 0
" Reevesii, 4 ft. ....	6 0	Lilacs, Purple or White,	
Ribes, Red, 4 to 5 ft. ....	6 0	3 to 5 ft. ....	40 0
" White, 4 to 5 ft. ....	9 0	Laurustinus, fine, 2 ft. ....	40 0
Snowberry, 5 ft. ....	6 0	Onk, Evergreen, in pots,	
Taxodium sempervirens,		2 to 3 ft. ....	60 0
5 to 6 ft. ....	42 0	Rhododendron ponticum,	
Yew, English, 4 to 6 ft. ....	42 0	fine, 1 to 2 ft. ....	75 0
		Laburnum, 10 ft. ....	50 0

The more rare kinds of Ornamental Shrubs and Trees at equally low rates, and the common kinds for Plantations or Coppice Wood, such as Birch, Oak, Elm, Lime, Poplar, &c., proportionately cheap. Strong Transplants, Quick, for mounding or making fences, 6*s.*, 8*s.*, and 12*s.* per 1000.

Nursery, Kingston, Surrey

## IRELAND.

**NEW SEEDS, 1853.**—The SUBSCRIBERS have had the honour of supplying several hundreds of the first families in Ireland for many years. The transit from this Port to the various Ports in Ireland is quick and expeditious, and the cost is very moderate. The Port of Plymouth is therefore well situated for commercial transactions with our sister country.

The Carriage of all Orders above £2 is PAID to the following Sea-ports:—

DUBLIN BELFAST CORK LIMERICK.

Steamers are continually running from the GREAT WESTLEY DOCKS (within a rifle shot of our Union Road Establishment), to the above-named Ports.

For particulars and Catalogues, apply to WILLIAM EDGEMOND RENDEL & CO., Seed Merchants, Plymouth.

ESTABLISHED MORE THAN HALF A CENTURY.

## GLOXINIA IMPERIALIS (HENDERSON'S).

EDWARD GEORGE HENDERSON AND SON are now prepared to send free by post, at 7*s.* 6*d.* each, the above new and beautiful Gloxinia, which they can with confidence recommend. It is a fine large bold flower, of good form, and first-rate habit; the lips are of a delicate lavender white, with a deep purple centre. The usual discount to the Trade, and one Gratis when three are ordered.

E. G. H. & SON will forward their new Seed Catalogue, post free, on application, containing all the novelties of the season. Wellington Nursery, St. John's Wood, London.

## FRUIT TREES, HARDY CLIMBERS, HARDY SHRUBS AND TREES, HARDY BULBS, GREENHOUSE PLANTS, HERBACEOUS PLANTS, CONIFERÆ, &c.

YOUELL AND CO. beg respectfully to refer the readers of the *Gardeners' Chronicle* to their Advertisement of the above, which appeared in last week's Paper, and to add that they are now sending out beautiful selections from their choice and extensive collection of

## CARNATIONS, PICOTÉES, PINKS, AND PANSIES,

in strong and healthy plants, at the following prices:—

25 pairs of any 12 varieties of Carnations and Picotees, 2 <i>s.</i> 6 <i>d.</i>	
by name .. .. .	3 0 0
12 do. ....	do. .... 1 10 0
12 do. ....	do. .... 0 18 0
12 do. very fine .. ..	do. .... 0 9 0
Fine mixed border do. do. per dozen pairs .. ..	0 9 0
True old Glove Carnation .. ..	0 12 0
12 pairs of finest Pinks, by name .. ..	0 12 0
Pansies, all the newest and very best show flowers, p. doz. ....	0 12 0
Do. fine do. per dozen .. ..	0 6 0

All Orders of 2*l.* and upwards delivered free to any Railway Station within 15 miles of the Nursery.

Royal Nursery, Great Marlborough.

THE ROYAL MOSS-POPE FEA. The attention of horticulturists and of the public in general is called to this new and peculiar FEA, as being surpassed by none in exquisite flavour and colour on table; it is at the same time highly productive. To be had only of Mr. DENNIS, West Court, Deiling, Maidstone, at 2*s.* 6*d.* per quart, and will be forwarded in any quantity (not less than a quart), to all parts of the kingdom, on receipt of postage stamps or post-office order for the amount.

## MESSRS. J. AND H. BROWN offer the following

selected PLANTS, FRUIT TREES, &c., which they will forward to any part of the Kingdom.

25 Azaleas, new hardy Belgian varieties on their own roots, with flower buds, one of a sort by name, for ..	20 0
25 American Azaleas .. ..	15 0
25 Hardy American Plants, one of a sort by name ..	10 6
12 Hardy Heaths and Kalmias, one of a sort ..	6 0
12 Rhododendrons, including Scarlet, White, and Rose, hardy varieties .. ..	12 0
New hardy Yellow Rhododendrons, each ..	5 <i>s.</i> 6 <i>d.</i> to 7 6
Fine hardy Scarlet Rhododendrons, 2 feet, per dozen ..	10 0
6 Hardy Magnolias, one of a sort ..	10 6
Cedar of Lebanon, 3 feet, well grown in pots, per dozen 10	
Deodara or Cedar of the Himalayas, 1 to 2 feet, per dozen .. ..	10 <i>s.</i> to 15 0
(Araucaria, Cryptomeria, and Conifers of all kinds, see List.)	
Climbing Roses of choice sorts, in pots, per dozen ..	6 0
Roses, standard and half standards, per dozen, 12 <i>s.</i> and 15 0	
Yellow Roses, Persian and Cloth of Gold, per dozen ..	12 0
12 Tea-scented Roses, one of a sort, by name, in pots ..	9 0
Wistaria sinensis, extra fine, in pots, 15 to 30 feet, each 3 6	
12 Hardy Passifloras, Jasmines, and Clematis of sorts ..	10 0
12 Greenhouse Azaleas, one of a sort, blooming plants ..	25 0
12 Choice Camellias by name .. ..	30 0
50 Choice Greenhouse Plants, one of a sort, by name ..	45 0
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12 Orchidaceous Plants, choice species, and good plants ..	30 0
Cinéraires and Calceolarias, show varieties, per doz., 9 <i>s.</i> to 12 0	
Fancy Geraniums, new sorts .. ..	8 <i>s.</i> to 12 0
Verbenas and Petunias, newest varieties, per doz. ....	6 0
6 Bulbs of Lilium lancifolium, one of a sort, for ..	12 0
First-rate show Pinks and Pansies, per doz. ....	6 <i>s.</i> to 9 0
First-rate Carnations and Yellow Picotees .. ..	9 <i>s.</i> to 12 0
12 Pansies, new white, pink, and bluish, of sorts ..	8 0
25 Hardy Herbaceous Plants .. ..	7 6
Hardy Ferns and other plants, for rockwork, per dozen ..	8 0

## SUPERIOR FRUIT TREES.

Fine dwarf and standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries; the best and most approved sorts of these respective kinds, true to name, each 2*s.* 6*d.* or per dozen .. .. 24 0

Untrained or Maiden ditto, 1*s.* 6*d.* each, or per dozen .. 15 0

Apples, dwarfs and standards, of best sorts, per dozen .. 15 0

Fine Gooseberries, Currants, and Raspberries, per dozen .. 3 0

Fine Figs, Medlars, Walnuts, and Mulberries, each .. 2 0

Strong Vines from eyes and layers, in pots, per dozen .. 15 0

Filberts, new, thin shelled, and red skinned, per dozen .. 3 0

Garden Seeds of all kinds. A selection of the most approved Flower Seeds, 20 papers, 6*s.*; 40 papers, 10*s.*, sent free by post. Also Catalogue for the season.

Albion Nursery, Stoke Newington, London, March 19.



# AGRICULTURAL SEEDS, PURE STOCKS AND OF THE FINEST QUALITY.

## BASS and BROWN beg to offer as under:— PERMANENT PASTURE AND OTHER GRASSES.

AS a great variety of the most useful Grasses are gathered to a considerable extent in this locality, and from the long experience and practice we have had in collecting them in this neighbourhood from a long distance round, we are enabled to supply them separately or mixed as low as any house in the trade. Our mixtures have ensured the greatest satisfaction, and will be found equal to any sent out.

Mixtures for Permanent Pasture on Light Lands, allowing 3 bushels 9 lbs. to each acre, per acre	24 0	Fine Scotch, Pacey and others, per bushel	5s. to 6s. 0d
Mixtures for Heavy Lands, per acre	27 0	Crested Dogtail, per lb., 8d.; per bushel	7 0
Mixtures for Parks, per acre	28s. to 30 0	Cocksfoot, per lb., 8d.; per bushel	7 0
Mixtures for Lawns and Bowling Greens, per acre	34s. to 38 0	Hard Fescue, per lb., 9d.; per bushel	9 0
Mixtures for Marshy Lands, per acre	24s. to 28 0	Sheep's Fescue, per lb., 9d.; per bushel	9 0
Mixtures for Orchards overspread, per acre	24s. to 30 0	Meadow Fescue, per lb., 9d.; per bushel	9 0
Mixture for Renovating Old Pastures, per lb.	0 10	Meadow Foxtail	per lb. 1 0
Mixture for fine Lawns in Gardens of the finest Short Grasses, per lb.	1 0	Sweet Vernal	2 0
Ditto ditto, per peck	4 6	Poa pratensis	1 0
Mixtures for soils of all descriptions, with the proper kinds of proportions requisite.		— trivialis	1 0
Italian Rye-grass, true, very fine quality, per bushel	5 6	Timothy or Meadow Catstail	0 8
Ditto fine, imported, per bushel	7 0		
Fine Perennial Rye-grass, per bushel	4s. to 5 6		

Mangold Wurzel, Yellow Globe	per lb.	0s. 8d.
" Red Globe	"	0 8
" Long Red	"	0 8
" Long Yellow	"	0 8
White Silesian Sugar Beet	"	0 8
Cabbage, large Drumhead	"	3 0
Linsed, fine English (Itiga stock), per bushel	"	9 0

Carrot, large White Belgian	per lb.	1s. 8d.
" long Red Altringham	"	0 10
Cattle Parsnip	per lb.	0 8
Lucerne	"	0 10

### WHOLESALE PRICES TO THE TRADE ON APPLICATION.

Goods not under 20s. delivered Free to all the Stations in London; also to all the Stations on the Norwich and Colchester Lines.

## SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

### SEEDS DIRECT FROM THE GROWERS.

THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT. SEEDS GROWN IN BERKSHIRE and the Southern Counties having obtained great celebrity, we have made such arrangements with Messrs. PICKFORD & CO., who have Offices on most of the great Lines of Railway, as will enable us to DELIVER OUR GOODS FREE OF CARRIAGE to most parts of the United Kingdom.

Particulars may be obtained by post, on application to us, addressed JOHN SUTTON & SONS, Seed Growers, Reading, Berks. A LARGE QUANTITY OF ONE YEAR SEEDLING LARCHES.

WILLIAM WOOD and SON have a fine Stock of the above to offer to their Friends.—Prices (which are moderate) will be furnished on application. Woodlands Nursery, Maresfield, near Uckfield, Sussex.

### THE BEST BROCCOLIES IN CULTIVATION.

MITCHINSON and CO., SEED MERCHANTS, Truro, Cornwall, have much pleasure in offering two superior BROCCOLIES, which, having been carefully saved under their own inspection, are warranted to give satisfaction. MITCHINSON'S PENZANCE, or EARLY WHITE BROCCOLI, is invaluable for its earliness, coming into use in February. It is a full sized handsome head, of excellent quality, but a shy seeder. Offered in sealed packets of about 500 Seeds, at 1s. 6d. per packet, postage free.

MITCHINSON'S TRURO, or SPRING WHITE BROCCOLI, is the most perfect Broccoli in cultivation, having every characteristic of perfection. The plant is robust, without coarseness, moderately dwarf, smooth leaves, with silvery ribs, handsome compact heads well protected. Many gardeners and others who saw them growing on our grounds last season pronounced them to be the best they had ever seen. The stock is limited; price 1s. 6d. per packet, or two packets for 2s. 6d. Postage stamps should accompany orders. General Catalogues, &c., forwarded on application.—Seed Establishment, Truro, March 12.

### NEW WHITE BROCCOLI—ROYAL VICTORIA.

EDWARD TILEY begs to announce that he has purchased the whole Stock of Seed of the above BROCCOLI, which has proved the hardiest growing and mildest flavoured variety yet offered to the public. Its superiority may be judged by the following:—"Grown by an amateur for the last four years, whose grounds lie in a cold, northerly aspect, where no other variety would succeed as the above has done, with certainty, it being equal to any grown in southern or warmer neighbourhoods. Its dwarf and hardy habit will prove a great desideratum to growers whose ground may be shallow and exposed to cold and cutting winds, having stood the most severe frosts, &c., and not being in any way affected by it, or inclined to run similar to other Broccolies before grown in the same situation. Weight generally from 6 to 8 lbs., and will keep its colour and flavour equal to the Cauliflower after its being cut several days." Packets of ½ oz., 1s. 6d.; ½ oz., 2s. 6d., or 1 oz. for 4s. E. T. has no hesitation in saying that this Broccoli will give as great satisfaction as all other new varieties sent out on former occasions.

A remittance must accompany every order in penny postage stamps to the amount or otherwise.

EDWARD TILEY, Nurseryman and Seedsman, 14, Abbey Church Yard, Bath.

### COLE'S SUPERB CRYSTAL WHITE CELERY.

WM. COLE, Dartford, Kent, begs to inform his friends and the public, that he is ready to send out a new White Celery, which he has every confidence in recommending as being decidedly superior to his Superb Dwarf Red, sent out, with universal satisfaction, three years back. The Crystal White is a dwarf kind, rarely exceeding (under the best management) 15 inches in height; it is very solid, crisp, and being in any way affected by it, or inclined to run similar to other Celeries before grown in the same situation. It has been seen by some of the first gardeners in the country, and pronounced to be a superior article. It may be obtained of W. C., as above, or from the following agents, at 2s. 6d. per packet, free by post:—

London: Messrs. Hurst and M'Mullen, Leadenhall Street; Messrs. Dave, Cottrell, and Benham, Moorgate Street; Messrs. Minier & Co., 60, Strand; Mr. Duncan Hairs, St. Martin's Lane, Charing Cross; Mr. Denyer, Gracechurch Street; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. J. and J. Fairbairn, Clapham.—Messrs. Garaway, Mayes, and Co., Bristol; Mr. Bunyard, Maidstone; Mr. Turner, Slough; Messrs. Downie and Laird, Edinburgh; Messrs. F. and J. Dickson, Chester; Messrs. T. and J. Dickson, Manchester; Messrs. J. and J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Voith and Son, Exeter; Messrs. Finney & Co., Gateshead; Mr. A. Ponter, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Messrs. Lincombe, Pines, & Co., Exeter; Messrs. Edmundson & Co., Dublin; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Mr. Brown, Norwich; W. B. Jeffries & Co., Ipswich; R. F. Darby, Cirencester.

### THE WHITE AMERICAN FLAX.

FRED. AD. HAAGE, JUN., of Erfurt (Prussia), begs to draw the attention of Agriculturists to the above valuable species of Flax. Its superiority over the common kind consists in its taller growth and exceedingly fine silk-like fibre. Seed, 3s. 6d. per lb., carriage free to London.—Orders are requested to be addressed to Mr. JAMES CARTER, Seedsman and Florist, 238, High Holborn, London.

### TO GROWERS OF CHOICE GARDEN PRODUCE.

WANTED TO PURCHASE, PINE APPLES, CHOICE FLOWERS, GRAPES, CUCUMBERS, MUSHROOMS, MELONS, &c. &c. &c. &c.

Payment Nett Cash on receipt of Goods.

Apply to GEORGE TAYLOR, JUN., FRUIT SALESMAN, St. John's Market, Liverpool.

### NEW ROSES, IN POTS, on the MANETII STOCK.

HYBRID PERPETUAL	s. d.	Rose de Soie	s. d.
Auguste Mie	2 6	Souvenir de la Reine des Belges	5 0
Baronne Haax	1 6	Spotted Queen	2 6
Comtesse Bathiauy	1 6	Therese de St. Remy	3 6
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Docteur Juillard	3 6		
General Budeau	3 6		
Génie de Châteaubriand	1 6		
L'Enfant du Carmel	3 6		
Le Lion des Combats	3 6		
Laure Raymond	3 6		
Louise Odier	3 6		
Madame Andry	3 6		
" Ducher	5 0		
" Fremion	2 0		
" Hilaire	3 6		
" Rivers	2 0		
Mère de St. Louis	5 0		
Queen Victoria (PAUL'S)	2 6		

Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

JOHN CATTELL begs to say that Priced Catalogues of his VEGETABLE, FLOWER, and AGRICULTURAL SEEDS may be had on application, enclosing a penny stamp for each.

The following very choice SEEDS may be had, post free, at the prices annexed per packet:—Azaleas, from the very choicest Indian varieties, 1s.; Anemone, single Poppy, fine mixed, 6d.; Brachysema latifolia, 1s.; Collinsia Bartsiifolia and multicolor, 1s. each; Cineraria, extra fine, mixed, 2s. 6d.; Calceolaria, saved from very fine varieties, carefully impregnated, 2s. 6d.; Celsia arcturus, 6d.; Cyclamen persicum, 6d.; Geranium, from new florist and fancy varieties sent out in 1851, separate or half of each, 2s. 6d.; ditto, from choicest older varieties, separate or half of each, 1s.; ditto, from choicest scarlet, pink, and scented varieties, 6d. each; Hovea Celsi, 1s.; Hardenbergia monophylla, 6d.; Indian Pink, superb mixed, 6d.; Lupinus moritzianus, 6d.; Phlox Drummondii, extra fine, mixed, alba, oculata, and Leopoldiana, 6d. each; ditto ditto Mayii, splendid striped, 1s.; Primula sinensis, fringed red and white varieties, extra fine, each, 1s.; Rhodantha Mangiesii, 1s.; Thunbergia alata, aurantia, and alba, 6d. each; Zinnia elegans coccinea, 6d.; German Stocks and Asters, as imported, from one of the best growers in Germany.

The following superior VEGETABLE SEEDS, post free, at the prices annexed.

CATTELL'S dwarf early Barnes Cabbage, per oz.	1 0
" Reliance Cabbage, per ½ oz.	1 0
" Drumhead Savoy, do.	0 6
" exquisite dwarf curled Parsley, do.	0 6
" fine early Walcheren Broccoli, per ½ oz.	0 9
" fine dwarf late Cauliflower, do.	0 9
" fine dwarf, curled, hardy Scotch Kale, per ½ oz.	0 6
" fine tall feathered do., per ½ oz.	0 6
" dwarf purple-top Beet, do.	0 6
" fine black-seeded Bath Cos Lettuce, do.	0 6
" true white Vegetable Marrow, per doz. seeds	0 3
" fine long Black Spine Cucumber, do.	0 6
" " white do.	0 6
Cuthill's Black Spine Cucumber, do.	0 6
Chamberlain's Long prolific Ridge do., per 2 doz. seeds	0 6
Cole's Crystal White Celery, per packet	2 6

Gladioli Breuchleyensis (very superior to gandavensis), flowering bulbs, free by post, at 1s. per doz.

Payments may be made in postage stamps, or by Post Office orders drawn on Westerham.

Address JOHN CATTELL, Seedsman, Westerham, Kent.

### NEW LARGONUM "FOSTER'S OPTIMUM."

CHARLES TURNER has strong plants of this unrivalled variety, which is large, and of fine shape; full sized truss, and smooth, with great depth and richness of colour; lower petals bright crimson, with large glossy black blotch on the top petals, leaving a narrow well defined margin of crimson scarlet; free bloomer and good habit; has been generally and very successfully exhibited; was figured in the January number of "The Florist" for 1852. A Coloured Illustration may be had on enclosing eight stamps. Price 42s.

### SHORT GRASSES.

FINE GRASS LAWNS IN FLOWER GARDENS, &c.—The great expense of cutting and carting turves from a distance may be avoided, and a superior Turf produced in a few weeks, by sowing SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds.

Great improvement may be effected in old Lawns by sowing about 20 lbs. to the Acre of these Seeds; for the formation of new Lawns twice that quantity will be necessary.

Price 1s. 3d. per pound; 3s. per gallon, or 21s. per bushel. Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

### GRASS SEEDS.

J. C. WHEELER and SON, SEEDSMEN to the GLOUCESTERSHIRE AGRICULTURAL SOCIETY, beg to offer the following GRASS SEEDS, which have been well harvested, well cleaned, and which they can warrant to be of the very best quality.

We have for some time paid considerable attention to Grass Seeds, and especially to mixing them in such proportions as the nature of the soil and other local circumstances may require, so as to form fine pastures. Having had much experience in this branch of our business, and the Grass Lands we have laid down having given great satisfaction, it is with much pleasure that we can recommend a fine mixture of the best Grasses and Clovers, suitable for the formation of a rich permanent pasture, from 25s. to 30s. per acre.

For improving the quality of Grasses already laid down, we can supply a good mixture at 1s. per lb.

For the information of those gentlemen who would prefer buying the varieties separately, and mixing them themselves, we have given a short description of some of the best sorts. About two bushels of the larger or light seed, and 12 lbs. of the small or heavy seed, is the quantity usually sown to the acre.

ITALIAN RYE-GRASS, imported seed, per bushel ... 7s. 6d.

Too much cannot be said in favour of this excellent Rye-grass. Compared with any other of the varieties of common Rye-grass, the Italian affords a stronger braid, arrives sooner at maturity, has a greater abundance of foliage, and of a lighter and more lively green colour; grows considerably taller, is more upright, or less inclined to spread on the ground. Another of its distinguishing characteristics is, that it is much preferred by cattle to any of the common sorts, and is greedily eaten by them, whether green or dry.

PERENNIAL RYE GRASS, per bushel ... 6s. MEADOW CATSTAIL, or TIMOTHY GRASS (Phleum pratense), per lb. ... 10d.

The Timothy Grass possesses the advantage of affording double the quantity of nutriment when its seeds are ripe, that it does if cut when in flower. On strong, tenacious, and rather moist soils, it is entitled to a precedence almost to any other, and should at least form a considerable portion of the mixture employed for sowing down such, either for alternate husbandry or permanent pasture.

MEADOW FOXTAIL GRASS (Alopecurus pratensis), per lb. ... 1s. 6d.

This is one of the earliest and best of Pasture Grasses, but not so well adapted for hay, as it produces but few stalks; its root leaves are very broad, long, soft, slender, and grow rapidly when cut, or when eaten down by live stock. It requires two or three years after sowing to arrive at full maturity.

ROUGH COCKSFOOT (Dactylis glomerata), per lb. ... 1s. It is a valuable Grass in cultivation, on account of the great quantity of produce which it yields, and the rapidity with which its leaves grow after being cut. It is well adapted for growing in shady moist places under trees, as in orchards, &c.

MEADOW FESCUE GRASS (Festuca pratensis), per lb. ... 1s. This is an excellent Grass, either for alternate husbandry or permanent pasture, but more particularly the latter. It is well liked by all kinds of domestic herbivorous animals.

SHEEP'S FESCUE (Festuca ovina), per lb. ... 10d.

This Grass forms the greater part of the Sheep pastures of the Highlands. In quantity of produce it is much inferior to the other cultivated Fescues; but, from being well liked by Sheep, it should always enter into the composition of mixtures for lands on which they are to be pastured. In fact, on the authority of Linnaeus, these animals have no relish for hills and heaths which are destitute of this Grass.

HARD FESCUE GRASS (Festuca duriuscula), per lb. ... 1s.

Will thrive on a great variety of soils, and is found to resist the effect of severe drought in summer, and to retain its verdure during winter, in a remarkable degree. From the fineness of its foliage and greenness in winter, it is well adapted for sowing in Parks, especially for Sheep pasture.

WOOD MEADOW GRASS (Poa nemoralis), per lb. ... 1s. 3d.

Its habit of growth is delicate, upright, close, and regular. There is no Grass better adapted for Pleasure Grounds, particularly under trees, as it will not only grow in such places, but forms a fine sward where few of the other fine Grasses can exist. It produces a considerable deal of foliage early in spring.

ROUGH-STALKED MEADOW GRASS (Poa trivialis), per lb. ... 1s.

This is a valuable Grass as a mixture for Pasture Lands, particularly on damp soils. Its habit of growth fits it for mixing along with the upright growing sorts, such as the Italian Rye-grass.

SMOOTH-STALKED MEADOW GRASS (Poa pratensis), per lb. ... 1s.

This Grass yields a large quantity of herbage at a very early period of the season.

SWEET-SCENTED VERNAL GRASS (Anthoxanthum odoratum), per lb. ... 2s. 6d.

This Grass yields but a scanty portion of herbage, yet, on the whole, permanent pasture should not be without a mixture of it, particularly in Park and Pleasure Grounds, were it for no other reason than its pleasant scent, not only when cut for hay, but also when its seeds become nearly ripe.

CRESTED DOGSTAIL GRASS (Cynosurus cristatus), per lb. ... 1s.

From this Grass forming a close turf, and having rather fine foliage, it may be advantageously sown on Lawns and other places, to be kept under by the scythe.

LAWN GRASS SEED, per lb. ... 1s.

By sowing this Grass a fine sward may be obtained in a short time, at one quarter the expense of laying down turf. It is a selection of the FINEST Grasses, and is entirely free from weeds. We can strongly recommend it to those about to form Lawns or Pleasure Grounds.

For some of the above descriptions we are indebted to "The Agriculturalist's Manual." J. C. WHEELER and SON deliver their Seeds CARRIAGE FREE to most of the principal Railway Stations in England.

J. C. WHEELER & SON, Nurserymen, Gloucester.



SEEDS CARRIAGE FREE.—SEE BELOW.

## NEW FARM SEEDS—1853.

**RENDLE'S NEW CATALOGUE** is just published, and can be had on application, in exchange for 1d. stamp. It contains descriptions of all kinds of Agricultural Seeds, with prices for every article, and will be found very useful to all Agriculturists, and those who take an interest in the cultivation of the soil.

**EVERGREEN RYE-GRASS, or DEVON EVER.**—This is a most valuable Grass for permanent pasture, and should be sown on all land where a fine Perennial and Evergreen Grass is required.

The Subscribers have contracted with some large growers in this County (Devonshire), and can supply the genuine article, free from noxious weeds, at 6s. per bushel.

**TRUE MARL or COW GRASS.**—The West of England is famous for this excellent variety of Cow Grass, which is of very permanent duration, and can be obtained GENUINE at the lowest market prices.

**PERMANENT PASTURE GRASS SEED,** in mixtures to suit various soils and situations, at the lowest prices.

The Subscribers have devoted much care and attention to this particular branch of the Seed Trade; and the large and increasing patronage they are daily receiving is the best proof they can offer of the quality and genuineness of the Seeds they supply.

**FINE LAWN GRASS, for Lawns, Pleasure Grounds, or Ornamental Parks.**—The very finest Evergreen Grasses are selected for this purpose, and a fine sward will be obtained in a very short time, at less than a quarter the price of laying down Turves. Price 20s. per bushel; 3s. per gallon; or 1s. 3d. per lb.

**TRUE ITALIAN RYE-GRASS.**—The Subscribers have a very large stock, and if a quantity above 10 bushels is taken, the price will be reduced to 5s. per bushel.

**LARGE ALTRINGHAM CATTLE CARROT.**—The Subscribers can offer more than 2 tons of this excellent variety, at 50s. per cwt., or 6d. per lb.

**MANGOLD WURZEL,** all the varieties, 1s. per lb. **BISHOP'S LAST and BEST PEA,** for field culture, 15s. per bushel, or 2s. 6d. per gallon.

**SCOTCH PERENNIAL RYE-GRASS,** 5s. per bushel; or 4s. per bushel, if a quantity above 20 bushels be taken.

**GRANITIC SEED BARLEY,** grown by George W. Fowler, Esq., on Dartmoor, at an elevation of 1100 feet, saved last autumn in brilliant weather. 6s. per bushel.

All Orders for Seeds above £2 will be delivered CARRIAGE FREE to most of the Steam Ports in England and Ireland, and all the Railway Stations in the South and West of England.

For Catalogues and particulars apply to **WILLIAM E. RENDLE & Co.,** Seedsmen by appointment to the South Devon Agricultural Society, and Royal Agricultural Society, Prince Edward's Island.

## SPECIAL CONTRACTS.

Noblemen, Clergymen, or Gentlemen requiring large quantities, special contracts can be made at a great reduction in price.

**NEW PLUMS.**—Although H. DOWLING has been patronised by Noblemen, Gentlemen, and others to an extent far beyond his most sanguine expectations, still he has, of two sorts, Angelina Burdett and Woolston Black Gage, several fine trees to offer, and which, from their being grown in an exposed situation, he feels confident can be removed with safety throughout the present month. By reference to the *Gardeners' Chronicle*, Nov. 13, 1852, and subsequent dates, full particulars may be seen of the fruits, relative to size, colour, flavour, productiveness, and period of ripening, together with testimonials of unexceptionable authority. Descriptive circulars to be obtained of Mr. HENRY DOWLING, Woolston Lawn, Southampton.—March 19.

**SUPERB HOLLYHOCK SEED.**—Well ripened Seed warranted to be saved exclusively from Comet, Elegans, Obscura, Mr. C. Baron, Penelope, Rosa grandiflora, Meteor, Walden Gem, Magnum Bonum, Spectabilis, Safranot, Delicata, Enchantress, Picta, Queen, Bicolor, Dido, Charles Turner, Formosa, Hebe, Model of Perfection, Rosa Alba, Sulphurea Perfecta, White Perfection, Blue Beard, Mulberry Superb, Snowball, and Queen of England.

A good mixture of the above, in packets containing upwards of 200 seeds, will be forwarded post free, upon the receipt of 2s. 6d. worth of postage stamps.

Also R. B. B. begs to offer plants of his superior Seedlings of 1851 and 1852, which received certificates at the National Floricultural Society, Regent Street, London, and met with universal approbation wherever exhibited. Catalogues sent upon pre-paid application.

R. B. BIRCHAM, Hedenham Rosary, Bungay, Suffolk.

**THE LARGEST, BEST BEARING, AND FINEST FLAVOURED PEA** yet introduced, is **HAIR'S DEFENCE** (KNIGHT'S) PEA. It grows about 4 feet, remarkably strong in habit, is earlier than the taller growing varieties, and should be planted 4 to 6 inches apart in the rows.

Plant February to April, 2s. 6d. per quart.

**HAIR'S DWARF MAMMOTH (KNIGHT'S) PEA** has been so extensively grown and approved that D. H. does not think anything need be said in confirmation of its established character. Sow 4 inches apart.

Plant February to May, 1s. 6d. per quart.

**BISHOP'S LONG-POD PEAS,** 1s. ditto.

**BURBIDGE'S ECLIPSE PEAS,** 1s. ditto.

Garden, Agricultural, and Flower Seeds, wholesale and retail, embracing every article connected with the trade upon the most reasonable terms.

Potatoes, all the best kinds, for seed.

Catalogues furnished upon application.

DUNCAN HALES, Seedman, 109, St. Martin's Lane, Charing Cross.

**NEW STRAWBERRY, INGRAM'S "PRINCE OF WALES,"** proved at the Royal Gardens to be the best Strawberry for Early Forcing, and Fruiting in the Autumn from forced plants, producing beautiful Fruit through the months of September, October, and November. The Fruit is of the first size, fine shape, and of a beautiful glossy red, flesh light red, solid, very juicy, and of exquisite flavour, 10 days earlier than the British Queen in the open air. The Fruit will bear carriage, consequently will be a useful market variety. It is of free growth, compact habit, hardy, and very prolific. It was raised in 1847, by Mr. Ingram, of Frognour, and now very extensively cultivated there, for forcing, out-door culture, and autumn fruiting.

JAMES SMALL begs to call the attention of Gardeners, Market Growers, and the Public generally, to the above new Strawberry, which he has propagated for sending out in April, 1853. Strong well rooted Plants, 3s. per hundred; 1s. 15s. for 50; 1s. for 25, box included. All persons wishing to secure Plants for Potting next season will please send their orders at once, which will ensure the strongest Plants.

Plants may be had of the following Agents, in London:—STURTESS and SONS, Seedsmen, 46, Chancery Lane; and DAW and COMPANY, Seedsmen, Moorgate Street. A remittance required from unknown correspondents, or references in London.

JAMES SMALL, Nurseryman, Colnbrook, Slough, Bucks.

## AMERICAN NURSERY.

**GEORGE BAKER,** Windlesham, near Bagshot, Surrey, Exhibitor of American Plants at the Royal Botanic Gardens, Regent's Park, begs to inform the nobility and public that he has published a Descriptive CATALOGUE of AMERICAN PLANTS, Conifers, Roses, Ornamental Shrubs, &c. &c., and may be obtained by enclosing two postage stamps. Near Staines Station, Windsor Branch, South-Western Railway.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his CATALOGUE of the above plants, Roses, Conifers, &c., is now published, and may be obtained by enclosing two postage stamps. The colours of all the Rhododendrons worthy of cultivation are described, in order to facilitate purchasers in selecting. The Rhododendrons, Azaleas, &c., annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

The American Nursery, Bagshot, Surrey, three miles from Blackwater Station, South-Eastern Railway, and four miles from Farnborough, South-Western Railway.

**NEW SHRUBBY CALCEOLARIAS,** CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

**J. WEEKS and CO., CHELSEA,** have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all Shrubby they are perpetually in flower; and from the great variety and brilliancy of their colours, they are invaluable for the conservatory or bedding-out.

J. WEEKS & Co., King's Road, Chelsea, London.

**DOUBLE ITALIAN TUBEROSE ROOTS,** 4s. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Buds may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

## FLORIST FLOWERS.

25 pairs Show CARNATIONS, in 25 varieties ... £1 0 0  
25 do. PICOTEES do. ... 1 0 0  
25 do. PINKS do. ... 0 8 0  
25 Fine Show PANSIES do. ... 0 12 0  
Any of the above may be had separate, package, hamper, &c., included.

**JOHN HOLLAND,** Bradshaw Gardens, Middleton, near Manchester, is now sending out selections of the above Florist Flowers, in show varieties, and strong, well-rooted plants, and in each order will include a pair of his new fancy Picotee, "Countess of Ellesmere." A few packets of PANSY SEED, selected from best show flowers only, at 1s. and 2s. per packet. Post-office orders to be made payable at Middleton, Lancashire. Auriculas, Alpines, Polyanthus, Primroses, &c. Printed and Descriptive Lists of all the above may be had on application, enclosing one postage stamp.

## STANDARD &amp; PYRAMIDAL FRUIT TREES.

**WILLIAM WOOD and SON,** in order to make room for a new and very extensive Plantation of Roses, have come to the determination of clearing off a large overstock of Standard Fruit Trees; the plants are remarkably strong and healthy, and comprise the most esteemed sorts in cultivation.

Apples, Standards ... 10s. per dozen.  
Pyramidal Trees ... 8s. "  
Pears, Standards ... 15s. "  
Pyramidal Trees, very fine ... 12s. "  
On Quince stocks (pyramidal trees) 18s. "  
Plums, Standards, very strong ... 12s. "  
Pyramidal Trees ... 9s. "  
W. W. & Son have still on hand a fine stock of the leading kinds of Roses.

N.B. Extra plants presented with each order to compensate for carriage.  
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

**BASS and BROWN'S SEED AND PLANT LIST** FOR 1853, free, for three penny stamps. Also, the AUTUMN CATALOGUE for three penny stamps, which contains the Roses, Herbaceous Plants, Hollyhocks, and other select Hardy Plants and Shrubs, Fruits, &c.; also the Cinerarias, Azalea Indica, &c.

## VEGETABLE SEEDS.

ASSORTED COLLECTIONS OF THE FINEST QUALITY.

Time of sowing and other information is furnished in the Catalogues, also the sorts and quantities of the No. 1, 2, and 3 Collections. If any sorts are not wished for, enlarged quantities of others furnished to make up the amount.

No. 1. Collection of largest quantities of choice and new sorts ... £ s. d.  
No. 2. Collection of smaller quantities ... 2 10 0  
No. 3. Collection of do. ... 1 10 0  
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## FLOWER SEEDS—BEST ASSORTMENTS.

Free by post, with cultural instructions.

The Catalogue gives height, colour, months of flowering, hardiness, duration, &c.

For an Abridged List of New Varieties, with a few not included in the Catalogue, see *Gardeners' Chronicle* of January 29th and February 12th.

100 varieties, select showy Annuals, including the newest 15 0  
50 varieties, 8s. 6d.; 30 varieties, 5s. 6d.; 20 varieties ... 4 0  
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, &c., 7s. 6d.; 12 varieties ... 5 0  
20 varieties choice Greenhouse Annuals ... 7 6  
12 varieties do. do. ... 5 0  
20 varieties choice Greenhouse Perennials ... 10 6  
12 varieties do. do. ... 7 6  
20 varieties choice hardy Biennials and Perennials ... 7 6  
12 varieties do. do. ... 5 0

## IMPORTED GERMAN SEEDS, in separate colours, very double.

24 superb varieties Dwarf Stocks, &c.; 12 varieties ... 2 6  
10 superb varieties new large flowering Stocks ... 2 6  
18 superb varieties Wallflower-leaved do. ... 3 6  
New white Wallflower leaved, very fine, 6d.; large pkt. 1 0  
6 superb varieties Autumn Brompton Stock ... 1 6  
8 superb varieties Emperor Stock ... 2 0  
New White Emperor do., very choice, per packet ... 1 0  
12 superb varieties German Aster ... 2 0  
12 superb varieties Globe flowering ... 2 0  
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Also superb double imported Wallflower, Larkspur, Balsam, Seneio elegans, Cock's-comb, Sweet William, &c. See Catalogue. Remittances requested from unknown Correspondents. Post Office Orders payable to STEPHEN BROWN, or the Firm.

In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods to the amount of 20s. and upwards, free to all the Stations in London; also free, as before, to all Stations on the London and Norwich Line, via Colchester.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## AGRICULTURAL SEEDS.

FLOWER SEEDS, AND SEEDS FOR THE KITCHEN GARDEN, Delivered Carriage free by Railway.

**J. C. WHEELER and SON, SEEDSMEN TO THE** GLOUCESTERSHIRE AGRICULTURAL SOCIETY, beg to state that their new Seed List for this season will be forwarded free by post on receipt of one postage stamp.

To those desirous of buying the best varieties in cultivation, their List will be found extremely useful.

## SELECTED GARDEN SEEDS.

**J. C. WHEELER & Son** beg to offer the following Collections of Garden Seeds:—  
No. 1. A complete Collection suitable for a large garden 2 10 0  
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No. 1 and No. 2 Collections will be sent free to any Railway Station in England.

J. C. WHEELER & Son, Seedsmen, Gloucester.

**CHARLWOOD and CUMMINS** beg to announce that they have received their importation of AMERICAN TREE and SHRUB SEEDS. Catalogues of which, as also of Agriculture, Garden, and Flower Seeds, will be forwarded on application.

14, Tavistock Row, Covent Garden, London.

**LIME TREES,** 8 to 12 feet high.—Several Thousands of the above for Sale, at 30s. per 100.

Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

**ASH-LEAF POTATOES,** all good set size, 5s. per bushel. Jackson's Improved Kidneys, ditto. Early Shaws and Early Proflics, 2s. 6d. per bushel.—Apply to Mr. B. CANT, Nurseryman, Colchester, Essex.

**AQUILEGIA GLANDULOSA.**—The Subscribers have for sale healthy one-year-old roots of this beautiful Columbine, carefully packed and sent free by post, at 5s. per dozen, with directions for treatment. Seeds at 1s. per packet, or for stamps of that value; a great reduction on wholesale orders. Respecting this beautiful flower Professor LINDLEY says, in the *Gardeners' Chronicle* of June 17, 1848: "This plant is perhaps the handsomest hardy perennial in cultivation." Prices of forest trees given on application. A large stock of Larch and Deodar very cheap.—JOHN GARGOR and Co., Nurseries, Forbes, N.B.

**AUGUSTUS VAN GEERT, NURSERYMAN, Ghent,** Belgium, begs to inform Amateurs and the Trade, an extract of his Choice Collection of Plants is just published, which may be obtained by application to Mr. R. SILBERBAD, 6, Harp Lane, Great Tower Street, London.

## DAHLIAS.

**CLARKE and Co., SEEDSMEN and FLORISTS, 86, High Street,** Borough, beg to intimate to their friends that they will have a good stock of Annie Salter, Reine des Belges, Niobe, Flower of the Day, and Colossus, a very large and scarce yellow, at 1s. 6d. each.

Also the following will be found in the 10s. per dozen list:—Sir Richard Whittington, Dr. Frampton, Sir F. Thesiger, Triumphant, Alice, Gloire de Reine, Queen of Whites, &c., &c. In the 4s. per dozen list will be found,—Fearless, George Glenny, Queen of Beauties, Rachael, Miss Spears, with every other variety that is three years old and above.

Catalogues may be had on application.

## SEED LISTS.

FOREST TREES, FRUIT AND ROSE TREES, &c.

**PETER LAWSON and SONS' PRICE LISTS** of the above, suitable for this season, are now ready, and may be had free by post, or on application from their agent—J. C. SOMMERS, 159, Fenchurch Street, London.

## The Gardeners' Chronicle.

SATURDAY, MARCH 19, 1853.

## MEETINGS FOR THE ENSUING WEEK.

MONDAY, March 21	Statistical (Anniversary) ...	3 P.M.
	Chemical ...	8 P.M.
TUESDAY, — 22	Civil Engineers ...	8 P.M.
	Medical and Chirurgical ...	8 P.M.
	Zoological ...	9 P.M.
WEDNESDAY, — 23	Society of Arts ...	8 P.M.
	Geological ...	8 P.M.
	Royal Soc. of Literature ...	8 P.M.
THURSDAY, — 24	National Horticultural ...	3 P.M.
SATURDAY, — 25	Medical ...	8 P.M.

MANY improvements, both in the country and in towns, are connected with the amount of rain, and it is therefore necessary that it should be correctly registered. Calculations for drainage and for the supply of water for towns, and the driving of machinery, are sometimes based on the quantity or depth of rain which is reputed to fall on a certain extent of what is termed gathering ground, that is, tracts inclining so as to throw the water towards some particular channel. If it is found that conduits have just sufficient capacity to carry off all the superfluous water from, say, a thousand acres of gathering ground in one locality, it might be fairly concluded that conduits of the same capacity would be adequate for the same purpose in another locality. But, if it should be proved, by means of proper rain gauges, that 24 inches fell annually in the one case, and 48 inches in the other, it is evident that conduits of double capacity must, or ought to be provided. Trees in gardens often suffer from dryness at root considerably before they show it; by attending to the rain-gauge, and observing with what amount of rain they thrive, and with how much less they do not thrive, artificial moisture could be advantageously supplied at fitting times. Many instances might be adduced to prove the utility of the rain-gauge, and that its registration has more importance than that of merely gratifying curiosity.

But although rain-gauges are intended to indicate the correct amount of rain, yet there is a statement by Mr. LAWES, in another part of this Paper, which, as he observes, if it be correct, must throw great doubt on the returns derived from the instruments that have been hitherto generally employed.

They have been in use, in some way or other, for upwards of 150 years, at least; but how constructed or situated previously to the end of the last



or beginning of the present century, little is known. In this latter period they have been, as they still are, variously constructed, some presenting a circular opening, others square, and of greater or less area in both forms. HOWARD, in his "Climate of London," recommends the funnel to be 5 inches diameter. The Royal Society states that "the rain-gauge may be of very simple construction. A cubical box of strong tin or zinc, exactly 10 inches by the side, open above, receives, at an inch below its edge, a funnel, sloping to a small hole in the centre."

Mr. HOMERSHAM, in making experiments relating to the supply of water for the inhabitants of Manchester and Salford, in 1847, employed a staff gauge, consisting of a staff of wood 18 $\frac{3}{4}$  inches long, and 2 inches diameter, fixed in such a manner that all the rain driven against it by the wind, and flowing down it, shall be caught in a bottle. Mr. HOMERSHAM states that the rain-gauges fixed by the Literary and Philosophical Society of Manchester were a combination of the staff and funnel gauge, inasmuch as a stick or index rod, three-fourths of an inch in diameter, attached to a float, and rising above the funnel with the fall of rain, intercepted a quantity of the latter, and gave results greatly in excess, the amount indicated by them for a year being from 54 to 63 inches in depth. Mr. HOMERSHAM further states that the corporation of Manchester, founding their scheme for supplying water on the indications of these gauges, appear to have been thereby misled.

It may be remarked that the results from staff gauges must be greatly affected by the force of the wind; for if there be but little wind they present comparatively little surface to the then nearly perpendicular fall of rain. On the contrary, when the wind is strong, and the rain in consequence is driven almost horizontally, the upright surface is more opposed to it, and would, therefore, collect a larger quantity than would be received by the mouth of a funnel of the same area. In elevated situations, the discrepancy between the results obtained from a staff and those from a funnel gauge is very great, as will be seen from the following results of experiments made in 1847 with staff gauges, comparatively with funnel gauges used by the Manchester, Sheffield, and Lincolnshire Railway Company.

SITUATION.	Funnel gauge, 9 inches diameter.	Staff gauge, 18 $\frac{3}{4}$ in. long, 2 inches diameter.
	Annual depth of rain. Inches.	Annual depth of rain. Inches.
Todd's Brook, brinks, top of hill, 1500 feet above level of sea	29.50	46.87
Todd's Brook, reservoir, bottom of hill, 620 feet above level of sea	38.39	20.67
Comb's Ridge, top of hill, 1670 feet above level of sea	35.85	58.99
Comb's Reservoir, bottom of hill, 720 feet above level of sea	51.30	27.89
Average of the four stations	38.76	38.60

From the above it appears that the annual amount of rain differs by the funnel gauge, according to elevation, as much as 21.80 inches; whilst the amount by the staff gauge differs in like manner 38.32 inches; that in the elevated situations the staff gauge collected the most rain, and the funnel gauge quite the contrary. Great as the discrepancies are, it is very remarkable that when we take the average of the four stations, the results of both kinds of gauges are very nearly equal. It may be remarked that any perpendicular opposing surface can only give a correct indication of the quantity of rain when the latter falls at an angle of 45°. Erect a plane, say 12 inches long and 3 inches wide, with its face to the wind; and provided the rain fall at an angle of 45°, this plane will just shelter as much as its area of the horizontal surface behind; or, in other words, it will intercept exactly as much rain as would have fallen on that surface had it not been there. But if the rain fall at a greater angle, it will intercept less; and, on the contrary, at a less angle, more. Supposing the erect plane were a very thin plate, then when the rain falls perpendicularly none would be intercepted; but if the rain were driving almost horizontally, as much would be intercepted as would otherwise fall on a horizontal plane the breadth of the plate (3 inches), and of almost infinite length.

It is the depth of rain which rests on a horizontal surface that is required to be ascertained by means of rain-gauges, and therefore their receivers must be placed in a horizontal plane. But being so placed, why more rain, per square foot, should fall in one of large dimensions, if that be really so, than in one of small, is a question which it is most desirable

to solve. By referring to Mr. LAWES' statement of the quantities collected in the large and small gauges, on the 8th and 10th of February, it will be observed that the difference is not uniform; and it must, therefore, depend on some variable cause—most probably the greater or less force of the wind. A portion of the current of wind coming in contact with any resisting body, such as the funnel of the gauge, must thereby be deflected, and must in consequence press upon the adjoining portions.

Supposing the funnel or receiver presents a surface of 6 inches square or one-fourth a square foot to a rather brisk wind, the pressure on that surface will be about 4 ounces. This force will be diverged in all directions, laterally as well as upwards; but it is only that which passes upwards that affects the subject of enquiry; for that must evidently tend to alter the direction of the fall of rain, so as to throw it over the mouth of the receiver. The greater the force of the wind, the greater the obliquity of the fall of rain, and the more easily its course will be deranged. If the rain fall perpendicularly there can be no difference between the quantities received by a large and small gauge, their respective areas being taken into account, at least not from the above cause; and any other, such as attraction to the larger body of water, can have but little effect.

Mr. HOWARD, "Climate of London," vol. ii. p. 159, alludes to the effects of the wind in causing discrepancies in differently situated gauges. "There is," he states, "another source of discordant results, which seems not to have been enough attended to. It exists in the deflection of the rain by accidental currents. On the 25th of September, 1811, finding in a gauge, No. 2, placed on a Grass plot about 70 feet from the west front of the house, 0.46 of an inch of rain, while in No. 1, placed 43 feet higher, on a glass turret on the top of the house, there was only 0.12 of an inch, I suspected that the wind, which came in squalls from the west, had a share in producing the difference. I took, therefore, two other gauges, Nos. 3 and 4; and on the 27th placed No. 3 in the gutter, near, and on a level with the west parapet of the house; and No. 4 about 20 feet in a line to leeward, at the same height, but in the valley between the roofs. It was then beginning to rain in moderately large drops; the wind fresh at S.W. After two hours and a half, I found in No. 3, 0.08, and No. 4, 0.11 of an inch; No. 2 on the ground having also 0.11 of an inch. I removed No. 4 about 40 feet to leeward, near the east parapet, and got in an hour and a quarter from No. 1, 0.08; No. 2, 0.15; No. 3, 0.12; No. 4, 0.14 of an inch. The rain continued six hours, with a steady wind, and was at times heavy; near twice as much fell on the ground gauge as on that at the turret; and the results of the other gauges proved that some part of the difference must be attributed to the wind between these. For it appears that the stream of air, obstructed by the west front of the house, and rising in a curve, carried with it a part of the rain over the windward gauge, to let it fall on the leeward; hence the latter had more than its due proportion, the former less." He adds, "On the whole, as the proper subject of calculation and comparison is the rain on the surface of the ground, this is the proper ordinary situation for the gauge; and it should be as remote as possible from all objects that may give rise to eddies in the stream flowing over it." This of course should be attended to, and according to the view we have taken, it should be placed so that even the apparatus itself should not disturb the stream of air.

As the subject is important, it ought to be investigated by those who have the most competent means of effectually doing so. It should be made the subject of experiment on a large scale at Greenwich, for there a gauge could be procured, say 12 feet square. Its products could be duly measured, and evaporation properly guarded against, or accounted for, in a manner that private individuals could scarcely undertake to accomplish. In the mean time, the latter may compare the results of a 5-inch diameter gauge with those of one 10 or 12 inches diameter, both placed above ground, on the same level; also those of a 5-inch gauge sunk to the level of a piece of smooth ground, with those of another gauge, of the same capacity, but standing 2 or 3 feet higher. T.

It is not a little singular that we should not yet have been able to discover the importance of those great GREEN BELL-GLASSES which the French market-gardeners call CLOCHES. At one time it was common to see in our gardens large glass bottles with their bottoms cut off; but they have gradually disappeared except from a few localities, and have been replaced by the costly hand-glass or the wooden glazed "box." We cannot, however, understand why, in the present state of the glass trade, it should not be as profitable to use these large bell-

glasses in England as in France. They cost from 7 $\frac{1}{2}$ d. to 8d. each in Paris, and we have reason to know might be bought at the English glass works for 10d. a-piece wholesale.

When a French gardener sets up a kitchen garden of the better kind, for the supply of the market, he finds two things indispensable—a powerful pump, for which he pays 60*l.*, and a large supply of cloches. Of the latter he provides about 3000 for half a hectare, or little more than an English acre. According to COURTOIS GÉRARD they are the most ancient of protecting contrivances, their employment being traceable back to about the year 1623. They are so universally used for raising crops that require shelter from either cold or wet, that some years ago the number actually employed in the market gardens of Paris alone was estimated at 1,659,900, which, at their then price of 10*d.* each, represented a capital of nearly 70,000*l.* sunk in this perishable article.

They are used principally for raising salads in the spring, and for Melons in the summer and autumn. About the beginning of February the Paris gardeners begin to raise their Lettuces and Chicory, in the middle of the month they get their hot-beds ready, and in the beginning of March they prick the plants out, four Cabbage and one Cos Lettuce under each bell-glass. By the end of April this crop is over, and they prepare for Melons; the latter are gone by the second week in September, and are succeeded by Lettuces, five under a glass. Or they get winter crops of Carrots, small salad, Chicory, &c., instead of Lettuces; and they reckon that the market value of the produce of their 3000 cloches, in the course of a year, is something more than 160*l.*—not a bad return.

It is in this way, and by similar unexpensive contrivances, that Paris market-gardeners manage to live well upon little bits of ground, charged with exorbitant rents. The rental of market-garden ground in that capital is from 20*l.* to 34*l.* per acre! according to the quality of the land and other circumstances; the dearest is on the east of the city, the cheapest on the south; the annual expenses altogether are estimated at something beyond 300*l.*; and yet a French gardener is able to extract about 200*l.* per acre in clear profit. It would require a considerable space to explain how this is done, but we shall endeavour to bring by degrees the more striking parts of his operations before our readers, as described by the French themselves, who, unlike our London growers, would be unable, if desirous, to make a secret of their system of working. Within the fortifications of Paris there existed, in 1845, 1125 market-gardeners, cultivating among them more than 1200 acres of land, as ascertained by COURTOIS from personal knowledge, and an examination of the books of the Paris markets. With such numbers and holdings, little exceeding an acre each on the average, trade secrets would be very difficult to keep.

The Exhibitions held in Regent Street this spring show plainly how far the French gardeners are in advance of the English in the production of the more delicate kinds of kitchen garden produce. It is quite clear, indeed, that English growers fear to come into comparison with them. We are sorry for it—sorry for the sake of our national reputation as horticulturalists, and sorry because the inevitable result will be the supply of Covent Garden from Paris instead of suburban London.

#### LARGE AND SMALL RAIN GAUGES.

HAVING occasion to collect large quantities of rain-water for the purpose of chemical analysis, I put up about a month ago a large gauge; and thinking it advisable to compare this with the small rain-gauges at present in use, I placed one of the usual size, 5 inches in diameter, close to it. They both stand in the middle of a field of 30 acres, about 2 feet above the surface of the ground. They are examined morning and evening; the water of the large gauge is weighed, and that in the small one measured by a graduated glass. The surface exposed in the large gauge is exactly 1-1000th of an acre, or 43.56 square feet, a little more than 43 $\frac{1}{2}$  feet. As a cubic inch of water weighs 252 $\frac{1}{2}$  grains, 1 inch of rain in this gauge will weigh nearly 226 lbs.—43.65 × 144 × 252.5 = 1,587,114, divide by 7000 = 226 nearly. A quantity of rain-water weighing 2 lbs. 4 oz. from the large gauge ought to correspond with 1-100th of an inch measured in the small gauge. The area of the small gauge is 19.635 inches, and as a square foot of water 1 inch deep weighs 36,360 grains, one measured inch of water in the graduated glass ought to weigh about 5000 grains—144 : 36,360 :: 19.635 = 4957; this I find by actual weighing to be nearly correct. The surface exposed in the large gauge is to the small as 320 to 1. 4957 multiplied by 320 gives 1,586,240, which is nearly the calculated weight of 1 inch of rain in the large gauge. In order, therefore, to compare the small and large gauge together, we have only to multiply each 100th of an inch by 2 lbs. 4 oz. to show how many pounds of rain in the large gauge should be



equivalent to the fall of rain as measured by the small gauge. In the following table are given the actual and calculated results:—

Date.	Large Gauge.	Small Gauge. Inch, 10th, 100th, 1000th.	Quantity of Rain at 2 lbs. 4 oz. to each 100th of an inch of Small Gauge.
February 5.....	lbs. oz.		
" 8.....	67 7	0.12	27
" 10.....	23 5	0.09	20.4
" 14.....	33 15	0.09	20.4
" 16.....	52 1	0.01	2.4
" 18.....	0 6	0.0	.....
" 21.....	7 12	0.0	.....
" 22.....	1 5	0.0	.....
" 23 morn.....	20 9	0.05	11.4
" 23 even.....	1 10	0.0	.....
" 24.....	7 12	0.02	4.8
" 25.....	1 2	0.007	.....
" 26.....	33 9	0.115	25
" 26.....	39 5	0.095	22.6
Total.....	290 2	0.597	132.14

To be equivalent to the large gauge, the small gauge ought to be 1.28 instead of .597; and if such an error as this was continued for a whole year, 24 inches of rain would be 51. I have no reason to suspect the accuracy of the results obtained, although possibly I may have made some mistake in the calculations. The weights of water in the gauges are taken by two assistants, and the results agree in every respect. I will communicate further results when obtained; in the meantime I shall be glad to hear whether any other person has compared rain-gauges of different sizes. I saw in the *Chronicle* a few weeks ago a letter from a correspondent in Pembrokeshire stating that the largest of two gauges gave the most rain. If these errors are confirmed, I am afraid the results obtained from small rain-gauges may be compared to small experiments in agriculture, both are of doubtful accuracy. *J. B. Lawes, Rothamsted.*

#### ECHITES SUBERECTA.

This twining plant is well adapted for pot culture, being moderate in growth and a profuse bloomer, producing great clusters of *Convolvulus*-shaped flowers of the purest yellow, all through the summer and autumn months. If good strong plants are obtained at once they may be induced to form nice blooming specimens this season. If bought at the nurseries examine the state of the roots, and if necessary shift into pots a size larger; if the soil is in an unhealthy state, however, and the roots weakly, reduce the balls sufficiently to clear away all the sodden and unkind soil, taking care in doing this to injure the roots as little as possible, and repot into rather small pots, plunging in a bottom heat of about 80° or 85°. Keep the atmosphere close and moist, and sprinkle overhead morning and evening, but apply water to the soil with care until the roots reach the side of the pots. Stop the more luxuriant shoots, to induce compact growth, and prevent the production of long-jointed gross wood, which would be the case if one or two shoots were allowed to take the lead while the plants are in bottom-heat and in a moist warm atmosphere. In the case of weakly plants, as soon as the pots are tolerably well filled with roots, shift into others a size larger, and continue the previous treatment for a fortnight or three weeks, when, if all has gone on well, they will be in good condition for shifting into the flowering-pots; the size of the latter must be regulated by the size and vigour of the plants, and the after treatment which it may be convenient to afford them. Twelve-inch pots will generally be found sufficiently large for specimens of one season's growth, and the plants will probably produce more blossom in this size than if allowed more space for their roots.

Where the plants are strong and healthy to start with it will not be necessary to shift them more than once previous to transferring them to their flowering-pots. If bottom-heat can conveniently be afforded for a fortnight after they are shifted into the flowering pots, it will be beneficial in promoting a healthy root action and getting them established without loss of time. Stopping should not be practised after shifting into the flowering pots, but any over-luxuriant shoot may be checked by bending its point downwards. The best situation for the plants, after they are fairly established in their flowering pots, is near the glass in a rather warm and not very moist temperature, where they will be fully exposed to the sun's rays; and when a fair amount of wood is obtained, the plants should be rather sparingly supplied with water at the roots until they exhibit a tendency to produce flower; and when this is once obtained, a liberal supply of water should be afforded, to maintain them in vigorous health and prolong the duration of the blossoms.

This plant is well adapted for training over a trellis affixed to a pot, and managed in this way it forms a really handsome object; or it may be trained to wires along the roof of a house, but trained in whatever way you please, it should be afforded a light situation with an average temperature during the summer and autumn months of 65° at night and 75° or 80° by day. When the flowers begin to fall, or are produced but sparingly, which will be the case towards November, do not give much water to the soil; for if the plants were liberally supplied with water, and afforded a rather warm temperature, after this, the result would be a second growth, and the derangement of the specimens for

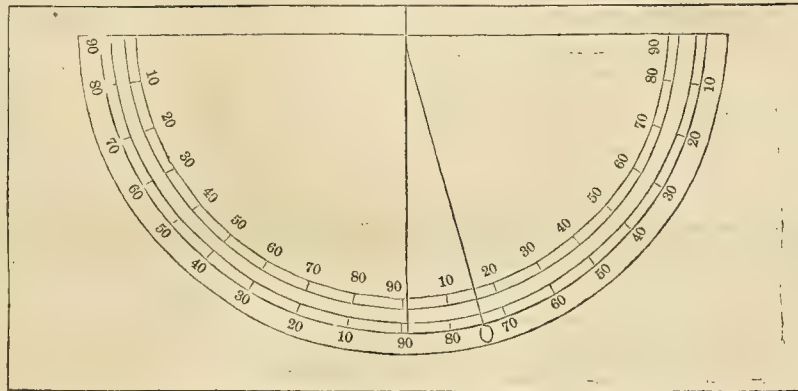
another season. During winter, they should be kept cool—say from 45° to 55°, and very little water given to the soil. In February or March, prune them, by cutting back the branches to prominent buds, removing weakly shoots altogether, and in the case of specimens, trained to trellises attached to pots; take care to cut back sufficiently to ensure a supply of young wood towards the base, but the habit of the plant, and cutting weakly shoots at the lowest bud, will almost effect this without further care. The roots should be examined before placing the plants in heat, and if necessary, the balls reduced, removing any unhealthy soil; but this will not be necessary generally after one year's growth. Plunging the pots in bottom heat will be useful in promoting vigorous growth, and for having them in flower early; but where it may be inconvenient to afford this aid, good specimens may be had in bloom without it by the end of June; and, with a liberal shift, these will continue flowering throughout summer and autumn.

Propagation is readily effected by means of cuttings made of the young wood selected in spring in a rather soft state, and inserted in a sandy soil and placed in a brisk bottom-heat; the plant also ripens seeds in abundance. Cutting plants, however, will be found to bloom most freely.

As regards soil, turfy sandy loam and peat, in the proportion of three parts of the former to one of the latter, with a free admixture of potsherds or small pieces of charcoal, and a liberal allowance of sand to ensure perfect drainage, will form a suitable compost for the culture of this plant. *Alpha.*

#### NEW PLUMMET LEVEL.

The accompanying woodcut represents an instrument of my own invention, which will be found very useful by gardeners in laying out pleasure grounds, particularly where it is necessary to make inclines. In practice I have found it to be conveniently portable, and much more useful than even the mason's or spirit level. In laying out the pleasure-grounds at Oak Lodge, near Southgate, for S. Sugden, Esq., a terrace was formed in the immediate vicinity of the house, and



it was in making the inclines belonging to this where I first tested and proved the utility of this little instrument.

It consists of an inch board of mahogany, oak, or well seasoned deal, 2 feet long by 1 foot wide (the dimensions may be increased or diminished to suit the taste or convenience of the operator), having four right angles, and its edges are made perfectly straight. Exactly in the centre a semicircle is described and divided so as to form two quadrants, each of which are subdivided into 90°, and for the sake of convenience numbered each way. Round the outside of the semicircle is made a cut through the board for admitting the smallest plummet, which must be allowed to move uninterruptedly in each direction. A fine saw cut is made through the divisional line at the top, through which a very slender and flexible thread is passed and made firm, and to this the plummet is suspended. The sketch I think will explain the rest; and there are, I imagine, but few practical men who will not be able to perceive at once the utility of the little contrivance which I have just attempted to describe. I should have said that a small piece of zinc or tin should be fastened at the back across the cut from the board to the semicircle to keep it in its place. A further improvement may be made by sinking the face of the semicircle in the board, when a square of glass may be fixed over it, and thus prevent the slender thread from being agitated by the air. *C. Lucas, Brentwood.*

#### Home Correspondence.

**Forcing Asparagus.**—The usual method of obtaining this fine vegetable during winter is by taking plants from the open ground and placing them in frames, warmed by dung or other means, by which a gentle bottom-heat is kept up; but this plan is defective, inasmuch as it is impossible to lift them out of the open ground without destroying many of their young roots, and, consequently, impairing their natural vigour. Hence the produce of such plants is weak and sickly in appearance. The following is the method of forcing Asparagus at Raby Castle:—We have 16 beds here

16 feet long, 4 feet 6 inches wide, and 5 feet deep; they are divided by a space 2 feet 6 inches wide for the linings; the beds are surrounded by a 4-inch brick-wall pigeon-holed from top to bottom, and coped with free stone firmly leaded together; the inside of the walls is lined with thin flag or slate, to prevent the roots from growing through the apertures into the lining. Brick rubble to the depth of a foot is laid on the bottom, and above that the compost. Plants of a year old are introduced into these beds and permitted to grow three seasons, when the beds are ready for work. Four beds are sufficient to supply any ordinary demand from Christmas till Asparagus can be obtained from the open ground. The advantages of forcing four beds at a time in rotation will be readily perceived, since it allows a bed to have three years rest before it is forced a second time. Light wooden span-roofed covers, which can be moved at pleasure, fit on to the stone coping; these covers are divided into four sashes on each side, every alternate one is of glass, the remainder of wood, thus partially admitting light, which gives the Asparagus that fine purple hue which is natural to it. As soon as the roots are in action the beds are watered with a solution of common salt, and diluted drainings of the dung-hill alternately, at a temperature of 80° Fah., a practice which is followed up through the season as required. By this method some of the heads measure from 3 to 4 inches in circumference. *G. B., an Under Gardener at Raby Castle.*

**Mr. Stephens' Collections of British Insects.**—British Entomologists will doubtless be pleased to learn that the Trustees of the British Museum have purchased the whole of the late Mr. J. F. Stephens' Cabinets of British Insects. As the collection contained the whole of the typical specimens described by Marsham in the "Entomologia Britannica," a considerable number of those described by Haworth in his "Lepidoptera Britannica," and the whole of those described in Mr. Stephens' "Illustrations of British Entomology," the acquisition of this collection was of course a matter of national interest. *W.*

**Selections v. Collections of Vegetables.**—You have frequently raised your voice in condemnation of the absurdity of continuing to grow such a multitude of

varieties of some species of culinary vegetables; the seed lists, however, still continue to come out with an addition of new sorts, without any diminution of the old ones. Cannot something be done to correct this growing evil? There has been in your columns much useful information

relative to the value of particular varieties, but there has been no extensive systematic classification of the merits of the whole of the varieties of any one particular species of vegetable. As I believe it would be quite impossible to effect this very desirable object in any one garden, or by any one individual, but only by the combined efforts of several persons simultaneously, I would suggest the expediency of calling on a certain number of gardeners in different parts of the country to make trial of some of the species of culinary vegetables, which contain the largest number of varieties. Let one-half dozen take Peas, another Lettuce, another Broccoli, &c. A small quantity of every variety procurable should be sown by each of the half dozen gardeners on the same day, and the same plan of describing their merits should be adopted. If there were printed tables distributed to each person it would ensure a unity in the descriptive character of each, and would greatly facilitate the taking of the notes necessary. For Peas the following notes may be taken: Soil and subsoil, colour of seed, wrinkled or smooth, when sown, height, strong or weak growing, when ready for use, average length of pod, average number of Peas in each, if good or indifferent bearers, flavour, &c. &c. In proving their flavour, as many varieties as possible should be tried at the same time, for unless this is done no one can arrive at any satisfactory conclusion as to which is the best. Should you approve of this suggestion, and would call the attention of a few gardeners to the subject, I shall be happy to do all I can in aid of so desirable an object. You can do much to diminish this great evil, and at the same time would collect a mass of facts of the greatest value to your readers. *Henry C. Oyle, Bridge Castle, Tunbridge Wells.*

**Rot in Larch.**—It is a great mistake to imagine that Larch, when in close neighbourhood with Scotch Fir, is never sound, as your correspondent "Hazel" represents at p. 118. The best Larch I ever saw cut grew amongst Scotch Firs. In two cases your correspondent says he is likely to have a wood of Oak and Birch, which he did not plant; instead of Larch, which he did. A practical lesson may be learned from this. The crop should be changed. It is seldom that two crops of the same kind of timber can be successfully raised on the



same piece of land. He has frequently noticed the great liking that Oak and Ash have for Larch; this, in his opinion, is the real reason why Larch has proved such a good nurse for those trees. The Larch manures and prepares the ground for them. In a practical point of view, I would say that Oak and Ash should prepare the ground for Larch, inasmuch as they open the subsoil with their roots, and help to carry off any water that might be lodging in the soil. All the manuring that Larch could give the ground, unless previously adapted for timber rearing, would prove of little avail, being surface manuring. On an exposed situation, Scotch Fir would prove a much better nurse for Oak and Ash than Larch, owing to the Firs being thick in foliage and evergreen. Your correspondent thinks it a good sign of health when Larch puts out a fresh set of branches after thinning. If the branches start from the boles of the trees, I would be much afraid of their health continuing. His theory of Larch rot, upon the whole, is, that it is caused by want of nourishment. Now, I often see Larch trees cut perfectly rotten, although growing in first-rate soils. If want of nutriment causes rot in Larch, how does it happen that placing manure about its roots will kill it? If trees are over-excited they cannot remain so long healthy as if they were growing under more natural conditions. I never conceived Larch rot to be identical with that of Ash, Spruce Fir, and Black Poplar. Ash and Spruce luxuriate where Larch could not exist many years. If Spruce be planted in gravelly dry soil it is subject to heart, or dry rot. I admit that the soil is in some cases in fault, but even then is it not bad management to select such soil for Larch? If this be so, I then infer that the real evil, in case of Larch-rot, arises from mismanagement in some shape or other. Overcropping or close planting would not of themselves cause any great evil in timber management, provided the woods were properly attended to afterwards; and I may add, too much room given to trees when planted or thinned is equally injurious to their health. In many cases the great evil of our present timber management arises from employers not having experienced men to superintend their woods. In several places bailiffs and gamekeepers are the only persons entrusted with timber management. *Practical.*

*McGlashan's Tree Lifter.*—I beg leave to correct the concluding paragraph in your leading article, at p. 164 in regard to this tree lifter; you there state—"Since the above was written we have been informed that a machine similar to Mr. McGlashan's was contrived some years ago by Mr. Strutt." It is only justice to the public and myself to state, that Mr. Strutt's machine was made from measurements and drawings taken from my large transplanting machine, with very slight modifications. Mr. Mackay applied to me at the instance of Mr. Strutt, to have this done, some eight or nine years ago. Sir W. Cubitt some time since, I am told, had another, from the same maker (Mr. Cowlishaw, of Derby). Both my machines are entirely my own invention: and have been in operation for upwards of 20 years, of which every one who has read my "British Winter Garden" (published in May last), must be fully aware, drawings being given there of both machines. *William Barron, Elvaston Castle.*

*Effects of the Late Severe Weather on Plants.*—In Messrs. Veitch and Sons' Nursery, at Exeter, *Acacia dealbata*, in the open quarter, is much hurt, but not killed; all its blossoms, however, have been destroyed. *Eucalyptus coccifera*, under similar circumstances, has not a leaf or bud at all injured. *Lapageria rosea*, against a north wall, is uninjured; and *Cerasus ilicifolia*, in the open quarter, is safe. *Fitz Royia Patagonica*, and *Saxa Gothaea conspicua*, though fully exposed, are both uninjured. *Escallonia macrantha* has had its tops a little hurt on a south wall and open border; but it has suffered more on a north wall; it stands best in the open border. *Berberis Darwini*, *Dracena indivisa*, and *Lomaria Magellanica*, in open quarters, are uninjured. *Lardizabala biternata*, on a north wall, is quite safe; and *Quercus agrifolia* and *Pernettya mucronata* var. *speciosa*, although both in the open border, are not at all injured, although the thermometer has fallen as low as 15°. *J. V.*

*Gas Heating.*—I have lately seen another gas stove at work in a greenhouse belonging to Mr. Lightfoot, of Camberwell. His hot-chamber or stove is in the inside of the house, with a gutter to admit air to the gas jets from without. The door of this stove is very small, and shuts so closely that no escape of gas nor any air can get into the house, which is 12 feet long by 8 feet wide, and 8 feet high, with glass on all sides. The thermometer on the mornings of the severest frosts has never been under 40°. The plants look remarkably healthy, and are all in a growing state; the joints of the pipes are cemented with white-lead, and there is no bad smell whatever. The pipe passes all round the house, and runs out into the open air. Any one can see Mr. Lightfoot's house, and can judge for himself; the expense he considers nothing at all, compared with the nuisance of fire-lighting and other inconveniences attending ordinary modes of heating. *James Cuthill, Camberwell.*

*Trout Spawn* (see p. 166).—Mr. Gurney states that he furnished a friend with trout spawn from the Wandle, which he succeeded in hatching and carrying safely to New Zealand, by Mr. Warrington's process of purifying the water by means of the *Valisneria*. Mr. Gurney would oblige me, and doubtless many other naturalists, if he would describe the process in detail. I fancy I understand Mr. Warrington's plan pretty

well, but the fact of trout spawn hatching in stagnant water is new to me, and it will materially facilitate the breeding of trout and salmon if this can be done regularly. If Mr. Gurney will kindly give all the details, so far as he is aware of them (such as the time the spawn was taken, the size of the vessel it was put into, whether it was deposited upon gravel, the number of plants of *Valisneria*, how often the water was changed during the voyage, the length of time between spawning and hatching, the number which arrived in New Zealand alive, with any other particulars which may occur to him), he will confer a great obligation on natural history. I am the more desirous of learning how long the ova were hatching, because it is now a disputed point; to me it seems less a matter of time than of temperature. "Ephemera" says that the ova were 140 days in hatching in the Shinn; whilst here, a gentleman of my acquaintance has them hatching in 62 or 63 days from the time of deposition in the gravel; but then he hatches them in spring-water, of which the temperature is seldom below 50°, and I am desirous of knowing whether the passing through the tropics did not hasten the process still more. I have long and frequently heard (indirectly) of Mr. Gurney's success in breeding trout, and hope he will not consider me importunate if I suggest to him the extension of his experiments not only to salmon but to the production of hybrids between the trout and the salmon; this is a problem in natural history which I believe has been solved here; but I would rather it were repeated by an independent observer. *T. G., Clitheroe.*

*Cottagers' Shows.*—We have lately established a cottage gardening society for the purpose of giving prizes for fruits, flowers, and vegetables, and a question has arisen amongst the managing committee, to which I feel sure we shall receive a fair answer in appealing to your paper. We have arranged to have two classes of members in our society who may compete for prizes, each in his own class, namely, 1, the employers; 2, the employed; the former paying 2s. annually, the latter 1s. But some members of our committee think that this second class should be subdivided, since, they say, the labouring man earning 10s. a week cannot fairly compete with the mechanic (*i. e.*, the journeyman carpenter, &c.), who may earn 15s. or 20s. weekly. If any one can tell me how this point is settled in other societies of this kind, they will confer a favour upon *T. H. M.*

*Changing the Names of Fruits* (see p. 149).—Under this heading a correspondent, calling himself "Pyrus," attempts to be witty at my expense. He accuses me of changing the names of fruits in my book on British Pomology, and of not paying sufficient respect to the authority of the Horticultural Society's Catalogue. I confess to neither. In the preface to my book, which he tries to ridicule, he will find this passage—"The nomenclature I have followed is, except in some instances, for reasons given, that of the London Horticultural Society's Catalogue. . . . The advantage of this identity of nomenclature is evident, as it sets at rest that mass of confusion which so long existed as to the correct names of fruits." As instances of this change he mentions "Norfolk Beefing" and "Joanneeting" from Norfolk Beaufin and June-eating. Cannot he distinguish the difference between a change of orthography and a change of nomenclature? What signifies it whether we write Spinage or Spinach? There is no change of nomenclature in adopting either, but if the one is more correct than the other let us have it. How can "Pyrus," witty and learned as he professes to be, advocate the adoption of such a concoction as the word "Beaufin" is? What language is it? He should know, for he has translated it for us, and tells us it means "good end." If it is meant for French, when did the noun "fin" become masculine? This "good end" will not do. "Pyrus" must try back, or stick to the "raw beef," till he can do better, even though it may be unpalatable. Then his "dear old Jenetting" is changed into "Joanneeting." What a calamity! and still he is not content to retain the dear old soul in the original, but wants her transmogrified into June-eating. Why June-eating? "Because," says he, "in the good old times of warm summers, according to Langley, this Apple ripened in June." He must read a little more of his newly-bought Langley, and he will be told—"although I have placed to every fruit the day on which 'twas ripe this year 1727, yet it is not to be expected that every year hereafter will produce them at the same time." And if he will go a deal farther back to the good older times, Rea will tell him that it was ripe on a wall in the end of June. He must try back again, and perhaps he will discover his friend old Darby, who will possibly enlighten him as to what Apple it really was to which Joan was so partial. "Pyrus" sticks to the mystic number 3, as all Jolly Gardeners do, and so his third and last complaint is, that I have adopted "Dr. Diel's German name" of Golden Winter Pearmain, instead of King of the Pippins. He cannot know much about Dr. Diel's work, or he would have known that it is there given as the English name, and not as the German. The true King of the Pippins was in existence long before Kirke pinned that name to the Golden Winter Pearmain. How then are we to distinguish the two, unless by giving to each their correct nomenclature? Let him inquire what the English Golden Winter Pearmain of the Society's Catalogue is. But, what object can "Pyrus" have in all this? Possibly he had nothing to do and sat down to amuse himself. But let me advise him, in attempting to ridicule others, not to make himself ridiculous. *Robert Hogg.*—"Pyrus" complains of the frequent change of names in plants and trees, and instances the Norfolk

"Beefin" as one of them. I am above half a century old; have been born and bred in Norfolk; and have always been cognisant of an Apple, used late in the season, called the "Beef" Apple or "Beefin," on account of its deep red skin; and recollect being, with other Norfolk men, much amused at Sir Joseph Banks' suggestion, that Beefin was a misnomer, and that it really was a French and not a Norfolk Apple, and that, in consequence of its long-keeping properties, it no doubt acquired the name of "Beau-fin." Surprising thought! when any one ever so slightly acquainted with the French tongue knows that "fin" is a noun feminine, and "beau" an adjective in the masculine gender, rendering such a suggestion irreconcilable to fact, and absurd. All sorts of bad or pedantic spelling has been given to this redoubtable Apple; some writing "Biffin," others "Beffin," and Sir Joseph, "Beaufin," but an old Norfolk man always, "Beefin." *W. Mason, Necton.*

*China Quince.*—In your No. of May 29, 1852, is a question from "Dodman" respecting a Quince grown in Syria called the China Quince. The fruit is stated, in a book called "Eight Years in Syria, Palestine, and Asia Minor," to be twice the size of an ostrich egg, and highly fragrant. This refers, doubtless, to the fruit of *Cydonia sinensis*, which is delightfully fragrant and very large; but "twice the size of an ostrich egg" is a rather vague description which I cannot understand. The tree is of extremely slow growth, of a neat aspect, and bearing pink flowers of no great beauty, which are succeeded, very rarely, by the fragrant fruit mentioned above. The fruit is only fit to smell at, being quite as uneatable as that celebrated Australian production the Wooden Pear (*Xylomelum*). With regard to hybridising, I can inform your correspondent that I once, in this colony, tried to fertilise the common Quince with the pollen of both *C. japonica* and *C. sinensis*; but that although I removed all the other flowers from the tree, not one set, out of about 100 which I retained for experiment. The *C. japonica* is here perfectly deciduous, and becomes in spring an absolute blaze of blossom, quite unlike what I recollect of it in England. There is a Quince in this colony which is used for hedges, and is said never yet to have flowered. I heard this story many years ago, and it appeared to me so curious, that I have never neglected an opportunity of inquiring into the truth of the case, and I have good reason to believe that the plant was introduced at least 50 years ago, and that it has never yet flowered. Is there any other instance known of the same kind? [No.] I should say that the plant has been largely propagated for hedges, because it is found to grow from cuttings more readily than the fruiting sorts. It has frequently been planted in gardens by mistake, to the great disappointment of the planter. In foliage it is undistinguishable from the common sort. *J. S. Bidwill, Wide Bay, N. S. Wales, Sept. 30, 1852.*

## Societies.

*HORTICULTURAL, March 15.*—DR. HENDERSON in the chair. The Right Hon. T. F. Kennedy was elected a Fellow. The objects of exhibition specially invited on this occasion were hybrid Rhododendrons, forced Strawberries, and salads; but no Rhododendrons or Strawberries came, and only one salad was produced, in the shape of a very fine collection of such vegetables from Mr. Burns, gr. to Lord Stanhope, at Chevening. It consisted of blanched Chicory (the entire-leaved sort), curled and Batavian Endive, Bath Cos and hardy green Lettuce; American, Normandy, Golden, Curled, and Water Cresses; Italian Corn Salad, a much better kind than the common sort; white Mustard, common garden Sorrel, Burnet, Red Beet, Chervil, Cole's Dwarf Red Celery in admirable condition, being sound and solid, and beautifully blanched; Tarragon, early frame Radishes, Chives, and Tripoli Onions. A Banksian Medal was awarded. A similar award was likewise made to Mr. Bailey, Shardeloes, for a Prickly Cayenne Pine-apple, weighing 5 lbs. 8 oz. It was remarked that this variety ought to be more commonly cultivated than it is, possessing, as it does, all the good qualities of an Enville, without any of its bad ones.—Mr. Butcher, gr. to W. Leaf, Esq., of Streatham, sent two bunches of Muscat of Alexandria Grapes, a little shrivelled, but still in good preservation, and a bunch of Black Barbarossa, which, although of last year's produce, was plump and fresh as the best new Grapes could possibly be. A Banksian Medal was awarded it.—Of plants, Messrs. Weeks & Co., of Chelsea, sent *Puya longifolia*, for which a Certificate of Merit was awarded, and cut flowers of *Nymphaea caerulea* and *dentata*. The *Puya* was fastened on a block of wood like an Orchid, a condition in which its numerous long scarlet flowers produced a brilliant display; and it was mentioned that, owing to the hardness of their skin, they kept long in perfection. It is one of those high coloured Pitarma-like plants which inhabit tropical America, and which are found to be so handsome in our stoves at a season when such things are most wanted.—Among miscellaneous subjects were bark and wood of *Fitz-Roya Patagonica*, from Messrs. Standish and Noble, of Bagshot. The wood bore considerable resemblance to Cedar, being red, smooth, and beautiful; the bark was thick and spongy, and appeared destined by nature to protect the tree from cold, furnishing additional proof that it will turn out to be hardy in this country, which it promises to be.—A collection of varieties of Indian Corn was exhibited by G. T. Davy, Esq., of Sussex Square, Hyde Park.



They were from Cusco, and consisted of very fine large kinds little known in this country, but unfortunately too tender for our climate. It was hinted, however, that they might be found worth a trial in some of the colonies, whose summers are longer and warmer than our own. It was stated that this Cusco corn was quite different from the Indian corn of North America.—An imported cone of the New Holland *Araucaria Bidwillii* was contributed by Lieut.-Colonel Sir Thomas Mitchell. It is the Bunya-Bunya of the natives, who feed on its large bean-like seeds.—From the Garden of the Society came *Oncidium barbatum*, the fine variety of *Dendrobium nobile* called *Blandyanum*, the hardy blue-flowered Californian *Ceanothus rigidus*, the true *Acacia caelestifolia*, a useful species for pot culture, two *Heaths* and *Epacris*, the Swan River shrub *Trymalium odoratissimum*, *Cytisus racemosus*, and *Polygala Dalmaisonia*. The garden also supplied the following varieties of Salad vegetables, viz., Lettuces, Scarole à fleur blanche, Chicorée fine d'Été and Sauvage amélorée panachée, Mustard; American, Normandy, and other Cress; *Celeri* gros violet de Tours, Early White Winter Radish, Deptford Onion, Burnet, common garden Sorrel, broad-leaved ditto, French ditto, and Oseille de Belleville, by far the best sort; also Chervil, Atkins' Crimson and Sutton's fine Dark Red Beet, Mache Ronde and M. d'Italie, the latter decidedly the king of Corn Salads.—Cuttings of the following fruit trees were distributed, viz., *Dunmore Plum*, a variety raised by the late Mr. Knight, and described in the Society's Transactions. It is a good sized oval fruit—yellow, although it sprang from a seed of the Purple Imperatrice and pollen of Coe's Golden Drop. The flesh adheres to the stone, is yellowish, extremely rich and sugary, so much so that it shrivels and dries like a preserved Prune. The tree is hardy, and bears well as a standard, ripening later than Coe's Golden Drop. It is not much in cultivation, but is highly approved of by all who have fruited it. *Beadnell's Seedling Pear*.—This is a middle-sized sort, so melting and juicy that it is scarcely possible for any Pear to be more so. It ripens in the end of September or beginning of October. The tree is vigorous and bears very abundantly. *Nouveau Poiteau* and *Colmar tardif Pears*.—These were received from M. Van Houtte as new and good sorts; but as they have not yet fruited in the garden, nothing further could be said respecting them.

## Reviews.

*The Theory and Practice of Landscape Gardening.* By Joshua Major, Knowsthorpe, near Leeds. 4to. Longman.

The progression of the arts and sciences, in a great measure, depends upon the industrial accumulation of wealth, and in no country is this so apparent as in England. The art of gardening has received, and is receiving, extraordinary impulses from this circumstance. History shows that until within the last century gardening, as a matter of design and taste, was confined to royal and baronial residences and some rich monastic institutions. Few, indeed, were the professors of what is called landscape gardening; still the names of Le Notre, Le Blond, Walpole, Whately, Bridgeman, and Kent are venerated as the expositors of principles which modern artists would do well to study and modern writers be cautious to condemn. Authors of a more recent date, such as Knight, Price, Repton, Gilpin, &c., have endeavoured to preserve all that was classic and appropriate in old exponents of the art, and apply such to the requirements of modern society. Not so Mr. Major, however, for he has a horror of "the gloomy, harsh, and formal style of a few centuries ago," and hopes that "good sense and good taste will never allow its revival to succeed and supersede the free, cheerful, and flowing style of modern gardening." He must therefore be regarded as a disciple of the cockney school.

What says Gilpin?—"The modern system throws down the walls, terraces, steps, and balustrades at one fell swoop; and exposes every recess of retirement, every nook of comfort to the blast and to the public gaze. The approach invades the precincts of the garden, which now, in spotty distinctness, is spread over a space cleared of every vestige of intricacy and repose; while a sunk fence excludes the cattle from that lawn which is apparently open to them, or the flimsy barrier of an iron hurdle is attached to a building whose ivied battlements have witnessed the lapse of ages." Mr. Major, however, clings with stern pertinacity to the modern style, and invites those about to form new places to visit examples of both, and "judge for themselves," and he is "satisfied that in 99 cases out of every 100 their choice will be for the modern, and not for the ancient." Of course our author must exempt Wilton (which he surely has never seen himself), with its Palladian bridge, straight walks, grottoes, fountains, terraces, balustrades, vases, urns, and other sculptural enrichments; and Trentham, with its chaste, yet massive masonry, broad and noble steps, gorgeous sculptural and mural ornaments, straight and expansive walks, with its 19 acres of geometrical flower garden, liberally studded with fountains, rows of Portugal Laurel cut to represent formal groves of Orange trees, and beds in regular form, with shorn edges of shrubs. Our author must also deprecate the taste of the noble owner of Bowood, who

has lately added upon so princely a scale an elaborate range of terraces to the western front of the mansion. "But," says Mr. Major, "will they tell us that because it was the fashion in former days to associate terraces and balustrades and flights of steps, &c., that it is right, therefore, to continue this practice? They may indeed tell us so, but they will have difficulty in convincing us of the fact; such principles in new formations are quite inadmissible at the present day." What say ye, my masters? "My taste," says Repton, "may perhaps be arraigned for asserting that the straight terrace at the Hazells ought not to be disturbed; although it is a remnant of geometric gardening of the last century, yet it is an object of such comfort and convenience that it would be unpardonable to destroy it for no other reason than because a straight walk is out of fashion; this would be acknowledging (what I protest against), that the art of landscape gardening ought to be under the dominion of fashion."—"I shall perhaps astonish some of the improvers in modern serpentine gardening by declaring that, as an appendage to this (Cobham) ancient mansion, I would prefer the broad and stately mall, along a straight line of terraces, to their too frequently repeated waving line of beauty."—"What such rustic embellishments," says Sir Uvedale Price, "are to the cottage, terraces, urns, vases, statues and fountains are to the palace and palace-like mansion." We shall dismiss this part of the subject—certainly a matter of considerable moment—with a quotation from Loudon, whose ideas on this point quite concur with our own:—"A very common error since the introduction of the modern style has been to suppose that picturesque beauty is the only beauty to be aimed at in laying out grounds; but so far from this being the case, it will often happen that the alteration required, for the purposes of convenience and character, will lessen that beauty, while it increases that of dignity, refinement, and appropriation to man."

"The outline of plantations" is a subject which has been extensively and warmly discussed. The remarks of our author (p. 150) are quite admissible, and we only wish that his illustrations had borne them out. Sir Henry Stewart, in the "Planter's Guide," observes, "Who does not experience the pleasure of contemplating smooth and soft surfaces, everywhere marked by swelling undulations and gentle transitions? Such are the outlines constantly prevalent in all the most beautiful objects in nature. We derive them originally from that most perfect of all forms—the female figure." And again:—"What shape, I would ask, can be adopted with such distant objects in view more generally than that of the circle or the oval?" We remember reading a review of the "Planter's Guide," attributed to the pen of Sir Walter Scott, wherein he poetically compared the forms of Sir Henry's plantations with the beautiful curve of a lady's arm. It appears that those artists who adopted the female figure as a type to illustrate their works, never took the body as a whole. Brown seems to have preferred the head and face, his masses being generally round or oval. Our author has, however, apparently taken as his type the remnant of the arms or limbs of some ancient warrior, as is exemplified in Plate 6, and elsewhere; and we are surprised that any one who could adduce either the reasoning or the illustration given at p. 152, should have fallen into errors of this kind. We agree with our author, "That the greatest caution is required in the assemblage of trees and bushes, that irregularity of breadth may be preserved in the glades or pastures, and that the dotting system may be strictly avoided. I allude not only to the rapid manner of dotting a lawn with single trees and bushes, and which is so frequently met with, but to an error not the less to be deprecated, namely, that of spotting groups (if I may be allowed the expression), equally all over a surface, thus frittering away repose, and nowhere showing broad and varied expanses of lawn, which are so eminently to be desired." Now, let any person cast his eyes over Mr. Major's plates, which are of course intended to illustrate the unquestionable error just adverted to, and ask himself which side of the question they are meant to exemplify. His plates, it must be owned, are not calculated to convey a high opinion of the author's taste. Not that we would judge from plans on paper of what is called picturesque gardening, to which, as it has been seen, our author is strongly addicted; for it will often happen that much better effects are produced than could have been anticipated from a design. The truth being that, Nature will sometimes look well in spite of the most tasteless modiste. But there are plans of such unmistakable ugliness as no happy accident can ever mend; and of these we have such an example at plate 7 of Mr. Major's designs, as to make it impossible for us to recommend him as a guide. Unfortunately the means at our disposal do not permit us to reproduce this astounding instance of what a landscape gardener will gravely propose. Let the reader imagine a piece of ground having the form of a Bergamot Pear, rendered ornamental in this manner:—First intersect the area by curved walks into five unequal portions; in one of them, near the centre of the boundary, set up a syringe perpendicularly, and call it a fountain; from this let a ditch wriggle painfully till it loses itself among some trees; throw upon the sides of the five divisions of the Pear a few queer looking clumps of bushes, and intersperse among the whole some 40 or 50 beds shaped like slugs or leeches, assorted in the higgledy-piggledy

style, and the reader will have some notion of what Mr. Major gravely proposes as the flower-garden of a "palace or mansion."

In one respect we quite agree with our author. "Every gardener," he remarks, "who can read and write (and without a knowledge of these no man ought to be a gardener), should at least be acquainted with the names of plants, &c." We trust, however, that Mr. Major does not mean to inculcate the desirableness of gardeners indulging in such cacography as his own, of which the following are some flagrant instances. *Festuca cuvina* (*F. ovina*), *Mespolis* (*Mespilus*), *Budlea-globosa* (*Buddlea globosa*) *Spiraea douglassii* (*Spiraea Douglasii*), *S. lindleyana* (*S. Lindleyana*), *S. areafolia* (*S. arifolia*), *budlea* (*Buddlea*) *Cottoncreeper* (*Cottoncreeper*), *A. menziesii* (*A. Menziesii*), *Pinus excelsa* (*Pinus excelsa*), *Leucombe Oak* (*Lucombe Oak*), *Cytissus purpurea* (*Cytisus purpureus*) *Jasminum nudiflora* (*J. nudiflorum*), *Taxus vaccata* (*T. baccata*), &c. &c.

We must not omit adding, since this professes to be a work of taste, that the volume is adorned by a portrait of the author seated very uncomfortably upon an armchair, reeling out of the perpendicular, and balanced painfully on two legs.

*Kelly's Supplement to the Post Office London Directory for 1853* has just appeared. It is drawn up with great care, and, as far as we have been able to test it, with singular accuracy. It contains the latest Post Office arrangements, a complete table of foreign postages, the town residences of all the members of the present Parliament, and a large quantity of supplementary directions. Cheap as some good things have now become, this is, we think, the cheapest shilling's-worth of all.

## Garden Memoranda.

MESSRS. CHANDLER'S NURSERY, VAUXHALL.—Lovers of Camellias will be glad to learn that the extensive collection of this favourite flower, for which this nursery is celebrated, is now in full bloom. When we state that they form a bank 160 feet in length and some 8 or 10 feet deep, some idea may be gathered of the kind of entertainment which it may be expected a visit to so large a display will afford. Red kinds, as *altheaeflora*, *Chandlerii*, *Woodsi*, *imbricata*, *elegans*, &c., are abundant and fine, and the old double whites have flowered well this year, few of the buds having dropped. Of Carnation striped varieties, *Albertus* is about the best, the next being perhaps *Colvilli striata*, and the semi-double sort called *Tricolor* is also very pretty. Among newer kinds may be mentioned *Marchioness of Exeter*, a fine rose, not very double, but never showing the eye; *Reine des Fleurs*, beautiful imbricated red; *Duchess of Northumberland*, white, flaked with pink, and very handsome; *Americana*, small delicate pink with a good round petal; *Elatia*, a small but compact carmine; *Teutonia*, a medium-sized rose, and very constant; and *Henri Favre*, a small, but finely shaped red kind. We may add that, in addition to the treat the Camellias afford, the show house is at present gay with *Hyacinths*, *Narcissi*, purple striped and other *Crocuses*, *Azaleas*, *Correaes*, *Epacris*, *Cinerarias*, *Cyclamens*, and forced shrubs, among which we remarked *Escallonia macrantha* badly coloured for want of bright sunlight, and the pretty white blossomed *Slender Deutzia* (*D. gracilis*). The latter will prove a valuable plant for forcing, requiring about the same treatment as *Kalmia glauca*, and things of that sort.

## FLORICULTURE.

CARNATIONS AND PICOTÉES.—That the constitution of plants is as variable as that of animals there can be little doubt, and yet how rarely do we find ourselves studying the requirements of plants under our care with anything like that forethought by which only common results can be obtained; while in floriculture such results should now-a-days be the exception, the rule being to aim at excellence. I have been led to make these remarks now, as we have arrived at that important point in the cultivation of Carnations and Picotées, viz., the potting in bloom. It is not enough that our stock of plants looks well, that our pots and crocks are ready for immediate use, and that our heap of compost is secure from wet, and has been frozen through, well pulverised, mixed and sweetened; we may look to our heap of nicely regulated condiments as the staple for potting in, but for this one heap to be so adjusted that it will ensure the after well doing of a whole collection would be to make it a universal heal, all which, I fear, will long remain a desideratum. Now in the very limbs of these Carnations and Picotées may be traced such differences in constitution, capabilities, and habit, that to suit all it is actually imperative on us to so fashion their food and treatment that each shall receive only that which from experience and study we consider most likely to fully develop the growth and flower in true character—to diet all alike may be to gorge the one and starve the other; nor can I recommend any intermediate universal course; each variety must be exactly suited, or how can it attain perfection? This, I am of opinion, explains the cause why in some localities particular flowers seem to flourish so much better than in others; it is because some component part of the compost is palatable to the appetite of the variety. I would ask, where is Admiral Curzon to be seen, possessing the colour, size, and strength, which it has in Derbyshire? Where can *Floia*?

\* *Hinton on Landscape Gardening*, page 26.

\* *Observations on Landscape Gardening*, page 126.



Gardens be found equal to those at South? Where do high coloured flowers revel better than at Woolwich and Birmingham? And yet in no two of these districts do the same varieties attain an equal degree of excellence, although each may be receiving the attention of the most skilful cultivators; circumstances alter cases, and particular soils change the very character of our best tried varieties. One may be good here, indifferent there, and absolutely bad elsewhere; much of this is unavoidable, however diligently we may strive to prevent it. Then how much more is the evil aggravated, when we treat all alike, high colours as pale, strong growers as weakly, and so forth—in fact, extremes of one class as extremes of another? All this simply arises from our not making ourselves acquainted with the subjects with which we have to deal. A good cultivator should study the nature of his plant, and supply that most likely to cherish, strengthen, and ripen its growth and increase. A robust Carnation, with bold and abundant foliage, needs greater nourishment than one of attenuated habit, and spare narrow Grass; again, if excessive manure be the immediate cause of "run" flowers, then we should refrain from its too liberal use, more especially as regards varieties known to be constitutionally disposed to have too much colour; and by the like rule, we should employ more freely exciting and rich compost, for kinds found to be wanting in colour and marking. Justice Shallow has too much colour; Sarah Payne is too often wanting in that respect; Earl Spencer is only good when obtained (as sold in seen) "well marked"; our rose flakes are proverbially pale-faced, see them where we may, while our scarlet flakes can boast of nothing like purity in their ground colour, the white being mostly flushed, and yet, in 19 cases out of 20, one and all are potted in the same description of compost, to the distaste of two-thirds of our collection. Is it then to be wondered at that we hear such exclamations as "I can't do any good with Caliban, 'tis too faint," or "my Queen Victoria (Simpson) is all run." The potted time is at hand, and I urgently request all who may have any confidence in my recommendations to provide themselves with a small supply of strong loam, of sandy loam, of leaf-mould, of sand, and of well-decayed manure, keeping each separate, in order that a portion, less or more, of any of them, may be added to the general compost, so as to make it suit the variety requiring to be potted. As a rule, high-coloured flowers need only a moderate supply of manure, and therefore if the compost is rich reduce it by adding a handful or so of loam, using the stiff loam to strong growers, and the sandy or light loam to delicate kinds; extra sportive sorts should be checked by employing a pinch or two of sand, while with those whose colours are too often found to be faint, add manure for strong, and leaf-mould for weakly growers; in short, endeavour to suit the respective appetites of the plants you are dealing with, for without such attention all hope of general success will be vain; yellow Picotees, taken en masse, may be treated like those of the delicate class; therefore apportion them an extra allowance of sandy loam, with a view to counteract any excess of richness in your compost. J. E.

**CALCEOLARIAS:** Z. You must be wrongly informed; no Calceolaria, that we know of, under that name (Golden Chain), was either rewarded or staged at the Horticultural Society's June meetings last year.

**CARNATIONS AND PICOTEEES:** \* Leicester. If your plants look well, but are not well rooted, do not shift for a time into their blooming pots. Before you turn them out, see that their roots are healthy and running round the ball; they will then quickly take hold of the new soil.

**HYACINTHS:** W. R. We cannot recommend dealers. You must consult our advertising columns.

**PERLAGONIUMS:** Fairplay. We do not understand the question. To what "chemical preparation" do you allude?

**PHLOXES:** J. Thorn. Plant them out as soon as the soil has become sufficiently dry for working; dig in some well decomposed stable manure, and let the bed settle for a few days; then plant with a trowel a foot apart.

**ROSSES:** R. We agree with you that accounts from different parts as to how they have withstood the effects of the late severe weather would be interesting. We learn that in some parts of (North) Devonshire they have suffered considerably.

#### SEEDLING FLOWERS.

**CAMELIA:** J. C. It does not appear to be different from the old double white.

**CINERARIAS:** E. R. O. 1, plum self, with jagged edges; 2, shaded lilac, narrow and jagged; 3, white faintly tipped with soft lilac, petals tolerably well formed.—Sub, Bedale. Of your seedlings, 1 is the only flower of the slightest value, and that entirely owing to its colour, which is a rich rosy purple, cheerful and well defined, on a pure white ground; the rest are weeds.—J. W. Windermere. 1, colour good, petal narrow and indented; 2, no novelty; 3, diminutive; 4, narrow and indented; 5, ditto; 6, colours dull and ill defined. They arrived in good condition.—A. Z. 1 and 2 can never take a place in collections grown for competition, however gay they may look on the home stage.

**PANSY:** G. W. T. We dare not venture to offer any opinion on so small a specimen. We can only judge from what we see, what it may or may not become we cannot say.

### Calendar of Operations.

(For the ensuing week.)

#### PLANT HOUSES.

The regulation of conservatory climbers, as well as those in other houses, will, at this season, demand attention; whatever form of training is adopted, there is no need of confining them to a stiff formal arrangement; whether the plants are in pots, or trained under the roof of the house, these plants should be managed so as to show their natural habits; therefore, in training, allow them (within certain limits) to assume a graceful (because natural) habit of growth. After training the main shoots in the most desired position for effect, the lateral shoots may be allowed to grow in

a certain degree of wildness, which will be found more satisfactory to the eye of taste; and at the same time will be equally favourable for the display of bloom. While English gardeners can beat the world in culture, there is still a deal which might be usefully copied in the artistic arrangement of continental plant-houses. So soon as the different kinds of Achimenes placed in heat show indications of growth, proceed with potting the number you require (to make a succession of bloom, this may be done at twice). As this class show better when in considerable masses, place 3 or 10 tubers either in shallow pots or in pans, now made on purpose for these and similar growing plants. The soil must be light and porous, consisting chiefly of decayed leaves, sand, and turfy peat. They will require to be grown in a warm, moist house, or close pit; and as they advance in growth should be neatly staked out.

#### FORCING DEPARTMENT.

**VINERIES.**—The present dry weather, and consequent dryness of the materials, should be taken advantage of. Where new Vinery borders are required, after considerable experience, we advise them to be made with but a few simple ingredients, rather more than half of which should consist of rich, half rotten turf, mixed with about equal parts of well decomposed yard manure, and the sweepings of towns (where such can be had), or as a substitute the scrapings from turnpike roads; both these latter contain a portion of finely broken down stone in the shape of grit, and will be found of great use when mixed with the manure, in keeping the border in an open healthy state for many years; these materials should be well mixed, and placed about 30 inches deep on a well drained bottom; or, which will be better, on rough flag-stones left hollow underneath. Some difficulty will be experienced, during these cold winds, in managing the admission of air, as its direct action on the young leaves of the Vine is injurious. A width of Nottingham netting placed over the sliding sashes will do much in breaking the current of cold air, and preserve a more regular temperature in the house. Maintain in each department a uniform treatment, according to the different stages of each crop. Keep up in all cases (except when the plants are in bloom), a moderate amount of moisture, rendered more necessary now by the dryness of the external air. Proceed with the disbudbing, and subsequent stopping, and tying in, the shoots of Vines now breaking. In training, allow shoots sufficient for their leaves to occupy the greater part of the space under the glass, unless where plants are grown underneath, when a clear space should be left up each light. **PEACH-HOUSE.**—Tie in the young wood when of sufficient length, so as to ensure its equal distribution over all parts of the tree; on no account leave it too thick, but allow sufficient room, that the leaves may enjoy their full share of light. Nothing can be more injudicious than crowding the tree with wood in the summer, only for the purpose of cutting it away at pruning time; if properly managed now, no more wood should be left than what will be required for the next season's crop. As the first house will soon be stoning, guard against sudden variations of temperature; syringe frequently, to keep down red spider, and attack green fly with tobacco, directly it is noticed; night temperature 55°, with an advance to 75° on bright days. Bring on the succession houses gradually; pay the same attention to the thinning and disbudbing as advised for the early house; the inside borders should now have frequent waterings, occasionally (especially if the trees are weak), with manure water.

#### FLOWER GARDEN AND SHRUBBERY.

The quantity of novelties in the bedding-plant way which are yearly "sent out" are becoming so numerous that a selection is necessary, more particularly as numbers of the new Verbenas, Petunias, &c., are quite unfit for growing in masses where habit, colour, and profusion of bloom are more desirable than mere size. We intend, therefore, noting a few in each class which have come under our notice, and which possess the requisite qualities for planting out in the open ground or for decorating vases, &c.; taking Scarlet Geraniums we find Tom Thumb, Frogmore improved, and Trentham Scarlet the best for dwarf beds; Cottage Maid, Punch, and Lady Agnes Byng, may be used where plants taller than the former are required. Princess Royal is a neat growing kind for small beds; Commander-in-Chief and Cerise Unique have lighter coloured flowers, but are excellent either for bedding-out or for vases; among the salmon and rose-coloured varieties—Captain Darley, Judy, Princess Alice (Ingram's), and Hydrangeaeflorum are good; in the variegated-leaved class, Flower of the Day, either for beds, or vases, is invaluable; Mangles's and the Old Gold-stripe must still be used, for the newer variegated kinds are at present scarce; but Dandy, Lady Plymouth, and Golden Chain are pretty for edgings or small beds. Continue the propagation of such plants as are required in considerable numbers, of which the different varieties of Lobelia Erinus may be named as affording valuable plants either for dwarf beds or for edgings. The annual kinds of Lobelia, as well as Phlox Drummondii and other annuals for planting in masses, should now be sown in a little heat. Cuttings already struck should be hardened off before potting or planting out. Give air abundantly to the more hardy kinds, to enable you to remove them under temporary shelter in a week or two, to afford room for the more tender kinds.

#### FLORISTS' FLOWERS.

Potting Carnations and Picotees should be immediately attended to; of course our directions, as far as

the proper supervision of the compost goes, have been seen to. Let us impress on amateurs again and again the necessity of personal attention to this matter—one wireworm or branding, as it is called (provincially), will often do more harm than the cost of a man for a week. Tulips must be shaded; but this is a point we have so often urged that we need not again refer to it. Considerable complaints are made of the destruction which has ensued amongst bulbs this season, and we believe with some truth. Is not the chief cause overgrowth? For years we have grown these bulbs in a simple mixture of leaves and turf well rotted, and have never had occasion to complain. More harm is done by stimulants than many florists are aware of. Pansies in pots must be well cleared of green-fly, which, at this season, makes its appearance in force. Tobacco-paper is the *ne plus ultra*, and should be liberally supplied.

#### KITCHEN GARDEN.

The early and late Potato crops should be planted immediately the ground is duly prepared for their reception. Avoid planting the main crop on rich soils, or in damp or confined situations; neither should fresh or very rich manures be used, as we have invariably found the crop attacked by disease earlier in the season when grown under the above conditions, while the crops planted on dry soils and open situations, particularly if on a porous subsoil, have comparatively escaped. In short, an undue luxuriance should by all means be avoided. Our practice is to plant in rows running north and south, and at a sufficient distance apart to allow the haulm to grow without coming together. It is a good practice to throw a dressing of turf or wood ashes, charcoal dust, or soot, in the drill with the seed. If the land is poor, old tan, decayed leaves, or similar manures should be forked in, previous to planting. In different localities some varieties are found to stand better than others, and such kinds should be grown only as experience shows are best able to withstand the attacks of disease. Parsnips, of which the hollow-crowned is the best kind, should be sown on a well pulverised soil of considerable depth. Drill the seed in, 15 or 18 inches apart. If the ground for Rhubarb, &c., has been prepared as directed, lose no time in planting the roots. The Early Scarlet and Linnæus Rhubarb we find the best for forcing and the early crop, and the Victoria for the principal supply; the former should be planted in rows 3 feet, and the latter 4 feet apart, to allow for the growth of their large leaves. The soil for these can hardly be too rich, and they are much benefited by liquid manure through the growing season.

#### STATE OF THE WEATHER NEAR LONDON.

For the week ending March 17, 1853, as observed at the Horticultural Gardens, Chiswick.

March.	Moon's Age	TEMPERATURE.									Wind.	Rain.
		BAROMETER.		Of the Air.			Of the Earth.					
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.				
Friday.. 11	12	20.173	37.083	56	35	45.5	42	41	E.	.00		
Satur.. 12	13	20.030	36.906	56	28	42.0	42	40	E.	.00		
Sunday.. 13	14	20.823	36.622	61	37	49.0	42	40	S.	.36		
Monday.. 14	15	20.627	36.515	60	25	37.5	43	41	S.W.	.18		
Tues.. 15	16	20.615	36.525	62	32	42.0	41	40	S.W.	.00		
Wed.. 16	17	20.631	36.594	41	31	36.0	41	40	N.E.	.00		
Thurs.. 17	18	20.890	36.820	33	22	27.5	40	39	N.E.	.00		
Average ..		20.825	36.725	49.8	30.0	39.9	41.5	40.3		.54		

March 11—Foggy; fine; slight fog at night.  
12—Dense fog; fine; slight fog.  
13—Foggy; very fine; rain at night.  
14—Rain; heavy rain; clear and frosty.  
15—Hour frost; large masses of white clouds; very fine; overcast.  
16—Uniform haze; cloudy; overcast.  
17—Densely overcast; cold throughout; clear; sharp frost.

Mean temperature of the week 23 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending March 26, 1853.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 20	51.6	34.4	43.0	10	0.36 in.	1	2	4	1	11	1	1	1
Mon. 21	52.0	35.0	43.5	12	0.21	6	1	1	1	1	1	1	1
Tues. 22	51.4	36.2	43.8	12	0.44	4	1	1	1	1	1	1	1
Wed. 23	50.9	35.2	43.0	13	0.60	5	4	1	1	1	1	1	1
Thurs. 24	50.3	34.9	42.6	9	0.11	3	4	1	1	1	1	1	1
Friday 25	51.4	33.3	42.4	11	0.50	3	6	4	3	4	4	3	3
Satur. 26	52.0	33.1	42.5	11	0.17	4	4	3	4	4	4	3	3

The highest temperature during the above period occurred on the 20th, 1850—therm. 69 deg.; and the lowest on the 25th, 1850—therm. 14 deg.

#### Notices to Correspondents.

**NAMES OF PLANTS:** W. P. Phala maculatus.—H. G. L. 1, Lycaste Skinneri; 2, a variety of it; 3, Picea mariana; 4, Dendrobium nobilis; 5 and 6, no number, varieties of Oncidium leucochilum. None are new; but no number is rare, and a fine thing.

**ORANGES:** Chinese. There is no occasion to graft them; Oranges will flower and fruit just as well if raised from seed; only they will do so in a shorter time. But if you sow the seed of the Mandarin Orange, it is very likely that the fruit, when produced, will be something else. If the real Mandarin Orange is to be sent to the West Indies, plants grafted in Europe from the true variety must be sent out. The object of grafting is not to cause the production of fruit, but to ensure the genuineness of the breed.

**POTATOES:** Skyma says—"We are not so particular in this country as the people of Ireland are concerning the quality of our Potatoes. I am told that the Irish have an appropriate sort of Potato for nearly every month in the year, which is only in prime condition during its own month, and which they eat only at such time." And he enquires "if any of our correspondents could kindly give a list of sorts proper to be eaten in some such succession?"

**VINES:** Fairford. If you wish to use blood for them, let the blood stand till it is putrid, after which you may mix it with earth, and leave it to decay; when decayed, and when the earth has become sweet again, it will be in the only state in which it ought to be used.

**MISC.** A Subscriber is informed that the Publisher has been enabled to complete a set from 1847.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

**ANTONY GIBBS AND SONS,**

**AS THE ONLY IMPORTERS OF PERUVIAN GUANO,** Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, **ANTONY GIBBS AND SONS** think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any re-sale made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London at 6l. per ton; also **CORN MANURE** for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

**PERUVIAN GUANO**, guaranteed the genuine importation of Messrs. A. GIBBS & SONS, 9l. 10s. per ton, or, in quantities of five tons and upwards, 9l. 5s. per ton in dock. A constant supply of **LINSEED AND RAPE CAKE**.

EDWARD PURSER, Secretary.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. Lawes' Factory, Deptford Creek:—

Turnip Manure ... .. per ton 27 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0  
Office, 69, King William Street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## SEWAGE CHARCOAL MANURE.

**PEAT CHARCOAL**, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenny.

Mr. JOHN ANNETT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

## GUANO AND OTHER MANURES.

**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

## FOOT-ROT IN SHEEP

PREVENTED AND CURED BY THE EARLY USE OF THE

**GUTTA PERCHA GOSHOES**, to be had of JOHN JONES & Co., Inventors, Patent Works, Sheffield. Sold to the Farmers at 3d., 4d., 5d., and 6d. each. Price of the powder in tin cases, 2s. 6d. each, sufficient for 100 sheep.

Directions for use.—Bind round the ankle some tailor's larding, which prevents too much pressure, at the same time keeps out the dirt; dip the upper part of the shoe into very hot water, then stretch up the material when soft to the height required. Full instructions are sent with each order.

Agent for London: Mr. F. HAINES, 22, Lime Street, Leadenhall Market.

## DO YOU BRUISE YOUR OATS YET? One

Bushel of Oats crushed will nearly make two. Immense saving and important improvement of the animal.

Oat-Brisers, Chaff-cutters, Ploughs, Threshing Machines, Domestic Flour Mills, Light Carts, Mining Tools, Brick and Tile ditto, Corn Dressing ditto, Horse and Steam Machinery put up, &c. Repairs done.—M. WEBB & Co., 115, Fenchurch-street, London. Pamphlet on Feeding, 1s.; List with 140 Illustrations, 1s.; per post, 1s. 4d. each.

## WARNER'S PATENT FARM AND COTTAGE

## PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required.  
To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest Pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

**JOHN WARNER & SONS,**

8, CHERBURGH, JEWIS STREET, LONDON.

Every description of Machinery for Raising Water, Fire Engines, &c.

**BAKER'S PHEASANTRY**, Beaufort Street, King's Road, Chelsea, by special appointment to her MAJESTY and H.R.H. PRINCE ALBERT.—ORNAMENTAL WATER FOWLS, consisting of Black and White Swans, Egyptian, Canada, China, Barmalee, Brent, and Laughing Geese, Shield-drakes, Pintail, Widgeon, Summer and Winter Teal, Gadwall, Labrador, Shovelers, Gold-eyed and Dun Divers, Carolina Ducks, &c. domesticated and pinnioned; also Spanish, Cochon China, Malay, Poland, Surrey, and Dorking Fowls; White, Japan, Pied, and Common Pheasants, and Pure China Pigs; and at 3, Half-moon Passage, Gracechurch Street, London.

**STEPHENSON AND PELL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Condenser Iron BOLLERS, and Conservatory and Hot-house Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

## BAKER'S FOUNTAINS.

THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.

**MESSRS. BAKER** can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

**OXLEY and Co's. ASBESTOS FILTER** enlarged. Price 30s. each; small size, 15s.

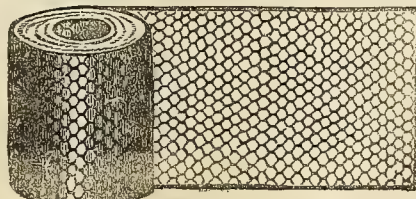
**TAYLOR & PEARCE**, 8, George Yard, Lombard Street. Twenty Gallons of Pure Water per diem. All Mineral and noxious matter entirely separated by this process. See *Lancet* and all the standard journals as to the value of ASBESTOS in filtration.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides. Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

**TANNED NETTING**, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Waxed Netting for Aviaries, &c., at 3d. per square yard. Scrim Canvas, for Wall Fruit.

At EDGINGTON & Co's, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may also be seen erected Emigrant Tents in great varieties on their latest improved principles.

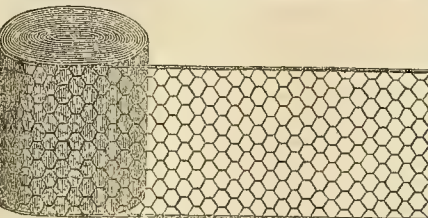
**GALVANISED WIRE GAME NETTING.**—7d. per yard, 2 feet wide.



	Galvanised.	Japanned iron.
2-inch mesh, light 24 inches wide ...	7d. per yd.	5d. per yd.
2-inch " strong " ...	9 " "	6½ " "
2-inch " extra strong " ...	12 " "	9 " "
1½-inch " light " ...	8 " "	6 " "
1½-inch " strong " ...	10 " "	8 " "
1½-inch " extra strong " ...	14 " "	11 " "

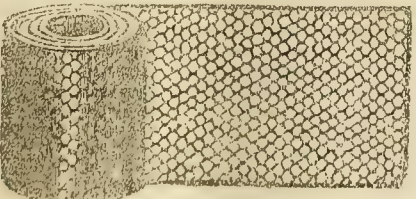
All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasants, 3d. per square foot. Patterns forwarded post free. Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

**GEORGE ARTINGSTALL AND CO., LATCHFORD**  
WIRE WORKS, WARRINGTON.



Manufacturers of Improved Strong  
**RABBIT-PROOF WIRE NETTING.**  
12 inches high ... .. 4d. per yard.  
18 " ditto ... .. 6d. " "  
24 " ditto ... .. 8d. " "  
All other widths at proportionate prices.  
Wire Works for Aviaries, Conservatories, Fencing, &c. &c.; also extra strong Wire Kiln Floors for drying Grain, &c. &c.  
N.B. Wire Work Galvanised on very advantageous terms.

**CHEAP WIRE GAME & POULTRY NETTING,**  
5d. per running yard.  
**GALVANISED DITTO,** 7d. per running yard, 2 feet wide.



	Galvanised.	Not Galvanised.
24 in. wide, 2 in. mesh, 7d. per yard. ...	...	5d. per yard.
30 in. " 2 in. " 9d. " ...	...	6½d. " "
36 in. " 2 in. " 10½d. " ...	...	7½d. " "
48 in. " 2 in. " 1s. 2d. " ...	...	10d. " "

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. FOX, City of London Wire Work and Iron Fence Manufacturer, 41, Skinner Street, and 6 and 8, Snow Hill, London.

**GRASS SEEDS FOR PERMANENT PASTURE**, made up in proper assortments and proportions for every description of soil.

**PACEY'S PERENNIAL RYE-GRASS**, very clean Seed, weighing from 26 lbs. to 30 lbs. per bushel.

**ITALIAN RYE-GRASS**, selected from the best growers in Lombardy. This Seed yields a much earlier and more luxuriant crop than can be obtained from any other, and should always be had recourse to when from five to six cuttings in the season is an object.

**TURNIPS**, in all the varieties of Swedes, Yellows, and Whites, worthy of cultivation. The Stocks of these have been greatly improved by raising the seed from large picked bulbs.

With every other description of Agricultural Seeds, priced Lists of which may be had post free on application.

**W. DRUMMOND & SONS, SEEDSMEN,**

Agricultural Museum, Stirling, N.B.

Carriage of Seeds prepaid to many of the principal Shipping Ports and Railway Stations throughout the kingdom.

## CLOVER SEEDS.

**AGRICULTURISTS** desirous of obtaining really genuine and pure new Clover and Grass Seed, are respectfully recommended to apply to the undersigned for Prices, and any other information required.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## IMPROVEMENT OF GRASS LANDS.

**SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES.**—Many Old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers, and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are sown early in the season, the improvement in the Pasture will be very considerable, and at a small expense.

The following, just received from Riddlesworth Hall, near Thetford, Norfolk, is similar to hundreds of others sent us by former purchasers:—

"The Grass Seeds which I had from you in 1848 have stood very well, and the Pasture is now very good; the Renovating Seeds also that I had of you, I used in my park on spots where I had removed (by stabbing) a coarse sort of Wire Grass, and they answered remarkably well."

Quantity of Seed required, 8 lbs. to 12 lbs. per Acre. Price 1s. per lb. Carriage Free.

Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks. N.B. We have a very fine Stock of Mangold Wurzel and Carrot Seed.

## PRESENT PRICES OF AGRICULTURAL SEEDS.

**SUTTON'S AGRICULTURAL SEED CATALOGUE** for 1853 will be seen on the last Page of the *Gardeners Chronicle* of 28th February.

Early Orders will have the preference of scarce sorts.

## The Agricultural Gazette.

SATURDAY, MARCH 19, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, March 24—Agricultural Imp. Society of Ireland.

THURSDAY, — 31—Agricultural Imp. Society of Ireland.

ON Wednesday last, Mr. WAX gave another lecture before members of the Agricultural Society of England, on what may be called his own subject—the ABSORPTIVE PROPERTIES OF SOILS. He had already published the results of his investigations into the power which soil was known to have of extracting ammoniacal and other substances from their solutions; and it was already known that he had shown this power to reside in certain double silicates of soda and alumina, and soda and lime, which all fertile soils contain in greater or less quantity. The principal object of the present lecture was to discuss the probability of our ever artificially manufacturing these double silicates, at a cost below their value as a manure; and more especially to make known the existence of a natural supply of soluble silica, which, though by no means all that is needed, in order to the end desired, is, as Mr. WAX truly said, an enormous step towards its attainment. This bed, containing so large a quantity as 70 per cent. of silica in a state in which it is soluble in alkalies, and in which it will readily unite with lime, is found immediately below the chalk and above the green-sand in the neighbourhood of Farnham, and probably all round the lower edge of the chalk formation in the south of England. An enormous extent and thickness of it exists along the Undercliff in the Isle of Wight; and an endless supply is thus accessible for agricultural and other purposes. It must be remembered that silica is generally insoluble in alkalies, except at high temperatures. It is soluble at a comparatively low temperature in a solution of potash and soda, after precipitation by an acid in the process of analysing siliceous minerals; but this solubility it loses if dried and heated. And in nature it is very rarely found in a soluble condition, except in very small quantities. The existence of so large a quantity as occurs in this bed below the chalk is thus a very remarkable discovery.

It is worth observing that in this, as in many other discoveries, the practical farmer has been before the chemist. The latter has only come after the former with his explanation of the value which had already been ascertained to reside in this singular substance. This soft, light-coloured, friable material had long been dug and sold near Farnham as a "chalk marl," although it contains no chalk whatever, being in fact a mixture of clay and soluble silica, and it had been found useful espe-



cially as a dressing for chalk land. Local experience had already satisfactorily determined this point; and now we have science coming to the aid of practice, and determining the cause and the mode of the benefits thus conferred; and we have our national society also coming to the aid of agriculture generally, and making known for the benefit of farmers throughout the country a secret unwittingly held for so long by those of the neighbourhood of Farnham.

It is proposed to use this soluble silica in the meantime, in the making of the slowly soluble silicate of lime for application to the land. Three methods of doing this exist:—1st, by heating about four of the ground rock and one of chalk to a dull red heat, when they will unite; the result, however, being altogether insoluble if it be heated beyond a dull red heat; 2d, by mixing about five of the ground rock and one of quicklime in a moist mortar, and leaving them together for a month or two; 3rd, by adopting the second method with the addition of three or four per cent. of carbonate of soda, which acts as a sort of mediator or go-between as regards the other substances, and induces a much more rapid combination.

The substance thus produced is soluble in water to the extent of 16 or 17 grains per gallon, and will thus convey both silica and lime into plants. Our grain crops in general contain about  $\frac{1}{2}$  cwt. of silica per acre, and a substance which shall be capable of conveying it into plants is thus likely to be valuable as a manure. Mr. WAY recommended that at least 3 cwt. of it be applied as a top-dressing per acre, and he expressed his belief that it might be useful as a corrective of that excessive luxuriance produced in grain crops by the use of ammoniacal manures. At the same time he warned his hearers that he could not be answerable for their getting a soluble material from the manufacturers, if ever the article should be made on the large scale, because a very slight error, as regards for instance the heat to which the material might be subjected, would render it altogether valueless.

At the close of this lecture Mr. NESBIT made some remarks tending to disparage the importance of the discovery of Mr. WAY and Mr. PAINE, hinged chiefly on the fact that soluble silica already to some extent exists in most soils, and that LIEBIG's manure, whose efficiency depended in some degree on similar grounds, had proved altogether a failure. Mr. ROWLANDSON replied to this by asserting that LIEBIG's manures had, in fact, never been made, that his formula had never been attended to in their manufacture. And we must confess that the facts brought out by Mr. PAINE, in the useful statement with which he followed up Mr. WAY's lecture—facts relating to the esteem in which this so-called chalk marl is held by the farmers near Farnham, and to his own experience of standing Wheat crops on the soil over it, notwithstanding that the land had all the richness of a Hop garden—more than counterbalance the influence of any adverse merely theoretical criticism to which Mr. WAY's views have been subjected. And we must remind those gentlemen—opponents in general of LIEBIG's views on the subject of manure—who would argue from the existence naturally of soluble silica in the soil to the uselessness of the proposed application of silicate of lime, that they are falling into the very error of which they have themselves been in the habit of accusing Baron LIEBIG, as regards the supply of ammonia to the land—that of deducing the unecessariness of Art from the bounty of Nature. The whole practice of the art of agriculture of course essentially depends upon constantly counterbalancing the deficiencies of Nature—adding to her supplies, aiding her operations, and of course reaping more than her results. This is admitted by all in the case of ammoniacal additions to the soil, and we have no doubt that it will ultimately be admitted by all in reference to those additions which Mr. WAY in his recent lecture has recommended. We believe that agriculturists generally have reason to join with cordiality in the vote of thanks awarded last Wednesday by the English Agricultural Society to MESSRS. PAINE and WAY, for their researches into this important subject.

CATTLE do not suffer so much as sheep from the long continuance of wet weather. They are naturally natives of a damp and low situation, and the large quantity of water imbibed by them is freely passed away by means of the kidneys. They have thus an immunity from such diseases as the rot; and abortion in them is not produced by wet, nor do their calves, under similar circumstances, become dropsical. During the long prevalence of wet weather they certainly lose condition if exposed to its influence, for not only is their food thereby injured and rendered less nutritious, but, from the constant exposure of their skin to rain, they lose

directly a certain portion of nourishment by means of evaporation. In consequence, however, of the improved system of management which now obtains, cattle receive better treatment and shelter than formerly, and are rendered comparatively independent of the vicissitudes of the weather.

Horses, and particularly farm horses, are more subject to injury from wet weather than cattle, because they are obliged to perform their daily tasks in all kind of weather; and many farmers are very dissatisfied unless their horses are doing something that may be called work, although the rain may descend in torrents at the time, and they might be more profitably employed in preserving or recruiting their condition in the stable, than in poaching the land in the fields, or conveying a load of water-saturated street-refuse from a neighbouring town. Farm horses generally lose condition in wet weather: partly from the badness of the roads increasing the severity of their labours, and partly from the extra deprivation of animal heat produced by the saturated state of their coats. The application of wet to the skin is also productive of diseases affecting the air passages, either in the simple forms of catarrh, or the more dangerous types of bronchitis or pneumonia.

Catarrh is simply inflammation of the mucous membrane lining the cavities of the nostrils and the throat, and is seldom attended by those severe and dangerous symptoms which accompany bronchitis and pneumonia. A discharge from the nostrils and a cough are the ordinary symptoms of catarrh, to which may sometimes be added diminished appetite and fever. The treatment may consist of moderate bleeding, febrifuge medicine, and a blistering application to the throat, assisted by a soft diet and abstinence from work. Where there is much debility, bleeding may be dispensed with, and purging should always be avoided.

Bronchitis, although, like the preceding, an affection of the same mucous membrane, yet is extended over a wider range; not limited even to the wind-pipe, but affecting a surface rivaling the skin in extent, and covering the countless ramifications of the tubes which convey the air throughout the lungs. There is consequently greater debility, more fever, increased pulse and respiration, and consequently greater danger. This danger, however, varies very much in different cases. When the inflammation of the membrane is mildly relieved by a moderate increase of the mucous secretion, the disease, with judicious treatment, runs its course, and gets well. But, if the inflammation is so intense as to suppress the secretion altogether, and to change the membrane from a white to a dark colour, then there is every reason to fear a fatal termination. To prevent the supervention of this unfavourable type, and to hasten the process of recovery, it is necessary to pursue prompt but moderate and judicious treatment. Bleeding may be had recourse to in the early stage; but here, as in all cases of disease of the mucous membranes, there is an indisposition to bear severe depletion, moderation must therefore be exercised. Counter-irritation should be promptly instituted either by blisters or setons, or both, applied in the neighbourhood of the parts affected. Tartarised antimony and nitrate of potash may be given internally, with small doses of proto-chloride of mercury, in the early stage, and vegetable tonics afterwards. Oatmeal and Linseed gruel, bran mash and Carrots, should principally compose the diet.

Inflammation of the substance of the lungs (*Pneumonia*) is even more dangerous than bronchitis, and it is characterised by more active inflammatory symptoms. There is usually a greater loss of appetite, a quicker pulse and respiration, and colder extremities. Bleeding is more particularly called for, and to a larger extent; in other respects, the treatment may be the same. In both, the body should be kept warm by clothing, but the temperature of the stable cool, and purgative medicine should in each case be avoided as poisonous.

In addition to these more dangerous maladies, wet weather produces other very troublesome complaints affecting the integuments, such as *Grease*, *Swelled Legs*, and *Chapped Heels*. The hairy extremities of farm-horses become saturated with wet and dirt; cold is produced by evaporation; reaction follows, and the legs, alternately unduly too hot and cold, become fit subjects for inflammation. Bleeding and physic is the proper treatment for swelled legs, or humour, as it is commonly termed; but, unless the treatment is prompt, there is some danger of the swelling becoming permanent: diuretics should follow. This system should also be adopted in grease and in chapped heels; but here local treatment is also demanded. Linseed poultices should, in the first instance, be applied to remove local irritation; and they may serve as the vehicle for an astringent application, such as the solution of

sulphate of zinc. When the poultice is discontinued, astringents, either as a lotion or in the form of a powder, should be continued until a cure is established; and this may in all cases be effected by enforcing the principles of treatment here recommended with vigilance and care.

#### LOIS-WEEDON WHEAT GROWING.

In the *Agricultural Gazette*, March 5, is a letter signed J. M. Goodiff. The twofold object of the letter being, 1st, to enlighten me as to the two questions I have asked on the subject of Lois-Weedon Wheat growing; and 2dly, to sound the praises of that system. I cannot say that at present I find myself much the wiser; and it seems to me that no two things can be more unlike than Mr. Smith's system, as set forth in his pamphlet, and J. M. Goodiff's explanations and remarks upon it. J. M. Goodiff answers my first question, on the subject of labour, by saying that  $12\frac{1}{2}$  men will dig the intervals of 100 acres in  $4\frac{1}{2}$  months. No doubt they will; but that is not what is wanted, and is neither Mr. Smith's principle nor practice, for at page 45 he tells us that he begins about the last week in September, completing his labours the first week in December; and he is no doubt perfectly right, as by so doing he exposes his freshly-turned up soil to the rain, wind, frost, and snow of the whole winter, thereby getting it by spring completely pulverised; and therefore, according to pamphlet, 10th edition, page 32 (for I, too, wish not to travel out of Mr. Smith's own book), I find that, according to Mr. Smith's calculation, it would take 25 men to dig the intervals of 100 acres in two months. It seems, however never to have struck J. M. Goodiff that Mr. Smith bases his argument, not on a farm of 100 acres, but 400; and that J. M. Goodiff has to provide for digging the intervals of at least another 200 acres. At page 12 Mr. Smith says, "I have limited my subject to Wheat, but I will go beyond it for a moment to state that, with one or two exceptional crops, the same principles should guide me throughout." It seems, however, from the pamphlet, that Vetches is the only real exception; Barley, Oats, Beans, root crops, Saintfoin, Lucerne, and Clover, where the ground was suitable, would all be cultivated on the interval and forking system. Giving up, however, 100 acres to Vetches and Clover without the interval system, we still have 300 acres of interval digging to be performed on one farm between the end of September and the close of the year—an amount of labour which may well make Mr. Smith say (page 20), "The time may come, however—some think it not far off—when the resolute hand to wield the fork may fail me." Mr. Smith thinks (pp. 21, 22) that, even then, his wants will be supplied by a mole cultivator worked by steam; the body of the machine suspended over the land on four broad wheels, &c.: and Mr. Smith informs us that the mole cultivator is already in model. Nobody will more rejoice than myself at the invention of such an implement; but until I see it really at work, I cannot but think that, on ground deeply moved, the weight of the body must cause the wheels to sink in too deeply to be of any service. J. M. Goodiff deals, however, very summarily with the labour question, for he says that he will for the nonce admit "the want of labourers;" and then goes on to say that "much of the labour in Mr. Smith's system may be safely dispensed with;" and then quotes page 19 to prove it, adding, "The annual double diggings are not absolutely necessary to the system." What says Mr. Smith, the author of the scheme?

(Page 9.) "It (the scheme) is essentially practical." "I submit to certain rules, and so gain certain ends. It is wholly by my obedience to the one that I accomplish the other."

(Page 10.) "No one can evade the conditions with impunity."

(Page 20.) "By means of the deep-stirring, uplifting fork, in lieu of the glazing and level plough, I bring up these mineral treasures."

(Page 42.) "The 3-feet intervals are to be tilled, and to do that effectually, there is no implement at present but the spade or the fork; nothing but the spade or the fork within the limited space of less than 3 feet can turn up the subsoil from the required depth." "That exposure of the subsoil is indispensable."

I might multiply these quotations, but space forbids, I will therefore, for J. M. Goodiff's special information, merely quote from page 52:—"A strict adherence to the foregoing directions is indispensable to full success. The necessity may not be patent at first sight; it may seem permissible to alter this, or to substitute that, but, *ex parte crede*, the change will lead you wide of the mark." J. M. Goodiff informs me that I have much to learn in the row tillage of grain, because I recommend drilling Wheat 1 foot apart, and he thinks Mr. Smith should leave out his middle row. Again hear Mr. Smith (page 52), "Change, for example, the three rows for two, and over luxuriance will follow, greater hazard, a larger amount of fallow, and a lighter crop." "Omit any of the required operations, and you will find difficulties and inconveniences that will damp your ardour, and perhaps stop your progress."

So much for J. M. Goodiff.

And now a few words before I close this letter: I quite agree with Mr. Smith in his desire for winter pulverisation of the soil; I agree with him that it should be drained, free from weeds, and constantly stirred during summer; but I do not agree with him as to the necessity for his interval sowing, or that it is right to



grow any one crop on the same land year after year. Mr. Smith, by his 3-feet intervals, precludes himself from the use of the plough in autumn and spring. He shows, however, at page 19, that in five specimens of soil analysed, at only 12 inches in depth, four out of the five contained mineral (silica) sufficient for 900 crops of Wheat! and the fifth, enough for 3600 crops! If so—if in 12 inches we have sufficient mineral for 700 or 900 Wheat crops, why go 24 inches? Why should we not plough in autumn 10 or 12 inches deep, in spring give a light ploughing, drill in Beans 3 feet apart, pulverise and clean through the summer with the scarifier and the horse-hoe, and in autumn drill in Wheat 1 foot apart over the whole acre instead of the half?—then, again plough deep, plough light in spring, drill root-crops 3 feet apart with manure—and then Wheat again, or Barley, or Oats. If Wheat was grown in this manner on the whole acre, once in four years, or even twice in four years, I venture to predict that the average produce annually on the 100 acres of the 400-acre farm would be more than 34 bushels per acre. *Economist.*

### Home Correspondence.

*Diseases of Sheep.*—I hope your excellent correspondent "W. C. S." will not omit giving the short article of "F. D." a passing notice, that your readers may profit by being rightly directed by that well-known skilful writer. I have long treated my flock according to the directions given elsewhere by "W. C. S.," and thank him heartily for giving his experience to the world. I have this year had many ewes with dead lambs in them that have required assistance, some with the head, others with the legs back. The ewes being in an unhealthy state we had many cases of inflammation of the womb. The ewes being strong and not much exhausted, we treated them with a copious bleeding, and gave 2 ounces of Epsom salts, 2 drachms of ginger, and 2 drachms of laudanum, which in most cases had the desired effect. We have this year had four hopeless cases, where the lambs were too rotten to be drawn away, the womb became filled with gas, and death soon put an end to their sufferings. Will "W. C. S." be kind enough to inform me of the best treatment in such cases? *G. Summers, Houghton Farm, near Blandford.*

*Steam Culture.*—In your *Gazette* of March 5 is mentioned an instructive lecture given by John Wilson, Esq., in which mention is made of Usher's steam plough, where the traction principle is abandoned, and that of rotation adopted; this is a step in the right direction; but it appears to me that in regard to steam being employed in cultivation, no one seems to appreciate the dignity of the monster. You have therefore to place proper tools in his hands, if you wish the work to be cheaply and expeditiously done, and see that they are of the right quality and kind. I would have an axle with six, eight, or more wheels, set with spades, forks (or teeth like a saw), to break up the ground to any depth you like to set them; then follows something like a road scraper to gather the soil into a box, with an apparatus within for breaking the mould fine; immediately underneath this box, another axle with wheels set with forks to stir the subsoil, whilst the soil is preparing in the box above, ready to be shot down in drills as the subsoil is forked. I believe a great part of good tillage to consist in well stirring the subsoil, and yet not allowing it to mix with the mould until it has time to sweeten and pulverise; by drilling the mould this would be accomplished. A roller following immediately to give it the proper consistence to receive the seed, which could be dibbled, or drilled, with guano, or any other manure—although I believe manure in a liquid form must become general; a small rake should follow close on the drill, to cover the seed. Thus, the whole would be accomplished at one laying of the rails. The mould-box should be emptied of the weeds and stones, on arriving at the edge of the field, where one could be easily carted off to rot, and the other for the farmers to mend their ways. I believe the first clod is the most difficult to turn; it would be well therefore to hang the axle, so as that the wheels would form a line, like men mowing, instead of being exactly parallel. They should be made to precede either to the right or left of the engine. If any of your readers can make the least use of the ideas I have here tried to describe, I hope they will not hesitate to do so, for my county is the last in which such an engine could be made useful, from its hilliness, or I would endeavour to get some of my neighbours to get something of the sort ready for the agricultural show that is to be held at Plymouth the coming season; notwithstanding that it is said, I believe by Lord Brougham, that the further you go to the west, the more convinced you are that the wise men came from the east. *Amos.*

*Ivy in Ireland as a Sheep and Cattle Provender.*—In your "Notes to Correspondents" of the 5th inst., the following appears, by "W. C. S.," in reply to "M. D.," "The Ivy does not abound with us, and we have never known it given to sheep. We imagine its nauseous taste will prevent its being palatable freely, so that probably it neither does good nor harm." How different is the case with us of the Emerald Isle, where it abounds extensively, is partaken of with avidity, and is believed in all cases to do much good, and in no case any harm. Forty years ago I have known poor cowkeepers to collect it and give the leaves to weak cows, in the absence of other green food in spring time, and it has been found productive of the best effects, in affording increased strength to such animals. In no case have I ever seen Ivy growing on buildings, to which sheep or cattle had

access, that the leaves were not eaten up as high as such animals could reach, in many cases by rearing themselves up on their hinder legs, with their fore feet against the walls. On one occasion, seeing the anxiety of a herd of deer to indulge in this luxury, and being scarce in green food for their sustenance, I had all the Ivy cut off close to the walls by a clipping shears, and supplied to them and to the sheep in the park daily whilst it lasted. After getting one meal of it thus supplied, such was the desire of these animals for the luxury, that the sheep, on seeing the shepherd approach the wall to cut it, would come bleating up close to him, and the deer, timid and cautious as they naturally were, would follow the shepherd at a respectful distance, to eat it up as he dropped it to them. Some of your readers may now say, these stock must have been badly off for food. Be it so; but I can assure them they were not worse off than was usual in such places. I can assure them, further, that the following season, with plenty of Turnips before them, they in most cases preferred to consume the Ivy first, when spread out with the Turnips. Query—Would it not be worth the notice of owners of parks walled for deer to plant Ivy by these walls, and thus ensure, first, an amount of food of which such animals are so instinctively fond; secondly, help to ornament these walls, in many cases otherwise unsightly; and thirdly, afford a support to the same walls against the ravages of time; for in the latter case has the Irish Ivy contributed so much to uphold our old castles and ecclesiastical buildings in Ireland as monuments of our ancestors' architectural skill and piety. For, despite the acts of Cromwell and his followers,

"Our Ivy-crowned turrets, the pride of past ages,  
Though mouldering in ruins, do still grandeur impart,"  
and afford to many of our "Irish song birds," as my friend Mr. Kidd will be glad to hear, a delicious food in the winter, when the Ivy berries are ripe and other suitable food scarce. Those who wish to cultivate the Ivy for such purposes can do so from seeds collected in winter and sown in spring, or from cuttings planted in autumn. The most hardy is that with small leaves, whether palmated or otherwise. The most beautiful, and containing the greatest amount of food at the same time, is that found so common in the south of Ireland, but which would come to perfection in all parts of Ireland, and distinguished by its large leaves. In selecting the cuttings, care should be observed in not taking them from the parts of the plants that had assumed the shrubby character on the tops of walls, as plants obtained from such rarely, if ever, produce rootlets on the stems capable of attaching themselves to walls or trees, but will remain quite shrubby during life. *Edward Carroll, Beg Erin, Wexford, March 8.*

*Mangold Wurzel.*—Allow me to give the result of a crop of Long Red Mangold Wurzel, raised here in 1852; the space allotted to this purpose was  $\frac{1}{4}$  acres of Wheat stubble, the soil of which consisted of a light loam, but in good condition. It will be seen by the following statement that the crop was grown in two divisions; the first contained 2 acres, and produced of—

Clean dressed roots, 68 tons, at 15s. ....	£	s.	d.
Deduct for 12 loads of manure, laid on in the autumn, at 5s. ....	51	0	0
" 12 in the spring ....	3	0	0
" 5 cwt. of Peruvian guano, at 10s. ....	2	10	0
" 10 cwt. of common salt, at 1s. ....	0	10	0
" Labour, 6l.; rent, &c., 2l. 10s. ....	8	10	0
	17	10	0
Leaving a profit on 2 acres of ...	£33	10	0

The second division contained  $\frac{1}{4}$  acres, and produced—

72 tons dressed roots, at 15s. ....	£	54	0	0
Deduct for 30 loads manure laid on in spring, at 5s. ....	7	10	0	
" 2½ cwt. Peruvian Guano 1 5 0				
" 2½ cwt. of Lawes's Patent Manure, at 7s. ....	0	17	6	
" 7½ cwt. common salt, at 1s. 0 7 6				
Labour, 7l.; rent, &c., 3l. 10s. ....	10	10	0	
	20	10	0	
Leaves a profit on $\frac{1}{4}$ acres of ...	33	10	0	

Total profit on the  $\frac{1}{4}$  acres of roots grown, exactly £67 0 0

On the same sort of soil, but owing to the good effects produced by preparing and manuring the 2 acres in the preceding autumn, and of having the distance between the rows 3 feet, and from plant to plant 15 inches, the produce was greater than in the second case, when the drills were only 27 inches, and the plants 10 inches asunder. The crop was considered throughout by many persons who had seen it, as a good attempt at growing this plant north of the Humber, many of the roots weighing (especially those of the first division) from 14 to 21 lbs. without the leaves. I may add that the practice of giving the leaves as food for stock is not very favourable here, having been found to bring on scour to a great extent, we therefore make it a practice to plough them in whilst in a green state, immediately after the roots are cleared away. The land was subsoiled. *P. Deane.*

*Permanent Pasture.*—As during this month Grass-seeds for laying down land to permanent pasture should be sown, a few directions and observations, I think, will not be out of place, as we are not all informed alike, and some have not the time for this neglected study. To commence with putting in the seed: dress the land well, and sow  $1\frac{1}{2}$  bushel of seed-corn to the acre, harrow and roll again, then sow the 3 bushels of mixed Grasses on an even surface, with a gentle breeze, that the light may be blown as far as the heavy ear; a bush harrow should only be used to cover in the seed, and leave it

well rolled, and it may be rolled again at opportunities, till the corn is too high; by thus closing it, the moisture is more easily attracted to and retained at the surface. After harvest the Grass should be manured, to gain strength, and must not be fed off; guano might be successfully applied. At the next year, if you cannot feed it with bullocks, it should be mown three or four times to induce it to tiller; and if a top-dressing of yard-dung were applied in the autumn, I can speak practically that a thick and close sward would be obtained the first year. In forming mixtures of Grass-seeds, every soil should be supplied with its appropriate mixture, both as regards succession and qualities, and as the permanent ones require time to come to maturity, some of the more short lived ones should be introduced; that there may be a crop from the beginning, and also that there should be as great a variety as possible. The *Anthoxanthum odoratum*, if sown alone, would yield too aromatic a quality, but if mixed with the *Alopecurus pratensis*, it becomes at once fattening, and the same with the rest; the Grasses thrive permanently only when mixed, some forming herbage in the spring and autumn, and a few throughout the warmer months; if they did not closely succeed each other, weeds would soon appear. In conclusion, I must remark that, unless the newly-laid-down land is rich, it will be exhausted in a few years, and will pay well for manure, as it is not annually resuscitated by the plough. *H. R. Smithe, Eastling.*

### Societies.

#### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

At the WEEKLY COUNCIL, held on Wednesday last, Lord ASHBURTON, President, in the chair, Professor Way, the Consulting-Chemist of the Society, delivered before the governors and members his lecture on the discovery of a natural source of "soluble silica," on the property of Mr. Mainwaring Paine, at Farnham, in Surrey, and of its agricultural application in reference to Professor Way's former investigations and deductions, as published in the *Journal of the Society*. Remarks on points connected with this discovery were offered to the meeting by Lord Ashburton, Colonel Challoner, Colonel Le Couteur, Mr. Paine, Mr. Nesbit, Mr. Rowlandson, and Dr. Calvert.

At the request of the Journal Committee, Professor Way was desired to prepare, with as little loss of time as possible, a complete detail of the facts and bearings of this discovery, in order that it might at once be printed for the information of the members in the *Journal of the Society*, which would this half-year be brought out at an earlier date than usual. The thanks of the meeting were then moved by Lord Camoye, seconded by Col. Challoner, and passed unanimously, to Professor Way and Mr. Mainwaring Paine, for the kind trouble they had taken in bringing this subject before the Society.

On the motion of Mr. Raymond Barker, seconded by Col. Challoner, the Meetings of the Council were adjourned, over Easter, to Wednesday, April 6th.

#### POULTRY.

*The Beards of Poland Fowl.*—Though the minds of some appear yet uninformed, I am gratified to learn that my remarks (July 31) on the question, Whether Polands should, or should not, have beards? have been so effectual in removing the prejudice excited by the author whose dislike so unmercifully condemned the bearded variety. I showed that no argument whatever had been adduced to warrant such condemnation, and that it was simply an idiosyncrasy of taste, a mere matter of personal dislike. Nothing, surely, can be more subjective of truthful inquiry than the conversion of a subject into an affair of like or dislike. If such were allowed, there would be no property or attribute of poultry remain fixed or established: one might dislike the feathered legs of the Shanghai; another, the rose comb of the spangled Hamburg; a third, the whole cheek of the Spanish fowl being white, and so on. Especially, then, does it behove men to be careful how they express themselves in print, for it is wonderful how people will at once adopt as an axiom and a truth anything that "they have seen in a book." If we do not like any particular properties of a fowl, yet have not proof that such are spurious, it is our duty to let Nature alone, and the fowl also, and not keep it. I feel convinced that no one would have questioned the propriety of beards, had not a learned author, in his dislike, most irreverently attempted to uproot them. To remove, however, the impression of dislike against the beard, I contended that, in the spangled Poland, it really harmonised with the whole appearance of the bird; with his magnificent top-knot, with his remarkably voluminous and profusely hackled neck, and with his whole dashing and *debonnaire* deportment. The Poland is an exceptional fowl—differing in many of his most striking, and characteristic, and allowed attributes, from other poultry; and I do affirm that there is a harmony, and a keeping, and a consistency between the beard and the top-knot—between the spreading and elongated feathers or beard below the bill, and the elongated feathers or top-knot above it. They, together, exhibit a conformity and a relation which comprises a oneness or complete whole. Diminish or take away either the one or the other, and



the whole effect is gone; there remains a nakedness and a want. Thus it ever is,—

"In Nature's chain, whatever link you strike,  
Tenth, or ten thousandth, breaks the chain alike."

For my own part I would not admit the beardless gold and silver-spangled Polands at our exhibitions: not because I think them a spectacle of nakedness and want about the neck, throat, and head, but for the graver reason, that I deem them spurious or mongrel fowl; hybrid, I judge, between the Poland and the spangled Hamburg. In elucidating this, unfortunately, the plumage can assist us little in our argument, or proof, for the golden and silver spangled Hamburgs closely approximate to the Polands. There are, however, more important points than the mere marking or colour of the plumage—there are distinctions of shape, or configuration of the body; circumstances relative to that great peculiarity of Polands, the top-knot; to the comb; as well as to the beard, and to the tail—that facilitate and satisfy inquiry. First as to shape: the body of the true Poland is very round, tapering somewhat suddenly near the tail; the breast is remarkably round and protuberant, "more so," observes Mr. Baily, "than in any other fowl, except the bantam." The neck is a characteristic and striking feature: it is not only long, but is of extraordinary thickness and fulness, and most profusely covered with voluminous hackle feathers, whilst in carriage it is upright, bold, and dashing. In the beardless variety there is a most perceptible modification and contrast; in a word, a very near approach to the spangled Hamburg. The prominence and roundness of the breast is diminished, the body is narrowed, lengthened, and gradually tapering to the tail, the feathers of which, as observable in the hen, are like those of the Hamburg, and are much longer than in the true or bearded Poland. The neck presents a striking difference; all that general volume of the neck is gone; and it is thin, spare of feathers, and meagre; in size and in proportion it is wanting. Though, as I have said, the marking of the plumage affords us no help in tracing the beardless Poland to its connexion with the spangled Hamburg, they being very similarly spangled, yet the nature, fabric, or material of the feather differs, and affords assistance in defining the difference between the true bearded Poland and the hybrid one. Thus, let any one handle a true golden Poland hen, and he will be struck with the remarkably soft, silky, yielding quality of feathers; it is so peculiar, that at this moment I can recall the surprise on my first handling one; while the feel or sensation communicated by the beardless fowls is like the Hamburg, a comparative closeness and hardness of feather; there being nearly as great a difference in this respect as there is between the feel of a Shanghai and a Malay. This difference in the character of feathers in various fowls is well noticed by Mr. Baily, and a very distinctive character it is. Again, the top-knot, in the great majority of beardless Polands (especially in the golden), is insignificant. It is, I believe, invariably so in imported birds; but within the last two years, there have been raised in this kingdom some silver beardless Polands with top-knots of fair size; the golden, however, as far as I have seen at exhibitions, or heard of, still remain *statu quo*, waiting some lucky hit, or cross with the bearded, to give them top-knots, and to reduce their abundant, plated, pointed combs. It is important to notice that in breeding beardless Polands the greatest uncertainty prevails as to the quality of the chickens. In some which I last year raised from the very best specimens of beardless silver Polands, there was a very near approach to the rose comb of the spangled Hamburg; an uneven, serrated, protuberant, and large plate of flesh, terminating in a point, with a mere tuft of feathers for a top-knot; whilst a very few had top-knots equal in size to the parents. It is, indeed, a fact as important as it is striking, that while the chickens of the true bearded Poland have invariably large and full-sized top-knots, the produce, on the contrary, of beardless Polands evince all the uncertainty and anomaly above stated. How is this? Why, I ask, should one be all certainty, the other uncertainty? The answer is clear, plain, and convincing enough. The beardless Polands, being spurious, hybrid, now the Polish, now the Hamburg blood or type prevails; so that, in the one instance, we have top-knots, in the other scarcely any, but with development of comb; for it is a fact well known to breeders, that all cross-bred birds exhibit such constant tendency to lean to one parental origin or the other; as they term it, "they cry back." Thus have I shown that the beardless Poland is degenerate in shape, specially and generally; also in carriage, bearing, or deportment, and in the quality of its feathers; whilst the character of its produce or chickens is ever varying and uncertain. But what, on the other hand, has been urged against beards? Simply dislike. A whisper has gone forth, which no one, however, will own to, that the beard is from a cross with the Russian fowl. In truth, the Poland has no one character of the Russian; not even in the so-called beard is there any resemblance; for, whilst the beard of the Russian is a long tuft, looking like a hanging bag of feathers, the beard of the Poland consists of imbricated feathers, scarcely longer than the rest on the throat, and closely, compactly, and definitely arranged in a triangular shape, the base being uppermost; it has nothing in common with the bearded tuft of the Russian, or any other fowl. It is truly *sui generis*—true in its own kind, and an inborn inbred characteristic of a true Poland. In conclusion, I beg to say, that although I now write as a partisan of the bearded Poland (and coincide with

the opinions of such experienced gentlemen as Mr. Vivian, as well as of Mr. Baker of London and others), it was only after mature reflection, observation, and experience on both varieties, kept at the same time, and in equal numbers, that the conviction was forced upon me, that the bearded are the true Polands, and that the beardless are spurious. J. R. Horner.

**POULTRY:** J. C. M. A fine well-fed young Turkey, weighing 30 lbs., will at Christmas command from five to six guineas. The demand for such a bird does not exist at any other time of the year.—J. H. K. You must make the exchange near home; I know no one who will give you Silver Hambro' eggs for Cochins, although the exchange will be in favour of the former. If you have the Golden Pencilled (now painted) in your neighbourhood, why do you not get them? Their qualities are the same as the Silver, and the difference is only in colour.—O. Your hen is suffering from fever, which dries the skin and kills the feathers. If she has a good Grass run, she will now find her own medicine; if she has not, get some large sods cut with plenty of growing Grass upon them and give them to her. Give her a table-spoonful of castor oil twice, at three days' interval. Discontinue the Potatoes and Indian-meal, and give Oatmeal slaked with water instead. I have tried Indian-meal, but do not like it for poultry food.—A Lady Amateur. If the cock with a scurfy comb be a Cochins China, those fowls are subject to it. It is supposed to arise from inward fever. A good Grass run, at this time of year especially, is a cure for it. The treatment to effect a speedy removal is a table-spoonful of castor oil given internally, and to rub the parts affected with compound sulphur ointment, or any natural emollient, having neither salt nor flour mixed with it; if the ointment is not easily to be had, good generous food, and a little strong old ale mixed with it, twice per day, with the fine weather we may now expect, will soon put the bird right.—C. S. Ilybrids between the fowl and pheasant are common, I have had it at a time. The fowls called pheasant fowls are not in any way akin to that bird.—R. F. A blue-legged Dorking fowl would be disqualified at any exhibition.—A Subscriber. I do not think your hen ever drops two eggs per day, but that they should be imperfect proves there is something wrong. Avoid all stimulating food, let her have a good Grass run, and see that she has access to lime or chalk for the formation of the shell. I know nothing better to throw into the haunts of fowls than a basket of bricklayer's rubbish. Let it be thrown in a heap; they will scatter it and pick out the pieces of lime of which they stand in need.—W. E. Eggs covered with butter as soon as laid will keep fresh for months, but they are entirely spoiled for setting. They must be quite covered. J. Baily, 113, Mount Street.

### Farm Memoranda.

**HARLEY THORN FARM.**—Mr. Etches having often invited me to look at his stock, I took the opportunity of doing so when on my way to London about two months ago; and got out of the train of the London and North-Western Railway at Whitmore Station, which is distant about five miles from Mr. Etches' farm, which is called Harley Thorn. I had no difficulty in finding a conveyance at the station, and had not proceeded far when I saw unmistakable evidence that I was approaching a farm in the very highest possible state of cultivation, and managed very differently from the farms in the vicinity. On one side of the road lay a barren moor, covered here and there with a little Gorse and stunted Heath, while on the other, were large fields in the highest condition, and plainly showing that they had been worked by a master hand. Mr. Etches' farms join the Duke of Sutherland's demesne at Trentham, and the lands lie on a pleasing slope, to the south of the Trent Valley line. They consist of two farms near each other, the united extent of which does not exceed 350 statute acres. When he took these farms, some four or five years ago, he was informed by the out-going tenant that the utmost extent of sheep he could keep on them was about 90; and there were stalls for 12 beasts only. Mr. Etches at once put in 400 sheep, and, with the assistance of artificial food, they paid during the first year not only the rent of the farm, the entire expense of extra keep, the wages of the shepherds attending them, and a considerable overplus, but they also so much improved part of the lands that, where the Wheat crop belonging to the way-going tenant had been valued at but 10 bushels per acre, the same fields, when again in Wheat, produced more than 40 bushels; and at the period of my visit to the farm, instead of 90 sheep and 12 beasts, there were now 400 sheep (300 of which were feeding), 134 beasts (90 of which were tied up), and there is always from 100 to 150 pigs; and all this, to use his own words, is the production of steam. The grand feature in the steam-engine is, that one fire and one boiler not only propels the entire machinery of threshing-mill, straw-cutter, oil-cake crusher, and Indian Corn-mill, and also fetches water from low ground at a considerable distance for its own supply, but that from this one boiler comes all the steam for preparing food for every animal on the farm. On one side of the cooking-house is a large vat, built a little under the level of the ground. This is meant to contain the food when prepared, and to mix it in. Immediately joining it is a large hot closet, built of bricks, and floored with kiln-tiles below. In this hot closet every particle of either hay or straw consumed on the farm is steamed, preparatory to being mixed with other food in the vat. When it is fully steamed, it is drawn into the vat through a door opening into it. Round the walls of the cooking-house barrels are placed, filled with cold water, with pipes leading from the boiler of the engine, by which the steam can at any moment be introduced by turning a stop-cock. When the steam is turned on, it rushes into the cold water with a loud noise; and in an incredibly short time the water begins to boil. Oil-cake bruised very fine, not merely broken as the common machines break it, but ground to meal in the mill attached to the engine; and Indian Corn, or any other grain, similarly prepared,

is now shaken into the boiling water and stirred, just as stirabout is made, and well salted. When it becomes of a proper consistency, and is thoroughly boiled, it is lifted out of the boilers with large ladles and thrown on the steamed straw in the vat, the straw being only withdrawn from the closet when this is ready to be thrown over it. The whole mass is carefully mixed now in the vat with forks resembling dung drags; and this mixture assumes the name of "chop," which is the only food given to cattle, horses, or sheep, in any shape whatever, except that the cattle and sheep get Turnips in addition. But they all get their share of this immediately after it is mixed, and whilst still quite hot, which is the great peculiarity of Mr. Etches' system; which, besides, is attended with so great a saving of Turnips that he told me he could feed double the quantity of stock per acre. He related to me an anecdote of how he was first induced to adopt this system, which I shall here tell you:—About 20 years ago, whilst living in the neighbourhood of Liverpool, it happened that almost every day he passed by a mill which was turned by two horses, and these horses attracted his observation by their very high condition; and he was so much struck by it, that he inquired from the owner how they had been fed. He assured him that they never got a mouthful of corn, or anything but hay; and he could get from him no further information on the subject. And this proved afterwards to be perfectly true, as he found out from the driver, from whom he elicited the secret of their high condition, which was, that they had a constant supply of hot water running close by them (the overflow of some steam machinery), and of this they could drink whenever they pleased; and to this was to be attributed their condition. This was the foundation of Mr. Etches' system of feeding on warm food, which he has now carried on with unparalleled success for these last 20 years. As I have given up feeding cattle myself, I did not make as accurate inquiries as I might otherwise have done as to the quantity of food consumed by them; besides which, I had little idea at that time of being called upon to give you a description of it here; but this much I had from Mr. Etches himself, that he never gave more than 8 lbs. of Linseed cake—or other food equivalent to it—to a heavy, fattening beast, and this only when he felt it prudent to push them forward in fat; and this he said he found to be the most remunerating quantity and method in finishing them. The horses are fed on nothing but chop, which they get three or four times a day. I never recollect to have seen such condition on farm horses before. They appeared to me, at first sight, to be too fat for their work; but, when I saw them carting their huge loads of Turnips from the heavy, wet fields, in Scotch carts, I became fully convinced that, though apparently too fat, they were in the highest possible condition for farm work. The pigs are fed on pulse and corn, prepared in the same manner as the porridge mixed for the "chop," some carrageen moss being added, which is found to improve much both the quantity and quality of the food, though it is only used in a very small proportion. Having endeavoured to give you a slight sketch of the manner in which the food is prepared, I shall go at once to the sheep, which are by far the most interesting stock on the farm, as they are fed in houses and lie upon timber, upon much the same plan as at Mr. Huxtable's. But before leaving the farm-yard for the sheep houses, that are at some distance, I must bring to your notice the best manure-tank I ever saw; it consists of a large tank, with pipes from every part of the yard, to conduct the liquid to it, the conveyance of which from the tank to the cart is most ingeniously managed:—A pipe from the bottom of the tank is carried down some distance to a lower level—consequently, there is no pump required, as a low cart can be backed under this pipe, and, a plug being withdrawn, it fills the cart of itself. Mr. Etches planned this himself, as he says the only man to pump a manure-tank is the owner of it, as no one else will do it as often as it should be done; but we do not often see proprietors of manure-tanks who have either time or inclination to pump them out, and, consequently, we often see them neglected. The tank itself is arched over the top, and made very nearly air-tight. Mr. Etches says, "the best possible way to preserve all good liquors, is to be sure to see that the bottles are well corked." The sheep houses are at a little distance from the farm-yard, and have been lately erected; they are built of brick, and roofed with tiles; they stand on a sloping piece of ground, which is as it were terraced, and is so contrived that the ground on one side of the house is about 6 feet lower than that on the other. The floor is placed a little above the level of the highest side, and is made of laths, which square about 1½ inch; these are laid down about three-fourths of an inch asunder, on oak joists, in the manner of flooring-boards, the joists being about 3 feet apart. The timber used for the flooring itself is one which was first adopted for the purpose by Mr. Etches, as he found it to be by far the most durable and the hardest timber known; it is teakwood. These oak joists thus rest on pillars of brick, about 20 inches square, and are placed at such distances as suffice to support the flooring. The side of the house next the low ground is all supported on pillars, and underneath the flooring is the manure-pit, which is sunk about 2 feet under the low ground and made quite water-tight. Into this all the droppings and liquid manure fall, through the interstices in the flooring, and remains there until when it is taken out a most valuable manure. The air has full access, then, through the opening in the pillars, to enter under the sheep, and the space between



the flooring and the roof being almost entirely doors and windows, only protected by slight laths, there is a continual current of air. The only place it is found necessary to shelter is the skirting, as it were, round the sides of the sheep, from the level they stand on to the eight of their backs; this is found to keep the current of air from blowing directly on their flanks, which is the only way it could injure them. Many persons I have conversed with about this system appear to think that there would be an unpleasant smell from the manure-pit, but such is not found to be the case, except in a very peculiar state of the atmosphere, and this can always be remedied by sifting a little sawdust or ashes over the surface, which will at once allay it; or where peat charcoal or gypsum can be obtained, it will be found even more efficacious, and greatly improve the manure. The length of each house is 60 feet, and the breadth is 15 feet in the clear; this is divided into small compartments of 12 feet in length, by the feeding troughs, which are railed on the edges with upright bars, through which the sheep put their heads while feeding; each trough presenting a front to the compartments on either side of it, so that the sheep's heads nearly meet in the centre when feeding. Into each of these compartments, then, which are 12 feet by 15, are put 20 sheep, so that the house, 60 feet long and 15 feet wide, contains 100 sheep. I was much surprised to find so many confined to so small a place, but they do perfectly well; they lie so dry, and there is so much air above them and below them, that they do not suffer at all from being apparently crowded. This is a most important advantage in housing sheep, as, with a very small amount of roofing, a very large flock can be sheltered; besides which, the more closely the sheep are packed together, the cleaner will the floor be kept by their feet, which sweep all the dirt at once through the chinks, as the ladies' dresses swept the floors of the Crystal Palace. The sheep are put into these houses about the end of October, and are fed every morning and evening with a good supply of cut Turnips, and in the middle of the day they get one feed of hot food, prepared as I have before described. The quantity of the mixed food, or chop, is regulated to the appetites of the sheep, and they get just as much as they can advantageously consume at one meal, without making waste. The farinaceous food and oil-cake contained in the chop seldom exceeds in cost 1d. per day for each sheep, on an average. The chief part of the sheep which are fed in these houses are one-shear wethers, and, generally, the cross between the Cheviot ewe and the pure Leicester tup, many of which had been purchased, in April and May, at low prices; and having shorn them at that time, he now had them ready for the knife. He disposes of them, when fat, to the butchers in the neighbouring town. Mr. Etches showed me some of these half-bred Cheviots he had sold in last April, at 16s. per head, which he was then selling out at 55s. a piece; this, added to the price of the fleece, was by no means a bad profit for eight months, six of which they were fed on Grass. In talking over Mr. Etches' farms, he pointed me out several portions of his Turnip field where he had used the manure from the sheep houses; and I need not, perhaps, tell you that the Turnips were very much larger than those which were grown on the common farm-yard manure. Mr. Etches seemed to pride himself on the size of these roots; and, notwithstanding the rapid strides he has made in agricultural knowledge in other respects, it appears he has yet to learn the value of a moderate-sized root compared with a large one; and I do believe that, were he starving to-morrow, and was told he should only have three Potatoes for his dinner, he would be so blind to his own interest, and so regardless of either theory or analysis, that he would choose the three largest in the dish! *Abridged from a paper, read by Mr. P. Hamilton, before the Royal Agricultural Improvement Society of Ireland.*

## Calendar of Operations.

### MARCH.

**SOUTH OXON FARM, March.**—When agricultural affairs are only so backward, the lengthened cessation of labour at this season of the year proves a serious matter, but will, nevertheless, be considerably counterbalanced by the ameliorating effects of the frost on the soil. From the 11th till the 26th of January the frost was so severe as entirely to prevent all sowing and ploughing, but we have found ample employment for our men and horses. Carting manure, and collecting and making compost heaps from every available source, such as road-scraps, and cleanings, &c., which, when mixed with salt at the rate of a bushel of salt to a cubic yard of earth, we had to be a very good manure for Turnips. We have nearly finished lambing; our ewes are, in general, pretty healthy, and in number up to the average of previous years. We have already had five per cent. of losses, which on our land is considered an unusually large number. The principal cause of death has been puerperal fever, occurring after lambing; it occurs sometimes directly after parturition, at other times the ewe goes on very well for a day or two, when she is suddenly seized, and generally dies in five or six hours after being attacked. There is always strong inflammation followed by rapid mortification, which, in nine cases out of ten, terminates in death, however skilful the treatment may be. Copious bleeding from the neck, and afterwards followed by a dose of opium and spirit of nitre mixed, we have succeeded in averting its attacks, we have tried various remedies at every stage of the disease, but with very little success. Fattening sheep is now making more progress and are now gaining what they lost to have had six weeks ago. The present high prices of corn and wool have induced many farmers to fatten their wethers, and would otherwise have been kept till next December. What effect this may have on the market trade during April and May we are unable to say, but it will undoubtedly enhance the price of store sheep considerably. Corn has very much improved in quality, and consequently commands rather more money. Good Wheat cannot be disposed of to advantage, the season being so far advanced for planting. G. W. J.

## Notices to Correspondents.

**DACON: Inquirer.** A full grown hog in good store condition, calculated to become 12 to 14 score when fat, may be fed for six or seven weeks on 7 lbs. of meal a day, and steamed roots ad libitum.

**DONNER: A Sub.** For large cattle—we have been accustomed to three-year-old Herefords—9 feet by 10 is ample large enough, taking about 1½ foot off one end for troughs, between two adjoining boxes, which troughs are placed between two uprights, into which they are bolted by two pins at each end. These uprights have pin holes all the way up, and so the troughs may be raised. If only the lower pins be inserted the troughs will turn round bottom upwards, and so be sure of being kept clean. The supply of water is a difficult thing to connect with a continually rising trough, but this may be done by using a gutta-percha supply-pipe, and the troughs may thus be used for roots, hay, and water, time about.

**COW: Subscriber.** You may give your cow 4 or 5 lbs. of oil-cake daily. But prefer giving her Bean-meal, or Barley with her hay; a similar quantity of either.

**DRAINS: A Subscriber.** Have extra length of collar over the junction of the pipes when near the trees. If 3 or 4 yards from the spread of the branches, and 4 feet deep, there is not much danger of the roots.

**ESSAY: N.T.** We do not know the rector of Whitechapel's address, but should think his designation would find him.

**GRASS SEEDS: G.P.** The Grass seeds will not be injured by a thin seeding of Barley, say one bushel per acre.

**GRAVES: Inquirer.** They are too good for store pigs.

**LOIS-WEDON: Inquirer.** We believe that the machines for this system, drill and all, are made at Towcester. They will be exhibited at Gloucester. You may try spring Wheat with it with certainty of its benefiting by the system, though of course not to the same extent as that which is early autumn sown.

**PICK OF LAND: Amateur Farmer.** It has certainly been tolerably well worked. If you can get it clean and well worked before the middle of April, you had better sow Carrots. Mix 6 cwt. of guano, 40 or 50 bushels of soot, and 4 cwt. of common salt together for your 2 acres. Sow it broadcast over the land, and harrow it well in a week before sowing the seed. Sow about 10 lbs. of the seed mixed with half a bushel of Oats, in rows 18 inches apart. The Oats will show the rows, and let you hoe sooner.

**PREDATORY BIRDS: Inquirer.** Thanks.

**RED SPRING WHEAT: J.P.** The April Wheat, the true *Triticum aestivum*, is a red Wheat.

**ROOKERY: Solders.** Your letter had not been received. You must place eggs in the nest of some birds on or near the spot. If you have no jay or magpie nests you might try those of smaller birds, and lend them a hand in bringing up their unwieldy brood if they should succeed in hatching.

**SHORT-STRAWED SORTS OF GRAIN: Short-straw, Piper's Thick-set Wheat, Poland and Potato Oats, Peacock's Barley, Bere, and generally the coarse six-rowed Barleys.**

**SMALL CHURNS: Milfordiensis.** Our experience in small churns relates only to common dash churns. There have been ample testimonials to the merits of the American.

**TALAVERA WHEAT: L.B.** It may be sown now, but it is late enough for it. You had better sow Barley.

**WATERPROOFING: J.T.** We will endeavour to procure a recipe.

## Markets.

### COVENT GARDEN, March 19.

The weather having again become cold, the supplies of Vegetables during the week have been no more than sufficient for the demand. Small quantities of new Hothouse Grapes are beginning to make their appearance. Table Pears and Apples are, of course, still scarce. Pine-apples are realising good prices. Forced Strawberries fetch 3s. an ounce. Cob and other Nuts bring fair prices. Among Vegetables, we remarked Green Peas, new Potatoes, Horn Carrots, Asparagus, Radishes, Globe Artichokes, and Lettuces, all of foreign growth, and very good. Both Sea-kale and Rhubarb are pretty abundant. Potatoes are dear. Mushrooms are scarce. Cut flowers consist of Heaths, Primulas, Early Tulips, Roses, Cyclamens, Mignonette, and Camellias.

### FRUIT.

Pine-apples, per lb, 6s to 10s  
Grapes, hothouse, p. lb, 20s to 25s  
Apples, dessert, p. bush, 10s to 13s  
— kitchen, do, 6s to 12s  
Pears, per doz., 1s 6d to 4s  
Oranges, per doz., 1s to 2s  
— Seville, p. 100, 7s to 14s

### VEGETABLES.

Cabbages, per doz., 1s to 2s  
Brussels Sprouts, per hf. sieve, 2s to 3s  
Broccoli, per doz., 2s to 3s  
Greens, per doz., 4s to 6s  
French Beans, per 100, 2s to 3s  
Asparagus, per bundle, 5s to 9s  
Sea-kale, per basket, 2s to 2s 6d  
Rhubarb, p. bundle, 1s 3d to 1s 6d  
Potatoes, per ton, 85s to 150s  
— per cwt., 5s to 9s  
— per bush, 2s 6d to 4s 6d  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 1s 6d to 3s  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 4s to 5s  
— Spanish, p. doz., 2s to 5s  
Beet, per doz., 1s to 1s 6d

### WOOL.

**BRADFORD, THURSDAY, March 17.**—The large purchases made at the close of last year generally put the spinners in good stock, and since the opening of the present their operations have been only of an assorting character, every week, however, showing a manifest change in the inquiries, no doubt from their stocks getting nearer wrought up. For anything good in class the demand is fully equal to the supply offering, and the prices are very discouraging to the buyers. The staplers, on the other hand, contend that if they dispose of their present stocks, they cannot replace on terms that will enable them to meet the current rates here. In Broke and Noils the inquiry is active, and the prices firm.

### HOPS.—DORCHESTER MARKET, March 18.

Messrs. Pattenden and Smith report that there is a firm and steady trade for all descriptions of Hops, and late rates are fully maintained.

### POTATOES.—SOUTHWARK, March 14.

During the past week there has been no arrival whatsoever and few by rail, but a fair supply from abroad. The following are the quotations:—York Regents, 110s. to 150s.; Lincolnshire do., 90s. to 120s.; French whites, 105s. to 110s.

### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, March 17.**  
Prime Meadow Hay 85s to 92s  
Inferior do. ... 75 to 80  
Power ... 45 to 50  
New Hay ... 45 to 50  
**WHITECHAPEL, March 17.**  
Fine old Hay ... 84 to 92s  
Inferior do. ... 63 to 75  
New Hay ... 45 to 50  
Straw ... 25 to 32  
Clover ... 95s to 100s  
Sainfoin cut ... 80 to 92  
Straw ... 30 to 35  
E. J. DAVIS.

### COAL MARKET.—FRIDAY, March 11.

Carr's Hartley, 16s. 6d.; Wallend Biddell, 16s. 9d.; Wallend Haswell, 15s. 3d.; Wallend Hutton, 15s.; Wallend Lambton, 15s.; Wallend Stewarts, 15s.; Wallend Tees, 15s.—Ships at market, 12s.

### SMITHFIELD.—MONDAY, March 14.

The number of Beasts is not quite so large on this day week; it is, however, quite sufficient. Some of the choicest qualities are more in request, but on the average prices are not much higher. The heavy rain caused a dull finish. We have a few more Sheep; trade for them is about the same as of late; a considerable number are now shorn; the weather is unfavourable for them to-day. Trade is dull for Calves, at Friday's rates. From Germany and Holland there are 694 Beasts, 1150 Sheep, and 132 Calves; from Scotland, 700 Beasts; from Norfolk and Suffolk, 2100; and 300 from the Northern and Midland Counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. ... 4 0 to 4 2  
Best Short-horns 3 8 to 4 0  
2d quality Beasts 3 0 to 3 4  
Best Downs and Half-breeds ... 5 2 to 5 4  
Do. Shorn ... 4 2 to 4 4  
Per st. of 8 lbs.—s d s d  
Best Long-wools ... 4 8 to 5 0  
Do. Shorn ... 3 10 to 4 2  
Ewes & 2d quality 3 8 to 4 4  
Do. Shorn ... 0 0 to 0 0  
Lambs ... 0 0 to 0 0  
Calves ... 3 6 to 4 0  
Pigs ... 3 8 to 4 8  
Beasts, 4206; Sheep and Lambs, 16,410; Calves, 164; Pigs, 215.

### FRIDAY, March 18.

The supply of Beasts being small and the weather more favourable for slaughtering, they are readily disposed of. Monday's quotations are cheerfully given, and in some instances there is a slight advance. The number of Sheep is very considerable, consequently they are quickly sold at higher rates. Notwithstanding the cold weather, Lamb is in greater demand; this is no doubt owing to the scarcity of other things. Trade is better also for Calves. From Germany and Holland we have 92 Beasts, 460 Sheep, and 149 Calves; from Norfolk and Suffolk, 250 Beasts; and 105 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. ... 4 0 to 4 2  
Best Short-horns 3 10 to 4 0  
2d quality Beasts 3 2 to 3 6  
Best Downs and Half-breeds ... 4 5 to 4 6  
Do. Shorn ... 4 6 to 4 8  
Per st. of 8 lbs.—s d s d  
Best Long-wools ... 4 10 to 5 2  
Do. Shorn ... 4 0 to 4 4  
Ewes & 2d quality 4 0 to 4 6  
Do. Shorn ... 0 0 to 0 0  
Lambs ... 5 8 to 6 4  
Calves ... 3 10 to 4 10  
Pigs ... 3 8 to 4 8

### MARK LANE.

**MONDAY, March 14.**—The supply of Wheat from Essex and Kent to this morning's market was moderate, but no improvement observable in the condition; the former met a slow sale or barely the terms of this day's night, and the latter must be written 2s. per qr. cheaper, at which reduction the stands were not cleared at a late hour. Foreign met a retail inquiry; the value of Baltic is unaltered, but the Southern qualities are obtainable on easier terms. Barley remains as last quoted. Beans and hog Peas are the turn cheaper; fine white are fully as dear. The Oat trade is slow, and inferior qualities are very difficult of disposal. Foreign Flour must be written 1s. per sack and barrel lower.

**PER IMPERIAL QUARTER.**  
Wheat, Essex, Kent, & Suffolk ... 40—54 Red ... 38—46  
— fine selected runs ... ditto 42—60 Red ... 44—52  
— Talavera ... 54—60  
— Norfolk ... Red ...  
— Foreign ... 40—58  
Barley, grind. & distill., 25s to 28s ... Cheviot 26—35 Malting ... 27—31  
— Foreign, grinding and distilling ... 26—30 Malting ... 30—33  
Oats, Essex, and Suffolk ... 17—20  
— Scotch and Lincolnshire ... Potato 22—24 Feed ... 17—22  
— Irish ... Potato 22—23 Feed ... 19—26  
— Foreign ... Poland and Brew ... 19—22 Feed ... 16—20  
Rye ... 29—32 Foreign ...  
Rye-meal, foreign ... 32—34  
Beans, Mazagan ... 30s to 32s ... Tick 32—34 Harrow ... 32—34  
— Pigeon ... 33s to 36s ... Winds 29—41 Longpod ... 30—34  
— Foreign ... Small 32—37 Egyptian 32—34  
Peas, white, Essex and Kent ... Boilers 33—41 Suffolk ... 40—42  
— Maple ... 32s to 35s ... Grey 30—33 Foreign 32—42  
Maize ... White ... Yellow ...  
Flour, best marks delivered ... per sack 38—46  
— 2d ditto ... ditto 23—38 Country 23—38  
Foreign ... per barrel 23—27 Per sack 36—40

**FRIDAY, March 18.**—The arrivals of grain this week have been moderate, those of Flour large. Although there were a few buyers of floating cargoes from a distance, the attendance at today's market was small, and the business transacted from the stands too trifling to admit of our making any alteration in the quotations of either Wheat, Spring Corn, or Flour, and the tendency is decidedly to lower prices.

### ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 3290	Qrs. 6140	Qrs. 850	2820 sacks
Irish ...	...	550	3280	...
Foreign ...	9570	2410	970	12160 brls

### IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Feb. 5 ...	46 1	31 8	15 7	31 11	34 7	31 5
— 12 ...	45 2	31 5	15 5	30 11	34 10	31 9
— 19 ...	44 6	31 1	17 9	30 4	34 5	31 2
— 26 ...	45 2	31 3	18 4	32 4	34 5	31 6
March 5 ...	45 9	31 7	18 3	30 9	34 8	32 6
— 12 ...	45 8	31 9	18 6	30 9	34 8	32 9

Aggreg. Aver. 45 5 31 5 18 4 30 8 34 6 31 10

### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

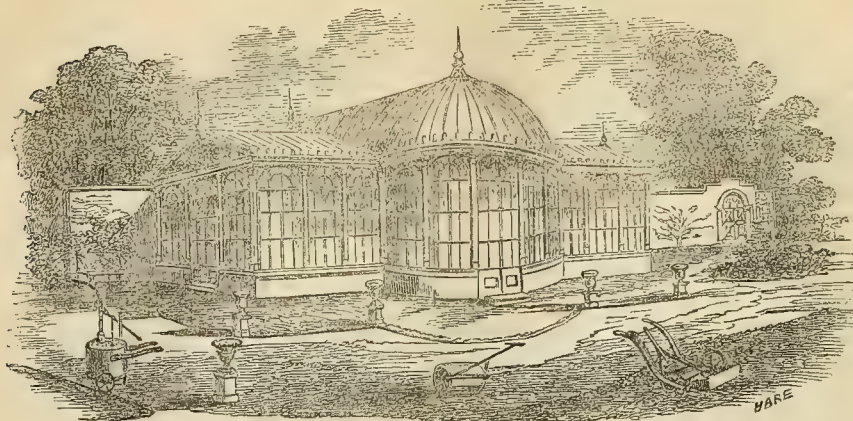
PRICES.	Feb. 5.	Feb. 12.	Feb. 19.	Feb. 26.	March 5.	Mar. 12.
46s 12d ...	...	...	...	...	...	...
45 9 ...	...	...	...	...	...	...
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**LIVERPOOL, Thursday, March 15.**—At our market this morning there was a fair attendance of the town and country trade, and a large business might have been done in Wheat and Flour had holders been disposed to take the low prices lately current; however, more money was insisted upon, and the depression noted on Friday was generally recovered. French Flour did not participate in the improvement, and must be quoted 1s. per sack lower on the week. Oats and Oatmeal met with a slow sale, at a decline of 1d. per 45 lbs. and 6d. to 8d. per load. Barley, Beans, and Peas were in fair request, at late rates. Indian Corn on the spot was only in small demand, and fully 1s. per qr. lower for white. **FRIDAY, March 11.**—This morning's market was very poorly attended; at a reduction of 1d. per bushel on Wheat, there was a very limited inquiry, and even a further reasonable concession did not appear calculated to produce a greater demand in the present immoderate state of the trade. The pressure of Flour was greater to-day, and several parcels were obtained at a decline of 1s. per barrel, but we found no general demand for American, and sack Flour ruled dull at nominally the same reduction. Beans are 1s. per qr. lower, and a slow sale. Fine Oats in tolerable request, but inferior much neglected, and Oatmeal again rather cheaper. Indian Corn, arrived here, is offering 1s. lower, both for white and yellow.



# COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



## A New Show Room devoted entirely to Articles of Horticulture. ILLUSTRATED CATALOGUES UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

### IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

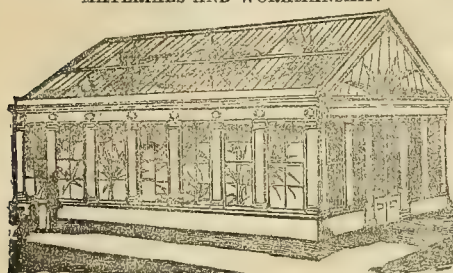
#### AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK. EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

A PRIZE MEDAL FOR SUPERIOR LOCKS WAS AWARDED TO J. H. BOOBYER, AT THE GREAT EXHIBITION OF 1851.

**THE CELEBRATED AGRICULTURAL DIGGING FORK, PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools.** Mole Traps, 6s. per dozen. Carpenters' and Smiths' Tools, &c. Best fine cut Clasp and Rose Nails at the lowest reduced prices. Sword-scrappers for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.: at J. H. BOOBYER & Co.'s (late STURCH & BOOBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope Street, Clare Market, London. Established nearly 200 years for the sale of goods from the best Manufacturers at the lowest prices. Goods forwarded to any part on the receipt of remittance.

### HORTICULTURAL BUILDING AND HEATING BY HOT WATER. AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



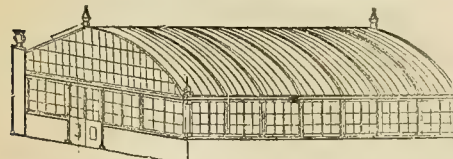
**GRAY AND ORMSON, Danvers Street, Chelsea, London,** having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.



**J. WEEKS AND CO., King's Road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS.**

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collections of Stoves and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.

### HORTICULTURAL BUILDING AND HEATING BY HOT-WATER.

**EDWARD AND A. WEEKS** (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.

One, two, and three-light Boxes always on hand.

#### SHEET GLASS.

**JAMES PHILLIPS AND CO., 116, Bishopsgate Street Without,** have a quantity of SHEET GLASS in 100 feet Boxes, which they offer

At 10s. PER BOX:  
Sizes—4 inches by 3, 4½ by 3, 5½ by 3.

At 12s. 6d. PER BOX:  
5½ by 3½, 6½ by 3½, 7 by 3½, 7½ by 4, 8 by 4½.

#### CROWN SQUARES.

At 12s. 6d. PER BOX:  
6 by 4, 6½ by 4½, 7 by 5, 7½ by 5½.

At 14s. PER BOX:  
8 by 6, 8½ by 6½, 9 by 7, 10 by 8.

#### FOREIGN SHEET GLASS.

PACKED IN CASES OF 200 FEET EACH:  
3½s., 36s., and 38s., Case included.

Boxes charged 2s. each, but full price allowed if returned free of expense.—116, BISHOPSGATE STREET WITHOUT.

#### ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON, Importer and Dealer in GLASS FOR CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.**

WAREHOUSE, 57, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long. Squares in boxes, 100 feet each.

16 ounces ... 3d. per foot.	Under 6 by 4 ... 12s.
21 ounces ... 4d. "	6 by 4, 6½ by 4½ ... 13s.
26 ounces ... 5d. "	7 by 5, 7½ by 5½ ... 14s.
32 ounces ... 7d. "	8 by 6, 8½ by 6½ ... 15s.
	9 by 7, 9½ by 7½ ... 16s.
	10 by 8, 10½ by 8½ ... 17s.
	11 by 9, 11½ by 9½ ... 18s.
	12 by 10, 12½ by 10½ ... 19s.
	13 by 11, 13½ by 11½ ... 20s.

Large Sheet of No. 16, very superior, packed in cases of 100, 200, and 300 feet, at 2½d. to 2½d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick; Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round oval, and square, for Clocks and Ornaments; Fern Shades and Dishes.

### CROWN, and 13, 16, 21, and 26 oz. HORTICULTURAL SHEET GLASS, in 100 feet boxes.

Of sizes—8 inches by 6 inches.	Of sizes—9½ inches by 7½ inches.
" 8½ " " 6½ " "	" 10 " " 8 " "
" 9 " " 7 " "	" 10½ " " 8½ " "
" 9½ " " 7½ " "	" 11 " " 9 " "
At 1½d. per foot.	At 1½d. per foot.

Also Crown and Sheet Glass in crates. British and Patent Plate, Sheet Lead, Pipe, White-lead, Oils, Turpentine, Colours, &c. G. FARMILLOE & Son, 118, St. John Street, West Smithfield, London.

#### GLASS FOR CONSERVATORIES, ETC.

**HETLEY AND CO. supply 16-oz. SHEET GLASS** of British Manufacture, at prices varying from 2d. to 3d., per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

### IMPROVED GRASS-CUTTING AND ROLLING MACHINE FOR CUTTING THE GRASS OF LAWNS, &c. NEW AND POWERFUL DOUBLE-ACTING LIFT AND FORCE PUMP

FOR LIQUID MANURE AND GARDEN AND GENERAL PURPOSES. Drawings, particulars, and testimonials forwarded free on application to WILLIAM DODDS & Co., 102, Leadenhall Street, London.

### TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

**PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combined ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens.** The Hydraulic Ram, Fine Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROY, Hydraulic Engineer, 70, Strand, and Bridgefield, Wandsworth.

P.S. IMPORTANT TO FARMERS, &c.—F.R. begs leave to call attention to his New Water Power, which in many cases will supersede the use of the Steam Engine.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



**ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.**—For Horticultural Buildings in Wood or Metal.

HORTICULTURAL BUILDING WORKS, CHICHESTER.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

**BENJAMIN EDGINGTON, MARQUEE, TENT, FLAG, and RICK CLOTH MANUFACTURER, 2, Duke-street, London Bridge, Southwark.**

EMIGRANTS' GROUP MEETING.—"No one must expect to get a house or lodgings at Port Phillip—every one must be provided with a tent." (See Mrs. Chisholm's Address, reported in the *Times*, July 23.)

BENJAMIN EDGINGTON invites all who are embarking for the Colonies, or the Gold Regions, to inspect his EMIGRATION TENTS. A lofty and extensive warehouse has been added to the premises, where a variety of Tents are erected, so that settlers and others may select at once the Tent best adapted for their purpose.

N.B.—The CHISHOLM TENT, price 3l. 10s., is manufactured by BENJAMIN EDGINGTON.

**J. AND H. FERRABEE, GENERAL and AGRICULTURAL ENGINEERS and MACHINISTS, MILLWRIGHTS, IRON and BRASS FOUNDERS, Phoenix Iron Works, near Stroud, Gloucestershire.**

J. & H. FERRABEE's Illustrated and Descriptive Catalogue may be had free by post on application; in which will be found particulars of their agricultural STEAM ENGINES, and their improved machinery for preparing the various products of the soil either for sale or for consumption on the farm, comprising a complete system of THRESHING and DRESSING MACHINERY; PORTABLE THRESHING, STRAW-SHAKING and WINNOWER MACHINES, for use in the field; HORSE-POWER THRESHING MACHINES, WINNOWER MACHINES, BARLEY HUMMELERS, GRINDING MILLS, FLOUR MACHINES, CHAFF and LITTER CUTTERS, CORN CRUSHERS, TURNIP CUTTERS, &c. &c.

As Millwrights of extensive practice and long experience, J. & H. FERRABEE possess peculiar facilities for the erection of all kinds of BARN MACHINERY, WATER WHEELS of every description, and FLOUR MILLS of the most approved construction; and they undertake the execution of such work to plans and estimates, which they prepare.

#### LAWN MOWING MACHINES.

J. & H. FERRABEE are the sole Manufacturers of the improved "BUDING'S" LAWN MOWING MACHINES, which are the only sort that can be used with equal ease and advantage on open unbroken lawns, between flower beds, and over narrow verges.

#### FRUIT TREES, POULTRY, RABBIT, SHEEP, AND CAT FENCING.

Worsted Netting to protect the bloom of Peach, Nectarine, and other trees, flowers, or seed-beds from frost, blight, and birds, two yards wide, 5d. per yard. New Twine Netting (tanned if required), one yard wide, 1½d. per yard; two yards wide, 3d. per yard; four yards wide, 6d.; half-inch mesh ditto, two yards wide, 6d. per yard. Tanned Netting, two or three yards wide, 1½d. per yard; four or six yards wide, 3d. per yard, or 6s. per 100 yards, one yard; 10s. per 100 yards, two yards; and 20s. per 100 yards, four yards wide. Elastic Hexagon Garden Net, or Serim Canvas, 4½d. per square yard. Cocoa Nut Fibre, or Hemp Sheepfolding Net, of superior quality, four feet high, 4d. to 6d. per yard. Rabbit Net, four feet wide, 1½d.; six feet wide, 2½d.; eight feet, 3d. per yard. Each edge corded ½d. per yard extra, suitable for poultry fencing. Square Mesh Cricketing Net, six feet wide and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c. at W. COLLINGFORD'S, No. 1, Strathmore Terrace, Shadwell London. Orders by post, with Post Office order or town reference punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Tents, Marquees, Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., made to order.

#### DOES YOUR MOTHER KEEP A MANGLE?

She cannot afford to buy one.—Well, buy MARY WEDLAKE'S, it only costs 55s. 6d. Wonderful.

**DEFEAT THE CHICORY TRICK!** A New Patent Self-acting COFFEE ROASTER, 21s. To be seen in operation at 118, Fenchurch Street, London.

**ONE-HORSE POWER or GEAR WORK**, to draw an Machinery to Cut, Grind, and Crush. Adapted for Farmer Horse-masters, and Colonists, only 12l.—Do you Bruise your Oats FLOUR MILLS, so as to be able to make your own Bread or Landing, or at Home, 4l. 10s. 6d.—Carts for the Country from 13l. and improved Implements for the Colonies.

Book on Feeding, per post, 1s. 4d.; Illustrated List, 200 Cut ditto, 1s. 4d.

MARY WEDLAKE & Co., 118, Fenchurch Street, London.

#### FOR AUSTRALIA AND THE COLONIES.—Light

cheap, and durable Roofing.

**CROGGON'S PATENT ASPHALTE ROOFING FELT** perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates; saves the timber required for slates; can be laid on with great facility by unpractised persons. Price 1d. per square foot.

**CROGGON'S PATENT NON-CONDUCTING FELT** covering steam boilers and pipes, saves 25 per cent. of fuel. Sample and testimonials sent by post on application to CROGGON & Co., 2, Dowgate Hill, London who also supply ship-sheathing felt and INODOROUS FELT for damp walls, and lining iron houses, to regulate the temperature.

#### HOLLOWAY'S PILLS FOR BILIOUS COM

PLAINTS and INDIGESTION is the best Medicine ever discovered. Extract of a letter from Mr. George Turner, Weanman Street, Birmingham, dated March 10, 1853:—"My Friend Holloway—Sir, I have to thank you for the cure which has been effected on me by your invaluable medicines. For period of about 18 months I was afflicted with violent Bilious attacks and indigestion, for which I could get no remedy although I tried various things. Finally, I resolved to try your excellent Pills, from which I received almost immediate relief and at length they effected a perfect cure. This is now some time ago, but I have experienced no relapse. Sold by Druggists, and at Professor HOLLOWAY'S Establishment, 2, Strand, London."







# ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

ANNUAL COUNTRY MEETING FOR 1853,  
FOR THE SOUTH-WALES DISTRICT, COMPRISING THE WHOLE OF SOUTH WALES, WITH THE ADDITION OF THE  
COUNTIES OF GLOUCESTER, HEREFORD, MONMOUTH, AND WORCESTER;

TO BE HELD AT THE

CITY of GLOUCESTER, in the Week Commencing MONDAY, the 11th of JULY.

## PRIZE SHEET FOR AGRICULTURAL IMPLEMENTS AND MACHINERY.

ALL PRIZES of the ROYAL AGRICULTURAL SOCIETY OF ENGLAND are Open to General Competition; Members of the Society having the Privilege of a Free Entry, while Non-Subscribers are allowed to compete on the payment of 5s. on each Certificate.

Forms of Certificate may be obtained on application to the Secretary, 12, Hanover Square, London. All Certificates for the Entry of Implements, &c., must state the total number of articles entered to be shown by each Exhibitor, and the space required for their exhibition; and they must be returned, filled up, to the Secretary, before the FIRST of MAY, 1853, the Council having decided that in no case whatever shall any such Certificate for Implements be received after that date.

## PRIZES.

No. of Prize.	£	No. of Prize.	£
1. For the Plough best adapted for general purposes ... ..	7	28. For the best Portable Steam Engine, not exceeding 6-horse power, applicable to Threshing or other Agricultural purposes ... ..	0
2. For the Plough best adapted for deep ploughing ... ..	7	29. For the second best Portable Steam Engine, not exceeding 6-horse power, applicable to Threshing or other Agricultural purposes ... ..	10
3. For the best One-way or Turn-wrest Plough ... ..	7	30. For the best Fixed Steam Engine, not exceeding 8-horse power, applicable to Threshing or other Agricultural purposes ... ..	0
4. For the best Paring Plough ... ..	5	31. For the second best ditto ditto ... ..	0
5. For the best Dynamometer, especially applicable to the Traction of Ploughs, and indicating the extent of work done ... ..	5	32. For the best Portable Threshing Machine, not exceeding 2-horse power, for small occupations ... ..	10
6. For the best Subsoil Pulveriser ... ..	5	33. For the best Portable Threshing Machine, not exceeding 6-horse power, for larger occupations ... ..	15
7. For the best Machine for making Draining Tiles or Pipes for Agricultural purposes ... ..	10	34. For the best Portable Threshing Machine, not exceeding 6-horse power, with Shaker, Riddle, and Winnow, that will best prepare the Corn for the finishing Dressing Machine; to be driven by Steam ... ..	20
8. For the best Instruments for Hand-use in drainage ... ..	5	35. For the best Fixed Threshing Machine, not exceeding 6-horse power, with Shaker, Riddle, and Winnow, that will best prepare the Corn for the finishing Dressing Machine; to be driven by Steam ... ..	20
9. For the best Heavy Harrow ... ..	5	36. For the best Corn Dressing Machine for small occupations ... ..	5
10. For the best Light Harrow ... ..	5	37. For the best Grinding Mill for Breaking Agricultural Produce into Meal ... ..	10
11. For the best Cultivator, Grubber, and Scarifier ... ..	10	38. For the best Linseed and Corn Crusher ... ..	5
12. For the best Pair-horse Scarifier ... ..	5	39. For the best Chaff Cutter, to be worked by horse or steam power ... ..	10
13. For the best Drill for general purposes ... ..	10	40. For the best Chaff Cutter, to be worked by hand power ... ..	5
14. For the best Steeple Corn and Turnip Drill ... ..	10	41. For the best Turnip Cutter ... ..	5
15. For the best Drill for small occupations ... ..	5	42. For the best Oilcake Breaker for every variety of Cake ... ..	3
16. For the best and most economical small-occupation Seed and Manure Drill for flat or ridged work ... ..	5	43. For the best ditto for Thin Cake ... ..	3
17. For the best Turnip Drill on the flat ... ..	10	44. For the best and most economical Steaming Apparatus for general purposes ... ..	5
18. For the best Turnip Drill on the ridge ... ..	10	45. For the best and most economical Machine for preparing unsteeped Flax Straw for market, by manual or other labour ... ..	10
19. For the best Dropping Machine, for depositing seed and manure ... ..	10	46. For the best Churn ... ..	5
20. For the best Manure Distributor ... ..	10	47. Miscellaneous Awards and Essential Improvements, Fourteen Silver Medals estimated at 21 ... ..	21
21. For the best Horse Hoe on the flat ... ..	5	48. For the Invention of any New Implement, such sum as the Council may think proper to award.	
22. For the best Horse Hoe on the ridge ... ..	5		
23. For the best collection of Agricultural Tools for hand-labour ... ..	5		
24. For the best Reaping Machine ... ..	20		
25. For the best Mowing Machine, for Natural and Artificial Grasses ... ..	10		
26. For the best One-Horse Cart for general purposes ... ..	5		
27. For the best Light Wagon for general purposes ... ..	10		

SPECIAL PRIZE OFFERED BY PHILIP PUSEY, Esq.

For the best Water Drill to Drill Four Rows of Turnips, with Artificial Manures, on the flat ... .. £10.

## CONDITIONS.

Prize No. 5.—The preference will be given to the Dynamometer indicating the width, depth, and length of furrow, as well as the resistance offered.

Prize No. 7.—With the Draining Tile or Pipe Machine, specimens of the tiles or pipes will be required to be shown in the yard; the price at which these have been sold must be stated, and will be taken into consideration; and proof of the working of the machine itself to be given to the satisfaction of the Judges. Every Exhibitor will be expected to bring a 2½ inches diameter, with the button or riblet 2 inches in diameter, with dies of other sizes varying from 1 to 4 inches, or larger, and buttons or riblets of corresponding dimensions.

Prize No. 13.—The Drill for general purposes will be preferred which shall possess the most approved method of distributing compost or other manure, in a moist or dry state; the power of depositing small and large quantities being especially considered. Other qualities being equal, the preference will be given to the drill which may be best adapted to cover the manure with soil before the seed is deposited.

Prize No. 16.—The Small Occupation Seed and Manure Drill will not compete with the drill of a higher price, as its cheapness to the purchaser will be a material consideration.

Prizes Nos. 17 and 18.—The Turnip Drills on the flat and ridge, respectively, will be preferred which shall possess the most approved method of distributing compost or other manure, in a moist or dry state, the power of depositing large and small quantities being especially considered. Other qualities being equal, the preference will be given to the drill which may be best adapted to cover the manure with soil before the seed is deposited.

Prize No. 20.—The Manure Distributor will be preferred which is best adapted for distributing broadcast any kind of compost or hand-tillage, when in a moist or dry state; and which is capable of adjustment for the delivery of any quantity from 5 to 40 bushels per acre.

Prize No. 28.—The Portable Steam Engine must not be more than 6-horse nominal power; the diameter of the cylinder not to exceed 8 inches. The Exhibitor will be required to furnish to the Society, along with the specification, a longitudinal and transverse sectional plan of the boiler, showing the action of the fire upon the flues; and also to state in writing the thickness and quality of the boiler plates, as well as the diameter of the cylinder, the length of stroke of the piston, the number of revolutions of the crank-shaft (with its diameter, and whether made of wrought or cast-iron), the diameter and weight of the fly-wheel, the diameter of the driving pulley, which should not be less than 5½ inches wide, nor move at a rate less than 1600 feet per minute, the number of horse-power the engine is calculated to work at, the probable time it will require to generate the steam, taking water at 60°, and raise it up to the working pressure (not to exceed 45 lbs. on the square inch), the quantity of fuel it will consume in getting up the steam, and the consumption of fuel for every hour it is in full work. The engine must be provided with a good water-gauge, and with a short piece of pipe fitted with a cock, having a thread to fit the 3-inch gas-pipe, for the purpose of fixing a pressure-gauge. Also a 2-inch cock must be attached to the steam-chest of the boiler, such cock to have the usual gas-thread for the purpose of taking steam from the boiler, should the Society require to do so. The Society will be empowered to select any engines for the purpose of driving other machinery under trial, and will pay the

Exhibitor 1s. a-day for the use of the engine and a competent attendant, during the time the service of such engine may be required. In adjudicating on the merits of the portable engines, reference will be had to the portability of the engine, without losing sight of the strength required for safety, and which will be best secured by the free use of wrought-iron in lieu of cast.

Prize No. 29.—The Fixed Steam Engine must not be more than 8-horse power, the diameter of the cylinder not to exceed 10½ inches; the Exhibitor will not be required to bring a boiler, as steam will be furnished by boilers supplied by the Society; but he will be required to fix the engine, also to find the materials for doing so, at his own expense, and in such a position in the trial-yard as may be pointed out to him. He must also furnish the Society with plans and specifications, describing fully the boiler and fittings that he would supply to his customer with the engine he exhibits. The drawings must show fully the forms of the flues, and the mode of setting the boiler; and the specification must describe the quality of the iron and the thickness of the plates in the boiler, the distance and diameter of the rivets, also the leading particulars of the engine he intends to exhibit, such as horse-power of the engine, diameter of the cylinder, length of stroke, number of strokes per minute, diameter of crank-shaft (and whether it is made of wrought or cast-iron), diameter and weight of fly-wheel, diameter of driving-pulley, which should not be less than 6 inches wide, nor travel less than 1200 feet per minute. The drawings and specifications relating to the Prize Engines will remain the copyright property of the Society. The engine exhibited must be supplied with a governor, and have a starting cock to regulate the supply of steam, and be fitted with a thread equal to the 2-inch gas-pipe. The Judges will be instructed to employ in the trial of the steam engines an apparatus known as a Force Resistor, as a test of power, such apparatus consisting of a friction break, to supply and regulate the friction required to balance the power of the engine, as well as to show the utmost resistance for any quantity of power the engine on trial may require.

Consumption of Fuel.—The quantity of fuel consumed by each engine will be strictly ascertained by the Judges.

Hand and Power Machines.—The Exhibitors of such machines as are usually worked by hand must provide and fix on them pulleys not less than 4 inches wide, such pulleys to be equal in diameter to twice the length of the winch that the machine is usually worked with. The Exhibitors of machines that require to be driven by power must fix on them pulleys of sufficient diameter and width, that they may be easily driven by straps.

Speed and Pressure.—1. All implements turned by the winch or hand-crank shall not be worked at any trial beyond the following speed, namely, 40 revolutions per minute for 12-inch crank, 35 revolutions for 14-inch crank, 30 revolutions for 16-inch crank. 2. In machinery driven by horse-power, the utmost speed that the horses shall be driven at during any trial shall not exceed 24 miles per hour, or 195 feet per minute. 3. Steam machinery shall under no circumstances be allowed to compete at any trial with a greater pressure than 45 lbs. per square inch in the boiler at which pressure it will be expected that the engine shall work up to the power declared by the Exhibitor.

\* \* \* Copies of the General Regulations, &c., of the Exhibition may be had on application to the Secretary. The Prizes and Conditions for Live Stock when finally settled will form the subject of distinct Advertisement.

London, March 19.

(By Order of the Council.)

JAMES HUDSON, SECRETARY.

## SUPERB NEW MELON.

AUSTEN'S "INCOMPARABLE" GREEN FLESH, 2s. 6d. per packet; larger do., of 15 seeds, 5s.; Golden Ball Green Flesh, do., 1s. 6d.; Bromham Hall, do., 1s.; &c. "CAPTIVATION" & "PHENOMENA" CUCUMBERS. The Two Finest Black Spines in Cultivation, in packets at 2s. 6d. each; Lord Kenyon's Favourite Cucumber (true), 2s. 6d. per packet; Victory of Bath, do., 1s.; and other good varieties. A packet of Austen's "Incomparable" Melon, a packet of Golden Ball, and one of either of the above Cucumbers will be forwarded to any part on receipt of 5s. in penny postage stamps.—For further particulars of the above, see *Gardener's Chronicle* of Feb. 5.

HOLLYHOCK SEED, selected from one of the best collections now in cultivation; 1s. 6d. per packet.

FIRST PRIZE GERMAN ASTER SEED.—This is unequalled in quality of bloom for exhibition, the seed having been saved from varieties that have taken from 40 to 50 first prizes within the last 10 years; 1s. 6d. per packet.

SWEET WILLIAM SEED, saved from upwards of 50 distinct dwarf and superb varieties; 1s. per packet.

ANTIRRHINUM SEED, from all the best shaped, striped, spotted, and brilliant varieties; and if sown now, will produce plants for blooming through the whole of the season; 1s. per packet.

Also Seed of that very scarce and delicious vegetable CROWN GOURD or CUSTARD MARROW, 1s. per packet.

N.B. A remittance must accompany the order from all unknown Correspondents, in penny postage stamps, when the whole or any quantity of the above will be forwarded free to any part.

EDWARD TILEY,

NURSERYMAN and SEEDSMAN, 14, Abbey Churchyard, Bath.

## WILLIAM HAMILTON has just received the

following NEW SEEDS:—

BEEF, FLAT BASSANO; flesh red and white, marked with zones, very sweet.  
BEEF, flat white; flesh very rich.  
CARROT, pure white transparent (short).  
LETTUCE, NEAPOLITAN; heads large like a Cabbage, very close and crisp.  
LETTUCE, SHANGHAI, from China.  
PACK-CHOI and PE-TSAI; two Chinese Cabbages.  
RADISH, Chinese, Winter; colour of flesh bright scarlet; very firm and rich flavour: a fine vegetable.  
TURNIP, yellow FINLAND; very early; grows above ground.

TURNIP, RUSSIAN; flesh ye' low, purple top: a curious kind. The above 6d. per packet; or the whole for 5s. 6d.

Abronia umbellata, Cochlearia acutifolia, Collinsia Bartisifolia, Coreopsis coronata, Ipomoea lutea, Myosotis exorita, Polanisia trachysperma, and many other new flower seeds.

The above 1s. per packet; or the whole for 7s. 6d.

Twenty-five varieties of beautiful hardy annuals for the border, with instructions for culture, forwarded free by post for 5s. 6d.; 12 varieties, 2s. 6d.; 12 varieties Perennials, 3s. 6d.

Address, WILLIAM HAMILTON, SEEDSMAN, 155, CHEAPSIDE, LONDON.

W. H.'s Priced and Descriptive Catalogue of Flower and Vegetable Seeds, Plants, &c., will be forwarded on application. Also a Priced List of the best Dahlias, Seakale, Asparagus, Potatoes, Herbaceous and bedding Plants, &c., &c.

## NEW HOLLYHOCKS.

CRIMSON PERFECTION (PAUL'S).—Rich bright crimson, good shape, splendid spike, and rather dwarf habit, a fine show flower; 7s. 6d. each. CROCEA (PAUL'S).—Buff at yellow, a bold flower of a distinct and desirable colour, large as full; 5s. each. ENCHANTRESS MAJOR (PAUL'S).—Deep rose, superb form, larger, darker, and finer spike than the variety, and decidedly a first-rate show flower; 2s. 6d. each. FIREBALL SUPERB (PAUL'S).—Brilliant rosy crimson, large, brighter, more double than the original, and with a finer spike; 2s. 6d. each. MRS. TAIT IMPROVED (PAUL'S).—Large pea soft and pleasing colour, and most desirable for its novelty and beauty; 2s. 6d. each. SHYLOCK (PAUL'S).—One of the deepest and richest scarlet crimson, and a good show flower; 5s. each.

The Subscribers, who obtained during the past year the S.P. Cup for Hollyhocks at the Edinburgh Grand Open Show, &c., first Prizes from the Royal South London Floricultural Society, Two first-class Certificates from the National Floricultural Society, and numerous other prizes, beg to offer 12 first-rate and distinct Hollyhocks, show varieties, for 30s.; 12 Superior do. do., for 12 Good do. do., 12s.; 100 Good mixtures for Borders, do. do., 12s. CARRIAGE FREE TO LONDON. Priced descriptive Catalogue by post.

A. PAUL and SON, NURSERYMEN, &c., Cheshunt, Herts, near London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in Parish of St. Pancras, and FREDERICK MULLIST EVANS, of No. 7, the Row, Stoke Newington, both in the County of Middlesex, Printers their Office, in Lombard Street, in the Precinct of Whitechapel, in City of London; and published by them at the Office, No. 3, 4, Street, in the Parish of St. Paul's, Covent Garden in the said City where all Advertisements and Communications are to be Addressed to the Editor.—SATURDAY, MARCH 19, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 13.—1853.]

SATURDAY, MARCH 26.

[Price 6d.]

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**ISLEWORTH HORTICULTURAL SOCIETY.**  
The first Exhibition of the above Society will take place on the 30th of JUNE next, when Prizes, open to all England, will be awarded for FLOWERS, FRUIT, and VEGETABLES.  
Further particulars, with Rules and Regulations, may be obtained on application to HICKSON BARONS, Hon. Sec.  
Holland House, Isleworth, March 26.

**THE SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.**—The First Exhibition of FLOWERS of the above Society will be held at the Horns Tavern, Kennington, on THURSDAY, the 28th of April, 1853, when Prizes will be offered for Collections and Class Specimens of AURICULAS, POLYANTHUSES, HEARTSEASE, CINERARIAS, &c. Members only to compete for Prizes, other persons may send Plants, Flowers, and other productions, but not for competition. First Class Certificates will be awarded to Seedling Florist Flowers, for such as may be deserving of the same.

Subscriptions, 20s. per annum, entitling each Member to the privilege of attending all Flower Shows, Lectures, and Meetings of the Society, of Exhibiting Flowers, Plants, &c., their own growth, in competition for Prizes, without any charge for entry, and also to have two free admissions for Friends at each Flower Show or Lecture. Honorary Members, 10s. per annum, will have the same privilege, with the exception of not exhibiting Plants, Flowers, &c., for competition. List of Prizes, and the Rules of Society may be had at the Horns Tavern, Kennington, and of the Honorary Secretaries, pro tem, JOHN BUSHELL, Esq., Lower Kennington Lane; WILLIAM TRAHAR, Esq., 5, Kensington Gore. Admission to Members and Honorary Members, at Two o'clock; admission to Non-members, 1s. each.

**ROYAL DEVON AND CORNWALL BOTANICAL AND HORTICULTURAL SOCIETY** (Established 1830). Under the patronage of H. R. H. the PRINCE OF WALES, DUKE OF CORNWALL (by his Council). A GRAND HORTICULTURAL FETE (Open to all England), will be held on the 8th, 9th, and 10th JUNE, 1853, on the occasion of the meeting of the Bath and West of England Agricultural Society, at Plymouth, in Grounds adjoining their Exhibition. By permission of Col. Coryton, the Band of the Royal Marines will attend.

Admission—First Day, 2s.; Second Day, 1s.; and Third Day, 6d. Subscribers of 21s. will be entitled to four Transferable Tickets for each day of the Exhibition; and those of 10s. 6d. to two Transferable Tickets, as well as Tickets for the Meeting in September.

The Prize Lists and Regulations may be had on application to Mr. PONTREY, Nurseryman, Cornwall Street, the Secretary, Finewell Street; or Mr. HEYDON, Farmer, Tavistock Street, Plymouth. NATHANIEL A. CARTON, Secretary.  
Plymouth, March 26.

## MAGNIFICENT NEW ANNUALS.

**J. CARTER, SEEDSMAN AND FLORIST, 238, High Holborn, London,** begs to inform amateurs and the trade in general that he has now received the new GOMPHRENA, imported by him from Western Mexico, which he can recommend as the most striking novelty of the season. The plant resembles the Gomphrena globosa, or Globe Amaranthus, but is decidedly a new and finer species. The flowers, of a brilliant orange, with bright yellow stigmas, literally cover the stems. To be had in packets at 1s. and 2s. 6d. each; trade packets 10s. and 20s. each, or per ounce. Also a superb new SCHIZANTHUS, from Colchagua, Andes; habit similar to Schizanthus retusus, but a new species; flowers large, and, from the specimens received, apparently of a rich blue. This will also prove a great acquisition. Price 1s. and 2s. 6d. per packet; trade packets 10s. each.  
JAMES CARTER, Seedsman and Florist, 238, High Holborn.

## POLYANTHUS SEED.

TO THE LOVERS OF THAT BEAUTIFUL EARLY SPRING FLOWER—THE POLYANTHUS.

**JAMES WOODS** has again this year a large quantity of Polyanthus Seed, which he can recommend with confidence, saved from none but named and good laced flowers. Price 1s. per packet, or sent free on receipt of 13 postage stamps to JAMES WOODS, Florist, Harwich, Essex.

## CHOICE FLOWER ROOTS FOR SPRING PLANTING.

RANUNCULI, superb, named and mixed.  
ANEMONES  
GLADIOLI, famous and grandavens Varieties.  
LILUM LANCIFOLIUM, album and rubrum.  
TIGRIDIA (or Tiger Iris), 4 superb varieties.  
For assortments and prices of the above, see Advertisement in *Gardener's Chronicle* of Jan. 29, and Feb. 5 and 12; and also for List of Bulbs for Spring Planting, see our Seed and Plant List for 1853, page 16.  
BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

## PELARGONIUMS AND NEW PLANTS.

**HENRY GROOM, Clapham Rise, near London,** by appointment FLORIST to HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the Nobility, Gentry, and Amateurs, that his Spring CATALOGUE of PELARGONIUMS AND NEW PLANTS is ready, and will be forwarded by post on application.

**AUGUSTUS VAN GEERT, NURSERYMAN, Ghent,** Belgium, begs to inform Amateurs and the Trade, an extract of his Choice Collection of Plants is just published, which may be obtained by application to Mr. R. STEUBER, 5, Harp Lane, Great Tower Street, London.

## STRAWBERRY PLANTS.

**CUTHILL'S BLACK PRINCE, 5s. per 100;**  
Cuthill's Prince of Wales, 20s. per 100; fine Lianthus plants, 3s. 6d. to 5s. each; Cucumber Plants, &c. Cuthill's Pamphlet on the Potato, &c., 2s., or by post 2s. 4d. Cuthill on Market Gardening Round London, 1s. 6d.; by post 1s. 8d. Cuthill's Gas Stove can be had of Hood and Co., Iron Merchants, Earl-street, Blackfriars, London. Price 15s. Post-office orders on Cambridge, green.—JAMES CUTHILL, Camberwell, London.  
P.S. The Black Prince Strawberry was gathered this year by Mr. Bonnet, of Dulwich, three weeks before Keene's Seedling, and bears forcing well, having an enormous crop during February and March.

## AMERICAN NURSERY.

**GEORGE BAKER, Windlesham, near Bagshot, Surrey,** Exhibitor of American Plants at the Royal Botanic Gardens, Regent's Park, begs to inform the nobility and public that he has published a Descriptive CATALOGUE of AMERICAN PLANTS, Conifers, Roses, Ornamental Shrubs, &c. &c., and may be obtained by enclosing two postage stamps. Near Staines Station, Windsor Branch, South-Western Railway.

**CHARWOOD AND CUMMINS** beg to announce that they have received their importation of AMERICAN TREE and SHRUB SEEDS. Catalogues of which, as also of Agriculture, Garden, and Flower Seeds, will be forwarded on application.  
14, Tavistock Row, Covent Garden, London.

## FLOWER SEEDS FREE BY POST.

50 Packets of Annuals, 8s. 6d.; 25 do., 4s. 6d.; 12 do., 2s. 6d. 25 Packets of Superior Annuals, 5s. 6d.; 12 do., 3s. 25 Packets of Perennials and Biennials, 5s. 6d.; 12 do., 3s. Also every variety of KITCHEN GARDEN SEEDS of the best quality.—Apply to ROBERT WESTMACOTT, Florist and Seedsman, Stuart's Grove Nursery, Fulham Road, Chelsea.

**THE ROYAL MOSS-POD PEA.**—The attention of horticulturists and of the public in general is called to this new and peculiar PEA, as being surpassed by none in exquisite flavour and colour on table; it is at the same time highly productive. To be had only of Mr. DENNIS, West Court, Dettling, Maidstone, at 2s. 6d. per quart, and will be forwarded in any quantity (not less than a quart), to all parts of the kingdom, on receipt of postage stamps or post-office order for the amount.

**THE GIANT SAINFOIN.**—True Giant Sainfoin Seed, of fine quality, may be had, price 10s. 6d. per bushel, of JOHN SUTTON & SONS, Seed Growers, Reading, Berks. Also, TRUE WHITE BELGIAN CARROT, YELLOW GLOBE, and other MANGOLD WURZEL. Choice Stocks of SWEDS and other TURNIPS, with Instructions for Cultivation of Root Crops.

**LARGE WHITE BELGIAN CARROT, Select Stock** ... 1s. 6d. per lb. **LARGE RED ALTHINGHAM** Ditto ... 1s. 6d. per lb.

TURNIPS, in all the varieties of Swedes, Yellows, and Whites, worthy of cultivation. The Stocks of these have been greatly improved by raising the seed from large picked bulbs. With every other description of Agricultural Seeds, priced Lists of which may be had post free on application.

W. DRUMMOND & SONS, SEEDSMEN, Agricultural and Horticultural, Stirling, &c. Carriage of Seeds prepaid to many of the principal Shipping Ports and Railway Stations throughout the kingdom.

## IRELAND.

**NEW SEEDS, 1853.**—The SUBSCRIBERS have had the honour of supplying several hundreds of the first families in Ireland for many years. The transit from this Port to the various Ports in Ireland is quick and expeditious, and the cost is very moderate. The Port of Plymouth is therefore well situated for commercial transactions with our sister country.

The Carriage of all Orders above £2 is PAID to the following Sea-ports:

DUBLIN	CORK
BELFAST	LIMERICK.

Steamers are continually running from the GREAT WESTERN DOCKS (within a rifle shot of our Union Road Establishment), to the above-named Ports.  
For particulars and Catalogues, apply to WILLIAM EDGUMBE RENDEL & CO., Seed Merchants, Plymouth.  
ESTABLISHED MORE THAN HALF A CENTURY.

## TO FLORISTS, NURSERYMEN, ETC.

**BETHAM AND BLACKITH, Cox's Quay, Lower Thames Street, London,** beg to announce that the CATALOGUE of PLANTS of Mr. J. LINDEN, of Brussels, for 1853, containing all the new and rare varieties, may now be had gratis on application as above.—March 26.

## SALE OF NURSERY PLANTS.

**PETER BOOTH, NURSERYMAN, Falkirk,** is selling off, at very cheap prices, a large general Stock of Transplanted and Seedling Nursery Plants, and in particular a very large Stock of Transplanted LARCH FIRS of various sizes, of most excellent quality, and cheaper than at any other Nursery. As the Advertiser wishes to retire from business, a Lease of all his Nursery Grounds (which belong to himself), and every encouragement would be given to a purchaser of the above stock, of which a great bargain could be got; and the Goodwill of the Business, which has been carried on by his relatives for more than 70 years past, and with great success, as the Nursery Grounds are situated in a very favourable locality for the Nursery Business. Should a Purchaser not be found, a Partner, with some capital and a good knowledge of the business, would be agreed with.

## THORN QUICK.

**WANTED,** a quantity of one or two years THORNS, also one year ASH.—Address, stating price, to R. S., care of Messrs. Hurst and McMullen, 6, Leadenhall Street, London.

**LIME TREES, 8 to 12 feet high.**—Several Thousands of the above for Sale, at 30s. per 100. Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

**ASH-LEAF POTATOES,** all good set size, 5s. per bushel. JACKSON'S Improved Kidneys, ditto. Early Shaws and Early Profites, 2s. 6d. per bushel.—Apply to Mr. B. CANT, Nurseryman, Colchester, Essex.

## FLOUR BALL POTATOES FOR SALE.

Of first-rate quality, in quantities of not less than 10 pecks, at 2s. per peck. Application to be made to WILLIAM BECKETT, Welham, Retford, Notts.  
Post Office orders, made payable at Retford, must accompany all orders.

## HORTICULTURAL SOCIETY OF LONDON.

### PRIVILEGED TICKETS.

The Exhibitions will take place on the Second Saturdays in May, June, and July, namely—

MAY 14, JUNE 11, JULY 9.

All Fellows who shall apply, on or before Tuesday the 26th of April, may obtain, at the rate of Three Shillings and Sixpence each, any number of tickets not exceeding FORTY-EIGHT; but no application for such tickets will be received after that day. Fellows of the Society subscribing for tickets at this price will be allowed a clear week from the 26th of April during which they may claim them. AFTER THAT PERIOD ALL THE 3s. 6d. TICKETS SUBSCRIBED FOR, BUT NOT ISSUED, MAY BE CANCELLED.  
After the 26th of April, any further number of tickets will be delivered to Fellows on their personal application or written order, at the price of Five Shillings each ticket.

**SPECIAL PRIVILEGE OF FELLOWS.**—Fellows of the Society enter free at half-past 12, and can introduce two friends WITH TICKETS; or the Fellow's privilege may be transferred to a brother, sister, son, daughter, father, mother, or wife, residing in the Fellow's house, provided the person to whom the transfer is made be also furnished with a ticket signed by that Fellow. That is to say, the privilege of entering early may be transferred, but not the privilege of FREE admission.

## HORTICULTURAL SOCIETY OF LONDON.

The attention of persons residing in the country is directed to the following Notice.—A SILVER BANKSIAN MEDAL and a CERTIFICATE OF MERIT are offered for the best Exhibitions of FRUITS or VEGETABLES, preserved whole, by private persons for family use, without sugar or vinegar (shown in bottles of white glass, one bottle of each kind), accompanied by a written account of the manner in which they have been prepared. To be delivered by 10 A.M., at the Society's Office, 21, Regent Street, on Tuesday, April 5.

## NATIONAL FLORICULTURAL SOCIETY, 1853.

### PRESIDENT.

EDMUND FOSTER, Esq., Clewer Manor, near Windsor.  
VICE-PRESIDENTS.  
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R. C. Fellowes, Norwich  
Dr. Lindley, 21, Regent Street  
C. B. Marne, Esq., Regent's Park  
R. B. Warner, Esq., Hoddesden  
J. Wilmore, Esq., Birmingham

### TREASURER.

Mr. Arthur Henderson, Pine Apple Nursery, Edgeware Road, London.

### COMMITTEE.

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— Barnes, Stomarket	— Lane, Berkhamstead
— Bragg, Slough	— Lidgard, Hammersmith
— Clarke, Streatham	— Lochner, Paddington
— Colman, Norwich	— Moore, Chelsea
— Cook, Notting Hill	— Newton, Isleworth
— Dean, St. John's Wood	— Paul, Cheshunt
— Dobson, Isleworth	— Pearson, Bishopsgate Street
— Fraser, Lea Bridge	— Perry, Birmingham
— Glendinning, Turaham Green	— Procter, Brompton
— Goldham, Sydenham	— Rivers, Sudbury
— Hamilton, Chesham	— Robinson, Pimlico
— Hamp, South Lambeth	— Rowland, Lewisham
— Headley, Stapleford	— Salter, Hammersmith
— Henderson, Wellington Rd	— Smith, Hornsey Road
— Holmes, Hackney	— Stains, Marylebone
— Hoyle, Reading	— Turner, Slough
— Ivory, Peckham	— Veitch, Exeter
	— Wilkinson, Ealing

### ASSISTANT SECRETARY AND COLLECTOR.

Mr. William Braidford, 21, Regent Street, London.

### HONORARY SECRETARY.

Mr. John Edwards, Water Cottage, Holloway, Middlesex.

### FINANCE COMMITTEE.

The Treasurer, C. P. Lochner, Esq.  
R. Staines, Esq.

### JOURNAL COMMITTEE.

Mr. John Salter, Mr. Andrew Henderson  
Mr. William Dean, Mr. Thomas Moore

### AUDITORS.

Mr. C. P. Lochner, Mr. Charles Lidgard

Subscription One Guinea per annum; Gentlemen's Gardeners, 5s. a Guinea.

### EXHIBITION DAYS.

Thursday, April 7, 21  
— May 5, 26  
— June 16, 29  
— July 14, 28

### 1854.

Thursday, January 14  
— February 11  
— March 4, 18

**ANNIVERSARY, MARCH 4, 1853.**

**RULE 13.**—That ALL FLOWERS be eligible for examination contributed by MEMBERS or NON MEMBERS, WITHOUT ENTRANCE FEES.

**NOTE.**—All subjects for examination must be entered and signed before 1 o'clock; the awards made known at 3 o'clock.

March 26, JOHN EDWARDS, Hon. Sec.



## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his CATALOGUE of the above plants, Roses, Conifers, &c., is now published, and may be obtained by enclosing two postage stamps. The colours of all the Rhododendrons worthy of cultivation are described, in order to facilitate purchasers in selecting.

\* The Rhododendrons, Azaleas, &c., annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

The American Nursery, Bagshot, Surrey, three miles from Blackwater Station, South-Eastern Railway, and four miles from Farnborough, South-Western Railway.

## THE BLACK BARBAROSSA.

"A GRAPE THAT DON'T KNOW HOW TO SHANK."

**JOHN BUTCHER** begs to inform Grape Growers requiring late Grapes through January, February, March and April, that the above will be in fine condition, as plump and fresh as the best new Grapes possibly can be; see *Gardener's Chronicle*, March 13, p. 182. Fruiting plants, 10s. 6d.; good plants, 5s. 6d. each, may be obtained of Messrs. Dowe, Cottrell, and Benham, 36, Moorgate Street, London; and of JOHN BUTCHER, Nurseryman, Stratford-on-Avon.

Samples of Berries sent on receipt of 12 postage stamps.

## GRASS SEEDS.

**J. C. WHEELER AND SON, SEEDSMEN to the GLOUCESTERSHIRE AGRICULTURAL SOCIETY**, beg to offer the following GRASS SEEDS, which have been well harvested, well cleaned, and which they can warrant to be of the very best quality.

We have for some time paid considerable attention to Grass Seeds, and especially to mixing them in such proportions as the nature of the soil and other local circumstances may require, so as to form fine pastures. Having had much experience in this branch of our business, and the Grass Lands we have laid down having given great satisfaction, it is with much pleasure that we can recommend a fine mixture of the best Grasses and Clovers, suitable for the formation of a rich permanent pasture, from 25s. to 30s. per acre.

For improving the quality of Grasses already laid down, we can supply a good mixture at 1s. per lb.

For the information of those gentlemen who would prefer buying the varieties separately, and mixing them themselves, we have given a short description of some of the best sorts. About two bushels of the larger or light seed, and 12 lbs. of the small or heavy seed, is the quantity usually sown to the acre.

**ITALIAN RYE-GRASS**, imported seed, per bushel ... 7s. 6d. Too much cannot be said in favour of this excellent Rye-grass. Compared with any other of the varieties of common Rye-grass, the Italian affords a stronger braid, arrives sooner at maturity, has a greater abundance of foliage, and of a lighter and more lively green colour; grows considerably taller, is more upright, or less inclined to spread on the ground. Another of its distinguishing characteristics is, that it is much preferred by cattle to any of the common sorts, and is greedily eaten by them, whether green or dry.

**PERENNIAL RYE GRASS**, per bushel ... 6s. **MEADOW CATSTAIL**, per lb. ... 10s. **TIMOTHY GRASS** (*Phleum*), per lb. ... 10s.

The Timothy Grass possesses the advantage of affording double the quantity of nutriment when its seeds are ripe, that it does if cut when in flower. On strong, tenacious, and rather moist soils, it is entitled to a precedence almost to any other, and should at least form a considerable portion of the mixture employed for sowing down such, either for alternate husbandry or permanent pasture.

**MEADOW FOXTAIL GRASS** (*Allopecurus pratensis*), per lb. ... 1s. 6d.

This is one of the earliest and best of Pasture Grasses, but not so well adapted for hay, as it produces but few stalks; its root leaves are very broad, long, soft, slender, and grow rapidly when cut, or when eaten down by live stock. It requires two or three years after sowing to arrive at full maturity.

**ROUGH Cocksfoot** (*Dactylis glomerata*), per lb. ... 1s. Is a valuable Grass in cultivation, on account of the great quantity of produce which it yields, and the rapidity with which its leaves grow after being cut. It is well adapted for growing in shady moist places under trees, as in orchards, &c.

**MEADOW FESCUE GRASS** (*Festuca pratensis*), per lb. ... 1s. This is an excellent Grass, either for alternate husbandry or permanent pasture, but more particularly the latter. It is well liked by all kinds of domestic herbivorous animals.

**SHEEP'S FESCUE** (*Festuca ovina*), per lb. ... 10d. This Grass forms the greater part of the Sheep pastures of the Highlands. In quantity of produce it is much inferior to the other cultivated Fescues; but, from being well liked by Sheep, it should always enter into the composition of mixtures for lands on which they are to be pastured. In fact, on the authority of Linnaeus, these animals have no relish for hills, and heath which are destitute of this Grass.

**HARD FESCUE GRASS** (*Festuca duriuscula*), per lb. ... 1s. Will thrive on a great variety of soils, and is found to resist the effect of severe drought in summer, and to retain its verdure during winter, in a remarkable degree. From the fineness of its foliage and greenness in winter, it is well adapted for sowing in Parks, especially for Sheep pasture.

**WOOD MEADOW GRASS** (*Poa nemoralis*), per lb. ... 1s. 3d. Its habit of growth is delicate, upright, close, and regular. There is no Grass better adapted for Pleasure Grounds, particularly under trees, as it will not only grow in such places, but forms a fine sward where few of the other fine Grasses can exist. It produces a considerable deal of foliage early in spring.

**ROUGH-STALKED MEADOW GRASS** (*Poa trivialis*), per lb. ... 1s.

This is a valuable Grass as a mixture for Pasture Lands, particularly on damp soils. Its habit of growth fits it for mixing along with the upright growing sorts, such as the Italian Rye-grass.

**SMOOTH-STALKED MEADOW GRASS** (*Poa pratensis*), per lb. ... 1s.

This Grass yields a large quantity of herbage at a very early period of the season.

**SWEET-SCENTED VERNAL GRASS** (*Anthoxanthum odoratum*), per lb. ... 2s. 6d.

This Grass yields but a scanty portion of herbage, yet, on the whole, permanent pasture should not be without a mixture of it, particularly in Park and Pleasure Grounds, were it for no other reason than the pleasant scent, not only when cut for hay, but also when its seeds become nearly ripe.

**CRESTED DOGSTALL GRASS** (*Cynosurus cristatus*), per lb. ... 1s.

From this Grass forming a close turf, and having rather fine foliage, it may be advantageously sown on Lawns and other places, to be kept under by the scythe.

**LAWN GRASS SEED**, per lb. ... 1s. By sowing this Grass a fine sward may be obtained in a short time, at one quarter the expense of laying down turf. It is a selection of the finest Grasses, and is entirely free from weeds. We can strongly recommend it to those about to form Lawns or Pleasure Grounds.

\* For some of the above descriptions we are indebted to Lawson's "Agriculturist's Manual."

**J. C. WHEELER & SON** deliver their Seeds CARRIAGE FREE to most of the principal Railway Stations in England.

**J. C. WHEELER & SON**, Nurserymen, Gloucester.

## SEEDS CARRIAGE FREE.—SEE BELOW.

## NEW FARM SEEDS—1853.

**RENDLE'S NEW CATALOGUE** is just published, and can be had on application, in exchange for 1d. stamp.

It contains descriptions of all kinds of Agricultural Seeds, with prices for every article, and will be found very useful to all Agriculturists, and those who take an interest in the cultivation of the soil.

**EVERGREEN RYE-GRASS, or DEVON EVER.**—This is a most valuable Grass for permanent pasture, and should be sown on all land where a fine Perennial and Evergreen Grass is required.

The Subscribers have contracted with some large growers in this County (Devonshire), and can supply the genuine article, free from noxious weeds, at 6s. per bushel.

**TRUE MARL or COW GRASS.**—The West of England is famous for this excellent variety of Cow Grass, which is of very permanent duration, and can be obtained GENUINE at the lowest market price.

**PERMANENT PASTURE GRASS SEED**, in mixtures to suit various soils and situations, at the lowest prices.

The Subscribers have devoted much care and attention to this particular branch of the Seed Trade; and the large and increasing patronage they are daily receiving is the best proof they can offer of the quality and genuineness of the Seeds they supply.

**FINE LAWN GRASS**, for Lawns, Pleasure Grounds, or Ornamental Parks.—The very finest Evergreen Grasses are selected for this purpose, and a fine sward will be obtained in a very short time, at less than a quarter the price of laying down Turves. Price 20s. per bushel; 3s. per gallon; or 1s. 3d. per lb.

**TRUE ITALIAN RYE-GRASS.**—The Subscribers have a very large stock, and if a quantity above 10 bushels is taken, the price will be reduced to 5s. per bushel.

**LARGE ALTRINGHAM CATTLE CARROT.**—The Subscribers can offer more than 2 tons of this excellent variety, at 50s. per cwt., or 6d. per lb.

**MANGOLD WURZEL**, all the varieties, 1s. per lb.

**BISHOP'S LAST and BEST PEA**, for field culture, 15s. per bushel, or 2s. 6d. per gallon.

**SCOTCH PERENNIAL RYE-GRASS**, 5s. per bushel; or 4s. per bushel, if a quantity above 20 bushels be taken.

**GRANITIC SEED BARLEY**, grown by George W. Fowler, Esq., on Dartmoor, at an elevation of 1100 feet, saved last autumn in brilliant weather. 6s. per bushel.

All Orders for Seeds above £2 will be delivered CARRIAGE FREE to most of the Steam Ports in England and Ireland, and all the Railway Stations in the South and West of England.

For Catalogues and particulars apply to **WILLIAM E. RENDLE & Co.**, Seedsmen by appointment to the South Devon Agricultural Society, and Royal Agricultural Society, Prince Edward's Island.

## SPECIAL CONTRACTS.

Noblemen, Clergymen, or Gentlemen requiring large quantities, special contracts can be made at a great reduction in price.

## GRAYSON'S IMPROVED GIANT ASPARAGUS.

**DAWE, COTTRELL, and BENHAM** (successors to **FREDERICK WARNER**) have a large stock of the above, two-year-old plants, 5s. per 100, with printed instructions for Cultivation.

Mitchell's Royal Albert Rhubarb ... 12s. per dozen.  
Myatt's Victoria do. ... 9s. "  
" Prince Albert do. ... 12s. "  
" Linnaeus do. ... 12s. "  
They also beg to offer the following New and Choice

## FLOWER SEEDS.

Per packet—s. d.	Per packet—s. d.
Abronia umbellata ... 1 0	Gaurolepis Tagetes ... 1 0
Aretotis breviscapa ... 0 6	Grammanthes gentianoides ... 1 0
Aster, Giant-quilled, very splendid ... 1 0	lutea ... 1 0
Collinsia Bartsiifolia ... 1 0	Eucenoide Bartonoides ... 1 0
Cenia turbinata ... 1 0	Mignonette, new large ... 1 0
" multicolor ... 1 0	flowering ... 0 6
Gauria Lindhemaria ... 1 0	Cineararia and Calceolaria ... 1 0

See descriptive list to be had on application. (Established at 28, Cornhill, 1720.) 36, Moorgate Street; and 3, Laurence Pountney Lane, City.

## STANDARD &amp; PYRAMIDAL FRUIT TREES.

**WILLIAM WOOD AND SON**, in order to make room for a new and very extensive Plantation of Roses, have come to the determination of clearing off a large overstock of Standard Fruit Trees; the plants are remarkably strong and healthy, and comprise the most esteemed sorts in cultivation.

Apples, Standards ... 10s. per dozen.  
Pyramidal Trees ... 8s. "  
Pears, Standards ... 15s. "  
Pyramidal Trees, very fine ... 12s. "  
On Quince stocks (pyramidal trees) ... 18s. "  
Plums, Standards, very strong ... 12s. "  
Pyramidal Trees ... 9s. "  
W. W. & Son have still on hand a fine stock of the leading kinds of Roses.

N.B. Extra plants presented with each order to compensate for carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

## SUPERB NEW MELON.

**AUSTEN'S "INCOMPARABLE" GREEN FLESH**, 2s. 6d. per packet; larger do., of 15 seeds, 5s.; Golden Ball Green Flesh, do., 1s. 6d.; Bromham Hall, do., 1s.; &c.

"CAPTIVATION" & "PHENOMENA" CUCUMBERS.

The Two Finest Black Spines in Cultivation, in packets at 2s. 6d. each; Lord Kenyon's Favourite Cucumber (true), 2s. 6d. per packet; Victory of Bath, do., 1s.; and other good varieties. A packet of Austen's "Incomparable" Melon, a packet of Golden Ball, and one of either of the above Cucumbers will be forwarded to any part on receipt of 5s. in penny postage stamps.—For further particulars of the above, see *Gardener's Chronicle* of Feb. 5.

**HOLLYHOCK SEED**, selected from one of the best collections now in cultivation; 1s. 6d. per packet.

**FIRST PRIZE GERMAN ASTER SEED.**—This is unequalled in quality of bloom for exhibition, the seed having been saved from varieties that have taken from 40 to 50 first prizes within the last 10 years; 1s. 6d. per packet.

**SWEET WILLIAM SEED**, saved from upwards of 50 distinct dwarf and superb varieties; 1s. per packet.

**ANTIRRHINUM SEED**, from all the best shaped, striped, spotted, and brilliant varieties; and if sown now, will produce plants for blooming through the whole of the season; 1s. per packet.

Also Seed of that very scarce and delicious vegetable **CROWN GOURD** or **CUSTARD MARROW**, 1s. per packet.

N.B. A remittance must accompany the order from all unknown Correspondents, in penny postage stamps, when the whole or any quantity of the above will be forwarded free to any part.

**EDWARD TILEY,**

NURSERYMAN and SEEDSMAN, 14, Abbey Churchyard, Bath.

## BASS AND BROWN'S SEED AND PLANT LIST

FOR 1853, free, for three penny stamps. Also, the AUTUMN CATALOGUE for three penny stamps, which contains the Roses, Herbaceous Plants, Hollyhocks, and other select Hardy Plants and Shrubs, Fruits, &c.; also the Cinerarias, Azalea Indica, &c.

## VEGETABLE SEEDS.

ASSORTED COLLECTIONS OF THE FINEST QUALITY.

Time of sowing and other information is furnished in the Catalogues, also the sorts and quantities of the No. 1, 2, and 3 Collections. If any sorts are not wished for, enlarged quantities of others furnished to make up the amount.

No. 1. Collection of largest quantities of choice and £ s. d.  
new sorts ... 2 10 0  
No. 2. Collection of smaller quantities ... 1 10 0  
No. 3. Collection of do. ... 1 0 0  
No. 4. Collection of fine and esteemed sorts ... 0 10 6

## FLOWER SEEDS—BEST ASSORTMENTS.

Free by post, with cultural instructions.

The Catalogue gives height, colour, months of flowering, hardiness, duration, &c.

For an Abridged List of New Varieties, with a few not included in the Catalogue, see *Gardener's Chronicle* of January 29th and February 12th.

100 varieties, select showy Annuals, including the newest 15 0  
50 varieties, ss. 6d.; 30 varieties, ss. 6d.; 20 varieties ... 4 0  
20 varieties, best Dwarf Annuals, in large packets, for filling beds on lawns, &c., 7s. 6d.; 12 varieties ... 5 0  
20 varieties choice Greenhouse Annuals ... 7 6  
12 varieties do. do. ... 5 0  
20 varieties choice Greenhouse Perennials ... 10 6  
12 varieties do. do. ... 7 6  
20 varieties choice hardy Biennials and Perennials ... 7 6  
12 varieties do. do. ... 5 0

## IMPORTED GERMAN SEEDS, in separate colours, very double.

24 superb varieties Dwarf Stocks, 4s.; 12 varieties ... 2 6  
10 superb varieties new large flowering Stocks ... 2 6  
15 superb varieties Wallflower-leaved do. ... 3 6  
New white Wallflower leaved, very fine, 6d.; large pkt. 1 0  
6 superb varieties Autumn Brompton Stock ... 1 6  
8 superb varieties Emperor Stock ... 2 0  
New White Emperor do., very choice, per packet ... 1 0  
12 superb varieties German Aster ... 2 0  
12 superb varieties Globe flowering ... 2 0  
12 superb varieties Pyramidal ... 2 0

Also superb double imported Wallflower, Larkspur, Balsam, Senecio-elegans, Cock's-comb, Sweet William, &c. See Catalogue. Remittances requested from unknown Correspondents. Post Office Orders payable to **STURGES BROWN**, or the Firm.

In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods to the amount of 20s. and upwards, free to all the Stations in London; also free, as before, to all Stations on the London and Norwich Line, via Colchester.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## GRASS SEEDS, SEPARATE OR MIXED, CARRIAGE FREE.

**SUTTON AND SONS** having for many years paid especial attention to the laying down Land to Permanent Pasture, are well acquainted with the various soils of most parts of the United Kingdom, and the Natural Grasses and Clovers suitable for each locality.

The following sorts may be had separate or mixed, at lowest market prices. All the best and most suitable of them are contained in our Mixtures for the several purposes described below.

<i>Allopecurus pratensis</i>	<i>Festuca luteifolia</i>	<i>Poa trivialis</i>
<i>Anthoxanthum odoratum</i>	<i>Festuca hirtelliformis</i>	<i>Poa nemoralis</i>
<i>Agrostis stolonifera</i>	<i>Glyceria hibernica</i>	<i>Poa angustifolia</i>
<i>Avena flavescens</i>	<i>Glyceria aquatica</i>	<i>Poa fertilis</i>
<i>Achillea millefolium</i>	<i>Holcus lanatus</i>	<i>Poa sempervirens</i>
<i>Cynosurus cristatus</i>	<i>Holcus avenaceus</i>	<i>Phleum pratense</i>
<i>Dactylis glomerata</i>	<i>Lolium italicum</i>	<i>Phleum majus</i>
<i>Festuca duriuscula</i>	<i>Lolium perenne tenuis</i>	<i>Phleum pratense</i>
<i>Festuca elatior</i>	<i>Lolium perenne</i>	<i>Pteridium aquilinum</i>
<i>Festuca gigantea</i>	<i>Poa annua</i>	<i>Poa annua</i>
<i>Festuca heterophylla</i>	<i>Poa annua</i>	<i>Poa annua</i>
<i>Festuca pratensis</i>	<i>Poa annua</i>	<i>Poa annua</i>
<i>Festuca ovina</i>	<i>Poa annua</i>	<i>Poa annua</i>
<i>Festuca rubra</i>	<i>Poa annua</i>	<i>Poa annua</i>

## MIXTURES FOR LAYING DOWN LAND TO PERMANENT MEADOW OR PASTURE.

Mixed expressly to suit the soil, according to whether it is heavy, light, or medium. The sorts contained in these Mixtures are grown in different localities, and gathered separately by the hand, expressly for this purpose, by which means all noxious weeds are excluded. They consist of the most nutritive kinds of Fescues, Poas, Sweet Vernal, Perennial Clovers, Loliums, &c., and each sort being kept separate, they are subsequently mixed in such sorts and proportions as are most suitable to the soil to be laid down. These Seeds can now be supplied for 24s. to 30s. per Acre, according to the sorts which the soil may require. The quantity we usually supply is 2 Bushels of light Seeds and 12 lbs. heavy Seeds per acre; but if coarser Grasses, which have larger Seeds, 3 Bushels or more would be necessary.

Also, **SUTTON'S RENOVATING MIXTURE OF CLOVERS and FINE GRASSES**, for improving old Pastures, price 1s. per lb. 8 to 12 lbs. being sufficient per acre.

There are now but few Counties in England wherein Pastures may not be seen which have been formed with our Mixtures of Grass Seeds; it may therefore appear superfluous that we should publish anything in the way of testimonials. We will, however, quote the following from among many other letters now before us:—

From P. Pusey, Esq., Pusey, February 11, 1850.

"I was particularly pleased with your Grass Seeds, which I employed for laying down fresh broke land. It became a close, fine sward by August."

From the Rev. A. Huxtable, Nov. 19th, 1852.

"Mr. Huxtable has the pleasure of acquainting Messrs. Sutton that their Grass Seeds of 1851 have turned out admirably."

From the Rev. J. Lawson Sison, Edingthorpe Rectory, Nov. 10th, 1852.

"I have one piece of land, sown last May with your permanent Grass Seeds, and no one can possibly tell it from an old meadow, save in the absence of weeds. I have had a great deal of feed from it also."

From Mr. J. A. Langford, Steward, Stonor Park, Henley-on-Thames.

"Your perennial Grass Seeds, supplied to Lord Camoys some five years since, now afford a pasture that is the general admiration of the neighbourhood for its early springing, and the fineness and luxuriance of its herbage."

In several of the above instances the land laid down was heavy clay, and others so poor and gravelly as to be quite unprofitable as arable land. Our present prices are from 24s. to 30s. per acre, as above.

We have also a superior Stock of Turnip Seeds, Mangold Wurzel, Carrot, and other Agricultural Seeds, Catalogues of which will be forwarded on receipt of one penny stamp.

**JOHN SUTTON & SONS**, Seed Growers, Reading, Berks.

Goods Delivered Carriage Free.



## IMPROVEMENT OF GRASS LANDS.

**SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES.**—Many Old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanted. If the Seeds are sown early in the Season, the improvement in the Pasture will be very considerable, and at a small expense.

The following is similar to many other Letters received from former Purchasers.

From D. T. Gunningham, Esq., Wellesbourne, Warwick, Nov. 1852. "The meadows that were renovated with your Seeds are looking very well. I cut nearly two tons of hay to the acre, and three years ago the same land hardly produced half a ton per acre. The Garden Seeds I have had from you exceed by far any that I have bought elsewhere."

Quantity of Seed required, 8 lbs. to 12 lbs. per Acre. Price 1s. per lb. Carriage Free.

Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks. N.B. We have a very fine Stock of Mangold Wurzel and Carrot Seed.

## FRUIT TREES, HARDY CLIMBERS, HARDY SHRUBS AND TREES, HARDY BULBS, GREENHOUSE PLANTS, HERBACEOUS PLANTS, CONIFERÆ, &amp;c.

**YOUELL AND CO.** beg respectfully to refer the readers of the *Gardeners' Chronicle* to their Advertisement of the above, which appeared on the 12th inst. and to add that they are now sending out beautiful selections from their choice and extensive collection of

CARNATIONS, PICOTÉES, PINKS, AND PANSIES,

in strong and healthy plants, at the following prices:—

25 pairs of superb varieties of Carnations and Picotées, by name	3 s. 0 d.
12 do. do. do. do. do. do.	1 10 0
12 do. do. do. do. do. do.	0 18 0
Fine mixed border do. do. per dozen pairs	0 9 0
True old Clove Carnation	0 12 0
12 pairs of fine Pinks, by name	0 12 0
Pansies, all the newest and very best show flowers, p. doz.	0 12 0
Do. fine do. per dozen	0 6 0
30 Packets of Newest and Choicest Flower Seeds, including all the most showy kinds, post free, for 5s.	

All Orders of 2l. and upwards delivered free to any Railway Station within 150 miles of the Nursery.

Royal Nursery, Great Yarmouth.

## NEW AND CHOICE FLOWER SEEDS.

FREE BY POST.

**MESSRS. WHEELER AND SON** have selected out of their large collection of Flower Seeds the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds, or groups in the flower-garden. They have marked each variety with its Botanical and English name—Height—Time of Flowering—Colour of the Flower—Manner of Growing—Whether Erect or Trailing, &c.—the Time it should be sown, and with other valuable Hints as to its cultivation.

In selecting these varieties care has been taken to exclude all shy-bloomers, or such as have an insignificant appearance, so that the collections will comprise only those which are really showy and handsome, and will prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The GERMAN STOCKS, ASTERS, ZINNIA, LARKSPURS, &c., are most superb. The collections will be sent free by post to any part of the Kingdom at the following prices:—20 Extra Fine Varieties, all distinct, 5s.; 50 ditto ditto, 10s. 6d.; 100 ditto ditto, 20s.

J. C. WHEELER & SON, 99, Northgate Street, Gloucester. Nurserymen and Seedsmen to the Gloucestershire Agricultural Society.

## PHLOX DELECTA.

**ROBERT SIM** begs to offer the above very distinct and fine hybrid Perennial PHLOX, with which he has been favoured by the raiser, A. Clapham, Esq., of Scarborough. It produces a profusion of perfectly shaped rich crimson flowers from July till late in the autumn, and will prove a very acceptable addition to the flower-garden. Flowers sent to the Floricultural Editor of the *Gardeners' Chronicle*, Sept. 4, 1852, were thus noticed:—"PHLOX: *P. Delecta*, is in every way a pretty variety, and cannot fail to prove a favourite." Plants free by post, 3s. 6d. each. Post-office orders on Chislehurst, or postage stamps, respectfully requested.—Nursery, Foot's Cray, Kent.

## ORCHIS LONGICORN.

**WILLIAM BARNES** begs to inform his friends and the public generally that he has a few strong PLANTS now in bloom, to offer for Sale, at 63s. each, of this beautiful Plant: a figure of which will appear in the "Florist" for May next.

W. B. can with the greatest confidence recommend this as one of the most beautiful plants in cultivation, as well as being a plant that blooms through the winter and early spring months. W. B. having grown it successfully for 19 years, has given the full particulars practised by him, how to grow it, and manage it when at rest, in the Journal of the Horticultural Society of London, which, appeared in January last, and was awarded a Silver Banksian Medal for it by that Society on the 1st of March, 1853; and would also refer the readers of the *Gardeners' Chronicle* to the Number for October 23, 1852, where the Editor, in speaking of the Orchis, states that "Orchis longicorn, when grown as we some time since saw it grown, is one of the most charming of greenhouse plants."

A remittance is expected from unknown correspondents. Camden Nursery, Camberwell, London, March 23.

## COLE'S SUPERB CRYSTAL WHITE CELERY.

**W. M. COLE**, Dartford, Kent, begs to inform his friends and the public that he is ready to send out a new White Celery, which he has every confidence in recommending as being decidedly superior to his Superb Dwarf Red, sent out, with universal satisfaction, three years back. The Crystal White is a dwarf kind, rarely exceeding (under the best management, 14 inches in height; it is very solid, crisp, and fine flavoured, and if sown at the same time as the red variety, will come into use a month earlier, and continue good a month later. It has been seen by some of the first gardeners in the country, and pronounced to be a superior article. It may be obtained of W. C. as above, or from the following agents, at 2s. 6d. per packet, free by post:—

London: Messrs. Finest and M'Mullen, Leadenhall Street; Messrs. Dawe, Cottrell, and Benham, Moorgate Street; Messrs. Miller & Co., Strand; Mr. Duncan Blair, St. Martin's Lane, Currier Crown; Mr. Denyer, Gracechurch Street; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. J. and J. Fairbairn, Clapham; Messrs. Garway, Mayes, and Co., Bristol; Mr. Bunyard, Maidstone; Mr. Turner, Slough; Messrs. Downie and Laird, Edinburgh; Messrs. F. and J. Dickson, Chester; Messrs. T. and J. Dickson, Manchester; Messrs. J. and J. Fraser, Lea Bridge, Essex; Messrs. Little and Bathany, Carlisle; Messrs. Vetch and Son, Exeter; Messrs. Finney & Co., Gateshead; Mr. A. Panty, Plymouth; Mr. E. Rendle, Plymouth; Mr. Catell, Westminister, Kent; Messrs. Lincoln, Pingo, & Co., Exeter; Messrs. Edmondson & Co., Dublin; Mr. Smith, Liverpool; Kent; Mr. F. P. Ashford and Maidstone; Kent; Mr. Brown, Norwich; W. B. Jeffries & Co., Ipswich. E. F. Darby, Cirencester.

## NEW SEEDS, FREE BY POST.

**NEW SEEDS (1853) on SALE, by WILLIAM EDGUMBE RENDLE AND CO., PLYMOUTH.**

Descriptions will be found at page 162 (March 12, 1853).

	Per packet.—s. d.
1. CELERY.—Cole's Crystal White, very superior	2 6
2. BROCCOLI.—Coming's Reliance, superb late white	2 6
3. BROCCOLI.—Rendle's superb Willoughby, late white	1 0
4. PARSLEY.—Rendle's Treble Garnishing	0 6
5. PARSLEY.—Mitchell's Winter Matchless	0 6
6. CABBAGE.—Enfield Market, very superior	0 6
7. LETTUCE.—New Crystal Cos	0 6
8. CUCUMBER.—Cuthill's Black Spine	1 0
9. TURNIP.—Early Friesland, bright yellow	0 6
10. TURNIP.—Golden Globe	0 6
11. ONION.—Large flat Madeira	0 6
12. PACK-CHOI.—New sort of Chinese Cabbage	1 0
13. PE-TSAL.—New sort of Ditto	1 0
14. LETTUCE.—Santed Hoosang Shanghai	1 0
15. LETTUCE.—Hoosang	1 0
16. CAULIFLOWER.—Stadholder	1 0
17. LOVE APPLE.—Cherry shaped	0 6
18. MELON.—Tyley's Bromham Hall	1 0
19. BEET.—Rendle's Superb Crimson	0 6
20. LEEK.—Large Musselburgh variety	0 6

A packet of each of the above 20 varieties of Vegetable Seeds for 10s., free by post. They should be grown in every Garden. Other kinds may be substituted (see page 162).

Apply to WILLIAM EDGUMBE RENDLE & CO., Seed Merchants, Plymouth.

## ONE YEAR SEEDLING HIMALAYA CEDAR, "CEDRUS DEODARA."

THE SEASON FOR NURSERY PLANTING HAVING ARRIVED,

**WM. MAULE AND SONS** beg to call the attention of those engaged in the growth of FOREST TREES to this most valuable Timber Tree, of which they have to offer the largest surplus stock in the trade, at the under-mentioned prices, in quantities as stated:—

	Per 100	25s.	Per 5,000	£45l.
" 1000	1000	1000	10,000	75l.
" 20,000		120l.		

The above are strong plants, pricked off in seed-pans, which, for convenience of carriage, may be shaken out, or forwarded in their present state, as desired. A large supply for ornamental and other planting, from 1 to 4 feet, grown in suitable sized pots.

N.B. No order for Seedlings this season can be executed after the 24th of April.—Stapleton Road Nurseries, Bristol.

## SELECT HARDY PLANTS.

**BASS AND BROWN** beg to offer as under:—

	s. d.
Rhododendron, scarlet hybrids, strong and fine	2 6
Rhododendron catawbiense, 1s. 6d.; ponticum	1 6
" in fine mixed variety, per dozen	9 12 0
Escallonia macrantha, strong, 9 in. to 2 ft., each	1 6
Deutzia gracilis	1 6
Weigela rosea, 1s. each; or strong, for forcing	1 6
" lutea	1 6
Cryptomeria japonica, 1½ ft. to 2½ ft.	2 6
Cedrus Deodara, 9 in. to 5 ft.	1 6
Ceanothus rigidus, 2s. 6d.; dentata	2 6
Pinus excelsa, 1 ft. to 2½ ft.	1 6
" insignis, 9 in. to 1 ft.	1 6
Pernettya speciosa, 3s. 6d. to 5s.; mucronata	1 6
Viburnum suspensum	2 6
Berberis Darwinii	2 6
" aquifolium, very strong, per dozen	9 0
" sinensis	12 0
Arbutus imbricata, 9 in. to 1½ ft., 1s. 6d. to 3s. 6d.; 1½ ft. to 2 ft., stout	7 6
Paeonia papaveracea (Tree Paeonia), strong	2 6
" Moutan rosea	2 6
Kalmia latifolia	1 6
Ribes, 6 best varieties; very strong	7 0
Garrya elliptica, 1 ft. each	1 6
Euonymus japonica, 1 ft. to 2 ft., per dozen	6 12 0
New German Daisies (Bellis Perennis), of the best selected sorts, 50 varieties, 18s.; 25 varieties, 10s.; 12 varieties	5 6
Herbaceous Plants (colours and heights given in Autumn Catalogue)	

" 100 distinct and showy varieties	30 0	50 for 17 6
" 25 ditto ditto	10 6	12 for 6 0
" 100 superior and new varieties	50 0	50 for 30 0
" 25 ditto ditto	17 6	12 for 9 0
" 25 fine vars. best adapted for rockwork 12 0	12 for 7 6	
Hardy Flowering Shrubs, 20 varieties, 12s.; 12 varieties	7 6	
Pentstemon, 12 fine varieties, 7s. 6d., or 6 for	5 0	
Lobelia, 6 distinct varieties	5 0	
Roses, finest sorts, Standards, per dozen	15s. to 21 0	
" dwarfs	6s. to 12 0	
" fine climbers	6s. to 9 0	
" dwarfs, without name, per 100	20 0	
Antirrhinum, fine show varieties, per dozen	6s. to 10 0	
Cheiranthus Marshallii, per dozen	9 0	
Dianthus fulgens, new dazzling scarlet	9 0	
" splendens, rich crimson	9 0	
Digitalis spectabilis, strong for flower	9 0	
Rocket, new double crimson	15 0	
Linum flavum	7 6	
Phlox, 12 fine varieties, 6s., or 25 for	10 6	
" 12 new and choice varieties, 9s., or 25 for	15 0	
Potentilla, 12 choice varieties	7 6	
Saxifraga oppositifolia, fine for bedding or for rock	6 0	
" alba, ditto	6 0	
Dwarf Rock Cistus, new and beautiful, very distinct, rich, and attractive, the collection of 24 varieties	18 0	
Hollyhocks, 12 superb varieties	18 0	
Climbing Plants, 12 fine varieties	10 0	
Raspberries, Rivers' new Large Monthly, per dozen	3 6	
" Fastolf or Filby, per 100	15 0	
" Magnum Bonum White, per dozen	2 6	
Gooseberries (list see Autumn Catalogue), finest prize sorts, strong 2 and 3-year plants, named	6 0	
" good varieties, 4s.; mixed	2 6	
Currants, Victoria, Grape, Naples, and other fine sorts, 3s. to Standard, Dwarf, and Trained Fruit Trees of the choicest kinds. (See Autumn Catalogue.)	4 0	
Rhubarb, Mitchell's Royal Albert, the earliest, and very fine, 1s. each	9 0	
" Myatt's Linneus, very fine, and early, 1s. each	9 0	
" Myatt's Victoria Giant, 9d. each	7 6	
Seakale Roots, 10s. per 100	1 6	
Grayson's Giant Asparagus, fine 3 year, per 100	3 6	

## STRA WBERRIES.

Kitley's Goliath ... per 100 5s. Myatt's Alice Mando, per 100 8s.  
Cuthill's Black Prince " 5s. " Fortified Hautbois " 3s.  
Myatt's Eleanor " 5s. " Eliza " 3s.  
British Queen " 5s. " Cole's Prolific " 3s.

Remittances requested from unknown Correspondents. Post Office Orders payable to STEPHEN BROWN, or the Firm.

In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods to the amount of 20s. and upwards, free to all the Stations in London; also free, as before, to all Stations on the London and Norwich Line, via Colchester.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## AGRICULTURAL SEEDS.

FLOWER SEEDS, AND SEEDS FOR THE KITCHEN GARDEN, Delivered Carriage free by Railway.

**J. C. WHEELER AND SON, SEEDSMEN TO THE GLOUCESTERSHIRE AGRICULTURAL SOCIETY**, beg to state that their new Seed List for this season will be forwarded free by post on receipt of one postage stamp.

To those desirous of buying the best varieties in cultivation, their List will be found extremely useful.

## SELECTED GARDEN SEEDS.

J. C. WHEELER & SON beg to offer the following Collections of Garden Seeds:—

No. 1. A complete Collection suitable for a large garden	2 10 0
No. 2. A Collection of equally choice varieties, but smaller quantities	1 10 0
No. 3. A Collection suitable for a small garden	0 15 0

No. 1 and No. 2 Collections will be sent free to any Railway Station in England.

J. C. WHEELER & SON, Seedsmen, Gloucester.

**ROBERT M. STARK, NURSERYMAN AND SEEDSMAN**, 1, Hope Street, Edinburgh, begs to intimate that his List of FLORISTS' FLOWERS, BEDDING PLANTS, &c., for the season is now ready, and may be had on application. Choice assortments of every other article connected with the Seed Trade. GARDEN, FARM, and FLOWER-SEEDS from select stocks. R. M. S. is removing in May to more commodious premises, 145, Princes Street.—March 26.

**SUPERB HOLLYHOCK SEED.**—Well ripened Seed warranted to be saved exclusively from Comet, Elegans, Obscura, Mr. C. Baron, Penelope, Rosen grandiflora, Meteor, Walden Gem, Magnum Bonum, Spectabilis, Safranot, Delicata, Enchantress, Picta, Queen, Bicolor, Dido, Charles Turner, Formosa, Hebe, Model of Perfection, Rosa Alba, Sulphurea Perfecta, White Perfection, Blue Beard, Mulberry Superb, Snowball, and Queen of England.

A good mixture of the above, in packets containing upwards of 200 seeds, will be forwarded post free, upon the receipt of 2s. 6d. worth of postage stamps.

Also R. M. S. begs to offer plants of his superior Seedlings of 1851 and 1852, which received certificates at the National Floricultural Society, Regent Street, London, and met with universal approbation wherever exhibited. Catalogues sent upon pre-paid application.

R. B. BIRCHAM, Hedenham Rosary, Bungay, Suffolk.

## NEW SHRUBBY CALCEOLARIAS.

CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

**J. WEEKS AND CO., CHELSEA**, have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all Shrubby they are perpetually in flower; and from the great variety and brilliancy of their colours, they are invaluable for the conservatory or bedding-out.

J. WEEKS & Co., King's Road, Chelsea, London.

## SUPERB SEEDLING HOLLYHOCKS.

**J. BUTLER, GARDENER TO R. HILLS, Esq.**, can with confidence recommend the following varieties, raised by him, as being first-rate and distinct: Eva St. Clare, 7s. 6d.; colour deep rose. Uncle Tom, 5s.; shaded maroon. Mrs. Reeve, 5s.; pale pink, very large—or the three for 15s. package included. The usual discount to the trade. Extra strong Plants now ready. A remittance is respectfully solicited from unknown correspondents.

Cole Park, Halstead, Essex.

## The Gardeners' Chronicle.

SATURDAY, MARCH 26, 1853.

MEETINGS FOR THE ENSUING WEEK.

	(Chemical Anniversary) 8 P.M.
WEDNESDAY, March 30	Society of Arts..... 8 P.M.
FRIDAY, April 1	Botanical..... 8 P.M.
SATURDAY, — 2	Asiatic..... 2 P.M.
	Medical..... 8 P.M.

THE Vine-mildew bids fair to occupy as many pages as the Potato-murrain. Pamphlet after pamphlet appears with scarcely an additional fact or suggestion; and now, to crown the whole, we have the formal report from M. LECLERC to M. PERSIGNY, Ministre de l'Intérieur, which, as far as we see, might as well have been written in his easy chair at home, without the expense or labour of a three months' journey through the Vine districts. The great fault committed was in not associating a competent botanist with M. LECLERC, who may have had many high qualifications, but who was evidently in some respects quite unfit for such a mission. In 1837, when the Macon district was ravaged by the larva of a *Pyrallis*, the government very wisely despatched the eminent zoologist M. AUDOUIN, whose report is quite a model for all who may be engaged in such researches; and though opinion may differ as to the part which the minute *Oidium* bears in the ravages, whether it be a primary or secondary cause of evil, it is clearly so universally involved in the question, that a botanist acquainted with such productions was as evidently necessary as was an entomologist in the case of the ravages of the *Pyrallis*. And the omission is the more to be regretted, because the Government had, and still have, in their service, at the Jardin des Plantes, a person intimately acquainted with the subject, of very active habits; and in the prime of life, accustomed to the minutest investigation, not only in the cabinet but in the field; and above all, which is a qualification not always to be met with on the continent, well read and accustomed to hunt up every source of information, inasmuch that if there be any fault in his numerous and important productions, it consists rather in a multiplicity of illustration than in any lack of information. Had M. TULANE been associated in the mission, it is quite certain that the results would have been



highly beneficial, at least in a scientific point of view, if they had not been crowned with any success as regards the treatment of the disease.

M. LECLERC seems scarcely to be aware that the Vine-mildew is by no means an isolated fact. Our Peach-trees suffer every year more or less from a similar affection; Peas, Roses, plantation beds of Hawthorn, Hops, and many other plants extensively cultivated, are notoriously the victims of a disease, in every case either produced or indicated by a white mould similar in character to that which affects the Vine. A main object should have been to ascertain how far the *Oidium* of the Vine differs from that of other plants, and whether its separation as a species, when it first appeared in England, was justifiable; for if the mould was already widely diffused on other plants, or if the Vine-mildew be merely a modification of some well-known species, a very important point as regards the origin of the disease is settled. Then, as to the nature of the parasite, it was necessary to determine the question whether its proper habit is not, like that of the parasitic species of *Botrytis*, to burrow amongst the spongy tissue of the under surface of the leaves, making at length its way through the stomates, though, like so many other of the moulds, capable of propagation on organs comparatively or entirely destitute of stomates, on indeed almost any inorganic substances, if the proper degree of moisture and temperature be present; and this was the more necessary because from every report it appears that in France the parasite is produced principally on the upper surface of the leaves, whereas in England it was on the lower surface principally that it was observed. Another point should have been to ascertain whether it is merely the infant state of another fungus, as is the case with the Peach, Pear, and Hop mildews, or whether no change can take place during the period of its existence. These and other points might be mentioned, which should have been examined in conjunction with any morbid appearances in the tissues. The figures, it should be observed, which accompany the report, and which are due to the skill of Dr. MONTAGNE and M. GUÉRIN-MÉNEVILLE, are very good and correct, and leave little to be desired as far as the external characters of the disease are in question.

Almost the only fact to which M. LECLERC has drawn attention, in addition to what has been repeated again and again in this journal or elsewhere, is that the mycelium is capable of germination after it has been kept in a dry state for a considerable time. Germination did not, however, take place at a lower temperature than 59° of FAHRENHEIT (15° Centigrade). It appears, too, that the disease is most prevalent in low and damp situations, from whence it spreads to higher vineyards, and that protection from currents of air proceeding from an infected spot is an effectual preventive. In point of treatment we find nothing that has any pretensions to novelty. Mr. TUCKER many years since showed how the disease might be completely mastered in the stove, and M. GRISON'S improved process will be of no less importance in the open field, wherever the benefit bears any due proportion to the necessary expenditure. On a large scale, however, except in vineyards which produce the choicest wines, it is evident that any considerable addition to the expense of culture, where wines are to be produced for a few sous the bottle, is altogether impracticable. We have in this country scarcely any conception of the misery which has been caused by the disease. In Madeira and the wine districts of France, where the population depends entirely on the cultivation of the Vine for support, the consequent suffering has been very great, though we trust it may neither be so disastrous nor permanent as the Potato murrain has been in Ireland. The same vices of injudicious manuring, at any rate, are not so generally involved in the cultivation of the Vine as to lead us to believe in any depravation of the stock; and there is therefore the greater reason to hope that, like so many other inflictions of Providence, it may in time be tempered, and the evidence seems in favour of this view. M. J. B.

ALTHOUGH our experience tells us that there is no protecting people altogether from the adventurers that swarm in every great town, and prey upon the unwary, yet, in the hope of rendering horticultural impositions unprofitable in the long run, we cannot refuse to devote a little space from time to time to their exposure. We therefore invite attention to the following case—in which names and places are suppressed, for obvious reasons.

A few weeks since there appeared in the advertising columns of a contemporary a magniloquent announcement of large money prizes offered for a certain small number of a kind of vegetable, the seed of which could only be procured by purchase from the advertiser. It was more especially represented that this vegetable was the very thing for

cottagers, who were invited to buy the seed in shilling packets, with the assurance that something more than a hundred pounds' worth of prizes would be given at the end of the present year to the most successful cultivation. The conditions were sufficiently enticing; buy, says the advertiser, a shilling's worth of seed now, and next autumn I will give you a chance of winning twenty pounds. The old lottery advertisements were not more tempting. The esculent in question was described as unrivalled for its excellence, productiveness, and novelty. We believe somewhere about 100 tons of produce per acre of this commodity were asserted to be procurable. The name and residence of a person said to be the raiser of the prodigy was duly given, and the vendors were a Messrs. — and Co., living in the neighbourhood of a great city.

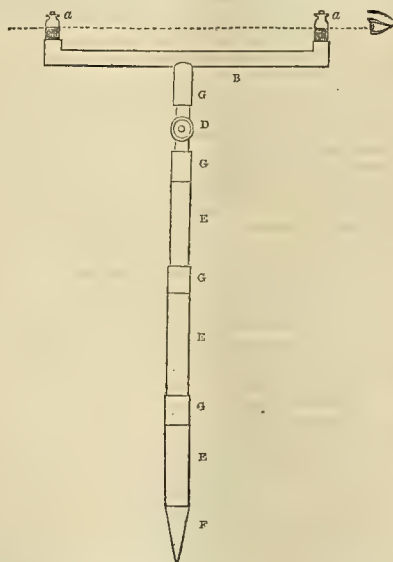
As we had no doubt that shillings and half-crowns would pour into the treasury of this worthy firm we took the liberty of making some inquiries about it, and the result is what might have been expected. Nobody knew anything about them further than that they lived in a den at the place named in the advertisement, where they were diligently occupied in sending away little packets of seeds. The police of the city in question report that they are by no means proper persons to deal with; that there is no finding them at home; they are, in reality, invisible to everybody except the letter-carrier and money-office keeper. Many inquiries were made for them, and about them, but in vain; and the usual end has occurred, the gentlemen are off, and the den is closed—at least for the present.

Let us hope that this hint will not be thrown away upon the simple-minded, who are apt to believe a fraud impossible if it does but appear to be gigantic.

#### BOTTLE LEVEL.

PERMIT me to direct attention to another small instrument, which deserves to be better known amongst gardeners who have to superintend or make pleasure-ground alterations. It is already figured in a work on land-surveying (but whose I cannot now remember), to which I am indebted for the original idea; but it is, as I now send it, shown with some important additions, which in using I found it necessary to make. Although extremely simple, it must not be despised on that account; for it will be found by gardeners quite as useful for most purposes, and much less expensive than the more complicated contrivances. The whole might be made by any country tinman for a very trifling sum.

Some ground, where it may be found necessary to use it, might be too hard to admit of the pointed iron shoe; in that case the tripod must be substituted. It will require no very ingenious person to construct one which would answer the purpose sufficiently well. Two small phials, *a a*, from which the bottoms are taken, are fixed in the brass tube *B*, permanently with iron or other suitable appliance; this tube should be about  $\frac{3}{4}$  of an inch in diameter, and 2 feet 6 inches long, having elbows (as shown) for placing the bottles, *a a*, in. A



coloured fluid should now be poured in, so as to fill each bottle half way up, or so, when the tube is held in a level position; corks should then be placed in the bottles. *D* is an iron joint for the purpose of adjusting the tube; this can be taken out of the ferrules *G G*. *E E E* are wooden lengths a foot or so long, to which are attached tin or brass ferrules, *G G G*. The instrument may be lowered or raised to suit convenience, by removing or adding one of these lengths. On the lower one is fixed a pointed iron shoe, *F*; by thrusting this in the ground the whole is held in a steady position.

When in use, after making it firm by sticking the pointed iron shoe in the ground, the joint *D* is turned until you get the brass tube as level as you can from

judgment; the corks are then taken gently out, and the liquid will show you when the instrument is sufficiently level for use. It will turn in any direction; and the method of using it will be readily understood by referring to the sketch. C. Lucas, Brentwood.

#### GROUND TEMPERATURE.

THE autumn of last year, and the month of January of the present, having been so remarkably wet and mild, and winter weather having set in with the spring season, it may be interesting to know, under these circumstances, what relation the temperature of the ground bears to its average in other years.

The following exhibits the mean temperature of the ground, at Chiswick, for the months of October, November, December, 1852, January, February, and up to March 22d, 1853, comparatively with its average in the corresponding months for 11 years, namely, 1838, 1839, and from 1844 to 1852 inclusive.

Mean temperature of the earth at 1 foot below the surface.

	1852-3	Oct.	Nov.	Dec.	Jan.	Feb.	March, to 22d.
11 years' average		48.55	47.97	45.67	42.29	36.32	39.09
		53.74	48.09	42.89	37.94	39.56	41.31
Difference		-5.19	-0.12	+2.78	+4.35	-3.24	-2.22

Mean temperature of the earth at 2 feet below the surface:—

	1852-3	Oct.	Nov.	Dec.	Jan.	Feb.	March, to 22d.
11 years' average		48.55	47.85	44.51	42.16	36.73	38.52
		62.91	47.38	43.04	40.75	38.64	41.91
Difference		-4.36	+0.47	+1.47	+2.41	-1.91	-3.39

Where the mean monthly temperatures since last October are above the average, the difference is marked (+), when below (-). It therefore appears that, at 1 foot deep, the ground in October was upwards of 5° colder than usual; in November its temperature was nearly equal to the average. It rose considerably above the average in December, and still more in January, being then higher than it usually is in March; but it was about 6° colder in February than in the preceding month, and in March it has hitherto been below the average. The ground is even now 2° colder than it usually is in January. R. T.

#### BORONIA SERRULATA.

WHEN properly managed this is decidedly a first class-greenhouse plant; but except in collections which probably owe something to the stimulus given to plant culture by our great metropolitan exhibitions, it is but seldom one sees a good specimen of this *Boronia*. This species is delicate, but it is not so difficult to cultivate as many imagine; it is, however, easily injured by injudicious treatment, such as sudden changes of temperature while in a soft growing state, and excess of moisture at the root in winter, or indeed at any season; and if once injured, to only a moderate extent, it is almost hopeless, by any mode of management, to get it into free growth again. Beginners cannot, therefore, be too careful to avoid any treatment which might impair the health of the plant, which will be easily kept in good condition if the following hints are carefully attended to.

Cuttings of the half ripened wood root freely enough; nevertheless its propagation is somewhat tedious, and persons who have an opportunity of procuring nice little plants from the nursery will find that the most satisfactory plan. I would, however, advise beginners to make their own selection, for young plants, to be worth possessing, should be dwarf and bushy, not pot bound, and covered with healthy foliage; all with spotted rusty leaves should be rejected, and plants procured in autumn should have well ripened wood. The only safe place for them to winter in is a nice dry light part of the greenhouse, where they will be free from damp, without being exposed to currents of cold air, and at that season water must be applied to the soil with care; give a thorough watering when necessary, and no more until it is evidently required, and avoid wetting the foliage.

From the beginning to the middle of March, if circumstances permit, will be a proper time to start young plants into growth. A night temperature of about 45°, allowing it to range from 10° to 15° higher with sun-heat, will soon cause them to push; but until they are in vigorous growth it will be dangerous to subject them to a very moist atmosphere, or to use the syringe, for too much moisture at this stage would probably be the cause of an attack of mildew. If this pest makes its appearance dust the plants thickly over with sulphur, taking care that it reaches every part of the foliage and wood, and repeat this as often as it may be necessary to eradicate the evil. When the plants make a start ascertain, by carefully examining the roots, if more pot-room is required, and give a moderate shift if requisite, but avoid large or unnecessary shifts. Apply water very cautiously after moving, till the plants appear to have taken to the fresh soil, which will be perceived by an increased vigour of growth. When they have become fairly established and are making strong growth, they must be sufficiently stopped or pruned back to ensure a compact bushy form, and any over-strong central shoots may be slightly bent downwards, to equalise the flow of the sap. If the plants shall have been well-rooted before being stopped, they will soon push their buds and make regular and vigorous growth, and when



healthy and active they should be syringed over-head on the mornings and afternoons of bright days, and shut up early in the afternoon with a moist atmosphere, but with a little air for the night. I am, however, taking it for granted that the plants are placed in a close pit or frame, which is the most proper situation for them during the growing season. If they are in a lofty house, there will be no necessity for giving night air. During bright weather they should be screened from the midday sun by using a very thin shade; but this should not be allowed to remain on longer than may be absolutely necessary, and it should be discontinued altogether when the amount of growth obtained is deemed sufficient for one season, and this must be early in autumn, to allow of its being properly ripened before winter. When the object is to ripen the wood and prepare the plants for winter, gradually expose them to more air and sunshine, and discontinue syringing over-head; but be very careful to avoid suddenly exposing them to a change of atmosphere, and remember that currents of cold drying air are inimical to the health of the plant at any season; and autumn rains must also be avoided at any inconvenience, for if the soil is allowed to become sodden at this season, the plant will be ruined.

They should be removed to the greenhouse early in autumn, selecting a situation near the glass for them, where they will not be exposed to cold drying currents of air, and water must be very carefully applied to the soil, avoiding all wetting of the foliage. With careful attention there will be little chance of any mishap during winter, and the plants had better be allowed to remain in the greenhouse till they have done flowering. It will, however, tend to prolong their season of beauty if a slight shade is applied as soon as the blossoms are properly coloured, not allowing this to remain on longer than may be required. After flowering, remove the specimens to a light close pit, and when they exhibit signs of vigorous health prune them back, and as soon as the buds start give a shift, regulating it according to the condition of the plants, and let the after management be the same as that for last season.

As regards soil, good fibrous peat, in a proper state with respect to age and moisture, is indispensable for the successful culture of this plant. The peat should be broken up rather small, rejecting all but the very prime fibry part; it should then be mixed with a liberal allowance of sharp silver sand and clean potsherds broken rather small; the proper proportion of sand will depend upon the quality of the peat in this respect, but be sure that enough is added to ensure the free percolation of water through the soil, and be very careful to ensure good drainage by using plenty of potsherds in the bottom of the pot, and covering these with a thin layer of the fibry portion of the peat, intermixed with plenty of sand. *Alpha.*

#### TRADE MEMORANDA.

A CORRESPONDENT informs us that MESSRS. JAMES MURRAY and Co., of "Stuartfield Lodge, Bonnington Road, Edinburgh," are—not now to be found there.

#### Home Correspondence.

*Major's "Landscape Gardening."*—Hopeless of obtaining any clue in the *Chronicle* to the real character of this book, after waiting so many weeks for the appearance of some critical notice, and having heard for years that Mr. Major had a work of the kind in preparation, I suffered my impatience to overcome my discretion, and threw away 40s. just in time to add by no means pleasant confirmation to the award of your reviewer in last week's Paper. That a book with so very ambitious a title, on a subject which has been so freely treated of by previous authors, and by a man who urges "40 years' experience" as his claim to attention, and who is such a disinterested lover of his art that for the labours of a life-time he has "looked for reward only in an improved public taste for so delightful and interesting a pursuit," should be brought within the compass of 204 small quarto pages of large type, and be illustrated only with a few execrable woodcuts, and some six or seven lithographic plans, of the merits of which last your reviewer has given a very fair and proper estimate; and that for this careless, and in all respects unsatisfactory production the unsatisfying purchaser should be debited to the tune of 40s. sterling, is assuredly enough, as our American friends would say, "to rile" one a little, especially in these days of cheap literature. And I must plead the privilege of a victim for thus publicly expressing my complaint. Subscribing to nearly all that your reviewer has said, I further impeach the book for want of method and arrangement. We are surely entitled to expect in a work which purports to be a treatise on "the theory and practice of landscape-gardening," that something, at least, should be written, distinctly and separately, on "the theory" of the art. But if the author cognises any principles at all, these are left to be gleaned, laboriously, from the mass of heterogeneous matter thus loosely thrown together. Perhaps Mr. Major's "opinion," of which he is rather indulgent, and his fancies, which are more peculiar than king, may constitute his "theory" of landscape gardening. At any rate, he is utterly innocent of making a single stone to that substantial foundation of art which was laid by such men as Price and Repton, on which alone any real greatness can be built. If, therefore, the work should ever reach a second edition,

a more significant title would probably be "Mr. Major's Practice of Landscape Gardening." To the natural defenders of Chatsworth and other places on which Mr. Major so modestly animadverts, I may safely leave the refutation of his remarks. I suppose, however, that it must be classed as one of the "new ideas" which he professes to "develop," that he describes the temple over the roof of which the water flows at the head of the great Chatsworth cascade as a "Swiss cottage." Truly, the editor of the *Builder* may well enter his protest against the assumed precedence of the landscape gardener, when the claim is put forth by one so unfamiliar with architectural forms as this. But I will only extract one more item at present from my budget of grievances. And this relates to the extremely loose and often incoherent style in which the book is written, and to the frequent use of such barbarous expressions as "landscapeist," "dress ground," "shrub-beds," &c. To return for a moment, then, to the point with which I started, and which all the other faults of the book so grievously aggravate, it is in no unfriendly spirit that I recommend Mr. Major to assign over his plates to his pupils for practice in the correction of errors in design, hang up his portrait in his own office, that he may always have an opportunity of studying himself, light his pipe with the wood-cuts, and bring out the volume in a reasonable form for 4s. or 5s., with some less presumptuous and more appropriate heading. *Quid pro quo.*

*Onion Maggot.*—Your Cornish correspondent, Mr. Symons (see p. 165), has given excellent directions for preparing ground for Onions, and the second week in February may perhaps suit him for sowing; but in this latitude we can seldom sow before the latter end of March, and this year it is likely to be still later, as we have at present, March 17th, 4 or 5 inches of snow upon the ground. In this neighbourhood we suffer greatly from the maggot, by which I have frequently lost at least two-thirds of my crop; but during the last two seasons I have set it entirely at defiance by using dry soot as a preventive. I dust the soil lightly over once a fortnight or so, from the time of sowing until all danger is past, and I now feel confident that if the ground is kept smelling of soot not a maggot will touch it. *J. G., Perth.*

*Bottled Mint.*—Lamb is now becoming more plentiful, but the late frosts have injured the started sprigs of Mint, the sauce of which is considered all but indispensable for this kind of meat. To secure this requisite in future, chop up green Mint in any quantity during summer, put it into wide-mouthed bottles, fill the bottles with vinegar, and cork closely up. The sugar can be added when required for use. I think no one could tell the difference of Mint so prepared from that fresh from the bed. *S. S., Market Drayton, Salop.*

*Artificial Breeding of Trout.*—I regret that I cannot give "T. G." (see p. 182) any detailed account of the transit of the spawn from England to New Zealand, as I have merely heard from the brother of the gentleman who took them out that the fish, or many of them, had arrived out, and so far the plan pursued had proved successful. Last season, however, Mr. Boccus procured some trout spawn from me, which was sent, together with some salmon spawn, in a vessel bound for Australia; it was placed in gravel in large iron tanks; a supply of water from the Wandle being also provided for the necessary change. The ova came to maturity some days before the usual time, on the arrival of the vessel under the tropics. The result of my own experience is, that about 42 days is the time required from the spawning, but this varies according to season, temperature, and other causes, for which I cannot account; as for instance, this year I had some ova sent me from Derbyshire, which was spawned on Christmas-day; most of them I put into my boxes, but some I kept in the house in a small tin vessel, into which water supplied from a tank on the house-top, and consequently at a low temperature, was kept constantly dripping. I have observed that this spawn has been very irregular in the time of its hatching, some of it coming to maturity in about 70 days, and one egg not till the 80th day, and that at the moment I was examining it with a microscope, under which the little creature is a splendid object, exhibiting to perfection the circulation of the blood in a marvellous manner. With regard to the wish expressed in the conclusion of "T. G.'s" letter, that a hybrid between the salmon and trout should be attempted in the Wandle, I am afraid that as the above named river is merely a succession of mill-dams, having no unbroken communication with either the sea or a large river, a hybrid possessing any of the distinguishing marks of the salmon could not be expected to thrive in it. *S. G., Carshalton.*

*Effects of the Winter in South Devon.*—All the older species of Indian Rhododendrons are uninjured, as are those from Sikkim, with the exception of one plant of Dalhousie, which has the points of its leaves slightly hurt, the other is untouched; ciliatum, 4 inches high, is coming into bloom. Berberis Darwinii is safe, and also coming into bloom. A standard plant of Escallonia macrantha has its leaves slightly hurt. Veronica speciosa, salicifolia, Lindleyana, and formosa are very much injured, and even the hardy V. decussata has not escaped unscathed. Only the leading shoot of a huge Acacia dealbata has been slightly hurt, and its masses of uninjured blossoms are struggling to expand. Acacia venusta against a wall is slightly touched, but not so much as the Myrtles, which are more hurt everywhere than I ever remember; and huge old plants nearly 30 feet high give a fuscous rather than a verdant look to the

house of a friend, against which they grow. Grevillea sulphurea and rosinarinifolia are safe, as are some Corraeas. A large plant of Cytisus canariensis is dead, as is Cyclopia genistoides, a Prostanthera, and Aster argophyllus. I much fear some of the new Californian Ceanothuses are killed; and while Pinus Russelliana has escaped uninjured, a Chinese Arbor-vitæ has been killed near it. The Himalayan Bamboo has suffered much, so has Benthania fragifera. Hardy Fuchsias are everywhere killed to the ground, and F. serratifolia against a wall is nearly dead, as is Habrothamnus fasciculatus. The three species of Cantua against a south wall, I fear, are quite dead. Mitraria coccinea is much hurt. Plants of Agave Americana are untouched, except one large plant, which has been sadly injured by the snow. Two trees of Eucalyptus have escaped with slight injury to their foliage, and my trees of the Citrus tribe, protected by frames of reed or wood, are wholly unharmed, and are, many of them, laden with ripe and ripening fruit. Against a wall, and sheltered at night, Gardenia Fortunei, Luculia gratissima, and Linum trigynum are safe. A large plant of Dracaena indivisa is safe, and Phormium tenax is untouched, as are the Edwardsias and Tasmanias aromatica. Plants of Camellia japonica are uninjured, and flowers of a rose-coloured variety are being gathered in good condition. *A Devonian.*

*Stem Roots of Vines.*—Our Vines are throwing out a quantity of root-like fibres from the base of every shoot. They are to be seen less or more in most Vineries, but here they are enormous. The fruit is nearly all set, but perhaps not so plentiful as usual. The house has been kept rather moist, and the shoots were pinched back (generally) to one bud above the bunch when about from three to six buds longer. Is this a good or a bad omen? What has been the cause? Should they be removed now or at the winter pruning? *Geo. Harris.* [Your border is too cold in proportion to the heat in which the Vines are growing, or else your roots are dead.]

*Heating Public Buildings, Greenhouses, &c.*—Is it not a strange thing that when public buildings, &c., can be so safely, pleasantly, efficiently, and economically heated by hot water, the old common dangerous flues should still be used? It is believed by many that, if this course is persisted in, we shall eventually lose every national edifice we have, and also plant structures in the country. The Tower, Houses of Parliament, Doncaster Church, &c. &c., have all fallen sacrifices, and now we have nearly lost that splendid old Royal residence, Windsor Castle. Pray let the gardening world raise their voice against this absurd, antiquated system of warming buildings, greenhouses, &c., involving, as it does, such an extensive destruction of property and frequently of human life. Now this could be prevented, being under our control and management, and it is highly culpable in us as a nation not to avail ourselves of the preservative means at our disposal. Many a valuable plant is destroyed through sulphurous gases and other effluvia escaping from the interstices of brick or tile flues, and no doubt they are equally injurious to the health of individuals. *J. R.* [But flues are cheap, and hot water very expensive. The former answer gardening purposes perfectly in some respects; and if well-constructed and properly managed, are not so open to the objection taken by our correspondent as he supposes.]

*Transplanting Trees.*—Observing, at p. 167, an account of a large Weeping Ash having been removed on a platform, at Holland House, I beg to say that Mr. Smith, gardener to the Right Hon. Sir James Graham, Bart., of Netherby, moved a very large Rhododendron, measuring 13 feet in height and 23 yards in circumference. The mode of transplanting was the very same as that adopted at Holland House, with this exception, that instead of the platform being moved on rollers it was placed on four very low wheels, made of circular pieces of thick plank, with holes in them to admit the axletrees. They rested on planks, and when the earth on each side of the platform was cut away, and the plant fairly placed on the stage, it was drawn up the incline by about 30 men with ropes and tackle fixed to a post, the wheels moved on planks for about 100 yards over Grass to a hard gravel walk, and then the mass was drawn by horses to where the plant now stands. I do not know what weight the plant and earth might have been, but it was a heavy pull for two strong horses. The operation took place about two years ago, and the plant is doing well. *J. B., Longtown.* [We presume our correspondent means feet by yards.]

*Changing the Names of Fruits* (see p. 182).—How strange it is that writers on gardening are so thin-skinned. I only used a gentle whip to Mr. Hogg, with a thong of silk, merely as a caution, and had nothing to do, Mr. Editor, with your lash of whipcord, and yet he is angry with me; he complains that I have only given three complaints. Well, let us look a little further into the matter. Pray, who would recognise the well-known Siberian Crab ("scarlet Crab" of some) under its new name of "Cherry Apple, H.," i.e., Cherry Apple according to Hogg. And then, again, the Winter Queening, under Mr. Hogg's new appellation of "Winter Quoining." There is no occasion for these changes. Mr. H. is a young author, and, as usual, aims at originality; in 10 years he will think differently to what he does at present. I have reason to believe that the Norfolk Beaufin is not an English Apple. If Mr. H. or Col. Mason will take a ramble among the orchards and gardens of Normandy, they will find the orchardists not very particular in their genders. I have so constantly



looked upon the word as a provincial abbreviation, as entirely to have forgotten its incorrect grammatical construction. All lovers of fruit and fruit trees will recollect having received grafts from friends not possessing much pomological knowledge, with such descriptions as the following attached, "Fine kitchen Apple," "excellent late dessert Apple," and so on. Well, our Beaufin undoubtedly came from France with its description in provincial French, "Beau à la fin;" and those who have seen the Norfolk Beaufin, grown under the bright sun of France, will acknowledge that it is really beautiful in March and April. This long name would soon be cut short by John Bull, who hates long names—witness the names of country villages, Wymondham becomes "Wyndham," and so on—and be made into Beaufin; and then John (who seems never to have liked the word Beau, I suppose because it was French) afterwards made it Beefin; this has been a very common change. The Beauchamps of Norfolk are "Beechamps," the Beaumonts of Essex are called by the country people, "Beemonts," Belvoir Castle is called "Beavor" Castle; the origin of the name of the Queen's beef-eaters is well known, and in this way, with the exception of the latter instance, the Beau has become "Bee," until our Apple has been compared to raw beef, and its name supposed to be derived from a fancied resemblance to it. (Mem. In reading the above, please to forget all about "Bill Stumps his mark.") "Lindley's Guide" was my authority for the ripening of the May Duke Cherry; he quotes Langley, and I suppose correctly. Mr. Hogg's "British Pomology" is my authority in the matter of the King of the Pippins, for it says "Golden Winter Pearmain, *Diel*;" as no English authority is given for this name, I, in my simplicity, supposed it to be a translation of Dr. Diel's German name. Am I correct? Hampshire Yellow is one of its English names; but Golden Winter Pearmain seems quite new, and was certainly not required.\* "King of the Pippins, *H.*" (see B. P., p. 123), or Hogg's King of the Pippins, is an Apple not known to any extent. Mr. H. should have given its origin. I presume it is a provincial name; at any rate, it is likely to lead to confusion. Mr. H. would have done better to have given it the name of "King Apple, *Rea*," as he suspects it is the variety thus distinguished by his favourite author. "The reasons given" for departing from the nomenclature of the Horticultural Society's Catalogue, are not good and sufficient in the instances I have given, and in "Joanneting," "Beefing," and "Quoining" border on the ridiculous; but I regret I gave way to a merry thought when writing, for I have no wish to cast ridicule on "British Pomology," or its author. It is a nice little book, and would be much nicer were it less like a descriptive catalogue; it contains too many names of little or no interest. Dr. Diel made his book interesting by writing from close personal observation; for he cultivated a complete collection of fruit trees in pots, so as to have them under his eye. Mr. H. can do this, and the results of his practice, coupled with his researches in our quaint old pomologists, will make the remaining portions of his book of much interest to all lovers of fruit and fruit trees. My object in writing to you was, and is, to prevent a departure from our present established nomenclature; for if we commence changes we must make Louise Bonne, of Jersey, into Louise Bonne d'Avranches, and Glout Morceau into Beurré d'Aremberg, according to French pomologists. *Pyrus*.

*Calceolaria pavonia*, and *Bignonia Tweediana*.—On looking over the names of plants sent for exhibition to the meetings of the Horticultural Society, I have not observed any notice of *Calceolaria pavonia* having been produced. This leads me to suppose that it has, perhaps, not flowered in the neighbourhood of London, as I can hardly think so remarkable a species as it is, would not have been sent to the Society's rooms. I saw a fine plant of it in bloom last week at the Glasnevin Botanic Gardens; it stood about 9 feet high, and had about a dozen shoots, each of which terminated in a large panicle of bloom. The flowers are individually larger than those of any other kind with which I am acquainted, and they are of a bright yellow colour. It may prove valuable for hybridising some of the herbaceous kinds with. Another charming plant, which seems difficult to bloom, was flowering in the same establishment, namely, *Bignonia Tweediana*. The hundreds of large golden yellow flowers, with which it was covered, produced a fine effect. *O. D.*

*Large and Small Rain Gauges*.—Mr. Lawes' interesting paper on the comparison of large and small rain gauges induces me to send you the results of what I have found to be the case here since 1849. In August of that year I placed a funnel gauge 8 inches in diameter on the top of an old tower 42 feet 6 inches above the ground. At the same time I placed a 5-inch funnel gauge on a rail 5 feet from the ground, not immediately near the tower, as an exposed situation could not be found there, but at a distance of 374 feet in an easterly direction; both gauges were fully exposed. I found to my surprise that the gauge on the tower received on the average decidedly more rain than the lower one, although some of the monthly averages showed the reverse; yet the year's totals in 1850 were decidedly in excess on the part of the 8-inch gauge. As this was contrary to the results of Professor Phillips's experiments at York (although Mr. Miller's series of observations in the

lake district shows that on ascending the hills the quantity increases up to an elevation of about 2000 feet, and then decreases), I altered the position of the gauges on the 1st of April, 1851—brought the 8-inch gauge down to the 5-foot level, and placed the 5-inch one on the top of the tower. The result was still that the 8-inch gauge caught more rain than the other, although their positions were reversed. On the 1st April, 1852, I brought the 5-inch gauge down from the tower, and placed it by the side of, and on the same level with, the 8-inch one. The result of the last 11 months shows that still the 8-inch gauge receives the most, and I therefore infer, as I mentioned in my former communication, referred to by Mr. Lawes, that the larger the area of the receiving vessel the larger will be the proportional quantity of rain caught by it. The following are the monthly results:

	8-inch gauge, 42 ft. 6 in. from ground.	5-inch gauge, 5 ft. from ground.
1849—September	3.870	4.162+
October	3.807	3.642
November	3.287	3.000
December	2.844	2.930+
1850—January	2.083	1.964
February	2.146	1.414
March	{.667 melted snow	{.813+
April	{.044 melted snow	{.065 melted snow
May	3.261	3.070
June	1.586	1.515
July	.755	.661
August	1.041	.797
September	2.260	1.843
October	2.800	2.839+
November	1.552	1.639+
December	3.516	3.178
1851—January	3.007	2.795
February	7.201	5.290
March	1.034	.948
	4.280	4.516+
	51.041	46.881

Thus in 19 months the 8-inch gauge, 42 feet 6 inches from the ground, had received 4.160 inches more than the 5-inch at 5 feet above the ground, although six of those months show + quantity in the 5-inch gauge.

	8-inch gauge, 5 ft. from ground.	5-inch gauge, 42 ft. 6 in. from ground.
1851—April	2.532	2.046
May	1.234	1.042
June	2.024	2.396
July	3.409	3.270
August	2.325	2.115
September	1.084	.994
October	3.553	3.411
November	3.124	2.313+
December	1.156	1.246+
1852—January	5.802	5.410
February	1.129	.867
March	.978	.604
	28.350	25.634

In 12 months the 8-inch gauge at the lower level had received 2.666 inches more than the higher one.

	8-inch gauge, 5 ft. from ground.	5-inch gauge, 42 ft. 6 in. from ground.
1852—April	2.258	2.188
May	2.272	2.182
June	3.341	3.178
July	.625	.559
August	4.744	4.397
September	2.307	2.192
October	4.482	4.250
November	9.026	8.617
December	4.202	3.687
1853—January	3.641	3.267
February	2.472	2.335
	10,450 melted snow	10,050 melted snow
	40.120	37.902

Thus in 11 months, the two gauges being in exactly similar conditions, the 8-inch gauge has received 2.518 inches more than the 5-inch one. It is to be observed that since they have been both together, the monthly average of the 5-inch gauge has never exceeded that in the 8-inch one, while during the time they occupied positions differing in height, and at some distance from each other, the conditions to which each was exposed were sufficiently different to cause the discrepancy of the 5-inch gauge occasionally receiving the most. The gauges are similarly constructed, and the rain is measured every morning in glass tubes graduated for each; that for the 8-inch divided to thousandths, and that for the 5-inch to hundredths of an inch. *T. S. P., H. M. Dockyard, Pembroke.*

*Vegetable Seed Lists*.—Mr. Ogle's suggestions in reference to this subject undoubtedly deserve the serious consideration of all interested in the matter; and where is the gardener who is not? But although I agree with the plan proposed, and think much good might be effected by it, yet I am of opinion that, however judiciously carried out, it would not entirely free us from imposition. Seeds may be grown, and proved to be of superior merit, and yet we are very likely to be deceived, by a spurious article being substituted, unless a company is formed which will guarantee to supply, upon their own responsibility, seeds that have been proved in accordance with their respective merits; and I am satisfied that unless something of this kind is done, we cannot at all times and in all cases depend upon the genuineness of those things we may deem worthy our patronage. In many instances seeds have to pass through the hands of several persons before they reach the honest, or it may be dishonest retailer; and it so happens that should there be any variety that is particularly recommended, many seedsmen make it convenient to say they possess it. I have demonstrative evidence of this fact. It may be remembered that some two years ago I strongly recommended the culture of "Snow's Superb Winter Broccoli," and I have done so since to a great number of gardeners and others, being convinced that a better winter sort cannot be grown, if obtained true to name. Now, many have ordered this Broccoli of their seedsmen and have been supplied

with what was stated to be it, but which proved to be quite another thing, no more like "Snow's" than a Cabbage is like a Cauliflower. I have had this variety truly excellent this season, but a friend and neighbour who orders it of one of the largest houses in the metropolis, and sowed and planted it about the same time as mine was, has not had it in yet, and to all appearance will not be able to cut it for some time. This is by no means an isolated case; and I deem it almost useless to give lists, however select, unless the trade is disposed to adopt a more straightforward mode in business transactions. *George Fry, Manor House, Lee, Kent.*

*Huling's Superb Plum*.—I apprehend there is a misprint of the name of this Plum in a late report of the meeting of the Horticultural Society, for it is there called "Haling's Superb." [A typographical error crept in. *Ed.*] According to Downing, in his "Fruits and Fruit Trees of America," and Hovey's "Fruits of America," it should be Huling's Superb. I received it some six or seven years ago from America under that name, and my note of its quality in 1851 is as follows:—"Ripe Sept. 5; large, round, green, juicy, rich, and excellent." The tree is quite remarkable for its large downy leaves, and stout downy shoots, and forms a most beautiful pyramid, which form it seems to take naturally. *Thos. Rivers.*

*Treatment of Larch*.—The best way of managing it with the least trouble and expense is the following:—Should your Larch be small and fit only for post and rails, peel it at the best time; for the bark, when left on, assisted by the nails to fasten and remain there, more quickly wets and taints the wood. If large and intended for timber and other purposes, and it shall have to be sawn up, first year peel off the bark, or strike them with a sledge hammer round the root end 4 or 5 inches, and leave them standing. Now, take care if they die, which is far from being always the case, not to neglect cutting them down early in the winter following, because when dead, capillary attraction, not being resisted by the living tree, soon fills the pores with water, and most rapidly contributes to injure and rot the wood. When you proceed to cut them down, place the lower branches now to be cut off in such a manner that when the tree falls it shall tilt the root end of the bole off the ground. There leave them on the spot in the wood, if possible shaded, for another year unpruned; they will lie off the ground perfectly dry, and get in fine condition for sawing up. Cover the sawn pieces with quicklime, stacking the lime upon them, and leave them enclosed as long as is convenient. You must observe that you cannot well shape them over again to other forms after being once so treated in lime, for it renders them hard and durable, and, by destroying the sugar and acetic acid, makes good durable timber, and keeps the grub out. This plan has been followed by me for many years, and I can recommend it as both economical and of great service. *C. P., York.*

*Cloches*.—It is certainly not a little singular that we should not yet have been able to discover the importance of cloches. Permit me to say that, being short of hand-lights this spring, I accidentally found from two to three dozen of these bell-glasses laid past, I should suppose as useless, but I am glad to say they answered well for growing salads. I have no doubt they will be useful for a host of other things. *R. Gilbert, Gardener, Sewerby House, Yorkshire.*

## Societies.

**LINNEAN, March 1.**—*R. BROWN, Esq.*, in the chair. The meeting was special, for the election of a council in the room of *J. F. Stephens, Esq.*, deceased. The ballot having taken place, Professor Bell, secretary of the Royal Society, was declared elected to fill the vacant place. Mr. W. W. Saunders exhibited the seeds of *Griffinia hyacinthina*, which had been matured in a stove at Wandsworth, near London. A paper was commenced from *C. J. F. Bunbury, Esq.*, entitled "Notes on the Vegetation of Buenos Ayres and the neighbouring Districts." The Flora of Buenos Ayres is destitute of trees, and shrubs grow only by the borders of the rivers. There are a large number of introduced European plants. *Sonchus oleraceus* (the Sow Thistle), *Echium violaceum*, *Hordeum pratense*, and some other Grasses, are exceedingly numerous, and give a feature to much of the country. The author also instituted comparison between the Flora of Buenos Ayres and that of Patagonia, Chili, and the Brazils.

**March 15.**—*R. BROWN, Esq.*, in the chair. continuation of Mr. Bunbury's paper on the Flora of Buenos Ayres was read by the Secretary. A collection of dried plants, made in the neighbourhood of Swan River by Mr. Duffield, was presented by Stevens, Esq. Mr. Heward presented a collection of dried specimens of Melastomaceae, chiefly found in the Brazils. *J. Van Voorst, Esq.*, was elected a Fellow.

**ENTOMOLOGICAL, March 7.**—The PRESIDENT in chair. Donations of books from the Royal Society, the Entomological Societies of France and Stettin, and of Lepidopterous insects from Messrs. F. B. Becker, Douglas, Aug. Shepherd, Edwin Sheppard, Major Shepherd, were announced, and printed lists of British Lepidoptera for marking off desiderata, were distributed by Mr. Dunning. Mr. Spence exhibited some minute insects belonging to the genera *Thrips*, *Typhlocyba*, which he had received from Dr. Lankester, and which are very injurious in Australia, destroy the petals of Roses and other garden flowers.

\* On seeing the Golden Winter Pearmain enlangued in the "Cottage Gardener," I ordered it of a nurseryman; but could not get it, as "it was not known." I found, afterwards, that hundreds of the King of the Pippin Apple trees were in this nursery.



Samuel Stevens exhibited *Buprestis Kirbii* and *Agasma semicrudum*, two rare Australian beetles. Mr. Spencer exhibited a fine specimen of the rare *Sphinx celerio* taken last autumn near the Regent's Park, and a scorpion taken alive near Edgware. Mr. Edwin Sheppard exhibited *Phibalapteryx gemmaria*, one of the rarest British moths, taken at Deal in September; and Mr. Hogan a specimen of *Hipparchia janira*, to the spiral tongue of which were attached several small appendages, which the President stated to be pollen masses of an *Orechis*. A note by Dr. Zeller on impaled insects was read, a beautiful and quite perfect specimen of *Triphena* comes having been found stuck on the sharp point of a *Juncus* in a situation where no *Lani* are ever observed; and a *Triphena fimbria*, much damaged, having been found stuck on a *Sloe* thorn (probably by a shrike). He also communicated a note on the best mode of obtaining the larvæ of butterflies, of which he had succeeded in rearing a great number of species, with an inquiry as to the larva of the Scotch argus; in answer to which the President stated that the latter had been observed by Mr. Logan. A monograph, by Mr. F. Smith, on *Cryptocerus*, a remarkable genus of exotic ants, was read; 20 species had been previously described, to which Mr. Smith had added 14 new species, and chiefly South American. He had also identified the sexes (which had not been previously done) and two allied genera were also described. The continuation of Mr. S. S. Saunders' Memoir on Albanian Strepsiptera was also read. The President announced that the Council had determined to offer another prize of five guineas for the best general account of the species of thrips injurious to fruit trees, with a particular history of the muscle scale of the Apple. The essays to be sent in on or before the 31st December next, under the usual terms. He also announced that a new part of the Transactions was ready for distribution, and that a memorial to Government urging the advantages likely to result from a juxtaposition of the scientific societies of the metropolis in some convenient locality, was placed on the table for the signature of the members.

### Garden Memoranda.

Mrs. Warner's, Hoddesdon, Herts.—Here, as elsewhere, the disastrous effects of the late severe weather have been severely felt. Broccolies have all been more or less injured, and some sorts, as Snow's White, are entirely killed. The varieties which have withstood the frost best are Chappell's Cream and Knight's Protecting. Of Peas sown in the end of last November, some have been killed; but by protecting them on the windy side with green Fir boughs, the majority of them have been saved. Brown Cobs and other Lettuces have all suffered greatly, and Strawberries are more or less hurt, but the British Queen the worst. The young shoots of Tea and China Roses have all perished, and some of the plants themselves are quite dead. Cauliflower plants under hand-glasses, however, look extremely promising, and not one of them has been lost. Fruit trees, both on walls and in the form of standards, are not so forward as might have been anticipated, considering the mildness of the weather previous to the occurrence of frost; they are, therefore, as yet uninjured, and with a little protection in the case of Peaches and Apricots, they may be expected to remain so. In a Vinery just being "started" were British Ferns in pots intended for the forthcoming exhibitions. They have recently been examined, repotted, and cleaned, and they are now beginning to push. The tender kinds have also been repotted and otherwise put in good growing condition. Passing through the early Vinery, in which a heavy crop of Grapes has just been thinned, we arrive at the Orchid-house, in which, even thus early, many of that lovely tribe were in bloom. Among the latter were the Low Lady's Slipper (*Cypripedium Lowii*) with one or two of its singular looking flowers in full perfection and others coming. *Calanthe vestita* was also in blossom, but it was the yellow-eyed variety, which is not near so handsome as the sort imported by Messrs. Veitch, which has a crimson eye. This fact should be borne in mind by those who intend to become purchasers of this plant. The end of this house is furnished with some tastefully arranged rockwork, at the base of which is a small piece of water in which are *Caladiums*, a *Nymphaea* or two, and other water plants; and behind the rockwork is a wall 30 feet in length and 14 feet in height, which is literally covered with seedling Ferns and other plants that luxuriate on the damp brickwork. *Acrostichum scandens*, planted in about 6 inches deep of soil, has run up nearly to the top of this wall, on which its noble fronds have a striking effect. *Polypodium phymatodes* and *Dendrobium Pierardi* also combine to make up this interesting vegetable screen. Among Palms and variegated plants on the rockwork below, was a specimen of *Asplenium Nidus*, measuring upwards of 10 feet in diameter. In another corner of the house, a fine example of *Begonia obliqua* was one mass of delicate pink flowers, which continue to be produced for weeks in succession. It is therefore valuable for cutting from. In a small forcing-house were Roses and other flowering plants coming on for the decoration of the conservatory, by means of the warmth furnished by a small Arnot stove. This has been in operation these dozen years, and during that time it has only needed repairing once. Here were *Coupe d'Hebe*, *Baronne Prevost*, *Duchesse de Montpensier*, *Auguste*

*tine* *Mouchelet*, *Mrs. Bosanquet*, and other favourite sorts. The conservatory was full of flowers. Among Roses, it contained *Auberon*, with eight blooms, all expanded; also *Charles Duval*, and the glorious *Géant des Batailles*, here, as in the open ground, "the gayest of the gay." There were likewise *Azaleas* of different kinds, and *Rhododendron azaleoides*, a charming plant at this season, and easily obtained by lifting it from the open beds in February, and subjecting it to a little forcing. The beautiful *Dielis spectabilis* also succeeds admirably under similar treatment. There was a plant of it here with great branching flower spikes upwards of a foot long. Among early Tulips were *Golden Rose*, a beautiful sort, which, if planted five or six together in an 8-inch pot, produces a truly striking effect; also the gay *Marriage de ma Fille*, and the red and yellow *Tournesol*. *Nemophila insignis* and *atomaria* planted three in a pot, hung down over the edges of the shelves, quite covering them with blossoms; the latter are found to be very useful for bouquets. Among fruiting plants was the little *Otaheite Orange*, with ripe fruit on it, thin-skinned and delicious; and a large *Citron* was loaded with half-ripe produce, which, when mature, is much esteemed for flavouring sweetmeats. In the Orangery, placed along the sides of the path, were *Camellias*, covered with showy flowers, and it is impossible for *Orange* trees to be more fruitful or healthy than they are here. The trees are large and fine, and are literally studded with fruit in all stages of growth, from perfect ripeness to that which is just changing colour. The tubs, which are comparatively small, are made of slate, with moveable panels, so that the roots can be examined at any time with facility. Some of the soil is removed from two sides of the ball one year, and from the other two the next, trimming off the matted roots, and fresh mould added, which has the effect of keeping them always healthy and fruitful. In open borders nothing was in bloom except *Snowdrops* and *Crocuses*, whose cheerful blossoms seemed to set the winter weather we are now experiencing at defiance.

### FLORICULTURE.

**CYCLAMENS.**—Those who wish to increase their stock of *Cyclamens* should look over them now when they are in flower, and select those for the purpose which are sweet-scented, and otherwise superior kinds. These should be placed on a shelf in the greenhouse, where they can have plenty of air; they will there produce abundance of seed, which, when sufficiently ripe, should be sown as soon as it is gathered in seed-pots or pans, well-drained, and filled with equal parts of good loam, sandy peat, and leaf-mould, or well decomposed dung. The seed should be distributed thinly and evenly over the pan, slightly covered with the mould, and kept moderately damp. Early in the autumn the plants will begin to show themselves; let them remain in the seed-pans until the beginning of May following, when a bed should be prepared for their reception, where there is sufficient bulbs to fill it, in the following manner: Take a layer of well-rotted dung 3 or 4 inches deep, the size the bed is intended to be; upon this place, well incorporated together, equal parts of good loam, sandy peat, and leaf-mould, sufficient to make a bed at least 9 inches deep. Now turn the plants out of the seed-pans, carefully preserving the points of the roots; for, if the latter are injured or cut off, the plant will make no progress until it has thrown out more roots from the base of the bulb. Then let them be planted from 4 to 6 inches apart, according to the size of the bulb. Let them be protected by a frame or hand-lights, give plenty of air, and, as the warm weather advances, take the lights away altogether. They will then need no other care than weeding and watering as may be required. Early in September they should be taken up carefully, and potted into pots varying according to the size of the plants; the smaller ones in 3-inch pots, the larger ones in 5-inch pots; put them in a close frame for about a week, giving a little air occasionally, until they have taken hold of the mould, which should be similar in quality to that mentioned above, with the addition of one-third well decomposed dung and a little silver sand. At the general time of housing greenhouse plants, give them a good airy position in the greenhouse, and in the following spring most of them will produce a tolerably good show of flowers. Those who have not the convenience of a greenhouse may keep them in a cold frame during the winter months, removing them when showing flower into the drawing-room or parlour as they are wanted; of course they will not bloom so early as those in the greenhouse, but it is better to have them late than not at all. When done flowering, place them in a cold frame, and pay as much attention to their wants as at any other season of the year; by this means the foliage continues vigorous and healthy. In May turn them out in a sheltered spot, and protect them from the mid-day sun. In September the mould should be shaken from them, any dead roots cut away, and the live ones carefully preserved; then repot into a size larger pot, and place them in their old position—the shelf or the frame. As the season advances, a portion of them may be placed in a warm house or the stove. These will flower much earlier than the rest, thereby prolonging the season of bloom for several months. A. K.

**NATIONAL FLORICULTURAL SOCIETY.** March 21.—One or two good flowers were produced on this occasion. Mr. Ivory, of Peckham, sent a *Cineraria* named *FRANCE ANTHELLA*, to which a label of commendation was awarded for its brilliancy of colour. It

was vigorous in habit, with a huge compact truss of purplish crimson flowers, having light disks. Mr. Keynes sent *Cineraria* Mrs. Edwards, a dwarf medium-sized sort, not first-rate in form; it was awarded a certificate for its colour, which is "a pale peachy lilac," with a grey disk. Some nice seedling *Cyclamens* were furnished by Mr. E. C. Henderson, and one of them was awarded a Certificate for its size, form, and well defined colours. Messrs. Frazer produced a *Camellia* named *Refulgens*, which was highly commended for its colour, which is bright cherry. Mr. Wilmore's *Epacris pallida* had a Certificate for its good shape, being considered to be an improvement on *Hyacinthiflora*. Messrs. Henderson contributed a small collection of *Hyacinths*, one or two of which were awarded labels of commendation.

**CATALOGUE, &c.**, received from Messrs. Schofield & Son, Knowlshorne, near Leeds. Also Schedule of Prizes issued by the Caledonian Horticultural Society; meeting days May 7, June 2, June 4, July 9, Sept. 1, Sept. 10, and Dec. 1. Catalogue from Mr. Henry Major, Knowlshorne, near Leeds; and from J. Weeks and Co., King's Road, Chelsea.

**DAHLIAS:** *G. R. G.* Annie Salter, Barmad, Duke of Wellington, Edmund Foster, Essex Triumph, Fearless, Gem of the Grove, General Faucher, George Villiers, Lady E. Cathcart, Morning Star, Miss Spears, Mr. Herbert, Mr. Seldon, Mrs. Seldon, Princess Radziville, Queen of Beauties, Queen of Lilacs, Richard Cobden, Sir F. Bathurst, Sir C. Napier, Sir R. Peel, Sir R. Whittington, and Triumphant.

**FUCHSIAS:** *Beginner.* Dark: Princess (Pince), Cartoni (Banks), Splendid (Low), Game Boy (Mayle), Standard of Perfection (Mayle), Nonsuch (Banks) Light: Conspicua (Banks), Sedonia (Smith), Lady Dartmouth, Crystal Fountain, Alba Multiflora, and Diadem of Flora.

**PANSIES:** *G. W. T.* We know nothing of the variety you refer to. As to the other matter some cultivator of Pansies will be able to assist you.

**PELARGONIUMS:** *G. B.* *Pimlico*, Elise (Hoyle), Ganymede (Hoyle), Magnet (Hoyle), Optimum (Foster), Purple Standard (Foster), Ariadne (Foster), National (Foster), Vulcan (Dobson), Virgin Queen (Arnold), Rosa (Beck), Mochanna (Hoyle), and Magificent (Foquet). *Fancies:* Advancer (Ayres), Formosissimum (Ayres), Magnum Bonum (Ambrose), Richard Cobden (Ambrose), Lady Hume Campbell (Miller), Caliban (Ayres), Hero of Surrey (Gaines), Triumphant (Ambrose), Reine des Français (Chauvière), Celestial (Ayres), Delicatum (Ambrose), and Gipsy Queen (Ayres).

**MISCELLANEOUS:** *Inquirer.* Apply at the Office, 5, Charles Street Covent Garden.

### SEEDLING FLOWERS.

**CINERARIAS:** *J. E. Boney.* Decidedly the best formed petal we have seen this season; can you favour us with another bloom? —*W. W.* Shrivelled up past recovery.

### Miscellaneous.

**Mode of Preventing Incrustation in Boilers.** Patented August 23d, 1852, by Frederick Dam, of Brussels, chemist.—The novelty of this invention consists in the employment of hydrate of potash or soda for the purpose of preventing incrustations in steam-boilers, and of removing any deposit that may already have formed. The hydrate is used in the state of solution, a saturated solution being preferred, and is introduced into the boiler, or into the water with which the boiler is supplied, in sufficient quantity to precipitate the impurities contained in the water, the proper proportion for this purpose being previously ascertained by testing some of the water with the solution which is to be used. Claim: the application of hydrate of potash or soda for the purpose described. *Mechanics' Magazine.*

**Improvements in the Manufacture of Manure.**—(Stothert's Patent, enrolled Oct. 17).—The first part of the patentee's invention has reference to the treatment of sewage water, and is thus effected: the sewage water being received into suitable tanks, is kept constantly agitated, with the addition from time to time of recently burnt quicklime, as new quantities of sewage are run into the tanks. 10½ lbs. of sulphate of alumina, half a pound of sulphate of zinc, and 10½ lbs. of compound animal and vegetable charcoal are then added to each 1000 gallons of sewage water, a portion of which is by this means precipitated in a solid form. The supernatant fluid and the solid precipitate may both be used for manure. The former may be applied in the manner usually directed for liquid manure, and if intended to be kept for any time, one drop of creosote or oil of peat may be added to each gallon of fluid. The solid manure may be at once dried and formed into blocks, or it may be first mixed with refuse vegetable or mineral substances. The compound animal and vegetable charcoal used is obtained by the destructive distillation of night-soil on the precipitated material above mentioned, with peat or refuse tanner's bark. *Pharmaceutical Journal.*

**Oaks of Northern Mexico.**—The Oak vegetation in the northern states of the interior is very numerous as regards species; but almost all the trees are low and stunted; often only shrubby; not forming dense forests, but standing in small groups on the precipitous sides of mountains. Many species have large, coriaceous, often rugose, tomentose leaves, and small fruits. They occur chiefly at elevations from 6000 to 8000 feet, and do not produce the same pleasing impression with the Oaks on the eastern Cordilleras; their weak, crooked stems, the few irregularly spreading branches, and stiff, lead-grey leaves, giving them a sombre appearance, still further augmented by the loads of pendulous ash-grey *Tillandsia usneoides*, which often cover the Oaks entirely. To give some idea of the extent of species found on those arid mountains in the interior of Mexico, I will mention the following from the silver district Real del Monte:—*Q. crassipes*, Mexican, lanceolata, laurina, tridens, depressa, ambigua, glaucescens, chrysophylla, pandurata, rugulosa, Grahami, glabrescens, repanda, barbinervis, crassifolia, obtusata, callosa, nitens, reticulata, confertifolia, sideroxylla, &c. These species are again found on all the mountains of the interior of Mexico, from Zacateca to Oajaca. In the silver district of the eastern mountains of the State of Oajaca, I have met with nearly all the species which I first knew only from Real del Monte. *Lichmann, in Hooker's Journal of Botany.*



## Calendar of Operations.

(For the ensuing week.)

## PLANT DEPARTMENT.

Now that the new growth has commenced, abundance of air and light should accompany it, if short-jointed wood and healthy foliage are to be obtained. To allow sufficient air to greenhouse plants, with the keen piercing winds we are now experiencing, requires some management; for with a bright sun air must be supplied in considerable quantities. Very thin gauze, or the hexagonal netting (recommended in our Calendar for Vineries), will be found excellent articles, placed before the openings for ventilation, to break the force of the currents of cold air, which would be unsafe to come in contact with the newly-made foliage of plants. As more than ordinary fires have been required of late in plant-houses, rendering (in addition to the drying effects of the external air) the internal atmosphere drier than usual, the requisite humidity should be supplied by sprinkling the heating apparatus, floors, &c., at the same time keeping it rather below than above the usual standard for this season, to meet the present low temperature. Hard-wooded plants, whose pots are full of roots, and which it is not convenient to repot just at present, should be carefully attended to with water; for if allowed to flag, many plants (particularly such as have fine hair-like roots) scarcely ever recover. The growth of plants intended to bloom next autumn and winter will require attention; if numbers are grown, they will be easier managed if placed by themselves. The early-started Chinese Azaleas, and the common and Otaheitan Orange, will be making growth, which should be encouraged by frequent syringing, and a genial temperature of about 50° by night. Straggling shoots should be at once removed; and to obtain perfect flowering specimens, the new growth should be uniform, to enable the wood to ripen at the same time. Some of the earliest bloomed Camellias may be added, and occupy the shady parts of the house. Epacris are another useful family for winter flowering, and will stand a moderate forcing. Select the early blooming section, and after pruning place them in a moderately warm temperature, and, by damping frequently, encourage them to break. To the above may be added various plants, which, if required to bloom by Christmas, should be encouraged to make an early growth, preparatory to an early ripening and rest; we prefer potting such of the above as require shifting, after the growth has become somewhat matured. Prune *in Erica hiemalis* and other winter blooming Heaths, as they go out of flower, to get in order for potting.

## FORCING DEPARTMENT.

**VINERY.**—During bright weather, some of the Vines having tender leaves, as the Cannon Hall, and Dutch Sweetwater, may get scorched; in this case, use very slight shading for a time, and keep the foliage as hardy as possible by good ventilation. The same conditions are very likely to bring out the red spider, particularly where forcing has been carried on for a length of time; the best way to prevent this pest increasing is to wash over the pipes or flues with a mixture of sulphur in powder, quick-lime, and water, adding a little skim-milk as a size. This should be put on in dull weather; and if the insects are numerous, the interior walls of the house may be brushed over with the composition, which may perhaps require repeating; but, generally speaking, if the conditions of good culture are practised, this pest will not make much head. Keep the heat steady in the early house during the stoning process, and maintain the necessary degree of moisture by frequent sprinklings. Pinch off all lateral shoots as they appear, that nothing may interfere with the final swelling of the fruit. Attend to our previous directions as regards the successional houses. Vines now breaking will require copious syringing, to counteract the dryness produced by the external air. To prevent the last house from breaking too soon shade them each fine day, and throw the house open by night. Examine carefully the inside borders of all forcing houses, and see that they are liberally supplied with tepid water, using liquid manure whenever circumstances make it necessary. **PINERY.**—Fruiting plants, directly they have done blooming, must be kept moist, both by the syringe (each fine afternoon) and by increasing the humidity of the house; take advantage of the sun-heat by closing early. A temperature of 90° to 96° will not injure them, if accompanied by as much moisture as the air will contain, or your means can supply. Remove thus early all useless suckers, and keep the fruit in an upright position by proper staking. Figs will now require the syringe twice daily, and frequent waterings at the roots. Keep the foliage from being too crowded, by pinching off the end of the wood where too thick; and, above all, keep the temperature steady. The first crop will now be swelling, and require this, to prevent its falling off. **STRAWBERRIES** are now ripening, and, when required to be kept for some days, should be removed to a dry, airy house; carry on the successional crops, that the supply may be continuous. The stock out of doors will require to be removed from their winter quarters, and placed in an open situation, giving them a good watering, and a surfacing if necessary.

## FORCING GROUND.

Those who are forcing their Melons and Cucumbers by the aid of hot water may congratulate themselves; for the trouble and uncertainty of managing them by dung linings this severe weather are very great. By

whatever way they are brought forward, a steady bottom-heat, agreeably with former directions on this point, must be maintained; and, if possible, keep up a command of top heat, to permit a gentle circulation of air through the house or frame daily; and, of course, considerably increasing it during sunshine. In stopping and training either Cucumbers or Melons, be careful not to remove or injure the large leaves while healthy, but keep them sufficiently thin, that while each leaf has its full share of light, they are not allowed to shade each other. Let the stopping, &c., be attended to daily, for it is a most injurious practice to allow them to grow wild for a week or more, and then cut the greater part away at once. Not a vine, or even leaf should be produced more than is requisite. Do not allow any fruit to set on Melons till they have formed a sufficient amount of foliage to enable the fruit to swell. Earth up as the roots advance, having the soil well dried for the purpose. Water very cautiously, and only when the soil is dry. Cucumbers in bearing will require manure water often, more especially if growing in pots or in a confined border; place an inch or two of rich compost over the roots as they rise to the surface, this will help to keep them productive; keep down insects and mildew. Beds for successional crops should be prepared, and sowings made for further supplies. As both Seakale and Rhubarb from the natural ground will be late this spring, a small crop of each may be put on, should a supply be wanted; the earliest forced, if a fresh material is added, with a slight heat, will produce a second crop. Potatoes in frames should be securely protected from frost; earth up as they advance; water very sparingly, and then during the fore part of the day, for the plants to get dry before closing time, and, to succeed the frame Potatoes, a crop should now be planted on a slight bottom-heat, formed by filling a trench with hot dung. When the soil for planting is on, the earth should not be much higher than the surrounding soil. Cover well with dry litter till the Potatoes appear above ground, after which they must be hooped over and covered each night by mats. French Beans, in bearing, water with liquid manure, and syringe with weak tobacco water, to keep down thrips. Keep up a succession by sowing a crop once a fortnight. If a pit can be spared it will be the best structure for growing them after the middle of April, and may be now got in readiness. Mushrooms keep in an equal temperature, admitting air occasionally. When the beds get exhausted, a casing of fresh soil, and moderate waterings, will often induce a second crop. It is, however, safer to make up a fresh bed, which, if a supply in May and June is wanted, should be done at once.

## FLOWER GARDEN AND SHRUBBERY.

To the list of scarlet Geraniums named last week, add Harkaway, a good variety for a dwarf bed. In the next section of Pelargoniums for bedding purposes, Crimson Unique, Moore's Victory, Quercifolium superbum, Lady Mary Fox, and Diadematum crubescens, are well-deserved favourites. In the fancy class, Jehu Superb, Queen Superb, Empress, Anais, and Beauty of Winchester, we find more suitable, but they require drier summers than we generally get, to see them in perfection. Virginium, when it becomes more plentiful, will prove valuable in this class, as affording a nearly pure white. Taking Verbenas, we intend naming only a few self adapted for growing in masses, and leaving the party-coloured flowers an open question. Among the scarlet varieties we use only *Boule de feu*, *Brilliant*, and *Evain*, planting *Defiance* where large masses and higher plants than the above are wanted. *Louis Napoleon* and *Mirabeau* are more crimson than scarlet, but equally good and showy. As white Verbenas, *Mont Blanc*, *Boule de Neige*, and *Celine Malet* we consider the best, planting *Melindres alba* for very dwarf beds, or edging. *Andrew*, *M. Pasquin*, *Mrs. Mills*, and *Stephenette*, are the best among the blue and violet class. We must not, however, forget the old *V. venosa*, which in large masses, or for mixing, is still a useful flower for a purple bed. Pot off seedling annuals intended for beds, &c. *Maurandias*, *Lophospermums*, *Loasas*, *Tropaeolums*, and *Cobaea scandens*, should be got on, to be well hardened off before planting time. While frost continues protect frames, &c., well by night, but allow air each day.

## FLORISTS' FLOWERS.

The weather has been so serious that little or nothing could be done; at all events potting Carnations and Picotees must be proceeded with the first favourable opportunity. Growers who intend to exhibit at the National Show, at York, should immediately get the varieties in which they require to make up their stock. We would advise them not to forget *Lady Macbeth* (R.E.), or *Fellowes' Haidee*, *Ganymede*, and some others which they will find in some of the lists of our first growers. These of course will be sent in pots when ordered; but let every purchaser eschew layers, sent wrapped in moss, at this time of the year; far better is it to pay a trifle for carriage. The satisfaction of a good bloom, with the increased layers, will amply repay the outlay. Many Tulips which we have seen have lost their outside leaf; while canker and mould have done their work. A slight protection will now be safe. We attribute in a great measure these casualties to over protection; but as all the fancy are determined to win at the Nottingham National, this will in a great measure account for the harm done. Auriculas and Polyanthus will now require more water, and strict attention as to air and cleanliness, &c. **DAHLIAS.**—Cuttings which are rooted must be potted off, kept close till established, and then hardened.

## HARDY FRUIT GARDEN.

Of course Peaches, Nectarines, and Apricots are securely protected from frost, by some material or other; in some respects, the present severe weather may do good, by protracting the blooming period. Not only the above, but the better kinds of Plums, Pears, and Cherries should have protection, should unfavourable weather occur when they are in bloom. We do not, however, advise their being covered till that time arrives, but the covering material may be got in readiness, should it be wanted.

## KITCHEN GARDEN.

The return of winter weather will prevent the getting in of the spring crops for a time. Wait till the weather changes before putting out Cauliflowers, Lettuce, &c., wintered under glass; but, in the mean time, harden them well, by giving them all the air possible, without damaging them by direct exposure to frost. When the weather permits, sow *Snow's Early Broccoli* for autumn use, and the *Enfield Market* and old *Sugar-loaf Cabbage* for summer supply, on a warm border. The early *Six-week Turnip*, Lettuces, Radishes, and similar vegetables in season but a short time, should be sown fortnightly on light soils.

## STATE OF THE WEATHER NEAR LONDON,

For the week ending March 24, 1853, as observed at the Horticultural Gardens, Chiswick.

March.	Moon's Age.	TEMPERATURE.										Wind.	Rain.
		BAROMETER.		Of the Air.			Of the Earth						
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.					
Friday..	18	9	30.101	29.928	34	20	27.0	38	39	E.	.00		
Satur...	19	10	30.150	30.132	40	20	30.0	37	38	N.	.00		
Sunday..	20	11	30.116	29.946	44	32	33.0	36	37	W.	.00		
Monday	21	12	29.839	29.764	42	25	32.5	36	37	S.	.01		
Tues...	22	13	29.887	29.859	42	24	33.0	36	37	S.	.01		
Wed...	23	14	29.855	29.829	40	23	31.5	36	37	N.E.	.01		
Thurs...	24	15	29.843	29.891	41	17	29.0	36	37	N.	.05		
Average ..			29.968	29.748	40.4	21.3	30.8	35.5	37.4		.05		

March 18.—Dry and frosty; overcast; snow-flakes occasionally; clear and frosty.  
 19.—Frosty; clear, with dry air; clear and frosty.  
 20.—Fine; cloudy; slightly overcast.  
 21.—Snowing; overcast; clear and frosty.  
 22.—Cloudy and cold; white clouds with very clear intervals; frosty.  
 23.—Slight snow; snow-showers occasionally; clear and frosty.  
 24.—Clear and frosty; snow-showers throughout the day; very clear.  
 Mean temperature of the week 12 deg. below the average.

## STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending April 2, 1853.

March and April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.									
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Variable	Calms
Sunday 27	53.7	34.7	44.2	10	0.37 in.	1	5	4	1	1	1	1	1	1	1
Mon. 28	53.3	34.2	43.8	10	0.68	1	5	4	1	1	1	1	1	1	1
Tues. 29	53.3	34.2	43.8	10	0.68	1	5	4	1	1	1	1	1	1	1
Wed. 30	53.7	35.2	44.4	9	0.11	1	3	4	1	1	1	1	1	1	1
Thurs. 31	54.9	35.8	45.2	11	0.39	1	3	4	1	1	1	1	1	1	1
Friday 1	54.4	35.2	44.8	15	0.75	1	3	4	1	1	1	1	1	1	1
Satur. 2	55.3	36.4	45.8	12	1.19	1	3	4	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 27th, 1850—therm. 75 deg.; and the lowest on the 25th, 1850—therm. 14 deg.

## Notices to Correspondents.

**CLOCHES:** *W. E.* You must apply to the Glass Works. We understand that Messrs. Hartley have offered to make any number not less than 200, for a shilling a piece.

**HOLLIES:** *J. S.* Plant them in August or September. **JOYCE'S SEED:** *W. T.* This has very little heating power. It may keep frost out of so small a greenhouse as you name, but that is quite as much as it can do in severe weather.

**MR. M'GLASHAN'S APPARATUS:** *Mr. Bundy* seems to misapprehend what has been said respecting this invention. No one that we know of has pretended that it exhibits any new principle in mechanics. All that has been alleged is, that it is an ingenious application of known principles. Upon turning to Mr. Barron's "Winter Garden" it will be seen that his transplanting machine is very different. The question to be answered in the Garden of the Horticultural Society was whether the apparatus was capable of doing what Mr. M'Glashan professed to do. For the purpose of exhibiting the lifting power, one tree was as well suited as another.

**NAMES OF PLANTS:** *T. S.* 1, *Pitcairnia suaveolens*; 2, *Hardenbergia ovata*.

**ONION MAGGOT:** *R. G.* See an article on this subject in our Home Correspondence of to-day.

**PEACHES FOR A PEACH-ROSE:** *W. H. C.* Royal George, Noblesse, and Bellegarde. These are sorts that you will get correct from any respectable nurseryman. It is late for moving Peach trees, but vegetation being very backward this season, you may now plant without any danger of their not succeeding; and by properly attending to them you will gain a year's growth.

**PEARS FOR A WEST ASPECT WALL:** *R. F.* As you wish to have large sorts, the following will be suitable:—*Beurré Diel*, *Glout Morceau*, *Beurré d'Amanlis*, *Van Mons Léon* le Clerc, *Beurré Rance*.

**PINE-APPLES:** *R. O. B.* Too much damp, or too little heat, would induce the discolouration you complain of. Your Strawberries are, no doubt, also rotting off from similar causes.

**POTATOES IN TAN:** *A. Z.* We believe that Mr. Bennett's plan, to which you allude, is to throw up the ground into ridges 30 inches apart in November, and to allow it to remain in that state until the first week in February. The ridges are then slightly levelled down, and if the ground is stiff, 3 inches of tan are placed between the rows, but if it is light, 2 inches are sufficient; the Potatoes are then planted whole on the tan, and covered with it to the depth mentioned above, three parts of the remaining ridge are afterwards thrown over them, the remainder being permitted to stand until the Potatoes require earthing up.

**POTSHERDS:** *W. D. H.* We do not believe the hard materials you ask for to be procurable, unless at the potteries. They are not used in this country for any horticultural purpose.

**STRAW PAPER:** *A. B.* We understand that to be manufactured exclusively in the United States. It is no doubt excellent for many purposes, and we should be happy to learn its history from some correspondent.

**TRANSPLANTING:** *South Sussex* should remove his Evergreen Oak in the month of September. Very large trees of this kind remove badly, and we would not advise him to try the experiment with one more than 10 or 12 feet high. He had better now dig a trench round it 3 feet deep, about 6 feet from the trunk, and fill the trench in with a little fresh soil. This will facilitate the formation of small firm fibres, and render the operation less hazardous in the autumn.

**VINES:** *H. B. C.* They appear to be in a bad condition; but no one, except a person on the spot, can say what ails them. **ZINC PANS:** *Sigma.* We presume they are to be had of any worker in the metal.



PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

**ANTONY GIBBS AND SONS,**

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9s. 5s. per ton, less 2½ per cent.

Any re-sales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c. delivered to any Railway Station in London at 6s. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

PERUVIAN GUANO, guaranteed the genuine importation of Messrs. A. GIBBS & SONS, 9s. 10s. per ton, or, in quantities of five tons and upwards, 9s. 5s. per ton in dock. A constant supply of LINSEED and RAPE CAKE.

EDWARD PURSER, Secretary.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. 7 0 0  
Sulphuric Acid and Coprolites... .. 5 0 0

Office, 69, King William Street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

SEWAGE CHARCOAL MANURE.

**PEAT CHARCOAL**, completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenny.

MR. JOHN ANNETT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other Manure. The quantity I used was 4 cwt. to half an acre."

GUANO AND OTHER MANURES.

**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

IRON HURDLES.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London; and 17, New Park Street, Southwark. Manufacturers of every description of Iron Fencing, beg to call the attention of Noblemen and Gentlemen to their present prices of **HURDLES**:—for Sheep, 6 feet long, 3 feet high, with 5 bars, at 4s. 6d.; and for Cattle, 6 feet long, 3 feet 3 inches high, with 5 bars at 5s. each.

DIGGING MACHINE.—SAMUELSON'S PATENT.

**M. R. BURGESS** having witnessed a most successful trial of this Machine, made in the presence of a number of the leading agriculturists of the district of Banbury, we have made arrangements for an agency for the sale of the same.—BURGOSS & KEY, 103, Newgate Street, and 52, Little Britain, London.

**LIQUID MANURE PUMPS AND GUTTA PERCHA TUBE**, by which Liquid Manure or Water can, by manual labour or steam power, be distributed over land at any distance, at a very trifling cost. Copies of Testimonials and Prices sent on application.—BURGOSS & KEY, 103, Newgate Street; and 52, Little Britain, London.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required.  
To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest Pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

**JOHN WARNER & SONS,**

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Every description of Machinery for Raising Water, Fire Engines, &c.

BAKER'S FOUNTAINS.

THE PHARMACY, BEAUFORT STREET, KING'S ROAD, CHELSEA.  
**MESSRS. BAKER** can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c. as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

CUCUMBER AND MELON BOXES and LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes, ready for immediate use. Warranted best materials, packed and sent to all parts of the Kingdom; 2-light Boxes and Lights from 1s. 6s. Garden Lights of every description, Conservatories, Green and Hot-houses made and fixed in all parts of the Kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties in England.—JAS. WATTS, Hot-house Builder, Claremont Place, Old Kent Road, London.

CLOVER SEEDS.

**AGRICULTURISTS** desirous of obtaining really genuine and pure new Clover and Grass Seed, are respectfully recommended to apply to the undersigned for Prices, and any other information required.  
Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**PRESENT PRICES OF AGRICULTURAL SEEDS.**  
**SUTTON'S AGRICULTURAL SEED CATALOGUE** FOR 1853 will be seen on the last Page of the *Gardener's Chronicle* of 26th February.  
Early Orders will have the preference of scarce sorts.

MEADOW AND PASTURE GRASS SEEDS.

**GEORGE GIBBS AND Co.**, will be happy to forward their Priced List of Turnips, Carrots, Mangold Wurzel, and other Agricultural Seeds for the present season.  
Their mixtures for laying Land down to Permanent Meadow and Pasture, are ready, price 30s. per acre, allowing 2 bushels and 12 lbs. to each acre. Mixtures for two or three years' lay, or rotation cropping, 22s. to 24s. per acre. Mixed sorts for improving old Grass Land, 1s. 2d. per lb. Fine sorts for forming Lawns, &c., 1s. 3d. per lb. Directions for Sowing and Treatment will accompany the Seeds.—Address,  
**26, Down Street, Piccadilly, London.**

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.

PRESIDENT OF COUNCIL—Earl BATHURST.

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*Surveying, Civil Engineering, and Mathematics*—W. Sowerby, A.I.C.E.  
Manager of Farm—R. Valentine.  
Assistant to Chemical Professor—A. Williams, M.R.C.S.

THE NEXT QUARTER DAY for the Admission of STUDENTS is Wednesday, April 6.

Students are admitted either as Boarders or as Out-Students. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as for agricultural education.  
Prospectuses and information can be had on application to the Principal.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, KENNINGTON, NEAR LONDON.

PRINCIPALS:

A. NESBIT, Author of Practical Treatises on "Arithmetic," "Mensuration," "Land Surveying," "Gauging," "English Parsing," &c., and  
J. C. NESBIT, F.G.S., F.C.S., Consulting and Analytical Chemist, Corresponding Member of the Central and National Agricultural Society of France, &c.

PROFESSORS:

Chemistry, Geology, and Agriculture: Mr. J. C. Nesbit.  
Assistant Chemist: Mr. E. Lane.  
Natural Philosophy, Surveying, Engineering, and Mathematics: T. M. CREGAN, Esq., C.E.  
Drawing and Fortification: T. J. RAWLINS, Esq., C.E., Professor of Drawing, St. Mark's College, Chelsea.  
Botany, Zoology, and Natural History: C. JOHNSON, Esq., Professor of Botany, Guy's Hospital.  
English Literature and Elocution: James WIGAN, Esq., Professor of Elocution in the Ladies' College of London, and late Lecturer in Rhetoric at Chesham College.  
Classics and Modern Languages: Able Assistant Masters.

Messrs. NESBIT take under their charge about 30 students, resident or non-resident, who obtain in the College every aid and advantage for Scientific Education, which immediate vicinity to London commands.

In this Institution unusual facilities are afforded for acquiring a thorough knowledge of every department of Analytical Chemistry, and of the Assaying of Gold, Silver, and other Metallic Ores. Mr. J. C. Nesbit has an extensive practice as an Analytical Chemist, and in his Laboratories the Students acquire a practical as well as theoretical knowledge of perhaps the most important of modern sciences.

The system of studies comprises a thorough Classical and Commercial Education, and every other branch requisite to prepare youth for the pursuit of Agriculture, Engineering, Mining, Manufactures, the Arts, the Naval and Military Services, and for the Universities.

The Laboratories are extensive and complete, and are amply provided with every apparatus essential for the most important chemical investigations.

The Students have access to a well-selected Library of upwards of two thousand volumes, comprising the most recent works in Science and Literature; to a valuable collection of Minerals and Geological Specimens; and to an extensive suit of Mathematical and Philosophical Instruments.

Between four and five acres of land, attached to the premises, are appropriated for the exercise and recreation of the pupils.

The senior residents have a commodious apartment for private study, and are each provided with a separate bed-room.

Mr. J. C. NESBIT may be consulted with reference to every variety of Chemical Patent and Manufacture, and the preparation of Artificial Manures. Analyses and Assays of all descriptions are also promptly and accurately executed at the College.

The terms and other particulars may be had on application.

THE GREAT NORTHERN ASSOCIATION FOR THE IMPROVEMENT OF THE BREEDS OF PIGS, POULTRY, PIGEONS, AND RABBITS.—Open to All England.

The Second Annual Exhibition will be held in the New Market House, Doncaster, on WEDNESDAY and THURSDAY, the 30th of November, and 1st of December, 1853. Upwards of 150l. will be offered for competition.

Prize Lists, and any further information, may be obtained of Mr. HENRY MOORE, Honorary Secretary, Doncaster.

The Agricultural Gazette.

SATURDAY, MARCH 26, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, April 6.—Agricultural Society of England.  
THURSDAY, 7.—Agricultural Imp. Society of Ireland.

WEATHER such as that of the past week is enough to upset the best agricultural calendar of operations, and puzzle all its readers. "Young Wheat will require hoeing towards the end of this month"—"Oats should be sown in the early part of this month"—"Barley may be sown towards the end of March"—"Grass and Clover seeds may be sown

with Barley"—"Potatoes should be planted this month"—"the land for Carrots is to be scarified and harrowed, if previously ploughed and manured"—"Spring Tares are to be sown for July consumption"—"Peas are to be sown in March"—"a seed bed for Cabbage is to be prepared and sown"—"Flax may be sown towards the end of March"—"Chicory for herbage may be sown"—"Camelina, Mustard, Teazles, &c., may be sown"—and so on. Talk of spring corn and Grass seeds—of Flax, Pulse, and green crops!—we wonder how many farmers have yet got all the land they intended for Wheat out of hand. With the thermometer below the freezing point almost constantly day and night for a week towards the end of March, and snow covering the land in the south of England, we may well be excused from following calendarial precepts adapted only for an average season.

In a letter to the *Aberdeen Journal* of last week we read the following:—"ARTHUR HARVEY, Esq., writes us, that, on 17th March, 1851, he had an imperial acre sown down, broadcast, with 1½ bushel; but a severe snow-storm falling during the night, previous to its being properly harrowed in, it remained comparatively unprotected for nearly three weeks, and he believes little more than half of the seed sown grew." This relates to the Barley crop; and it illustrates the risks run by hurrying on the routine of operation, in literal obedience whether to habit or rule, and not intelligently accommodating your proceedings to the circumstances both of the soil and of the sky. If we had to write a calendar for such weather as the past week, supposing it to continue for another fortnight, it should contain more of caution than direction, and would read somewhat to the following effect:—"Do not send hoers among your Wheat until the land is dry, and the plants, invigorated by a week's genial warmth, are prepared to take advantage of the stimulating effect of cultivation between their rows. Delay all seed-sowing till the weather improves. Potato planting may continue where the land is dry. The plough should be kept at work in preparation of land for Barley, for Peas, and for Tares—we suppose your Oat land is either sown or prepared for seed. Manure may be carried out for the Vetches, and spread and covered in. Manure heaps may be formed in the fields intended for green crops, and those intended for Carrots may be turned, so as to be in a ripe state for application where the land has not received an autumn manuring.—As a general rule, energy, and preparedness, and activity should guide the proceedings of the farmer; but his best policy sometimes is one of caution and delay, if not of entire inaction.

WE understand it is certain that Government will this year attempt the collection of the agricultural statistics of one or more districts of considerable extent in England and in Scotland respectively. And the results of this attempt will no doubt guide them to some more skillfully arranged machinery for performing the work on a completer plan, and over a larger extent in the future. The success of the preliminary trial is therefore of very great importance. To insure it, a suitable district needs to be selected—the subjects of inquiry regarding it need to be determined upon—and the machinery for making that inquiry and collecting its results needs to be arranged and set to work.

It is not intended, we believe, to ask powers from Parliament—such as were given in the case of the census returns—to enforce the returns which are now to be obtained; the information asked, if obtained at all, will be given voluntarily by the owners or occupiers of the land, and even the labour of procuring this information has to some extent been volunteered, and for the rest will be laid upon the shoulders of some existing department, so as to incur as little expense and make as little disturbance as possible. The Highland Society have, we understand, engaged to superintend and direct the business in Scotland, and the Poor-law Board will, we suppose, have to do the same in England. We can pretty confidently predict whose work will be best done.

In the plan developed in Mr. Gibson's bill of 1847—"enumerators" were to be employed to distribute and collect the schedules, and the superintendent-registrar of each district was to receive them, collate them, and transmit the information they conveyed to the Board of Trade. And if the labour were one merely of "enumeration," there was no reason why the county police or any other set of mere officials should not undertake the work and perform it as efficiently as any other. The objects aimed at in Mr. Gibson's bill were indeed attainable by little more than mere enumeration. The bill was designed to ascertain the acres growing Wheat, Barley, Rye, Oats, &c., and the number of cattle, sheep, &c., on the various farms. But, supposing these objects attained, we should have arrived at a very imperfect knowledge of the agri-



cultural statistics of the district in question. What we want to know is the actual produce of the land and not the mere acreage of it. And so the Government of the day seemed to think—they concluded that the objects aimed at were not worth much trouble, even if they could in this way be ascertained; for Mr. LABOUCHERE, on being asked, at the time, as to the intention of the Government regarding the bill, said that the scheme would cost 40,000*l.*, and that the CHANCELLOR of the EXCHEQUER could not spare the money!

The fact is, that we want not only the number of horses, cattle, sheep, and pigs, and of the acres under the different crops, but we want to know the weight of beef and mutton and wool and bacon produced, and the bushels of Wheat, Barley, Oats, &c., grown; and to give us these we must obtain the assistance of intelligent men accustomed to agricultural estimates and valuation. At the best the results we get will be but a guess. The acres, no doubt, may be ascertained with tolerable accuracy; even if the occupier cannot tell the extent of his fields. The parish maps and rate books will inform us that, if he will only let us know their names. A great deal of information may, no doubt, be given by the Tithe Commutation Commission; and we suppose a district for this trial examination could be selected large enough where they had completed their labours. The extent of arable land and Grass, and waste and woodland, would be thus obtained at once—and when valuations had been made, and maps existed, as they have been made and do exist in every parish in the country, we suppose the value and extent of every separate field would be ascertainable. The collectors of these returns—the overseers of the poor, or the relieving officers they will probably be, if the Poor-law Board shall undertake the matter—will thus have their labours much facilitated.

The question as to the machinery to be employed must depend on the objects aimed at. If these merely include the area under different crops, and the number of the live stock in the district, then the work may be entrusted safely to almost any parish officers, overseers, tax-collectors, or even constables. If the tenants of the land will give the information asked, it matters little in this case who is employed to put it together. But if estimates are to be made, such as are made, for instance, where an incoming tenant takes the stock and crop of his predecessor at a valuation, then we shall need the services of a class of men corresponding in ability to our professional valuers. At best, as we have said, the tabulated statement of the whole result will be the expression of an opinion and not of a fact; for obtain the return at what season of the year you may, the produce whose amount you want is in the risk or in the field as well as the bushel, and its quantity must be judged of, measured. Most farmers have been disappointed, sometimes agreeably, when they came to thresh the ricks whose produce they had estimated—and it was the estimate alone they could return. And as self-interest may mislead even an honest judgment, the collectors of these estimates need to be more than mere "enumerators." The overseers of our poor are, in general, men accustomed to agricultural affairs, but we should not feel much confidence in their editorship of these agricultural returns; and the same difficulty occurs in connection with the employment of any existing body of officials for this purpose. The idea of district surveyors superintending these enumerators, suggested in many of the reviews of Mr. GINSON'S measure, seemed a tolerable solution of the difficulty, but that is inapplicable to the present scheme, owing to the cost.

The Highland Society will find no difficulty in the matter, it will go about the work heartily and intelligently, and inspire with equal energy its members in the district which it selects; and we doubt not that a most useful report will be made from the district in Scotland. If the Farmers' Clubs of the English counties had not nearly all died out, they would have been the bodies to have done the work in England; and we believe the English Agricultural Society, or if they refused, even the London Farmers' Club, would superintend the labour of the English district to be chosen, with greater probability of arriving at a useful result than exists in the case of any other agency that has been suggested.

A great deal remains to be said on the selection of a district and the nature of the inquiries to be made regarding it; but we must, for the present, postpone our remarks. Government may rest assured that their resolution on this subject, even though it determines on so modest a beginning, will be hailed with great satisfaction by all the intelligent farmers of the country, and we believe that every effort will be made to insure the success of the experiment.

## INDUSTRIAL EDUCATION IN UNION SCHOOLS.

(SEE PAGE 714 FOR 1852.)

THE following Balance-sheet is taken from the accounts kept by the schoolmaster, Mr. A. Sparkes, and was furnished to the Board of Guardians last October; since then, however, on looking over the stock of Potatoes, so many have been found decayed that the balance on the last year must be reduced by at least 20*l.* The rates are not included, which will further reduce the balance on the whole period by 5*l.* more, therefore the summary will show

Balance of 1850	...	...	£4 13 5
" 1851	...	...	14 16 4
" 1852	...	...	56 4 11
			75 14 8
Deduct rates	...	...	5 0 0
			£70 14 8

averaging 23*l.* 11*s.* 6½*d.* per annum, for the three years, as a return to the Union for the labour of an average of fourteen boys three hours per day, making two days per week, realising 9*s.* 1*d.* per week, or nearly 4*d.* per day each.

Statement of the Produce and Expenditure of the Peterborough Union School Farm.—From Michaelmas 1849, to Michaelmas 1851, on 3 acres of Land; and from Michaelmas 1851, to Michaelmas 1852, on 6 acres of Land.

EXPENSES:—FROM MICHAELMAS 1849 TO MICHAELMAS 1850.			
	£	s.	d.
New Tools and Repairs	...	...	5 5 6
Garden Seeds	...	...	0 4 6½
Seed Potatoes	...	...	5 10 7½
Seed Barley	...	...	0 5 0
Threshing Barley	...	...	10 0
One Years' Rent for 3 acres of Land	...	...	10 10 0
To Balance	...	...	4 13 5

To MICHAELMAS 1851.			
22 bushels of Barley, at 2 <i>s.</i>	...	...	3 3 0
3½ quarters of Beans, at 2 <i>s.</i>	...	...	4 18 0
Tools and Repairs	...	...	1 2 3
Seed Wheat	...	...	0 13 0
Seed Peas	...	...	0 9 9
Seed Potatoes	...	...	3 0 6
Garden Seeds	...	...	0 6 9
Threshing Beans and Wheat	...	...	1 7 0
12 Pigs and Salesman's Commission	...	...	16 14 6
Barley for Pigs	...	...	3 7 6
One Years' Rent of 3 acres of Land	...	...	10 10 0
To balance	...	...	14 16 4

To MICHAELMAS 1852.			
Seed Wheat and Drilling 1½ acres of Land	...	...	0 13 6
Barley for Pigs	...	...	2 14 0
Tools and Repairs	...	...	1 8 0
4 Pigs and Salesman's Commission	...	...	4 7 3
Seed Peas, 10 <i>s.</i> 6 <i>d.</i> ; Beans, 12 <i>s.</i>	...	...	1 2 6
Seed Potatoes	...	...	4 11 0
Garden Seeds	...	...	0 3 0
Threshing Wheat	...	...	1 4 9
One Years' Rent of 6 acres of Land	...	...	21 0 0
To Balance	...	...	76 4 11

RETURNS:—FROM MICHAELMAS 1849 TO MICHAELMAS 1850.			
	£	s.	d.
Vegetables supplied to the House	...	...	0 13 5
22 bushels of Barley, at 2 <i>s.</i>	...	...	3 3 0
3½ quarters of Beans, at 2 <i>s.</i>	...	...	4 18 0
Potatoes supplied to the House, at 5 <i>s.</i> 4 <i>d.</i> per sack	...	...	18 4 8

To MICHAELMAS 1851.			
Vegetables supplied to the House	...	...	2 15 4
6 Pigs	...	...	21 10 0
5 st. 2 lbs. of Pork supplied to the House, at 4 <i>s.</i> 10 <i>d.</i> per st.	...	...	1 4 10
21 bushels of Peas, at 3 <i>s.</i> 6 <i>d.</i>	...	...	3 13 6
5 quarters of Wheat, at 3 <i>s.</i>	...	...	9 15 0
21 cwt. of Straw for House, at 1 <i>s.</i> 3 <i>d.</i> per cwt.	...	...	1 6 3
Potatoes supplied to House, at 5 <i>s.</i> 4 <i>d.</i> per sack	...	...	20 2 8

To MICHAELMAS 1852.			
Vegetables supplied to the House	...	...	3 7 6
5 Pigs	...	...	18 13 0
10 bushels of Peas for the House, at 3 <i>s.</i> 6 <i>d.</i>	...	...	1 15 0
161 st. of Cabbages, at 4 <i>d.</i>	...	...	2 13 8
56½ st. of Beans, at 6 <i>d.</i>	...	...	1 8 9
7 qrs. 5 bushels of Wheat, at 3 <i>s.</i> 7 <i>d.</i>	...	...	14 2 0
Mr. J. Ellis, for Stone Pits, one year	...	...	1 10 0
4 Pigs	...	...	14 10 0
On hand, 14 tons of Potatoes, at 4 <i>d.</i>	...	...	56 0 0

It is to be observed that the washings and refuse of the house given to the pigs would be otherwise wasted, and that much of the manure used is made by the pigs, and that there is a probability of the land being more productive during the succeeding years if managed with equal care, as it has been well cleaned and entirely dug over; the work is not oppressive, as the boys go to it with alacrity, and perform their allotted tasks with cheerfulness; it seems to have generated an attachment between the schoolmaster and the boys, and has had a decidedly beneficial effect upon their health, as shown by a keener relish for their food, and generally improved appearance, as well as producing a favourable change in their habits and manners, evidenced by fewer complaints of their behaviour and greater progress in their mental acquirements. All this gratifying result has been produced in spite of the adverse influences to which a union school is exposed, from the constant liability of an accession of young savages from the streets, orphans from lodging-houses, and children of criminal offenders, long familiarised with vice and depravity, thrown promiscuously among the disciplined boys. It is lamentable to observe the sad effects occasionally experienced from a young rascal entering the school; the utmost care of the master will scarcely guard from contamination; low habits will revive under the noxious influence, and disorganisation is threatened by the reckless outcast who

looks on public maintenance as his right, and all restraint and subordination with aversion.

Notwithstanding this and other drawbacks, the attention lately given to the education of pauper children is a step in the right direction; the elevation of the lowest must in a great measure leaven the mass; the light of knowledge may be diverted or misapplied, but we are convinced the good far out-balances any of its bad effects; self-respect is often nurtured, and that is no light antidote to vulgarity and vice. The "union children" have always borne a bad character, now several of them keep their places and become comparatively respectable members of society; and looking at their origin, their associations, the examples before them, the persuasions about them, the natural bent of every one, the absence of that parental watchfulness and solicitude which, after all, is the surest safeguard against evil, and regarding all the difficulties with which the poor destitute creatures are surrounded, we should hail with gladness any successful effort that may reclaim some of them, any measure that may interest the benevolent in their well-doing, and any system that will turn their energies to account, or that will awake and direct their energies. Discipline, kindness, care, education, and industrial training, offer far better hopes and greater advantages than the old system of parochial corruption, dragging down as it did, each year, a larger number of our fellow-countrymen into the abyss of pauperism, as it each year separated by a wider gulf the very poor and ignorant from the wealthy and accomplished. J. W., Peterborough.

## DRAINAGE OF SUBURBAN LANDS.

SEVERAL volumes have been issued by the General Board of Health, entitled "Minutes of Information," on various subjects. I wish to refer to the one on the "Drainage of Land forming the Site of Towns," "Road Drainage," and the "Facilitation of the Drainage of Suburban Lands"—titles inviting enough to carry the inquisitive eye of every agriculturist and horticulturist to the heart of the volume. That few will peruse it without feeling informed, may be confidently asserted, without vouching for the truth of all its theories or the accuracy of all its details. In itself it is little more than a clever, careful, concise, and useful compilation of the experience and testimony of others; and its comparative freedom from technical matter will ensure its popularity, and a certain degree of usefulness. It may be remarked, however, that almost every book on this subject is what may fairly be called popular. Some people think that it were as well if it were otherwise. If fewer and sounder opinions prevailed, more satisfactory results might be expected.

The volume commences with some remarks on the baneful effects to the public health of constant humidity about the "foundations of houses in towns" (and the same equally applies to country houses and homesteads), "arising from superfluous water causing dampness, whether such water be derived from land-springs or rainfall," provision against the removal of which is so generally neglected, and very foolishly so, because it tends to weaken the health, and diminish the comforts of the inhabitants, both brute and human.

On the subject of town drainage, two questions are still open to discussion, namely—1st, Whether surface water arising from rainfall, springs, &c., should be carried off in conjunction with the sewage matter and all refuse from houses, &c.; or whether two systems of drains should be constructed, one for ordinary surface drainage, and another for the purpose of conveying away such solid accumulations from dwellings, as may be removed by the action of water, the water in this case being only waste water from the same houses, or some other provided and regularly supplied for the purpose, as in flushing the sewage conduits, &c.; and 2d, Whether the main drains of towns should be built as they have generally been, so large as to admit a man to examine them and clear away obstructions, or only large enough to convey away the maximum quantity of sewage likely to enter them. In these instances, as generally happens when discussions arise, either view of the case is correct, the difficulty being to assign the limit at which one fails and the other becomes proper.

The part of the volume which treats of land drainage, gives what most readers of these columns would consider a very much too lengthy report on the subject. It contains nothing new, and merely recapitulates the written and spoken testimony of others on the subject. Parkes, Smith, and Stephens, &c., are the original authors of this part of the book. The same may be said of the road drainage; Sir Henry Parnell and Hughes, &c., are the authors. I presented the readers of the *Gardeners' Chronicle and Agricultural Gazette* with a view of the subject last year containing almost all that has been stated in the present publication on this department. Here, however, is a note appended to these extracts, which contains even more than the authors themselves seem fully to appreciate. "It has been suggested that much useful information might be obtained from an examination of the nature and condition of lands throughout suburban districts" (it is true of all districts) "by means of trial-pits or test-holes, such as are made for examining the soil for land drainage. The information obtainable by this means consists of—1. A knowledge of the nature and capabilities of the land in each district. 2. Of the state of each district as to drainage or the want of it. 3. The relative condition of adjacent districts, and how far the want of drainage in one district affects others. 4. How far a complete drainage of one district would



affect others. 5. Whether the superfluous water in any particular locality arises from springs, or whether it be rain water retained in the soil. 6. Whether water, in any quantity likely to be useful, could be collected by land drainage in any particular locality. 7. The most suitable localities for reservoirs for collecting such waters. 8. The quality of the water found in the different localities. Generally such information might be obtained as would form a record of the present state of suburban districts" (and all other districts as well), "as to drainage or the want of it" (and also as to other circumstances influencing its present state and value, and future prospects and capabilities), "to which reference could in future be made from time to time, as to the effect of any drainage executed."

Is it only now that the importance of studying agricultural geology is recognised? Alas! for the credit of those identified with the progress of that department of geological science—it has yet almost to be commenced. Yet there are professorships and lecturers on agricultural geology in the country; unfortunately, however, they bring down ridicule on it, by confining their views of this really extensive and most important subject to the agricultural capabilities of the soil, which they endeavour to connect with the subjacent strata. The merest tyro in geological science must see how seldom the surface materials partake much of the character of the rocks which immediately support them, however evident it may be that surface mould must have resulted from the slow, gradual, and yet constant degradation and chemical decomposition of some substrata, from which, nevertheless, they may have been transported to any distance. And now "it has been suggested" merely that much good might result from the study and application of a province of geological science, which since the days of Elkington has lain almost dormant—neglected, if not despised.

Again, it might be asked, why the General Board of Health, considering the importance of this matter, as they state it themselves, do not make such surveys as are now being executed under their authority and sanction include such desirable details? Men capable of affording such appendages to these surveys which are now costing too much to be left defective could be obtained in abundance, and it need not even materially increase the expense.

The book which has suggested these observations closes with a series of arguments, proving that the drains hitherto in use have been much too large for all they were required to effect. The following is a specimen of this part of the volume:—

"As might be expected, the first drainers set out with drains of this erroneous construction, as may be seen by the diagrams in Mr. Smith of Deanston's first pamphlet. Thus his minor drains were of no less than 18 inches of sectional capacity. Now a single drain of this capacity will, when running half full at the outlet, discharge in 24 hours about 600 tons of water, equal to a rainfall of nearly six inches in depth upon an acre. One inch in depth is a very heavy fall in a day; and it generally takes two days for the water after rain to drain fully from deep drained land. Yet Mr. Smith provided 18 such drains per acre, having a total sectional area of 324 inches, and capable of discharging, when only half filled,  $4\frac{1}{2}$  inches of rainfall from an acre in a single hour; that is, in six hours, more than the whole annual rainfall of the London district." Again, it is said that from some trial works it was found "that glass pipes, which had a wavy surface, discharged less water at the same inclinations than Staffordshire stone-ware clay pipes, which were of perfectly exact construction." This goes to prove that exactness of form contributes more to increase of discharge than smoothness of surface does. Any one acquainted with the laws of fluid motion would expect this result *a priori*. The wavy surface gave a series of contractions, which governed the discharge. Not so with rough surfaces.

It is unfortunate that such trials are often made in the absence of correct knowledge of the laws of nature. Hence time is often wasted in seeking for facts already well established, while other investigations really needed are still left untouched. Men of experience, clever in their way, but still not informed of all that might be easily obtained, had they ever been instructed in the principles of their callings, begin to fancy that because they are not aware of certain conclusions, no one else knows them, and forthwith they set about finding them out for their own information: a very laudable enterprise, but how much better it would be if they could learn what others had done for them, and spend their time and money in eliciting new truths.

The same page even in books complains of the want of conclusive knowledge of a subject, and betrays the deficiency of its authors' acquaintance with that which is really known. In no subject is this more generally the case than in hydrodynamics, which is the theory of all these discussions. This is perhaps owing to the circumstance that the French language contains the most faithful records, and the most elaborate tables of experiments on the subject.

The greater portion of the volume which is now at the will of the reader, consists of a series of indices of tables carefully arranged, and containing information of a very valuable kind to agriculturists. J. G. B. Marshall.

### Home Correspondence.

**Pampas Grass.**—This Grass is described by travellers as occupying the central region of the South American Pampas, that vast treeless plain, described by Hum-

boldt as being bounded on the north by forests of Palms, while its southern extremity is covered with almost perpetual ice. Sir Francis Bond Head, in the account of his journey across the Pampas from Buenos Ayres to the district of Santiago, in the Cordilleras of Chili, describes this Grass region as extending "over a breadth of 450 miles, in which there is not a weed to be seen, the tall coarse Grass being its sole produce; and in summer, when at its height, it is beautiful to see the effect which the wind has in passing over the wide expanse of luxuriant and waving green." Other travellers agree in describing the Pampas Grass as often exceeding 10 feet in length, and affording food, both in its green and withered seasons, to the vast herds of wild horses and oxen which roam concealed amongst its huge bushy tussocks; while it also supplies the native Gauchos with thatch for their mud huts. The Pampas Grass is only of recent introduction to Britain, and was first noticed as an agricultural plant by Messrs. Lawson and Son, of Edinburgh, in the 3d edition of their "Treatise on the Cultivated Grasses and other Herbage and Forage Plants," in 1850. Hence it is now, 1851, attracting considerable attention in consequence of being found perfectly adapted to withstand the rigours of our northern winters. In the nurseries of Mr. James Cunningham, at Comley Bank, near Edinburgh, it has stood without sustaining the least injury for the last four or five years, although the last winter (1849-50) proved very destructive to many reputed hardy plants. It is there grown on a poor light sandy soil, and in the last three autumns (1848-49 and 50) it produced a thick mass of gracefully-waving foliage 8 to 10 feet in length, from amongst which there arose annually in the month of October and November several strong and erect stems 6 to 8 feet in height, each surmounted with a large and graceful feathery panicle of a beautiful silvery whiteness, bearing a considerable resemblance to the elegant inflorescence of the sugar cane; so that, independent of its economical merits, it is one of the most splendid of the many ornamental plants which has of late years been added to our hardy exotic flora. In habit of growth the Pampas Grass is a tussock or tufted growing perennial, not spreading by means of its roots, but producing a close mass of foliage stems, to the dividing and transplanting of which cultivators must for the present have recourse in its propagation, as, from the late period at which it flowers, perfect seeds can seldom be looked for in the climate of Britain. In consequence of the extraordinary size of the Pampas Grass, its foliage is much stronger and coarser than that of the ordinary Gramineæ, resembling in this respect some of the tropical Cyperaceæ, so that it has yet to be ascertained how far it may be adapted for the feeding of domestic animals; but at any rate the magnitude of its growth cannot fail to recommend it for litter and other apparent uses, while to the sportsman it must prove invaluable as game cover, especially in deer parks and other ornamental grounds. At present the few British nurserymen who are so fortunate as to possess the Pampas Grass, cannot produce a supply of plants equal to the demand. These are rated in the last published catalogues of the Messrs. Lawson, of Edinburgh, at 5s. each. W. Gorrie.

**Drainage.**—Mr. Selby writes in the last *Gazette* that "Quickness of escape of the water is the soul of draining." I have heard that "brevity is the soul of wit," and I believe it. But we have yet to learn that the saying may be paraphrased with respect to draining. Water may depart too quickly as well as too slowly, as I once proved to a gentleman who was most anxious to show that deep drainage was inferior to shallow. He was a tenant to some land I had recently drained a little more than 4 feet deep, upon a farm of which some fields had been previously drained by himself 2 feet deep in the furrows. After some very heavy rains he met me, and proposed that we should go and see the lands so differently treated, saying at the same time that he knew he should be able to plough the land drained by himself two or three days earlier than that drained by me. I consented to go, with this stipulation, that we should each drink a tumbler of water running from our respective drains. We went to the spots, tumbler in hand. The water issuing from my drains, which were running copiously, was brilliant and sparkling. I drank my draught. The water running from his drains, not so copious in quantity, was neither clear nor sparkling. He did not drink his draught. We then walked over the lands, and my friend did not see so much the matter as he would have had me believe before we started, though prejudice was still at work, and showed me how true it was that "a man convinced against his will is of the same opinion still." I did manage to get him to say, in spite of his prejudices, that the drains "spoke volumes," and that he little thought, when he brought me down to see the "poaching" of the deep drained land, that he should find his own drains poaching upon the manure he had put into the land. J. Bailey Denton, 62, Parliament-street, London.

**Steam Culture.**—From some remarks made by your intelligent and active correspondent, "I. A. C.," in your last *Gazette*, I am induced to send you a few observations on the application of steam to the cultivation of the land, hoping they may lead to the publication of a more elaborate article than has yet appeared on this subject. Is it not a proof of the inefficiency of the plough, as now used (and consequently of its inability to compete with a machine combining the requisites of expedition and a tillage equal to that of the spade), that manual labour is successfully competing with this "venerated implement"

of the present generation, and would undoubtedly supersede it were not the supply limited? In some cases, as at Lois-Weedon, spade husbandry has been profitably employed, whilst labouring under the disadvantage of a scarcity of hands, arising out of an unusual tide of emigration. How invaluable therefore to the agriculturist at this time would a machine be which economises time, and at once performs the operations of ploughing, scuffling, rolling and clod crushing, infinitely better than they could be performed separately. Perhaps it is premature to speak of that which has not yet a material existence, but remains a phantom of the brain; however, we believe the author of "Talpa" has hold of the right clue when he separates the idea of a plough from the application of steam to the purposes of tillage. It was a bold stroke at any rate; and we deem it a fortunate occurrence for the author, that Mr. Greening's sensibilities were overcome by the somniferous effects of the easy chair, or we are apprehensive his remonstrances would have risen from words to blows as he saw his old prejudices scattered far and wide, and his pet child incapable and faulty when viewed by the "light of science." We would recommend every intelligent agriculturist to purchase the book, that they may judge of the author's ability to place before his readers the principles that should guide them in the application of different mechanical powers. He proves very clearly that the steam-engine is more particularly adapted to the vertically circular motion, which mode of action, it appears to us, will always produce the greatest effect with the least waste of power. But to return to the cultivator: we question whether a locomotive can ever be made to traverse a field without incurring an expense which would make its general use practically impossible. On this point we should like to receive further information; but supposing we are reduced to the necessity of employing stationary engines, in this case, if it can be proved, from the results of the latest trials made by the Marquis of Tweeddale, that the application of steam, as a motive power to the common plough, can be made profitable, it will be the best guarantee of a greater gain when the traction principle is abandoned, and the circular movement adopted. This we believe possible, and shall attempt to prove in a future number of the *Gazette*. A Practical Farmer.

**Mechi's Liquid Manure and Irrigation** has created an anxiety among British farmers nearly equal to that raised among the Chinese 2000 years ago, when a celebrated ruler converted poisonous stagnant pools from a noxious impediment to the important and useful purpose of irrigation, and produced crops such as never had been seen or heard of before. Mr. M.'s experiments seem to have the same effect in this country, and are laid hold of with a yearning avidity, only to be compared to the worshipped examples excited by Ven-li, who descended from his throne to hold the plough, demonstrating to his enraptured subjects that royalty was equally great holding the plough or swaying the sceptre. The name of that renowned emperor has shone for more than 2000 years in the rich valleys and high-cultivated mountains of China; and I have no doubt but generations to come will see "Mechi" engraven on green meadows and Turnip fields. However interesting and encouraging Mr. Mechi's experiments are, we cannot adopt them all until they are proved improvements; and I, as one of his numerous school, would humbly beg leave to examine his furnace, which at p. 170 of the *Agricultural Gazette* he calls "an important matter;" and says that for want of sufficient space below the furnace the bars are often melted; and he informs us "we get smoke instead of gas, because we do not admit air in sufficient quantity." This is much too vague for practical use, especially from such a source of information; and it is very likely to lead some that would be a "Mechi" to construct the opposite of a smoke-consuming furnace. In writing on such an important subject as the fixing of boilers, it would have been very useful and very acceptable to the readers of the *Agricultural Gazette* if Mr. Mechi had gone a little into detail, and stated the proportions of a well-constructed furnace. Experienced engineers say, a square foot of grate will only burn to advantage 10 lbs. of coal per hour, which, to give out the most of the heat, will require 20 lbs. of oxygen; this enables us to calculate the number of cubic feet of air required to pass through the furnace to supply the oxygen, but supposing the space below the furnace and bars to be the dimensions required, the draught in the flue or chimney must also be regulated. It was proved (by Dr. Muller I think) that 1 lb. of charcoal, by being burnt to the best advantage, will convert 13 lbs. of water at 60° Fahr. to steam; but the same quantity of charcoal burnt in a furnace of ordinary construction will only raise about 2½ lbs. of water to steam. Mr. Mechi's contrivance for admitting air at the end of the fire-bars is right; and the admission of air at the sides, upon the Argand lamp principle, if properly constructed, I believe would act well; but whether the air admitted would not be better to be heated upon Mr. J. Williams' plan, is a question worthy the attention of Mr. Mechi. No furnace can consume the smoke in the way that the "stoking" is generally done, and I much fear the admission of a greater quantity of cold air will only make a bad worse, for the following reasons:—If there be sufficient draught a brisk combustion goes on, the cold air rushing over the fire is too quickly deprived of the oxygen, and the draught carries off the carbonic acid formed, which in passing over the ignited coal dissolves a portion, and cools the fire below the smoke-burning point, which is not less than 1000° Fahr., but to burn the smoke



regular it should be very little short of 1200° Fahr. Mr. M. has omitted to mention a most essential point in the smoke-consuming furnace, viz., a regular supply of moisture, which could be very conveniently done with a small tube from the steam of the boiler. One-third of the coal burnt is generally lost in smoke, so that the consuming of smoke is a matter of great economy. C. M. D., *Kingsweston*.

*Answer to the Inquiries of J. Lloyd, Carmarthen, respecting the Effects of Draining upon the Principles laid down by Lord Wharnclyffe* (see *Agricultural Gazette* of Feb. 12).—I quite agree with your correspondent Mr. Lloyd that the late excessively wet weather has been a severe trial of deep draining at wide intervals upon clay subsoils, but it has also proved in a most satisfactory manner the efficiency of Lord Wharnclyffe's combined system of deep and shallow draining on Wortley estate. From the recent date of Lord Wharnclyffe's letter to Mr. Pusey on draining, published in the *Journal* of the Royal Agricultural Society, in which a full description of the soil, subsoil, &c., was given, it is perhaps unnecessary that I should dwell on it further; but as some of the readers of your valuable *Gazette* may not have seen it, I briefly state the outlines, referring any parties that may feel interested in the subject to the full description given by Lord Wharnclyffe. The soil on Wortley estate that has been drained, is generally from under 4 inches to upwards of 12 inches in depth, part of it a strong loam, and the other part free soil; the subsoil is almost invariably a strong retentive clay, and in many cases strongly imbedded with stones, frequently requiring the use of a pickaxe to excavate the drains; and generally at the depth of from 3 to 4 feet we find throws of loose shale, stone, and the out-crops of coal-seams, &c., which act as a dam to the water. The fall of the ground is, for the most part, considerable. I invariably find the 4 feet drains, which are placed 20 yards apart directly up the fall, and across these throws, tap the lodgments of water just named, as well as any springs that are in the way; then at acute angles with the 4 feet drains, others of the depth of 2 feet are placed at regular distances of 8 yards, which being sloped into the 4 feet drains at each junction, the surface water is discharged from the 2 feet drains into the 4 feet drains, and, with the under springs, &c., passes through the main drains to the outlets. I have paid strict attention to the effects of this system of draining from the time I undertook Lord Wharnclyffe's agency in Sept., 1850; and although previous to the commencement of the late extremely wet weather I was fully satisfied with the efficiency of the system, yet I was astonished to find, during the late heavy and most incessant rains, that these drains seemed to carry off the water nearly as fast as it fell, and invariably the surface has become dry soonest where within reach of the 2 feet drains. I have frequently examined the outlets during the heaviest rains, and always found the water rushing out of the pipes (of 3 inches and in some cases 5 inches diameter) with such force as to be driven several feet from the outlet before falling into the ditch. At the commencement of Lord Wharnclyffe's draining at Wortley several fields were drained from 3½ to 4½ feet deep, and at distances from 10 to 14 yards, none of which effectually drained the surface. Within the last two years we have added the 2 feet drains in several of the fields, which have invariably given satisfaction. Although I have no wish to dictate to others as to the system they ought to adopt in their own respective districts, yet from the statements I have of late read in your *Gazette*, as well as from private correspondence I have had with friends in the south of England respecting the want of efficiency of the entire deep system, I would advise a trial of our Wortley system, which I fully believe will be found to succeed. W. Hunt, *Agent to the Right Hon. Lord Wharnclyffe, Wortley, Sheffield, March 16.*

*Arterial Draining.*—Your correspondent "I. A. C." in his excellent remarks in your Paper of the 12th, has fallen into an error on the subject of the outfall of the Nene: he says, "The first point for consideration in the work now pressing for accomplishment is the capability of the outfalls." It is because its outfall is so perfect that the upper valley of the Nene is now obtaining relief. Now, the upper valley of the Nene has not yet obtained any relief, though it fully expects to do so when the outfall is improved at and near Wisbech. By the Act passed last session for this great and much-wanted improvement, a large sum of money is to be laid out in improving the river through Wisbech, and a large sum is to be further expended between Peterborough and Wisbech; and until those greater works are completed, nothing but the most trifling works can be done in the upper valley, as it is felt that until the mouth of the river is improved, it is impossible to judge what may be necessary to be done in the upper part of the river. Will it be credited, in these days of improvement, that this "Nene Navigation and Drainage Bill" was opposed in the last session upon the most frivolous ground, and that the promoters of it were actually obliged to spend upwards of 10,000*l.* in getting it through Parliament. *An Inhabitant of the Nene Valley.*

*Failures.*—Having drained 8 acres of deep peat so that horses could work it, I planted it with Potatoes in seawe. I had a splendid crop of stems and flowers, but not much above a ton an acre of tubers. Many plants never formed a tuber. Blaming the seawe for this, I planted it again, the following year, with Potatoes, in 2 cwt. of guano per acre. Again, the tops were an enormous crop, but the bottoms worse than before. I thought it time now to try Oats. Nothing could surpass the vigour of blade till 2 months old,

when it turned sickly, and I did not reap above a quarter per acre. It is now in miserable Grass, but quite firm and dry. If any of your readers will kindly "reason me" the above, they will oblige. J. M. K., *Eileanach, Inverness*. [Mar! your peat abundantly, and try again.]

*Sugar Beet.*—I have read with much interest your remarks on Professor Sullivan's report on the Sugar Beet. Whether it may successfully compete with the Cane or not under our present commercial system I will not pretend to say, but you hardly give it fair play when you quote the per centage of sugar as ranging from 3.553 to 10.391. I have the report at this moment before me, and see that a sample furnished by myself gave 13.507 per cent. of sugar, and one grown by my brother 14.551. Both of these were grown in the extreme north of Ireland, one of them nearly 400 feet above the level of the sea; and it is a very remarkable fact, that all the samples sent from the north greatly exceed in saccharine matter those from the southern and midland districts, where Wheat is infinitely superior both in quality and produce. With regard to the value of the tops, I this year fed 18 two-year-old bullocks for eight weeks on the leaves of two Irish acres of Red Mangold Wurzel; they were allowed 4 stones each per day, with as much Oaten straw as they chose, and thrrove quite as well as they did afterwards on an equal quantity of Aberdeen Turnips. Taking the latter as worth 5*s.* per ton for feeding purposes (which is about what I would value them at), the Mangold Wurzel leaves would be worth 3*l.* 2*s.* 6*d.* per Irish acre, or about 1*l.* 17*s.* 6*d.* per statute acre. The Sugar Beet would give, I think, a greater weight of leaves. W. Sinclair, *Holy Hill, Strabane, Ireland*. [The per centage of sugar in the raw Beet is given in Messrs. Sullivan & Gage's Report, p. 29, exactly as we have stated it. No doubt higher proportions are to be found upon looking through the pages; but as they are not insisted upon by these able experimentalists, we presume them to have been regarded as altogether exceptional. We quoted the figures objected to by our correspondent as an illustration of the important fact, that the quantity of sugar in a crop is in no way to be taken as indicated by the weight of roots.]

*Cornish Cultivation of Potatoes.*—I notice in the *Mark Lane Express* some observations, furnished by Mr. Prideaux, on the culture of early Potatoes in Cornwall. As the practice there indicated is quite opposite to that which prevails in Essex, I should like to elicit an expression of opinion. It seems that in Cornwall the dung is spread on the flat, the ground is ploughed, and after the plough the sets are placed by hand in the furrow, when the dung is forced by a rake on the Potato set, and the plough returns, covering the set. In Essex, the practice is to drop the sets on the dung in drills, and then to ridge up the ground. Which is the best way of attaining heat, by the ridge or on the flat? A. B. [The following is part of Mr. Prideaux's quotation from the essay on Cornish Agriculture in the *Journal*:—"The cultivation of this root forms a very considerable part of the business of farmers in some districts, particularly those residing at Penzance, the Lizard, and on the banks of the Looe and Tamar. The soil and climate of Cornwall are peculiarly adapted to the growth of the Potato, the land being generally dry, light, and friable, and the climate moist and mild. An old lay pasture is preferred, which is well reduced by ploughing, tormenting, harrowing, and rolling, until it is brought to a fine tilth; it is then manured with dung or seaweed, and latterly guano. This crop being generally considered to be a fallow crop, most farmers pay considerable attention to the weeding, hoeing, and banking. The kinds of Potatoes are numerous, but their names being provincial would not be known in other localities; we have, however, two kinds which are known in the London market by the names of the 'Cornish Reds' and the 'Early Kidney.' The cultivation of the last kind is exclusively confined to the Penzance district, and they are raised sufficiently early to compete with the forced Potatoes of the London market. From 12,000 to 15,000 bushels of the early Kidneys are sent annually to the eastern markets. In the parishes bordering on the Looe great quantities of Potatoes are grown for the London market. In some of the parishes which adjoin the cliffs and the river, the preparation for Potatoes commences in the months of January and February, by carting out the accumulated soil from the hedges into small heaps; if this should not prove sufficient, furrows are ploughed up across the field, and the soil also added to that which the hedge grips produced. On these 'bottoms' of earth, dung from the farm-yard, seaweed, and sand are deposited and mixed together. The quantity of dung and weed amounts generally to about 25 cart loads per acre; sand from 12 to 14 loads. The lay is then partly skimmed, the one portion being turned over on that which remains, and is called 'turning to rot.' After it has been 'to rot' for two or three months, it is harrowed down fine, and if any couch appears it is burned; but burning is not generally liked for Potatoes, it being considered that the ashes cause the Potato to be of a soapy close nature. The manure is spread as the Potatoes are planted, which is done by ploughing a furrow, into which the sets are dropped by women and children. A man follows, and pushes in the manure on the sets with the back of a rake; the plough returns, and covers the whole with another furrow. Two small furrows are then ploughed without any sets, which gives place sufficient between the rows of Potatoes. When the field, or a given portion thereof, is planted, the land is harrowed down fine, which completes the work.]

## Societies.

ROYAL DUBLIN, March 4.—Professor Sullivan read a paper *On the Comparative Value of Large and Small Roots of Beet*, from which we make the following extracts:—On the Continent, where the roots are grown for the purpose of manufacturing sugar, it was long since remarked, that large-sized roots yielded less sugar than moderate-sized ones—between 1 and 3 lbs. in weight. Analytically this was fully shown by the researches of the continental chemists who had examined the subject, and was fully confirmed by our results of last year. Further than this, no practical application seems to have been made of the fact; and as very large roots, grown in a rich and properly tilled soil, may be better than moderate-sized ones grown in another place, no general law as to growth was surmised. In most previous investigations upon the composition of roots, the examination was confined to a single root from each locality; and hence it is owing to this cause that no satisfactory results were obtained. To remedy this defect, we determined to take six roots from each locality—three of the largest and three of the smallest; and in order to diminish the influence of accidental causes, we subjected a great number of roots to examination. Our results are, in fact, founded upon the examination of about 450 roots of every kind, including Swedish Turnips, Carrots, the different varieties of the Beet, &c. With a very few exceptions, we have found that, as a general rule, small roots contain a larger per centage of solid matter than large roots, in some cases even to the extent of 50 per cent. Thus, the mean per centage of solid matter contained in three roots of Sugar Beet, varying from 3 lbs. 11½ oz. to 4 lbs. 2 oz., grown by Mr. Niven, of Drumcondra, was found to be only 10.408, whilst in three small roots, varying from 1 lb. 3½ oz. to 1 lb. 11½ oz., it was 17.427; or, in other words, 100 tons of the small roots would be equal to 167.43 tons of the large. To take another example:—Three roots of long red Mangold Wurzel, grown by Mr. Kelly, of Portrane, varying from 6 lbs. 14½ oz. to 9 lbs. 3 oz., contained only 10.986 per cent. of solid, whilst three small roots, varying from 6½ oz. to 7½ oz., contained 15.624 per cent.—that is, 100 tons of the small contained as much solid matter as 142.18 tons of the large. The rule applies equally to Swedish Turnips. Thus, three Turnips, grown by Mr. Boyle, at the Workhouse farm of Ballymonee, county of Antrim, varying from 6 lbs. 5½ oz. to 6 lbs. 12 oz., yielded 13.731 per cent. of solid matter, and three small roots, varying from 1 lb. 2 oz. to 1 lb. 5½ oz., 16.254 per cent.; or, in other words, 100 tons of the small would be equal to 118.37 tons of the large. Owing to the influence of accidental causes—such as the comparative ripeness of the grains of seed, the influence of manure, &c.—it could not be expected that, in every case, a small difference in weight would be accompanied by a corresponding difference in the amount of solid matter; and accordingly we find that, in many cases, a root of 4 lbs. may contain as much, and even more solid matter than a root of 3 lbs. Nevertheless, such examples are rare, as will be found by reference to the tables of the detailed report about to be published. But, if we divide the roots grown upon a field into several groups, showing large differences of weight, the rule becomes universal. Thus, in 17 roots of Sugar Beet, grown by Lord Talbot de Malahide, upon the Island of Lambay, there were—

4 roots of from 6 to 8 lbs. in weight, which yielded, as a mean per cent. of solid matter ...	12.541
5 roots, between 3 and 5 lbs. ...	14.197
8 roots, under 3 lbs. ...	15.756

These results clearly indicate that, with increase of weight, the solidity of roots diminishes. On tabulating our results we have found that, taken as a whole, small roots, no matter how or where grown, are superior to large roots in the amount of solid matter. The following table contains a summary of our mean results, as far as we have been able as yet to reduce them to:—

SIZE OF ROOTS.	White Silesian or Sugar Beet.	Long red Mangold Wurzel.	Orange Globe Mangold Wurzel.	Red Globe Mangold Wurzel.	Swede Turnips.	Red Carrots.	White Belgian Carrots.
Average of roots	10.204	10.017	10.785	8.704	10.755	...	...
Above 7 lbs. ...	11.653	11.476	11.028	10.115	11.257	...	...
From 3 to 5 lbs. ...	15.708	14.394	13.974	12.050	12.810	...	...
Average of all roots ...	14.532	13.635	12.645	11.188	12.031	13.370	12.990

This table presents some curious results, besides showing the decreasing value of roots as the size increases. Thus, for instance, as far as these results go, the Sugar Beet contains the largest amount of solid matter of any of the root crops now cultivated; and red and white Carrots, though usually sold for 2*l.* or 2*l.* 10*s.* per ton, are very little superior to ordinary Swedes, and much inferior to the varieties of Beet. Of course, we do not pretend that the value of roots can be determined by the per centage of solid matter alone, as its composition must be taken into account. But, in the same variety of plant, it will give an approximation to the truth—indeed, practically speaking, a very close one; in different species, or different families of plants, it is absolutely necessary to take the composition as well as the quantity of solid matter into consideration. In the case of Carrots, however, an examination of the solid matter does not show that they are superior to that of the Beet. *The Irish Farmers' Gazette.*



## Reviews.

*Ireland: Emigration and Valuation and Purchase of Land in Ireland.* Reprinted from the "Journal of the Statistical Society of London." By John Locke. Second Edition. London: John William Parker & Son, 495, West Strand, 1853.

MR. LOCKE, besides the pamphlet before us, is the author of another, "On the People, the Land, and the Law in Ireland," first published anonymously in 1851, and now, with the author's name prefixed, appearing in a third edition. On its first appearance it called forth some antagonism, which seems to have subsided, as the main facts stated by its author (who, from his connexion with the Encumbered Estates Court, had peculiar facilities for learning and testing them) have been satisfactorily established by indisputable statistic evidence collated in a succinct and perspicuous form. The object of the writer in presenting his first pamphlet to the public was to show to the land-purchasing classes that capital could now where be invested more beneficially than in the purchase of estates in Ireland, and having pointed out that the emancipation of land from barren ownership, and its transfer to the hands of capitalists and practical farmers, would lead to national prosperity, and having shown from official reports of the Board of Public Works that the profits on the expenditure of money in drainage have been very considerable, and that the great question of over-population has been "more than solved" by circumstances beyond legislative control—famine, with its fatal results, and emigration, whether from necessity or choice; that with peace, security, free contracts, and diminished law (blessings which may be anticipated from the legislation in progress), agriculture and manufactures must flourish—he, though not in the order of our abridged remarks, urges the combined advantages now offered for investing capital in the soil, either by individuals, or associations of men speculating on the purchase of large tracts for the purpose of improving and reselling in lots, or by thrifty tradesmen and industrious farmers, who have sufficient pecuniary means.

In the recently published pamphlet there is much valuable information compressed into a small compass. The first considers the reparative agencies for checking the consequences of excessive emigration. "1. The general progress of the people, industrial, educational, and social. 2. A well defined law of tenure, worked out in the spirit of its intention by the mutual good feeling and good sense of landlords and tenants; and 3. The improvement of the labouring classes, including cottiers and small farmers. \* \* \* Now, the first mentioned is abundantly manifest in the decrease of crime, and the increase of agricultural improvement and general enterprise. Of the second we may entertain a well grounded expectation, the matter being in competent and zealous hands; and the diminution of Poor-law taxation, and substitution of independent capitalists for distressed or insolvent landed proprietors, who were unhappily incapacitated from fulfilling the responsibilities of their position, afford strong warranty for the improvement of the labouring classes, which is, indeed, already felt in the rise and progress of industry in all its departments."

We have no wish to see any check to the exodus of the peasantry, as long as they find they can better their condition in America or elsewhere. We cannot forget that, since these pages were written by Mr. Locke, four ribbon atrocities occurred in Westmeath. Until those who commit them, under a deep and hidden system of murderous revenge, be rooted out of the land, it is vain to expect that English and Scotch settlers will render themselves, in the accursed localities of assassins, urrowing under ground as it were, reparative agents of the waste of human life effected by the hired or inductive Thug, whom no efforts of as fine and trustworthy a body of police as ever was established can ring from his hiding hole. Happily the plague spots are w; and to its immortal honour be it remembered, that in that was pre-eminently the most miserable, oppressed, and Roman Catholic province of Ireland, agrarian atrocities have been almost, if not altogether, unknown. British colonists may safely go to Mayo.

It is vain to say that only three or four murders have taken place within so many months, and these only in this or that district; while a single murder under the ribbon reign of terror is likely to occur, a very decided disinclination will be felt by British farmers to give their own soil for a settlement (with a Ribbon's title to quit at the pulling of a trigger) in Ireland. When we had state lotteries, thousands of people, not together insane, purchased tickets, because somebody must draw the 20,000l. prize, and they might be the lucky ones; so, though the chances are unkind against the assassination of a new proprietor or tenant in Ireland, the consideration that he may be the unlucky mark will deter many speculators, and many good men, British and Irish, from meddling with Irish farms. There will, however, be a lack of hands in Ireland to carry on the works of improvement if the capital flows freely there; and chemical aid, to a large extent, being assumed as bedient and available under the altered circumstances of the native population.

As we do not desire to see in Ireland that aggregation of land into the hand of a few owners which in England has almost extinguished the race of ancient tenants, as we deprecate the English system by which the language of our own "Talpa," "the man of small or

moderate income is becoming every day more and more effectually ousted from the possibility of ownership in 'the earth,' which was made for all," we rejoice to learn that purchasers at and under 2000l. are two-thirds of the whole number, and that of the purchasers nineteen-twentieths are Irish, applying, generally speaking, their capital to the reclamation of the soil.

It is gratifying, however, to perceive from the pamphlet that in the "far west," where industrial economy and skill are so much needed, English immigration has been considerable; 63,000 acres of Sir R. O'Donnell's Mayo estates have been purchased by English capitalists, led by Mr. Ashworth. Ballinakill bay is the location of many English purchasers. The vast estates of Ballinahinch, which were purchased by the Law Life Insurance Company, will probably be resold in lots, thus multiplying the class of owners.

It appears, however, that up to the period when the returns had been made, there had been only 114 Scotch and English purchasers of 400,000 acres, who contributed, however, more than a million of the purchase money, of which London paid more than 700,000l.

The bargains that have been picked up when so vast an amount of property was forced into the market, can no longer be expected, we sincerely hope. It is vain to deny the fact that tremendous sacrifices have been made, and that estates which were sold for a song would now realise much more. We know of one in the favoured county of Leinster which, two years ago, would not have produced more than 16,000l. It was sold last summer for 21,500l., though the rental is little more than 1200l. a year, and liable to two annuities (on healthy though aged lives) amounting to, we believe, 500l. a year. That there is a progressive and even considerable advance in the market price is certain, but it is vain to disguise the fact that the first scale of sales was disproportionately low, even under all the depressing influences of the time.

## Miscellaneous.

*Nitrate of Soda in the rough.*—All the nitrate now sent to England goes through the process of purification, because it is chiefly used by chemical manufacturers, not by farmers. The process at the quarries, for they cannot be called mines, is as follows:—"The rough nitrate of soda is broken into small pieces, put into boilers, water introduced, and the whole boiled; the nitrate is held in solution, whilst the earthy matter, salts, sulphates, &c., are separated, and fall to the bottom of the vessel: the saturated solution of nitrate is let into a reservoir, where it deposits any remaining earthy matter; the clear liquor is run into shallow troughs, exposed to the sun; crystallisation takes place, containing only 2 to 3 per cent. of impurities, and it is then ready to be conveyed to the coast for exportation." Now, inasmuch as there is no rain; neither is there firewood near the hundred refineries; consequently in these Peruvian deserts they employ as fuel English coals brought round Cape Horn to Iquique, and thence of course upon mules' backs to La Noria. But for agricultural purposes I cannot think that the nitrate need be refined at all. We have seen that the proportion of nitrate contained in the rough salt reaches 85 per cent., while the only impurities are salts, which might themselves be rather beneficial, and are certainly harmless to crops. The rough material lies on the surface, within a few miles of the shore, not near Iquique only, but along a wide range of coast. It may be dug like gravel, and I cannot see why it should not come to England for 6l. instead of 16l. per ton, as the price of the pure nitrate existing in this unrefined ore. A few miles of common cart-road are all that is wanted; if the country had happily belonged to men of the United States, there would have been a railroad from La Noria to Iquique already. Let us trust some merchant or some company will undertake the venture, which must at once, if successful, effect another desirable object, and greatly lower the price of guano, for happily this wide tract of nitrate-bed provided by nature is not capable of being monopolised, like the guano islands, by any Government of Peru. Nay, if that Government should feel called upon to interpose impediments, a rival source of nitrate exists in the contiguous desert of Atacama within the territory of Bolivia. *Pusey, Dec. 1852; Journal of the Royal Agricultural Society.*

*Sewage of Milan.*—The city of Milan is encompassed by the waters of canals, which on the one side connect it with the Adda, and on the other with the Ticino and the Po. The Naviglio Grande terminates under its walls. The Naviglio Interno, occupying the former ditch of the ancient town, furnishes an inner line of navigation, by which heavy supplies of all kinds are transported, and links the Naviglio Grande with the Naviglio della Martesana, the important line connecting Milan with the river Adda. From the southern side of the city, the magnificent canal of Pavia—one of the greatest of those public works which Napoleon bestowed on Northern Italy—pursues its course towards Pavia; while numerous smaller channels, supplied directly or indirectly from the great arteries just mentioned, co-operate in producing that wondrous fertility which at once attracts the traveller's notice when he first visits the neighbourhood of the city. Among the smaller channels, the most remarkable is the Vettabbia, the escape line of the Naviglio Interno, and the receptacle, at the same time, of a large portion of the sewerage of the town. With its waters, so rich in fertilising matter, the adjoining meadows are irrigated, and produce no less than eight crops annually, of which five are Grass

and three hay. One of the farms watered from this stream, which I visited, gave a rent of 30 francs per *pertica*, or nearly 8l. per acre; and this was considered a moderate amount, there being farms in the immediate neighbourhood which were rented at from 15l. to as high as 22l. per acre. Results like these, however, were confined to a very narrow circle, including not more than a few square miles immediately around the city. It was only at Milan that I found the sewerage waters utilised. In the other large towns which I subsequently visited, I found no measures taken to benefit by the drainage or the refuse they supplied. Even at Milan it is a portion only of the proceeds of the sewerage which finds its way to the Vettabbia. The stable manure is either sold directly, or sent by the proprietors to their farms in the vicinity. The produce of the street clearances is eagerly sought by the cultivators of the higher lands to the north of the city; while house manure of different kinds is carried away by another class of cultivators, who apply it chiefly to the market gardens around the town. The subterranean channels which communicate with the Vettabbia carry off, therefore, only a limited proportion of the animal and vegetable refuse which Milan supplies; and it is a mistake to consider this city as an illustration of the utilisation of such products on a large scale. There will be no difficulty in understanding the cause of the fertility of the districts adjoining the great towns of the Lombardian plains, when it is borne in mind that in the triangle included between Milan, Lodi, and Pavia, each side of which is little more than 20 miles in length, there are, it is estimated, not fewer than 100,000 head of cattle, 100,000 pigs, and 25,000 horses, in addition to the human population. It is to the immense supplies of manure, solid and liquid, obtained from these sources, and not to the refuse of the towns themselves, that the richness of the soil is mainly attributable. *Italian Irrigation, by Captain Smith.*

## Calendar of Operations.

## MARCH.

ESKDALE, DUMFRIESSHIRE, March 23.—Since the 10th ult. our highest hills have been deeply covered with snow. The hay, of which, owing to the absence of snow-storms for several years past, only a limited quantity had been secured, was speedily eaten up; and the flocks had to be driven to the low country, a distance, in some instances, of 20 to 30 miles. Here many of them remained for upwards of four weeks, at a very great expense—one flockmaster, I understand, for some considerable time was paying 14l. per day. This will prove a heavy cut upon the farming profits of the current season, as independently of the present pecuniary outlay, the ewes now heavy with young must have suffered much from the long travel through the snow, as well as from improper and insufficient food, sufferings which must tell upon this season's "crop" of lambs, and probably also upon the constitutions of the flock for years to come. Saturday, the 26th ult., was considered by many shepherds who were exposed to it as the worst day they ever were out in. No livers were lost, though several were in great peril, from the tempestuous wind and blinding drift. There has not been such a day, or as much snow upon the ground at one time, for six-and-twenty years. Ten days ago there was a welcome thaw; and by the middle of last week, all the flocks had returned to their homes; and although large patches of snow still lay in deep wreaths, upon the hollows of the higher grounds, it was hoped that "the winter was over and gone." The mavis and blackbird were singing in the woods, the rooks began to repair their nests, and the peewit and curlew returned to their haunts amongst the hills. Frost and snow, however, have again returned. On the night of the 17th the thermometer fell to 12°; which is lower than we have had it before this season; high biting winds, and snow showers on the 19th and 20th; and on the 21st, for a few hours, it snowed as fast and drifted nearly as much as on the bad Saturday. The frost and snow showers confuse the up-country shepherds are in despair! Their lambing-time, luckily, does not commence for three weeks; amongst park sheep it commenced a fortnight since. Of the few I already have, more than half have lambed prematurely; the lambs evidently have been dead for some time. In some cases of twins one is not larger than a rat—quite bare; the other the size of a small rabbit. The ewes have been well cared for all winter; the fields are well sheltered, and during the snow they had good hay, and lately Oats. Could the rainy season have anything to do in producing it? In the months of November, December, and January, we had 34.65 of rain. *J. L.*

## Notices to Correspondents.

ADDRESS: *Mr. Mason's* address has been mislaid, and we have a letter for him.

BONES GRINDING SMALL: *L. M.* Certainly the smaller the better. Bone-dust is better than half-inch bones, and "bone-meal" better than either. The latter is, however, we suspect, very liable to adulteration. Why will you not reduce your own purchased bones in a heap with damp sand, as Mr. Pusey recommended, or in solution, the finest division of all, by means of sulphuric acid?

CLOVER SEED: *G. R.* It is probably most safely kept in the straw. If hung up in a bag in the granary, the seed keeps well till the next year.

DRIED FLESH MANURE: *A Correspondent, W. O. Trevelyan*, wishes to know where he can get some of the dried flesh manure imported from South America. We are informed that Messrs. Spooner and Bailey, of Eling, near Southampton, have imported a quantity.

FAIR ACCOUNTS: *E. S. H.* The system recommended in the Cyclopaedia has not a set of published account books to carry it out. But the simple instructions given are in correspondence with the use of ordinary books such as every stationer has for sale.

FOOD: *Celticus.* If you are confined to the articles named we would place oil-cake first, and Linseed and Linseed-meal next, and Rape-cake last, at about two-thirds the value of the others. But your best plan, as we have often said, is to unite the Linseed with Bean-meal or Barley-meal, and so make a compound better than any of the substances you have named. Of the materials of such a compound, in the proportion of about one to three you might give from 4 to 8 lbs. daily, according to the age and quality of your animal. The easiest way of making it is to boil the Linseed in a soup, and make it salt, and throw it over the hay straw chaff, and then dust the meal over it, and serve it up warm.

FOULS: *O. P. Mosses, Burgess and Key*, of Newgate Street, used to advertise them.

GUTTA SERENA: *J. M. K.* The gutta serena tubing mentioned by Mr. Key, of Newgate Street, in this Paper, p. 172, can be had of Mr. Key.



**IVY:** C. P. of York, says, "We have been in the constant practice of giving it to sheep for many years, and we consider it most beneficial; it keeps their black and white faces smiling and contented, for they are always on the look-out after having once tasted it; indeed I often boast of my fine Ivy mutton as excellent. It is good for the bared, and prevents other mischief from them. May I add, also, that Scotch Fir, both for deer and sheep, is capital food in winter. It is a preventative of the rot and dysentery; but it is very difficult to get our mountain sheep to take to it at first, unless a covering of snow compels them to taste it. My tenants often ask me to provide them some, almost as indispensable and their right."

**KILNS:** J. M. Horner. The whole subject is discussed in the article "Kilns" in Blackie's "Cyclopedia of Agriculture." In the common square eastern countries' kiln, either coal or faggots are used—the latter preferred. We will extract a passage on the subject from the work, if you choose.

**MANURE:** C. B. We do not know it. The testimonials seem full and explicit.

**NIGHTSOIL:** C. W. T. It might be dried by the use of gypsum and charcoal, and the action of both of them, besides drying up moisture, would tend to fix any volatile ingredients. There is no need for evaporation after the use of these substances.

**NITRATE OF SODA:** A. B. It is commonly adulterated with common salt, the presence of which, if in any quantity, will be indicated by its precipitating on a red-hot surface; and if only in small quantity, by the addition of solution of lunar caustic to its solution—when, if pure, no precipitate will follow—if adulterated, a white curdy precipitate will appear.

**POTATO DISEASE:** B. C. The mode of application was not stated. We suppose it did not much signify whether you put it in the drills along with the sets or spread it broadcast over the surface of the land; for the first shower would spread it through the soil. You must not buy it per lb., but per cwt. The price named was 16d. per ton for "pan sulphate," an impure sulphate. Do not be too sanguine about sulphate of potash.

**RELATIVE VALUES OF FOOD:** Subscriber. Either we had not read or you had not written the question correctly. The answer now must be—4 of Indian corn would contain about 2.5 of starchy matters and 48 of nitrogenous matters; 2 of Peas and 16 of Swedish Turnips would together contain probably 2.6 of starchy matters or their equivalent, and about 5 or 6 of nitrogenous matter. In practice, however, it must be remembered that Turnips do not attain their theoretical value except when combined with other food.

**SHEEP:** W. E. We doubt whether you could apply anything at the present time that will be of service whilst the wool is on their backs. The following may, however, be tried, if you do not object to discolour the wool: Barbadoes tar, 3 oz.; Lard, 9 oz. To be melted together, and the following to be afterwards combined with it: Mercurial ointment, 2 oz.; about the size of a walnut to be rubbed into the affected parts. Probably the sheep were dipped in the autumn in too strong a mixture. W. C. S.

**SPRING BEANS:** A. L. O. S. They are very extensively ploughed in, and with perfect success, when the land is in good tilth. You propose spreading the manure and then commencing ploughing, having women and children to drop the Beans in every fourth furrow, which will leave the rows 27 inches apart, wide enough to horse-hoe well—the land is somewhat foul. This plan of putting in Beans is very generally adopted, and "a proper drill," a Bean barrow, has been contrived to lay the Beans in the furrow.

## Markets.

### COVENT GARDEN, MARCH 26.

The weather still continuing cold, the supplies of Vegetables during the week have been no more than sufficient for the demand. New Hothouse Grapes may now be obtained. Table Peas and Apples are, as might be expected, scarce. Pine-apples are realising good prices. Forced Strawberries fetch 3s. an ounce. Cob and other Turnips bring fair prices. The supply from the Continent of Green Peas, new Potatoes, Heart Carrots, Asparagus, Radishes, Globe Artichokes, and Lettuce, is pretty well kept up. Both Sea-kale and Rhubarb are pretty abundant. Potatoes are dear. Mushrooms are scarce. Cut flowers consist of Heaths, Primulas, Early Tulips, Roses, Cyclamens, Mignonette, Cinerarias, and Camellias.

### FRUIT.

Pine-apples, per lb., 6s to 10s  
Grapes, hothouse, p. lb., 20s to 25s  
Apples, dessert, p. bush, 10s to 13s  
— kitchen, do., 6s to 12s  
Pears, per doz., 1s 6d to 4s  
Oranges, per doz., 1s to 2s  
— Seville, p. 100, 7s to 14s

### VEGETABLES.

Cabbages, per doz., 1s to 2s  
Brussels Sprouts, per hz. sieve, 2s to 3s  
Broccoli, per doz., 2s to 3s  
Greens, per doz., 4s to 6s  
French Beans, per 100, 2s to 3s  
Asparagus, per bundle, 5s to 9s  
Seakale, per basket, 2s to 2s 6d  
Rhubarb, p. bundle, 1s 3d to 1s 6d  
Potatoes, per ton, 55s to 150s  
— per cwt., 5s to 9s  
— per bush, 2s 6d to 4s 6d  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 1s 6d to 3s  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bush, 4s to 5s  
— Spanish, p. doz., 2s to 5s  
Beet, per doz., 1s to 1s 6d

### POTATOES.—SOUTHWARK, MARCH 21.

Since our last report there have been few arrivals coastwise or by rail, but a fair supply from abroad. The following are this day's quotations:—York Regents, 110s. to 150s.; Lincolnshire do., 90s. to 120s.; Scotch, 100s. to 120s.; do. reds, 90s. to 100s.; French whites, 95s. to 110s.

### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, MARCH 24.**  
Prime Meadow Hay 67s to 92s  
Inferior do. ... 75 84  
Rowen ... 45 60  
New Hay ... 45 60

**CUMBERLAND MARKET, MARCH 24.**  
Prime Meadow Hay 92s to 96s  
Inferior do. ... 60 78  
New Hay ... 78 84  
Old Clover ... 95 108

**WHITECHAPEL, MARCH 24.**  
Fine Old Hay ... 80s to 90s  
Inferior do. ... 70 80  
New Hay ... 78 84  
Straw ... 28 32

### WOOL.

**BRADFORD, THURSDAY, MARCH 24.**—A great quantity of all kinds of combing Wools has changed hands within the last ten days, and at high rates, compared with this period last year. This move is no doubt from the fact of the absorption of the purchases made at the end of last year, and a desire to secure a supply of good class wool, which this market is exceedingly low

of, particularly in wethers and wether sorts, which have been in continued request. Down tags and diamond matchings are not abundant; half bred hogs have been less called for, and may be found in greater plenty than other sorts. On the whole there is an unsatisfactory state of things, the consumption being too close on the supply, and the accounts from the wool-growing districts add nothing of a more cheering character, the cold and wet season having been against the flock owners. Noils and brokes are now getting scarce; the high price that wool is commanding tends to limit the quantity making.

### SMITHFIELD.—MONDAY, MARCH 21.

There is again a falling off both as respects number and quality of Beasts; consequently prices have advanced, and a clearance is effected. We have a few more Sheep than on Monday last; however the demand is adequate, and prices are again rather higher. The weather is unfavourable for shorn Sheep and Lambs, but they cannot be quoted lower. Trade for Calves is about the same as on Friday. From Germany and Holland there are 704 Beasts, 950 Sheep, and 153 Calves; from Scotland, 600 Beasts; and 2000 from Norfolk and Suffolk.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c., ... 4 2 to 4 4	Best Long-wools... 4 10 to 5 2
Best Short-horns 4 0 to 4 2	Do. Shorn ... 4 2 to 4 6
Best 2 quality Beasts 3 2 to 3 6	Ewes & 2 quality 4 0 to 4 6
Best Downs and Half-Breds ... 5 4 to 5 8	Do. Shorn ... 0 0 to 0 0
Do. Shorn ... 4 4 to 4 8	Lambs ... 5 8 to 6 4
	Calves ... 3 10 to 4 10
	Figs ... 3 1 to 4 8

Beasts, 4046; Sheep and Lambs, 17,030; Calves, 192; Figs, 220.

### FRIDAY, MARCH 25.

There is a fair supply of Beasts for the day. Trade is tolerably brisk, and Monday's quotations are well supported. Sheep are not so much in demand on Monday last, and prices are a shade lower. This being Good Friday, the principal feature of to-day's business is Lamb. The supply is much shorter than on former occasions, consequently there is a brisk sale at high rates. In some instances our top quotation is exceeded. The Calf trade is scarcely as good as on Monday. Our foreign supply consists of 150 Beasts, 150 Sheep, and 179 Calves; from Norfolk and Suffolk, 600 Beasts; and 80 Milch Cows from the home counties.

### MARK LANE.

**MONDAY, MARCH 21.**—The supply of Wheat from Essex and Kent to this morning's market was small, and the condition still bad; the former was disposed of on the terms of this day's sale, but much of the latter remained unsold towards the close. Foreign grain, a retail inquiry, which was chiefly confined to the lower priced qualities for the country. In floating cargoes there was little doing. Barrel Flour met a somewhat improved inquiry, at 23s. to 24s. per barrel for Western Canal, and 25s. to 26s. for Baltimore. The trade for Barley was slow, and to effect sales it was necessary to submit to a reduction of 6d. to 1s. per qr. Beans and Peas were unaltered in value. Oats are a slow sale at last week's prices.

PER IMPERIAL QUARTER.		s. s.	s. s.
Wheat, Essex, Kent, & Suffolk ... White	40—54	Red	38—46
— fine selected runs ... ditto	42—60	Red	44—52
— Talavera	54—60	Red	—
— Norfolk	—	Red	—
— Foreign	40—58	—	—
Barley, grind, & distil, 24s to 27s... Chev.	25—34	Malt	26—30
— Foreign, grinding and distilling	25—30	Malt	30—33
Oats, Essex, and Suffolk	17—20	—	—
— Scotch and Lincolnshire ... Potato	22—24	Feed	17—22
— Irish	21—23	Feed	19—20
— Foreign ... Poland and Brew	19—22	Feed	16—20
Rye ... meadow, foreign	29—32	Foreign	—
Beans, Mazagan, ... 30s to 32s	32—34	Harrow	32—34
— Pigeon ... 33s to 36s	39—41	Longpod	30—34
— Foreign	32—37	Egyptian	32—34
Peas, white, Essex and Kent ... Boilers	38—41	Suffolk	40—42
— Maple ... 32s to 35s	30—33	Foreign	32—42
Maize ... White	38—46	Yellow	—
Flour, best marks delivered ... per sack	38—46	—	—
— 2d ditto ... ditto	23—38	Country	23—38
— Foreign ... per barrel	22—26	Per sack	35—38

### ARRIVALS IN THE PORT OF LONDON LAST WEEK.

	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas.
Flour 20970 sks						
17060 brls						
English	3570	7348	11368	374	490	392
Irish	—	550	70	3280	—	—
Foreign	10336	2410	—	3864	2195	—

**WEDNESDAY, MARCH 23.**—There was very little Wheat fresh up since Monday. The continuance of cold weather gives holders increased confidence, and Wheat could not be purchased on easier terms than at the beginning of the week. Barley was saleable at late rates. The supplies of Oats are trifling in the extreme, and rather more money was in some instances obtained from needy buyers. Beans and Peas brought last Monday's quotations.

### IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Feb. 5	46 1	31 8	18 7	31 11	34 7	31 5
— 12	45 2	31 5	18 5	30 11	34 10	31 9
— 19	44 6	31 1	17 9	30 3	34 5	31 2
— 26	44 2	31 3	18 4	30 6	34 5	31 6
March 5	45 9	31 7	18 3	30 9	34 6	32 6
— 12	45 8	31 9	18 3	30 9	34 6	32 9
Aggr. Aver.	45 5	31 5	18 4	30 8	34 6	31 10

### Duties on Foreign Grain 1s. per qr.

### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Feb. 5.	Feb. 12.	Feb. 19.	Feb. 26.	March 5.	Mar. 12.
46s 1d	...	...	...	...	...	...
45 9	...	...	...	...	...	...
45 8	...	...	...	...	...	...
45 2	...	...	...	...	...	...
44 6	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, MARCH 22.**—We have this week received liberal supplies of Flour, both of barrels and sacks, Indian Corn, and Wheat, principally from the United States and France. The weather has been very cold for several days. The market this morning was well attended by millers and dealers, and a few from a distance in the interior; and there was a good consumptive sale for Wheat and Flour, at the full prices of Friday, which were slightly better than those obtainable on this day's sale. Oats in fair request, as well as Oatmeal, at fully late rates. Egyptian Beans 1s. per qr. lower. Barley and Peas full price. A moderate inquiry for Indian Corn, at similar prices, were paid last Tuesday. **FRIDAY, MARCH 18.**—The arrivals from Ireland and coastwise since Tuesday have been small. At this morning's market there was only a small attendance of buyers, and the business done was insignificant. There was less fine white Wheat offering, and where sales of such were made sellers had the advantage; inferior descriptions were neglected, and without change in value. Flour met with a slow retail demand, at about Tuesday's rates. Oats and Oatmeal were without alteration either in value or demand. Barley and Peas maintained their value, but Egyptian Beans were fully 1s. per qr. lower. Indian Corn met with little attention, and prices were hardly so good as on Tuesday.

## BEEHIVES.

**GEORGE NEIGHBOUR AND SONS** invite particular attention to their new and varied collection of BEEHIVES for the present season, in which are comprised all the most recent improvements and inventions of the day. Their Newly Arranged Catalogue, with Drawings, is now ready, and will be forwarded on receipt of Two Postage Stamps. **GEORGE NEIGHBOUR & SONS**, 127, High Holborn, and 149, Regent Street.

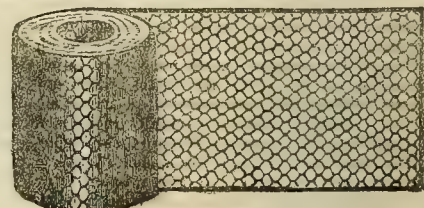
Agents:—Liverpool, Henry Drury, Castle Street; Manchester, Hall & Wilson, 50, King Street; Glasgow, Austen & M'Aslan, 168, Tronquair Street; Dublin, W. Edmondson & Co., 61, Dame Street.

**FRUIT TREES, POULTRY, RABBIT, SHEEP, & CATERING.**—To protect the bloom of Peach, Nectarine, and other trees, flower, or seed-beds from frost, blight, and birds. New Twine Netting (tanned if required), one yard wide, 1 1/2d. per yard; two yards wide, 3d. per yard; four yards wide, 6d.; half-inch mesh ditto, two yards wide, 6d. per yard. Tanned Netting, two or three yards wide, 1 1/2d. per yard; four or six yards wide, 3d. per yard; or 5s. per 100 yards, one yard; 10s. per 100 yards, two yards; and 20s. per 100 yards, four yards wide. Elastic Hexagon Garden Net, or Scrim Canvas, 4 1/2d. per square yard. Cocoa Nut Fibre, or Hemp Sheepfolding Net, of superior quality, four feet high, 4d. to 6d. per yard. Rabbit Net, four feet wide, 1 1/2d.; six feet wide, 2 1/2d.; eight feet, 3d. per yard. Each edge corded 3d. per yard extra, suitable for poultry fencing. Square Mesh Cricketer Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c., at W. COLLINGSWOOD'S, No. 1, Strathmore Terrace, Shadwell, London. Orders by post, with Post Office order or town revenue, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Tents, Marquee, Rack Cloths, Tarpaulin, Lines, Rope, Twine, &c., made to order.

**TANNED NETTING**, for the protection of Fruit. Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Waxed Netting for Avianes, &c., at 3d. per square yard. Scrim Canvas, for Wall Fruit.

At Edginton & Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may also be seen erected Emigrant Tents in great varieties on their latest improved principles.

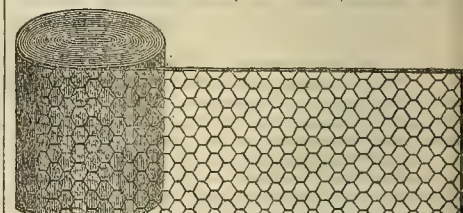
**GALVANISED WIRE GAME NETTING.**—7d. per yard, 2 feet wide.



	Galvan-ised.	Japanned iron.
2-inch mesh, light 24 inches wide ... 7d. per yd.	5d. per yd.	
2-inch " strong " ... 9 "	6 1/2 "	
2-inch " extra strong " ... 12 "	9 "	
1 1/2-inch " light " ... 8 "	6 "	
1 1/2-inch " strong " ... 10 "	8 "	
1 1/2-inch " extra strong " ... 14 "	11 "	

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised sparrow-proof netting for Pheasants, 3d. per square foot. Patterns forwarded post free. Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

**GEORGE ARTINGSTALL AND CO., LATCHFORD**  
WIRE WORKS, WARRINGTON.

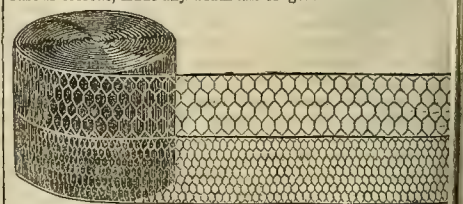


**Manufacturers of Improved Strong RABBIT-PROOF WIRE NETTING.**  
12 inches high ... 4d. per yard.  
18 ditto ... 6d. "  
24 ditto ... 8d. "  
All other widths at proportionate prices.  
Wire Works for Avianes, Conservatories, Fencing, &c. &c. also extra strong Wire Kiln Floors for drying grain, &c. &c. N.B. Wire Work Galvanised on very advantageous terms.

**HENRY J. MORTON, PATENT GALVANISED IRON**  
ROOFING WORKS, 94, ALBION STREET, LEEDS, AGENT FOR PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES.  
The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.

**IRON HURDLES** and all kinds of **WIRE FENCING** and Ornamental Wire Work.

**GALVANISED GAME AND POULTRY NETTING**, very strong and neat, NEVER REQUIRES PAINTING, and cannot rust or corrode, made any width and length.



24 inches wide, 3-inch mesh.  
24 inches wide, 2-inch mesh.  
**GALVANISED IRON SPOUTING**, Plain and Ornamented for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRING PAINTING.  
Galvanised Iron Liquid Manure Pumps, Water Cistern Troughs, and all kinds of Iron Work, Asphaltic Roofing Felt, &c. Apply at 94, ALBION STREET, LEEDS.



## EMIGRANTS TO AUSTRALIA.

**FLOUR MILLS**, so as to be enabled to make your own bread on landing—CARTS for the Country, and IMPLEMENTS for the Colonies.

**DOES YOUR MOTHER KEEP A MANGLE?**—Can't afford buying one. Well; buy Mary Wedlake's. Cost only 55s. 6d.

**DEFEAT THE CHICORY TRICK!**—A New Patent Self-acting COFFEE ROASTER, 25s. To be seen in operation at 118, Fenchurch Street, London.

**ONE-HORSE POWER or GEAR WORK**, to draw any Machinery, and Cut, Grind, and Crush. Adapted for Farmers and Horse-keepers; only 12l.—How do you Bruise your Oats yet? **MARY WEDLAKE & CO., 118, Fenchurch Street, London.**

**BENJAMIN EDGINGTON, MARQUEE, TENT, FLAG, and RICK CLOTH MANUFACTURER, 2, Duke-street, London Bridge, Southwark.**

**EMIGRANTS' GROUP MEETING**.—"No one must expect to get a house or lodgings at Port Phillip—every one must be provided with a tent."—(See Mrs. Chisholm's Address, reported in the Times, July 23.)

**BENJAMIN EDGINGTON** invites all who are embarking for the Colonies, or the Gold Regions, to inspect his **EMIGRATION TENTS**. A lofty and extensive warehouse has been added to the premises, where a variety of Tents are erected, so that settlers and others may select at once the Tent best adapted for their purpose.

**N.B.—THE CHISHOLM TENT**, price 3l. 10s., is manufactured by **BENJAMIN EDGINGTON**.

## SHEET GLASS.

**JAMES PHILLIPS and CO., 116, Bishopsgate Street Without**, have a quantity of **SHEET GLASS** in 100 feet Boxes, which they offer

At 10s. PER BOX:

Sizes—4 inches by 3, 4½ by 3, 5½ by 3.

At 12s. 6d. PER BOX:

5½ by 3½, 6½ by 3½, 7 by 4, 8 by 4½.

## CROWN SQUARES,

At 12s. 6d. PER BOX:

6 by 4, 6½ by 4½, 7 by 5, 7½ by 5½.

At 14s. PER BOX:

8 by 6, 8½ by 6½, 9 by 7, 10 by 8.

## FOREIGN SHEET GLASS,

PACKED IN CASES OF 200 FEET EACH:

34s., 36s., and 38s., Case included.

Boxes charged 2s. each, but full price allowed if returned free of expense.—116, BISHOPSGATE STREET WITHOUT.

## ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.**

**WAREHOUSE, 87, BISHOPSGATE STREET WITHOUT, LONDON.**

Cut to any size squares, not above 40 inches long.

16 ounces ... 3d. per foot.

21 ounces ... 4d. "

26 ounces ... 5d. "

32 ounces ... 7d. "

Large Sheet of No. 16, very superior, packed in cases of 100, 200, and 300 feet, at 2½d. to 2½d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick; Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments; Fern Shades and Dishes.

## GLASS FOR CONSERVATORIES, ETC.

**HETLEY and CO. supply 16-oz. SHEET GLASS** of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for **PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES**, to **JAMES HETLEY & CO., 35, Soho Square, London.**

See *Gardeners' Chronicle* first Saturday in each month.

**CROWN, and 13, 16, 21, and 26 oz. HORTICULTURAL SHEET GLASS**, in 100 feet boxes.

Of sizes—8 inches by 6 inches. | Of sizes—9½ inches by 7½ inches.

" 8½ " " 6½ " | " 10 " " 8 " "

" 9 " " 7 " | " 10½ " " 8½ " "

" 9 " " 7 " | " 11 " " 9 " "

At 1½d. per foot. | At 1½d. per foot.

Also Crown and Sheet Glass in crates. British and Patent Plate, Sheet Lead, Pipe, White-lead, Oils, Turpentine, Colours, &c. **G. FARMLOE & SONS, 118, St. John Street, West Smithfield, London.**

## BY HER MAJESTY'S ROYAL LETTERS PATENT.

**ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.**—For Horticultural Buildings in Wood or Metal.

**HORTICULTURAL BUILDING WORKS, CHICHESTER.**

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

**OXLEY and Co.'s ASBESTOS FILTER enlarged.**

Price 20s. each; small size, 15s.

**TAYLOR & PEARS, 8, George Yard, Lombard Street.**

Twenty Gallons of Pure Water per diem. All Mineral and noxious matter entirely separated by this process.

See *Lancet* and all the standard journals as to the value of ASBESTOS in filtration.

## WATERPROOF PATHS.—Those who would enjoy

their Gardens during the winter months should construct their walks of **PORTLAND CEMENT CONCRETE**, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, **J. B. WHITE & BROTHERS, Millbank Street, Westminster.**

**A PRIZE MEDAL FOR SUPERIOR LOCKS** WAS AWARDED TO **J. H. BOOBYER**, AT THE GREAT EXHIBITION OF 1851.

**THE CELEBRATED AGRICULTURAL DIGGING FORK, PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools.** Mole Traps, 6s. per dozen. Carpenters' and Smiths' Tools, &c. Best fine cut Clasp and Rose Nails at the lowest reduced prices. Sword-scarpers for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.: at J. H. BOOBYER & Co.'s (late Sturges & Boobyer), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope Street, Clare Market, London. Established nearly 200 years for the sale of goods from the best Manufacturers at the lowest prices. Goods forwarded to any part on the receipt of remittance.

**IMPROVED GRASS-CUTTING AND ROLLING MACHINE FOR CUTTING THE GRASS OF LAWNS, &c. NEW AND POWERFUL DOUBLE-ACTING LIFT AND FORCE PUMP**

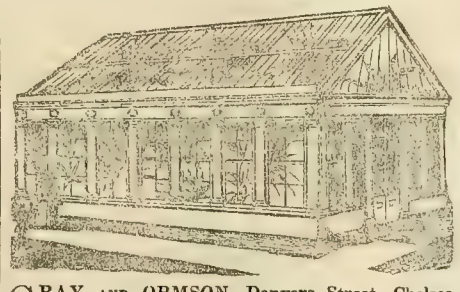
FOR LIQUID MANURE AND GARDEN AND GENERAL PURPOSES. Drawings, particulars, and testimonials forwarded free on application to **WILLIAM DODDS & Co., 102, Leadenhall Street, London.**

**HORTICULTURAL BUILDING AND HEATING BY HOT-WATER.**

**EDWARD and A. WEEKS** (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.

\* One, two, and three-light Boxes always on hand.

**HORTICULTURAL BUILDING AND HEATING BY HOT WATER. AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.**

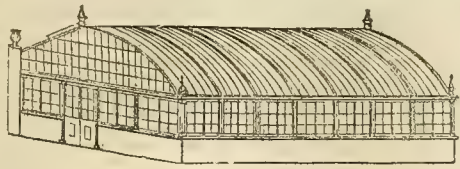


**GRAY and ORMSON, Danvers Street, Chelsea,** London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are now in a position to execute orders on the most possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-Water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

**HORTICULTURAL BUILDING AND HEATING BY HOT WATER. WARRANTED BEST MATERIALS AND WORKMANSHIP, AT THE LOWEST POSSIBLE PRICES.**



**J. WEEKS and CO., King's Road, Chelsea,** HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The **HOT-WATER APPARATUS** (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collections of Stoves and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. **J. WEEKS & Co., King's Road, Chelsea, London.**

**BERDOE'S VENTILATING WATERPROOF LIGHT OVERCOATS** are the best and perfectly unobjectionable protection, as they effectually resist any amount of rain, without confining perspiration—the fatal objection to all other waterproofs, as too many have found to their cost, all air-tight materials being utterly unfit and dangerous for clothing. These garments are thoroughly respectable, and adapted for general use at all times equally as for rainy weather. Price 45s. **W. BERDOE, 36, New Bond Street and 69, Cornhill, London (only).**

**METCALFE and Co.'s NEW PATTERNS TOOTH-BRUSH and SMYRNA SPONGES.**—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—Is an Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable tubular Russian bristles, which do not soften like common hair. Fish-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at **METCALFE, BINGLEY, & Co.'s Sole Establishment, 130 n, Oxford Street, one door from Holles Street, London.**

**METCALFE'S ALKALINE TOOTH POWDER**, 2s. per box. CAUTION.—Beware of the words "From METCALFE'S" adopted by some houses.

## TO GARDENERS AND NURSERYMEN.

**TO BE LET**, for a term of Five or Seven Years, the **GARDENS** of a gentleman who has no private use for them. They comprise about four acres, with two large Hot-houses, Forcing Pits, Cottage, and Premises, in a populous town contiguous to a Railway Station, and will be let at a moderate rent to any person possessing sufficient capital and ability to keep the whole in their present state of order and repair.—Apply at the office of Mr. J. CLEMENCE, 29, City Terrace, City Road, for the owner's address.

## PRIZE POULTRY EGGS FOR HATCHING.

**PRIZE COCHIN CHINA EGGS, 12s.; Prize White-faced Spaniards, 12s.; Black Polands, 9s.; Gold Polands, 9s.; Dorking, 6s. per prize stock; and pure Aylesbury Duck Eggs, 6s. per dozen.** All Eggs warranted fresh. **Cochin China, Spanish, Dorking, and other choice Poultry for Sale.** A remittance requested with all orders; and letters to enclose stamp for reply.—Address, **WM. TANNER, Fleetpond, Winchfield, Hants.**

**COCHIN CHINA EGGS.**—An Amateur, who has some very handsome Cochin China Fowls, of a pure breed, Cinnamon and Buff, good in weight and symmetry, is willing to dispose of some Eggs, at 7s. per dozen. Payment, by Post Office order.—Address, **X. Y., Post Office, Farnham, Surrey.**

**COCHIN CHINA FOWLS** EGGS from very choice Birds, bred from Messrs. Sturgeon, Wingfield, and Dr. Gynce's Stock. All from light-coloured and well-plumaged Birds, price 12s. 6d. per dozen, carriage paid to London.

Also a few very superior Birds for sale. Price on application, enclosing a stamped envelope. Post-office orders payable to **ARTHUR HOBNCASTLE, Grays, Essex.**

## Sales by Auction.

## COCHIN CHINA AND OTHER POULTRY.

**MR. STRAFFORD** has received instructions from Mr. T. H. Fox, 44, Skinner Street, Snow Hill, to offer for Sale at the Bazaar, Baker Street, Portman Square, on **THURSDAY, the 14th day of April** next, the whole of his Stock of **COCHIN CHINA POULTRY**, including some splendid Birds lately purchased by him, being the picked lot of the valuable collection of T. H. Potts, Esq. Some choice Birds of Mr. Andrews's Breed, including his celebrated Hen, and Birds related to her, a number of Prize Medal and commended Birds, selected regardless of expense. Also about 20 lots of **SPANISH FOWLS** of high character, including his Prize Birds at the Great Metropolitan Exhibition.—Catalogues in due time of Mr. STRAFFORD, 89, Gildford Street, Russell Square, and at the Bazaar, Baker Street.

**VERY EXTENSIVE AND IMPORTANT SALE OF PURE-BRED HEREFORD AND OTHER CATTLE, FARMING HORSES, FAT SHEEP, IMPLEMENTS, &c. &c.**

**MR. STRAFFORD** is favoured with instructions from Henry St. John Joyner, Esq., to sell by Auction, without reserve, at the Farm, Chadwell Place, near Grays, Essex, on **THURSDAY, the 31st March** next, and following day, his entire herd of **HEREFORD CATTLE**, consisting of 70 head of Bulls, Cows, Heifers, and Steers; 20 Shorthorn and other Fat Beasts; 10 Fat Calves; with 160 Fat Sheep; valuable team of 12 Cart Horses, Chaise and Nag Horses, with all the Improved Implements for a large farm.—Catalogues, with the pedigrees and other particulars, may be had upon application to Mr. STRAFFORD, 89, Gildford Street, Russell Square; and of Mr. JOYNER, at Chadwell Place, near Grays, Essex.

## BROMPTON.

## TO GENTLEMEN, NURSERYMEN, BUILDERS, &amp; OTHERS.

**MESSRS. PROTHEROE and MORRIS** are instructed by Mr. RAMSAY (in consequence of the land being let for building), to sell by Auction on the premises, Fulham Road, Brompton, on **WEDNESDAY, March 30**, at 11 o'clock, without reserve, the whole of the **GLASS and other ERECTIONS**, consisting of five newly-built Greenhouses, several ranges of Pits, two and three-light Boxes, Sheds, Seed Shop and Fittings, a large quantity of Bricks, York Paving and Building material, Stages, and sundry utensils; also about 200 fine Mulberry trees, a considerable quantity of Loom, Bog, Rotten Dung, &c.—May be viewed prior to the sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO GENTLEMEN, FLORISTS, &amp; OTHERS.

**MESSRS. PROTHEROE and MORRIS** will sell by Auction, at the Mart, Bartholomew Lane, on **THURSDAY, March 31, 1853**, at 12 o'clock, a First-rate Collection of Carnations and Picotees; Standard and Dwarf Roses, comprising Hybrid Perpetual, Bourbon, &c.; a selected assortment of American Plants; Camellias, well set with bloom; choice Dahlias, in dry roots; Paeonies, Ranunculuses. Also an assortment of Annual and Perennial Flower Seeds.—May be viewed the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, Leytonstone, Essex.

## ISLINGTON NURSERY.

## TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

**MESSRS. PROTHEROE and MORRIS** are instructed to submit to public competition by Auction, on the premises, about the latter end of April (if not previously disposed of by private contract), the Erections of Greenhouses, containing a large quantity of Glass, Iron Columns, York and Valencia Paving, Ancient Capitals, Twisted Stone Columns, Flues, Furnaces, Fittings of Seed Shop and Counting-house. Also large Camellias, Daphne odora, 3000 or 4000 Mezerion Stocks in Pots, Cactus fulgidus, Geraniums, &c., together with the Brick, Brickwork, &c. American Nursery, Leytonstone, Essex.

## ORCHIDS.

**MR. J. C. STEVENS** begs to notify that the first Sale of **ORCHIDS** for this season will take place at his Great Room, 38, King Street, Covent Garden, on **FRIDAY, 5th of April**. It comprises a CHOICE and VALUABLE COLLECTION OF ESTABLISHED PLANTS of *Phalenopsis amabilis* and *grandiflora*, *Saccolabium guttatum*, *Acridas*, *Cattleyas*, &c., &c., the property of a gentleman going abroad. Catalogues will be forwarded in due course.

## TO THE

## ADMIRERS OF PURE-BRED SUFFOLK HORSES.

**MESSRS. COOK** have great pleasure in announcing to the public that **W. FISHER HOMS, Esq.**, of Boxed Lodge, has honoured them with a commission to dispose of the following **STOCK** by public Auction, at the Three Cups Hotel Yard, Colchester, on **SATURDAY, April 2**, at half-past one o'clock, p.m.:—Four Pure-bred Chestnut Suffolk Cart Stallions, three ditto Young Suffolk Mares, four ditto Geldings, and three Harness Horses.

Mr. FISHER HOMS's celebrity is so universal that the mention of his name as the owner of the above Stock, is a guarantee to the agriculturists of the kingdom for the quality of it.

Descriptive cards, with Pedigrees, &c., will be in circulation after Saturday next, and will be duly advertised in this and other papers.—Office, Colchester, March 26.



# READ'S GARDEN ENGINES, SYRINGES, ETC.



WHEN an article of real utility attracts public attention, IMITATORS start into the field to snatch from the inventor the just reward of his labours. It has now become a daily practice of exhibiting in the windows of ironmongers and others, Syringes of the very commonest description, with the words "READ'S PATENT," as an inducement to purchasers. This, as an eminent writer on Horticulture has recently remarked on the subject, is indeed "living upon another man's fame."

Read's Instruments have the ROYAL ARMS, with the Address—35, REGENT CIRCUS, LONDON.

**FLOWER SEEDS, FREE BY POST.**—The SUBSCRIBERS have a very superior stock of all the newest kinds, and as some of the choicest varieties are grown under their own inspection, they can warrant them to be quite new and correct to name.

SCALE OF PRICES, SENT POSTAGE FREE.

No. 1.—100 Packets (choicest sorts), including all the best hardy, half-hardy, and Greenhouse Annuals, Biennials, and Perennials ... 25s.  
No. 2.—50 ditto ditto ditto ditto ... 15s.  
No. 3.—25 ditto ditto ditto ditto ... 8s.

Their Collections of Flower Seeds will be made up in packets, with Ayres' and Moore's Labels, with cultural advice.

**SUPERIOR GLOBE GERMAN ASTER.**

(SAVED BY AN AMATEUR EXPRESSLY FOR THE SUBSCRIBERS.)

They have much confidence in offering a very superior sort of Globe Aster Seed, saved by an amateur in the neighbourhood of Bath, who says:—"The sort was given to me by a friend in the neighbourhood, who has taken first prizes for several years following; and I have been equally successful. I have shown them at Bath and other places, and have always been first; indeed, no other sort has any chance with them, and I am perfectly confident that when you see a good bed of them in your gardens, you will throw away all others." 1s. per packet.

**GERMAN FLOWER SEEDS.**

They have received a very choice assortment of all the best imported Stocks, Asters, Balsams, Iarkspurs, Cookscombs, Hollyhocks, &c., from one of the first houses on the Continent, and which can be highly recommended.

Full Descriptive Catalogues can be had on application, which can be had in exchange for one penny stamp.

Apply to WILLIAM EDOUARD RENDEL & Co., Seed Merchants, Plymouth.—All Flower Seeds sent free by post.

**NEW PLUMS.**—Although H. DOWLING has been patronised by Noblemen, Gentlemen, and others to an extent far beyond his most sanguine expectations, still he has, of two sorts, Angelina Burdett and Woolston Black Gage, several fine trees to offer, and which, from their being grown in an exposed situation, he feels confident can be removed with safety throughout the present month. By reference to the *Gardeners' Chronicle*, Nov. 13, 1852, and subsequent dates, full particulars may be seen of the fruits, relative to size, colour, flavour, productiveness, and period of ripening, together with testimonials of unexceptionable authority. Descriptive circulars to be obtained of Mr. HENRY DOWLING, Woolston Lawn, Southampton.—March 26.

**NEW AND CHEAP PLANTS, TO BE CLEARED OFF IMMEDIATELY.**

**HENRY WALTON, Florist, &c., Edge End,** Marsden, near Burnley, Lancashire, begs to offer the following choice CINCERARIAS, FUCHSIAS, GERANIUMS, &c., at the very reduced prices annexed:—  
CINCERARIAS.—Nonsuch, Mr. Sidney Herbert, Mrs. Sidney Herbert, Marianne, Mrs. Charles Keat, St. Clair of the Isles, Lago, Unique, Magnum Bonum, Orpheus, Gustavus, The Village Queen, Surprise, Alba Magna, and Queen of Beauties; the above 1s. 6d. each, or the set for 18s. Also a large quantity of the older varieties, such as Margaretta, Lady Araminta, Amy Robsart, Effie Deans, Delicata, Electra, Lady Hume Campbell, and several others, at 6s. and 9s. per dozen; the above are all strong blooming plants.

FUCHSIAS.—Nice free-growing young plants, now ready for larger pots, viz., Nil Desperandum, Nonsuch, Gaiety, Honey Bell, Joan of Arc, Leader, Aurora, Peculiarity, Novelty, Standard of Perfection (Epps's), Staudard, Verrio, Splendissima, Commodore, Gem of the Season, Pendula, Exquisite, Globosa, perfecta, Darling, and Pet, the last three named ones are highly recommended as bedding varieties; the above 1s. each, or the set of 20 for 18s., or 9s. per dozen, post free.

GERANIUMS, strong blooming plants.—Prince of Orange, Constance, Nectar Cup, Fireball, May Queen, Generalissimo, Exquisite, Rowena, Sir Robert Peel, Emily, Village Maid, Lord Stanley, Prince Arthur, Flavia, Isis, and several others equally new; 15s. per dozen, 24 for 11s., or 50 for 11s. New Fancy Varieties.—Defiance, Caliban, Celestial, Bride, Torbay Hero, Triumphant; the above six for 15s. Older Fancy Varieties.—Desirable, Prima Donna, Beauty, Albion, Jenny Lind, Empress, Creole, and Exquisite; the above eight, 1s. each.

Also a very choice collection of Carnations and Picotees, in strong healthy plants, at 9s., 12s., and 18s. per dozen pairs.  
H. W.'s Spring Catalogue is now ready, containing all the choice Dahlias of last season, 9s. and 12s. per dozen; older varieties, 4s. 6d. and 6s. per dozen. Chrysanthemums, all the leading kinds, 6s. and 9s. per dozen. It contains also Geraniums, Fuchsias, Hollyhocks, and all the leading Florists' Flowers of the day, and may be had for 1d. stamp. Strong, healthy, well-rooted plants may be depended upon. All orders to the amount of 25s. carriage paid to Liverpool, Manchester, Leeds, and Preston; 2l. and upwards, carriage paid to Birmingham. Plants given over to compensate for further carriage. It is respectfully requested that all orders be accompanied with a Post Office order, payable at Marsden, Lancashire.

## AGRICULTURAL SEEDS,

FOREST AND ROSE TREES, &c.—PRICED LISTS.

**PETER LAWSON AND SONS'** Catalogues of the above for this season are now published, and may be had on application, or free by post from their Agent.

Also "Agrostographia; or, Grass Treatise" 2s. 6d.; and the Synopsis of the Vegetable Products of Scotland," price 10s. 6d.  
JOHN C. SOMMERS, 159, Fenchurch Street, London.

## FLORIST FLOWERS.

25 pairs Show CARNATIONS, in 25 varieties ... £1 0 0  
25 do. PICOTEEs do. ... 1 0 0  
25 do. PINKS do. ... 0 8 0  
25 Fine Show PANSIES do. ... 0 12 0  
Any of the above may be had separate, package, hamper, &c., included.

**JOHN HOLLAND, Bradshaw Gardens, Middleton,** near Manchester, is now sending out selections of the above Florist Flowers, in show varieties, and strong, well-rooted plants, and in each order will include a pair of his new fancy Picotee, "Countess of Ellesmere." A few packets of PANSY SEED, selected from best show flowers only, at 1s. and 2s. per packet. Post-office orders may be made payable at Middleton, Lancashire. Auriculas, Alpines, Polyanthus, Primroses, &c. Priced and Descriptive Lists of all the above may be had on application, enclosing one postage stamp.

## HARDY ANNUAL AND BIENNIAL FLOWER SEEDS.

FREE BY POST.

**SAMUEL FINNEY and Co.** are now sending out choice selections of the most showy and hardy Flower Seeds, such as they are certain will succeed well with the most ordinary management in cold and exposed situations. Per 100 packets, 14s.; 50 ditto, 7s. 6d.; 25 ditto, 4s.; 12 ditto, 2s. 3d.  
Their Seed Catalogue, containing descriptive lists with prices of the best and most approved Garden, Agricultural, and Flower Seeds, may be had free on application. Also their descriptive priced Catalogue of Florists' Flowers and Bedding-out Plants.

They have a fine lot of Seedling Calceolarias and Cinerarias, raised from the best varieties in cultivation, strong healthy plants, in 4-inch pots, at 6s. per dozen, basket and package included.—Gateshead Nursery, Newcastle-upon-Tyne, March 26.

**THOMAS JACKSON and SON** having a fine Stock of frequently Transplanted TREES and SHRUBS, respectfully solicit attention to their low Prices of a few of the leading kinds:—

Per doz.—s. d.	Yew, Irish, 3 to 4 ft., p. doz. 24 0
Arbor-vitæ, American, 3 ft., 6 0	6 to 8 ft., 7s. 6d. and
Chinese, 3 to 5 ft., 18 0	" 10s. 6d. each.
Arbutus, 3 to 4 ft., 18 0	
Aucubas, 2 ft., 12 0	Per 100.
Cedar, Deodar, in pots, 1 1/2 to 2 ft., 18 0	Berberis aquifolium, 1 1/2 to 2 ft., 20 0
Cedar of Lebanon, in pots, 2 to 3 ft., 18 0	Box, Tree, 3 to 4 ft., 50 0
Cotoneaster microphylla, 2 ft., 6 0	Fir, Spruce, 4 to 5 ft., 20 0
Daphne pontica, 2 ft., 6 0	" Larch, 6 to 8 ft., 20 0
Holly Green, 5 to 7 ft., 48 0	Weymouth, 4 to 5 ft., 25 0
Variegated, 1 to 2 ft., 15 0	Holly, Green, 2 to 3 ft., 40 0
Spiræa Lindleyana, 4 ft., 9 0	Laurel, Common, 4 to 5 ft., 50 0
Reevesii, 4 ft., 6 0	" Portugal, 1 to 2 ft., 30 0
Ribes, Red, 4 to 5 ft., 6 0	Lilacs, Purple or White, 3 to 5 ft., 40 0
" White, 4 to 5 ft., 9 0	Larunstinus, fine, 2 ft., 40 0
Snowberry, 5 ft., 6 0	Oak, Evergreen, in pots, 2 to 3 ft., 60 0
Taxodium sempervirens, 5 to 6 ft., 42 0	Rhododendron ponticum, fine, 1 to 2 ft., 75 0
Yew, English, 4 to 6 ft., 42 0	Laburnum, 10 ft., 50 0

The more rare kinds of Ornamental Shrubs and Trees at equally low rates, and the common kinds for Plantations or Coppice Wood, such as Birch, Oak, Elm, Lime, Poplar, &c., proportionately cheap. Strong Transplanted Quick, for mending or making fences, 6s., 8s., and 12s. per 1000.  
Nursery, Kingston, Surrey

## NEW ROSES, IN POTS, on the MANETTI STOCK.

HYBRID PERPETUAL. s. d.	ROSE de Soie s. d.
Auguste Mie ... 2 6	Souvenir de la Reine des Belges ... 5 0
Baronne Hallez ... 1 6	Spotted Queen ... 2 6
Comtesse Bathianay ... 1 6	Therese de St. Remy ... 3 6
Comte Odart ... 2 6	William Griffiths ... 2 6
Docteur Julliard ... 3 6	
General Bideau ... 3 6	BOURBON.
Génie de Châteaubriand ... 1 6	Madame Cousin ... 2 6
L'Enfant du Carmel ... 3 6	Prince Albert (PAUL'S) ... 7 6
Le Lion des Combats ... 3 6	Paul de Virginie ... 2 0
Laure Raymond ... 3 6	Souvenir de l'Exposition ... 5 0
Louise Odier ... 3 6	Souvenir de l'Empire ... 5 0
Madame Andry ... 3 6	
" Ducher ... 5 0	PERPETUAL MOSS.
" Fremion ... 2 0	General Druot ... 3 6
" Hilaire ... 3 6	Herman Kegal ... 2 6
" Rivers ... 2 0	
Mère de St. Louis ... 5 0	Moss.
Queen Victoria (PAUL'S) 2 6	Madame Albion ... 3 6

Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

## PERMANENT PASTURE.

**H. R. SMITHE**, of Eastling, Faversham, Kent, is now prepared to send out his mixtures of the Natural Grasses and Perennial Clovers, to lay down land to permanent pasture. The greatest attention is given in apportioning the various sorts, that the mixture sent may be suitable to the particular soil, &c., of the buyer.

Three bushels of Seed are supplied to the acre, the price of which, including every expense to his nearest railway station, in England, is 24s. per acre, and for a three years' lay, 21s. per acre. The Seeds are gathered principally under the superintendence of the Advertiser. The various species of Grasses can be had either separately or in mixtures for lawns and top dressings.

## A LARGE QUANTITY OF ONE YEAR SEEDLING LARCHES.

**WILLIAM WOOD and SON** have a fine Stock of the above to offer to their Friends.—Prices (which are moderate) will be furnished on application.  
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

## TWO OF THE LARGEST AND BEST MARROWFAT PEAS EVER INTRODUCED.

**WAITE'S KING OF THE MARROWS** AND **FAIRBEARD'S WILL WATCH**, 21s. per bushel; for quantities not less than 1 peck.  
J. G. WAITE, Seed Merchant, 181, High Holborn, London.

## DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.

The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.  
N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

## MEADOW AND PASTURE GRASS SEEDS.

**THOMAS GIBBS and CO., SEEDSMEN to the ROYAL AGRICULTURAL SOCIETY OF ENGLAND**, beg to state that the following Seeds are now finished cleaning, and are ready for sending out.

GRASS SEEDS FOR LAYING DOWN LAND TO PERMANENT MEADOWS AND PASTURES.—The kinds used in these mixtures will be selected and apportioned to suit the nature of the soil.

Grass Seeds, in mixtures, for Irrigation.

Do. do. for Parks, &c.

Do. do. for 2 and 3 years' lay.

Do. do. for Garden Lawns, &c.

Do. do. for Renovating Grass Land.

Italian Rye Grass—very fine sample, Improved Perennial Rye Grass, Annual or common do., and all kinds of Clovers, White Belgian and Red Ayrshire Carrots; Yellow Globe, long Red, and other Mangold Wurzel; Gibbs' new very large Cattle Parsnip, Swedish Turnips of various sorts, Gibbs' green top Yellow Hybrid Turnip, White-fleshed Turnips of various sorts, Drumhead and other Cabbages, Duerne, Broom, Furze, Sainfoin, and all kinds of Agricultural, Kitchen Garden, and other Seeds.  
Corner of Half-moon Street, Piccadilly, London.

## NEW WHITE BROCCOLI—ROYAL VICTORIA.

**EDWARD TILLEY** begs to announce that he has purchased the whole Stock of Seed of the above BROCCOLI, which has proved the hardiest growing and mildest flavoured variety yet offered to the public. Its superiority may be judged by the following:—"Grown by an amateur for the last four years, whose grounds lie in a cold, northerly aspect, where no other variety would succeed as the above has done, with certainty, it being equal to any grown in southern or warmer neighbourhoods. Its dwarf and hardy habit will prove a great desideratum to growers whose ground may be shallow and exposed to cold and cutting winds, having stood the most severe frosts, &c., and not being in any way affected by it, or inclined to run similar to other Broccolis before grown in the same situation. Weight generally from 6 to 8 lbs., and will keep its colour and flavour equal to the Cauliflower after its being cut several days." Packets of 1/2 oz., 1s. 6d.; 1/4 oz., 2s. 6d.; or 1 oz. for 4s. E. T. has no hesitation in saying that this Broccoli will give as great satisfaction as all other new varieties sent out on former occasions.

A remittance must accompany every order in penny postage stamps to the amount or otherwise.

EDWARD TILLEY, Nurseryman and Seedsman, 14, Abbey Church Yard, Bath.

**JOHN CATTELL** begs to say that Priced Catalogues of his VEGETABLE, FLOWER, and AGRICULTURAL SEEDS may be had on application, enclosing a penny stamp for each.

The following very choice SEEDS may be had, post free, at the prices annexed per packet:—Azalea, from the very choicest Indian varieties; 1s.; Anemone, single Poppy, fine mixed, 6d.; Brachysema latifolia, 1s.; Collinsia Bartschiana and multicolor, 1s. each; Cineraria, extra fine, mixed, 2s. 6d.; Calceolaria, saved from very fine varieties, carefully impregnated, 2s. 6d.; Celsia arcturus, 6d.; Cyclamen persicum, 6d.; Geranium, from new florist and fancy varieties sent out in 1851, separate or half of each, 2s. 6d.; ditto, from choicest older varieties, separate or half of each, 1s.; ditto, from choicest scarlet, pink, and scented varieties, 6d. each; Hovea Celsi, 1s.; Hardenbergia monophylla, 6d.; Indian Pink, superb mixed, 6d.; Lupinus moritzianus, fine, 6d.; Phlox Drummondii, extra fine, mixed, alba, oculata, and Leopoldina, 6d. each; ditto do. Mayli, splendid striped, 1s.; Primula sinensis, fringed red and white varieties, extra fine, each 1s.; Rhodantha Manglesii, 1s.; Thunbergia alata, aurantia, and alba, 6d. each; Zinnia elegans coccinea, 6d.; German Stocks and Asters, as imported, from one of the best growers in Germany.

The following superior VEGETABLE SEEDS, post free, at the prices annexed.

CATTELL'S dwarf early Barnes Cabbage, per oz. ... 1 0	
" " Reliance Cabbage, per 1/2 oz. ... 1 0	
" " Drumhead Savoy, do. ... 0 6	
" exquisite dwarf curled Parsley, do. ... 0 6	
" fine early Walcheren Broccoli, per 1/2 oz. ... 0 9	
" fine dwarf late Cauliflower, do. ... 0 9	
" fine dwarf, curled, hardy Scotch Kale, per 1/2 oz. ... 0 6	
" fine tall feathered do., per 1/2 oz. ... 0 6	
" dwarf purple-top Beet, do. ... 0 6	
" fine black-seeded Bush Cock Lettuce, do. ... 0 6	
" true white Vegetable Marrow, per doz. seeds ... 0 3	
" fine long Black Spine Cucumber, do. ... 0 6	
" " white do. ... 0 6	
Cuthill's Black Spine Cucumber, do. ... 0 6	
Chamberlain's Long prolific Ridge do., per 2 doz. seeds ... 0 6	
Cole's Crystal White Celery, per packet ... 2 6	

Gladiolus Brechelevensis (very superior to gandavensis), flowering bulbs, free by post, at 14s. per doz.

Payments may be made in postage stamps, or by Post Office orders drawn on Westernham.

Address JOHN CATTELL, Seedsman, Westerham, Kent.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by their Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden in the said County, where all Advertisements and Communications are to be Addressed to THE EDITOR.—SATURDAY, MARCH 26, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 14.—1853.]

SATURDAY, APRIL 2.

[PRICE 6d.

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## HORTICULTURAL SOCIETY OF LONDON. PRIVILEGED TICKETS.

The Exhibitions will take place on the Second Saturdays in May, June, and July, namely—

MAY 14, JUNE 11, JULY 9.

All Fellows who shall apply, on or before Tuesday the 26th of April, may obtain, at the rate of Three Shillings and Sixpence each, any number of tickets not exceeding FORTY-EIGHT; but no application for such tickets will be received after that day. *Fellows of the Society subscribing for tickets at this price will be allowed a clear week from the 26th of April during which they may claim them. AFTER THAT PERIOD ALL THE 3s. 6d. TICKETS SUBSCRIBED FOR, BUT NOT ISSUED, MAY BE CANCELLED.*

After the 26th of April, any further number of tickets will be delivered to Fellows on their personal application or written order, at the price of Five Shillings each ticket.

**HORTICULTURAL SOCIETY OF LONDON.**—The attention of persons residing in the country is directed to the following Notice.—A SILVER-NESTLEMAN MEDAL and a CERTIFICATE OF MERIT are offered for the best Exhibitions of FRUITS or VEGETABLES, preserved whole, by private persons for family use, without sugar or vinegar (shown in bottles of white glass, one bottle of each kind), accompanied by a written account of the manner in which they have been prepared. To be delivered by 10 A.M., at the Society's Office, 21, Regent Street, on Tuesday, April 5.

**ROYAL BOTANICAL SOCIETY, REGENTS' PARK.**—The days appointed for the Exhibitions of Plants, Flowers, and Fruit this season are GENERAL EXHIBITIONS, Wednesday, May 25th, June 8th, and 29th. AMERICAN PLANTS, Monday, June 13th and 20th.

Tickets of Admission are now being issued, and may be obtained at the Gardens, by orders from Fellows of the Society.—Price, on or before May 14th, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

**THE ROYAL SOUTH-LONDON FLORICULTURAL SOCIETY.**—Established in 1835. Under the Patronage of Her Most Gracious Majesty the Queen, H.R.H. the Duchess of Kent, and H.R.H. the Duchess of Gloucester.

## PRESIDENT.

The Right Hon. Earl Stanhope, F.R.S.

## VICE-PRESIDENTS.

The Right Hon. the Earl of Ripon.

The Right Hon. Earl Howe.

The Hon. William Ashley.

Benjamin Hawes, Esq.

William Tiffin, Esq., M.D., F.L.S.

James Coppock, Esq.

Treasurer.—Richard Stains, Esq.

## COMMITTEE.

*Twelve Amateurs.*—Messrs. Brown, Cook, Cuppar, Dutton, Edwards, Harms, James, Lochner, Long, Legard, Proctor.

*Six Nurserymen.*—Messrs. Barnes, Fraser, Fowler, Paul, Smith, Turner.

*Six Gentlemen's Gardeners.*—Messrs. Cole, Hamp, Over, Roser, Robinson, Young.

## SECRETARY AND COLLECTOR.

Mr. J. T. Neville, Ebenezer House, Peckham.

Subscription, 2s. per annum, entitling every Member to the privilege of attending all Flower Shows of the Society; of exhibiting Fruits, Plants, &c., in competition for Prizes, without any charge for entry; and also to have two free admissions.

**NOTICE.**—The Committee have the pleasure to announce that the First Exhibition of the season will be held as usual in the Assembly Rooms of the Horns Tavern, Kennington, on Tuesday, the 26th of April, when Prizes may be awarded for Miscellaneous collections of Stone and Greenhouse Plants, Auriculas, Polyanthus, Pansies, and Cinerarias, and for which private growers exhibit independent of growers for sale. Extra Prizes are offered to Members for Cinerarias, Auriculas, Polyanthus, Azaleas, &c., and for Specimen Plants by the Society.

Schedules are in the course of preparation, and may be had of the Committee, at the Horns Tavern, of the principal London seedsmen, and of the Secretary, to whom all applications relative to Membership should be addressed.

The Society's Prize Medals are—Large Gold Victoria, value 5l.; small ditto, 4l.; Gold Albert, 3l.; Large Silver Victoria, 2l.; large Silver Linnaeus, 1l. 10s.; Large Silver Albert, 1l. 5s.; small Silver Victoria, 1l.; Small Silver Linnaeus, 15s.; Small Silver Albert, 10s.; Small Bronze, 5s.—To Seedlings, First-class certificates. Successful Exhibitors have the option of receiving medals or cash.

The Committee are in treaty for the Great Metropolitan Dahlia exhibition, to be held in conjunction with their own September show. Persons desirous of offering extra Prizes through this exhibition will please to communicate promptly with the Secretary, at the Show may receive due publicity.

## THE WHITE AMERICAN FLAX.

**FRED. AD. HAAGE, JUN.,** of Erfurt (Prussia), begs to draw the attention of Agriculturists to the above valuable species of FLAX. Its superiority over the common kind consists in its taller growth and exceedingly fine silk-like fibre. Seeds, 3s. 6d. per lb., carriage free to London.—Orders are requested to be addressed to Mr. JAMES CARTER, Seedsmen and Florist, 238, High Holborn, London.

## HARDY AND SHOWY FLOWER SEEDS, (POST FREE).

Which may be sown where they are intended to bloom.  
No. 5. A Collection of the best 50 sorts known ... £0 10 6  
No. 6. A Collection of the best 36 sorts known ... 0 7 6  
No. 7. A Collection of the best 24 sorts known ... 0 5 0  
BOKHARA CLOVER, BORAGE, AND OTHER SEEDS FOR BEES.  
Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## CHOICE FLOWER ROOTS FOR SPRING PLANTING.

RANUNCULI, superb, named and mixed.  
ANEMONES  
GLADIOLI ramosus and grandiflorus varieties.  
LILUM LANCIPOLIUM, album and rubrum.  
TIGRIDIA (or Tiger Iris), 4 superb varieties.

For assortments and prices of the above, see Advertisement in *Gardener's Chronicle* of Jan. 29 and Feb. 5 and 12; and also for List of Bulbs for Spring Planting, see our Seed and Plant List for 1853, page 16.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

## FLORIST FLOWERS.

25 pairs Show CARNATIONS, in 25 varieties ... £1 0 0  
25 do. PICOTEES do. ... 1 0 0  
25 do. PINKS do. ... 0 8 0  
25 Fine Show PANSIES do. ... 0 12 0  
Any of the above may be had separate, package, hamper, &c., included.

**JOHN HOLLAND, Bradshaw Gardens, Middleton,** near Manchester, is now sending out selections of the above Florist Flowers, in show varieties, and strong, well-rooted plants, and in each order will include a pair of his new fancy Picotee, "Countess of Ellesmere." A few packets of PANSY SEED, selected from best show flowers only at 1s. and 2s. per packet. Post-office orders to be made payable to J. Holland, Lancashire, Auriculas, Alpines, Polyanthus, &c. Price and Descriptive Lists of all the above may be had on application, enclosing one postage stamp.

## PELARGONIUMS AND NEW PLANTS.

**HENRY GROOM, Clapham Hill, near London,** by appointment FLORIST to HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the Nobility, Gentry, and Amateurs, that his Spring CATALOGUE of PELARGONIUMS AND NEW PLANTS is ready, and will be forwarded by post on application.

**THE ROYAL MOSS-POD PEA.**—The attention of horticulturists and of the public in general is called to this new and peculiar PEA, as being surpassed by none in its exquisite flavour and colour on table; it is at the same time highly productive. To be had only of Mr. DEXTER, West Court, Dettling, Maidstone, at 2s. 6d. per quart, and will be forwarded in any quantity (not less than a quart), to all parts of the kingdom, on receipt of postage stamps or post-office order for the amount.

## EVERGREEN FENCES.

**EDWARD SANG & SONS, NURSERYMEN, Kirkaldy,** have on sale quantities of fine young plants of YEW, HOLLY, PORTUGAL LAUREL, PRIVET, &c., of sizes (9 to 18 inches) suitable for forming hedges, and which have been prepared for removal by repeated transplantings. Prices, which are very moderate, on application.

## AGRICULTURAL SEEDS,

FOREST AND ROSE TREES, &c.—PRICED LISTS.

**PETER LAWSON AND SONS' Catalogues of the** above for this season are now published, and may be had on application, or free by post from their Agent.  
Also "Agrostographia; or, Grass Treatise," 2s. 6d.; and the Synopsis of the Vegetable Products of Scotland, price 10s. 6d.  
JOHN C. SOMMER, 169, Fenchurch Street, London.

**LIME TREES, 8 to 12 feet high.**—Several Thousands of the above for Sale, at 30s. per 100.  
Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

## PHLOX DELECTA.

**ROBERT SIM** begs to offer the above very distinct and fine hybrid Perennial PHLOX, with which he has been favoured by the raiser, A. Clapham, Esq., of Scarborough. It produces a profusion of perfectly shaped rich crimson flowers from July till late in the autumn, and will prove a very acceptable addition to the flower-garden. Flowers sent to the Floricultural editor of the *Gardener's Chronicle*, Sept. 4, 1852, were thus noticed:—"PHLOX: R. S. Delecta is in every way a pretty variety, and cannot fail to prove a favourite." Plants free by post, 3s. 6d. each. Post-office orders on Chislehurst, or postage stamps, respectfully requested.—Nursery, Foot's Key, Kent.

## MAGNIFICENT NEW ANNUALS.

**J. CARTER, SEEDSMAN AND FLORIST, 238, High Holborn, London,** begs to inform amateurs and the trade in general that he has now received the new COMPRENSA, imported by him from Western Mexico, which he can recommend as most striking novelty of the season. The plant resembles the Comprehens globosa, or Globe Amaranthus, but is decidedly a new and finer species. The flowers, of a brilliant orange, with bright yellow stigmas, literally cover the stems. To be had in packets at 1s. and 2s. 6d. each; trade packets 10s. and 20s. each, or per ounce. Also a superb new SCHIZANTHIUS, from Colombia, Andes; habit similar to Schizanthus retusus, but a new species; flowers large, and, from the specimens received, apparently of a rich blue. This will also prove a great acquisition. Price 1s. and 2s. 6d. per packet; trade packets 10s. each.  
JAMES CARTER, Seedsmen and Florist, 238, High Holborn.

## PERMANENT PASTURE.

**H. R. SMITHE, of Eastling, Faversham, Kent,** is now prepared to send out his mixtures of the Natural Grasses and Perennial Clovers, to lay down land to permanent pasture. The greatest attention is given in apportioning the various sorts, that the mixture sent may be suitable to the particular soil, &c., of the buyer.

Three bushels of Seed are supplied to the acre, the price of which, including every expense to his nearest railway station, in England, is 24s. per acre, and for a three years' lay, 21s. per acre. The Seeds are gathered principally under the superintendence of the Advertiser. The various species of Grasses can be had either separately or in mixtures for lawns and top dressings.

## DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.

The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmesan Cheeses.

## TWO OF THE LARGEST AND BEST MARROWFAT PEAS EVER INTRODUCED.

**WAITE'S KING OF THE MARROWS** AND FAIRBEARD'S WILL WATCH, 21s. per bushel; for quantities not less than 1 peck.  
J. G. WAITE, Seed Merchant, 181, High Holborn, London.

## LOCKSBROOK NURSERY.

**VIOLETS.**—As the month of April is the best time for planting Violets, R. SHACKELL begs to offer his Seedling RUSSIAN SUPERB, a variety which gives the greatest satisfaction, and is spoken of in the highest terms by most of the leading horticultural writers. Also, the Double Blue Perpetual Tree Violet, a variety so well known that nothing need be said in its praise.

Strong plants of the Russian Superb Violet, 6s. per dozen, hamper included. Plants sent through the Post Office, 3s. per dozen. Strong plants of the Tree Violet, such as would make a display at once, 3s. per dozen, hamper included; or 11s. per 100. Plants sent through the Post Office, 2s. per dozen.  
Address, ROBERT SHACKELL, 36, Broad Street, Bath.

**GRASS SEEDS for Permanent Pasture: Cow Grass, or Perennial Red Clover; White Belgian Carrot, Mangold Wurzel, Swede, &c. Seeds, DELIVERED CARRIAGE FREE.**

WHEELER'S Priced List of Agricultural Seeds sent post free on receipt of one postage stamp.

J. C. WHEELER & SONS, Seedsmen to the Gloucestershire Agricultural Society, Gloucester.

**TRUE WHITE BELGIAN CARROT, AND YELLOW GLOBE MANGOLD WURZEL.**—The undersigned having a large Stock of White Belgian Carrot and Yellow Globe Mangold of home growth, can supply them at moderate prices. Purchasers of large quantities will be served liberally. Applications by post, stating quantity required, will be promptly replied to.—Address, SUTTON & SONS, Seed Growers, Reading, Berks.

**LARGE WHITE BELGIAN CARROT, Select Stock** 1s. 6d. per lb.  
**LARGE RED ALTRINGHAM Ditto,** Ditto 1s. per lb.

**TURNIPS,** in all the varieties of Swedes, Yellows, and Whites, worthy of cultivation. The Stocks of these have been greatly improved by raising the seed from large picked bulbs.

With every other description of Agricultural Seeds, priced. Lists of which may be had post free on application.

W. DRUMMOND & SONS, SEEDSMEN,

Agricultural Museum, Stirling, N.B.  
Carriage of Seeds prepaid to many of the principal Shipping Ports and Railway Stations throughout the kingdom.

**A QUANTITY OF ONE-YEAR SEEDLING LARCH,** ALSO ONE AND TWO YEAR SEEDLING ALDER.

**WM. WOOD AND SON** have still a fine Stock of the above to offer, at reasonable prices, which will be furnished on application.  
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

**WHITE MULBERRY TREES,** expressly cultivated for the rearing of the SILKWORM.—Recent experiments having proved that with proper care this valuable Insect may be as successfully reared in England as in other countries, the Advertiser begs to say that he is sending out fine healthy Trees, from 1 foot to 6 feet high, 10s. to 35s. per 100; Cuttings of the Morus multicaulis alba, 4s. per 100.—Address, GEORGE BALCHIN, Nurseryman, Spring Place, Godalming, Surrey.

## NEW AND CHOICE FLOWER SEEDS.

FREE BY POST.

**MESSRS. WHEELER AND SON** have selected out of their large collection of Flower Seeds the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds, or groups in the flower-garden. They have marked each variety with its Botanical and English name—Height—Time of Flowering—Colour of the Flower—Manner of Growing—Whether Erect or Trailing, &c.—The Time it should be sown, and with other valuable hints as to its cultivation.

In selecting these varieties care has been taken to exclude all shy-bloomers, or such as have an insignificant appearance, so that the collections will comprise only those which are really showy and handsome, and will prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The GERMAN STOCKS, ASTERS, ZINNIA, LARKSPURS, &c., are most superb. The collections will be sent free by post to any part of the Kingdom at the following prices:—20 Extra Fine Varieties, all distinct, 5s.; 50 ditto ditto, 10s. 6d.; 100 ditto ditto, 20s.

J. C. WHEELER & SON, 60, Northgate Street, Gloucester. Nurserymen and Seedsmen to the Gloucestershire Agricultural Society.



# EXHIBITIONS IN THE GARDEN OF THE HORTICULTURAL SOCIETY OF LONDON, FOR THE YEAR 1853.

THE EXHIBITIONS WILL TAKE PLACE ON THE SECOND SATURDAYS  
IN MAY, JUNE, AND JULY.

NAMELY, MAY 14, JUNE 11, JULY 9.

## SCHEDULE OF THE PRIZES. FLOWERS.

(Pots are to be measured inside, one inch below the rim.)

### Division I.—IN WHICH NURSERYMEN AND PRIVATE GROWERS EXHIBIT INDEPENDENTLY OF EACH OTHER.

1. Pelargoniums; in collections of 12 new and first-rate varieties, with perfectly distinct colours, cultivated with superior skill, in 8-inch pots. GB—SG—CE.
2. Six distinct Fancy Pelargoniums; in 8-inch pots. SG—CE—LS.
3. Six distinct Scarlet Pelargoniums; in 8-inch pots. CE—LS—SK. (In July only.)
4. Roses, in pots; in collections of 12 distinct varieties, in 13-inch pots. GB—SG—CE. (In May and June only.)

N.B. The collections in which the varieties are most distinct will have the preference.

N.B. The Judges will disqualify any collection that shall be found to contain a plant which has been recently placed in the pot from the open ground, or that is shown in a pot of any other size than 13 inches.

### Division II.—IN WHICH NURSERYMEN ALONE CAN SHOW.

5. Exotic Orchids; in collections of 15 species of superior cultivation. GB—SG—CE.

### Division III.—IN WHICH ALL PERSONS ARE ADMITTED TO EQUAL COMPETITION.

6. Stove or Greenhouse plants; in collections of 20 plants. LG—GK—GB—SG.
- N.B. Calceolarias, Fuchsias, Orchids, and Pelargoniums, are excluded from all the four classes of Stove or Greenhouse plants. Only three species or varieties of the same genus can be allowed in this and the following number, and no two specimens of the same kind.

7. Stove or Greenhouse plants; in collections of 15 plants. GB—SG—CE.
8. Stove or Greenhouse plants; in collections of 6 plants, in pots or tubs not less than 20 inches in diameter. GB—SG—CE.

N.B. Only two species or varieties of the same genus can be allowed in this number.

9. Stove or Greenhouse plants; in collections of 6 plants, in pots not exceeding 13 inches in diameter. SG—CE—LS.

N.B. Not more than one species or variety of the same genus can be allowed in this number. No one can show in more than one of the classes of Stove or Greenhouse plants, except No. 9.

10. Exotic Orchids; in collections of 20 species of superior cultivation. GK—GB—SG—CE—LS—SK—SB—C.

11. Exotic Orchids; in collections of 10 species of superior cultivation. SG—CE—LS—SK—SB—C.

12. Exotic Orchids; in collections of six species. CE—LS—SK—SB—C.

N.B. Nurserymen cannot show in either of these three classes of Orchids. No exhibitor can show in more than one of them.

13. Greenhouse Azaleas; in 12 distinct varieties. GB—SG—CE.

14. Greenhouse Azaleas; in 6 of the newer kinds, in 8-inch pots. SG—CE—LS.

15. Greenhouse Azaleas; in 6 distinct varieties. SG—CE—LS.

N.B. No one can show in 13 and 15 at the same time.

16. Indian Rhododendrons, and their hybrids; in 6 distinct varieties. SG—CE—LS. (In May only.)

17. Cape Heaths; in collections of 10 entirely distinct varieties. GB—SG—CE.

N.B. It is expected that the same plant shall not be exhibited on more than one occasion. The Judges, in making their award, will give, both in this and the two next numbers, a marked preference to plants grown in their natural forms,

without stakes or stays; and will also take distinctness of species into favourable consideration. No duplicate will be allowable. No one can take more than one prize in the three classes of Heaths.

18. Cape Heaths; in collections of 10 entirely distinct varieties, in 11-inch pots. SG—CE—LS.

19. Six distinct Cape Heaths; grown in 8-inch pots. CE—LS—SK.

20. Single specimens of very superior cultivation, excluding everything which can be shown singly in other numbers, and plants not in flower. LS—SK—SB.

N.B. No one can take more than one prize in this number.

21. Tall Cacti; six distinct varieties in flower. CE—LS—SK.

22. Roses of 50 varieties in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety. CE—LS—SK. (In July only.)

N.B. No one who exhibits in this number can also compete in the following.

23. Roses, exhibited as in No. 31, and in 25 varieties. LS—SK—SB. (In June and July only.)

N.B. Private growers only can exhibit here. If Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete.

24. Fuchsias; in sixes, in distinct colours. CE—LS—SK. (In July only.)

25. Achimenes; in collections of six distinct varieties, exhibiting superior cultivation. LS—SK—SB. (In July only.)

26. Heliosyris; in sixes. LS—SK—SB.

27. Calceolarias; in sixes. LS—SK—SB. (In July only.)

28. Ferns; very distinct hot-house kinds, not fewer than 10; to be shown intermixed with Orchids. LS—SK.

29. New Hybrid Plants, exclusive of Roses, Rhododendrons, Azaleas, and garden cross-breeds, such as Gloxinias and the like. LS—SK—SB.

N.B. It is certain that much may be effected by hybridising plants in common cultivation, such as Lilacs, Honey-suckles, &c. &c. This class will be judged by the Society's officers.

30. Newly introduced or extremely rare ornamental plants in flower, not introduced by the Society. SG—CE—LS.

N.B. These Medals will be awarded by the Society's officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this number. Nothing will be regarded as new which has been exhibited in the Garden or Regent Street in a previous season, nor garden seedlings, hybrids, nor domesticated varieties of any kind. No prizes will be given to New Plants which have been introduced through the Society.

31. Miscellaneous single plants. SK—SB—C.

N.B. Exhibitors in this class will not be thereby entitled to a pass ticket. Heaths, Cockscombs, Heartsease, Hydrangeas, and bouquets, together with all plants for which separate prizes are offered as single specimens, are altogether excluded from this and the following number.

32. Miscellaneous collections of plants, exclusive of Ferns: CE—LS—SK.

33. Seedling Hybrid Pelargoniums, of entirely new crosses. SB—C.

N.B. Every seedling must be shown singly, and marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. The plants must be shown in pots, and not in a cut state.

34. Carnations; in collections of 12 distinct varieties, in 11-inch pots. CE—LS—SK. (In July only.)

35. Picotees; in collections of 12 distinct varieties, in 11-inch pots. CE—LS—SK. (In July only.)

36. Yellow Picotees; in collections of 6 distinct varieties, in 11-inch pots. LS—SK—SB. (In July only.)

37. Pinks; in collections of 12 distinct varieties, in 8-inch pots. SK—SB—C. (In June only.)

38. Six distinct Calceolarias; in 8-inch pots. CE—LS—SK.

N.B. No medals are to be awarded unless the plants are in very high health and extremely well grown. (In May and June only.)

39. Pansies; in twelves, in 8-inch pots. SK—SB—C.

40. Alpines; in twelves. SK—SB—C.

41. Cinerarias; in sixes, in 8-inch pots. SK—SB—C. (In May only.)

N.B. Prizes will only be given to extremely fine specimens.

## FRUIT.

### ALL PERSONS ARE ADMITTED TO EQUAL COMPETITION.

For the month of May no Schedule is proposed; but Fruit will be rewarded by the Judges according to its merits, and with reference to the following Schedule of Prizes for June and July.

Fruiterers are not allowed to exhibit at all. No duplicate awards can be made in any case whatever. No person can take more than one award in each Letter, except in B, D, H, K, L, M, N.

N.B. All Fruit must be sufficiently ripe for market,

- A Collections of six Pine Apples, not including more than two of a sort. SG—CE—LS.

- B Pine Apples, in single specimens:—

1. Queens. CE—LS—SK.
2. Envoiles, Cayennes, Sugar-loafs, Black Jamaicas, Otaheites, &c. CE—LS—SK.
3. Providence. CE—LS—SK.

- C Grapes in pots; three specimens to be shown. CE—LS—SK.

- D Grapes; in three bunches for private growers, and six bunches for Market Gardeners:

1. Black Hamburgh. CE—LS—SK.
2. Black Prince, or West's St. Peter's. CE—LS—SK—SB.

WELL COLOURED, AND PROPERLY NAMED BY THE EXHIBITOR, AS FAR AS PRACTICABLE: if the contrary, it will be disqualified.

3. White Muscadines, or Sweetwaters. CE—LS—SK—SB.
4. Muscats. CE—LS—SK—SB.
5. Frontignans, or other sorts, distinct from the foregoing. CE—LS—SK—SB.

- E Peaches, in sixes. LS—SK—SB.

- F Nectarines, in sixes. LS—SK—SB.

- G Figs, in sixes. SB—C.

- H Cherries, in dishes of 1 lb. each:

1. Black. SK—SB—C.
2. White. SK—SB—C.

- I Strawberries, in pots; six pots to be shown. SK—SB—C.

N.B. They must have grown in the pots in which they are shown.

- K Strawberries, one dish each:

1. British Queen, and similar kinds. SK—SB—C.
2. Keen's Seedling, and similar kinds. SK—SB—C.
3. Other kinds. SK—SB—C.

- L Melons, one specimen each, for the best flavoured.

1. Green-fleshed. SK—SB.
2. Scarlet-fleshed. SK—SB.

- M New varieties of any of the preceding kinds of fruit.

- N Other kinds of fruit of peculiar excellence and value.

N.B. The medals under this and the preceding letter will be given at the discretion of the Society's officers.

### SPECIAL PRIVILEGE OF FELLOWS.

Fellows of the Society enter free at half-past 12, and can introduce Two Friends with Tickets; or the Fellow's Privileges may be transferred to a Brother, Sister, Son, Daughter, Father, Mother, or Wife, residing in the Fellow's house, provided the person to whom the transfer is made be also furnished with a Ticket signed by that Fellow; that is to say, the privileges of entering early may be transferred, but not the privilege of free admission.

The number of 3s. 6d. Tickets to which Fellows are to be entitled in 1853 is 48.

#### ORCHIS LONGICORNU.

WILLIAM BARNES begs to inform his friends and the public generally that he has a few strong PLANTS now in bloom, to offer for Sale, at 63s. each, of this beautiful Plant: a figure of which will appear in the "Florist" for May next. W. B. can with the greatest confidence recommend this as one of the most beautiful plants in cultivation, as well as being a plant that blooms through the winter and early spring months. W. B. having grown it successfully for 19 years, has given the full particulars practised by him, how to grow it, and manage it when at rest, in the Journal of the Horticultural Society of London, which appeared in January last, and was awarded a Silver Banksian Medal for it by that Society on the 1st of March, 1853; and would also refer the readers of the *Gardeners' Chronicle* to the Number for October 23, 1852, where the Editor, in speaking of the Orchis, states that "Orchis longicornu, when grown as we some time since saw it grown, is one of the most charming of greenhouse plants."

A remittance is expected from unknown correspondents. Camden Nursery, Camberwell, London, April 2.

#### ONE YEAR SEEDLING HIMALAYA CEDAR, "CEDRUS DEODARA."

THE SEASON FOR NURSERY PLANTING HAVING ARRIVED, WM. MAULE AND SONS beg to call the attention of those engaged in the growth of FOREST TREES to this most valuable Timber Tree, of which they have to offer the largest surplus stock in the trade, at the under-mentioned prices, in quantities as stated:—

Per 1000 .....	25s.	Per 5,000 .....	45s.
" 1000 .....	10s.	" 10,000 .....	75s.
" 20,000 .....	120s.		

The above are strong plants, pricked off in seed-pans, which, for convenience of carriage, may be shaken out, or forwarded in their present state, as desired. A large supply for ornamental and other planting, from 1 to 4 feet, grown in suitable sized pots.

N.B. No order for Seedlings this season can be executed after the 24th of April.—Stapleton Road Nurseries, Bristol.

#### NEW SHRUBBY CALCEOLARIAS.

CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

J. WEEKS and Co., CHELSEA, have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all Shrubby they are perpetually in flower; and from the great variety and brilliancy of their colours, they are invaluable for the Conservatory or bedding-out.

J. WEEKS & Co., King's Road, Chelsea, London.

FLOWER SEEDS FREE BY POST.—50 Packets of Annuals, 8s. 6d.; 25 do., 4s. 6d.; 12 do., 2s. 6d. 25 Packets of Superior Annuals, 5s. 6d.; 12 do., 3s. 25 Packets of Perennials and Biennials, 5s. 6d.; 12 do., 3s.

Also every variety of KITCHEN GARDEN SEEDS of the best quality.—Apply to ROBERT WESTMACOTT, Florist and Seed man, Stuart's Grove Nursery, Fulham Road, Chelsea.



**IMPROVEMENT OF GRASS LANDS.**  
**SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES.**—Many Old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are sown early in the Season, the improvement in the Pasture will be very considerable, and at a small expense.

The following is similar to many other Letters received from former Purchasers.

From D. T. Cunningham, Esq., Wellesbourne, Warwick, Nov. 1852. "The meadows that were renovated with your Seeds are looking very well. I cut nearly two tons of hay to the acre, and three years ago the same land hardly produced half a ton per acre. The Garden Seeds I have had from you exceed by far any that I have bought elsewhere."

Quantity of Seed required, 8 lbs. to 12 lbs. per Acre. Price 1s. per lb. Carriage Free.

Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks. N.B. We have a very fine Stock of Mangold Wurzel and Carrot Seed.

**JOHN HENCHMAN** is now sending out strong Seedling

**CEDRUS DEODARA** in 3-in. pots, 3s. per doz., or 1l. per 100. 3 yrs old, in large 60-pots, 6 to 8 in., 6s. per doz., or 2l. per 100. fine plants, 1 ft. in 54-pots, 9s. per doz., or 3l. per 100.

Strong flowering roots of **HOLLYHOCK**, raised from Chatter's best named varieties, 3s. per doz.

A few of his choice breed of Seedling **CALCEOLARIAS**, 9s. per doz.

Choice **CALCEOLARIA** and **CINERARIA** SEED, 2s. 6d. per packet.

Edmonton, near London, April 1.

**JOHN KERNAN** begs to offer the following to Gentlemen, Farmers, and Agriculturists, which are new, true, and cheap:—

White Carrot, per lb., 1s. 3d.; Altringham do. ...	1 0
Field Parsley, to sow with clover, per peck ...	4 0
Mutton's Purple-topped Swede, per lb. ...	0 6
Skirring's do. do. do. ...	0 6
Green Scotch Turnip, per lb. ...	0 6
Purple do. do. do. ...	0 6
Yellow Globe Mangold Wurzel, per lb. ...	0 8
Red do. do. do. ...	0 8
Long Red do. do. do. ...	0 8
Thousand-headed Cabbage, do. ...	1 0
Drumhead do. do. ...	1 0
Italian Rye-grass, per bushel ...	6 0
Pacey's Perennial do. do. ...	5 0
Mixed Grasses, for permanent pasture, do. ...	8 0
Red and white Clover, per lb. ...	0 8
Trefoil, 6s. per lb.; Timothy, per lb. ...	0 8
Maple Peas, 6s. per bushel; Buckwheat, per bush. ...	6 0
Rape, 7s. 6d. per bushel; Barley, per bushel, 6s. ...	6 0
Chickens Oats, as per weight and sample ...	8 0
Flax, one year from Riga, per bushel ...	6 0
Tares, per bushel ...	1 0
Large Hollow-crown Parsnip, per lb. ...	1 0

Also Choice Flower and Vegetable Seeds. Emigrants' orders carefully selected and packed. The trade supplied.

Catalogues may be had on application. An Apprentice wanted.

4, Great Russell Street, Covent Garden, London.

**ALEXANDER PONTEY, NURSERY AND SEEDSMAN,** Plymouth, respectfully informs agriculturists that he is prepared to supply, in any quantity, seeds of the undernamed, and also seeds of all the most approved sorts of **TURNIP**, **MANGOLD WURZEL**, and **GRASSES**. To the latter he invites especial attention, having been supplied with the greatest care, and are warranted true to their names.

**RUSSIAN OR SEVENTEEN WEEKS' SPRING WHEAT.**—The advantages of this Wheat are, that it may be sown so late as the first week of May, it produces an abundant crop, and is particularly adapted for seedling out, being a sort that seldom goes down.

**FISHER HORBS' ORANGE GLOBE MANGOLD WURZEL.**

**SHORT TOP BRONZE SWEDEN TURNIP.**

**LOTHIAN IMPERIAL PURPLE TOP SWEDEN TURNIP.**

**ALSKA HYBRID CLOVER.**

N.B. A few quarters of **BLACK TARTARIAN OATS** (true).

A. P. begs also to inform amateurs that his Nurseries abound with all the choicest Plants for Bedding out. The following are some of the most approved sorts, which he can supply at 4s. to 6s. per dozen.

<b>VERBENAS</b>	<b>HELIOTROPIUMS</b>
<b>PETUNIAS</b>	<b>LANTANAS</b>
<b>CUPRESSAS</b>	<b>PLUMBAGOS</b>
<b>SCARLET GERANIUMS</b>	<b>PHLOXES</b> , &c. &c.

**DAHLIAS**.—Newest varieties, 21s. per dozen. Other sorts, 6s. to 9s. per dozen.

Catalogues of Farm and Garden Seeds, as also of Plants and Forest Trees, may be had on application.

**FIRST-RATE NEW FUCHSIAS, VERBENAS, PETUNIAS, CINERARIAS, GERANIUMS, ETC.,**

**AT GREATLY REDUCED PRICES.**

**WILLIAM RUMLEY AND SONS** can supply the following first-rate Collections, in fine healthy plants, at the very low prices offered, hamper included, or free by post, on receipt of a Post Office Order, payable at Richmond.

**FUCHSIAS**.—Purchaser's selection from the following first-rate new varieties:—20 for 14s., 12 for 9s., or 6 for 5s., or 12 for 12s., or 12 for 7s. 6d., viz., Crystal Fountain (the largest and best light variety ever offered), Roi des Fuchsias, Ariel, Nil Desperandum, Cartoni, Verrio, Pendula, Pot, Nonsuch, Darling, Louisa Lelandais, Bella Donna, Standard of Perfection, Standard, Magnificent, Beauty of Deal, Hengist, Globose, Perfecta, Gem of the Season, Leader, Agnes, Aspasia, L'Eclair, Honey Bell, Joan of Arc, Exquisite, &c.

**VERBENAS**.—Purchaser's selection from the following new and extra fine varieties, 6s. per doz.; our selection, 4s. per doz.:—Vermilion, National, Cornelia, Orlando, Surprise, Moutthou, Purple, Royal, Madame de Sevigne, Virginia, Parfume, de Madeline, Juliette, Madame Taff, Pearl, Jean Bart, Auricul, Conspicua, Fairy, Lady of the Lake, Exquisite, Voltigeur, Admirable, Eclair, King, British Queen, Captain Brook, Haidée, Jeanette, &c.

**PETUNIAS**.—The following choice varieties, 6s. per dozen:—Grand Duke, Exquisite, Eclair, White Giant, Bonade Montis, Christabel, Pour Royale, Beauty of Richmond, Conspicua, Mary Ann, Gem, Joan of Arc, Aspasia, Rosa Superba, &c.

**CINERARIAS**, a splendid collection, in strong blooming plants, 6s. per dozen; smaller plants, 4s. per dozen.

**SHOW GERANIUMS**.—12 choice varieties, 9s. to 12s.; Scarlet do., 20 choice varieties, including Flower of the Day, for 7s. 6d., or 12 for 4s. 6d.; Rose-colored do., 6 choice varieties, for 3s.

Lebanon fulgens multiflora, 4s. per dozen; Minima splendens multiflora, 5s. per dozen; Veronica Andersonii, 1s. each; Mitrata, 1s. each; 6d. each.

Our New Descriptive Catalogue, containing first-rate collections of Fuchsias, Verbenas, Geraniums, Dahlias, Cinerarias, Petunias, Dryas, Anemones, Greenhouse, Bedding Plants, &c., at very low prices, may be had on application.

Gilling, Richmond, Yorkshire.

**NEW SEEDS, FREE BY POST.**

**NEW SEEDS (1853) on SALE, by WILLIAM EDGUMBE RENDLE AND CO., PLYMOUTH.**

Descriptions will be found at page 162 (March 12, 1853).

1. CEBLEY.—Cole's Crystal White, very superior ...	2 6
2. BROCCOLI.—Coming's Reliance, superb late white ...	2 6
3. BROCCOLI.—Rendle's superb Willowe, late white ...	1 0
4. PARSLEY.—Rendle's Treble Garnishing ...	0 6
5. PARSLEY.—Mitchell's Winter Matchless ...	0 6
6. CABBAGE.—Enfield Market, very superior ...	0 6
7. LETTUCE.—New Crystal Cos ...	0 6
8. CUCUMBER.—Cuthill's Black Spine ...	1 0
9. TURNIP.—Early Friesland, bright yellow ...	0 6
10. TURNIP.—Golden Globe ...	0 6
11. ONION.—Large flat Madeira ...	0 6
12. PAK-CHOI.—New sort of Chinese Cabbage ...	1 0
13. PETSAL.—New sort of Ditto ...	1 0
14. LETTUCE.—Sauté Hoosang Shanghai ...	1 0
15. LETTUCE.—Hoosang ...	1 0
16. CAULIFLOWER.—Stadholder ...	1 0
17. LOVE APPLE.—Cherry shaped ...	0 6
18. MELON.—Tiley's Bromham Hall ...	1 0
19. BEET.—Rendle's Superb Crimson ...	0 6
20. LEEK.—Large Musselburgh variety ...	0 6

A packet of each of the above 20 varieties of Vegetable Seeds for 10s., free by post. They should be grown in every Garden. Other kinds may be substituted (see page 162).

Apply to WILLIAM EDGUMBE RENDLE & Co., Seed Merchants, Plymouth.

**HARDY ANNUAL AND BIENNIAL FLOWER SEEDS.**

FREE BY POST.

**SAMUEL FINNEY and Co.** are now sending out

choice selections of the most showy and hardy Flower Seeds, such as they are certain will succeed well with the most ordinary management in cold and exposed situations. Per 100 packets, 14s.; 50 ditto, 7s. 6d.; 25 ditto, 4s.; 12 ditto, 2s. 3d.

Their Seed Catalogue, containing descriptive lists with prices of the best and most approved Garden, Agricultural, and Flower Seeds, may be had free on application. Also their descriptive priced Catalogue of Florists' Flowers and Bedding-out Plants.

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because a circumstance in its latest history appeared to explain distinctly the cause of the deplorable mismanagement of which the controllers of these royal forests stand convicted. They have been tried at the bar of their own office, and of Parliament, and the jury of public opinion has given a verdict against them, without extenuating circumstances. It is not for us to say what sentence should be pronounced upon the offenders; the only duty which attaches to us is to point out what we conceive to be some of the causes which have led to a state of things we will venture to say unparalleled in the history of forest management. For surely that must be called unparalleled mismanagement which has resulted in reducing the revenues of the Crown to an annual average profit of 6d. a year per acre. We had not intended to select any particular instance from among the gentlemen implicated in these transactions; but since Mr. LIPSCOMB has attempted to vindicate his own peculiar forest, we are forced into inquiring what his defence is worth.

Our charge, upon the before-mentioned authority, was, that in this gentleman's hands the forest of Delamere, consisting of 4022 acres, had produced an average of 390*l.* annually in 1849, 1850, and 1851; that in 1851 the return had been 854*l.*, that in 1852 it fell to 410*l.*, and that for 1853 he had estimated its income at only 588*l.*; whereas Mr. BROWN, of Arncliffe, after examining the forest, declared that it ought to yield 1726*l.*, or nearly three times as much as the deputy-surveyor supposed it to be capable of producing. It was impossible not to infer from this fact that Mr. LIPSCOMB was not acquainted with the proper management of such business as he is entrusted with by Government.

And what is his answer to this charge? The facts as stated by us are not denied; but Mr. LIPSCOMB says that for four years prior to 1849 he obtained "a clear net surplus revenue of 1300*l.*" Very likely: but why then drop to an average of 390*l.* for the three next years, and why declare himself incapable of obtaining more than 588*l.* in the fourth? About the last he maintains a prudent silence; but he offers some excuse for the three others, which neither we nor the public think sufficient. The defence amounts to this—that in 1845, 1846, 1847, and 1848 his forest yielded 1300*l.* a year; and that then, owing to a falling off in the yield of litters bark and price of Fir poles, he could only get 390*l.* a year. But he said in January, 1852, that he could only obtain 588*l.* between April 1, 1852, and March 31, 1853; while Mr. BROWN, of Arncliffe, advised the Government that he ought to return 1726*l.* Now, as he was wrong by two-thirds on the last occasion, he must be taken to have been equally wrong on other occasions, and consequently to have caused a loss to Government of 800*l.* a year in 1849, 1850, 1851, and 1852; so that he has in reality 3200*l.* to account for. We the more insist upon this, because Mr. LIPSCOMB himself assured Lord DUNCAN'S Committee in April 1849, that the 1300*l.* a year clear profit, which he had then made would go on increasing year by year (Qu. 7047-8), as, in fact, it appears from Mr. BROWN'S inquiries to have done, although Mr. LIPSCOMB has not known how to realise the profit.

And how should he? Forest management is a very difficult art. It demands long experience, great acquaintance with trees and their nature, and a perfect familiarity with all that influences the rate of growth of timber. Mr. LIPSCOMB himself tells us that his qualification for this great and difficult charge was—1, that he had been a clerk in the War Office, with a retiring allowance of 224*l.* a year; 2, that when he was very young he knew how to plant trees! but in the management of woods he had had no experience!! 3, that he was a protégé of Lord DUNCAN (see Report of Lord DUNCAN'S Committee, p. 343, qu. 6801-13-18). So that in plain English the appointment was a scandalous job, the expense of which the country has had to pay.

And this gentleman, with such qualifications as he himself describes, coolly tells the Committee that he has directed the plantation of 100,000 trees a year, and that in the nice operation of thinning the plantations "he acts entirely upon his own judgment."

What says Mr. BROWN, as to the manner in which Mr. LIPSCOMB'S judgment has been exercised; why, he says that the Oaks are much too close, that where they have had room they are 12 inches in diameter, but the average diameter is about half; that the Pines are far too close, and do not appear ever to have been thinned, although of more than 20 years' growth; that Oaks are ruined by being under the drip and shade of Pine trees, and by having been planted in undrained clay; that in one place 125 acres have been planted with Oak, although, from the nature of the soil, Oak is incapable of growing upon it; that where clearing has been effected the

manner has been bad in the extreme, and that the land has been replanted with a crop quite unsuitable to it, which will never succeed or become of any value. We might easily, if worth while, extend such extracts, which are all taken from a couple of pages beginning a report upon Mr. LIPSCOMB'S forest, by one of the most skilful foresters which this country has ever produced. The whole affair is a painful commentary upon the manner in which men in office will sometimes sacrifice the public interest to momentary considerations of political expediency.

We beg it to be understood that we have had no desire to hang up Mr. LIPSCOMB to the public gaze; that he has brought upon himself. But after all he is no worse than his neighbours, and the real blame attaches less to them than to those who appointed such incompetent persons to discharge great public duties. The latter act according to their judgment, and we dare say mean well; but they are wholly ignorant of everything which a forester's apprentice ought to be familiar with. When we see that the management of the public forests is intrusted to one gentleman because he had been a clerk in the War Office, who had planted a tree when a little boy; to another who having never had anything to do with wood or timber may have been supposed to be unprejudiced; to a third, because he was a farmer, or a farmer's son; to a fourth, who was a medical gentleman out of Ireland (Qu. 6511); to a fifth, because he was a lieutenant in a militia regiment; to other agents who had been lawyers' clerks, or land-surveyors' clerks, drilled "for three months and upwards under Mr. TURNER" in the New Forest (p. 285), and to some because they had been labourers in somebody's garden; it is impossible not to perceive that the management of the forests has been one universal system of jobbing, the effect of which has, of course, been to annihilate for nearly half a century one of the most magnificent properties in the kingdom.

We need not indicate the remedy; Government knows well enough how to deal with these cases, and the country looks to a resolute and honest Government for the only remedy which is possible.

THE GRAPE-MILDEW has been so widely diffused, and has done such great damage to the crops, not only of those Grapes which produce wine, but of such species as the Currant, which are cultivated only for the sake of their fruit, that it has not only attracted general attention, but must henceforth occupy a permanent place in the history of the diseases of plants. Vines have, however, suffered before from the attacks of parasitic fungi, as in the case reported by M. DUBY, in 1834, in the 7th volume of the *Memoirs of the Natural History Society of Geneva*. The leaves in the neighbourhood of that city, along the shores of the lake, fell with astonishing rapidity in the month of July, long before the lateral buds were so fully developed as, in the ordinary course of things, to push off the old leaves, and this in the absence of fog or rain; so that, in spite of a peculiarly fine season, the vintage to a great extent failed. One or two pamphlets appeared on the subject, and then the matter dropped, as being principally of local interest, nor does any botanist at the present time seem to know anything of the brownish-green fungal to which the premature fall of the leaves was attributed, though there is a good figure and description of it in M. DUBY'S memoir under the name of *Torula dissiliens*. The complete disappearance of this little enemy, which for the moment caused some alarm, is encouraging as regards the probable cessation of the Grape-mildew.

There is some reason, indeed, to believe that Grapes were subject to a disease in very early times, the effect of which, at least, was the same as that of the Grape mildew; and we rather point out the particular record which we have in view, because it does not seem to have been noticed, though THEOPHRASTUS, DIOSCORIDES, and PLINY have been ransacked. In the passage of ISIDORE, "he looked that it should bring forth Grapes, and it brought forth wild Grapes," the version of MONTANUS, instead of wild Grapes, gives "uvas putidas," which exactly tallies with the Hebrew word implying some stinking fruit; and BATE explains it of Grapes which rot upon the Vine, while other authors, as HASSELIUS, think that the fruit of *Solanum incanum* is meant, from the circumstance of its being known to the Arabs by the name of Wolf Grapes. We are inclined to think that the former notion agrees best with the general tone of the passage, and if so it must relate to some general affection of the vineyards. The point is, at least, curious and worthy of further research. M. J. B.

#### DAPHNE ODORA ROSEA.

I observe in your last week's Number a recommendation to raise *Cyclamens* from seed. The *Cyclamen*

is a great favourite of mine, and I would not like to be without it in my greenhouse. Much, however, as I admire this singularly beautiful Primwort, and delicious as is its fragrance, I am about to invite attention to a shrub which I esteem above all winter-flowering plants, viz., *Daphne odora rosea*. It is destitute of the showy flowers of the *Camellia*, it is true, and it does not possess that singularity of form which wins for the *Cyclamen* so many admirers; and if the eye alone is to be consulted, many superior plants might be named. But if our sense of smell is allowed to choose, it will at once give the preference to this best of perfumes, compounded by nature's own hand. In my estimation it has no equal in this respect among the fragrant plants with which Nature has so plentifully supplied us; even in the shop of the perfumer, where so many odorous substances are gathered together, a sprig of this variety of *Daphne* will be found to retain its fragrance and to be the most deliciously sweet of the whole.

Its culture is extremely simple, and the amateur will do well to add it to his stock of plants; for I am sure that if the lady members of his family once inhale its soothing fragrance, they will rather tend it with their own hands the whole year round than not find it in flower during the dull months of winter. Before detailing its culture, however, I must premise that you obtain your plant from some respectable nurseryman, in order to have it according to name. I have at last been fortunate enough to get the true sort, but I have purchased inferior varieties several times under this name, not at all the plant I now recommend. In consequence of this I was led to propagate the true sort, which I did by grafting it on *D. pontica*, in the manner in which Apples or Pears are worked. After they were grafted, they were placed in a close frame, whose temperature was about 65°; here they remained about two months—April and May—and I found that all had "taken" well. I pinched the shoots, so as to induce the plants to become bushy, and still kept them close and moist. By the end of the season I had formed them into compact small plants, and, after having been twice stopped, the later growth was sufficiently ripened to produce flowers.

After flowering they were placed near the glass, in the cool end of the greenhouse, but, as the season advanced, and they began to show symptoms of growth, a portion of the plants was removed to one end, which I keep as warm as I conveniently can. Here they soon completed their first growth, and were stopped. They made a second growth, and were now good-sized plants in 9-inch pots, and so delightful was their fragrance during November, &c., that they were the especial favourites of all who had anything to do with them. A succession of bloom is easily kept up by preventing a portion of the plants from growing so early as the others, and by afterwards keeping them in a colder atmosphere; and an extra stopping of the smaller plants will afford a still further succession. I manage by this means to have plants in flower from November to April. But it will be found necessary to watch the plants that are intended for flowering in March, and to assist them to ripen their wood, otherwise you will be likely to meet with disappointment.

Like other *Daphnes*, this delights in light, sandy loam. I use turfy loam, cut about 2 inches thick, and allowed to get well decomposed before it is used. To this I add about a third of fibrous peat and silver sand, and this mixture I find to answer perfectly. They will, however, be found to grow very well in turfy loam, rendered light by the addition of silver sand. Alpha.

#### MEANS OF IMPROVING SOILS FOR POTTING.

AMATEURS much feel the want of a generally useful compost. I should like some of your correspondents to try the following and give their report:—

Take a quantity of the common mosses (*Hypnum* answer the purpose best), dry them in a hot room till they will crumble to powder when rubbed in the hand, or, as I do it, through a fine wire riddle. Do not bake them, though a nearly cold oven will answer in careful hands, for too much heated one of the two essential qualities—elasticity, will be deteriorated and the material partly converted into a clammy matter, perhaps dextrine or some analogous substance.

Now the peculiar quality of this moss-powder is, that it renders any soil with which it is mixed elastic. Such a compost will never set hard or become sour. Thus one great amateurs' stumbling-block is at once removed, and hard-potting, required by many plants, may be fearlessly practised, as it seems to secure perfect drainage. Mixed with lumpy loam it will grow *Camellias* well, and it is a capital addition to the strong soil used for *Amaryllids*. Added to any of the ordinary loamy composts, it makes at once a medium in which almost any stove plant will luxuriate. *Begonias* grow in it as if they could hardly contain themselves. The same with regard to *Gesneras*, *Gloxinias*, and other tuberous sorts.

The second quality hinted at was its powerful and lasting fertilising property. With regard to proportions, we know that plants will thrive in pure moss, so that we cannot well err on that point. A larger quantity may be used for quick and temporary growth, and less for more permanent potting. It will also be added to stout rough material, or fine and sandy, according as we would grow an *Hedychium* or a fancy *Geranium*, which last, by the way, will flourish in it; in fact, it seems to act the part of the rotten turf of the nurseryman, so much insisted on and so hardly to be



procured by the generality of amateur gardeners, especially in towns. Now, I assert that it will render the poorest worn-out kitchen-garden soil more than tolerable to the generality of plants, and that is something. *Mickelwell.*

### Home Correspondence.

*Cloches* were in constant use by the market-gardeners around the metropolis about 70 years ago. They were called bell-glasses, and were of common green bottle glass, bell-shaped, 18 or 20 inches in diameter, having a thick rim for strength, and at the top a knob of glass as a handle. The usual practice with market-gardeners was, in autumn to place in the centre of each bell a promising Cauliflower-plant, and four others around it; the centre plant remained under protection of the glass, but as spring advanced the other four surrounding plants were planted out in the open ground as a successional crop. By the time Cucumber-plants were sufficiently advanced to be ridged out, the early Cauliflowers had been cut, leaving the bell-glasses at liberty to be put on over each hole of Cucumbers. On half a dozen acres of market-garden purchased for conversion into pleasure-ground, there could not have been fewer than a hundred or two of bell-glasses, and they were sold for 3s. or 4s. each bell. Hand-glasses from that time, by degrees, came into general use, because they were considerably less costly than the bell-glasses. About the same time, 70 years ago, the Drumhead Cabbage was much cultivated for the London markets, and was often brought to an enormous size. When sourcrot was made for sending to our army in America, the solid head of one of the Cabbages weighed 60 lbs.; if memory fails not, one immense specimen was found to weigh nearly 80 lbs., and up to 40 lbs. of solid head was not rare. *B.*

*The Seed Trade.*—A good deal of complaint is made, and justly so, about seed catalogues containing so many varieties of each particular vegetable, but it is in reality the public which causes such to be the case; for many people are foolishly prejudiced in favour of old varieties, which have long ago been superseded by new and better sorts, but which, if the seedsmen did not keep for these customers, of course they would go elsewhere for them. Again, certain varieties are better adapted for particular localities than others, and although perhaps inferior in the main, they will be preferred by people who live in those places. For instance, the British Queen Pea, an acknowledged first-rate variety in the south, does not suit Scotland well, it being too late for the climate. Until any particular sort of vegetable shall have reached a point beyond which no improvement can be made, we must expect, as a necessary consequence, that new and superior varieties of it will be yearly added to those we already possess, and which in due time must replace the old sorts; and surely no one can object to such things happening. But it is also well known that much that is no improvement at all is palmed upon the gardening world, and it would be highly desirable that all the new varieties of vegetables should pass through some special tribunal before the public took any notice of them. *Johannes.*

*Plants in Rooms.*—It is considered dangerous to sleep in conservatories, or in any place confined among plants, because of imbibing carbonic gas. Is it dangerous for young ladies to have in their sleeping-room, of very good size, a small flower-stand containing, perhaps, four little pots of Geranium, Primulas, or the like, or is that only the fussiness of old ones? The latter is my opinion, and I seek for yours. *A. H.* [The notion you refer to is as ridiculous as it is prevalent. One mouse will give off as much carbonic acid in a night as all the plants any young lady could find room for in her sleeping room.]

*Changing the Names of Fruits.*—"Pyrus" still fails to establish his own definition of "Beaufin." Even his second attempt is a failure, for the expression "Beau à la fin" presupposes the use of the word "Pomme," which being feminine cannot be coupled with "Beau." He is, therefore, in as bad a plight as he was before. If, however, he has, as he says, "reason to believe that the Norfolk Beaufin is not an English Apple," and will give us his reason, it may possibly throw some new light upon the subject; for although the definition I have given was arrived at after much inquiry and intercourse among the orchardists of Norfolk, I state candidly that I am not wedded to my own or the opinions of others when they are found to be at variance with facts; but let us have facts: my desire is to get at the truth. When "Pyrus" says that the "orchardists of Normandy are not very particular in their genders," I agree with him as regards their conversation, but having years ago and for several years anticipated his advice, and taken a ramble among the orchards and gardens of Normandy, I must say that I never found one such instance in the compound name of any fruit, as he would have us to believe does exist; neither do I find any instance among the various catalogues of Norman orchard fruit in my possession. I know a Norman Apple called "Beaufinet," which signifies "the handsome fellow;" if that is of any use to him, and he can find his Beaufin there, he is welcome to the hint, but he must give up the "good end." I mention, for the information of "Pyrus," that Diel gives "Golden Winter Pearmain" in plain English as well as in the German, and states he received it in 1800 from Messrs. Loddiges; and also that he subsequently traced it from the Kirkes of Brompton as the "King the Pippins," and as a new seedling of their own which they had raised by chance! Now, we all know what

the Kirkes' seedlings have proved to be—their Golden Pippin, Golden Reinette, Scarlet Admirable, Lemon Pippin, Hicks' Fancy, and many other fancies; and, knowing this, is "Pyrus" prepared to say that he would adopt the nomenclature of such an authority in preference to that of Loddiges? It matters not whether the misnomer of King of the Pippins has become general or not; the same remark is applicable to Dumelow's Seedling, which is far more popularly known by the name of "Wellington Apple;" and still "Pyrus" would not adopt the latter, merely because it is the more popular. I do not know that the true King of the Pippins is the "King Apple" of Rea, otherwise I would have adopted that nomenclature. I only suspect that it is so; but having no evidence to confirm my suspicion, I cannot assert it. As all that he has said about Joanneting and Quoining amounts to nothing, I need not dwell on these subjects. When he tries to show me I am wrong, I shall show him I am right. I must say that "Pyrus" would save himself and me too a great deal of unnecessary trouble if he would be more careful in the subjects he selects for criticism, for his remarks on the "Cherry Apple," which he designates by the vague name of Siberian Crab, are quite frivolous. He will find it so called by Loudon in his "Arboretum;" and in the first edition of the Society's Catalogue it is called "Cherry Crab." The French call it "Pomme Cerise," and the Germans "Kirschappel." I have, myself, frequently had orders for it under the name of Cherry Apple; and as the name Siberian Crab is equally applicable to several other varieties, why not adopt Cherry Apple, which is by universal consent the preferable one! I am inclined to believe that "Pyrus" is so wrapt up in the information he already possesses, that he finds fault with everything that is new to him. I really cannot help thinking that he is determined to find fault, for he is not only dissatisfied with the matter, but even the very nature and essence of my book. He says "it is a nice little book, and would be much nicer if it were less like a descriptive catalogue." Now that is just what I want it to be more like. I would it were even more descriptive. I intended it to be in pomology what a Flora is in botany; but if he prefers the story-book style, adapted to pomological subjects, as Miss Wakefield's "Letters on Botany," or Miss Pratt's "Flowers and their Associations" are to that science; or, rather, the simple style of Peter Parley or Old Humphrey; and if he will treat us to "a nice little book" in that way, I am sure it will be most acceptable and interesting. In conclusion I thank "Pyrus" for his suggestion about growing fruit trees in pots "for practice;" but I am not so fond of that plan as some are. They are, no doubt, pretty toys for old gentlemen, such as Dickens' Mr. Garland, or elderly ladies like Hood's Mrs. Gardiner, who have nothing else to do than "fiddle" away their time; but I prefer the orchard standard, the garden pyramid, the espalier, and the wall; and if Dr. Diel had practised less of that method of fruiting his trees, perhaps we would not have had such mistakes in his work as the same fruit being described under two, and sometimes three different names. I would not advise "Pyrus" to practise that system if he is attempting to follow in Dr. Diel's footsteps. *Robert Hogg.*

*Juniperus excelsa.*—A fine lofty specimen, having been injured more than 10 years ago, by the application of liquid animal manure, has never recovered, and the fresh young shoots, annually formed, come to no good. Is there any remedy, by chemical antidotes, by root-pruning, by transplanting, or, generally, by any means? *A. H.* [Not that we know of.]

*Cole's Crystal White Celery.*—My employer placed in my hands, not many days ago, a catalogue which was sent by post from a seedsman living not many hundred miles from Maidstone. In perusing it, I found the above named Celery marked at 1s. per packet. Knowing that Mr. Cole and his agents are advertising this esculent at 2s. 6d. at the moment I write, I am satisfied that there must be some mistake, or why should such a difference exist in regard to the scale of charges? I have looked over Mr. Cole's advertisement, and I cannot discover that the seedsman to whom this refers is an authorised agent, consequently, I am led to believe that Mr. Cole is not cognisant of the fact, or why does he not offer 1s. packets? Perhaps he may be induced to put us right in the matter. *G. Fry.*

*The Nouveau Poiteau Pear,* of which scions have lately been distributed by the Horticultural Society, ripened with me Nov. 5, 1851; it is as large, or larger, than the Glout Moreau, something like it in shape, in colour of a brownish red. It is so melting as to dissolve perfectly and rapidly in the mouth; its flavour is scarcely enough piquant; it bears abundantly as a pyramid. *Thomas Rivers.*

*Large Laburnums.*—A friend of mine sends me two packets of Laburnum seeds, gathered from two trees, one packet from a tree in the park of Sir William Scott, of Ancrum, which measured, at 3 feet from the ground, 7 feet and an inch in girth; the other packet contained seed from a tree on the neighbouring farm of Kirklands, which is 4 feet 4 inches in circumference. I have not Loudon's Arboretum at hand, but are not these gigantic Laburnums? At least, they far exceed in size any which I have ever seen. *Dodman.*

*Achimenes picta.*—Among the various species of this genus none are better deserving of notice than this one, whether for the richness of its velvety green foliage, traversed with pale, greenish white, or for the beautiful streaked and spotted flowers it sends forth when under good cultivation.—"In Mexico," says Hartweg, "this

Achimenes prefers dry, rocky ground, not much shaded, where it scarcely attains more than 5 inches in height, seldom producing more than two or three flowers upon a stem." From this account it appears that our garden specimens far exceed the wild ones, both in vigour of growth and abundance of flowers. It is no uncommon thing to see handsome plants, 2 or 3 feet in height, which, instead of merely a few solitary flowers, have frequently four or six in the axil of each leaf. The prolific source of multiplication possessed by this plant enables a gardener to increase it to an infinite extent. In addition to the facilities of increase afforded by the scaly tubers of the stem, it may be propagated by the leaves, like a Gloxinia, and also by division of the underground tubers. The last, however, is by far the most preferable, on account of their producing stronger plants. The leaves, when taken for cuttings, may be planted in a compost of two-thirds sand and one-third peat-soil, covered with a bell-glass, and placed in bottom-heat. Water must be given sparingly; the leaves are of a very succulent nature, and if kept too damp would soon go off. As soon as they have made sufficient roots (which they will do in about six weeks), pot them off into small pots, place them in bottom heat and they will soon make good plants fit for forcing. When the tubers are to be started, put them in pots or pans of moderate size, say from a foot to 15 inches in diameter, and place them in a strong bottom-heat. As soon as they have grown to about 6 inches in height repot them, selecting the best plants and potting them to themselves, keeping the weaker ones for a succession. For potting use a compost of one-third leaf-mould, and two-thirds well-rotted dung, peat, and sand, with a little charcoal broken small. In potting, the plants should be bent down into the mould, leaving about 2 or 3 inches above the surface. Keep them in heat as before; as soon as they begin to grow vigorously supply them with plenty of water, syringing them twice a day, mornings and evenings. Air must be given sparingly for the first few days: afterwards give it freely, so as to ensure stout healthy plants. They may be potted as often as thought fit, until they begin to show flowers, using the same compost, and giving good drainage. When they have done flowering put the day of the month on each stick, which will enable one at any future period to know what tubers to start first. The tubers in their resting season require only to be kept dry and warm. *Francis Symons, Carelew, Cornwall.*

*Transplanting Trees.*—The statement given by "J. B.," at p. 197, respecting the removal of our large Rhododendron, is quite correct. There are two other plants here, of the same sort, planted most likely at the same time as the one in question. When planted, they were 8 or 10 yards apart, but they for many years have been united, and now they form one dense mass, 70 yards in circumference, although they have often been greatly reduced by the knife. *W. Smith, Netherby, March 30.*

*Effects of the Winter near Dublin.*—Strong healthy plants of Cupressus Goveniana and C. lusitanica have been killed; C. elegans is much injured; C. funebris growing near them, and rather more exposed, is quite safe, although its leader continued growing up to the end of September, while Taxodium sempervirens and Escallonia macrantha, within a few yards of it, are much hurt. The beautiful Ceanothus divaricatus against a trellis, and on a good aspect, has had its breast-wood all "cut off," while C. dentatus and C. rigidus, more exposed than the former, have escaped. The shoots of Lonicera flexuosa, Weigela rosea, Escallonia rubra, Jasminum revolutum, and even those of the common Ivy upon the walls, all afford evidence of the severity of the past winter. Out of a dozen valuable Pinuses, P. radiata is the only one that has suffered. The beautiful Holly-leaved Cherry, Cerasus ilicifolia, and Berberis aquifolium, have been slightly injured. On the mornings of the 21st and 22d of March we had very sharp frost. Our Peaches on the open wall were then in bloom; a piece of thin canvas, however, suspended from the coping has prevented the blooms from being injured. *D. Pressly, Gardener to G. Burns, Esq., Knockmaroon March 29.*

*Stem Roots of Vines.*—I am trying to prevent my Vines from throwing out so many stem roots this season; and I hope, by the same means also, to prevent shanking. During last autumn I procured tarpauling to cover a border 60 feet long, by 16 feet in width. In October I covered the border, keeping the tarpauling about 2 inches clear of the soil; this I allowed to remain on till January, when I began to prepare for starting the Vines, and I was glad to find that the border was in a much better state than on previous occasions. Having got it forked over, and a little compost added to it, the tarpauling was again applied; and I intend it to remain on except during fine days, when it will be an easy matter to roll it up, to permit the border to receive the full influence of the sun, and again to let it down at night. When the Grapes begin to colour it is my intention to keep the border as dry as possible. It is now in very good condition, quite different from what it has been in on other seasons, when it has been loaded with wet manure to raise a heat. I may also add that the Vines are showing better bunches, and are very strong, without so many stem roots as they have previously had; they are just coming into bloom. *T. Amy.*

*Birds.*—Papers have lately appeared in your columns relative to destructive birds. If, by an act of volition, your correspondent could destroy the birds of which he speaks, he would soon wish them all back again. *A.*



King of Prussia procured the destruction of sparrows throughout his dominions, but soon retraced his steps. One pair of sparrows in the spring and early summer destroy 6000 caterpillars a week. In the French game laws of 1840, or thereabouts, it is expressly enacted that it shall be lawful for the prefects of departments to forbid the destruction of all small birds. It is fit to add that bird catching is practised on the continent to a most extraordinary extent, and this provision is intended to check it, the act reciting—that in consequence of such destruction it had been found that vegetation had greatly suffered. Almost all the thick-billed birds which eat corn and seeds will also prey upon caterpillars, insects, and larvae. In fact it is difficult to name a single bird which does not do as much good as harm. The bullfinch is a sad plague. Walk out quietly among your Plum trees, and you will see every now and then two or three of these birds quietly crushing the blossoming buds all over the tree; but these birds are not numerous. Wood pigeons have increased of late years, so as to become a nuisance; they will shear off entire rows of Peas as clean as a rabbit. The two latter-named birds do not, as far as I am aware, compensate for the mischief they do. The preservation of game, causing the extirpation of nearly all the birds and animals of prey, have immensely increased the numbers of the feathered tribes, and at the same time in a great measure stopped the predatory incursions of the bird-nester in our fields and woods. Thus the equilibrium of check and counter-check, which in such things constitutes the economy of nature, is somewhat interfered with. More might be said on this subject, but in the meantime permit me to observe that if the aspirations of "J. W." were too rigorously carried out, our trees and hedges would be leafless. Their destroyers would become a plague, and the sublime language of the prophet, speaking of the locust, would be realised, "before them it is as the garden of Eden, behind them a desolate wilderness." *An Inquirer.*

*Hulings' Superb Plum.*—In last week's *Chronicle* (see p. 198), Mr. Rivers, in correcting a misprint in the report of the meeting of the Horticultural Society, calls this plum "Huling's Superb." In these days of pomological censors, we must be particular about nomenclature, and I therefore hasten to correct the correction, which should have been *Hulings' Superb*, it having been raised by Dr. Wm. Hulings (not Huling), of Pennsylvania. I have cultivated this variety ever since 1846, and can confirm the high character Mr. Rivers has given of it. *Robert Hogg.*

*Forcing Asparagus.*—I like the method adopted at Raby for forcing this vegetable, but the costly brick wall, coping-stone, &c., are not to be had in one place out of ten. The plan practised here is very simple and efficient. We merely throw out the alleys 20 inches deep, forcing part of two beds at once, the middle lining acting for both, and fill them up the same distance above as below, with well-prepared dung and leaves, taking care to give the boxes a gentle slope each way, to throw off the water. The boxes used are all made of wood. I may mention that we give air on all favourable occasions, which not only colours the Asparagus, but gives it a delicious flavour. *R. Gilbert, gardener, Sewerby House, Yorkshire.*

## Societies.

CALEDONIAN HORTICULTURAL, March 3.—R. STEWART, Esq., in the chair. On this occasion there was a good display of Hyacinths and other plants, to which prizes were awarded as follows:—Twelve best Hyacinths, produced by nurserymen: 1st, Messrs. Dicksons and Co., with the following varieties:—Prince Albert, Bellini, Emily, Laurens Koster, Prince of Waterloo, Porcelain Sceptre, Queen of the Netherlands, Emilfus, Miss Kitty, Amy, Madame de Stael, and Ida; 2d, Messrs. James Dickson and Sons, with Grand Lillas, Prince Albert, La Tour d'Auvergne, Amicus, La Grand Vidette, Voltaire, Lord Wellington, Queen Victoria, Orondates, William I., Baron de Tuiller, and Romulus. Six best Hyacinths, produced by practical gardeners or amateurs: 1st, Mr. Henderson, gr. to C. K. Sive-wright, Esq., Cargilfield, with Laurens Koster, Orondates, Lord Wellington, Victoria Regina, and Grand Vidette (white and blue); 2d, Mr. Fowler, gr. to J. MacMurray, Esq., with Orondates, Mars, Voltaire, La Jaine Anne, La Tour d'Auvergne, and Acteur. Best Heath: 1st, Mr. Fowler, with a neat plant of Erica hiemalis; 2d, Mr. Pender, gr. to D. Anderson, Esq., with E. Lambertiana rosea. Best Azalea: Mr. Pender, with A. indica alba. Best six blooms of Camellia: Mr. Mitchell, gr. to Lady Keith, with Palmer's Perfection, Beahli, Double White, Sweetii, Imbricata, and Queen Victoria. Finest two Cinerarias: 1st, Mr. Laing, gr. to the Earl of Rosslyn, with Sunnash and a seedling; 2d, Mr. Henderson, for Cerito and Marianna. Finest two Chinese Primroses: 1st, Mr. Henderson, for well-grown plants of Double White and Single Fringed Purple. Seakale: 1st, Mr. Kerr, gr. to R. Brown, Esq.; 2d, Mr. Pender. In addition to the articles sent in competition, there were a few extra productions sent for exhibition only, for which thanks were voted as follows:—To Messrs. P. Lawson & Son, for Pimelea Verschaffeltii, Camellia Rudolphia, and Hyacinths; to Messrs. Dicksons & Co., for Rhododendron ciliatum, in flower, a beautiful specimen of R. campanulatum, and Hyacinths; to Mr. Handsyde, for Conifers and Evergreen Shrubs, including Ilex cornuta, furcata, micro-

carpa, and ligustrifolia, a variety of Taxus elegantissima, Berberis Darwinii, Crataegus crenulata, Juniperus oblonga pendula vera, &c.; to Messrs. Downie & Laird, for Dielytra spectabilis; to Mr. Reid, for Camellia blooms; to Mr. Stirling, for early flowering Herbaceous plants; to Mr. Pender, for a seedling Camellia; and to Mr. Sinclair, for Asparagus. The exhibition was enhanced by a number of plants from the Society's Garden, including Rhododendron ciliatum, in flower, a splendid specimen of Dielytra spectabilis, and a fine display of Camellias and early bulbs in the Winter Garden. Seedling Florists' Flowers and other novelties: First class certificate to Rhododendron Countess of Rosslyn, produced by Mr. Laing, gr. to the Earl of Rosslyn, having been raised from seed (it is supposed), of R. arbo-reum album fertilised with R. caucasicum. The truss is large and fine, and of a white colour. It was stated to be quite hardy, having stood out for at least 10 years, but the flowers, appearing from the beginning to the end of April, are apt to be destroyed by late spring frosts. Letter of Commendation to Rhododendron No. 280, produced by Mr. Laing, and of the same description as the above, but inferior to it. A flowering plant of Lomatia silaifolia was also shown by Mr. Laing.

BOTANICAL OF EDINBURGH, March 10.—The PRESIDENT in the chair.—Dr. Balfour exhibited some donations which had recently been made to the Museum of Economic Botany at the Royal Botanic Garden. Among them was a specimen of Caoutchouc from an African Euphorbia, contributed by Dr. Holden; also specimens of a plant said to be used in the Mauritius as a febrifuge, and in cases of indigestion, called Japana or Tapania; likewise of another plant called "Koma Koma" or worm-root, used as a vermifuge, from Fort Murray. The following papers were read: 1. On the occurrence of Palms and Bamboos, with Pines and other northern forms, at considerable elevations on the Himalaya. By Major Madden.—In this paper the author gave an account of various plant-forms which are met with in the Himalaya, and showed the association of plants which are often said to represent tropical forms with others which are said to be characteristic of temperate or cold regions. He noticed Phoenix humilis, Chamaerops Khasyana, Harina oblongifolia, species of Arundinaria, Thamnocalamus, Musa, Quercus, Acer, Rhododendron, Pinus, &c., growing at elevations varying from 5000 to 10,000 feet. He concluded by drawing the attention of geologists to the importance of these facts as bearing on their views in regard to the climate of former epochs of the earth's history, and by showing, that in drawing inferences as to climate, we can only do so safely by a consideration of the individuals of each species, and not by that of the whole species of a genus. When we find species of Palms, Bamboos, and Banana growing amongst and above Pines, Cedars, Oaks, Cypressess, Yews, Maples, Hazels, and Ash, it seems to be very rash to draw conclusions in regard to climate from mere generic data. The paper was illustrated by large drawings of the principal Palms, &c., noticed, and also by plants from the Royal Botanic Garden of Phoenix humilis (presented by Mr. Moore, of the Glasnevin garden); the Hemp Palm of China (presented by Messrs. Standish & Noble); Arundinaria falcata, &c. The paper will appear in the "Annals of Natural History," and the Society's Transactions. 2. Remarks on British Plants, Part II. By Charles C. Babington, M.A., &c.—Among the plants mentioned by Mr. Babington was Agrimonia odorata, distinguished from A. Eupatorium, by the tube of the fruit being bell-shaped, not furrowed, and the exterior spines of the fruit declining. The paper was illustrated by specimens from the University Herbarium, and will appear in the "Annals of Natural History" and the Society's Transactions. 3. On a remarkable Formation of a Stem-root in the decayed trunk of a Willow. By J. Lowe, Esq., Gainsborough. Communicated by Dr. Balfour.—A sketch was exhibited of a large Willow, in which a root had been developed in a peculiar manner so as to form the main stem. Mr. Lowe observed "the tree (Salix viminalis) having become decayed in the centre, a root had evidently been sent down by a portion of the upper extremity of the tree, through the rotten, sponge-like substance which filled up the interior. Feeding on this and the moisture absorbed by it, the root at length reached the ground, where it established a firm hold, the circumference then died away until the root now taking on the functions of the stem and becoming entirely denuded, at length became the only support of the living top. The remaining part of the periphery only acts as a mechanical support. The circumference of the root-stem is 18 inches at top and 13 at the bifurcation, about 3 feet above the ground; it has latterly taken on more stem-functions by putting forth several branches. The tree is growing near Sleaford, where I have observed its progress for some years."

## Reviews.

Industrial Education in England. By the Chevalier de Cocquiel. Translated by Peter Berlyn. 8vo. Chapman and Hall. (A pamphlet of 83 pages.)

THIS is the view taken by an intelligent foreigner of the state of popular education in England, in the year of the Great Exhibition, together with a few short but judicious notes by the translator. M. de Cocquiel appears to have been employed by the Belgian Government to

examine the subject treated of in the work before us, and to report what he conceived to be the merits and defects of our educational system, in so far as the industrious classes are concerned. He has evidently had access to exact sources of information, whatever he saw was observed with the eye of high intelligence, and the conclusions at which he arrives are on the whole worthy of an enlightened politician.

The opinions held by M. de Cocquiel on the general tendency of classical studies, harmonise entirely with the views now entertained by most Englishmen upon that subject. In describing the state of education in Belgium he makes the following remarks.

"The general education given in our country, as in the majority of the other countries of Europe, noways fits us to play a useful part in society. The general instruction in preparing young men for every career qualifies them for none. Hence that crowd of applicants for government situations. If we had a well organised special system of instruction, we should like wise not see so many young men, for want of better occupations, aspire to the diploma of advocate or doctor, too frequently without rendering real services to society, frittering away talents which might be rendered available in other directions. Assuredly, if greater facilities were afforded to young men of acquiring practical knowledge in manufacturing, commercial, and agricultural industry, the number of candidates for government appointments would speedily be found to diminish considerably. The system of education which prevails in the greater number of the European states, not only does not prepare men to enter upon the industrial career, but actually tends to divert them from it. Nobody can doubt that the tendency of the classical studies, such as they are generally constituted, inspires young men with a kind of disdain for the industrial professions. This is an evil, a deplorable one, eminently opposed to the general spirit of the age. Beyond the walls of the educational establishments, and the colleges, industry is held in high esteem; it is placed on a level with all situations, and in the great states foremost in the march of civilisation, it has on more than one occasion proved the stepping-stone to the highest public functions. Inside the colleges, the industrial professions are indeed regarded much in the same light as by Cicero when he termed them sordide artes."

There can be no doubt that the usual routine of a common English education is in the highest degree irrational; but it can hardly be otherwise until more intelligent teachers shall have been provided in abundance. A man can only teach what he understands; and he naturally values at a higher rate that of which he is master than subjects concerning the nature and bearing of which he has no adequate information. A common English teacher knows little except Latin, Greek, and the elements of arithmetic; he can teach no more. A first-class English master often differs chiefly in degree; he has brought away classical and mathematical attainments from Oxford or Cambridge, and they form the staple commodity which he offers to his customers. Modern languages, natural philosophy in its application to practical purposes, and the various branches of chemistry and natural history, are the exception not the rule. And thus we see the whole system of rational tuition inverted; that which most nearly affects men's material interests is postponed to subjects whose value is chiefly traditional, and which very seldom bear upon the pursuits of after life.

It may be said, perhaps, that this has little to do with the industrial classes, to which knowledge is now imparted upon a different principle. But we know of no class which is not in this great country industrial. The son of a nobleman, or of the rich merchant, or of the wealthy country gentleman, belongs to the industrial classes as much as a weaver or a carpenter. Here, as in all society, the classes are numerous and greatly different in rank; but throughout the whole there exists the same necessity for a knowledge of the practical business of the external world. And so it must always be until the upper ranks of society here sink to the level of the worn-out Spanish noblesse.

So far as the education of mere artisans, who constitute the industrial classes in a restricted sense, is concerned, M. de Cocquiel seems to regard with especial approbation the Glasgow Mechanics' Institution.

"Of all the mechanics' institutions," he says, "which I have visited during my sojourn in Great Britain, the most interesting and the most useful, because it has adhered to its old traditions, is that of Glasgow. It was founded exclusively by the working men, who having had some misunderstanding with the management of 'Anderson's Institution,' determined upon founding with their own resources an establishment intended to remain independent of the aid of the wealthier classes. There complete and systematic courses of lectures on the various sciences applied to the arts and manufacture are given, not for the amusement but for the instruction of the members. Every year prizes are awarded for the invention of new machines, and for the construction of new models. Thus, I have seen a very varied collection of models of machinery made by the operatives of Glasgow. A certain number of the members have formed themselves into a mutual improvement society. The topics chiefly discussed are the sciences, education history, and general literature. Gratuitous admission to the library and lectures has been granted to poor well-conducted apprentices. In this manner, from 1841 to 1850, upwards of 250 apprentices without means have received the benefits of an excellent professional educa-



tion, and have had the use of a library of between five and six thousand volumes."

No doubt the capital part of the rules of this institution is that which prevents the classes from being diverted from their proper purpose, instruction, to the clap-net demonstrations called popular lectures, got up for show, and intended for mere amusement. It is this last error which has brought about the decay of so many promising associations, begun with zeal, and containing all the elements of success, but dropped as soon as it was discovered that if much was displayed nothing solid was really taught; for it is absolute teaching which artisans require and are willing to pay for, and for which those above them are ready to find funds. The Edinburgh School of Arts is a striking example of this fact.

"This school was," says M. de Cocquiel, "founded in 1821, by Mr. Leonard Horner, with the object of giving instruction to mechanics 'in such branches of physical science as are of practical application in their several trades.' It was antecedent to the Mechanics' Institutions of Glasgow, London, Liverpool, and Leeds. Of all the working men's institutions, it is almost the only one which has remained faithful to its original programme. The eminently practical instruction which it affords to the operatives is adapted to their wants and condition. Leaving aside subjects which are only of passing interest, the instruction which is given in the Edinburgh school has always been strictly confined to those branches calculated to improve the industrial classes. Contrary to the mechanics' institutions, its success has been steadily growing, and, during the last ten years, the number of its students has more than doubled. The Edinburgh School of Arts differs in more than one respect from the working men's institutions. These differences will throw a light on the causes of the success of the former, and the decline of the latter. The School of Arts is supported by the contributions of the wealthier classes of Great Britain, and particularly of Edinburgh. It is, therefore, not entirely dependent upon the funds contributed by the mechanics who avail themselves of its advantages, and who only pay a trifling admission fee to the classes. The mechanics' institutions open their doors to all classes of the community, even to ladies; the School of Arts, on the contrary, is limited to the industrial classes. The pupils have no concern either in the management of the school or in the election of the managers. The management is elected by the general body of subscribers. All the professors are paid; no gratuitous courses are received. The subjects of instruction are limited, and subordinate to the wants and condition of the working classes. The library solely comprises works of a useful character, calculated to aid the pupils in the study of the sciences taught to them. Party-political and controversial works are excluded from the establishment."

These are the rules of practical wisdom, and, in a country like Great Britain, will always lead to good results; provided only those who apply the rules are one to the obligations imposed upon them. The remarks by Mr. Horner on the occasion of distributing prizes at the end of the winter session 1850-1 are so apposite, and so entirely express our opinions, that we gladly avail ourselves of them in concluding the present notice.

"Many of the educational establishments to which the school of arts gave rise, the mechanics' institutions, have failed in their proposed object, by not restricting themselves sufficiently to a definite course of instruction. They take up a great variety of subjects, without relation one to the other, without any bearing upon the professional education of the mechanics, treat them superficially, and thus, instead of being schools where a sound practical education may be obtained, they do little more than afford an amusing and innocent way of passing a hour in the evening after the day's work. In this they unquestionably do much good morally, by withdrawing many from sensual and degrading indulgences; at I think that it may be confidently affirmed, that while our system is as effective in its moral results, need more so, inasmuch as it operates by means more dignified and impressive, they miss, indeed they scarcely in be said to aim at, the important object which we successfully attain."

**Garden Memoranda.**

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN.

Owing to the fortunate backwardness of vegetation, things have scarcely suffered so much here from the severe frost and searching cold winds, with which we have lately been visited, as might have been expected; nevertheless, some plants have sustained considerable injury. A few of the leaflets of the Nepal Berberry (*Berberis*), have been browned; but otherwise it is well. It is, however, in a somewhat sheltered corner, as the also examples of *Ceanothus papillosus*, *dentatus*, and *rigidus*. Of these, *papillosus* has had its foliage browned a good deal, and *dentatus* is a little hurt; but *rigidus* has not had a leaf harmed. *C. verrucosus* also appears to be perfectly hardy, and is full of flower-buds. *Prunus* *Contorta*, *Prunus apiculata*, *macrophylla*, *Tecote*, *retorta*, *Aspidula*, *De-voniana*, *Russelliana*, *muricata*, *montana*, *Benthiana*, *Ilaviana*, *tuberculata*, and *melanocarpa*, are all unhurt; but *P. patula* is a little hurt, and *Orizaba* has had all its foliage browned, but the buds and wood appear to be uninjured. *P. macrophylla* is touched a good deal, *Fitz-Roya patagonica* has been a little hurt, and *Saxo-Gothica* conspicuous a good deal, the latter having had some of its young shoots quite

killed; the older portions of the plant, however, have stood better. *Cupressus Udeana* is quite safe, as are also *C. thurifera*, *macrocarpa* and *Goveniana*. The *Funereal* Cypress is likewise unharmed. *Juniperus flaccida* is considerably damaged, although it has stood several years uninjured in its present situation; *Cryptomeria japonica* is full of male flowers, and quite safe, and *Taxodium sempervirens* has withstood the weather perfectly. *Cephalotaxus adpressa* is uninjured, as is also *Retinispora squarrosa*. Among other things, *Quercus oleifolia* and *Cookii* have proved quite hardy, *Rhamnus oleifolia* has had its young shoots killed, the Japan Oak (*Quercus glabra*) is uninjured, *Ilex Tarago* has been killed; the Californian Evergreen Plum has had the top pair of leaves on the young shoots a very little hurt; but otherwise it is as green and healthy as possibly could be desired. *Pavia californica* is making young shoots, which are as yet perfectly safe. An *Arbutus* from California is very much injured, and the *Neighberly Berberis tinctoria* has had all its top killed. *Berberis fasciculata hybrida*, a fine evergreen spreading bush, appears to be quite hardy. *Crataegus Layii*, which in China bears multitudes of Siberian crab-like fruit, which are much used for preserves, is budding out as vigorously as if it were in its native country.—Messrs. Veitch's *Dracena indivisa*, a tall Yucca-like plant, is also green and healthy, and altogether very striking. The young shoots of *Moutans*, which have been left unprotected, are of course all killed. *Myrica californica* stands frost well, as do also the Oval-leaved Privet of Japan and *Escallonia macrantha*, although the latter is a little browned. The leaves of the blue gum (*Eucalyptus globulus*) which produced the large timber that was exhibited at the great Exhibition of 1851, has had its leaves injured; but in this case, as doubtless in many others, the browning of the foliage has arisen more from the violent gales of piercingly cold winds which have swept over most of England than from the mere frost. Belgian *Alstroemerias*, which attracted considerable attention a year or two ago, are coming up strongly in the open border in the American garden, notwithstanding the cold weather we are still experiencing. Little satisfactory can be said respecting *Sikkim Rhododendrons*, which are small plants under hand-glasses here; the *Edgeworthia*, *Dalhousie*, and one or two other species, however, appear to have suffered a little, while *ciliatum* is quite green and fresh.

In the orchard department, coping boards 9 inches wide have been put along the top of the Peach wall. This has hitherto been found to be sufficient protection to the blossoms, which are only opening, and consequently as yet safe; but should the weather not take a favourable change soon, straw and other protections must be resorted to, as they had to be last year. We observed that the tree under Cottam and Hallen's Peach frame was considerably more forward than the others, and also that the Stanwick Nectarine is expanding abundance of blossom on strong, well-ripened shoots. Apricots on a west aspect are not yet in flower. Pears on walls are very promising, and as yet they are unhurt; the Forelle or Trout variety is the most forward; but even the flowers of that are safe. Among Broccolies, the Wilcove is not far enough advanced to be harmed, and Lake's Superb White (a good deal like the latter), has endured the frost well. Knight's Protecting has also proved itself this year, as it always does, one of the best late winter Broccolies we have, the leaves twisting over and keeping the curd beautifully white and free from injury. Snow's Hardy White is a good Broccoli, and has also stood well here, though it has been killed in some other places. One called Hampton Court, from Messrs. Sutton, appears to be the true Knight's Protecting. Lettuce-leaved Spinach has stood very well; a few of the outside leaves have suffered a little, which may be owing to the fleshy nature of this sort; but as much food can now be gathered from this as from the Flanders, which is less succulent, but apparently a trifle hardier. Peas sown early are not yet making their appearance; doubtless owing to the continued coldness of the ground. Some in pots are being kept in a cold frame till the weather will permit of their being planted out. Onions have just been sown, and winter ones transplanted to come in early. A few Mazagan Beans have also been planted. Bath or Brown Cos Lettuces have all, or very nearly all, been killed; but a White Cos, received from Mr. Cock, of Chiswick, has stood very well, proving itself fully hardier than the Romaine Verte d'Hiver. This will, therefore, be a valuable acquisition.

A great portion of the Arboretum has been mown, the shrubbery borders dug, and other work put forward, preparatory to the forthcoming exhibitions. A few shrubs have been removed from the corners of the borders at the intersection of the main walks near the west entrance to the conservatory, and the ground where they stood has been levelled and turfed, which certainly improves the appearance of this part of the garden. We may also mention that the hole where the large tree moved by Mr. McGlashan's apparatus came from has been levelled and turfed over, leaving little or no trace now of the disturbance caused by the great feat which was an object of so much attraction only three weeks ago.

We had almost forgotten to notice an alteration which is being effected in the large iron tent; its roof has been removed, and a wooden one, covered with zinc, is being substituted; a few feet round the very top, we understand, being ordered to be glass.

A notice was posted up in the reading-room, to the

effect that Dr. Lindley would deliver a lecture in the evening on Earth in its relation to Horticulture.

**FLORICULTURE.**

**HYACINTH SUPPORT.**—For this purpose I have employed No. 12 copper wire, curved in a serpentine manner, with an eye or ring at top to put the flower stem (through, for many years; and I find the plan to answer perfectly. It is scarcely perceptible when in use, and certainly if simplicity is any recommendation, nothing can be more so. The curved wire can be contracted or drawn out, as the growth of the plant requires. The ring at top opens and closes to admit the stem. I take a piece of half-inch deal, 4 inches square, for the plinth, on which the glass stands with the wire at the back, and firmly fixed in the stand; I paint the whole green. Should the weight of the spike render it necessary, a fine piece of metallic string passed round the neck of the glass and wire will suffice to keep all secure. Speaking of metallic string, I am greatly surprised that it is not more generally used. I tie my Vines with it, sometimes using a large size, merely passing it twice round, or a smaller size once round, and twisted. I also employ it for many other things, and when out of use it is straightened and used repeatedly for similar purposes. Many of the trade sell it, as do ironmongers, &c. I think as many as six sizes of it are made. *W. G., Hereford.*

**ROSE MAGGOT.**—Two years ago, on minutely inspecting the buds of my Rose trees about the end of March, I observed some very small powdery matter about them, and on examining with a glass I found a very small maggot in the bud; it occurred to me that as there are side buds which come into growth when the main bud is accidentally destroyed, I should possibly get rid of one set of caterpillars by removing all the main buds: I did so on a large branch, leaving the rest of the bush to take its chance. On the back of many of the buds I found the little creatures busy at work. I noticed the denuded branch during the summer, and found my conjecture confirmed. New buds came, and the branch was covered with flowers uninjured, whilst the rest of the tree was very much infested—the only drawback was that the Roses on the experimental branch came somewhat later. I repeated the experiment last year with the same result, and I make this communication in the hope that others may be induced to try the same mode of getting rid of one of our worst pests, as the plan has the advantage of extirpating, as far as it is practised, the propagation of the progeny. A quick hand, after the bushes are pruned, would soon clear a number of trees much quicker and very much better than could possibly be effected by hand-picking, when the mischief, in nine cases out of ten, is already irretrievably done. If any of your correspondents should try this mode, perhaps they will communicate their results. *T. H., Stoke Newington.*

**AURICULAS:** *Beta.* The soil in which the Auricula has been found to thrive and colour well in is about one-half old hot-bed manure and one-half sound fibrous loam, well turned over and frozen through before being used. It is much preferable to employ charcoal or wood-ashes in the compost instead of sand; they keep the soil open and sweet, and they also help to fertilise it.

**CATALOGUE** received from Messrs. Cole and Sharp, Aston Lane Nursery, Birchfields, Birmingham.

**CINERARIAS:** *Cecilia.* Some varieties are constitutionally disposed to "turn up the edges of their leaves;" want of water at their growing time, or green-fly, both tend to "turn the lower leaves yellow." If you find aphides on them, fumigate before the plants get much in flower.—These are now becoming gay, and will require careful and rather copious watering. Shading with thin canvas during the day will prolong their beauty. Seedlings should be examined carefully, in order that the best may be saved for another trial.

**FUCHSIAS:** *L. P.* Cuttings struck in spring may be made to form handsome specimens by the autumn. If your "old stools" are cut back they will possibly flower by midsummer. Plants are made bushy and compact by frequent stoppings and cool treatment.

**HOLLYHOCKS:** *Beginner.* You may "pot on" the stock you have been getting from the trade, and when sufficiently rooted round the ball to hold the soil together, turn all out into the open quarter which you have so carefully prepared for their reception.

**PANSIES:** *Beginner.* Plant at once, and take off cuttings during the growing season for increase.

**PINKS:** *Beginner.* The chances are against your obtaining well-laced blooms from plantations made now. You may try, but we doubt your success.

**ROSES:** *Z.* You may plant as soon as the frost breaks up.

**TULIPS:** Stirring the soil carefully, and protecting them from frost, hail, or snow-storms, is all that is necessary at present; but this should be perseveringly attended to: mild showers will assist them. Keep them open as much as possible, as soon as they appear above ground; the bloom itself will not be earlier than an average season.

**VERBENAS:** *Beginner.* Do not turn them out yet.

**SEEDLING FLOWERS.**

**CAMELLIAS:** *Lady R.* A bold flower, with well-formed stout petals, double, and regularly imbricated; colour deep rosy pink; petals smooth on the edges, although slightly disposed to be indented in the middle. A variety well worth growing.

—*J. M.* An excellent flower, more double than its parent (imbricated), which it closely resembles in general characteristics, although a shade or two paler in colour.

**CINERARIAS:** *J. E. Romney.* The flowers you have again sent fully maintain the character we gave the first; the only perceptible drawback is, that the petals reflex instead of cup, but perhaps this may not happen on the plant. — *W. H.* Not near so good as varieties possessing the same colour, already in cultivation. — *W. J. H. H.* A clear red and "telling" flower, with nicely cupped petals, smooth and stout. They are, however, not blunt enough; at their ends, and a slight indentation is apparent at the tips of the well-formed disk, however, pure white ground, and well-defined deep purple heavy markings, make it a real acquisition. — *S. K.* All shrivelled up and unmanageable. — *Sub. Bodele* 1, a bold neat looking flower, with a cool pretty merit; 2, compact and a pale flower; both are of very merit equalling many named and already out. — *J. C. Hoveburgh* 1,



a good deep blue; 2, very broad and obtuse in petal, but "reflexed," 3, tip very bright, but petal narrow; 4, although bold, is not blunt enough at the ends, and it is disposed to be serrated; 5, delicate.

POLYANTHUS: J. H. A neat highly-coloured flower, but apparently not sufficiently dissimilar from some of our leading kinds already in cultivation.

## Calendar of Operations.

(For the ensuing week.)

### PLANT HOUSES.

ALTHOUGH previous directions have been given on the importance of obtaining a short-jointed, sturdy habit of growth in ligneous plants, as a foundation for healthy specimens, we again advert to the subject, as this is the season, above all others, when attention should be directed to the point. It will be obvious that free admission of air, and in most cases of light as well, are essential. In connection with this, allow space sufficient between each plant for the light to penetrate, and air to pass freely. The great object with cultivators of specimens is to get plants to open their blooms at one particular time; considerable tact, and a knowledge of the habit of each plant, is requisite for this. As a general rule, it should be observed that no second growths should be permitted, and that the shoots for blooming the ensuing year should be selected of equal strength, at once, and sufficient in number for the desired purpose. A uniformity of growth will thus be formed, which should on no account be disturbed. When the growth is complete, the plants should be placed in a state of rest, and should not be excited into further growth. With those plants blooming on the current year's wood, the same principles in regulating the preceding year's shoots must be acted on. The floral display in the conservatory will now be at its height; those Chinese Azaleas which have been slightly forced will take the place of Camellias now on the wane; in addition, the different species of Cytisus and Acacias will be in perfection, as will the Indian Daphnes, and the beautiful Pea-blossomed plants from New Holland. If to these are added forced hybrid Rhododendrons and hardy Azaleas, the Chinese Weigela, Roses (including a good supply of Teas), Cinerarias, bulbs, Mignonette, &c., a mass of bloom will be brought together which it will be difficult to match at any other season. Let every care be taken to water plants coming into bloom; more particularly to those which have been forced, as they are generally in small pots. The inside borders will now require liberal supplies; keep the edgings and borders in the neatest order, as well as every part of the house, and preserve an uniform, enjoyable temperature. Shading will be necessary during bright weather. Orchids will now be pushing into growth. The remarks we made on the desirableness of obtaining a simultaneous show of bloom in woody plants, apply to various kinds of Orchids. Keep up the requisite humidity, and though nothing like stagnation should occur in the material in which the plants grow, yet the syringe must be used pretty freely, especially in bright weather, to plants in active growth; shading must be continued. Plants suspended in baskets or placed on blocks, should be frequently taken down and soaked in tepid water, as the syringe alone often fails in keeping such sufficiently damp.

### FORCING DEPARTMENT.

VINERY.—Directly the berries in the early house show indications of colouring, gradually reduce the moisture, that by the time the Grapes are fully coloured the air may be brought to a comparatively dry state. We do not advise the sudden withdrawal of this necessary element during the colouring process, having found a certain amount of moisture essential to the final swelling of the crop and healthy action of the leaves, in addition to the check this treatment gives to the progress of the red spider; of course an additional amount of ventilation by night, as well as by day, must be added. Pay attention to the succeeding houses by regulating the shoots as they advance, and keeping a progressive temperature in conformity with the daily increase of light and heat. PINERY.—When the weather becomes warmer the succession Pines of all ages will require repotting; in this be guided in some measure by the state of the roots. If our directions respecting giving the plants a slight increase of bottom heat were acted upon at the time, the roots by this time will be in a good state for a shift. If the roots are healthy, remove only the loose soil from the balls and any decayed leaves about the base of the stem. Give a rather small shift at this season, except to plants now out in their fruiting pots, and mind the soil is dry and not altogether cold. Place the ball sufficiently low in the new pot to allow for a couple of inches of fresh compost over it, which will encourage the growth of surface roots. Any plants with decayed or unhealthy roots should be shaken quite out. Have the dead parts cut away and repotted in small pots; they will soon recover in a mild bottom-heat. Replunge directly potting is over, keeping the plants near the glass, and allowing room in width for the new growth. Keep close for a week or two till a fresh start is made, when the usual admission of air, &c., must be given. Plants in dung-pits should have the linings turned to give a little extra heat. PEACH-HOUSE.—Tie in the present year's shoots when they get of sufficient length, and keep down spider and green-fly, which rarely do much mischief where good culture is maintained. The second house will require thinning;

the syringe or engine may now be plied freely, and the house closed somewhat earlier in the day; give air early in the morning, or rather allow a slight circulation during the night: this precaution is become the more necessary, since large squares and close laps have made the greater part of modern forcing-houses more like a Ward's case than the houses with open laps and small squares of former times; and yet, we are not quite sure if the latter (putting the deficiency of light out of the question) were not more in accordance with natural principles. Sow Tomatoes, Capsicums, Vegetable Marrow, and Cucumbers for ridging out, if not already done. Prick off when large enough, putting one or two plants in each pot: they will require to be well hardened by the middle of May. A few Capsicums should be potted and kept in heat for an early supply, if no old plants have been preserved for the purpose. Sweet Basil and Marjoram should likewise be forwarded in heat for an early supply.

### FLOWER GARDEN AND SHRUBBERY.

Continuing our remarks on bedding plants, and taking Calceolarias, our selection is, *Sulphurea splendens*, Frost's Superb, and Kayii for yellow selfs. The former is a fine thing, *Aurantia multiflora* is an orange-coloured variety, and *Amplexicaulis* and *floribunda* are pale yellows; *Kentish Hero* and *Shankleyana* are blotched, and *Sultan* and *Meteor* are dark-coloured selfs, and make rich-coloured beds. *Petunias*, though very showy, and well adapted for situations where thin, rather rambling growth is no objection to their introduction, are not compact enough for very trim beds. *Mars*, *Prince Albert*, and *Mrs. Lowe*, are dark varieties of tolerable habit for bedding; *Shrubland Rose* and *Jenny Lind* are pretty rose-coloured kinds; and the old *nyctaginiflora* makes a good white bed, especially when seen from a distance. A bedding out plant of a decided blue and good habit is much wanted. *Salvia patens*, the best in colour, growing too high for many situations, and *chamaedryoides* not being showy enough. The different varieties of *Lobelia erinus* are all that can be desired as to colour, but they are not sufficiently high for large beds. *L. erinus grandiflora* and *ramosoides* are the tallest and perhaps the best; but all are useful, and with the white varieties cannot well be dispensed with for small beds and for edgings. The tall section of *Lobelias* includes some fine things, among which *fulgens*, *splendida*, *ramosa*, *pyramidalis*, and *Salterii*, &c., make a splendid show in the autumn. A few annuals may now be sown in vacant spaces between herbaceous plants, or on the edges of borders and clumps in the shrubbery; the more compact showy varieties should be selected for the front, and the taller growing kinds behind. Sow plentifully of Sweet Peas, and any vacant spaces between shrubs, not exactly in sight, may be usefully occupied with *Mignonette*, always valuable, both for covering ground and for its delicious fragrance.

### FLORISTS' FLOWERS.

Polyanthuses and Auriculas in pots will now require more water, at the same time giving abundance of air at all convenient opportunities; great attention must be paid to covering, as the onward growth of the trusses must not by any means be checked. Take care also that on and about borders where seedling Polyanthuses are growing that the snails are caught, else much disappointment will inevitably ensue. Pot away the stock of Carnations and Picotees as fast as possible; after a few days, when the soil is well settled, insert the sticks to which the flower stems are to be tied. Look over the beds of seedlings, and the first dry day stir the surface soil, and fasten the plants. Pot off *Dahlia* cuttings as they root, and continue to insert more if a large quantity are required. *Ranunculus* seed may now be advantageously sown in pans: water the soil well first, and strew the seed and chaff thickly on the surface, barely covering, then place in a cold-frame; it will soon vegetate.

### KITCHEN GARDEN.

Notwithstanding the excess of rain last autumn, and consequent wet state of the ground through the winter, we find that where land of even heavy quality was thrown up rough early in February it is now in capital working order, to which the late dry weather has mainly contributed. In all probability our instructions have been more easily given than carried out; and a glance at former calendars may not be amiss, to see what may be in arrears, more particularly as the protracted winter has no doubt interfered with getting in many things previously directed. Seakale should now be planted on prepared ground, or seed may be sown where it is to remain. Plant in rows 3 feet apart, and 18 inches between the plants. Cut out the principal bud before planting, to encourage the side ones, which, when broken, thin out to two or three, according to the strength of the plant; if the centre bud is left it often produces a flower-stem, and prevents the formation of good crowns. Mulch after planting. Jerusalem Artichokes and Horse-Radish may now be planted; the latter requires a sandy soil of good depth (2 feet at least) with a dressing of dung at the bottom. Select sets with single crowns, and drop them in holes 18 inches deep, made with an iron bar; or to grow it fine have the rows 30 inches apart, and the plants a foot or 15 inches from each other. The holes should be filled up with leaf-soil or very light soil. A light crop may be taken off the ground, as the tops will not appear much before midsummer. Garlic and Shallots, plant, if not in the ground. Sorrel, divide when rain comes,

and plant in rich soil. Spinach, sow once a fortnight, should rain occur, and a milder state of the weather, Cauliflower and Lettuce plants, wintered in houses, should be transferred to rich borders, if possible somewhat sheltered; water well before planting, and plant in shallow trenches, the ridge between which will afford them a slight protection from cold winds. Take care to earth up the early Peas, and stick those sufficiently forward.

### STATE OF THE WEATHER NEAR LONDON.

For the week ending March 31, 1853, as observed at the Horticultural Gardens Chiswick.

March.	Moon's Age	BAROMETR.		TEMPERATURE.					Wind.	Rain.
		Max.	Min.	Of the Air.			Of the Earth.			
				Max.	Min.	Mean.	1 foot deep.	2 feet deep.		
Friday.. 25	25	29.916	29.847	41	18	29.5	36	36	N.E.	.00
Satur... 26	17	30.045	29.966	44	17	30.5	36	36	N.E.	.00
Sunday.. 27	18	30.063	29.989	50	27	33.5	36	36	W.	.00
Monday.. 28	19	30.150	30.129	48	21	34.5	38	37	E.	.00
Tues.... 29	20	30.141	29.995	48	26	37.0	38	37	E.	.00
Wed.... 30	21	29.831	29.691	58	29	43.5	33	33	E.	.00
Thurs... 31	22	29.704	29.622	57	40	45.5	38	39	S.	.00
Average ..		29.975	29.864	49.4	25.4	37.4	37.1	37.1		.19

March 25—Quite clear; cloudy; clear and frosty.  
26—Clear; fine; hazy; sharp frost at night.  
27—Overcast throughout; frosty at night.  
28—Frost; cloudy; frosty haze; sharp frost.  
29—Foggy; dry cold haze; frosty.  
30—Dry haze; very fine; overcast.  
31—Fine; very fine; boisterous with rain at night.  
Mean temperature of the week 6 deg. below the average.

### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending April 9, 1853.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 3	56.4	34.5	45.4	5	0.20 in.	4	3	3	1	1	6	5	4
Mon. 4	55.8	35.5	45.1	11	0.46	4	5	5	2	3	3	2	2
Tues. 5	56.2	35.9	46.0	13	0.55	4	5	5	2	3	3	2	2
Wed. 6	55.1	36.4	45.8	10	0.30	3	2	3	2	2	4	1	1
Thurs. 7	56.5	37.2	46.8	12	0.40	3	2	3	2	2	4	1	1
Friday 8	55.9	35.3	45.9	11	0.30	1	6	5	5	2	3	3	2
Satur. 9	54.6	35.4	45.0	12	1.26	4	4	5	1	3	5	4	1

The highest temperature during the above period occurred on the 3d 1845—therm. 78 deg.; and the lowest on the 6th, 1845—therm. 22 deg.

### Notices to Correspondents.

BACK NUMBERS OF THE GARDENERS' CHRONICLE: Many being out of print, the publisher, to save trouble, has drawn up a list of such single numbers as can still be had. Any subscriber who will forward postage stamps equivalent to as many copies as are required, will have them sent free by post.

1841.—1, 8, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 45, 46, 47, 48, 51.  
1842.—1, 2, 4, 6, 8, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 24, 26, 27, 28, 29, 30, 31, 32, 33, 35, 38, 39, 41, 42, 43, 45, 50, 51, 52, 53.  
1843.—All except 1, 2, 3, 4, 5, 6, 7, 8, 15, 19, 21.  
1844.—All except 46.  
1845.—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 18, 19, 20, 21, 23, 25, 27, 28, 31, 39, 40, 41, 42, 44, 48, 49, 50, 51, 52.  
1846.—4, 5, 6, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 23, 24, 26, 37, 41, 42, 43, 46, 49, 50, 51.  
1847.—1, 2, 3, 4, 5, 8, 11, 12, 14, 19, 21, 22, 27, 32, 33, 36, 37, 41, 42, 43, 44, 46, 47, 48, 51.  
1848.—All except 29, 31, 35, 42, 43, 45, 46, 47, 49, 50.  
1849.—All except 46, 47, 48, 49.  
1850.—1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 31, 34, 35, 38, 39, 40, 50, 52.  
1851.—All except 24, 27, 30, 49, 52.  
1852.—All except 38, 39, 40, 44, 45, 46, 47, 48, 49, 51.  
1853.—All.

Complete sets may be had for 1847, 1848, 1849, 1850, 1851, 1852, price 26s., or bound in cloth 30s., each year. The former years are out of print.

Books: *Explorer*. You will find, in Lindley's "Elements of Botany," a glossary explanatory of the usual botanical terms, after the model of a Latin dictionary—in short, in plain English.—W. S. The Manse Garden, and Paxton's Cottage's Calendar.

MICHAELM DAINIES: J. C. You should look to the Botanic Gardens rather than the nurseries for these things. The best are *Aster Nova Angliae*, *cyaneus*, *lavigatus*, *ericoideus*, *punicus*, *spectabilis*, *cordifolius*, and *adulterinus*. Many are well figured in the Botanical Register, vols. 18 and 19. They are out of fashion, principally, on account of their running about inconveniently, and having a weedy appearance when not in flower. You might try Messrs. Backhouse of York, or Plant of Cheadle, or some other country nurseryman.

NAMES OF PLANTS: *Mary*. *Ageratum conyzoides*, and one of the many varieties of *Acacia armata*—T. E. *Acacia melanoxylon*, as far as can be judged from a plant out of flower.—J. H. 1. *Asplenium Odontites*, rather rare in this country. 2. *Asplenium luridum*, to be found in most collections. Both are natives of New Zealand. S.

RAIN-GAUGE: *Agon*. Some register the water from snow by artificially melting the latter; others when the snow thaws naturally, or when it would reach the ground in the form of water. The first is the preferable mode. The product, however, should be distinguished as "melted snow."

ROSE TREES: T. F. R. If you are not a nurseryman, you have no power to remove them, unless you have some special agreement to that effect.

TROUT: T. will thank some of our readers to inform him where he can procure some spawn, as he has no trout in his immediate neighbourhood; and also, whether any book has been published containing directions for its treatment.—Can anyone tell D. G. N. whether there are now any persons in England who undertake to stock ponds and rivers with fish spawn according to the new plan, at the proper time of the year.

VINERY: R. T. will hardly have failed to observe that we invariably recommend Hartley's rough plate glass. The only reason for using sheet glass for the sides must be that it looks better. We have no experience of the effects of the small ribbed glass; but it is very pretty, and we suppose quite as good as Hartley's, only dearer.—P. Q. Hartley's patent plate is the very best glass you can use for your little greenhouse with Vines up the rafters. The panes should not exceed a foot in breadth, the length is immaterial.

VIOLETS: F. D. What is the yellow Violet; there are many yellow Violets.

WOODICE: M. M. A. A toad or two, kept in your houses, will thin their numbers, and large quantities may also be caught by placing two tiles or boards over each other; between them they crawl as morning approaches, to conceal themselves; tiles laid over Cabbage leaves form good traps.

\* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



**PERUVIAN GUANO.**  
**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,  
**ANTONY GIBBS AND SONS,**  
AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.  
The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—  
The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.  
Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**SUPERPHOSPHATE OF LIME,** warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.  
PERUVIAN GUANO, guaranteed the genuine importation of Messrs. A. GIBBS & SONS, 9l. 10s. per ton, or, in quantities of five tons and upwards, 9l. 5s. per ton in dock. A constant supply of LINSEED and RAPE CAKE.  
EDWARD PURSER, Secretary.  
LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton 27 0 0  
Superphosphate of Lime ... .. 7 0 0  
Sulphuric Acid and Coprolites ... .. 5 0 0  
Office, 63, King William Street, City, London.  
N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**GUANO AND OTHER MANURES.**  
**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone oil; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

**SEWAGE CHARCOAL MANURE.**  
**PEAT CHARCOAL,** completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.  
"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in flower with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenn.  
Mr. JOHN ANNETT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other manure. The quantity I used was 4 cwt. to half an acre."

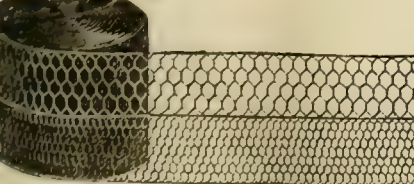
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	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide ...	7d. per yd.	5d. per yd.
2-inch " strong " ...	9 " "	6½ " "
2-inch " extra strong " ...	12 " "	9 " "
1½-inch " light " ...	8 " "	6 " "
1½-inch " strong " ...	10 " "	8 " "
1½-inch " extra strong " ...	14 " "	11 " "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantry, 3d. per square foot. Patterns forwarded post free.  
Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

**HENRY J. MORTON, PATENT GALVANISED IRON ROOFING WORKS, 94, Albion Street, Leeds, Agent for PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES.**  
The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.  
**IRON HURDLES** and all kinds of WIRE FENCING and Ornamental Wire Work.  
**GALVANISED GAME AND POULTRY NETTING,** very strong and neat, NEVER REQUIRES PAINTING, and cannot rust or corrode, made any width and length.



24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.  
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. 0½d. per yard.  
**GALVANISED IRON SPOUTING,** Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.  
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalt Roofing Felt, &c. Apply at 94, ALBION STREET, LEEDS.

**AGRICULTURAL SEEDS,**  
PURE STOCKS AND OF THE FINEST QUALITY.  
**BASS and BROWN** beg to offer as under:—  
**PERMANENT PASTURE AND OTHER GRASSES.**  
AS a great variety of the most useful Grasses are gathered to a considerable extent in this locality, and from the long experience and practice we have had in collecting them in this neighbourhood from a long distance round, we are enabled to supply them separately or mixed as low as any house in the trade. Our mixtures have ensured the greatest satisfaction, and will be found equal to any sent out.

Mixtures for Permanent Pasture on Light Lands, allowing 5 s. d.	
3 bushels 9 lbs. to each acre, per acre ...	24 0
Mixtures for Heavy Lands, per acre ...	27 0
Mixtures for Parks, per acre ...	28s. to 32 0
Mixtures for Lawns and Bowling Greens, per acre ...	34s. to 38 0
Mixtures for Marshy Lands, per acre ...	24s. to 28 0
Mixtures for Orchards overshadowed, per acre ...	24s. to 30 0
Mixtures for Renovating Old Pastures, per lb. ...	0 10
Mixture for fine Lawns in Gardens of the finest Short Grasses, per lb. ...	1 0
Ditto ditto, per peck ...	4 6
Mixtures for soils of all descriptions, with the proper kinds of proportions requisite.	
Italian Rye-grass, true, very fine quality, per bushel ...	5 6
Ditto fine, imported, per bushel ...	7 0
Fine Perennial Rye-grass, per bushel ...	4s. to 5 6

	per lb.	0s. 8d.
Mangold Wurzel, Yellow Globe ...	0 8	
" Red Globe ...	0 8	
" Long Red ...	0 8	
" Long Yellow ...	0 8	
White Silesian Sugar Beet ...	0 8	
Cabbage, large Drumhead ...	3 0	
Linseed, fine English (Riga stock), per bushel ...	9 0	

Carrot, large White Belgian ... per lb. 1s. 8d.  
" long Red Altringham ... " 0 10  
" " per cwt. ... 50 0  
Cattle Parsnip ... per lb. 0 8  
Lucerne ... 0 10  
Turnips of all the best stocks at the lowest prices. See Catalogue.

**WHOLESALE PRICES TO THE TRADE ON APPLICATION.**  
Goods not under 20s. delivered Free to all the Stations in London; also to all the Stations on the Norwich and Colchester Lines.  
**SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.**

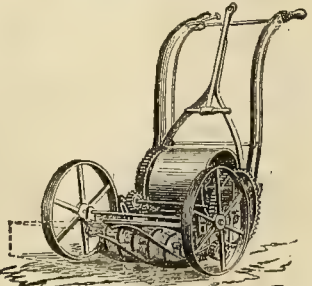
**CHEAP WIRE GAME & POULTRY NETTING,**  
5d. per running yard.  
**GALVANISED DITTO,** 7d. per running yard, 2 feet wide.



	Galvanised.	Not Galvanised.
24 in. wide, 2 in. mesh, 7d. per yard. ...	5d. per yard.	
30 in. " 2 in. " 9d. " ...	6½d. " "	
36 in. " 2 in. " 10½d. " ...	7½d. " "	
48 in. " 2 in. " 1s. 2d. " ...	10d. " "	

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. FOX, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

**TANNED NETTING, for the protection of Fruit.**  
Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Waxed Netting for Aviaries, &c., at 3d. per square yard. Scrim Canvas, for Wall Fruit.  
At EDGINGTON & CO.'S, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may also be seen erected Emigrant Tents in great varieties on their latest improved principles.  
MANUFACTURED SOLELY BY  
**J. AND H. FERRABEE,**  
PHOENIX IRON WORKS, NEAR STROUD, GLOUCESTERSHIRE.



**"BUDDING'S" LAWN-MOWING MACHINE,**  
WITH REGISTERED IMPROVEMENTS, No. 3074.  
**J. AND H. FERRABEE** have this year made further improvements in their Mowing Machines, which may now be used with equal facility over open unbroken lawns and pleasure grounds, between flower beds and on verges, no practice whatever being required to work them.  
**HAND MACHINES** are made of three sizes, cutting the several widths of 16, 19, and 22 inches. The smallest may be worked by one man, the others require the assistance of a strong boy.  
**HORSE MACHINES** are made of two sizes, one cutting 30 inches, and the other 36 inches wide. They are very strong and powerful Machines, capable of cutting the longest and roughest Grass usually met with on lawns and pleasure grounds.  
PRICES:—16-inch Hand Machine ... 25 10 0  
19-inch " ... 6 0 0  
22-inch " ... 6 0 0  
30-inch Horse Machine ... 14 0 0  
36-inch " ... 16 0 0  
J. & H. FERRABEE'S Illustrated and Descriptive Catalogue of Agricultural Steam Engines, Machines, and Implements, will be sent free by post, on application.

**CLOVER SEEDS.**  
AGRICULTURISTS desirous of obtaining really genuine and pure new Clover and Grass Seed, are respectfully recommended to apply to the undersigned for Prices, and any other information required.  
Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.  
**PRIZE MANGOLD WURZEL.**—Superior Yellow Globe Mangold, Red Globe, Long Red, and Long Yellow ditto, 1s. per lb., or cheaper in large quantities.  
For particulars, apply to JOHN SUTTON & SONS, Seed Growers Reading, Berks.

**MEADOW AND PASTURE GRASS SEEDS.**  
**THOMAS GIBBS AND CO., SEEDSMEN to the ROYAL AGRICULTURAL SOCIETY OF ENGLAND,** beg to state that the following Seeds are now finished cleaning, and are ready for sending out.  
**GRASS SEEDS FOR LAYING DOWN LAND TO PERMANENT MEADOWS AND PASTURES.**—The kinds used in these mixtures will be selected and apportioned to suit the nature of the soil.  
Grass Seeds, in mixtures, for Irrigation.  
Do. do. for Parks, &c.  
Do. do. for 2 and 3 years' lay.  
Do. do. for Garden Lawns, &c.  
Do. do. for Renovating Grass Land.  
Italian Rye Grass—very fine sample, Improved Perennial Rye Grass, Annual or common do., and all kinds of Clovers, White Belgian and Red Altringham Carrots; Yellow Globe, long Red, and other Mangold Wurzel; Gibbs' new very large Cattle Parsnip, Swedish Turnips of various sorts, Gibbs' green top Yellow Hybrid Turnip, White-fleshed Turnips of various sorts, Drumhead and other Cabbages, Lucerne, Brown, Furze, Sainfoin, and all kinds of Agricultural, Kitchen Garden, and other Seeds.  
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Manager of Farm—R. Vallentine.  
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THE next QUARTER DAY for the Admission of STUDENTS is Wednesday, April 6.  
Students are admitted either as Boarders or as Out-Students. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as for agricultural education.  
Prospectuses and information can be had on application to the Principal.

**The Agricultural Gazette.**  
**SATURDAY, APRIL 2, 1853.**  
MEETINGS FOR THE TWO FOLLOWING WEEKS.  
WEDNESDAY, April 6—Agricultural Society of England.  
THURSDAY, " 7—Agricultural Imp. Society of Ireland.  
WEDNESDAY, " 13—Agricultural Society of England.  
THURSDAY, " 14—Agricultural Imp. Society of Ireland.  
It is plain from our last week's remarks that even steam presses and express trains cannot keep up with the rapid changes of an English climate. The past week has been busily and properly employed—over the south of England, at any rate—in those very spring operations of which we were last week recommending the postponement. Oats and Barley have been sown, Tares and Peas have been also sown, and the land for Carrots, Mangold Wurzel, &c., is being cultivated—all under circumstances of soil and sky very favourable generally to the prospects of these crops. We refer to the farm calendar of the season once more, both for the sake of a word in excuse of



our last week's remarks, and also that we may direct the attention of our readers to the following letter, just received from H. S. THOMPSON, Esq., of Moat Hall, York, on the subject, especially important this season, of Spring Wheat:—

"The quantity of Wheat sown in Great Britain is so much below the average, and the breadth of land devoted to Barley and Oats will therefore be so much larger than usual, that the latter kinds of grain are not unlikely to be much depressed in value after next harvest, and Wheat to bear a higher price than ordinary. It would, therefore, be for the advantage both of the public and the producer that more than common attention should be paid to those kinds of spring Wheat which may even yet be sown with a fair probability of success. With this view I send you a copy of the Transactions of the Yorkshire Agricultural Society for 1848, which contains the results of certain experiments tried under the auspices of that Society with a variety of Wheat known locally as 'April Wheat.' The concurrent testimony of several growers shows that this species of Wheat can be sown with advantage until the middle of April. I have grown above five quarters per acre of this Wheat, drilled on the 10th of April, and after sowing it for five years successively I can safely recommend it, provided that the land be in good condition, and that seed enough be sown. It is a horned Wheat which, I believe, originally came from Russia, and its habit of growth confirms the impression that it has been accustomed to the short but forcing summer of that northern climate. It does not tiller, but each root pushes up a single stem with extraordinary rapidity, and not less than three bushels of seed should be used on land which grows a good deal of straw, and three and a half or four on land that grows light crops. To prevent disappointment, I may mention that I have none of this Wheat to part with, and have already been obliged to disappoint several applicants. An advertisement for 'Horned April Wheat' would, however, probably bring forward parties able to furnish."

We will only add that the report of experiments to which Mr. THOMPSON refers will be found in another column: and that our own experience perfectly agrees with their result as to the yield and early maturity of this *Triticum aestivum*, sown in April. We have sown it a fortnight later than this present date, and have reaped in August a crop exceeding 30 bushels per acre off a thin brashy soil.

WE have received a circular from some gentleman interested in Mr. BICKES' PATENT FERTILISING POWDER, requesting us to make trial of it with Wheat, Barley, Oats, Beans or Peas, &c.—taking care to apply the right material to the right seed—to apply the Wheat powder to Wheat—and to apply that for Barley, Oats, Rye, Buckwheat and Spelt—that for Beans, Peas, and Lentils—and that for Clover and Lucerne, &c., in every case correctly—to apply powder 'A' on light soils, and powder 'B' on heavy soils—for one bushel of seed to dissolve 6 pints of the powder in 3 pints of tepid water, and then to place the seed in a smooth bottomed vessel or on a floor, and pour the solution gradually upon it, stirring or rubbing at the same time the seed between the hands till every grain is covered and the whole of the liquid taken up, and after this to dry the seed quickly and render it fit for sowing by adding as much of dry sifted ashes or sandy earth as may be considered necessary for this purpose—and so on. And we have received a placard from a Mr. GEORGE EATON, of Dublin, who dresses with a chemical preparation any kind of Potatoes, whole or in cuttings, which he will warrant to grow. "G. E. has proved the complete success of his composition by trials made for years by past."

Now, the mode of conferring extra vigour and productiveness upon a healthy crop consists first, no doubt, in the selection of good seed—but chiefly in the growth of that seed under favourable circumstances. The mere selection of good seed will not suffice, and so neither will the artificial invigoration of ordinary seed, even if we knew how to accomplish it. We once thought this idea of Mr. BICKES likely to benefit the farmer, and were at some pains to test it, with results which were recorded in our volumes for 1844 and 1845. They were unfavourable to the pretensions that had been put forward. In the first year's experiments excessively strong solutions had been used, which probably injured the seed; but in the second year, when no such fault was committed, the differences exhibited between the steeped and the unsteeped seed were various, and probably not more considerable than if the corn had been sown in its natural condition. We do not, therefore, intend to take the advice of our correspondent, nor can we recommend it to any of our readers whom it may have reached.

And if we cannot increase the vigour of healthy crops, so neither can we restore it in the case of diseased ones, by a mere dressing or steeping of the germs from which they are obtained. Mr. EATON may point to many individual instances of apparent success, without in the least touching the grounds of reasonable opinion on these subjects. Agricul-

tural results are never attributable to one cause alone: and it will need a very large number of facts to convince anyone that a plant which has of late years become diseased under all sorts of climate, in all sorts of soil, and under all sorts of treatment, is restorable to perfect soundness by a mere "dressing."

As the experiment to be made this season in the collection of AGRICULTURAL STATISTICS is to depend for its success simply on the will of the tenant farmers of the district to be selected, it is desirable that they should be aware of its importance, both to themselves and to the country at large. Fortunately the farmers of Norfolk, which is, we believe, the county chosen for the attempt, stand high for intelligence, so that, while on other grounds we believe a better choice might have been made, on this there can be no reason for regretting the selection.

Nevertheless, even in Norfolk, we may expect that many will look with suspicion on the inquiries that will be addressed to them, and we may be sure that some will return these questions unanswered. Hence two inferences may be drawn. The first is, the need of employing some agency, whether by letter or in person, for addressing farmers at the different boards of guardians, farmers' clubs, and market ordinaries in the county, and endeavouring to convince them of the beneficial character of the scheme. And the second is, the need of employing such agents in the work of collation as shall be competent from the returns of part only of the district to arrive at a sound judgment of what the results upon the whole may be. Let us just refer to the first, at present, and leave the other, with some observations on the district selected, for future remark.

It seems to us that the most obvious argument in favour of the measure arises out of the favourable verdicts which large bodies of farmers have already passed upon it. The Highland Society of Scotland have repeatedly pressed upon the Government the desirability of more accurate knowledge than we have of the annual agricultural produce of the country; and we understand that they have undertaken the superintendence of the present experiment upon the subject, so far as the Scottish district is concerned. And if it be objected that they are a company of landholders rather than of farmers, that would not be true; but if it were, no such objection can be laid against the opinion of the London Farmers' Club, which has resolved (Dec. 7, 1846) "that an annual system of agricultural statistics would be highly beneficial" for several reasons stated, both national and agricultural. And to take a more strictly provincial society, such as that of Berwickshire, so strongly did they feel upon the subject, that the following is their resolution on it:—"We are unanimous in considering this a suitable object to be prosecuted by such a society as ours"—to which they justly added, "We possess considerable advantages for prosecuting it." On both these points we feel sure that they spoke the truth—no agency for the collection of these facts regarding farming can be so efficient as one which includes in effect all the best farmers of the district where it is to operate. This club agreed on a plan of operation to which we shall hereafter refer: whether it was ever carried out we do not know. Lastly, take the verdict of the St. Peter's Farmers' Club. The following resolutions were carried unanimously: (1847). "That it is desirable farmers should possess accurate statistics of agriculture, showing annually the number of acres in the United Kingdom planted with Grasses, grains, and roots; specifying the several quantities of each kind, and the probable produce of each per acre."—"That it is desirable some respectable organised body of agriculturists should undertake to obtain the statistics, and that committees should be formed of or from the several farmers' clubs existing in the country to devise and suggest the best means, &c.": and it was further determined that this and the foregoing resolutions should be forwarded to the London Farmers' Club—on which, they proposed, should devolve the final work of collating the several district reports.

Now here are national, metropolitan, county, and local societies of farmers all agreeing on the importance of the knowledge aimed at by the means about to be employed by Government, some of them so earnest on the subject that they propose to themselves the task of acquiring the information wanted; and others so convinced of its importance, to the agricultural body especially, that they think the work is proper for the farmers' clubs of the country to undertake. The grounds on which the London Farmers' Club arrived at their resolutions on the subject, depended chiefly on the national importance of the subject—that, no doubt, which justifies the Government in undertaking the task—

but also on the agricultural importance of the subject, for among their reasons is the following: "4. Because it would enable both the landlord and the tenant to form an opinion whether there was a growing demand for any particular produce, and thereby determine to make an outlay in improvements to meet it." And the St. Peter's Farmers' Club came to the still more immediate and even personal influence of such knowledge as they thus could have. It was thought desirable for farmers in particular, as placing them more on an equality as to a knowledge of the facts on which all trade depends, with those with whom their business is transacted. At present, merchants, millers, speculators—in some cases by their individual, and in others by their combined efforts—possess much more information to direct them in purchasing, than the agriculturist does in guiding him in disposing of the produce of his farm. In proof of the utility of statistics in this point of view, it was mentioned by a member who was a maltster and a farmer, that he was not so much surprised at the price of Barley at the time (Feb. 1847), as he should have been, for the report of the crops in the *Agricultural Gazette*—good so far as it went, because given by men who were practically acquainted with the subject upon which they were writing—had led him to believe that Barley, Beans, Peas, and Oats, would be 10s. per quarter dearer than they were the previous year; and he had to his personal advantage been influenced by that report in his purchases and sales as maltster and as farmer.

On all these grounds, then—and other cases might be added—a very satisfactory defence of this measure might be based, and one which, seeing that no more can be done in the present instance than the agriculturists of the districts themselves will do, ought to be drawn up and widely circulated in the district to be examined, before the inquiries to be made are regularly distributed.

#### KILWHISS v. ROTHAMSTED.—No. V.

THEORY OF ROTATION OF CROPS.

MR. LAWES has quoted some of the weakest passages in his writings, in his paper of 3d April. I would never have exposed them, if he had not put them forth with such confidence that they are apt to be taken for philosophy by the unwary. To show that I do not have any sympathy with them—that they convey opinions which are diametrically opposed to my own, I will lay the fallacy bare, and in doing so retain the *italics* and *capitals* for his own benefit.

But, before proceeding further, I must say a few words on the theory of agricultural rotations. I believe that the comparative degree of ammoniacal exhaustion which the soil suffers by plants to be principally meteorological; for my own part, I do not know of any other theory which will stand a breath of criticism when I reason upon the facts "one by one." The mineral theory is the grand basis upon which mine rests, but all plants must be held as having certain conditions in which they can absorb their nitrogen from the atmosphere, and certain conditions in which they cannot do so; these conditions are chiefly meteorological. I have already attempted to apply these principles not only to our fallow crops, but to explain the nicer distinctions which chemistry would deny, but which experience has long claimed to exist between the different varieties of cereals. My theory embraces the one class of facts as easily as it does the other. In fact, rotations are principally useful in more temperate countries, where the cultivators are forced to find plants which can expend their vegetative energies over the season when there is more heat and moisture in the atmosphere, to afford food to other plants which only admit of being developed when the air contains little of these life-giving influences. At the level of the sea, within the tropics, where heat and moisture hold their sway throughout the year, rotations can scarcely be said to exist.

I must now call particular attention to the misrepresentation of my views by Mr. Lawes, and I think no one will consider it fair that he has had recourse to this means to draw me within the "circumference of his rotation." He writes, on April 3d, "*He (R.) thus claims then for the wild Mustard, the Turnip, and the Rape, when growing to flower or seed, qualities opposite to those which characterise the Turnip when grown in our rotations as a root crop, and such as are closely allied to the (manurial) condition required by our cultivated Wheat crop.*" To render his meaning plain, he has further asserted that I have given countenance to his opinions, that when Turnips are grown for seed, "the organic manures should contain more nitrogen and less carbon." I beg to inform him the "misrepresentation is complete." I ask him to point out a passage in my writings where such ideas could be ascribed to me. Mr. Lawes is always perplexing himself and others about the Acorn before he grows the Oak. I certainly said it was reckless generalisation in him to advocate the "breaking up of pastures in every case," because pasture plants belonged to the same family as the Wheat. Turnips, he said, wasted nitrogen as every plant does in the flowering processes. That was all. It should also be borne in mind that there is a loss of carbon, oxygen, and hydrogen in the same process; but it is a total misapprehension of my papers to say that



when Turnips are grown for seed, "the manure should contain more nitrogen" than when bulbs are produced. I would rather maintain the contrary. I am willing, however, to discuss this question, and I therefore assert that the same amount of nitrogen in the manure which it requires to raise a maximum crop of bulbs, will raise a maximum crop of seed. To cover all the expedients which may be had recourse to, I am ready to discuss the subject either in a "scientific," "practical," or "rotation-effect" point of view. But what does Mr. Lawes wish to impress on his readers when he has put the following passage in *italics* with the capitals:—

"We've then to cultivate the Turnip for its most natural products, the treatment it would require would much more nearly approach that adopted for Wheat than at present; the deviations now observed, and which have been referred too exclusively to the natural specialities of the plants, would be greatly lessened, and the character of the plant as a FALLOW CROP would be lost."

Why would the four course rotation be deprived of the Turnip if it was grown for seed? Because the seed contains oil, answers Mr. Lawes; but surely any one would give another answer to the question if he would simply think for himself. The Turnip is a biennial when grown for seed; the rotation would, of necessity, be "Turnip bulbs—Turnip seed." The very comparison which has been made is quite ridiculous; when the Turnip is grown for seed, every one knows that it is its own fallow plant. In nine cases out of ten less manure is given for Turnip seed or Coleseed than for Turnip bulbs; and it is known that Turnip seed is very successfully grown on many very poor and light soils, which only grow bulbs by much forcing. The difficulty is to grow bulbs, the seed will follow in due season. Can any one yet discern philosophy in the following passages? There is scarcely a ray of light to render the "darkness visible." Those who can gather wisdom out of such materials must, at least, be as wise as the author himself.

"In the seeds of Cruciferous plants, Turnips and Rape, for example, a non-nitrogenous product, oil, seems to abound, and we might expect that ammoniacal manures would tend to enhance its production in such plants, in like manner as that of starch is increased in the seeds of the Gramineous family." Also: "Yet much of it is also attributable to the fact, that in the case of Turnip it is not the seed that is the object of our culture, but a monstrous accumulation that could only take place under a somewhat unnatural or artificial balance of the constituents of supplied food, and under such a condition of climate as should be adverse to seed forming."

I must now advert to a characteristic in Mr. Lawes' writings which has caused much mystification and confusion. This is a habit in him of saying something of the Wheat or of the Turnip, when he is writing of either separately, which his readers are led to suppose cannot be said with as much or even more truth of the one as of the other. He further dresses his ideas in an ambiguous garb, which serves to give them a philosophic look. Those who are off their guard, and interpret him literally, are misled. I could show some rather amusing passages in his writings of this quality. This is the history of Mr. Pusey's "misrepresentations" of Rothamsted. This is also the reason why Mr. Caird, with all his practical knowledge, has allowed himself, in his "English Agriculture," to write of the practical deductions of Rothamsted in such terms, that if I had done so, I would have been accused of ridiculing Mr. Lawes' labours; several of the extracts I have already made are tinged with this fault. Two paragraphs to which Mr. Lawes has directed my attention are yet to be disposed of, and I think the most of our readers will consider that my additions in parentheses are just as right and true as his half statement of the truth. What is the use of bringing forth such sentences which can only perplex and darken what should be plain and simple?

"We have supposed that bulb (or seed) formation, in the degree in which it is developed for feeding (or seedling) purposes, is a disposition of matter existing in quantity beyond what is essential to the health of the natural plant." And at page 552: "From which, again, we may perhaps gather that the cultivated bulb (or cultivated seed) is the result of a continued accumulation of secreted matters formed in quantity beyond the essential requirements of the plant as such."

I have been taken pretty sharply to task for stating that Mr. Lawes' experiments "on Turnips were not so satisfactory as those on Wheat." I shall, therefore, give a very short review of the experiments themselves, and consider whether the "earlier," or even the later, deductions which have been drawn from them are in harmony with either the science or practice of agriculture. *R. Russell, Kibbloss, Fife.*

#### APRIL WHEAT.

[We do not reprint from the Yorkshire Agricultural Society's Journal all the reports on this subject which have been furnished to it by the gentlemen who had been requested to undertake trials of this Wheat. It will suffice, after stating Mr. Thompson's experience in full, to present a tabular statement of the mere results which have been arrived at by the others.]

"Report No. 6: Mr. H. S. THOMPSON.—The April Wheat was sown on the 10th of April, and immediately adjoining it was a plot of Hunter's White; both drilled by the same drill, on the same day, and on land that had been treated alike in every respect. Having received very favourable accounts of the April Wheat, I determined not to confine myself to the trial plot, but to sow seven acres with it, and certainly have had no reason to regret having done so, for, judging from what has been hitherto threshed, I believe it to have been the best crop of Wheat on my farm last season. The previous treatment of the land had been as follows:—1847; fallowed for Swedes; manured with a liberal dressing of fold yard manure in ridges, and the seed

drilled with 4 bushels of bones and 80 lbs. of sulphuric acid per acre, mixed with soil and ashes. Half the Swedes were pulled off, and the remainder eaten on the land by sheep, which were allowed  $\frac{1}{2}$  lb. of Linseed-cake per head daily. The two kinds of Wheat were drilled about 8 $\frac{1}{2}$  inches wide, and at the rate of two bushels per acre. The April Wheat appeared above ground two or three days before the other, and in a short time took a very decided lead, which it maintained up to harvest. The Hunter's White tillered excessively, so as to resemble Grass more than corn. The April Wheat did not tiller at all, and in the first week in June was one foot taller than the other: it was, however, too thin on the ground; and I intend in future to sow it at the rate of ten pecks, instead of two bushels, per acre. The April Wheat was ripe about a week later than my earliest autumn-sown Wheat, and was out on the 4th of September, just before a field of white Wheat sown on the 16th of February. It was a heavy crop.

"The Hunter's White was so much affected by mildew that it was scarcely worth harvesting, and remained a dingy green colour till the end of September. It was out on the 2d of October, and the weather was fine until it was carried. The produce was, however, wretchedly bad, both in quantity and quality, and, being totally unfit for grinding into flour, was used up with other tail corn for cattle and pigs.

"A road of each was cut and threshed separately, having been marked out at the time of sowing. The produce was as follows:—

	APRIL WHEAT.		HUNTER'S WHITE.
	Best Corn.	Tail.	All Tail Corn.
One Rood.....	Bush. Pecks. 10 3 $\frac{1}{2}$	Bush. Pecks. 0 2 $\frac{1}{2}$	Bushels. 4
Or per Acre .....	43 $\frac{1}{2}$ 0	2 $\frac{1}{2}$ 0	16

"The straw of the April Wheat was long and well adapted for thatching; that of the Hunter's White was so much injured by mildew as to be broken in frag-

Tabular Statement of the Results of the Trials of April Wheat.

	Kinds of Wheat sown.	Time of Sowing.	Time of Reaping.	Quantity of Seed per Acre.	Produce per Acre.	REMARKS.
1. Mr. CHOLMLEY...	April Wheat	April 10	Sept. 14	Bushels. 2	Bushels. Probably under 24 bushels.	Too thin on the ground.
	Collin's Spring Wheat	April 10	Nearly a month later	2	So much mildewed as to be of little value	
2. Mr. LINTON .....	April	April 20	Aug. 20	2	27 $\frac{1}{2}$	Straw long and strong, and quite free from mildew,
3. Mr. NEWHAM ..	Talavera	April 20	Mown for cattle	2	.....	Suffered from bad weather, or would have been worth 8d. per bushel more than April Wheat.
	Hoptoun	April 4	Sept. 14 Sept. 30	2 2	27 34	
4. Mr. OUTERWAITE	April	March 16	Sept. 7	2 $\frac{1}{2}$	15 $\frac{1}{2}$	Too thin on the ground; full of wild Oats and harif.
	Hunter's White	March 16	Sept. 8	2 $\frac{1}{2}$	23	Was out in three weeks' rain, whereby the hooding sheaves were sprouted; the others were sound, and sold for 2s. 6d. per bushel more than the red. Straw bright, and free from mildew.
5. Mr. WILEY .....	April Norfolk	April 5 April 5	Sept. 20 From three weeks to a month later	2 $\frac{1}{2}$ 2 $\frac{1}{2}$	20 $\frac{1}{2}$ So much mildewed as to be valueless	
6. Mr. THOMSON ...	April Hunter's White	April 10 April 10	Sept. 4 Oct. 2	2 2	43 $\frac{1}{2}$ 16 (all tail corn)	Straw long, bright, and strong. Straw so much mildewed as to be totally unfit for fodder.

ments by threshing. The grain of the April Wheat is rather small and lean, and requires to be known by the millers before they will buy it freely. *Moat Hall, Dec., 1848.*"

#### APPLICATION OF LIQUID MANURE.

CUNNING PARK, NEAR AYR (belonging to and farmed by Mr. Telfer).—Oct. 23, 1852.—This farm contains 48 acres, and is entirely devoted to a dairy of 40 cows. No corn is grown on it. Hay, Grass, and green crops are reared. There are two large tanks here, the contents of which are forced through pipes into the fields by an engine of three horse power. The tanks, however, are not covered, which is a great drawback; Mr. Telfer hopes to get this defect remedied soon. The urine only flows into the tanks, the solid being kept by itself, and dribbled in for the root crops. Italian Rye-grass is sown at the rate of 4 bushels to the acre. The seed is supplied to him by Mr. Dickenson, of London. Mr. Telfer does not allow his Italian Rye-grass to stand for two years—in which respect his practice differs from others. He considers that there is more nutriment in the first year's crop—so much so as to justify the additional expense of seed and labour. He also mentioned that after the plant has run to seed, it ceases to afford much herbage. The urine alone does not nearly supply all the manure required for the Italian Rye-grass. He irrigates it to the extent of 20,000 gallons per acre after every cutting. Peruvian guano and nitrate of soda are also used, therefore, to assist the manuring the Rye-grass, after each cutting. The latter is found the most efficacious. About 4 cwt. per acre is the proper quantity. Mr. Telfer found by experiment that 2 cwt. of Peruvian guano produces 5 $\frac{1}{2}$  tons of Rye-grass, and 4 cwt. produces 7 $\frac{1}{2}$  tons per acre. Both were the produce of one month's growth. In middle of summer his fields yield weekly about 4 tons of Grass;—1 ton of Grass will yield 6 cwt. of excellent hay. He considers that for feeding cows 1 ton of Rye-grass is equal for nourishment to  $\frac{1}{2}$  ton of Turnips. His

cows consume each daily 112 to 130 lbs. of Rye-grass, with 2 lbs. of oil-cake, so that if an acre of Rye-grass yield 45 tons of meat in the six months, which is the case at Cunning Park, about 5 or 6 cows can be fed on an acre in that time. Mr. Telfer grows all the kinds of Mangolds. He prefers, however, the long to the globe—of the long yellow he had 25 tons—the long red 23 tons per Scotch acre. The following is Mr. Telfer's statement of his crops for next year, with his estimate of the expected produce per Scotch acre, these being the quantities which he has hitherto raised:—

Mangolds ...	6 acres	45 tons.
Cabbages ...	6 "	60 "
Italian Rye-grass ...	6 "	45 "

On his land he lays 50 tons of solid dung per acre—which is ploughed in, and immediately before sowing he applies the guano or nitrate—which is followed by liquid manuring. Mr. Telfer's compound for his cows at the time of my visit was as follows:—

Turnips ...	10 cwt.	Divided daily among 42 cows; being at the rate of 126 lbs. to each.
Cabbages ...	8 "	
Potatoes ...	8 "	
Rye-grass ...	21 "	

Mr. Telfer mentioned that the quantity of urine produced by a cow is nearly equal to the quantity of milk she gives; and that the solid dung obtained from each is about 12 tons yearly. *Mr. Home's Report to the East Berwick Farmers' Club.*

#### Home Correspondence.

John Sillett's Small Farm.—In an article headed "Tullian Husbandry," and signed "J. D. P., Colne Engaine," March 5, I see reference made to "a person not 100 miles from Saxmundham in Suffolk," in such a way as to lead your readers to suppose he has misrepresented his success on his two acres of land. I think it only justice to John Sillett (for doubtless he is the person alluded to) to state that I also saw his ground in 1851, and again just before harvest in 1852. Being about to try some experiments applicable to small

holdings, and having read Sillett's pamphlet, I also, for further information, "trained some of the way and coached the rest," after the harvest of 1851, and I confess the state of the land disappointed me. It was weedy. But it was fully accounted for, when a very respectable person in the neighbourhood informed me that Mr. Sillett, being a poor man, considered he could get his house up cheaper by working at it himself than by trusting wholly to hired workmen, and had consequently neglected his ground during his building operations. He had also abstained from hired labour on his ground (perhaps injudiciously), but he had determined to cultivate the two acres with his own hands; and, as the neighbour said, "no persuasion could induce him to depart from his rule." Sillett was aware of the impression I had as to the state of his land; "but," said he, "since you have visited my place at a most unfavourable time, I must beg you will do me the justice to come again when my land is cropped." I did so in August, 1852, and I only wish "J. D. P." had been with me. The crops were most luxuriant. Some of the Swedes measured 20 inches round. The Wheat appeared much better than his neighbours'. And, as to stock, he had 10 pigs of about 7 stone each, besides several rabbits and 100 fowls, as nearly as I can recollect. He had a set of Nutt's bee boxes, well stocked; and altogether the place had a prosperous, happy appearance. I cannot conclude without comparing "J. D. P.'s" statement of profits with that of Sillett. Sillett says in his pamphlet that in the year 1847 (which we all know was a most favourable year, from the high prices of agricultural produce), his stock and crops produced 74l. 3s. 10d., besides supplying his family with milk, butter, &c. After deducting enormous rent and taxes, he shows 51l. 1s. 10d. in his favour—that is, as wages for his labour, but clearly not 50% saved, as "J. D. P." states. Again, if the whole produce of one year be valued at 74l. 3s. 10d., how does "J. D. P." show a difference of 100% in the valuation, unless indeed he priced what he saw at 25l. 6s. 2d. less than nothing? I think if you will take the trouble to compare the two statements you will, in fairness, insert this, and correct any erroneous



impression which may be made. *An Honest Man's Friend, Chaldon, Surrey.*

**Land Drainage.**—The answer that you give to my question, on behalf of "T. G. Clitheroe," increases my perplexity. I know that water rises in soils by capillary attraction; but I have yet to learn that the soil ever parts with such water except by evaporation. J. C. C. [We hardly understand your difficulty. If it be in conceiving an opposition between the force of gravitation and the capillary force, what becomes of your remark that water rises?—exactly what gravitation would hinder its doing. If there be no difficulty in this, then, there can be no difficulty in supposing one of the forces able to "overcome" the other. Water does not only rise, it spreads in virtue of capillary attraction. Will you be kind enough to state in greater fullness your ideas on the subject.]

**Opium or Laudanum.**—Some of your readers may perhaps like to be informed of the rationale of my recommendation of substituting for laudanum in certain cases opium and spirit of nitric ether, more particularly as I have been condemned as unnecessarily troublesome for so doing. Opium is a valuable medicine, and is at once a sedative, narcotic, and anti-spasmodic. In the latter capacity no other agent has such a powerful effect in relieving agony, and the writer has not unfrequently saved life by continuing its action for the space of 24 to 48 hours, administering it perhaps several times daily. Now if it were conveyed into the system in every case in the form of laudanum, for every drachm of opium we should be giving an ounce of spirits of wine, which, though it might be given to a certain extent with impunity and advantage, yet, if repeated as long as opium may be required, would be tantamount to giving a quantity of brandy to a patient in a case probably attended with fever and bordering on inflammation. It is found that opium does not dissolve perfectly in water. A certain portion of spirit is necessary, which I have often had recourse to with advantage, in the form of spirit of nitric ether, a valuable medicine in itself, embracing the properties of a febrifuge, a diuretic, and a sudorific; in fact, one of the most useful medicines in the Pharmacopœia, and very well adapted for the case for which it was advised. In combining it with opium there is no difficulty whatever, and I am sure the druggist will not consider it troublesome in preparing, and I trust your readers will not consider me unnecessarily troublesome in showing "the reason why." The best treatment for such cases as those alluded to by "G. S.," whose politeness I appreciate, will be the administration of the ergot of Rye in doses of a scruple combined with ginger and gentian, and repeated, if required, several times, with one or two hours' interval. The above medicine has the peculiar effect of stimulating the wound, and thus causing it to contract and discharge its contents. It requires, however, to be used with great caution. I am pleased to find that the observations on Ivy have elicited some valuable information from Ireland, and it leads to the suggestion whether its culture, under certain circumstances, should not be promoted. W. C. S.

**Stoppage of Drains.**—Last winter a field on the Gilling estate of J. J. Wharton, Esq., was drained under my direction. This field is very level, and was drained with 2-inch pipes for the parallel drains, having sub-mains of 3-inch pipes leading into a large and deep culvert, which crossed the field. The parallel drains were 4 feet deep and 27 feet asunder. The sub-mains were 4 feet 3 inches deep. The field when drained was an old rough pasture; the surface soil in some places was a good loam; in others black or bog earth to a considerable depth. The subsoil also varied greatly; under the good surface soil, a strong clay was generally found, while the black earth laid chiefly upon gravel, very full of water. The 2-inch pipes in the black earth were laid with collars; the rest of the parallel drains and the mains were laid without collars. After the drainage of the field was completed, the quantity of water discharged was very great. Mr. Wharton himself measured the water running from one of the sub-mains, which conveyed the drainage of about 5 acres of land, and it was found to yield 11 gallons per minute. The drainage was afterwards carefully examined by an experienced Government inspector, and by him pronounced an excellent piece of work. Immediately after the drainage was finished the field was broken up, and last summer bore capital crops. The drains appeared to act beautifully through all the wet autumn until about Christmas, when the ground over the very sub-main, where the discharge was found to be 11 gallons per minute appeared to be damp; this dampness continued increasing, until at last water stood on the surface immediately over the drain. I recently had this drain opened in this place, and found several of the 3-inch pipes completely choked by fibrous matter, similar to the specimen herewith sent. I believe it consists of the roots of one of the mosses frequently seen in ponds and belonging to the tribe of plants called *Algae*. The whole pipe was filled with these fibres, which were jammed so tight together that not a drop of water could pass through. The drain was effectually stopped in this manner in three or four places, and these places, though in the same reach of drains, were several yards apart. I have been induced to send you this statement because I think it shows that even where drains are made with the greatest care, choking may ensue. Some persons may be of opinion that had collars been used this stoppage would not have arisen, but I do not think so. I believe the moss is produced

in the water, and brought by it into the drain, where it is nourished by a constant stream, until, as in this instance, it entirely fills the pipe. No other part of the field has shown the slightest indication of similar stoppage. H. J. Turner, Richmond, Yorkshire.

**On Bones as a Top-Dressing for Grass-Land.**—Having had to answer several inquiries that have been addressed to me on the subject of bone-manure, I think a short statement of the way in which it has been so successfully applied here as a top-dressing for Grass-land may be interesting to some of your agricultural readers. For many years past I have been in the habit of using bones to some extent; I am therefore enabled from practical experience to speak with confidence of their great value, and to bear my humble testimony to the good effects that have resulted from their application. Although they may be considered rather expensive in the first instance, yet I am convinced they will be found among the most powerful and lasting manures known to us at the present time, and admirably suited for renovating all worn-out pasture land. As an instance of what may be effected by following a system of dressing with bone-manure, I will adduce the fact, that before using it here on about 100 acres of Grass-land—the soil of which is a free yellow loam, resting on a shelly subsoil, and well drained—there was barely Grass enough to support from 250 to 300 Southdown sheep and 4 horses; whereas the same land now maintains a flock averaging from 450 to 500 Southdowns, 8 cows, and 4 horses, besides allowing a portion of about 25 acres to be annually saved-up during the summer months and cut for hay. With regard to the mode of treating the bones, I may observe that they are far less effective when sown over Grass by hand than when properly mixed with earth and allowed to remain some time after in a heap. My usual practice is to fix on a convenient spot near the land intended to be dressed, and there make a deposit of all the refuse earth, road-scrappings, and scourings of ditches, &c., that are collected in the course of the year, until I think I have obtained as much as will give me about 20 loads per acre. In October the bones are procured, the proportion used being at the rate of three quarters per acre; and after distributing them as equally as possible over the large heap, they are immediately covered up until it is convenient to have the whole turned over, and thoroughly mixed together. In this state they remain until the weather is favourable in February, or very early in March, for carrying out and spreading the compost. The after management consists in going over the part manured with a sharp harrow, then sowing a mixture of about 6 lbs. of white Clover, and 3 lbs. of Trefoil seed per acre, covering with the roller, and finishing with a bush-harrow. In about four or five years the mowing for hay and manuring the following spring are repeated, but with a lesser quantity of bones per acre, and without the necessity of sowing any more Clover or Trefoil. By this system of mowing and manuring I have had the pleasure of seeing a vast improvement effected, not only in the nature and appearance of the herbage, but in the additional number of stock that the land has been made to support; and I feel perfectly certain that the same result may be obtained by any person who will only take the trouble to follow a similar plan to the one above mentioned, of which the foregoing details, I trust, will be useful to those who may be unacquainted with the value of bones or their management. W. B. Booth.

**The Tullio-Smithian System of Wheat Growing.**—Some of your readers may possibly be interested in the results of a crop of Wheat grown in 1852, which was cultivated in accordance with the principles advocated by the Rev. S. Smith. I therefore send you the following statement. The exact measurement of the field upon which the experiment was made is 4A. 2R. 18P. Before giving the results of last year's crop, it will be necessary to state the preceding crops grown upon this field during a few years. In the winter of 1847, the land being in high cultivation, it was sown with Wheat at the rate of one bushel per acre; the crop, up to the beginning of July, 1848, promised to be a most abundant one, at which time it was reviewed by Mr. Lawes, who pronounced it to be the finest looking crop he ever beheld. After this period a series of wet weather set in, which threw down the straw, and then, instead of the enormous yield we anticipated, the crop was only 6 quarters per acre, of very indifferent quality. The field was again sown with Wheat and Clover, without manure; and in 1849 the crop was 5½ quarters per acre, of excellent quality. In 1850, the crop was Clover without manure. In 1851 the crop was Wheat again, with a manure of guano at the rate of 3 cwt. per acre. The yield was from 7 to 7½ quarters per acre of very superior grain. And then immediately after the harvest the field was very deeply ploughed in preparation for the adoption of Mr. Smith's plan. Owing to the want of proper implements, it was not sown till the 12th of November. The quantity of seed used was half a bushel per acre for the field, or at the rate of one bushel reckoning the ground actually sown. The intervals between the rows were not touched up till March, subsequently the soil was cultivated pretty much according to Mr. Smith's directions, but it was not nearly so well done as on his own fields. The field was visited in July with the outskirt of a water-spout, which occasioned much damage to the crops; and afterwards in this neighbourhood we experienced an unusually wet and protracted harvest, by which nearly all our crops were greatly lessened and their quality deteriorated. The crop on this field was stacked by itself. It has just been

threshed, and the yield is 167½ bushels, or at the rate of 36½ bushels per acre. The quantity of straw was about 7½ tons. The quality of the sample, like that of the rest of my crops of corn, was very much damaged by the continued wet weather during the harvest. The subsoil of this field is the lower chalk marl; the surface soil, or "staple," as termed by Mr. Smith, is very stiff and tenacious. It is a good Wheat soil and nothing more—not good enough to bear Hops well. It is needless to occupy your columns with remarks of my own, for your readers cannot fail to make their own inference that the principles so ably advocated by the Rev. S. Smith, and so zealously carried out by him at Lois-Weedon, have also been illustrated and confirmed by this experiment at Farnham. J. Manwaring Paine.

## Reviews.

*Journal of the Bath and West of England Society for the Encouragement of Agriculture, Arts, Manufactures, and Commerce, established 1777. J. Ridgway, 164, Piccadilly.*

OUR readers are aware that this society has sprung into new life, chiefly owing to Mr. Acland's vigorous efforts on its behalf. One proof of this was given at Taunton last July; another will, no doubt, be given with even greater éclat at Plymouth next June, when a meeting of the society will take place, and an exhibition of cattle and implements will be held under its auspices. The following particulars on the subject of this Exhibition will, no doubt, be read with interest.

The Exhibition will take place on Wednesday, Thursday, and Friday, the 8th, 9th, and 10th of June, and amongst the prizes to be offered are the following:—

	£	s.	d.
For Devon Cattle, prizes amounting to ...	70	0	0
For South Devon or South Hams Cattle, ditto ...	50	0	0
For Cattle of any other Breed ...	77	0	0
For Long Woolled Sheep ...	40	0	0
For South Down Sheep ...	20	0	0
For Dorset Sheep ...	32	0	0
For Mountain Sheep ...	12	0	0
For Pigs, Large Breed ...	15	0	0
For Pigs, Small Breed ...	15	0	0
For Horses ...	45	0	0
	383	0	0
For Poultry ...	77	10	0
For Pigeons ...	8	0	0
	85	10	0
For Implements used in the Preparation of			
Ground ...	28	0	0
" Cultivation of Crops ...	29	0	0
" Harvest Crops and preparing for			
Market ...	57	0	0
" Preparation of Food for Stock ...	23	0	0
" Miscellaneous ...	10	0	0
For Collections of Implements ...	23	0	0
For Plans and Models ...	10	0	0
For New and Improved Implements ...	10	0	0
	190	0	0
	£658	10	0

## GENERAL REGULATIONS.—1853.

No stock can be admitted for exhibition unless a certificate of entry has been received by the Secretary, on or before Friday, 15th April.

All animals intended for exhibition must be at the Show-yard before seven o'clock on the evening of Tuesday, the 7th of June, otherwise they will not be admitted.

Hay, straw, and green food will be provided for the stock whilst in the yard free of expense.

Members may exhibit an unlimited number of animals as extra stock, by payment of 5s. per lot.

Non-subscribers must pay 10s. for every head or lot of live stock, before obtaining a ticket of permission to bring them into the Show-yard.

Persons intending to exhibit implements must send two copies of the certificate, properly filled up, to the Secretary, on or before Friday, 15th April; all such implements must be brought into the Show-yard unpacked and arranged before 7 o'clock p.m., on Saturday, 4th June. No charge will be made for exhibiting implements.

Implements must remain in the yard until 4 o'clock p.m., of Friday, the 10th of June.

Certificates required may be had on application to the Secretary, H. ST. JOHN MAULE, Bath.

All cattle, implements, &c., brought into the Show-yard shall be subject to the orders, regulations, and rules of the council, or officers appointed by them. One person only will be allowed to enter the Show-yard with each lot. The yard will be cleared, after the stock are admitted, of all persons not attending to their animals in the pens.

One free ticket of admission into the Show-yards, for the Thursday only, may be obtained by any member on application to the Secretary, at his office at Plymouth, during the week of the show (on producing the receipt for the annual subscription), to be given up on entering the yard.

The public will be admitted to the stock and implement yard—On Wednesday, the 8th, after the judges have given in their award, on payment of 2s. 6d. On Thursday, the 9th, from 7 a.m. to 6 p.m., on payment of 1s.; and from 6 p.m. until 8 p.m. of the same day, on payment of 6d. On Friday, the 10th, from 9 a.m. until 4 p.m., on payment of 6d.

Live stock must remain in the yard until 12 o'clock at noon on Friday, the 10th; when the whole of the implements will be on view throughout the day, and such live stock as may be left for inspection or sale.

In the meantime we have the pleasure of directing attention to another proof of the new life which the society now exhibits—in the first number of a new agricultural serial published under its auspices. The Transactions of the old society were among the earliest publications of the kind, and may still be read with interest, for the many important agricultural papers they contain. The present number of the new serial proves that its object is to aim at a position among existing periodicals similar to that held by its predecessor among its contemporaries. No. 1 of this Journal contains a valuable paper by Lord Portman, on the General Principles of Agriculture; another by Mr. Miles, M.P., on the Culture of Mangold Wurzel; a paper from the Journal of the English Agricultural Society; and a Report of the Exhibition at Taunton.



## POULTRY.

**POULTRY.** *J.M.* The fowls you have watched are the golden spangled Hamburg. You probably expected the golden pencilled, which are altogether different. Those you have are sometimes called pheasant fowls.—*A Subscriber.* I have lost some very valuable chickens from cramp lately, and have been making much inquiry for a cure. Accident has perhaps discovered one. A gentleman talking with me, told me a cramped chicken, apparently in articulo mortis, was thrown on a hotbed, and recovered. Believing the heat had to do with the cure, he subjected all that were affected to a vapour bath, made thus: A pail or large vessel being filled with boiling water, a sieve was placed over it, in which the chicken was put, and the whole covered with a thick cloth. The bird was taken out, when the cramp had passed away. Many apparently hopeless cases are, from this treatment, thriving and hopeful subjects. I know no other cure, as the visitation this year has assumed a new form, and has been so speedily fatal, as to render treatment impossible.—*M.B.* I can only recommend you to have patience; I have no doubt the hens will lay properly formed eggs. Pullets will sometimes lay faulty ones at first, especially when they begin young.—*Osman.* The taste of the eggs is caused by the food of the fowls. I have no doubt, if you will cause inquiry to be made, you will discover this to be true. I know an instance where fowls were fed with some Barley that had been partially malted, and the eggs acquired the taste and smell of the food.—*O.* My reason for suggesting a change of food was, that the loss of feathers at an unusual season indicates internal fever; and perhaps the fact that your hens have laid more than those of your neighbours may be accounted for by stimulating food, of which the nakedness is the penalty. The green run has been useless of late; but if the weather changed and the herbage began to grow, I am sure the hen would find her natural cooling food. I recommend to do away with the Oats and Potatoes, and to feed for a few days on oatmeal alaked with water; if the fever improve on this, continue; if not, give a dose of castor-oil—a tablespoonful twice, at three days' interval. Fine weather will do more than any other treatment.—*J.B.P.* To secure eggs in the winter, you must save pullets hatched in the previous April or May. I believe the best method of preserving eggs is to cover them with butter when fresh laid, but as I stated a short time since, such eggs will not hatch.—*F.W.* If the hen of which you complain sits in a box or basket, move her in it at night into your hatching-house. If she sits on the ground (as she should do), move her, eggs and all, to the place where you wish her to sit, and cover her by a basket turned over her, or any other contrivance. She will very soon be reconciled to her new abode. *J. Bailey*, 113, Mount Street.

## Miscellaneous.

The Bath and West of England Agricultural Society have awarded the prize for the best essay on the cultivation and consumption of root crops to Mr. W. C. Spooner, of Eling, Southampton. There was considerable competition, and several essays were commended.

**The Water Drill.**—As at our annual trials of implements the delivery alone of the manure by the different drills can be tried, it seemed to me that it might be of use to farmers if I tried the comparative effect produced on the crop by the ordinary drill and by the water-drill. Accordingly, after feeding off some Vetches towards the end of July, I put in two acres of Turnips with Chandler's water-drill, and, within five days, four acres more with a prize Turnip-drill made by Hornsby. The ground was almost too wet, so that the water-drill had no advantage on that account. The quantity of manure was the same with each; it was rather large, because the season was late, 6 cwt. of superphosphate per acre. The water-drilled Turnips took the lead, and kept it in a most extraordinary way till December, when the weighing took place and the following result appeared:

	Superphosphate.	Turnips.
	Tons.	
Water-drilled ...	6 cwt. ...	134
Dust-drilled ...	6 cwt. ...	63

I cannot account for this enormous difference; I never saw so great a difference before, and should not expect it again; but after some years' experience of the two drills, I have determined to abandon the use of the dust-drill in flat drilling and to use the water-drill only. For there is, firstly, the advantage that you can drill in dry weather at once; 2dly, that the manure is better diffused in the soil for each rootlet to feed upon; 3dly, that you save the expense of the ashes required by the dry drill, say for 24 bushels of ashes, at 2d. a bushel, 4s. per acre; fourthly and lastly, that much less labour of horses and men is required with the water-drill, especially now that by means of a gutta percha pump, costing 4l., which can be purchased with the drill, the boys who drive can fill the water-carts also. I find the comparative labour as follows:—

DUST-DRILL.	WATER-DRILL.
Horses.	Horses.
4 in drill.	2 in drill.
1 fetching ashes.	2 fetching water.
1 supplying drill.	
6	4

Men. Boys.	Men. Boys.
2 1 with drill.	2 0 with drill.
4 0 mixing manure.	0 2 filling and driving
1 1 with ash-carts.	— water in carts.
—	—
7 2	2 2

If the brook be less conveniently situated than on my farm, more horses and boys would be required for fetching water, but it answers to fetch the water from a good distance. One farmer in Wiltshire carries his water for the purpose two miles. The water-drill is made at present only by Messrs. Reeves, at Westbury, Wilts. It costs 25l. The prize dust-drill at Lewes cost 23l. On these grounds it appears to me that, where water is at command within a reasonable distance, the water-drill should supersede the dust-drill altogether in flat work for Turnips, such as we use in the south. *Pusey*, Dec. 1852; *Journal of the Royal Agricultural Society*.

Mr. Samuelson's New Digger has been tried this week, on various farms in the neighbourhood of Banbury; and on Thursday, on land in the occupation of Mr. Charles Cave, on the Broughton-road. Although the trial was a private one, being merely for the instruction

of those interested in the patent, a number of experienced agriculturists visited the spot in the course of the day. The trial appears to have given universal satisfaction, and what surprised us most was to see a machine of such extreme simplicity accomplish the operation of digging; whereas in all attempts hitherto made, a great complication of parts has been introduced, with the erroneous view of imitating the motions of the human body. Circular motion has been the foundation of all our most important improvements in machinery; and in this instance a number of steel prongs, firmly connected, but revolving in circles, perform the work of digging with great facility and effect. The implement covers a breadth of about 3 feet, and digs to a depth varying from 4 to 10 inches, which latter is regulated in a very simple manner. Provision is also made to prevent clogging. On this occasion it was drawn by five horses, and dug at the rate of about 2 acres in three hours and a half. The draught, however, will vary, as may be supposed, with the nature and condition of the soil. The inventor is not so sanguine as to think that it will supersede the implements at present in use—indeed in some instances it will require to be followed or preceded by them, in order to the most perfect cultivation; but in most cases it will doubtless, without their assistance, prepare a more perfect seed-bed than any tool now in use (the fork not excepted). *Oxford Chronicle*, March 12.

## Notices to Correspondents.

AGRICULTURAL SOCIETY'S JOURNAL: *H.H.* Twice a year: 10s. a number.

ANALYSIS: *H.E. Gordon.* There is no Society whose members have the privilege of gratis analysis. The Agricultural Society of England gives its members the privilege of analysis by its chemist at certain rates. Other answers next week.

DRAINING PLOT: *Haldon.* There is none available in stony land, or as a substitute for the pick-axe.

FLAX: *Linnam.* It is purchased by dealers in the field to be "handled" by themselves—or in the condition in which it is ready for use by the manufacturer. There is a ready enough sale for it in most localities. As to selection of seed, you may depend upon any respectable seedsmen. The Dutch seed has been deemed best; but home-grown seed is used with perfect propriety.

GRASS SEEDS: *Haldon.* We quote the following from Lawson's valuable essay on the cultivated Grasses. On light soils for one year hay, and two years pasture, sown with a crop—Dactylis glomerata, Orchard Grass, 2 lbs.; Lolium italicum, Italian Rye Grass, 9; L. perenne, perennial do, 15; Medicago lupulina, Hop Trefoil, 1; Phleum pratense, Timothy Grass, 3; Trifolium hybridum, hybrid Clover, 2; T. pratense, red Clover, 4; T. p. perenne, perennial do, 4; T. repens, Dutch Clover, 4. Total, 41 lbs. In upland districts add 2 lbs. per acre of Plantago lanceolata.

HARTLEY THORN FARM: *Dunel.* A very full report was published in the *Dublin Farmers' Gazette*; we do not know where else you will obtain it.

## Markets.

## COVENT GARDEN, APRIL 2.

The weather still continuing cold, the supplies of Vegetables during the week have been no more than sufficient for the demand. New Hothouse Grapes are improving both in quantity and quality. Pine-apples are realising good prices. Forced Strawberries fetch from 2s. to 3s. an ounce. Cob and other Nuts bring fair prices. The supply from the Continent of Green Peas, new Potatoes, Horn Carrots, Asparagus, Radishes, Globe Artichokes, and Lettuce, is still considerable, and the various articles are generally excellent in quality. Both Sea-kale and Rhubarb are pretty abundant. Potatoes are dear. Mushrooms are scarce. Cut flowers consist of Hyacinths, Primulas, Early Tulips, Roses, Cyclamens, Mignonette, Cinerarias, and Camellias.

## FRUIT

Pine-apples, per lb, 8s to 12s  
Grapes, hothouse, p.l.b., 15s to 24s  
Strawberries, per oz, 2s to 3s  
Apples, dessert, p.bush, 10s to 13s  
— kitchen, do, 6s to 12s  
Oranges, per doz., 1s to 2s  
— Seville, p. 100, 7s to 14s

Cabbages, per doz., 1s to 2s  
Brussels Sprouts, per hf. sieve, 2s to 3s  
Broccoli, per doz., 2s to 3s  
Greens, per doz., 4s to 6s  
French Beans, per 100, 1s to 3s  
Asparagus, per bundle, 5s to 9s  
Sea-kale, per basket, 2s to 2s 6d  
Rhubarb, p. bundle, 9d to 1s 6d  
Potatoes, per ton, 85s to 150s  
— per cwt., 5s to 9s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 1s to 3s  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 4s to 5s  
— Spanish, p. doz., 2s to 5s  
Beet, per doz., 1s to 1s 6d

## POTATOES.—SOUTHWARK, March 28.

During the past week the arrivals, both coastwise and foreign, have been limited; and, owing to the severity of the frost, very few have come by rail, and a slight advance upon last week's quotations has been obtained. The following are this day's quotations:—York Regents, 110s. to 160s.; Lincolnshire do, 90s. to 130s.; Scotch, 100s. to 130s.; do. cups and reds, 90s. to 105s.; French whites, 100s. to 115s.

## HAY.—Per Load of 36 Trusses.

SMITHFIELD, March 31.  
Prime Meadow Hay 85s to 95s  
Inferior do. ... 75 80  
Rowen ... 45 60  
New Hay ... — —

CUMBERLAND MARKET, March 31.  
Prime Meadow Hay 92s to 98s  
Inferior do. ... 70 85  
New Hay ... — —  
Old Clover ... 100 108

## WOOL.

BRADFORD, THURSDAY, March 31.—Since last Thursday, several holidays have been observed, the consumption of wool has been lessened, and less inquiry by buyers. The prices which are now quoted, and said to have been realized, are such that it is impossible to mix with any hope of ever realising cost. The spinners have been anticipating some ease in the price of wool, and have worked their stocks down in consequence; but it is now certain that no material reduction can be looked for until a supply

of the new clip comes to market. Nails and brokes are very eagerly sought up at firm prices.

## SMITHFIELD.—MONDAY, March 28.

We have a few more Beasts, but are enabled to retain last Monday's quotations for choicest Scots; other kinds are rather lower. Trade is very dull for Sheep, owing to a large supply of dead meat, and a decreased demand. Prices for all kinds are about 2d. per 8 lbs. lower. Lamb is considerably lower than on Friday last. There is no alteration in the Calf trade. From Germany and Holland there are 827 Beasts, 840 Sheep, and 143 Calves; from Scotland, 600 Beasts; 1800 from Norfolk and Suffolk; and 300 from the northern and midland counties.

Per st. of 8 lbs.—s d s d Best Scots, Herefords, &c. ... 4 0 to 4 4 Best Short-horns 3 10 — 4 2 Best 2d quality Beasts 3 0 — 3 4 Best Downs and Half-breds ... 5 2 — 5 6 Do. Shorn ... 4 4 — 4 6 Beasts, 4138; Sheep and Lambs, 17,764; Calves, 181; Pigs, 230.

## FRIDAY, April 1.

We have quite a sufficient supply of Beasts, although by no means large. Trade is slow, but prices remain nearly the same as on Monday. The number of Sheep much exceeds the demand, which is unusually small. They cannot all be disposed of, even at a further reduction. Calves are also lower, but they are mostly disposed of. Our foreign supply consists of 178 Beasts, 1040 Sheep, and 242 Calves; from Scotland, 40 Beasts; and 105 Milch Cows.

Per st. of 8 lbs.—s d s d Best Scots, Herefords, &c. ... 4 0 to 4 2 Best Short-horns 3 10 — 4 0 2d quality Beasts 3 0 — 3 4 Best Downs and Half-breds ... 5 0 — 5 2 Do. Shorn ... 4 2 — 4 4 Beasts, 531; Sheep and Lambs, 5150; Calves, 307; Pigs, 235.

## COAL MARKET.—FRIDAY, April 1.

Holywell, 18s.; Wallsend Braddyl's, 19s. 3d.; Wallsend Hawell, 20s.; Wallsend Stewarts, 20s.—Ships at market, 82.

## HOOPS.—BOROUGH MARKET, April 1.

Messrs. Pattenden and Smith report that the market for new Hops is in a quiet state, at late prices. The demand for old Hops continues brisk, with prices advancing.

## MARK LANE.

MONDAY, March 28.—Since the 15th inst. we have experienced a continuance of very severe frost (on the night of the 24th the thermometer fell to 15° Fahr.), and last week some snow fell daily, with wind shifting from N.E. to N.W.; yesterday, with westerly wind, we had some rain, and the temperature is somewhat milder. With dry weather now the frost will have proved beneficial to the land. The markets for Wheat have been steady, without any material change; some of the English were a trifle firmer, and Leith the reverse. The supply of Wheat from Essex and Kent to this morning's market being remarkably small, was disposed of on the terms of this day's night. Foreign met a retail sale only at our late quotations. In Flour there is little doing, but prices are unaltered. Barley was in fair demand at last week's prices. Beans and Peas remain as last quoted. Oats are in rather better inquiry, at fully late rates.

Pen Insular QUANTITIES.  
Wheat, Essex, Kent, & Suffolk, White 40-54 Red 38-46  
— fine selected runs ... ditto 42-60 Red 38-46  
— Talavera ... 54-60  
— Norfolk ... Red ... —  
— Foreign ... 40-58  
Barley, grind. & distill, 24s to 27s. ... 25-34 Malt ... 26-30  
— Foreign, grinding and distilling ... 26-30 Malt ... 30-33  
Oats, Essex, and Suffolk ... 17-20  
— Scotch and Lincolnshire ... 22-24 Feed ... 17-22  
— Irish ... 21-23 Feed ... 19-20  
— Foreign ... Poland and Brew ... 19-22 Feed ... 16-20  
Rye ... 29-32 Foreign ... —  
Rye-meal, foreign ... 32-34  
Beans, Mazagan ... 30s to 32s ... Tick ... 32-34  
— Pigeon ... 33s — 36s ... Winds ... 39-41 Longpod ... 30-34  
— Foreign ... 32-37 Small ... 32-37 Egyptian ... 32-34  
Peas, white, Essex and Kent ... Boilers ... 38-41 Suffolk ... 40-42  
— Maple ... 32s to 35s ... Grey ... 30-33 Foreign ... 32-42  
Maize ... — Yellow ... —  
Flour, best marks delivered ... per sack 38-46  
— 2d ditto ... ditto 23-38 Country ... 23-38  
— Foreign ... per barrel 22-26 Per sack ... 35-38

FRIDAY, April 1.—We have a considerable supply of foreign Wheat, chiefly from the south of Europe. To-day's market was only moderately attended. English Wheat is unaltered in value, but the demand for foreign languid, and the turn of price favours the buyers. About 40 vessels have arrived off the coast, the majority of which are Wheat-laden. Polish Odessa has been done at 39s. 6d., Berdianski at 44s. 6d., and Galatz at 38s. Flour is a slow trade. Barley, Beans, and Peas remain as on Monday. For Oats there is a limited sale at late rates.

## ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
	Qrs.	Qrs.	Qrs.	1830 sacks
English ...	3140	1280	4390	
Irish ...	—	—	6740	
Foreign ...	21280	1270	—	5440 hrls

## IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Feb. 19 ...	44 6	31 3	17 9	39 3	34 5	31 2
— 26 ...	45 2	31 3	18 4	40 2	34 5	31 6
March 5 ...	45 9	31 7	18 3	30 9	34 8	32 6
— 12 ...	45 8	31 9	18 6	30 9	34 4	32 9
— 19 ...	45 5	31 9	18 10	30 10	34 2	32 11
— 26 ...	44 9	31 10	18 9	33 0	34 3	32 3
Aggreg. Aver.	45 2	31 6	18 5	30 10	34 5	32 3

## FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

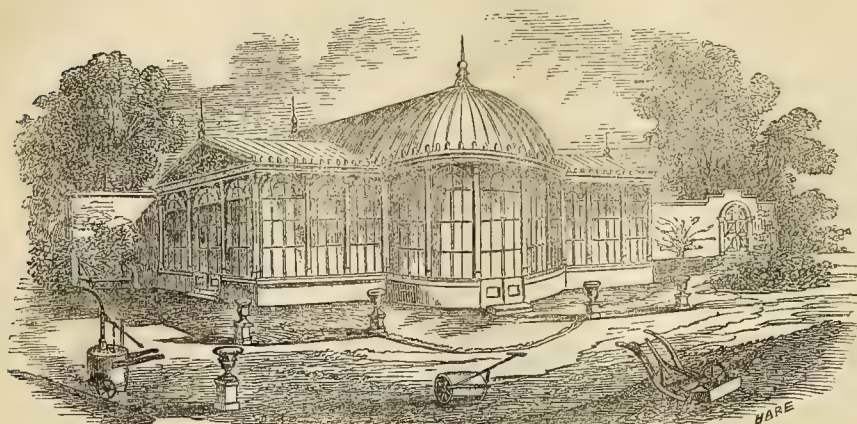
PRICES.	Feb. 19.	Mar. 26.	March 5.	Mar. 12.	Mar. 19.	Feb. 26.
45s 9d—	...	...	...	...	...	...
45 8	...	...	...	...	...	...
45 6	...	...	...	...	...	...
45 2	...	...	...	...	...	...
44 9	...	...	...	...	...	...
44 6	...	...	...	...	...	...

LIVERPOOL, THURSDAY, March 29.—The arrivals from Ireland and coastwise during the past week have been light upon the whole. Owing to the intervention of the Easter holidays, there has been little doing in the trade; however, in the few transactions which have taken place rather more firmness has been evinced by holders, and prices generally are fully supported. The weather has become mild and seasonable. The market this morning was moderately attended by the trade, who purchased to a fair extent of Wheat, at about the prices of this day week. Flour, both American and French, was neglected, and easier to buy. Oats and Oatmeal were in rather better request, and the turn dealer. Barley and Peas were scarcely inquired for, and Beans were 6d. per qr. lower. Indian Corn afloat was in better request, and rather dearer, but parcels on the spot were without a material alteration in value.



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**GEORGE NEIGHBOUR AND SONS** invite particular attention to their new and varied collection of BEEHIVES for the present season, in which are comprised all the most recent improvements and inventions of the day. Their Newly Arranged Catalogue, with Drawings, is now ready, and will be forwarded on receipt of Two Postage Stamps. **GEORGE NEIGHBOUR & SONS**, 127, High Holborn, and 149, Regent Street.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

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Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

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**HOT-WATER HEATING APPARATUS**, upon approved principles, supplied and fixed in Horticultural and other Buildings, by **WILLIAM DODDS & CO.**, Heating Engineers, 102, Leadenhall-street, London. First-rate references if required.

## HORTICULTURE IN ALL ITS BRANCHES.



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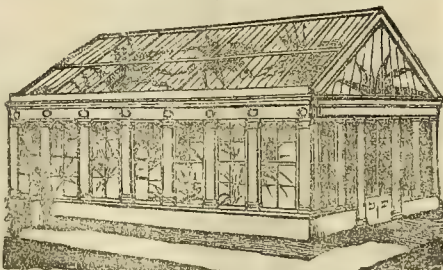


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G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

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At 12s. 6d. PER BOX:  
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Boxes charged 2s. each, but full price allowed if returned free of expense.—116, BISHOPSGATE STREET WITHOUT.

### ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.**

WAREHOUSE, 57, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long. Squares in boxes, 100 feet each.  
Under 6 by 4 ... .. 12s.  
6 by 4, 6½ by 4½ ... .. 13s.  
7 by 5, 7½ by 5½ ... .. 15s.  
8 by 6, 8½ by 6½ ... .. 20s.  
9 by 7, 8 by 12 by 10 }  
13 by 10, 14 by 15 by 10 }  
Large Sheet of No. 16, very superior, packed in cases of 100 200, and 300 feet, at 2½d. to 2½d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick; Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments; Fern Shades and Disks.

### GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

**HETLEY AND CO.** are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 100 feet
From 6 by 4	Under 6 by 4	at 1½d.	is £0 12 6
7 " 5	7 " 5	" 2½d.	" 0 16 8
8 " 6	8 " 6	" 2½d.	" 0 18 9
10 " 8	10 " 8	" 2½d.	" 1 0 10
12 " 9	12 " 9	" 2½d.	" 1 2 11

Larger sizes, not exceeding 40 inches long, 16 oz. from 3d. to 3½d. per square foot, according to size.  
21 oz. " 3½d. to 5d. " " "  
26 oz. " 3½d. to 7½d. " " "

**PATENT ROUGH PLATE, THICK CROWN GLASS,** and **PATENT PLATE GLASS** for Horticultural purposes, at reduced prices, by the 100 square feet.

**GLASS TILES AND SLATES** made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

**PATENT PLATE GLASS.**—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

**GLASS SHADES**, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to **JAMES HETLEY & Co., 35, Soho Square, London.**

### CROWN, and 13, 16, 21, and 26 oz. HORTICULTURAL SHEET GLASS, in 100 feet boxes.

Of sizes—8 inches by 6 inches.	Of sizes—9½ inches by 7½ inches.
" 8½ " " 6½ " " 10 " " 8 " "	" 10 " " 8 " "
" 9 " " 7 " " 10½ " " 8½ " "	" 11 " " 9 " "
At 1½d. per foot.	At 1½d. per foot.

Also Crown and Sheet Glass in crates. British and Patent Plate, Sheet Lead, Pipe, White-lead, Oils, Turpentine, Colours, &c. **G. FARMLOE & SON, 118, St. John Street, West Smithfield, London.**

### TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

**PATENT GLASS TUBES**, Iron Coated with Glass, Gutta Percha, Comminated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of **FERMAN ROY**, Hydraulic Engineer, 70, Strand, and Bridgefield, Wandsworth.

P.S. IMPORTANT TO FARMERS, &c.—F.R. begs leave to call attention to his New Water Power, which in many cases will supersede the use of the Steam Engine.

### BY HER MAJESTY'S ROYAL LETTERS PATENT.



**ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.**—For Horticultural Buildings in Wood or Metal.

HORTICULTURAL BUILDING WORKS, CHICHESTER.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

### IMPROVED GRASS-CUTTING AND ROLLING MACHINE FOR CUTTING THE GRASS OF LAWNS, &c. NEW AND POWERFUL DOUBLE-ACTING LIFT AND FORCE PUMP

FOR LIQUID MANURE AND GARDEN AND GENERAL PURPOSES. Drawings, particulars, and testimonials forwarded free on application to **WILLIAM DODDS & CO., 102, Leadenhall Street, London.**

**BAKER'S PHEASANTRY**, Beaufort Street, King's Road, Chelsea, by special appointment to her MAJESTY and H.R.H. PRINCE ALBERT.—ORNAMENTAL WATER FOWLS, consisting of Black and White Swans, Egyptian, Canada, China, Barnacle, Brent, and Laughing Geese, Shieldrakes, Pintail, Widgeon, Summer and Winter Teal, Gadwall, Labrador, Shovelers, Gold-eyed and Dun Divers, Carolina Ducks, &c., domesticated and pinnated; also Spanish, Cochon China, Malay, Polard, Surrey, and Dorking Fowls; White, Japan, Pied, and Common Pea-fow, and Pure China Figs; and at 3, Half-moon Passage, Gracechurch Street, London.



## HOME-GROWN AGRICULTURAL SEEDS.

**M. R. JACKSON** having grown on his Farm last Summer a few hundred-weight of good Seed of that excellent large Red Cattle Carrot, the true long ALTRINGHAM, offers it genuine at 9s. per stone or 1s. 6d. per gallon; also Seeds of four of the best varieties of Swedish and three of the best varieties of Yellow Hybrid Turnips, all transplanted and well grown. A Descriptive Catalogue and present prices, with references to some of the most extensive Farmers in Yorkshire and Durham as to their great superiority over all others, forwarded on receipt of one postage stamp.

Scruton House, Bedale, Yorkshire, April 2.

## BASS AND BROWN'S SEED AND PLANT LIST

FOR 1853, free, for three penny stamps. Also, the AUTUMN CATALOGUE for three penny stamps, which contains the Roses, Herbaceous Plants, Hollyhocks, and other select Hardy Plants and Shrubs, Fruits, &c.; also the Cinerarias, Azalea Indica, &c.

## VEGETABLE SEEDS.

ASSORTED COLLECTIONS OF THE FINEST QUALITY.

Time of sowing and other information is furnished in the Catalogues, also the sorts and quantities of the No. 1, 2, and 3 Collections. If any sorts are not wished for, enlarged quantities of others furnished to make up the amount.

No. 1. Collection of largest quantities of choice and new sorts	£ s. d.
No. 2. Collection of smaller quantities	1 10 0
No. 3. Collection of do.	1 0 0
No. 4. Collection of fine and esteemed sorts	0 10 6

## FLOWER SEEDS—BEST ASSORTMENTS.

Free by post, with cultural instructions.

The Catalogue gives height, colour, months of flowering, hardness, duration, &c.

For an Abridged List of New Varieties, with a few not included in the Catalogue, see *Gardener's Chronicle* of January 29th and February 12th.

100 varieties select showy Annuals, including the newest	15 0
50 varieties, 8s. 6d.; 30 varieties, 5s. 6d.; 20 varieties	4 0
20 varieties best Dwarf Annuals, in large packets, for sowing in lawns, &c., 7s. 6d.; 12 varieties	5 0
20 varieties choice Greenhouse Annuals	7 6
12 varieties do.	5 0
20 varieties choice Greenhouse Perennials	10 6
12 varieties do.	7 6
20 varieties choice hardy Biennials and Perennials	7 6
12 varieties do.	5 0

## IMPORTED GERMAN SEEDS, in separate colours, very double.

24 superb varieties Dwarf Stocks, 4s.; 12 varieties	2 6
10 superb varieties new large flowering Stocks	2 6
18 superb varieties Wallflower-leaved do.	3 6
New white Wallflower leaved, very fine, 6d.; large pkt.	1 0
6 superb varieties Autumn Brompton Stock	1 6
8 superb varieties Emperor Stock	2 0
New White Emperor do, very choice, per packet	1 0
12 superb varieties German Aster	2 6
12 superb varieties Globe flowering	2 0
12 superb varieties Pyramidal	2 0

Also superb double imported Wallflower, Larkspur, Balsam, Senecio elegans, Cocksfoot, Sweet William, &c. See Catalogue. Remittances requested from unknown Correspondents. Post Office Orders payable to STEPHEN BROWN, or the Firm.

In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods to the amount of 20s. and upwards, free to all the Stations in London; also free, as before, to all Stations on the London and Norwich Line, via Colchester.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## SEEDS CARRIAGE FREE.—SEE BELOW.

## NEW FARM SEEDS—1853.

**RENDLE'S NEW CATALOGUE** is just published, and can be had on application, in exchange for 1d. stamp.

It contains descriptions of all kinds of Agricultural Seeds, with prices for every article, and will be found very useful to all Agriculturists, and those who take an interest in the cultivation of the soil.

**EVERGREEN RYE-GRASS, or DEVON EVER.**—This is a most valuable Grass for permanent pasture, and should be sown on all land where a fine Perennial and Evergreen Grass is required.

The Subscribers have contracted with some large growers in this County (Devonshire), and can supply the genuine article, free from noxious weeds, at 6s. per bushel.

**TRUE MAIR, or COW GRASS.**—The West of England is famous for this excellent variety of Cow Grass, which is of very permanent duration, and can be obtained GENUINE at the lowest market prices.

**PERMANENT PASTURE GRASS SEED,** in mixtures to suit various soils and situations, at the lowest prices.

The Subscribers have devoted much care and attention to this particular branch of the Seed Trade; and the large and increasing patronage they are daily receiving is the best proof they can offer of the quality and genuineness of the Seeds they supply.

**FINE LAWN GRASS, for Lawns, Pleasure Grounds, or Ornamental Parks.**—The very finest Evergreen Grasses are selected for this purpose, and a fine sward will be obtained in a very short time, at less than a quarter the price of laying down Turves. Price 2s. per bushel; 3s. per gallon; or 1s. 3d. per lb.

**TRUE ITALIAN RYE-GRASS.**—The Subscribers have a very large stock, and if a quantity above 10 bushels is taken, the price will be reduced to 5s. per bushel.

**LARGE ALTRINGHAM CATTLE CARROT.**—The Subscribers can offer more than 2 tons of this excellent variety, at 60s. per cwt., or 6d. per lb.

**MANGOLD WURZEL,** all the varieties, 1s. per lb.

**BE-HOPS LAST and BEST PEA,** for field culture, 16s. per bushel, or 2s. 6d. per gallon.

**SCOTCH PERENNIAL RYE-GRASS,** 5s. per bushel; or 4s. per bushel, if a quantity above 20 bushels be taken.

**GRANITIC SEED BARLEY,** grown by George W. Fowler, Esq., on Dartmoor, at an elevation of 1100 feet, saved last autumn in brilliant weather. 6s. per bushel.

All Orders for Seeds above £2 will be delivered CARRIAGE FREE to most of the Steam Ports in England and Ireland, and all the Railway Stations in the South and West of England.

For Catalogues and particulars apply to **WILLIAM E. RENDLE & Co.** Seedsmen by appointment to the South Devon Agricultural Society, and Royal Agricultural Society, Prince Edward's Island.

## SPECIAL CONTRACTS.

Noblemen, Clergymen, or Gentlemen requiring large quantities, special contracts can be made, at a great reduction in price.

**FLOWER SEEDS, FREE BY POST.**—The Subscribers have a very superior stock of all the newest kinds, and as some of the choicest varieties are grown under their own inspection, they can warrant them to be quite new and correct to name.

## SCALE OF PRICES, SENT POSTAGE FREE.

No. 1.—100 Packets (choice sorts), including all the best hardy, half-hardy, and Greenhouse Annuals, Biennials, and Perennials	25s.
No. 2.—50 ditto ditto ditto ditto	15s.
No. 3.—25 ditto ditto ditto ditto	8s.

Their Collections of Flower Seeds will be made up in packets with Ayres' and Moore's Labels, with cultural advice.

## SUPERIOR GLOBE GERMAN ASTER.

(SAVED BY AN AMATEUR EXPRESSLY FOR THE SUBSCRIBERS.)  
They have much confidence in offering a very superior sort of Globe Aster Seed, saved by an amateur in the neighbourhood of Bath, who says:—"The sort was given to me by a friend in the neighbourhood, who has taken first prizes for several years following; and I have been equally successful. I have shown them at Bath and other places, and have always been first; indeed, no other sort has any chance with them, and I am perfectly confident that when you see a good bed of them in your gardens, you will throw away all others." 1s. per packet.

## GERMAN FLOWER SEEDS.

They have received a very choice assortment of all the best imported Stocks, Asters, Balsams, Larkspurs, Cockscombs, Hollyhocks, &c., from one of the first houses on the Continent, and which can be highly recommended.

Full Descriptive Catalogues can be had on application, which can be had in exchange for one penny stamp.

Apply to **WILLIAM EGGUMBE RENDLE & Co.** Seed Merchants Plymouth.—All Flower Seeds sent free by post.

## DIGGING MACHINE.—SAMUELSON'S PATENT.

**MR. BURGESS** having witnessed a most successful trial of this Machine, made in the presence of a number of the leading agriculturists of the district of Banbury, we have made arrangements for an agency for the sale of the same.—**BURGESS & KEY**, 103, Newgate Street; and 52, Little Britain, London.

## LIQUID MANURE PUMPS AND GUTTA

**PERCHA TUBE**, by which Liquid Manure or Water can, by manual labour or steam power, be distributed over land at any distance, at a very trifling cost. Copies of Testimonials and Prices sent on application.—**BURGESS & KEY**, 103, Newgate Street; and 52, Little Britain, London.

**BENJAMIN EDGINGTON, MARQUEE, TENT, FLAG, and RICK CLOTH MANUFACTURER**, 2, Duke-street, London Bridge, Southwark.

**EMIGRANTS' GROUP MEETING.**—"No one must expect to get a house or lodgings at Port Phillip—every one must be provided with a tent."—(See Mrs. Chisholm's Address, reported in the Times, July 23.)

**BENJAMIN EDGINGTON** invites all who are embarking for the Colonies, or the Gold Regions, to inspect his EMIGRATION Tent. A lofty and extensive warehouse has been added to the premises, where a variety of Tents are erected, so that settlers and others may select at once the Tent best adapted for their purpose.

N.B.—THE CHISHOLM TENT, price 3l. 10s., is manufactured by **BENJAMIN EDGINGTON**.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

## BEDDING AND FURNITURE MANUFACTORY.

Persons furnishing, who consider good taste, durability, and economy a desideratum, should not fail to visit this celebrated Furnishing establishment before deciding elsewhere, the Furniture Galleries, Show Room, and Factory being the most extensive in London, containing an assemblage of the most fashionable Cabinet Furniture, Upholstery, Carpets, Bedsteads, Bedding, &c., unequalled in magnitude and variety, the whole being of a superior class as to style and manufacture. The prices, which are marked in plain figures, will be found less than is usually charged for articles of a very inferior description. At this establishment parties can make their own calculations, avoiding the annoyance of delusive estimates and delay, a written warranty is also given. Books containing Designs of Bedsteads, with the weight, size, and price of Bedding, forwarded post free. Patent Folding Iron Bedsteads, 13s. 6d. each; Mahogany Wash-basins, with Marble tops, 30s. each.

**DRUCE & Co.**, 65, 69, and 58, Baker Street; Factory, 4, King Street, Portman Square, London.—N.B. Special arrangements made for the conveyance of goods into the country.

## HARDS' FARINACEOUS FOOD, for INFANTS

and INVALIDS.—This celebrated food for the Infant and Invalid is sold by all Chemists and Druggists, Patent Medicine Vendors, Grocers, Tea-dealers, Italian Warehousemen, and Confectioners, in packets of 1s. and 2s. each; also family cases, 7s. 6d. Please to observe all genuine packets and cases are signed "Jas. Hards" and manufactured at the Royal Victoria Mill, Dartford, Kent.

## HOLLOWAY'S PILLS.—EXTRAORDINARY

CURE OF PALPITATION OF THE HEART.—Mr. John Baker, of Wordsley, states, in a letter to Prof. HOLLOWAY, that a few years ago he was under medical treatment in the Queen's Hospital, Birmingham, for palpitation of the heart, but returned home without deriving any benefit. He then tried HOLLOWAY'S PILLS, which gave him immediate relief, and in a short period his health was so much improved as to enable him to resume his employment. A short time since, however, he was seized with violent sickness and vomiting of blood, from which he has entirely recovered by having recourse to these invaluable Pills, and he now enjoys excellent health.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

## BEAUTIFUL HAIR, WHISKERS, EYEBROWS,

&c.—CRINITIAL is the only preparation that can be relied upon for the growth of hair and whiskers, the restoration of hair in baldness, strengthening weak hair, preventing it falling off, and checking greyness. Persons who have been deceived by similarly named imitations will find that the genuine article has no equal. In pots and bottles 2s. each, through all druggists; or sent free by post for 24 penny stamps, addressed to Madame CORRELL, Elv Place, Holborn, London. "It restored my hair after every thing else had failed." Miss Small, Dorking. "The young man has now a good pair of whiskers." Mr. Yates, hairdresser, Malton. "It is the only preparation I can recommend."—Dr. Lee, Professor of Chemistry.

## A PRIZE MEDAL FOR SUPERIOR LOCKS

WAS AWARDED TO J. H. BOOBYER, AT THE GREAT EXHIBITION OF 1851.

**THE CELEBRATED AGRICULTURAL DIGGING FORK, PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools.** Mole Traps, 6s. per dozen. Carpenters' and Smiths' Tools, &c. Best fine cut Clasp and Rose Nails at the lowest reduced prices. Sword-scrappers for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.; at J. H. BOOBYER & Co.'s (late STRUCH & BOOBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope Street, Clare Market, London. Established nearly 200 years for the sale of goods from the best Manufacturers at the lowest prices. Goods forwarded to any part on the receipt of remittance.

**COCHIN CHINA AND MALAY FOWLS.**—An Amateur having obtained some of the above Birds of pure breed, and having more Eggs than he requires for his own consumption, is willing to dispose of a few at 9s. per dozen, packed in a box, and forwarded to any part on receipt of a Post Office Order for the amount to **KEUBEN WARLEY**, 22, Belgrave Terrace, Queen's Road, Dalston. Also a few of the above Birds for sale very cheap.

**COCHIN CHINA EGGS**, from light-coloured and heavily-feathered birds, bred by Thomas Sturgeon, Esq., may be had on application to **CHARLES FRENCH**, Surveyor, Grays, Essex.—Price 12s. per dozen.

**COCHIN CHINA EGGS.**—An Amateur, who has some very handsome Cochin China Fowls, of a pure breed, Cinnamon and Buff, good in weight and symmetry, is willing to dispose of some Eggs, at 7s. per dozen. Payment, by Post Office order.—Address, X. Y., Post Office, Farnham, Surrey.

## MASON'S PHEASANTRY: EGGS FOR HATCHING.

ING.—Cochin China Fowls' Eggs from buff birds of Lovell's, Stairston's, Purnard's and other admired strains, 1s.; and white-faced Spanish from Poole's, Davey's, Gate's, Owen's, and other London breeders, 8d. each—box, &c., 1s. extra; forwarded on receipt of Post-office order. Eggs from first-rate gold and silver-laced Sebright Bantams, shortly. The above Fowls and Fancy Pigeons for Sale. Apply to **TIMOTHY MASON**, King's Cottage, North End, Fulham, London, near Hammersmith Gate, where the Birds may be seen.—Letters to inclose stamp.

## Sales by Auction.

## COCHIN CHINA FOWLS.

PERIODICAL SALE ON TUESDAY, APRIL 5.

**MR. J. C. STEVENS** begs to announce that the next Sale of **FANCY POULTRY** will take place at his Great Room, 38, King Street, Covent Garden, on **TUESDAY**, 5th April, at 12 o'clock precisely. There are many choice specimens of **COCHIN CHINA FOWLS**, including some white Birds, bred by Mrs. Herbert, which took 1st prize at Birmingham, 1851, and many Buff Birds of great merit.—Catalogues will be forwarded, on receipt of a stamped directed envelope, enclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

## TO PLANT EXHIBITORS AND OTHERS.

**MR. J. C. STEVENS** has received instructions from Mr. W. J. Epps, Bower Nurseries, Maidstone, to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on **FRIDAY**, April 22, from 50 to 100 of the **FINEST SPECIMEN PLANTS** possible, consisting of Ericas, Azaleas, Fimeleas, Polygalas, &c. The Ericas comprise the finest and most healthy plants known, and beautifully set with flower, of the following: *Ferruginea*, *retorta* major, *albata*, *Wilsonii*, *tortuosiflora*, *Albertii* superb, *Cavendishii*, *Massonii*, *Savileana*, *Hartnellii*, *vasiflora*, *elegans*, &c. Azaleas, double red (magnificent plant) *Lateritia*, *variegata*, *Unionigeseens*, *Incomparable*, *Gledastensis*, *Hebe*, *exquisita*, &c.—Catalogues are preparing, and will be forwarded in due course.

## ORCHIDS.

**MR. J. C. STEVENS** begs to notify that the first Sale of ORCHIDS for this season will take place at his Great Room, 38, King Street, Covent Garden, on **FRIDAY**, 8th of April. It comprises a CHOICE and VALUABLE COLLECTION OF ESTABLISHED PLANTS of *Phalenopsis amabilis* and *grandiflora*, *Saccolabium guttatum*, *Aerides*, *Cattleyas*, &c., &c., the property of a gentleman going abroad. Catalogues will be forwarded in due course.

## TO GENTLEMEN, FLORISTS, AND OTHERS.

**MESRS. PROTHEROE AND MORRIS** will Sell by Auction, at the Mart, Bartholomew Lane, London, on **THURSDAY**, April 7, and following day, at 12 o'clock, a first class collection of **CARNATIONS and PICOTEES**, 300 Superb Standard and Dwarf Roses, a selected assortment of Ornamental Trees and American Plants, Dahlias in roots, Peonies, Ranunculus; together with an assortment of Annual, Biennial, and Perennial Flower Seeds. On view morning of Sale.—Catalogues may be had at the Mart, and of the Auctioneers, Leytonstone.

## ISLINGTON NURSERY.

## TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

**MESRS. PROTHEROE AND MORRIS** are instructed to submit to public competition by Auction, on the premises, about the latter end of April (if not previously disposed of by private contract), the Erections of Greenhouses, containing a large quantity of Glass, Iron Columns, York and Valencia Paving, Ancient Castles, Twisted Stone Columns, Flues, Furnaces, Fittings of Seed Shop and Counting-house. Also large Camellias, Dahpne odoras, 3000 or 4000 Mezereon Stocks in Pots, Cactus fulgidus, Geraniums, &c., together with the Stock, Brickwork, &c. American Nursery, Leytonstone, Essex.

## FARMING IMPLEMENTS, LIVE STOCK, MARQUEE, QUANTITY OF USEFUL IRON WORK, ETC.

**MR. FRED. GODWIN** will sell by Auction, at Gunter's Farm, Earl's Court Road (near the turnpike), on **THURSDAY**, the 14th April, at 12 for 1 o'clock, Farming Implements, Ploughs, Suffolk Wheel Dray, five Carts, two Wash Carts, three Waggons, four Horses, two fat Hifers, one Alderney Heifer, three Alderney Cows, 18 Pigs, one Sow, two large glazed Forcing Pits, a Marquee by Edgington, bags of Seed, useful Iron Work in Stoves, Pans, Pumps, Tanks, Rails, Bells, Cart and Wagon Work.—On view two days prior to the Sale; and Catalogues had at the Lodge; at the Drayton Arms, Earl's Court; the Goat in Boots, Little Chelsea; and at the Auctioneers' Offices, 3, Halkin Terrace, Belgrave Square, London.

## VALUABLE HOTHOUSE AND GREENHOUSE PLANTS.

LAWRENCE WESTON HOUSE, HENRY, NEAR BATHIST.

**MESRS. J. TAYLOR AND SON** have the honour to announce that they are instructed by **ROBERT OSBORNE**, Esq., to submit for unsold Sale by Auction, on the Premises, on **WEDNESDAY** next, April 6, at 11 o'clock, the whole of the Choice and very valuable **HOTHOUSE and GREENHOUSE PLANTS**, consisting of large, well-grown Specimens of Indian Azaleas, Camellias, Ixoras, and other rare Exotics; Pitt Frames and Lights, Hothouse Bolsters and Pipes, &c. &c.—Catalogues may be had of the Auctioneers, Westbury-upon-Trym, near Bristol.



# ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

## ANNUAL COUNTRY MEETING FOR 1853,

FOR THE SOUTH-WALES DISTRICT, COMPRISING THE WHOLE OF SOUTH WALES, WITH THE ADDITION OF THE COUNTIES OF GLOUCESTER, HEREFORD, MONMOUTH, AND WORCESTER;

TO BE HELD AT THE

CITY of GLOUCESTER, in the Week Commencing MONDAY, the 11th of JULY.

### PRIZE SHEET FOR AGRICULTURAL IMPLEMENTS AND MACHINERY.

ALL PRIZES of the ROYAL AGRICULTURAL SOCIETY OF ENGLAND are Open to General Competition; Members of the Society having the Privilege of a Free Entry, while Non-Subscribers are allowed to compete on the payment of 5s. on each Certificate.

Forms of Certificate may be obtained on application to the Secretary, 12, Hanover Square, London. All Certificates for the Entry of Implements, &c., must state the total number of articles entered to be shown by each Exhibitor, and the space required for their exhibition; and they must be returned, filled up, to the Secretary, before the FIRST of MAY, 1853, the Council having decided that in no case whatever shall any such Certificate for Implements be received after that date.

### PRIZES.

No. of Prize.	No. of Prize.
1. For the Plough best adapted for general purposes ... .. 7	28. For the best Portable Steam Engine, not exceeding 6-horse power, applicable to Threshing or other Agricultural purposes ... .. 20
2. For the Plough best adapted for deep ploughing ... .. 7	For the second best Portable Steam Engine, not exceeding 6-horse power, applicable to Threshing or other Agricultural purposes ... .. 10
3. For the best One-way or Turn-wrest Plough ... .. 7	29. For the best Fixed Steam Engine, not exceeding 8-horse power, applicable to Threshing or other Agricultural purposes ... .. 29
4. For the best Pairing Plough ... .. 5	For the second best ditto ditto ... .. 18
5. For the best Dynamometer, especially applicable to the Traction of Ploughs, and indicating the extent of work done ... .. 5	30. For the best Portable Threshing Machine, not exceeding 2-horse power, for small occupations ... .. 1
6. For the best Subsoil Pulveriser ... .. 5	31. For the best Portable Threshing Machine, not exceeding 6-horse power, for larger occupations ... .. 15
7. For the best Machine for making Draining Tiles or Pipes for Agricultural purposes ... .. 10	32. For the best Portable Threshing Machine, not exceeding 6-horse power, with Shaker, Riddle, and Winnow, that will best prepare the Corn for the finishing Dressing Machine; to be driven by Steam ... .. 20
8. For the best Instruments for Hand-use in drainage ... .. 3	33. For the best Fixed Threshing Machine, not exceeding 6-horse power, with Shaker, Riddle, and Winnow, that will best prepare the Corn for the finishing Dressing Machine; to be driven by Steam ... .. 29
9. For the best Heavy Harrow ... .. 5	34. For the best Corn Dressing Machine ... .. 5
10. For the best Light Harrow ... .. 5	35. For the best ditto ditto for small occupations ... .. 5
11. For the best Cultivator, Grubber, and Scarifier ... .. 10	36. For the best Grinding Mill for Breaking Agricultural Produce into Meal ... .. 10
12. For the best Pair-horse Scarifier ... .. 5	37. For the best Linseed and Corn Crusher ... .. 5
13. For the best Drill for general purposes ... .. 10	38. For the best Chaff Cutter, to be worked by horse or steam power ... .. 10
14. For the best Steeple Corn and Turnip Drill ... .. 10	39. For the best Chaff Cutter, to be worked by hand power ... .. 5
15. For the best Drill for small occupations ... .. 5	40. For the best Turnip Cutter ... .. 5
16. For the best and most economical small-occupation Seed and Manure Drill for flat or ridged work ... .. 5	41. For the best Oilcake Breaker for every variety of Cake ... .. 5
17. For the best Turnip Drill on the flat ... .. 10	42. For the best ditto for Thin Cake ... .. 3
18. For the best Turnip Drill on the ridge ... .. 10	43. For the best and most economical Steaming Apparatus for general purposes ... .. 5
19. For the best Dropping Machine, for depositing seed and manure ... .. 10	44. For the best and most economical Machine for preparing unsteeped Flax Straw for market, by manual or other labour ... .. 10
20. For the best Manure Distributor ... .. 10	45. For the best Churn ... .. 3
21. For the best Horse Hoe on the flat ... .. 5	46. Miscellaneous Awards and Essential Improvements, Fourteen Silver Medals estimated at 21
22. For the best Horse Hoe on the ridge ... .. 5	47. For the Invention of any New Implement, such sum as the Council may think proper to award.
23. For the best collection of Agricultural Tools for hand-labour ... .. 5	
24. For the best Reaping Machine ... .. 20	
25. For the best Mowing Machine, for Natural and Artificial Grasses ... .. 10	
26. For the best One-Horse Cart for general purposes ... .. 5	
27. For the best Light Waggon for general purposes ... .. 10	

SPECIAL PRIZE OFFERED BY PHILIP PUSEY, Esq.

For the best Water Drill to Drill Four Rows of Turnips, with Artificial Manures, on the flat ... .. £10.

### CONDITIONS.

Prize No. 5.—The preference will be given to the Dynamometer indicating the width, depth, and length of furrow, as well as the resistance offered.

Prize No. 7.—With the Draining Tile or Pipe Machine, specimens of the tiles or pipes will be required to be shown in the yard; the price at which these have been sold must be stated, and will be taken into consideration; and proof of the working of the machine itself to be given to the satisfaction of the Judges. Every Exhibitor will be expected to bring a die 2½ inches diameter, with the button or triblet 2 inches in diameter, with dies of other sizes varying from 1 to 4 inches, or larger, and buttons or triblets of corresponding dimensions.

Prize No. 13.—The Drill for general purposes will be preferred which shall possess the most approved method of distributing compost or other manure, in a moist or dry state, the power of depositing small and large quantities being especially considered. Other qualities being equal, the preference will be given to the drill which may be best adapted to cover the manure with soil before the seed is deposited.

Prize No. 16.—The Small Occupation Seed and Manure Drill will not compete with the drill of a higher price, as its cheapness to the purchaser will be a material consideration.

Prizes Nos. 17 and 18.—The Turnip Drills on the flat and ridge, respectively, will be preferred which shall possess the most approved method of distributing compost or other manure in a moist or dry state, the power of depositing large and small quantities being especially considered. Other qualities being equal, the preference will be given to the drill which may be best adapted to cover the manure with soil before the seed is deposited.

Prize No. 20.—The Manure Distributor will be preferred which is best adapted for distributing broadcast any kind of compost or hard-illage, when in a moist or dry state; and which is capable of adjustment for the delivery of any quantity from 5 to 40 bushels per acre.

Prize No. 28.—The Portable Steam Engine must not be more than 6-horse nominal power; the diameter of the cylinder not to exceed 3½ inches. The Exhibitor will be required to furnish to the Society, along with the specification, a longitudinal and transverse sectional plan of the boiler, showing the action of the fire upon the flues; and also to state in writing the thickness and quality of the boiler plates, as well as the diameter of the cylinder, the length of stroke of the piston, the number of revolutions of the crank-shaft (with its diameter, and whether made of wrought or cast-iron), the diameter and weight of the fly-wheel, the diameter of the driving pulley, which should not be less than 5½ inches wide, nor move at a rate less than 1600 feet per minute, the number of horse power the engine is calculated to work at, the probable time it will require to generate the steam, taking water at 60°, and raise it up to the working pressure (not to exceed 45 lbs. on the square inch), the quantity of fuel it will consume in getting up the steam, and the consumption of fuel for every hour it is in full work. The engine must be provided with a good water-gauge, and with a short piece of pipe fitted with a cock, having a thread to fit the ¼-inch gas-pipe, for the purpose of fixing a pressure-gauge. Also a 2-inch cock must be attached to the steam-chest of the boiler, such cock to have the usual gas-thread for the purpose of taking steam from the boiler, should the Society require to do so. The Society will be empowered to select any engines for the purpose of driving other machinery under trial, and will pay the

Exhibitor 11. a day for the use of the engine and a competent attendant, during the time the service of such engine may be required. In adjudicating on the merits of the portable engines, reference will be had to the portability of the engine, without losing sight of the strength required for safety, and which will be best secured by the free use of wrought-iron in lieu of cast.

Prize No. 29.—The Fixed Steam Engine must not be more than 8-horse power, the diameter of the cylinder not to exceed 10½ inches; the Exhibitor will not be required to bring a boiler, as steam will be furnished by boilers supplied by the Society; but he will be required to fix the engine, also to find the materials for doing so, at his own expense, and in such a position in the trial-yard as may be pointed out to him. He must also furnish the Society with plans and specifications, describing fully the boiler and fittings that he would supply to his customer with the engine he exhibits. The drawings must show fully the forms of the flues, and the mode of setting the boiler; and the specification must describe the quality of the iron and the thickness of the plates in the boiler, the distance and diameter of the rivets, also the leading particulars of the engine he intends to exhibit, such as horse-power of the engine, diameter of the cylinder, length of stroke, number of strokes per minute, diameter of crank-shaft (and whether it is made of wrought or cast-iron), diameter and weight of fly-wheel, diameter of driving-pulley, which should not be less than 6 inches wide, nor travel less than 1200 feet per minute. The drawings and specifications relating to the Prize Engines will remain the copyright property of the Society. The engine exhibited must be supplied with a governor, and have a starting cock to regulate the supply of steam, and be fitted with a thread equal to the 2-inch gas-pipe. The Judges will be instructed to employ in the trial of the steam engines an apparatus known as a Force Resistor, as a test of power, such apparatus consisting of a friction brake, to supply and regulate the friction required to balance the power of the engine, as well as to show the utmost resistance for any quantity of power the engine on trial may require.

Consumption of Fuel.—The quantity of fuel consumed by each engine will be strictly ascertained by the Judges.

Hand and Power Machines.—The Exhibitors of such machines as are usually worked by hand must provide and fix on them pulleys not less than 4 inches wide, such pulleys to be equal in diameter to twice the length of the winch that the machine is usually worked with. The Exhibitors of machines that require to be driven by power must fix on them pulleys of sufficient diameter and width, that they may be easily driven by straps.

Speed and Pressure.—1. All implements turned by the winch or hand-crank shall not be worked at any trial beyond the following speed, namely, 40 revolutions per minute for 12-inch crank, 35 revolutions for 14-inch crank, 30 revolutions for 16-inch crank. 2. In machinery driven by horse-power, the utmost speed that the horses shall be driven at during any trial shall not exceed 2½ miles per hour, or 198 feet per minute. 3. Steam machinery shall under no circumstances be allowed to compete at any trial with a greater pressure than 45 lbs. per square inch in the boiler; at which pressure it will be expected that the engine shall work up to the power declared by the Exhibitor.

\* \* \* Copies of the General Regulations, &c., of the Exhibition may be had on application to the Secretary. The Prizes and Conditions for Live Stock when finally settled will form the subject of distinct Advertisement.

(By Order of the Council.)

JAMES HUDSON, SECRETARY.

London, March 19.

### POLYANTHUS SEED.

TO THE LOVERS OF THAT BEAUTIFUL EARLY SPRING FLOWER—THE POLYANTHUS.

JAMES WOODS has again this year a large quantity of Polyanthus Seed, which he can recommend with confidence, saved from none but named and good faced flowers. Price 1s. per packet, or sent free on receipt of 13 postage stamps to JAMES WOODS, Florist, Harwich, Essex.

### SHORT GRASSES.

FINE GRASS LAWNS IN FLOWER GARDENS, &c.—The great expense of cutting and carting turves from a distance may be avoided, and a superior Turf produced in a few weeks, by sowing SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds.

From the Rev. Theophilus Sauls, Gravelley Parsonage, Feb. 13, 1852. "As you are passing through Gravelley, I wish you would call and see my garden lawn, pasture, and churchyard, which I sowed last spring with your seeds, and this time last year was only a Bean field, but now a beautiful close green sward, and I am happy to say free from weeds."

From Edingthorpe Rectory, August 20, 1852.

"The Grass seed you sent me was most excellent. Three months ago I had no lawn at all; I have now a close, short, verdant lawn, and it is the wonder of my friends."

Great improvement may be effected in old Lawns by sowing about 20 lbs. to the Acre of these Seeds; for the formation of new Lawns twice that quantity will be necessary.

Price 1s. 3d. per pound; 3s. per gallon, or 21s. per bushel. Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

### "ENGLAND'S GLORY" FUCHSIA.

JOHN HARRISON begs to inform his Friends and the Public generally, that he intends to send out in April the above-named splendid FUCHSIA, which has been the admiration of everyone who has seen it, and is allowed to be the best White Fuchsia in cultivation. Plants 10s. 6d. each; one plant will be presented when three are ordered. Catalogues of Roses, Evergreens, and Deciduous Shrubs, Greenhouse Plants, Dahlias, Hollyhocks, and other Florists' Flowers can be had on application. Nursery, Darlington, April 2.

### CHOICE PANSIES, &c.

12s. the Set.  
Almanzor (Thomson)  
Adela (Turner)  
Androcles (Youell)  
Commander-in-Chief (Youell)  
Conductor (Thomson)  
Diamant (Fellowes)  
Elegantissima (Thomson)  
Golden Drop (Hart)  
Helen (Hunt)  
Juventa (Hooper)  
GERANIUMS.—Lord Mayor (Black), Mochana and Flavia (Hoyle), 12s. the set.  
FANCY GERANIUMS.—Albion, Charlotte Grist, Jenny Lind, Lady Rivers, Marion, Odette, Princess Maria Galitzin, Perfection, Prince Albert, Reine des Fleurs, Reine des Français, Prima Donna, 12s. the set.  
If the three selections are taken, they will be charged 30s.; warranted healthy plants. Fine Picotees, Pansies, Double Rockets, 4s. per dozen; Primula sinensis, mixed, and fine Antirrhinum, 1s. per packet.  
HART & NICKLIN, 132, High Street, Guildford, Surrey.

### "LARGE EVERGREENS FOR SALE."

APRIL THE BEST MONTH FOR TRANSPLANTING. GEORGE BAKER begs to announce that he has a large Stock of WEEPING and GREEN HOLLIES, from 1 to 10 feet high; having been recently removed, they will transplant without risk. Also very fine Spruce Firs, from 3 to 8 feet high; Abies Canadensis, 5 to 10 feet. Fine specimen American Plants, Kalmias, Rhododendrons, Azaleas, Andromeda, Ledums, &c. Prices may be had on application.—American Nursery, Windlesham, near Bagshot, Surrey.

N.B.—Descriptive catalogues may be had by enclosing two postage stamps.

### MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS and Co., will be happy to forward their Priced List of Turnips, Carrots, Mangold Wurzel, and other Agricultural Seeds for the present season. Their mixtures for laying Land down to Permanent Meadow and Pasture are ready, price 30s. per acre, allowing 2 bushels and 12 lbs. to each acre. Mixtures for two or three years' lay, or rotation cropping, 22s. to 24s. per acre. Mixed sorts for improving old Grass Land, 1s. 2d. per lb. Fine sorts for forming Lawns, &c., 1s. 3d. per lb. Directions for Sowing and Treatment will accompany the Seeds.—Address,

26, Down Street, Piccadilly, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLER EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed, to the Editor.—SATURDAY, APRIL 2, 1853.







## SEEDS CARRIAGE FREE.—SEE BELOW.

## NEW FARM SEEDS—1853.

**RENDLE'S NEW CATALOGUE** is just published, and can be had on application, in exchange for 1d. stamp.

It contains descriptions of all kinds of Agricultural Seeds, with prices for every article, and will be found very useful to all Agriculturists, and those who take an interest in the cultivation of the soil.

**EVERGREEN RYE-GRASS, or DEVON EVER.**—This is a most valuable Grass for permanent pasture, and should be sown on all land where a fine Perennial and Evergreen Grass is required.

The Subscribers have contracted with some large growers in this County (Devonshire), and can supply the genuine article, free from noxious weeds, at 6s. per bushel.

**TRUE MARL or COW GRASS.**—The West of England is famous for this excellent variety of Cow Grass, which is of very permanent duration, and can be obtained GENUINE at the lowest market prices.

**PERMANENT PASTURE GRASS SEED,** in mixtures to suit various soils and situations, at the lowest prices.

The Subscribers have devoted much care and attention to this particular branch of the Seed Trade; and the large and increasing patronage they are daily receiving is the best proof they can offer of the quality and genuineness of the Seeds they supply.

**FINE LAWN GRASS,** for Lawns, Pleasure Grounds, or Ornamental Parks.—The very finest Evergreen Grasses are selected for this purpose, and a fine sward will be obtained in a very short time, at less than a quarter the price of laying down Turves. Price 20s. per bushel; 3s. per gallon; or 1s. 3d. per lb.

**TRUE ITALIAN RYE-GRASS.**—The Subscribers have a very large stock, and if a quantity above 10 bushels is taken, the price will be reduced to 5s. per bushel.

**LARGE ALTRINGHAM CATTLE CARROT.**—The Subscribers can offer more than 2 tons of this excellent variety, at 50s. per cwt., or 6d. per lb.

**MANGOLD WURZEL,** all the varieties, 1s. per lb.

**BISHOP'S LAST and BEST PEA,** for field culture, 15s. per bushel, or 2s. 6d. per gallon.

**SCOTCH PERENNIAL RYE-GRASS,** 5s. per bushel; or 4s. per bushel, if a quantity above 20 bushels be taken.

**GRANITIC SEED BARLEY,** grown by George W. Fowler, Esq., on Dartmoor, at an elevation of 1100 feet, saved last autumn in brilliant weather. 6s. per bushel.

All Orders for Seeds above £2 will be delivered CARRIAGE FREE to most of the Steam Ports in England and Ireland, and all the Railway Stations in the South and West of England.

For Catalogues and particulars apply to **WILLIAM E. RENDLE & Co.**, Seedsmen by appointment to the South Devon Agricultural Society, and Royal Agricultural Society, Prince Edward's Island.

## SPECIAL CONTRACTS.

Noblemen, Clergymen, or Gentlemen requiring large quantities, special contracts can be made, at a great reduction in price.

## NEW VERBENAS AND PETUNIAS.

**THOMAS BARNES** will be prepared to execute orders for his superb Seedling VERBENAS and PETUNIAS by the 20th of April, in fine healthy plants, viz.:—Verbena Dane Croft variety, 5s. each; Purity, 5s. each. Also the following new Continental varieties, 2s. 6d. each, or 24s. per dozen:—Beauté de Paris, Caroline Colmans, Fulgorie, Lavexin, Luciane, Madame Barnes, Madame Ivery, Madame Lemonier, Madame Rogier, Madame Pommery, Madame Boncharlet, Mons. Duvain, Mlle. Gonnat, Princesse Marianne, Princesse Matilde, Souvenir d'Ivry. Good sorts, of last year, 6s. to 12s. per dozen; older varieties, 3s. to 5s. per dozen.

**PETUNIAS.**—Each 5s.: Lady Columbia, Rosetta, Ponceau, and Fair-Bing. Also the following new Continental varieties, 2s. 6d. each:—Cuvier, Damas, Ernest, Nina, Le Plus Ultra, Surprise, and Agreeable.

Catalogues with description of the above; also best Dahlias, Fuchsias, Chrysanthemums, &c. &c., may be had on application.

N.B. Fine collection of Bedding Plants, 3s. to 9s. per dozen, or 20s. per 100.—Dane Croft Nurseries, Stowmarket, Suffolk.

## SUPERB NEW MELON.

**AUSTEN'S "INCOMPARABLE" GREEN FLESH,** 2s. 6d. per packet; larger do., of 15 seeds, 5s.; Golden Ball Green Flesh, do., 1s. 6d.; Bromham Hall, do., 1s.; &c.

**"CAPTIVATION" & "PHENOMENA" CUCUMBERS,**

The Two Finest Black Spines in Cultivation, in packets at 2s. 6d. each; Lord Kenyon's Favourite Cucumber (true), 2s. 6d. per packet; Victory of Bath, do., 1s.; and other good varieties. A packet of Austen's "Incomparable" Melon, a packet of Golden Ball, and one of either of the above Cucumbers will be forwarded to any part on receipt of 5s. in penny postage stamps.—For further particulars of the above, see *Gardener's Chronicle* of Feb. 5.

**HOLLYHOCK SEED,** selected from one of the best collections now in cultivation; 1s. 6d. per packet.

**FIRST PRIZE GERMAN ASTER SEED.**—This is unequalled in quality of bloom for exhibition, the seed having been saved from varieties that have taken from 40 to 50 first prizes within the last 10 years; 1s. 6d. per packet.

**SWEET WILLIAM SEED,** saved from upwards of 50 distinct dwarf and superb varieties; 1s. per packet.

**ANTIRRHINUM SEED,** from all the best shaped, striped, spotted, and brilliant varieties; and if sown now, will produce plants for blooming through the whole of the season; 1s. per packet.

**ALSO Seed of that very scarce and delicious vegetable CROWN GOURD or CUSTARD MARROW,** 1s. per packet.

N.B. A remittance must accompany the order from all unknown Correspondents, in penny postage stamps, when the whole or any quantity of the above will be forwarded free to any part.

EDWARD TILEY,

NURSERYMAN and SEEDSMAN, 14, Abbey Churchyard, Bath.

## ORCHIS LONGICORNU.

**WILLIAM BARNES** begs to inform his friends and the public generally that he has a few strong PLANTS now in bloom, to offer for Sale, at 63s. each, of this beautiful Plant: a figure of which will appear in the "Florist" for May next. W. B. can with the greatest confidence recommend this as one of the most beautiful plants in cultivation, as well as being a plant that blooms through the winter and early spring months. W. B. having grown it successfully for 19 years, has given the full particulars practised by him, how to grow it, and manage it when at rest, in the Journal of the Horticultural Society of London, which appeared in January last, and was awarded a Silver Banksian Medal for it by that Society on the 1st of March, 1853; and would also refer the readers of the *Gardener's Chronicle* to the Number for October 23, 1852, where the Editor, in speaking of the Orchis, states that "Orchis longicornu, when grown as we some time since saw it grown, is one of the most charming of greenhouse plants."

A remittance is expected from unknown correspondents. Camden Nursery, Camberwell, London, April 9.

## LOBELIA "ST. CLARE."

**JAMES LAKE, NURSERYMAN, &c., Bridgewater,** begs to offer to public notice the above Seedling LOBELIA, which for brilliancy of colour, profusion of bloom, dwarfness of habit, and beauty of foliage, cannot be equalled by anything in cultivation. Strong established plants the first week in May, 3s. 6d. each, or 30s. per dozen. The usual allowance to the trade. A remittance must accompany all orders from unknown correspondents.

AGENTS.—Messrs. E. G. Henderson & Son, St. John's Wood, London; Hurst & M'Mullen, 6, Leadenhall Street, London; and Mr. Charles Turner, Slough.

## TESTIMONIALS.

*Gardener's Chronicle*, August 1852.—"The most striking we have seen; an improvement on Feu de Roi; habit, dwarf and good."

*Gardener's and Farmer's Journal*, Sept. 4.—"A very fine variety; flowers large, colour vivid and intense, foliage dark and glossy, habit dwarf."

## RARE AND BEAUTIFUL FLOWERS at the

Prices marked, or the lot for 15s., including postage:—

Per paper—s. d.

Antirrhinum, saved by an Amateur from a most superb and unique collection (unequaled in this country), recommended as being sure to produce splendid flowers, both novel in colour and exquisite in form, only in WILLIAM DENYER'S possession ... 1 0  
 Abronia umbellata, very fragrant for bedding out ... 1 0  
 Aretotis brevicaupa, a splendid new annual ... 0 6  
 Boevia chrysostoma ... 0 6  
 Collinsia multicolor, large flowered ... 0 6  
 Cenia tubinata alba, pure double white ... 0 6  
 Calceolaria, new hybrid for bedding out, splendid ... 1 0  
 Cochlearia acaulis, very dwarf and pretty ... 0 6  
 Calandrinia umbellata, splendid perennial ... 1 0  
 Coreopsis Pygmaea, new dwarf, beautiful ... 0 6  
 Delphinium triste, new Black Larkspur ... 0 6  
 Dianthus chinensis, new striped ... 0 6  
 Eragrostis namaquensis, rare ... 1 0  
 Ipomoea lutea, yellow Convolvulus ... 0 6  
 "lytanthia, splendid bright purple ... 1 0  
 Impatiens, new yellow ... 1 0  
 Incarvillea sinensis, new climber ... 1 0  
 Lophoclinium hirtum ... 0 6  
 Mimulus caeruleus ... 0 6  
 Mignonette, new Gigantic ... 0 6  
 Nemophila aurita alba oculata ... 0 6  
 Perilla nankinensis, rare ... 1 0  
 Stock Island, new yellow summer flowering ... 0 6  
 — White, wall-leaved, new hybrid ... 0 6  
 — Rose, wall-leaved, new hybrid ... 0 6  
 The above, with all the other New and Choice Flower Seeds, may be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch Street, London.

Descriptive and Priced Lists sent on application.

## EDWARD GEORGE HENDERSON and SON,

Wellington Road, Nursery, St. John's Wood, London, will, on and after the 1st of May, 1853, commence sending out the following NEW PLANTS, the entire stock of which they are the sole proprietors.

**LIBERTIA GRANDIFLORA.**—A very neat-habited greenhouse plant, of a most lovely azure blue, and very attractive, each flower being full an inch in diameter. It blossoms abundantly throughout the spring and summer months. We purchased the entire stock of Mr. Hally, Blackheath. Price 10s. 6d. each.

**GERANIUM GLAUCUM GRANDIFLORUM (INTERMEDIUM).**—A very neat dwarf and compact growing plant, flowering abundantly all the summer; of the most delicate silvery whiteness; flowers of good form, with a deep spot of crimson in the upper petals; very distinct, and one of the prettiest true hybrid Geraniums. It was awarded a Certificate of Merit, in June 1852, at the Horticultural Society's Exhibition at Chiswick. Price 10s. 6d. each.

**GERANIUM BOULE DE NEIGE.**—A white-flowering horse-shoe leaf variety, throwing up a fine truss of flowers well above the foliage. The petals of this variety are as broad as the scarlet-flowering kinds. We purchased the entire stock of Messrs. Thibaut and Keteleer, of Paris. Price 7s. 6d. each.

**LOBELIA ROI LEOPOLD.**—Azure blue, of a very dwarf compact habit, well adapted for small beds. It is the best blue in the herbaceous class of Lobelias, and was raised on the continent in 1851; at present we are in possession of the entire stock. Price 7s. 6d. each.

**ERICA BURNETTII.**—A beautiful hybrid Heath, resembling Erica hibernica in many respects, but the colour is a bright red with pure white lips; the substance is also more waxy, and the flowering season earlier; it blossoms from September to December. We purchased the entire stock of Mr. Burnett, Yorkshire. Price 10s. 6d. each.

**CALCEOLARIA GOLDEN CHAIN.**—Fine golden yellow, of great substance and fine habit, with very stout footstalks; it is decidedly the best yellow bedding variety at present in cultivation. Price 7s. 6d. each.

**CALCEOLARIA SULTANA.**—Fine large yellow, deeply spotted in the throat; habit shrubby, something in the way of C. sulphurea splendens, but its general character far surpassing that variety. Price 7s. 6d. each.

**CALCEOLARIA COMPACTA.**—A very dwarf and useful yellow variety, quite unique for its dense and abundant flowering properties; it will prove very acceptable for small beds and edging purposes. Price 5s. each.

**FUCHSIA PURPLE PERFECTION.**—This is, without exception, the finest of all the dark reflexing Fuchsias, in the style of F. ne plus ultra, but twice the size; better formed, of greater substance, and more brilliant in colour. This Fuchsia is noticed in the *Gardener's Chronicle*, August 21, 1852, p. 535, and described as the most desirable dark variety yet raised. Price 10s. 6d. each. This variety was raised in Liverpool and the entire stock purchased by us.

**DUCHESS OF LANCASTER.**—A superb white Fuchsia, distinct in character, and possessing better qualities than any white yet raised, for extra fine shape and good contrast of colours, united to a remarkably free growth and fine habit. This flower is equally proportioned in length of tube and corolla, each measuring one inch, independent of seed-pod and style. The tube and sepals are pure white, and quite free from all that coarse incrustation which has hitherto blemished many of the white Fuchsias. This kind, on the contrary, has a highly polished and smooth appearance. The sepals are very broad, with a beautifully reflexed corolla, of deep rose shaded with violet, which has a fine contrast to the white colour of the tube and sepals. We consider this to be the best white Fuchsia at present in cultivation, and to be unrivalled for exhibition purposes. Price 10s. 6d. This variety was raised at Lancaster, and the entire stock purchased by us.

**PREMIER.**—A large well-proportioned flower in the dark class; tube long and stout, with ample reflexing sepals of deep rich crimson plum-colour, or very deep violet-purple. Habit graceful, and flowering in large trusses at the termination of each shoot. A very excellent variety for exhibition purposes. Price 10s. 6d. each. This variety was raised in the Wellington Nursery.

**GLOXINIA IMPERIALIS.**—7s. 6d., can now be forwarded post free.

## NEW AND CHOICE FLOWER SEEDS.

## FREE BY POST.

**MESSRS. WHEELER and SON** have selected out of their large collection of Flower Seeds the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds, or groups in the flower-garden. They have marked each variety with its Botanical and English name—Height—Time of Flowering—Colour of the Flower—Manner of Growing—Whether Erect or Trailing, &c.—the Time it should be sown, and with other valuable hints as to its cultivation.

In selecting these varieties care has been taken to exclude all shy-bloomers, or such as have an insignificant appearance, so that the collections will comprise only those which are really showy and handsome, and will prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The GERMAN STOCKS, ASTERS, ZINNIAS, LARKSPURS, &c., are most superb. The collections will be sent free by post any part of the Kingdom at the following prices:—20 Extra Fine Varieties, all distinct, 5s.; 50 ditto ditto, 10s. 6d.; 100 ditto ditto, 20s.

J. C. WHEELER & SON, 99, Northgate Street, Gloucester. Nurserymen and Seedsmen to the Gloucestershire Agricultural Society.

## NEW AND RARE PLANTS.

**LOUIS VAN HOUTTE, NURSERYMAN, Ghent,** Belgium, desires to draw the attention of the Horticultural world to the following splendid Novelties, which he is now going to send out for the first time, in well-established plants, viz.:—

**ALLOPLECTUS SCHLIMMII**, by far the most beautiful species of this fine genus: leaves very large, of a dark velvety green, underneath of a rich purple colour; flowers in large heads of purplish violet. It is highly recommended as a first-rate stove plant, alike attractive in foliage and flower. Price 10 francs.

**BEGONIA MINIATA**, a very fine species, combining the brilliant colour of B. cinnabarina with the graceful habit of the well-known B. fuchsoides. In foliage it resembles much the latter, but it surpasses fuchsoides far in brilliancy of colour, and has the great merit of being, even when small, a most abundant flowerer. Price 10 francs.

**CENTROPOGON TOVARENSIS**, a beautiful species, of vigorous habit, fine foliage, compact growth, and terminal bouquets of rich purple flowers. It is a very free flowering plant, doing very well in a greenhouse during summer, and admirably adapted for specimen culture. Price 10 francs.

**THYRSACANTHUS RUTILANS**, one of the most splendid Acanthaceae plants ever imported, of free growth, shining leaves, and easy flowering. The graceful pendant racemes attain 2 feet in length, and produce a great number of long, tubular flowers of the most vivid carmine. The plant rests a long time in flower, and will soon be received in every select collection. Price 15 francs.

**FUCHSIA MINIATA**, a very distinct, beautiful species, of good habit, forming a moderately-sized branching and compact shrub, like F. serratifolia. The flowers are produced in abundance in terminal bunches, of a brilliant orange-scarlet colour. Price 15 francs.

The above five Plants are direct importations of Mr. J. LINDSEY, already favourably known to the Horticultural public, through the great number of fine plants he has introduced.

**CALCEOLARIA VIOLACEA** (Torellana punctata), a striking novelty which I feel happy to introduce to general attention. I raised it from seeds received from Chili. It forms a dwarf compact shrub, with neat persistent foliage of a leathery texture, quite a hard-wooded plant, without the least resemblance to any other known species of Calceolaria. The charming flowers appear in spring, and are of a clear sky-blue, with yellow throat, dotted with red points. It may be said that this is one of the most interesting plants that have been lately imported; for besides its great size, it is the first real CALCEOLARIA, it is to be presumed that it may become, in the hands of skilful hybridisers, the mother of quite a new race of this so justly admired tribe. Price 10 francs.

**GERANIUMS, NEW FRENCH VARIETIES OF DIADEMATUM**, quite different from all others, and far superior in size, colour, and shape to any fancy varieties. They have been won by J. DUVAL, gardener to Mons. J. ODIER, at Belle-Vue, near Paris, from the well-known Diadematum, in diligently and patiently ameliorating this old kind through a long number of years, until he arrived to perfection, having obtained large size, good shape, and distinctness of colour and markings. They produced an immense sensation at last year's exhibition in Paris; and the large Golden Medal which was awarded it unanimously was but a feeble expression of the general admiration.

The following 10 varieties will be sent out in May next:—A. Miellet, Jacques Duval, Triomphe de la Tour, Colonel Poissy, Général Eugène Cavaignac, Madame de Lamoricière, Gustave Odier, Gloire de Belle-vue, Jean Odier, Aristocrate des Jardins. Subscription price for the set of these 10 varieties, 100 francs. (N.B. Discount on this price; only entire collections to be delivered.)

**NEW TREE PÆONIES** (Pæonia Montana). The three following varieties have been raised by M. RODIGAS, and having seen them when in full flower, I can warrant their extreme beauty:—Souvenir de Madame Knorr; flowers very large, very double, white suffused with tender rose, extremely delicate. Price 25 francs.

Charles Rogier; silky white, centre petals all over striped, mottled and bordered with rose colour, like a Carnation; quite extra! Price 40 francs.

Remembrance of A. T. Downing; pure silky rose, very brilliant, very double. Price 25 francs.

The set of the above three varieties,—80 francs.  
**RHODODENDRON ETENDARD DE FLANDRE**, a most beautiful hybrid of R. catawbiense and R. pont. Pardolot, certainly one of the most magnificent varieties of hardy Rhododendrons; flower-heads of enormous size and well formed; each individual flower large, of good shape and texture, and rich colour; the upper petals prominently spotted with black, producing a striking effect. Young, grafted Plants, according to size,—15 to 25 francs.

**RHODODENDRON DUC DE BRABANT**, another splendid variety of R. catawbiense, which deserves the highest recommendation. Flowers semi-double, white delicately bordered with rosy lilac; upper petals marked with clear yellow, beautifully dotted with brown; flowers most profusely in large, close heads; and quite as hardy as the R. Verraiueanum fl. pleno. Price 15 to 25 francs.

(N.B. Some strong plants covered with flower-buds may be had from 50 to 100 francs each, according to size.)

**WEIGELA AMABILIS** (W. Metelerkampii), one of the finest shrubs which our gardens have received from Japan. I bought the stock of it, and can now offer good established plants at the very moderate price of 5 francs each, or 60 francs per dozen.

(N.B. Most of the above Novelties are already figured and described in the 8th volume of the "Flore des Serres," &c., of which the 6th number is about to appear. Price 38 francs per volume.)

Besides the above Novelties I beg to recommend my very select Collections of Roses, Camellias, Indian and Ghent Azaleas, Rhododendrons, and bulbous Plants of all sorts, as well as the general collections of Stove and Greenhouse Plants, new French Verbenas, Chrysanthemums, &c.

Orders may be addressed to me, or to my Agent in London, Mr. SLEBBERD, 5, Harp Lane, Great Tower Street, from whom also my Catalogues may be had on application.

N.B. Discount allowed to the Trade.



**BASS AND BROWN'S SEED AND PLANT LIST**  
FOR 1853, free, for three penny stamps. Also, the **AUTUMN CATALOGUE** for three penny stamps, which contains the Roses, Herbaceous Plants, Hollyhocks, and other select Hardy Plants and Shrubs, Fruits, &c.; also the Cinerarias, Azalea Indica, &c.

**VEGETABLE SEEDS.**  
ASSORTED COLLECTIONS OF THE FINEST QUALITY.  
Time of sowing and other information is furnished in the Catalogues, also the sorts and quantities of the No. 1, 2, and 3 Collections. If any sorts are not wished for, enlarged quantities of others furnished to make up the amount.

No. 1. Collection of largest quantities of choice and £ s. d.  
new sorts ... .. 2 10 0  
No. 2. Collection of smaller quantities ... .. 1 10 0  
No. 3. Collection of do. ... .. 1 0 0  
No. 4. Collection of fine and esteemed sorts ... .. 0 10 6

**FLOWER SEEDS—BEST ASSORTMENTS.**  
Free by post, with cultural instructions.  
The Catalogue gives height, colour, months of flowering, hardiness, duration, &c.

For an Abridged List of New Varieties, with a few not included in the Catalogue, see *Gardeners' Chronicle* of January 29th and February 12th.

100 varieties select showy Annuals, including the newest 15 0  
50 varieties, 8s. 6d.; 30 varieties, 5s. 6d.; 20 varieties ... 4 0  
20 varieties best Dwarf Annuals, in large packets, for  
filling beds on lawns, &c., 7s. 6d.; 12 varieties ... 5 0  
20 varieties choice Greenhouse Annuals ... .. 7 6  
12 varieties do. do. ... .. 5 0  
20 varieties choice Greenhouse Perennials ... .. 10 6  
12 varieties do. do. ... .. 7 6  
20 varieties choice hardy Biennials and Perennials ... 7 6  
12 varieties do. do. ... .. 5 0

**IMPORTED GERMAN SEEDS**, in separate colours, very double.  
24 superb varieties Dwarf Stocks, 4s.; 12 varieties ... 2 6  
10 superb varieties new large flowering Stocks ... .. 2 6  
18 superb varieties Wallflower-leaved do. ... .. 3 6  
New white Wallflower-leaved, very fine, 6d.; large pkt. 1 0  
6 superb varieties Autumn Brompton Stock ... .. 2 0  
8 superb varieties Emperor Stock ... .. 2 0  
New White Emperor do., very choice, per packet ... 1 0  
12 superb varieties German Aster ... .. 2 0  
12 superb varieties Globe flowering ... .. 2 0  
12 superb varieties Pyramidal ... .. 2 0  
Also superb double imported Wallflower, Larkspur, Balsam, Senecio elegans, Cockscomb, Sweet William, &c. See Catalogue.  
Remittances requested from unknown Correspondents. Post Office Orders payable to STEPHEN BROWN, or the Firm.

In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods to the amount of 20s. and upwards, free to all the Stations in London; also free, as before, to all Stations on the London and Norwich Line, via Colchester.

Seed and Horticultural Establishment, Sudbury, Suffolk.

**GRASS SEEDS, SEPARATE OR MIXED, CARRIAGE FREE.**

**SUTTON AND SONS** having for many years paid especial attention to the laying down Land to Permanent Pasture, are well acquainted with the various soils of most parts of the United Kingdom, and the Natural Grasses and Clovers suitable for each locality.

The following sorts may be had separate or mixed, at lowest market prices. All the best and most suitable of them are contained in our Mixtures for the several purposes described below.

<i>Aloupecurus pratensis</i>	<i>Festuca tenuifolia</i>	<i>Poa trivialis</i>
<i>Anthoxanthum odoratum</i>	<i>Festuca holdeformis</i>	<i>Poa nemoralis</i>
<i>Agrostis stolonifera</i>	<i>Glyceria hultensis</i>	<i>Poa angustifolia</i>
<i>Avena fatens</i>	<i>Glyceria aquatica</i>	<i>Poa ferulis</i>
<i>Achillea millefolium</i>	<i>Holcus lanatus</i>	<i>Poa sempervirens</i>
<i>Cynodon cristatus</i>	<i>Holcus avenaceus</i>	<i>Pheum pratense</i>
<i>Dactylis glomerata</i>	<i>Lolium italicum</i>	<i>major</i> [minor
<i>Festuca duriuscula</i>	<i>Lolium perenne</i>	<i>pratenae</i>
<i>Festuca elatior</i>	<i>Lolium perenne</i>	<i>Pteridium aquilinum</i>
<i>Festuca gigantea</i>	<i>Lolium perenne</i>	<i>repens</i>
<i>Festuca heterophylla</i>	<i>Lolium perenne</i>	<i>pratenae</i>
<i>Festuca pratensis</i>	<i>Lotus corniculatus</i>	<i>perenne</i>
<i>Festuca ovina</i>	<i>Medicago lupulina</i>	<i>Trifolium minus</i>
<i>Festuca rubra</i>	<i>Poa pratensis</i>	<i>Trifolium hybridum</i>

**MIXTURES FOR LAYING DOWN LAND TO PERMANENT MEADOW OR PASTURE.**

Mixed expressly to suit the soil, according to whether it is heavy, light, or medium. The sorts contained in these Mixtures are grown in different localities, and gathered separately by the hand, expressly for this purpose, by which means all noxious weeds are excluded. They consist of the most nutritive kinds of Festucas, Poas, Sweet Vernal, Perennial Clovers, Loliums, &c., and each sort being kept separate, they are subsequently mixed in such sorts and proportions as are most suitable to the soil to be laid down. These Seeds can now be supplied for 24s. to 30s. per Acre, according to the sorts which the soil may require. The quantity we usually supply is 2 bushels of light Seeds and 12 lbs. heavy Seeds per acre; but if coarser Grasses, which have larger Seeds, 3 bushels or more would be necessary.

Also, SUTTON'S RENOVATING MIXTURE OF CLOVERS and FINE GRASSES, for improving old Pastures, price 1s. per lb. 8 to 12 lbs. being sufficient per acre.

There are now but few Counties in England wherein Pastures may not be seen which have been formed with our Mixtures of Grass Seeds; it may therefore appear superfluous that we should publish anything in the way of testimonials. We will, however, quote the following from among many other letters now before us:—

From P. Pacey, Esq., Pacey, February 11, 1850.

"I was particularly pleased with your Grass Seeds, which I employed for laying down fresh broke land. It became a close, upward by August."

From the Rev. A. Huxtable, Nov. 19th, 1852.

"Mr. Huxtable has the pleasure of acquainting Messrs. Sutton that their Grass Seeds of 1851 have turned out admirably."

From the Rev. J. Lawson Simon, Ellingham Rectory, North Walsham, Nov. 2, 1852.

"I have one piece of land, worn last May with your permanent Grass Seeds, and no one can possibly tell it from an old meadow, and in the absence of weeds. I have had a great deal of feed from it also."

From Mr. J. A. Langford, Steward, Stonor Park, Henley-on-Thames.  
"Your perennial Grass Seeds, supplied to Lord Camoys some years since, now afford a pasture that is the general admiration of the neighbourhood for its early springing, and the fineness and luxuriance of its herbage."

In several of the above instances the land laid down can be seen clay, and others so poor and gravelly as to be quite unsuitable as arable land. Our present prices are from 24s. to 30s. per acre, as see above.

We have also a superior Stock of Turnip Seeds, Mangold Seeds, Carrot, and other Agricultural seeds. Catalogues of which will be forwarded on receipt of one penny stamp.

JAMES SUTTON & SONS, Seed Growers, Reading, Berks.

Goods Delivered Carriage Free.

## NEW SEEDS, FREE BY POST.

**NEW SEEDS (1853) on SALE, by WILLIAM EDGUMBE RENDLE and CO., PLYMOUTH.**

Descriptions will be found at page 162 (March 12, 1853).

Per packet—s. d.  
1. CELERY.—Cole's Crystal White, very superior ... 2 6  
2. BROCCOLI.—Coming's Reliance, superb late white ... 2 6  
3. BROCCOLI.—Rendle's superb Willowe, late white ... 1 0  
4. PARSLEY.—Rendle's Treble Garish ... 0 6  
5. PARSLEY.—Mitchell's Winter Matchless ... 0 6  
6. CABBAGE.—Enfield Market, very superior ... 0 6  
7. LETTUCE.—New Crystal Cos ... 0 6  
8. CUCUMBER.—Cuthill's Black Spine ... 1 0  
9. TURNIP.—Early Friesland, bright yellow ... 0 6  
10. TURNIP.—Golden Globe ... 0 6  
11. ONION.—Large flat Madeira ... 0 6  
12. PACK-CHOI.—New sort of Chinese Cabbage ... 1 0  
13. PE-TSAI.—New sort of Ditto ... 1 0  
14. LETTUCE.—Sunted Hoosang Shanghai ... 1 0  
15. LETTUCE.—Hoosang ... 1 0  
16. CAULIFLOWER.—Stadholder ... 1 0  
17. LOVE APPLE.—Cherry shaped ... 0 6  
18. MELON.—Rendle's Bromham Hall ... 1 0  
19. BEET.—Tidley's Superb Crimson ... 0 6  
20. LEEK.—Large Musselburgh variety ... 0 6

A packet of each of the above 20 varieties of Vegetable Seeds for 10s., free by post. They should be grown in every Garden. Other kinds may be substituted (see page 162).

Apply to WILLIAM EDGUMBE RENDLE & CO., Seed Merchants, Plymouth.

## MEADOW AND PASTURE GRASS SEEDS.

**THOMAS GIBBS and CO., SEEDSMEN to the ROYAL AGRICULTURAL SOCIETY of ENGLAND**, beg to state that the following Seeds are now finished cleaning, and are ready for sending out.

**GRASS SEEDS FOR LAYING DOWN LAND TO PERMANENT MEADOWS AND PASTURES.**—The kinds used in these mixtures will be selected and apportioned to suit the nature of the soil.

Grass Seeds, in mixtures, for Irrigation.  
Do. do. for Parks, &c.  
Do. do. for 2 and 3 years' lay.  
Do. do. for Garden Lawns, &c.  
Do. do. for Renovating Grass Land.

Italian Rye Grass—very fine sample, Improved Perennial Rye Grass, Annual or common do., and all kinds of Clovers, White Belgian and Red Altringham Carrots; Yellow Globe, long Red and other Mangold Wurzel; Gibbs' new very large Cattle Parsnip, Swedish Turnips of various sorts, Gibbs' green top Yellow Hybrid Turnip, White-fleshed Turnips of various sorts, Drumhead and other Cabbages, Lucerne, Broom, Furze, Sainfoin, and all kinds of Agricultural, Kitchen Garden, and other Seeds.

Corner of Half-moon Street, Piccadilly, London.

**MESSRS. J. and H. BROWN** offer the following selected PLANTS, FRUIT TREES, &c., which they will forward to any part of the Kingdom. s. d.

25 Azaleas, new hardy Belgian varieties on their own roots, with flower buds, one of a sort by name, for ... 20 0  
25 American Azaleas do. do. ... 15 0  
25 Hardy American Plants, one of a sort by name ... 10 6  
12 Hardy Heaths and Kalmias, one of a sort ... 6 0  
12 Rhododendrons, including Scarlet, White, and Rose, hardy varieties ... 12 0  
New hardy Yellow Rhododendrons, each ... 5s. 6d. to 7 6  
Fine hardy Scarlet Rhododendrons, 3 feet, per dozen ... 10 0  
6 Fine hardy Magnolias, one of a sort ... 10 6  
Cedar of Lebanon, 3 feet, well grown in pots, per dozen ... 10 0  
Deodara or Cedar of the Himalayas, 1 to 2 feet, per dozen ... 10s. to 15 0  
(Araucaria, Cryptomeria, and Conifers of all kinds, see List.)  
Climbing Roses of choice sorts, in pots, per dozen ... 6 6  
Roses, standard and half standards, per dozen, 12s. and 15 0  
Yellow Roses, Persian and Cloth of Gold, per dozen ... 12 0  
12 Rhododendrons, one of a sort, by name, in pots ... 9 0  
Wisteria sinensis, extra fine, in pots, 15 to 30 feet, each 3 6  
12 Hardy Passifloras, Jasmines, and Clematis of sorts ... 10 0  
12 Greenhouse Azaleas, one of a sort, blooming plants ... 25 0  
12 Choice Camellias by name do. ... 30 0  
50 Choice Greenhouse Plants, one of a sort, by name ... 45 0  
24 Choice Ericas, one of a sort, by name ... 16 0  
12 Orchidaceous Plants, choice species, and good plants ... 30 0  
12 Bulbs of superb Gloxinias and Achimenes, by post ... 10 0  
Cinerarias and Calceolarias, show varieties, per doz., 9s. to 12 0  
Fancy Geraniums, new sorts, per dozen ... 8s. to 12 0  
Verbenas and Petunias, newest varieties, per doz. ... 6 0  
6 Bulbs of Lilium lancifolium, one of a sort, for ... 12 0  
First-rate showy Pinks and Pansies, per doz. ... 6s. to 9 0  
First-rate Carnations and Yellow Picotees, per dozen, 9s. to 12 0  
12 Peonies, new white, pink, and blush, of sorts ... 8 0  
25 Hardy Herbaceous Plants ... 7 6  
Hardy Ferns and other plants, for rockwork, per dozen ... 8 0

## SUPERIOR FRUIT TREES.

Fine dwarf and standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries; the best and most approved sorts of these respective kinds, true to name, each 2s. 6d. or per dozen ... 24 0  
Untrained or Maiden ditto, 1s. 6d. each, or per dozen ... 15 0  
Apples, dwarfs and standards, of best sorts, per dozen ... 15 0  
Fine Gooseberries, Currants, and Raspberries, per dozen ... 3 0  
Fine Figs, Medlars, Walnuts, and Mulberries, each ... 2 0  
Strong Vines from eyes and layers, in pots, per dozen ... 15 0  
Filberts, new, thin shelled, and red skinned, per dozen ... 3 0

Garden Seeds of all kinds. A selection of the most approved Flower Seeds, 20 papers, 5s.; 40 papers, 10s., sent free by post. Also Catalogues for the season. All who are Planting New Gardens, Pleasure Grounds, Conservatories, &c., should see our Catalogues.

Albion Nursery, Stoke Newington, London, April 9.

## NEW ROSES, IN POTS, on the MANETTI STOCK.

HYBRID PERPETUAL	s. d.	Mé de St. Louis	s. d.
Baronne Hallet ...	1 6	Mé de St. Louis ...	5 0
Baronne de Morel ...	3 6	Olivier des Serres ...	2 0
Blanche de Beaulieu ...	2 0	Queen Victoria (PAUL'S) ...	2 6
Comtesse Bathiany ...	1 6	Rosa de Sole ...	2 6
Comte d'Arny ...	2 6	Souvenir de la Reine des ...	5 0
Destiny ...	2 0	Spotted Queen ...	2 6
Duplessis-Mornay ...	3 6	Thérèse de St. Henry ...	3 6
Etendard du 6 <sup>e</sup> M <sup>o</sup> ...	1 6		
Géné de Châtoubrand ...	3 6		
L'Enfant du Carmel ...	3 6	Madame Bourdon ...	2 6
La Séduisant ...	3 6	Prince Albert (PAUL'S) ...	7 0
Laur Raymond ...	3 6	Paul et Virginie ...	2 6
Louise Odier ...	3 6	Souvenir de l'Exposition ...	5 0
Ludovic Leland ...	1 6	Souvenir de l'Empire ...	6 0
Madame Andry ...	3 6		
"Duchesse ...	5 0		
"Fremont ...	2 0		
"Flory ...	3 6		
"Hiltaire ...	3 6		
"Oger ...	2 6		

PROFUSIONAL MOSS.  
General Druot ... 3 6  
Herman Kogal ... 2 6

MOSS.  
Madame Albion ... 3 6  
Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

## FLORIST FLOWERS.

25 pairs Show CARNATIONS, in 25 varieties ... £1 0 0  
25 do. PICOTEES do. ... 1 0 0  
25 do. PINKS do. ... 0 8 0  
25 Fine Show PANSIES do. ... 0 12 0

Any of the above may be had separate, package, hamper, &c., included.

**JOHN HOLLAND**, Bradshaw Gardens, Middleton, near Manchester, is now sending out selections of the above Florist Flowers, in show varieties, and strong, well-rooted plants, and in each order will include a pair of his new fancy Picotee, "Countess of Ellesmere." A few packets of PANSY SEED, selected from best show flowers only, at 1s. and 2s. per packet. Post-office orders to be made payable at Middleton, Lancashire. Auriculas, Alpines, Polyanthus, Primroses, &c. Priced and Descriptive Lists of all the above may be had on application, enclosing one postage stamp.

**JAMES FAIRHEAD**, SEED-GROWER, Cressing, near Brintree, Essex, having a stock of New Genuine Seeds, from the best stocks, carefully selected, begs to offer to his friends and the public the following:—Orange Globe Mangold Wurzel, 8d. per lb.; Red Globe do., 8d. per lb.; Long Yellow do., 9d. per lb.; Long Red do., 8d. per lb. Altringham, Horn, and James' Carrot, 9d. per lb., or 42s. per cwt.; White Belgian, 1s. 3d. per lb. Skirving's and other purple-topped Swedes, 4s. per gallon. Scotch, Yellow, White, and Green Round Turnip, 3s. 6d. per gallon. Scarlet Runner Beans, 13s. per bushel; Dwarf Kidney do., 12s. Terms—Cash. Bags charged for. Carriage paid to any station on Eastern Counties Railway, when orders amount to 20s. and upwards.

## MEADOW AND PASTURE GRASS SEEDS.

**GEORGE GIBBS and Co.**, will be happy to forward their Priced List of Turnips, Carrots, Mangold Wurzel, and other Agricultural Seeds for the present season. The mixtures for laying Land down to Permanent Meadow and Pasture, are ready, price 30s. per acre, allowing 2 bushels and 12 lbs. to each acre. Mixtures for two or three years' lay, or rotation cropping, 22s. to 24s. per acre. Mixed sorts for improving old Grass Land, 1s. 2d. per lb. Fine sorts for forming Lawns, &c., 1s. 3d. per lb. Directions for Sowing and Treatment will accompany the Seeds.—Address,  
**26, Down Street, Piccadilly, London.**

A Z A L E A	s. d.	I N D I C A	s. d.
Louvoineins ...	1 6	Adolphe fl. pleno ...	2 6
Augusta aurantia ...	2 0	Prince Albert ...	2 6
Delecta ...	1 6	Juliano plena ...	2 6
Superba duplex ...	1 6	Dunbarii ...	1 6
Robertsii ...	1 6	Optima ...	1 6
Herbertii ...	1 6	Rosea punctata ...	1 6
Maurica de Bethman ...	2 6	Exquisita ...	1 6
Alba ...	1 0		

The above are nice plants, full of bloom buds, in 32-sized pots. Carriage paid to London.

THOMAS RIVERS, Nurseries, Sawbridgeworth, Herts.

## PERMANENT PASTURE GRASS.

ALL ORDERS ABOVE £2 CARRIAGE FREE.

(SEE OTHER ADVERTISEMENTS.)

**WILLIAM E. RENDLE and CO.** have much pleasure in stating that they have this season a very excellent assortment of Grass Seeds, suited for various soils and situations. They have paid great attention to this department of the Seed Trade, and can without hesitation say that they have given the best satisfaction to all who have favoured them with their orders.

## MIXTURES FOR LAYING DOWN LAND TO PERMANENT PASTURE.

The kinds are most carefully saved, all noxious weeds being excluded. The selections will contain several species of Festucas, Loliums, Poas, and Trifoliums, in such quantities as will best suit the soil for which the selection is intended. We usually send 2 bushels of light seed and 12 lbs. of heavy seed per acre, which will be sufficient for most soils. The large increasing demand for Grasses for Permanent Pasture enables us to reduce the price to 25s. or 32s. per acre, according to the sorts required to suit the soil. Gentlemen in giving their orders are requested to state the quality of the soil, situation, &c.

## FOR LAYING DOWN PERMANENT LAWNS.

In Lawns or Ornamental Parks it is generally desirable to have a predominance of fine Evergreen Grasses. All the coarser kinds will, therefore, be entirely excluded, and the sward will at all times present a luxuriant and handsome appearance. The price of the best Lawn Grass is 20s. per bushel, 3s. per gallon, or 1s. 3d. per lb.

The following Mixtures can also be supplied at the lowest market prices:—For Permanent Pasture and Hay in Orchards and other Grounds much overshadowed with Trees; for Heathy or Moory Lands which have been improved with a view to their producing better Pasture; for laying down Shallow Uplands and Sheep Walks; for Lands in Preparation for Irrigation; Mixture for renovating Old Pastures, Park Lands, &c.; Fine Grass Seed, for Pleasure Grounds, &c., kept constantly under the Scotch.

Mixtures can also be supplied for Pasture and Cover in rich shady Woods, for Improved Deep Mossy Ground, for Marshy Grounds, for Warrens and Light Sandy Soils, for Dry Gravelly Situations, and for Drifting or Blowing Sands.

In giving orders for the above selections, we beg respectfully to request that the quality of the soil be given for which the Seed is required, whether it be moist, or dry, of a peaty or calcareous nature; and it will be also very material to state the altitude, exposure, or other peculiarities.

Apply to WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

ESTABLISHED MORE THAN HALF A CENTURY.

## The Gardeners' Chronicle.

SATURDAY, APRIL 9, 1853.

## MEETINGS FOR THE ENSUING WEEK.

MONDAY	April 11	Geographical	8 p.m.
		Syn. Egyptian <th>7 p.m.</th>	7 p.m.
		Civil Engineers <th>8 p.m.</th>	8 p.m.
		Medical and Chirurgical <th>8 p.m.</th>	8 p.m.
		Zoological <th>9 p.m.</th>	9 p.m.
		Royal Soc. of Literature <th>8 p.m.</th>	8 p.m.
		Literary Fund <th>3 p.m.</th>	3 p.m.
		Graphic <th>8 p.m.</th>	8 p.m.
		Society of Arts <th>8 p.m.</th>	8 p.m.
		Ethnological <th>8 p.m.</th>	8 p.m.
		Pharmaceutical <th>8 p.m.</th>	8 p.m.
		Antiquarian <th>8 p.m.</th>	8 p.m.
		Royal <th>8 p.m.</th>	8 p.m.
		Royal Institution <th>8 p.m.</th>	8 p.m.
		16-Medical <th>8 p.m.</th>	8 p.m.

COUNTRY SHOWS FOR THE PRESENT MONTH.—12th: Salisbury.—20th: Kelso.—21st: Bath, and Royal Horticultural of Ireland.—25th: Middleton Auricula.—28th: Oxfordshire and Meath.

WHEN, at the instance of the late Lord AUCKLAND, at that time Governor-General of India, the Court of Directors ordered a large quantity of seed of the DRODAR to be imported annually for distribution here, a service was rendered to the United Kingdom



the extent of which cannot, as yet, be estimated. Enough, however, has been seen to assure us that we have acquired in some abundance an evergreen tree of singular beauty, perfectly hardy in these latitudes, and so unlike any other coniferous plant in its manner of growth as to add a new feature to the rich vegetation of these islands.

We now learn with great satisfaction that the East India Company has ordered a ton weight of the seed of this tree to be placed at the disposal of Government for the service of the Woods and Forests, and that the first parcel has already arrived. Should all this quantity vegetate no fewer than 16,000,000 plants will have been acquired, and thus we may expect the hills of Great Britain to be speedily clothed with the sacred Cedar of the Brahmins; or making every allowance for deteriorated seeds, the produce to be raised must necessarily be prodigious. The charge of rearing it having been confided to four eminent nurserymen—Messrs. GLENDINNING, of Chiswick; LAWSON, of Edinburgh; SKIRVING, of Liverpool; and WATERER, of Knapp-hill—we have security for the crop being skilfully managed, which no one would have guaranteed if the seed had been placed in the hands of the present Deputy-Surveyors of the Royal Forests.

Government will thus become possessed of a very large quantity of a fast-growing tree, the value of which cannot be over-rated, whether it is regarded as a nurse, most useful for protection, and profitable for thinning, or, according to the testimony of those who are familiar with it in India, strong and durable as timber.

We apprehend that no hardy tree yet known has the same high value as the Deodar, as a nurse. The Scotch Pine is so heavy and compact in its foliage that it keeps light off the deciduous trees which grow among it, and offers great obstruction to the free circulation of air, doing about as much harm in this way as it effects good by giving shelter from heavy gales. Its poles too are so bad that it must always bear a very low price in the timber market. Larch, which is a far better nurse, because its light airy foliage and pyramidal form offer no hindrance to the action of light and the free circulation of air, and whose poles usually fetch a good price, has the fault of being destitute of leaves in the early spring, and is, moreover, subject to the mysterious and incurable "rot." On the other hand the Deodar combines the graceful form and rapid growth of the Larch; with the evergreen character of the Scotch Pine, without the faults of that species, and we have the evidence of every observer who has seen it in India, that its timber is of excellent quality. As that is a very material point, and since we have occasionally heard it suggested that because the Deodar is nearly related to the Cedar of Lebanon, its timber will probably partake of the bad quality of the latter, it seems worth while quoting the opinions of those who are personally acquainted with it. That no inference can be legitimately drawn from the supposed relationship of it to the Cedar of Lebanon is sufficiently shown by the Scotch Pine and the Pinaster. They also are nearly related; and yet the old timber of the first has great durability and strength, while the latter is at all ages worthless for any purpose except firewood. A similar but more striking contrast is offered by the Pinaster and *Pinus hispanica*, species surely more nearly allied than the Deodar and Cedar of Lebanon. Now we have the evidence of Captain WIDDRINGTON that the latter was largely used in the Spanish navy for deck-planking, a purpose to which Pinaster timber could never be applied.

The positive testimony of Indian travellers seems conclusive as to the durability and excellence of Deodar timber. Baron CHARLES V. HUGEL, now Austrian Minister at Florence, a good judge of such matters, saw the tree in abundance, and he calls it "the incorruptible Himalayan Cedar, the invaluable Deodar." Major MADDEN, than whom no one has more carefully investigated the history of Himalayan Conifers on their native mountains, quotes this very expression of v. HUGEL, and evidently assents to it; he even thinks it worth inquiry whether it really repels the white ant, which seems to be a Himalayan notion.

MOORCROFT—and there never was a more trustworthy reporter—in the first volume of his travels, makes use of the following language. "The most valuable tree of Kashmir is, however, the Deodar, a variety of Cedar, the timber of which is extensively employed in the construction of houses, temples, and bridges." And he adds, that pieces of it had been found little decayed, although exposed to the action of water for 400 years.

We have, moreover, the high authority of Dr. ROYLE, who long resided in the Deodar countries, that the timber is of excellent quality, and of great strength, as well as durability. It is universally employed in the building of temples, in which none

but the best materials would be employed. The mode of using it is to construct a solid frame-work of the timber, and then to fill in the spaces between with stones, so that the main strength of the building is made to depend upon the Deodar, rather than the masonry. Thus used, it is exposed to a trial which nothing but timber of the best quality could support. This is in complete accordance with all that we have ever heard of the quality of Deodar wood; and must be regarded as conclusive.

The only subject of doubt in our minds as to the issue of the great undertaking now described is whether the gentlemen to whom the young Deodars will be finally intrusted, after they shall have been delivered up to Government by the nurserymen who are to rear them, will know either where, or when, or how they ought to be planted.

#### TECOMA GRANDIFLORA.

ALTHOUGH but little used for pot-culture, this is a first-rate plant for that purpose, and it may be easily induced to form large, handsome specimens, which are valuable for autumn decoration. When properly treated its large, trumpet-shaped blossoms are produced in long clusters on the end of every shoot; and if kept in a rather cool, airy situation, they will retain their beautiful colour for a considerable time.

It may be propagated either by means of cuttings of the young wood, of the roots, or from eyes, in the same way in which Vines are usually managed. Cuttings of the young wood are, however, best when the plants are wanted to bloom in a small state; and if short-jointed bits in a rather firm state are selected, and planted in light sandy soil, covered with a bell-glass, and afforded a gentle bottom heat, they will soon emit roots, and may be had in blossom the same season. The readiest way, however, of obtaining a stock of this plant is by means of the prunings of the ripe wood, cut with about half an inch of shoot on each side of the eyes; those laid on the surface of a well-drained pot, filled with a light sandy soil, covered about half an inch deep with the same, and placed in a gentle bottom heat, will soon push into growth; and root cuttings, also, grow freely. During the first season this plant should be kept in a rather warm, moist pit, and afforded plenty of pot room, to induce it to make wood; and if propagated early in the season, and encouraged to make active growth till about the middle of August, and then gradually exposed to the full action of the sun, together with a free circulation of air to ripen the shoots, a sufficient amount of ripe wood will probably be obtained to form useful flowering specimens the following season. Where large plants are desired, however, it will be necessary to grow them a second season after propagation in a rather warm, moist place. Very little water should be given to the soil when the aim is to ripen the wood; and after the fall of the leaf, the plants may be set in any cool dry place, where they will be least in the way and secure from frost; and no water should be given to the soil, until it may be desired to start them in spring. April will be the proper time to encourage growth, in the case of plants intended to form flowering specimens. But previous to placing them in a growing temperature, prune the shoots closely back, having at the same time an eye to the form of specimen required. I prefer carrying up a shoot to the height of from 4 to 6 feet, and by means of stopping, obtaining a large head; managed in this way, the only support needed is a stake for the main stem, and the branches hang down gracefully all round, covering the pot, and forming a cone of verdure and beauty. The branches require to be cut back closely every season, to keep the specimens in form; indeed, they require to be pruned about as severely as a Vine.

After pruning, turn the plants out of the pots, and reduce the ball slightly, in order to get rid of sour soil, but injure the roots as little as possible, and repot in the same sized pot, or in one a size larger, and if convenient place them in a house where Vines are just starting, or in the warm end of a greenhouse, applying water to the soil to bring it into a moist healthy state, and moistening the plants overhead with the syringe morning and evening. When the shoots begin to lengthen, thin them out to a moderate quantity, leaving those that are strongest, and turn the plant frequently, so as to expose all sides equally to the light. A high temperature would be decidedly injurious if continued after the shoots are about 6 inches long, and when about this stage the plants should be removed to the greenhouse, or to a pit where they will be freely exposed to light, and where a cool moist temperature can be maintained. When large specimens are obtained, if they do not give indications of flowering, give water rather sparingly at the roots, and keep the atmosphere close and as dry as is convenient; this will check the tendency to growth and induce the production of flowers, but with ordinary management there will be no necessity to resort to any particular treatment to obtain abundance of blossoms.

As soon as the flower buds begin to be developed the plants may be liberally supplied with clear liquid manure in a rather weak state, and this should be continued during the blooming season; but in the case of young plants with a fair amount of pot room stimulants may be dispensed with; they will, however, be found of great service to large specimens, which will be necessarily pot bound. While in flower the plants should occupy a light airy situation in a cool house, and after blooming

attention must be paid to getting the wood well ripened before winter.

Good rich sandy turfy loam, with about one-third of leaf soil or sandy peat to keep the loam open and porous, adding a quantity of clean sharp sand, and lumpy bits of charcoal, will be found to form a suitable compost for this plant. *Alpha*.

#### AMERICAN PLUMS.

THE American fruit growers have been successful in raising some good varieties of this most useful fruit, which is, I think, fated to play a more important part in our domestic economy than it has hitherto done, for, ripening as some varieties now do in July, others continuing to ripen till the end of October, besides the facility with which they may be preserved so as to last all through the winter for kitchen purposes, the Plum, next to the Apple, must be reckoned our most useful fruit. Most of the American varieties are very hardy, and bear well as standards or as pyramids; in the latter form, by biennial removal, they are adapted even for the smallest gardens. The following are a few varieties of American origin which have borne fruit with me:—

(The following are extracts from my note-book in 1851, the fruit gathered from young pyramidal trees in the open ground.)

*Corse's Nota Bene*, raised by Mr. Corse, of Montreal, Canada; oval, reddish purple, rather above medium size, not very juicy, but rich and good; ripe August 20th. A very hardy sort, and most abundant bearer.

*Dennistons' Superb*.—Round, greenish yellow, rather larger than the Green Gage; rich, juicy, and sweet, but rather flat, like an over-ripe Green Gage, useful, as it ripens 10 days before that standard variety, and bears most abundantly.

*Lawrence's Favourite*.—Round, green, rich and good; in America said to be "two or three times as large as the Green Gage." Here it has not yet proved so; ripe Sept. 5. The tree is remarkable for its glossy dark green leaves and upright vigorous growth.

*Purple Favourite*.—Roundish oval, large and very handsome, rich, juicy, and good; ripe Sept. 12. A most abundant bearer.

*Autumn Gage*.—Oval, medium size, pale yellow; not very juicy, but rich, and excellent; ripe Sept. 30th. Tree very hardy, and an abundant bearer.

*Pond's Seedling*.—Oval; large as the White Magnum Bonum; a good culinary Plum, one of the best; ripe Sept. 5th. This variety has been cultivated in the neighbourhood of Westminster and Bath for many, perhaps 20 years, under the name of the "Fonthill Plum;" it is said by Downing to have been raised from seed by Mr. Pond, a nurseryman, near Boston, United States. For "raised" I think we must read "received."

*Orange*.—Round, large, but has not yet proved here so large as the Washington; a useful kitchen Plum, and remarkable for its beauty; a pyramid studded with its bright golden fruit is a most ornamental object; ripe Sept. 10th. Tree very hardy, and most abundant bearer.

*Hulings' Superb* is said by Downing to have been raised from seed by Mr. Keyser, of Pennsylvania, "but first made known to cultivators by Dr. Hulings." I received this sort from Germany under another name, about the same time that I received it from America. Mr. Keyser, I should judge from his name, is or was a German, and he may have received it from Germany instead of having raised it; at any rate it is a curious coincidence. *Thos. Rivers*.

#### HEATING.

I AM aware that great differences of opinion still exist as to the most expedient and economical method of heating horticultural structures, some preferring the old brick flue, while others insist that in every way the hot-water system is preferable. It occurred to me that by a judicious combination of both methods something like favourable results might be accomplished. Arrangements were therefore made to carry this "combination system" (if I may be allowed the term) into effect. One of two Vineries was selected for the purpose, and the annexed sketches will, I think, enable persons to understand the plan pursued.

I have invariably found, on examination, that the bricks on each side the fire-place, contiguous to the furnace bars, were very much burnt away. This convinced me that much heat was wasted, which, by other means, might be turned to advantageous account. I proposed to have a boiler made similar to the one represented, and fixed as I have attempted to show it in the longitudinal section of the fire-place; but I found it would be a difficult and very expensive matter to get a single one of this description made, therefore a saddle-boiler was obtained and fixed instead. This being large, there was ample room for fuel when it was placed on a line with the furnace bars in the manner in which the proposed boiler is shown. The boiler set, in this way, forms the fire-place, and obviates the necessity of employing fire-bricks.

It was found on trial that the flue could be heated as quickly, or very nearly so, and as intensely, as though no boiler had been present; and, at the same time, the water in the pipes was heated very expeditiously; in fact, I found it necessary to keep the sliding doors of the ventilators belonging to the hot-air chamber of the pit continually open; and I fully believe that had the bed stood upon pillars placed at intermediate distances,



sufficient heat for any purpose, at any season, might be generated in it from the pipes beneath, and they would be simultaneously assisting very materially to heat the atmosphere of the house. The only objection to this arrangement which I can discover, would be the impossibility to command bottom-heat, without, at the same time, wasting it by warming the atmosphere of the house unnecessarily.

A chimney is built immediately over the boiler, and when bottom-heat only is required, the damper, which is shown in the sketch inside the house, a little distance from the furnace, is put down, and thus the heat from the fire is turned effectually from the flue inside, and is made, in consequence of the manner in which the boiler

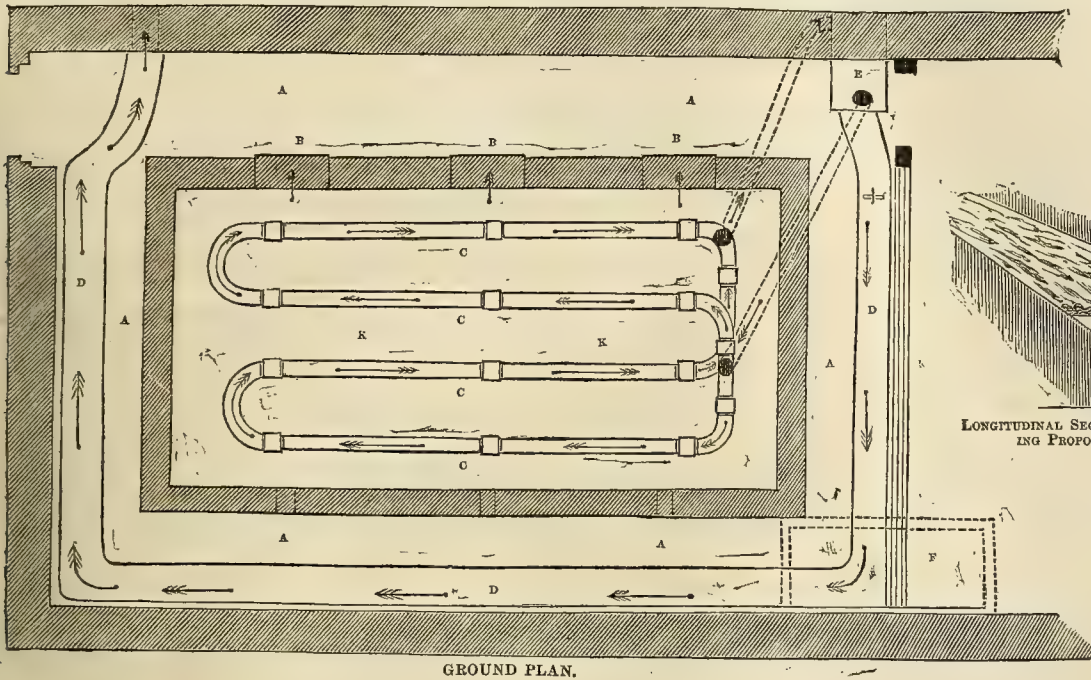
is fixed, to traverse it (the boiler) several times, and then pass into the chimney.

Tanks, of course, may be used instead of pipes, if desired; and I am of opinion that, in most cases, they are far preferable. If they were constructed so as to hold a large body of water, in the present case, they would be the more convenient, for when once heated they would retain a high temperature a long time. Where tanks which contain a large quantity of water are employed alone they are inconvenient, in consequence of the long time unavoidably taken up in heating them when once cold. This inconvenience, however, is overcome by employing flues in conjunction with them, as sufficient heat for any horticultural purpose may be

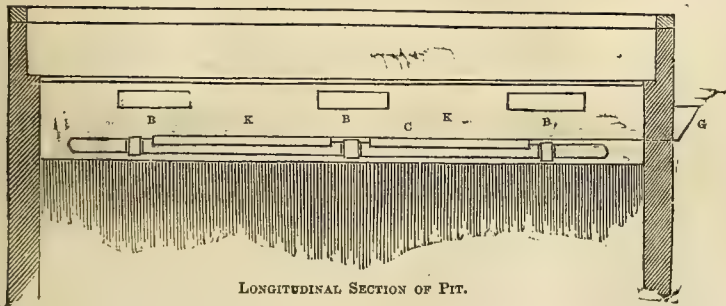
obtained from the latter, in a very short time, notwithstanding the double arrangement.

It matters not what boiler is used, some heat will escape into the flue; and when the flue is a perpendicular one, the quantity of heat thus lost cannot very accurately be detected. Heat at all times has an upward tendency, and, when permitted, it escapes very rapidly in this direction. But if an horizontal flue is used, it is retained, and gradually radiated by its upper surface and sides.

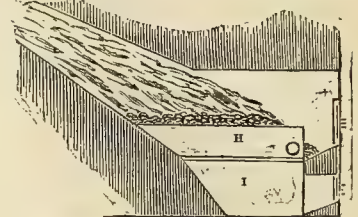
This system cannot be applied conveniently, perhaps, to a house of large dimensions, as brick flues are not effectual when much longer than 40 or 50 feet; but for houses of moderate size, I am convinced that it may be applied with great advantage. *Charles Lucas, Brentwood.*



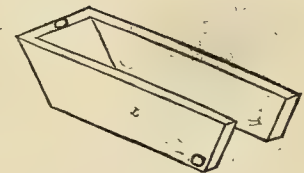
GROUND PLAN.



LONGITUDINAL SECTION OF PIT.



LONGITUDINAL SECTION OF FIRE-PLACE, SHOWING PROPOSED BOILER FIXED.



ISOMETRICAL SKETCH OF PROPOSED BOILER.

## REFERENCES TO PLAN.

AAAA. Walks.  
BBB. Ventilators, having sliding doors, by whose means the bottom heat is regulated.  
CCCC. Four-inch iron pipes, on which zinc saddles are placed for holding water for evaporation. The saddles are shown in the sketch of the longitudinal section of pit.

DDD. Flue, having a damper near the fire-place, as shown, for the purpose of shutting off the heat from the inside flue when bottom heat only is required.  
E. Boiler (saddle).  
F. Tank, over which (fixed in partition) is a double-action pump.  
G. Tin can from which the saddles are supplied with water, it being connected with them by means of half-inch iron pipes.

H. Proposed boiler, shown as it was intended to have fixed it, but which is substituted by a saddle boiler.  
I. Ash-pit.  
KK. Hot-air chamber.  
L. Isometrical sketch of proposed boiler.  
The arrows indicate the circulation of the heated water in the pipes, and the air in the flue and chamber.

## Home Correspondence.

*Rhododendron Dalhousiae* has flowered at Dysart House, Fifeshire, under the skilful management of Mr. John Laing, the intelligent gardener to the Earl of Rosslyn. The foliage of the plant is much larger and more undulating than it has been observed to be in its native state, and the flowers exceed in size those figured in the "Sikkim Rhododendrons." The corolla is more open at the mouth,  $4\frac{1}{2}$  inches in diameter, and nearly as long; the colour is white, with a pale orange-yellow at the base inside, and the Lemon odour is faint. The anthers are all imperfect, narrow, and produced behind into a sort of horn, lying parallel to the filament. In its native country the corolla is of a much purer white, generally smaller,  $4\frac{1}{2}$  inches being on the average the largest measured, though  $4\frac{1}{2}$  inches have been observed. The Orange hue comes on at a later period; the young corolla is faintly tinged with pink; the Lemon scent is strong and delicious; and the leaves, as mentioned above, are much smaller, and seldom undulated. *J. D. H.*

*Fire at Windsor Castle.*—Your correspondent "J. R." says, that this fire was caused by flues of hot-air from stove, and that if hot-water were used we should be free from accidents by fire. Now, it so happens that he cause of the fire at Windsor Castle was from a hot-air apparatus. There is quite as much danger from hot-water as hot-air, unless your correspondent has any plan so as to heat the water without a furnace. *M. F. Certainly.*

*Stem Roots of Vines.*—The chief cause of Vines emitting root-like fibres from the base of each shoot is too much moisture in the atmosphere of the house. Their growth may soon be stopped, or at least retarded, by keeping the air drier. I cannot, however, conceive that there could be any great harm in removing them, and they

certainly have an unsightly appearance. I have seen them upwards of an inch in length on Vines, which the same season have ripened a heavy crop, some of the bunches weighing from 2 lbs. to 3 lbs. each. *J. W.*—Dryness of the border, accompanied by a dry atmosphere inside the house, will prove an efficient check to the growth of stem roots. The borders here are covered with fermenting material, but not loaded with wet manure, which every one knows is cold, and productive of bad results. We collect long litter, and mix with it a quantity of clean warm leaves, the whole being shaken up lightly and covered with straw, when in a few days a congenial warmth is generated all over the border. As soon as it begins to cool it is replaced with similar material, and under this treatment the roots are healthy and active, whilst the stems are covered with roots at the base of every spur, from 4 to 6 inches long, and I am always glad to see them; they are most numerous when the ground roots are kept active, at the same time a very humid atmosphere is kept up inside from the time the buds break up to the Grapes approaching ripeness, when, of course, a drier air is maintained; diluted liquid manure is occasionally used for sprinkling the pipes and pathways with, by which means the atmosphere becomes impregnated with ammonia, which not only nourishes the fruit, but gives a healthy appearance to the foliage. As soon as the Grapes are ripe, the manure is removed from the border, leaving a mulching to preserve the roots from the scorching sun, as the border is full of spongioles or young fibres to the very surface. In autumn a top-dressing is added, which is allowed to receive the mild rains of that season. Early in November, dry leaves are laid on to the depth of a foot, to answer the purpose of a prepared cover; these keep the border dry. I may add, that the Vines are

all showing plenty of fruit; from four to six, and I have seen 12 bunches show on a single spur. The early house is now colouring a crop of 20 bunches to a Vine. *Anon.*

*Potato Tubers.*—Do these increase and grow after the removal of the bine? I had a crop of Early Shaws last year, which I lifted early in July, 1852. I sowed on this ground white Turnips, on which I folded sheep. I had a very good crop of white Turnips. On ploughing up the ground this week I have collected a considerable quantity of Potatoes, and they are, without doubt, considerably above the size of the tubers I took up in July last. *A. B.*

*Stocking Rivers with Fish.*—In your Paper of April 2, "D. G. N." inquires whether there are any persons in England who undertake to stock ponds or rivers with fish spawn, according to the new plan, at the proper time of year. A person of the name of Robert Ramsbottom, fishing-tackle maker, Clitheroe, Lancashire, is in the habit of doing so, and I should recommend your correspondent "D. G. N." to communicate with him on the subject. *T. W. T., Cheshire.*

*Cole's Crystal White Celery.*—I perceive that Mr. Fry (see p. 213), is desirous of knowing how it is that a seedsman in the neighbourhood of Maidstone can offer the above article for sale at 1s. per packet, when myself and agents require 2s. 6d. per packet. I have this morning received a letter from the seedsman alluded to, in which he states that the error is a typographical one, and that it was not discovered till several hundred catalogues had been circulated. By referring to those now sent out it will be perceived that the mistake is corrected. *William Cole, Dartford.*

*The Winter.*—Seeing *Cupressus Goveniana* returned killed from Dublin, I beg to mention ditto, absolutely



exempt from all change here; *Cupressus thurifera* is killed as to the extreme tips of some branches, but, as a tree, it is uninjured; *Escallonia macrantha* is deprived of the larger portion of its old foliage, but it is breaking out vigorously all over, and none the worse; *Daphne collina*, narrow variety, has turned yellow, and the flower-buds are expanding very reluctantly; but the broad variety, contiguous to it, is as luxuriant as possible; *Coprosma lucida* has all the foliage destroyed, but few, if any, of the twigs; *Pittosporum Mayii* (qu. if same with *tenuifolium*), intact, both in sunny and shady aspect; *Fabiana imbricata* equally so. *A. H., Cambridgeshire.*

—Our shrubs generally have a withered appearance, indeed many seem quite dead; the *Laurustinus*, *Euonymus*, *Berberis aquifolium*, and *Garrya elliptica*, are severely nipped, and the *Aucuba japonica*, Sweet Bay, common Laurel, Portugal Laurel, and Evergreen Oak are all hurt, but not so severely as the preceding. Ivy on walls, common Holly, *Arbor-vitæ*, and even the *Deodar* bear evidence of the severity of the frost. Among flowering shrubs that are injured are *Rhododendrons*, *Kalmias*, *Escallonias*, *Roses*, *tree Pæonies*, *Heaths*, and *Cistuses*. We are situated on a part of the promontory of Flamborough Head, about 3 miles from the sea on the north, 4 miles on the east, and about 300 yards on the south, so that it is only a west wind that comes unaccompanied with the blasting effect of the sea air. *F. Cheetham, Foreman at Sowerby House, Bridlington.*

I am sorry to say that our Conifers have suffered much more here than at the Horticultural Society's Garden, owing to vegetation being unusually forward with us at the time the hard weather commenced. Excepting a few of the new ones, they were planted in 1846, so they have endured, uninjured, more severe frosts in former years; the lowest temperature we have experienced during this season being 20° below the freezing point. Out of a good collection the following has suffered:—*Pinus Hartwegii* and *patula* had all their foliage browned, and some of their shoots killed; *P. apulcensis*, *australis*, *Grenvilleæ*, and *Winchesteriana* have had their leaves very much touched, but their wood appears to be unhurt; the foliage killed half-way back on *macrophylla* and *Coulteri*, the latter I know is counted synonymous with *macrocarpa*, yet *macrocarpa* is quite uninjured in the same situation, and not 30 yards from it; *insignis* and *muricata* are browned a little; *Abies Jekoensis*, a foot high, has 3 inches of its top killed; the leaves of *A. Brunonianæ* are only a very little hurt; *Cupressus funebris*, 4 feet high, and protected with a mat, is quite killed; *C. Uldeana*, one plant, 7 feet high, killed; another, 15 feet, is very much injured; *C. Goveniana*, *macrocarpa*, and *thurifera*, the latter 17 feet high, have their leaders killed, also many of their side shoots, and altogether very much damaged; *Taxodium sempervirens*, 18 feet high, has suffered a good deal; one plant of *Cryptomeria japonica* has had its top killed 18 inches down, the others are uninjured; *Juniperus flaccida*, *Gossinthiana*, and *Bermudiana* are more than half killed; *Pinus Russelliana* and *Araucaria imbricata* are also injured a little. *M. Henderson, Cole-Orton Hall, Ashby-de-la-Zouch, Leicestershire.*

**Stem-roots of Trees.**—In your report of the meeting of the Edinburgh Botanical Society, I read an account of "the remarkable formation of a stem-root in the decayed trunk of a Willow," which reminded me of a tree somewhat similar, that grows in Holton Park, Oxon. The tree I allude to is a young Chestnut, which has grown inside an old Ash, and has sent down a strong root, which now forms the trunk of the tree, one whole side of the Ash having fallen away. This root trunk is above 10 feet high, and varies from 20 to 21 inches in circumference. About 10 feet above the ground are still remaining, though of course quite dry, the small roots which first took root in the decayed part of the Ash. *A Young Gardener, April 6.*

**Wilmot's Early Forcing Kidney Bean.**—I have tried this Bean, and I find it to be a very good one; it is not only large, but highly flavoured, very prolific, and dwarf in habit, qualifications very essential not only in French Beans, but in every other description of vegetable grown in pots for winter use. I have been gathering from it ever since the first week in February. I use 9-inch pots well drained, filled with two-thirds of fresh fibrous loam, and one-third well decomposed stable manure. I put three plants in each pot, and pinch off the tops at the second rough leaf. This causes the plants to produce a more compact head, and consequently a greater number of Beans. From each pot, upon an average, I gather 50 Beans. *B. T. P.*

#### Changing the Name of Fruits.

"Down among the dead men let them lie."

As Mr. Hogg has thrown over Dr. Diel as an authority, we will in like manner throw overboard "Golden Winter Pearmain," which has for its origin a misnamed Apple, sent from Messrs. Loddiges; and also Joannet and Quining, and return quietly, after this little tempest, to the names in the "Catalogue of the Fruits cultivated in the Garden of the Horticultural Society," the most useful catalogue ever published. The most popular name in the north for Dumelow's Seedling Apple is the "Normanton Wonder;" the "Wellington" is its cockney, or rather Covent Garden name. I am really obliged to Mr. Hogg for mentioning the "fiddling" nature of fruit-tree cultivation in pots, otherwise, after seeing those beautiful fruit trees in pots of different kinds at Frogmore, in the Royal gardens, I might, although a young man with unbleached hair, have become, like Mr. Ingram—according to Mr. Hogg's estimation—a "fiddling gardener;" and besides, all Dr. Diel's numerous errors we owe, according to Mr. Hogg, to his cultivating fruit

trees in pots, "such pretty toys for old gentlemen." I hope to grow old very soon if I can then grow such fruits on trees in pots as Mr. Ingram does for her Majesty. *Pyrus.*

**Hulings' Superb Plum.**—In my hurried communication last week, I stated that this Plum was raised by Dr. Hulings, quite forgetting at the time that it was only introduced to public notice by that gentleman. The person who raised it was a Mr. Keyser, of Pennsylvania, and hence it is sometimes called "Keyser's Plum." My attention was chiefly engaged with the correctness of the nomenclature, and I did not observe the oversight till I read the published statement. *Robert Hogg.*

**Effects of the Winter on the Coast of Dorset.**—I regret to say our garden is in a very pitiable condition as to appearance. I have not often seen it so shabby, but I hope our losses are not so great as they appear. I do not expect to discover the worst or the best till May, or later, as doubtless some plants that look as bad as possible, may shoot afresh, or some evergreens that seem to hold on for the present, may ultimately have not strength to recover. It is at all events something to have established the perfect hardness down to 19° Fah., of such plants as these:—*Rhododendron Gibsoni*, *cinnabarinum* (except one from the Hort. Soc. garden, named *Rh. cinn. var.*, which is browned by the frost), *glaucum*, *Rollisii*, *Niligricum*, and *arborescens*; *Azalea indica*, all vars; *Pinus tenuifolia*, *muricata*, *longifolia*, and *radiata*; *Araucaria Brasiliensis*; *Daphne japonica*, *Fortuni*, and *Aucklandi*; *Laurus glauca* and *canariensis*, *Apollinaria canariensis*, *Arbutus tomentosa* and *mollis*; *Thea Assamica*; *Acacia linearis*, *melanoxylon*, and *armata*; *Tetratheca japonica*, *Mesembryanthemum californicum*; *Pittosporum Mayi* and *tenuifolium*, *Quercus reticulata*, *rugosa*, *dealbata*, *lanuginosa*, *annularis*, and *agrifolia*; *Fagus Cunninghami*, *Sisyrinchium grandiflorum*, *Convolvulus Cneorum*, *Epacris sp.*, *Portiera hygrometrica*; *Ilex Cunninghami*, *cassine*, *Tarago*, *Mexicana*, and *excelsa*; *Corypha australis*, *Chamærops Martiana* and *hystrix*; *Pteris cretica* and *rotundifolia*; *Gaultheria acuminata* and *buxifolia*; *Winters* and *Illiciis* (3), *Tasmanian aromatica*, *Magnolia fuscata*, *Chinese Bamboo*, *Broad-leaved ditto*, *Styrax officinale*, *Rubus smilacifolius*, *Hollobolia*, *Diosma umbellata*, *Polypodium Billardieri*, *Libocedrus Doniana*, *Olea fragrans* and *Americana*; *Beschorneria yuccoides*, *Agave mitis* and *scabra*; *Pyrus Hookeri*, *Crataegus crenulata*, *Mida salicina*, several *Coprosmas*, &c. &c.

## Societies.

**HORTICULTURAL, April 5.**—Dr. HENDERSON in the chair. H.R.H. Prince Albert, his Majesty the King of Prussia, his Imperial Majesty the Emperor of Russia, his Majesty the King of Wurtemberg, and his Imperial Highness the Archduke John of Austria, who had been previously Fellows of the Society, were on this occasion elected Honorary Members; and the Right Honourable Lord Wenlock, Mrs. Long, and S. Rickards, Esq., Fellows. Of fruits preserved without sugar or vinegar two collections were contributed, one—by far the best—by Mr. Lovejoy, butler to J. Thorne, Esq., of Mawbey House, South Lambeth, the other from the neighbourhood of Birmingham. Mr. Lovejoy's consisted of Damsons, Greengage Plums, Gooseberries, Rhubarb, Cherries, Black and Red Currants, Raspberries, and Mulberries, all in good condition, with their forms nearly as perfect as when first bottled. They were stated to have been treated as follows:—When the stalks were removed they were bottled, and boiling water added, having alum in it in the proportion of 1 drachm to 4 gallons. They were then permitted to stand till they had become cold, when the bottles were filled and bunged down tight. They were then placed in a copper of cold-water, and heated to 176°. After that a piece of bladder was tied over the bottles, and they were sealed securely up. A Banksian Medal was awarded. The second collection, which was very inferior to the above, was shown by Elizabeth Chaddish, cook to S. Rudder, Esq., of Handsworth. It consisted of Mussel and Damson Plums (both of 1851 and 1852, the one being about as sound as the other), Bilberries, Cherries, and Gooseberries. A Certificate of Merit was awarded it.—Some Grapes were shown by Mr. Allport, gr. to H. Akroyd, Esq., and Mr. Mitchell, of Brighton. Both were Black Hamburg; Mr. Allport's being much the better of the two, but unfortunately a little rubbed by travelling. A Certificate was awarded them.—Other fruit consisted of forced Strawberries. Of these Mr. Ingram, gr. to her Majesty, at Frogmore, sent examples of his new seedling called Ingram's Prince of Wales, a sort raised from the British Queen. It is a large variety, and, in the present instance, somewhat coarse; but this is not its character when grown under natural circumstances. For forcing it is said to be much superior even to Keens' Seedling, being a sure setter; and as regards flavour, it is preferred above all other sorts at the Royal table. It may be mentioned that, if after forcing the plants are turned out, and such flowers as appear removed up to the beginning of September, the plants will produce an abundance of fruit in autumn, when their coarseness will be found to have disappeared. A Banksian Medal was awarded.—Mr. Monro, gr. to the Earl of Clarendon, at the Grove, Watford, furnished unusually large examples of Cuthill's Black Prince Strawberry, showing that its small size,

which is sometimes complained of, may be greatly improved under good cultivation. A curious fact belonging to this variety is that it frequently produces blossoms of a deep red colour. A Certificate was awarded.—Of vegetables, Mr. Bates, of Manor House, East Molesey, Surrey, sent seven heads of excellent Broccoli, for which a Certificate was awarded. The sort was not named; but it was certainly very fine, considering the condition in which the late severe weather has left this valuable esculent.—Mr. Lewis Solomon sent some French Peas, which looked as if they had been kept too long.—Among flowers, an excellent collection of Hyacinths, which were the admiration of every body, was contributed by Messrs. Henderson, of Pine Apple Place. It consisted of first-class varieties, in the finest possible condition, and well deserved the Banksian Medal which was awarded it.—A similar award was also made to Messrs. Lane, of Great Berkhamstead, for two boxes of cut Roses, whose colours were more than ordinarily brilliant for forced blooms, and whose size and fragrance were all that could be wished for, even in the Queen of flowers.—Of Orchids, Mr. Summerfield, gr. to J. S. Venn, Esq., sent a new *Dendrobium*, in the way of D. Wallichii, but altogether smaller, to which a Certificate was awarded. It was stated to have been bought at one of Stevens' sales, and has, we believe, found its way into one or two other collections.—Mr. Carson, gr. to W. F. G. Farmer, Esq., sent an example of the beautiful *Arrophyllym giganteum*, producing several fine flower spikes, more than half a foot of each of whose tops was richly ornamented all round with small, purple, shell-like blossoms, arranged with the most perfect regularity and symmetry. This species has flowered at several places this season under the appellation of *squarrosom*; but the proper name is *giganteum*. A Banksian Medal was awarded it. The same plant, but not so vigorous or fine, was furnished by Mr. Franklin, gr. to Mrs. Lawrence, together with a noble specimen of *Dendrobium macrophyllum*, and its closely allied species *anostomum*; two examples of *Vanda suavis*, and one of *V. tricolor*; *Oncidium sarcodes*, a finely-cultivated *Chysis bracteescens*, and two other smaller plants. In regard to the *Chysis*, it was mentioned that its stiff, fleshy, white and yellow flowers, answered exceedingly well for the decoration of ladies' hair. A large Silver Medal was awarded.—Mr. Loddiges received a Certificate for the new Brazilian *Lælia* called *grandis*. The sepals and petals are of a peculiar cinnamon colour, the lip lilac, becoming darker towards the point; and although by no means a striking plant, yet it possesses a certain amount of gaiety.—Mr. Dennis, of the King's Road, Chelsea, sent a small, poorly-flowered plant of *Forsythia viridissima*.—Messrs. Henderson had a pretty hybrid *Rhododendron* called *campanulatum superbum*, but apparently with very little of campanulatum in it.—Mr. Gaines sent three nicely spotted, delicate pink *Rhododendrons* called *Unique Elegans*, and *Roseum maculatum*, for which a Certificate was awarded; and a similar award was also made to the same grower for two plants of *Rogeria thyrsi* flora, a plant from central America, whose numerous clusters of rosy *Rondeletia*-like flowers cannot fail to secure for it, when well cultivated and highly coloured, as these were, a place in every collection. The same nurseryman likewise sent a seedling *Cineraria*, called *Reine des Fleurs*, which promises to be a first-class flower. Mr. Mitchell also sent a large-flowered *Cineraria*, called *Fairbrother's Mary Elizabeth*.—Other florist flowers consisted of Queen of February and Wellington *Pelargoniums*, gay forcing sorts, from Mr. Gill, of Denbigh Road, Bayswater.—From Mr. Moore, of the Apothecaries' Garden, Chelsea, came a specimen of *Melastoma corymbosa*. A glass case containing anatomised leaves and seed-vessels (of the Popp and other things), neatly arranged, and altogether a well executed as the best Indian specimens of the ar was contributed by a lady, and received, as they justly deserved, much praise.—From the Garden of the Society came a handsome bush of *Forsythia viridissima*, literally loaded with bright yellow blossoms, large and fine showing that to have this shrub in perfection at this season the flowers must have a little protection, although the plant itself is perfectly hardy; along with it we the Sikkim *Rhododendron ciliatum*, which is flowered abundantly everywhere just now; *Henfrya scandens* Mr. Fortune's *Camellia hexangularis*, *Acacia celastria* folia, *Begonia hydrocotylifolia*, and a handsome variety of it called *hybrida*; *Ceanothus rigidus*, which has proved quite hardy this spring, while *dentatus*, which is to be suspected is sometimes sold for it, has been little injured; *Habrothamnus elegans*, *Trymalis odoratissimum*, *Centradenia rosea*, some *Azalea*, *Epacris*, *Heaths*, and one or two other plants.

## Notices of Books, &c.

**Black's Library Edition of the Waverley Novels.**—Sir our last notice the Monastery, the Abbot, and Keir worth have appeared, concerning which we say every thing when we report that they are in all respects worthy of the beautiful edition to which they belong.

**Lord Byron and the Comic Dramatists of the Restoration** (Traveller's Library, No. 40).—Just the book to railway, and certain to be re-read with pleasure every man of refined taste.

**Emigration**, by C. Hursthouse (12mo, Hardwicke).—Beset as we are by all manner of inquiries respect



this subject, we are glad to be able to refer to the present work, which is truthful, honest, and judicious; we only wish it had been more temperate in its expressions here and there. There is no special advice given in it to gardeners, but the following must be of use to all classes:—

"A quarter of a century ago, the annual emigration from this country was about 15,000 souls. Increasing year by year as its benefits have become more felt, it has now reached nearly 360,000; thus, at the rate of hundreds a day, the adventurous and the sanguine, the unfortunate and the discontented, the desperate, the poor, and the needy, are stepping forth from our 'serried ranks,' to seek the free space and plenty of newer and less crowded lands. Here, perhaps the thought may cross some mind, that emigration, though inherently a good thing, may, like other good things, be carried to excess, just as a pint of old ale may strengthen a teetotaler, a gallon prostrate him. Undoubtedly they would be right: emigration might be carried much too far for the interests of the mother country. For instance, if some 'dazzling diggings' were discovered at the Land's End, and three-fourths of Hastings emigrated there, the chief items in the next census might be the mayor and corporation, a few score elderly ladies and gentlemen, and some hundreds blooming young women. In such case, Hastings would become as a city of the past. Rents in High Street would fall to ciphers, and strayed cattle graze unheeded in the market-place. If the French landed, the 'unprotected female' would fall the easy prize of war; and, without strong-minded women essayed the plough and spade, the fair fields and gardens of the suburbs might relapse into pristine wilderness. And similar over-emigration from the kingdom would produce similar sad effects. In emigration, as in everything else, there is a judicious turning-point—a 'whole-some mean.' A country wanting people is in a worse plight than a country wanting space. But this turning-point we are far, very far from having reached. True, hundreds a day may leave us, but a thousand a day are born to us. True, emigrant-crowded ships may dot the channel; but we go through the land and see no signs thereof. And, whilst we count our paupers and beggars by hundreds of thousands, our criminals by tens—whilst our capital displays the astounding spectacle of a twentieth part of its population rising every morning without the means of getting the morning's meal—whilst the 'Song of the Shirt' remains a true song—whilst thousands of strapping young men (doing their sisters' work) are exhibited in shops serving tape and bobbin—whilst an advertisement in the *Times* for an accomplished governess (where, as the family is serious, no salary will be given) is answered by 20 charming young ladies, anxious for the wretched post—whilst such telling facts as these are patent to the world, we have good assurance that emigration is not overpassing those wholesome limits, within which it is the certain source of national prosperity and individual well-doing, just as the sun is the certain source of light and heat. The great moral blot on this country is pauperism, and its squalid offspring, engendered crime. Did time permit, we might see how a wise system of pauper emigration would convert this costly curse into a wealthy blessing. But, having to go round the world and call at the 'Diggings,' we can't stop at the workhouse, and must dismiss this part of our subject with the reflection, that in a few more years, Anglo-Saxon emigration will root the language of Shakspeare and Milton over half the earth; that the emigrant's plough, rather than the warrior's sword, has made us first of nations; and that, if ours be the empire on which the sun never sets, it is mainly to emigration we owe the boast."

#### Garden Memoranda.

ROYAL BOTANIC GARDEN, KEW.—Since our last visit a new Victoria house has been completed. It is a square iron and glass structure about 45 feet in the side, span-roofed, and, like the great Palm house, set on a handsome basement wall of stone. The tank is circular, about 34 feet in width, lined with concrete at the bottom, over which is placed sheet lead, terminating in a substantial stone rim, on which an iron railing is set, to prevent visitors pushing one another into the water. The plant, which is, of course, in the middle of the tank, has had a place especially prepared there for it, surrounded by hot-water pipes, some of which are also, we understand, led under the mould in which it is planted. The bottom of the tank, beyond the place for the soil in the centre, is covered with rough gravel, which has a clean and nice appearance. The atmosphere of the house is likewise warmed by means of hot-water pipes, and ventilation is effected by the sliding of one or two sashes in the roof, and by the moving outwards of certain panes in the sides; under these conditions the plant, which has not been long in its new situation, is thriving satisfactorily. The house, which is glazed with green glass, is entered at the east end, through a small span-roofed porch, about 12 feet square. It is placed at a little distance from the west-end of the large Palm stove, on a raised platform or terrace, and some new walks have been made to approach and lead from it.

In the large Palm house, above alluded to *Doryanthes excelsa* has been finely in blossom, but its beauty is now past. Its flower stalk was at least 15 feet in height, surmounted by a large tuft of brilliant crimson Lily-like flowers. The noble tree Ferns which this stove contains generally look well, as also do most of the Palms; were it possible to accommodate them,

both would, however, do better in a smaller house, where the temperature would be more equable; for here it is impossible to prevent currents being generated in winter, which have a tendency to scorch the foliage wherever they occur, and in one or two instances considerable mischief has been done by them. As summer comes on, however, this will be repaired. The two loftiest Palms in this house are kinds of *Coccoloba*, of which one (*Coccoloba plumosa*) is an old inhabitant of these gardens, and the other (*Coccoloba coronata*) was recently presented by Sir G. Staunton, Bart., having been transported, though of so large a size, by railway, from Leigh Park, in a case 42 feet in length. These, as does the common *Coccoloba*, afford good examples of one numerous group of Palms which have their leaves pinnate, or divided like the plume of a feather. The two stoutest Palms in the collection, easily recognised by the thickness of their trunks and the great size of the tubs in which they are placed (each single plant, with its earth and tub, being calculated to weigh 17 tons), are the West Indian or Jamaica Fan-Palm (*Sabal umbraculifera*), a good example of a second extensive group, having palmate or fan-shaped leaves. The *Caryota urens* may be mentioned as deviating considerably in its foliage from other Palms: each leaf is very much divided, and the ultimate divisions or leaflets resemble in shape the fin of a fish. We may further mention in this collection the *Date-Palm* (*Phoenix dactylifera*); the Dwarf Palm (*Chamaerops humilis*), which is the most northern of all Palms, extending even into the south of Europe; the *Palmyra Palm* (*Borassus flabelliformis*), the most difficult of Palms to rear; the *Guinea Oil-Palm* (*Elais Guineensis*), which produces the African Palm-oil; the well known *Coccoloba*; the *Cabbage-Palm* (*Oreodoxa oleracea*), which yields an esculent substance from the crown of its stem; and *Plectocomia elongata* from Dr. Wallich, which, with its luxuriant foliage, and its singularly spiny stem, cannot fail to attract attention, the spines being digitate, or united together like the fingers of the hand, or still more resembling the foot of the mole, and admirably formed for strength. Its leaves, when full grown, are of great length, and pinnate like the shaft of a feather—so long, indeed, that they seem, as does the stem, to need support; and Nature has provided them with the means, for the main stalk of the leaf, at the end, extends into a lengthened slender tail, armed all along with strong deflexed hooks, by means of which, while running up among the stems, and catching hold of the branches of other trees, the foliage and stem are propped. Here is also the *Wax Palm* (*Ceroxylon andicola*), of the Andes of New Grenada, discovered by Humboldt, of which the full grown stem is covered with a waxy substance having the same properties as bees' wax; and, lastly, we may observe that many kinds may be seen to have a coarse fibre separating from the base of the leaves—so strong, indeed, that in the *Attalea funifera* it forms an extensive article of commerce from Pará, Brazil, for the purpose of making brooms and brushes used by hand, as well as for the machines employed in sweeping the streets of London and other cities. Some or other of the *Bananas* or *Plantains* may always be seen in this house, in a more or less advanced state of flower or fruit, through the whole year, their ample and delicately green foliage over-topping many of the other plants. The *Zamia*, *Cycases*, and *Encephalartus*, at the south end of the house, are worthy of attention; and here are also noble specimens of the curious *Elephant's Foot* (*Testudinaria Elephantipes*). *Streptizias* are just now in flower: *S. Regine* is from 4 to 5 feet high, the other is the stately *S. augusta*, which, together with the *Traveller's Tree*, or *Urania speciosa* of Madagascar, have the most ample leaf-blades of any plants in the house. Good examples of the *Papaw*, and others of the *Choccolate Tree*, are placed in this tropical house. The juice of the former is employed in the East and West Indies for rendering tough meat tender. The *Bread Fruit* of the Pacific Isles (*Artocarpus incisa*) is also here, together with the *Mango* (*Mangifera indica*), which annually yields its rare and delicious fruit, but whose first flowers have not set this season. Here, too, are the *Coffee Tree*, seen in one place growing out of the crevices of the bare tufa rock of Bermuda; the *Black Pepper* plant of our tables is also climbing over stumps of trees on a shelf. At one time it was believed that all our *Black Pepper* was furnished by one kind of plant, and if any sample happened to be inferior to another, the fault was ascribed to the mode of preparation; now it is known, however, that there are at least three different plants that yield this condiment, all differing from one another both in appearance and produce. Among the numerous kinds of *Figs* there will be found here, at the north entrance, a young plant of the *Banyan* (*Ficus indica*), one of the most celebrated trees in tropical India, for the immense stretch of its limbs, and the singular mode provided by Nature for their support, which consists in its sending down from its branches numerous roots, which are small, until they fix themselves in the ground, but after that they swell with great rapidity. The plant here, though young, has already sent down many stout roots or props, but of course it can give but a faint idea of the appearance of this famous tree. The *Peppal tree* (*Ficus religiosa*), from the same country, is remarkable for the tail-like points to the leaves; and another kind of *Fig* in this collection is the true *Sycamore-tree* of scripture, or *Sycamore* of Palestine (*Ficus Sycomorus*).

Pursuing our way to the principal cluster of glass-

houses, we come to the old tropical aquarium, in which is a thriving specimen of the *Royal Water Lily*, and a good example of *Nymphaea Devoniana*, the fine scarlet hybrid raised at Chatsworth, by Sir Joseph Paxton.

The *Orchids* in the different stoves look extremely well, and among them are many fine specimens of that interesting tribe, more especially one of *Maxillaria Harrisoniae*, which is, at least, a yard wide, and producing multitudes of shell-like flowers. *Eriopsis biloba*, a handsome seldom-seen *Orchid*, was also in flower here, along with *Cypripediums*, which flower better in shallow pans than in pots. An attempt has been made to do away, as much as possible, with canvas shading for these plants, and to substitute a shade made by painting the outside of the glass-roof with white-lead, "pouncing" it afterwards with the brush to destroy all lines. This appears to answer perfectly, and it has not been found to make the house too dark for these plants, even in winter. At the end of the large *Orchid-house* are some famous *Pitcher-plants*; and in another division some noble *Ferns*, more especially of the Ceylon *Angiopteris longifolia*, the Mexican *Cibotium Schiedei*, and one or two others, whose spreading fronds are one or two yards long. These and many others have all been raised by Mr Smith, from seeds out of his herbarium, sown in loam, in shallow wooden troughs placed over hot-water pipes, in one of the smaller stoves.

A lean-to stove at the back, or south side, of the Museum, is filled with a choice miscellaneous collection of tropical plants. Here are the *Nutmeg*, the *Clove*, the original *Cacoutchouc tree* (*Siphonia elastica*), from Pará; the *Upas* or *Poison tree* of Java (*Antiaris toxicaria*); the *Cow tree*, or *Palo de Vaca* (*Galactodendron utile* of Humboldt), native of the *Caracacs*, abounding in a milky juice, which is drawn into gourds by tapping, and used as a cooling and refreshing drink; the *Xanthochymus pictorius* of Roxburgh, the fruits of which ripen with us, and yield, on puncturing, a juice which concretes into one kind of Gamboje; the singular *Lace Bark tree* (*Lagetta linearia*) from Jamaica, whose layers of inner bark (there are as many as the portion of the tree yielding it is years old) resemble, without much artificial preparation, an exquisite lace; the *Indian Teak* (*Tectona grandis*), extensively used in ship-building, and the equally useful and much rarer *African Teak*, or *African Oak* (*Oldfieldia Africana*); the most splendid of all flowering trees, *Amherstia nobilis*; the celebrated *Gutta Percha* plant (*Isouandra gutta*); the *Malayan Mangosteen* (*Garcinia mangostana*), the rich fruit of which we vainly strive to procure in our stoves; the *Saouari Nut* (*Pekea tuberculosa*), and *Double Cocoa Nut* imported in a large tub with great difficulty from the *Seychelle Islands*. It has at present only one leaf, a large one having perished during the journey; but it may now be said to be fairly established.

An old *Vinery*, now improved and at present used for nursing or rearing plants for other situations, contains a full collection of Dr. Hooker's *Sikkim Rhododendrons*. Among them are strong plants of *R. Campbelliae*, *Argenteum*, *Maddenii*, *Aucklandiae*, and *lanceifolium*, and smaller ones of *Thomsonii*, *lepidotum*, *Edgeworthii*, *niveum*, *Hodgsonii*, *cinnabarium*, *Falconeri*, *ciliatum*, and *glauceum*, &c. Several plants of *ciliatum* are in full flower, and are extremely handsome, each shoot terminating in from 3 to 4 blossoms, measuring upwards of an inch across the mouth, while the plants themselves are not more than 8 inches high. *Glauceum* also promises to bloom this year; but none of the others. We may mention here that most of the above varieties have been planted out in sheltered "nooks" of *Rhododendron* clumps along the side of the principal promenade, and that there they have all proved hardy, and *ciliatum* is covered with flower-buds. Some are also planted among *Ferns* in a cool damp house behind the *Cactus house*, where they seem to succeed well, but they have failed planted out in a pit, which Mr. Smith attributes to the air being too dry and warm for them. Some of the large thin-leaved kinds, as *argenteum*, become browned all along the margins of the leaves, from too dry an atmosphere, and it is a curious fact that this happened last summer at the same time both in the house, in pits, and out of doors.

Among novelties, in a sort of nursery house, we remarked the *Rice-paper plant* (*Aralia papyrifera*), from *Formosa*; *Impatiens Hookeri*, a *Ceylon Balsam* of considerable beauty; the Mexican *Semeiandra grandiflora*, a greenhouse bush, whose flowers bear considerable resemblance to those of some of the smaller blossomed *Fuchsias*, and one or two other interesting plants.

We observed in pots out of doors, at the end of one of the houses, the *Para Grass*, a kind of *Panicum* which is found to be very suitable for dry sandy soils in temperate countries; and while speaking of *Grass-like* plants, we may add, that in a cool house we remarked the *Xanthorhoea hastilis* of New South Wales in blossom. The flower-stems resemble the bolt of an Italian iron set upright, the small white flowers being closely arranged, as it were, round that part which is heated. This is plentiful in Australia, where it sends up its flower-stems in abundance after a bush fire has passed over it.

As regards the effects of the winter out of doors, it is worthy of notice that *Pinus patula*, which has only had its leaves browned at Chiswick, has been completely killed here; and *Pinus pulcherrima* and the *Gowen Cypress* have also been somewhat injured, although they have not been hurt at Chiswick. Some of the *South Carolina Andromedas* have also been killed outright, and the leaves on the young tops of *Laurels* are



everywhere browned. The willow-leaved Veronica has also suffered much, both against walls and in the shape of a bush. Escallonia rubra has also been touched, and many other plants; but the whole extent of the injury is of course not yet ascertained.

In the greenhouses Acacias, Boronias, Eriostemons, Rhododendrons, Cinerarias, and other spring flowering plants were exceedingly gay; but with the exception of Crocuses and a few Primroses, little else was in blossom anywhere out of doors.

## FLORICULTURE.

**LEADING FLOWERS OF 1852.**—Calceolarias, numerous as they are, still require improvement. At present they must be admitted to be little better than annuals; for from a small packet of seeds sown annually, may be obtained nearly all the variety which it is customary for us to see in collections. We want better habit and greater distinctness of colours and markings. The everlasting yellow with brown spots surfeit the eye and detract from an otherwise fine flower; only five Calceolarias out of many scores have been considered worthy of reward by the National Floricultural Society, and those Labels of Commendation only—they are, Araminta, Fascination, Fireball, Heywood Hawkins, and Wellington Hero. The latter is a shrubby variety. Let us hope that some skilful raiser will take this flower in hand, and ascertain satisfactorily what it is yet capable of becoming. That Cape Heaths are also susceptible of some improvement few will deny, but to effect anything really worth while in regard to this flower, time and perseverance must needs be at command. Among more recent sorts E. Mooreana must surely take a prominent place; it is dwarf in habit, with a free branching growth, and it is an abundant bloomer; E. Marnockiana is also a first-class variety; and E. jasmijniflora rubra, E. tricolor Eppsi, and E. t. splendida are all good kinds; E. Leeana, var. viridis, is likewise desirable. Epacris, useful as they are for early spring decoration, are improving but slowly; nevertheless in E. Ingramii, E. elegans, and E. rosea alba we have three highly attractive and distinct varieties whose colours are bluish, pink, and deep reddish crimson. Pinks have lately received some valuable additions; Optima and Colchester Cardinal rank quite first class; the same may be said of Mrs. Bragg, Jupiter, Ruby, Esther, Koh-i-noor, Perfection, and Sarah; these will each, doubtless, be seen at our coming exhibitions, and by means of them we may hope to obtain further improvement; for even with all the energy bestowed on the Pink during the last half century, it is still found to be a difficult task, on a show day, to select a dozen distinct varieties having form and smoothness combined; and yet our trade catalogues enumerate hundreds. We cannot but think that our dealers would show a wise discretion by restricting themselves to a limited number, be it of Pinks, Pansies, Carnations, Dahlias, Roses, &c.; let them begin by giving, say 12, 24, or 36, as the case may be, of those they consider the best, and thus, even in one season, we should have lists of great value to the whole floral fancy. Some may remark, that "as vendors we would be deprived of pleasing our customers," but this could be obviated by a foot note to the effect that other varieties were grown, and might be had, although not enumerated. We hope, ere long, to see the day when we shall have selections rather than collections. J. E.

**THE CINERARIA.**—The following is my mode of cultivating this useful flower, which is at present the greatest ornament I have in my little greenhouse:—When the blooming season is over, I place the plants full in the sun for about a month, giving them but little water. I then remove them to a shady situation, where they soon begin to grow very freely. In the middle of August I turn them out and shake the soil carefully from the roots; I then break off the shoots with as many young roots attached as possible; I place them in some 4-inch pots, with a mixture of one-third turfy loam, one-third leaf soil, one-third silver sand, well mixed up together. After that I set them in a slight hotbed, and water them with a fine-rosed pot, keeping the lights shut close, and shading them for a few days until they are established; I then leave the shading off, and give them air by degrees till the lights are quite removed in the day-time. At the end of September I pot them into 6-inch pots, well drained with pieces of potsherd, with a mixture of one-half turfy loam, the other half leaf-soil and silver sand well rubbed and mixed together without being sifted; I then set them in a cold pit as near the glass as possible, and give them all the air I can when the weather will permit. In the beginning of November I again shift them into 10 or 12-inch pots, according to the growth of the plants, using the same mixture as before, with plenty of drainage, and I again place them in a cold pit, and give them all the air I possibly can. I always make it a practice to cover the pit up with straw and mats every night, in order to keep the frost from them. With this treatment my plants grow freely, and bloom abundantly. D. S.

**NATIONAL FLORICULTURAL SOCIETY, April 7.**—Messrs. E. G. Henderson sent, among other things, Rhododendron ciliatum nicely in flower; and Messrs. Henderson, of Pine Apple Place contributed 24 well bloomed Hyacinths, two Rhododendrons, and some other plants. Of Cinerarias, some 50 seedlings were staged: one named National, from Mr. G. Smith, was reported to be insufficiently in flower, otherwise it possibly might have had a first-class Certificate. A variety named Conspicua, from Mr. G. Wheeler, of Warmminster, received a Certificate of Merit. It is a white-ground sort, heavily tipped with rosy-purple; disk dark blue. A Certificate of Merit was also awarded to Cineraria

Mrs. Truelove, a kind with pure white ground, heavily tipped with dense crimson-purple; disk very dark purple. Cineraria Lady Flora, from Messrs. Ivery & Son, of Dorking, was admired, but it received no award, the plant being in very bad health.

**CINERARIAS:** A. H. Marlow. Very large, measuring little short of an inch and a half across, but otherwise worthless.—F. E. P. Packed in dry cotton, and too much shrivelled up for examination.—W. D. 4, ribbed, thin, and narrow; 3, without merit; 1, ditto; 2, not so good as Fairy Queen.—E. A. Newark. 64, colour very cheerful, but possessing little merit; 48, diminutive; 62, delicate, but a weed; 55, a real gem, so far as the specimen admits of examination, the bloom being a mere fragment, containing only 10 petals.

## Calendar of Operations.

(For the ensuing week.)

### PLANT HOUSES.

**PROCEED** with the staking and tying out of plants requiring such assistance; but if our former directions are carried out relative to growing plants with short-jointed wood, a good deal in the way of stakes may be dispensed with, although some will be necessary to give the plant its desired shape; but on no account use more than will effect that purpose. Turn each plant frequently round, that it may not become one-sided. The greatest care will be requisite to prevent soft-wooded stove plants from drawing; as these will now be making rapid progress, they should have a large share of light, using shade only during the middle of the day. Some of those potted early may now require a second shift; in this, however, the cultivator must be guided by the requirements for which the plant is grown. Take every opportunity of keeping down insects, by fumigation and the active use of the syringe; but in this avoid injuring the foliage of newly-formed large-leaved plants, which is sometimes done by a careless workman in syringing them. Hard-wooded plants should be frequently examined with respect to their drainage. At this season many of them are either in bloom (as most of the New Holland plants), or approaching that state, and will consequently require a larger quantity of water, more especially large specimens not shifted since last season. It will hence be obvious that if the drainage is imperfect, or, on the other hand, the entire mass of roots does not get equally moistened, the death of the plants must soon occur from one or other of the above causes; and hence the necessity of paying attention to this important point—more especially when the most delicate plants are the first to suffer. The cuttings we advised to be struck, for a stock of winter-flowering plants will now require potting off. As it is not desirable these should be grown to a large size, keep them rather short of pot room; a hot-water pit will answer best for growing these and similar things. The plants can then be brought close up to the glass, and, by a little attention, will form stout bushy plants, with well-ripened wood, by the autumn, and which then may be brought into bloom at pleasure.

### FORCING DEPARTMENT.

**VINERY.**—As the sun has now considerable power, the coverings of Vine borders may be partly or entirely removed, except where the crop has made some progress, when, for reasons previously stated, it would be injudicious to remove the material; more especially if it is affording any heat to the border. The borders uncovered should be very lightly pricked over, and made to look as neat as possible. These remarks are likewise applicable to Peach-house and other borders whose surfaces have been covered to protect them from frost, as they will lose much more heat than they will gain by remaining covered up after this. Keep the syringe at work to young Vines breaking, and endeavour, by a moderate temperature, accompanied by humidity, to obtain a uniform progression of growth. As sun heat increases, allow larger admissions of air. Make it a rule to give air very early in the morning, that the leaves may become gradually dry before the sun acts powerfully on them, neglecting which is one principal cause of scalded foliage. Proceed with thinning out the crop in the succession houses; this should at all times be done with especial reference to the age and constitution of the Vines; and therefore, though no certain rule can be safely laid down to regulate the weight of fruit each Vine should carry, it will be wise at all times to leave too few, rather than too many. We have seen one heavy crop ruin young Vines for several years; and much caution should be used for the first two or three years of their bearing. With Muscats, in particular, this should be observed, as they show profusely, and their foliage being smaller than some kinds of Grapes, they are less able to carry a heavy crop till they get well established. **STRAWBERRIES.**—As the first crop is removed, bring on the next in rotation, and place an equal number in a dung frame or pit, to forward them on. A good quantity of the British Queen should now be brought into work; for, although it is not so valuable for the first crop as Keens' Seedling, and takes longer time to ripen, yet, when well done, there is nothing so fine; and it will be found as good a setter at this time, and onwards through the season, as any of the other kinds.

### FLOWER GARDEN AND SHRUBBERY.

In addition to plants named in former Calendars for flower-garden decoration, we must not forget the Heliotrope, of which there are now several varieties, among which corymbosum is one of the best; Gem is good, were it not that flowers and leaves are too much of a colour; Voltairianum nanum will be very suitable for small beds, if it prove hardy enough to open its blooms perfectly.

For beds requiring taller plants, a selection from the autumn blooming section of Phloxes can be made, including some which combine a dwarf habit, brilliancy of colour, and which keep in bloom for a long time; Omnicolora and its varieties are among the best, and two new kinds, Spencerii and Mayiana, are likely to form valuable additions to this class. In a similar way, Pentstemon fulgens, formosum (scarlets), and speciosum (blue), make good plants for grouping. Kalosantes coccinea is perhaps the most striking plant for bedding or for vases we have; the only drawback to its use is the short time it continues in bloom. We find, however, in cool shady places its blooming season is considerably lengthened. Antirrhinums are so gay, and continue so long in bloom, that no garden should be without them; the varieties are numerous. The Ghent Alstroemerias are brilliant in colour, they should be planted in well drained beds, and protected through the winter from heavy rains and frost, when they will thrive well; they dislike removing often, or even pot culture. The same treatment suits Oxalis Bowiciana, a showy dwarf plant for a rose-coloured bed. Showery weather should be taken advantage of to complete the planting of deciduous trees and shrubs without delay, and likewise of any evergreen left unplanted from the autumn, as from the present time to the end of the month is the most suitable season next to the autumn for removing most kinds of evergreens; in planting, avoid exposing the roots to the sun, or drying winds. Mulch immediately after planting, to prevent undue evaporation from the soil, as well as to save watering; a good watering overhead with the garden engine on the evening of bright days will prove of great use to newly-planted evergreens, and when the plants are large, the stem and some of the principal branches should have haybands tied round them, which, by damping once or twice daily, will keep the bark moist, and facilitate the flow of sap.

### HARDY FRUIT GARDEN.

The weather having become more genial to the opening bloom, a portion of the protecting material should be removed from Peach, Nectarine, and Apricot trees; do this gradually, that the bloom may not suffer by a too sudden exposure. When canvass screens on rollers are employed, of course they are rolled up by day and let down each night; if the nights, however, are warm, they need not be lowered quite down, as a little extra air by night will be more beneficial than otherwise to the bloom: we name this as we have more than once observed the bloom of Peach and Apricot trees injured by too much covering: where spray or netting is used, and which could not conveniently be removed daily, a part should at once be removed, as before advised, only keep it on hand in case a return to severe weather should render its use again necessary. Figs should now have their winter protection removed, and have the necessary thinning out and tying in. The bloom of the choicest kinds of Pears should have some protection, should frost occur, where the trees are against walls. This is easily done; but with espaliers and low standards the difficulty is greater: for low standards a slight frame somewhat the shape of an umbrella, and covered with canvas may be fixed over each tree; of course the frame should exceed in diameter that of the tree. For espaliers, a width or two of canvas should be fixed on a frame over the line of trees; if the above are placed 2 feet above the trees they will protect them from a tolerably severe frost, provided it is not accompanied with wind, in which case screens will have to be fixed to windward as well.

### KITCHEN GARDEN.

As soon as the principal crops are in the ground, and the main quarters have got their supply of dung wheeled in, to serve for the season, as we formerly directed, proceed to make good any part of the edgings not in order; either (supposing they are Box) by taking the whole up and re-planting or filling up blanks.

### Notices to Correspondents.

**BOOKS:** J. P. Brecon. We suppose that "Boccius on Artificial Spawning" is as good a book as any. It can be had through the trade; we believe it was published by Longmans.—S. S. Lindley's "Vegetable Kingdom" is out of print; a new edition may be expected in a month or two.—H. T. E. Pym's "Elements of Forestry," &c.—Alpha. There is no such book as you ask for. **BROCCOLI:** W. H. The Walcheren, Snow's Superb, White Winter, and Knight's Protecting, are good winter sorts. The latter you may obtain under the name of Hampton Court. With regard to the price of Snow's Superb Winter White, we can only say that it may be had at various prices. Good Broccoli seed cannot be expected to be sold at a low price. Considering that Broccoli occupies the ground for a long time, that after all the crop is of little or no value if the seeds have not been purely saved, it is evidently the best plan to procure that which is genuine, and possibly a good price will ensure such. **CALADIUM:** A. H. No species may be considered hardy. **ELÆOCARPUS:** W. R. E. cyaneus will live out of doors in summer but will die there in winter. **NAMES OF PLANTS:** H. G. B. Phycella corusca, a Chilean bulb.—J. W. Seems to be young Isoetes lacustris.—M. L. The one with the short, bright-green leaves, two in a sheath, is Pinus muricata; the other, with three leaves in a sheath, may be bit of Pinus insignis, but it is impossible to say from such a specimen. P. Gordoniana and pseudo-strobis have both very long leaves in a sheath. **PONDERA:** A. H. The species crassipes is quite tender. **PISTIA:** A. H. Pistia stratiotes is figured in "Botanical Magazine," t. 4564; Ceratopteris in the "Bulletin de la Société Philomatique," 1821, p. 184, and also in the botanical part of "Freyer's Voyage," t. 20. **VINES:** E. E. In a Viney 28 feet long you may plant several Vines, of the following sorts:—three Black Hamburgs, one Black Prince, one Chasselas Musqué, two Royal Muscadines. **VINERIES:** T. G. W. You may ripen Grapes in the autumn in Vineries in ruins; but you cannot force in it. **YUCCA:** J. B. It will flower over and over again. Give it little manure when it begins to grow. A supplement to the Horticultural Society's Fruit Catalogue is in preparation, and may be expected by Midsummer.



## GUANO AND OTHER MANURES.

**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:  
 Turnip Manure ... .. per ton £7 0 0  
 Superphosphate of Lime ... .. " 7 0 0  
 Sulphuric Acid and Coprolites... .. " 5 0 0

Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## TO AGRICULTURISTS.

**PONTEY, ROWE, AND CO., MANURE MANUFACTURERS,** Drake's Place, Plymouth, beg to inform Agriculturists and others that they continue to grind BONES of all sizes, manufacture MURIOPHOSPHATE, and supply PERUVIAN GUANO, direct from GIBBS & CO., at the lowest prices for genuine articles. They deliver their Manure by agreement at any seaport in the west of England, and at any of the stations on the South Devon and Bristol and Exeter Railways.

They submit the following Testimonials, selected from a great number they have received from Agriculturists in different parts of Devon and Cornwall.

*Penvenon, Helston, Sept. 4, 1852.*

Gentlemen,—I have much pleasure in stating that the Muriophosphate, &c., has far exceeded anything I expected. I used 4 cwt. per acre last year, which produced me a good crop of Swedish Turnips; the land was afterwards sown to Wheat without any additional manure, and it is decidedly the best crop I have this season.—Yours, &c., B. MANNELL.

Messrs. Pontey, Rowe, & Co., Manure Merchants, Plymouth.

*Down, Kingsympton, Nov. 21, 1852.*

Sir,—In answer to your inquiries respecting the results of your phosphate of lime, I am fully satisfied of its value for Turnips, especially in forcing on the plant in the first stage of its growth. I sowed 2½ cwt. to the acre, mixed with 5 bags of peat ashes, and I have the best Turnips in the parish, and I have great pleasure in saying that it answered on my land (it being a light soil) beyond my expectations. You are at liberty to make any use of this information.—I am, Sir, yours truly, WILLIAM KEMP.

To Mr. Petherbridge, Hill, near Barnstaple, Agent for

Pontey, Rowe, & Co.

*Sticklepath, February 10, 1853.*

Sir,—Having used your Muriophosphate in the two preceding seasons as a manure for my common Turnips with great success, I was induced this season to try it for a large portion of my Swede crop, the success of which has far exceeded my expectations, having, with about 3 cwt. of your manure, mixed with 7 bags of ashes to the acre (drilled with the seed), grown an excellent crop of Turnips, about 28 tons to the acre, of first-rate quality. I can with confidence say, I seldom, if ever, grew better; whilst the portion manured with dung, sown at the same time, suffered so severely from the ravages of the fly and grub, that I had but half a crop. I can with confidence recommend your Muriophosphate as a valuable manure for Turnips, not only for its fertilising qualities, but as a preventative against the ravages of the fly and grub, which for the last few seasons have been so destructive to the Turnip crop in this neighbourhood.—With respects, believe me, Sir, yours truly, JOHN DENNIS.

To Mr. R. Petherbridge, Hill, near Barnstaple, Agent for

Pontey, Rowe, & Co.

From George Spurrell, Bailiff to Edward Weld, Esq., Tavstock Court, Tavstock, Nov. 15, 1852.

In answer to your letter of the 18th ult., respecting the Muriophosphate, I have used it for several years past for roots, and this year with Grass only, with great advantage. I can also say that we have tried it against Guano, Farm-yard Manure, and Lawes' Superphosphate, and the result turns in favour of the Muriophosphate. This year we have grown about 30 tons per acre Swedes, dressed principally with Muriophosphate; as to the straw crop after, there is not the least doubt of an abundant crop. I would with confidence say, it is an excellent preparation for green and straw crops. Had I a farm that I could feed off my roots on the same land, I should use it in preference to any other manure.—I am, Sir, yours obediently, GEORGE SPURRELL.

To Mr. Petherbridge, Hill Farm.

*Barton, Landrake, 2nd month 17th, 1853.*

Respected Friend and Sir,—Last spring I manured some old Grass land with Bone manure, having mixed it with earth two months previously. I can now speak to its beneficial effects on old pasture. I tried it against lime and earth in the same field, and found the cattle preferred the part manured with Bone, and produced finer herbage.—I am respectfully, JOHN C. BROWN.

Alexander Pontey, Nursery and Seedsman, Plymouth.

*Carclen, Feb. 21, 1853.*

My dear Sir.—I will now endeavour to redeem the promise I made to you some time ago, of sending you my opinion of Bone Manure, with a short statement of the way in which it has been so successfully applied here as a top-dressing for Grass land. You are aware that for many years past I have been in the habit of using Bones to some extent, I am therefore enabled from practical experience to speak with confidence of their great value, and of the good effects that have resulted from their application. Although they may be considered expensive in the first instance, yet I am fully convinced they will be found among the most powerful and lasting manures known to us at the present time; and admirably suited for renovating old worn-out pasture land. As an instance of what may be effected by following a system of dressing with Bone Manure, I will adduce the fact that before using it here on about 100 acres of Grass land, the soil of which is a free yellow loam, resting on a shelly subsoil, and well drained, there was barely Grass enough to support from 250 to 300 southdown sheep, and four horses, whereas the same land now maintains a flock averaging from 450 to 500 southdowns, eight cows, and four horses, besides allowing a portion of about 25 acres to be annually sowed up during the summer months and cut for hay. With regard to the mode of treating the Bones, I may observe that they are far less effective when sown over Grass by hand, than when properly mixed with earth, and allowed to remain some time afterwards in a heap. My practice, therefore, is to fix on a convenient spot near the land intended to be dressed, and there make a deposit of all the refuse earth, road scrapings, scourings of ditches, &c., that are collected in the course of the year, and I think I have obtained as much as will give me about 20 loads per acre. In October the Bones are procured, the proportion used being at the rate of 3 quarters per acre, and after spreading them as equally as possible over the large heap, the whole are then thoroughly mixed together, and remain in this state until the weather is favourable in February or very early in March, for carrying out and spreading the compost. The after management consists in going over the part that has been manured with a sharp harrow, then sowing a mixture of about 6 lbs. of white Clover and 3 lbs. of Trefoil seed per acre, covering them with the roller, and finishing with a bush harrow. In about four or five years the mowing for hay and manuring the following spring are repeated, but with a lesser quantity of Bones, and without the necessity of sowing any more Clover or Trefoil. Such is the system that I have pursued, and I shall be happy to give the foregoing details if it prove useful to those who may be unacquainted with the value of Bone manure or its management.—I am, my dear Sir, yours very truly, W. R. BOOTH.

To Mr. Alexander Pontey, Nursery and Seedsman, Plymouth.

## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

**ANTONY GIBBS AND SONS,**

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**SUPERPHOSPHATE OF LIME,** warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

PERUVIAN GUANO, guaranteed the genuine importation of Messrs. A. GIBBS & SONS, 9l. 10s. per ton, or, in quantities of five tons and upwards, 9s. 5d. per ton in dock. A constant supply of LINSEED and RAPE CAKE.

EDWARD PURSER, Secretary.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

## SEWAGE CHARCOAL MANURE.

**PEAT CHARCOAL,** completely saturated with London Sewage, will be found a most effective Manure for any crop. It may be obtained from the Sewage Manure Works, Stanley Bridge, Fulham, Middlesex, at 60s. per ton, 4s. per cwt., and 2s. 6d. per half cwt.

"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden, by Mr. Glenny.*

Mr. JOHN ANKITT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other manure. The quantity I used was 4 cwt. to half an acre."

## MANURES, LINSEED CAKE, &amp;c.

on sale, in any quantity, the following articles, pure and unadulterated, and at the lowest prices:—

Home-made Linseed Cake. Linseed for feeding.  
 Rape Cake. Linseed Oil.

## MANURES.

Superphosphate of Lime. Peruvian Guano.  
 Calcined Bone. Wheat Manure.  
 Fine ditto, for dissolving. Mangold Wurzel Manure.  
 Bones, half-inch. Potato Manure.  
 Ditto, dust. Sulphuric Acid.  
 Ditto, fine, for dissolving. Gypsum.  
 Animal Guano, or Dried Flesh Manure, from South America. Nitrate of Soda.

Orders addressed to DIXON & CARDUS, Linseed Mills and Artificial Manure Works, Northam, Southampton, will receive prompt attention.

## IRON HURDLES.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London; and 17, New Park Street, Southwark, Manufacturers of every description of Iron Fencing, beg to call the attention of Noblemen and Gentlemen to their present prices of HURDLES:—for Sheep, 6 feet long, 3 feet high, with 5 bars, at 4s. 6d.; and for Cattle, 6 feet long, 3 feet 3 inches high, with 5 bars at 5s. each.

**A PRIZE MEDAL FOR SUPERIOR LOCKS** WAS AWARDED TO J. H. BOOBYER, AT THE GREAT EXHIBITION OF 1851.

**THE CELEBRATED AGRICULTURAL DIGGING FORK, PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools.** Mole Traps, 6s. per dozen. Carpenters' and Smiths' Tools, &c. Best fine cut Clasp and Rose Nails at the lowest reduced prices. Sword-scrapers for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.: at J. H. BOOBYER & Co.'s (late STURCH & BOOBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope Street, Clare Market, London. Established nearly 200 years for the sale of goods from the best Manufacturers at the lowest prices. Goods forwarded to any part on the receipt of remittance.

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Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. 2 s. d.  
 Patent Pump ... .. 1 15 0  
 Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0  
 Larger sizes if required.  
 To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest Pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

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Every description of Machinery for Raising Water, Fire Engines, &c.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not sink through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

## AGRICULTURAL SEEDS.

FOREST AND ROSE TREES, &c.—PRICED LISTS.

**PETER LAWSON AND SONS'** Catalogues of the above for this season are now published, and may be had on application, or free by post from their Agent.

Also "Agrostographia; or, Grass Treatise," 2s. 6d.; and the Synopsis of the Vegetable Products of Scotland," price 10s. 6d. JOHN C. SOMMER, 159, Fenchurch Street, London.

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**H. R. SMITHE**, of Eastling, Faversham, Kent, is now prepared to send out his mixtures of the Natural Grasses and Perennial Clovers, to lay down land to permanent pasture. The greatest attention is given in apportioning the various sorts, that the mixture sent may be suitable to the particular soil, &c., of the buyer.

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## The Agricultural Gazette.

SATURDAY, APRIL 9, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, April 13—Agricultural Society of England.  
 THURSDAY, — 14—Agricultural Imp. Society of Ireland.  
 WEDNESDAY, — 20—Agricultural Society of England.  
 THURSDAY, — 21—Agricultural Imp. Society of Ireland.

THE great advantage which the Scottish experiment upon the subject of AGRICULTURAL STATISTICS has over that to be performed in England, lies in the closer connection which those who superintend it have with the selected district. The Poor Law Board can no doubt reach the guardians in the several unions of the county of Norfolk—though even then it is by no means certain that its instructions will be any the more acceptable for



the source from which they have originated—but it cannot reach the occupiers of the land except through a channel which, at the best, will have no tendency to propitiate their regard. Now, the Highland Society at once commands the respect and the goodwill of the farmers of the districts which it has selected. It has not only in the subjects on which it has to operate that clannish spirit, of itself favourable to the undertaking, out of which the strong feeling of distinct nationality peculiar to Scotland has, in every aspect of it, arisen; but in itself, and therefore in all whom it commissions, it presents claims to the respect and goodwill of every farmer in Scotland whom it addresses, which not one of them will dispute. Its "enumerators," therefore, have an easy task before them. Each, in his own district, visits every parish, calls on the best and most intelligent farmers, and, a stranger before, is, on presenting his credentials, at once assured of hearty assistance. His office, thus, really is one merely of enumeration—he has merely to add up returns furnished him by the several parishes.

If we could find in England, as the Highland Society easily can in Scotland, one intelligent farmer in every parish ready to sanction the scheme and urge it upon his neighbours—the task of collecting the agricultural statistics of a district would present little difficulty. The result upon the whole must, of course, be the sum of the results obtained from the individual parishes; and if these were as easily obtainable in Norfolk as they will be in Roxburghshire, Haddington, and Sutherland, the prospects of the English division of the experiment would be brighter than they are. We would engage, with the help of the assistant overseer in our own parish, to ascertain the numbers of the different sorts of stock, and the extent of land in Grass, fallow, and the various crops, within its limits, on any one day in June; and, with the willingly-rendered assistance of neighbours, we would undertake to forward as trustworthy a judgment as the subject permits, upon the acreable produce of the several crops, on any one day in August. If there were another in every other parish in our country equally ready with ourselves, one-fortieth of the problem for all England would be solved at once. These individual farmers are more easily obtainable in Haddington than they will be in Norfolk, not because such men do not exist in the latter county—there is no county in the island farmed by a more intelligent tenantry—but because there is no body like the Highland Society to introduce the matter to them, who can so perfectly command their respect. There is positively nothing in the English district to represent that hearty and intelligent co-operation with the national society in a work seen to be of great value, not only nationally but agriculturally, which will be at the foundation of the movement in Scotland. The inquiries, instructions, &c., may be distributed to all the tenants in the district, but the replies are optional; and it is too much to suppose either that a large number of those from whom they are asked are sufficiently interested in the subject to exert themselves in connection with it, or that those who do not feel this interest will put forth this effort for the satisfaction of the mere functionaries concerned in the matter of distributing and collecting a set of unimportant and unauthorized questions. The upshot will be, that, when the officer calls for the schedules a week after he has distributed them, 19 out of 20 will still be blank; and after, in obedience to his instructions, he has urged the matter upon the attention, one by one, of the occupiers in his district, not more than 30 or 40 per cent. of them will then hurriedly supply the missing figures. Were there power to compel returns, any parish officers would serve the purpose of mere distribution and collection, which would then be all that was needed; but in the case of an optional series of returns, it seems necessary to the success of the experiment that it be undertaken by some society, body, board, or person who shall command the respect, agriculturally, of the district to be examined.

The following is the method in which the matter is to be managed in the Scottish counties:—

"The county of Roxburgh is to be divided into seven districts the county of Haddington into six districts, and the county of Sutherland into four districts. Each district will be composed of a certain number of contiguous parishes, as like as possible in their agricultural features and products. An enumerator has already been named for each district. In each parish of his district the enumerator has a correspondent. This staff consists of farmers of standing and influence. The enumerators furnish the secretary of the Highland Society with lists of the occupiers of land in their districts. The necessary number of schedules are to be enclosed and addressed in the secretary's office, and sent *en masse* to the enumerators for distribution. Each packet will contain a specimen of a complete schedule in print, and a printed letter of instructions signed by the enumerator. The schedule shows the occupant's name and address, the total and the arable acreage of his farm, the acreage under different crops, the acreage not under crop, and the stock. The crops enumerated are Wheat, Barley, Oats, Rye, Beans and Peas, Vetches, Turnips, Potatoes, Mangold Wurzel, Carrots, Cabbage, hay, alternate Grasses, improved permanent Grass enclosures, irrigated meadows. Land not in crop—bare fallow, sheep walks, woods, waste. Stock—horses,

milk cows, other cattle, ewes, wethers (tups are to be returned along with the wethers; where sheep form the staple of the farm, a schedule exclusively applicable to sheep is to be issued), swine. The schedule will be delivered to occupants by the 10th of May, and is to be completed and returned to the enumerators of the several districts on or before the 20th of that month, by which time farmers can pretty correctly estimate the extent of green crops still to be sown. The returns will be checked and tabulated in the office of the Highland Society, and lodged by the secretary with the Board of Trade. So far the returns exhibit only acres and stock; they afford no indication of annual produce, and indeed contain nothing beyond what a landlord already knows. It is not intended to put any direct questions to the farmer in reference to production, nor will the inquiry in any way expose the produce of a single farm, while it is hoped that it will afford the means of correctly arriving at that of a county. The process will be this. The secretary having tabulated and abstracted the returns, reports to the enumerator of a district the number of acres of each description of crop sown. The enumerator and his committee, consisting of a farmer from each parish of the district, meet immediately before harvest and compare notes with each other as to its probable prospects; they meet again after the harvest, and determine the number of bushels of the different grains, tons of the different roots, &c. &c., which may be assumed as the fair average produce, per acre, throughout the district in question, for crop 1855. In like manner the ewe and the wether stock returned in May, afford the means of estimating the wool, while the yield of lambs can be correctly calculated by that portion of the ewe stock, which the district committee will know to have been bred from. Finally, milk cows will enable dairy produce to be judged of. The district averages will be reported to the secretary, and, when put together, they will enable him to exhibit the gross produce of a county."

Now, it seems to us that, in the absence of a Central Society to superintend the English experiment—for the Council of the Royal Agricultural Society of England have decided that they cannot, consistently with the terms of their charter, take any measures on the subject of agricultural statistics—the local societies and farmers' clubs ought to be called upon to contribute their influence. For, whatever the means employed, if the goodwill of but one intelligent man in each parish, of good standing amongst his neighbour farmers, could be obtained in Norfolk, as it easily can in Roxburghshire or Haddington, the difficulty of the matter would disappear alike in both; and this goodwill to the success of the attempt will be more easily procurable through local clubs and district societies, than in any other way.

Whoever may have the superintendence of the Norfolk experiment would therefore do well to put himself in communication with all the agricultural societies in that county, and so obtain access to the farmers through their own office-bearers.

THERE have from time to time been attempts to introduce more generally amongst Barley growers a skinless variety of the six-rowed species; and remarkable statements of its productiveness have been published, and its merits as a malting grain have been extolled, and an extraordinary origin has been procured for it, so as to give it a good recognisable advertising designation; and so, for several years as spring has come round, we have regularly observed the announcement of the Peruvian or skinless Barley for seed.

It so happens that Barley of similar character has been imported from Siberia, introduced, Mr. LAWSON tells us, by a Mr. HALLIDAY, in 1768; and a naked Barley has been imported from the Himalayan mountains, introduced in 1817, and called Nepal Wheat; and from a letter in the *Aberdeen Journal*, of March 16, we learn that a similar Barley has been introduced from the Cape of Good Hope. So that if there was that merit in these naked Barleys, that some energetic advertisers would have us believe, there has been ample opportunities for farmers to learn it. The letter just alluded to especially dwells upon the extraordinary productiveness (10 qrs. per acre of 63 lbs. a bushel in one instance!), the admirable malting character (not so perfectly proved by the instance cited), and the first-rate meal qualities of this variety; and among the general remarks with which the letter closes we extract the following testimony of Mr. HARVEY, of Tillygreig, near Aberdeen, who writes thus favourably of it:—"In respect of produce of this, as tried against other Barley, I have, both in 1851 and 1852, a larger proportion to the acre of Peruvian than of other Barley in quarters; I have a weight per bushel, extra; I have equal bulk of straw; my Grass offers better where it grew; it has been earlier; it does not shake more readily, though, the awns being very brittle, it is easily divested of them when fully ripe, and which may cause the careless observer to think it is apt to shed its seeds; it is not apt to lodge, and it is less trouble in dressing, when brought into the mill, requiring no hummelling."

Taking this 'Peruvian' Barley to be the same as the Siberian, we dare say that it deserves a mention among other sorts in a history or description of varieties of Hordeum; and it may be useful as an early variety in some of our later districts; but that it will or ought to supplant the standard varieties 'Early English,' 'Chevalier,' 'Annat,' we do not believe.

MANY millions are annually sent out of this country for the purchase of Flax, and its various

products:—70,000 tons of the fibre, 650,000 quarters of the seed, 70,000 tons of the oil-cake, are annually imported. Such is the statement with which Mr. WILSON concluded a most interesting address, delivered last Wednesday before the Society of Arts. Now, without pretending that the immense value here represented is so much actually lost to the agricultural interest—that the money spent by them on Linseed for sowing, and on oil-cake for feeding, would be all in the pockets of the farmers, as well as all this produce in their barns if they had grown it themselves, or that so much of it as might reach the pockets of the labourers is not represented by a pretty nearly similar amount derived from the larger extent of land devoted to other produce under present circumstances; without assuming that the immense sums paid by English manufacturers to foreign growers, and which might have been handed over to English growers, is so much actual loss to the latter—there can be no doubt that these figures justly claim the serious attention of British agriculturists. High authorities have assured us that the cultivation of Flax has long been a merely protected branch of the agricultural economy of this country; that it is only under the influence of richly endowed societies, devoted to the encouragement of its cultivation, that it continues to maintain its ground; and that it has long been declining in those districts where it used to flourish. They say that these figures, representing our importations of Flax, would be exceeded by the figures representing the importations of other agricultural produce which would be needed, were land enough in this country, which is now devoted to the production of the latter, used in the cultivation of the former.

Well! that is the simple question to be decided before we can determine the agricultural importance of the subject. It might indeed so happen that an equal ultimate expenditure of means was involved in both cases, and yet one might be more desirable than the other, because of a better distribution of that expenditure—because, for instance, a larger share of it might go through the hands of the labourer, and we believe that such a case is illustrated in the present instance; and that, other things being equal, Flax is more than a mere substitute for Wheat, because, while the farmer may benefit from both alike, the labourer has reason to prefer the former. But labourers have not the direction of cultivation; and in order, therefore, to determine the prospects of Flax culture in this country, it only needs that we ascertain its bearings on the pockets of the farmer.

Now, it certainly is not more safe to form a judgment on this point from the declining condition of the crop in certain districts where it used to be largely grown, as in Scotland, Somersetshire, &c., than it would have been to judge of the prospects of the iron trade from its tottering state, when carried on in the weald of Sussex. Other districts proved their greater fitness for the capitalist who wished to invest in that direction, and improvements of manufacture have wonderfully increased the production. No wonder that Scottish farmers have not liked the crop when its tedious and laborious management, after it has been pulled, comes on for superintendence during their late corn harvest; and no wonder that it has anywhere done little more than "hold its own," when we remember that the tedious, critical, and difficult part of its management has hitherto been in the hands of the growers, who rarely have the time, and of farm-labourers, who rarely have the skill needed for the work.

The prospects of the crop however, now, are better than they ever have been. We do not refer to the efforts, on its behalf, of societies devoted to its encouragement, though they have been most useful, but rather to the successes of inventive genius in connection with its preparation for the market. It was to this part of the subject that Mr. WILSON's most interesting address especially referred. He is to speak on the same subject, probably in greater detail, at the meeting of the English Agricultural Society next week, and we shall defer a full report of his remarks till then. It must suffice for the present if we state the main results at which the improvements which he described have now arrived.

The dry ways of preparing Flax for the market were barely referred to, and, except under certain circumstances, have had but little claim on our consideration. And of the other class of methods, those acting by the employment of chemical solutions for the extraction of the fibre are likely to fail before the great improvements effected in the processes of water retting. Hitherto, by the ordinary plan of soaking in tanks or mooring in running water, from 14 to 30 days have been wasted in the slow process of natural fermentation, by which the fibre is set free. By SCHENK'S improved hot water



method this time is shortened to three or four days, but fermentation, though artificially accelerated, is still the agency employed. But lately, by the use of hot water applied in a most ingenious manner, and without the aid of fermentation, the process has been shortened to 24 hours; and at length, by another patented contrivance, or rather series of contrivances, which has been fully tested, the process has been shortened to three or four hours! The last patent, by Buchanan, certainly exhibits very great inventive skill, and we hope next week to state its peculiarities in detail; meanwhile, we refer to it here, as proving the greatly improved prospects of the Flax crop.

A sure and rapid process, such as is now possible, will at once attract capital to the work, and we shall have reterities fit for the treatment of a largely increased produce of the plant in every considerable district. And this is all that is wanted to increase its cultivation far beyond its present limited extent.

We may mention that as in the latest processes no fermentation is set up, the steep liquor is simply the extract matter of the plant, which proves to be of a richly azotised nature; so that it is, in fact, of equal nutritive value with distillers' wash.

#### WHO ARE THE ROBBERS OF THE SOIL?

By what force are aqueous solutions compelled to break through the laws of gravitation and rise as sap in plants, and that to any height? Upon this question I have long been of opinion hangs the problem of their relative exhausting properties in the various families of plants, rather than in the amount of those matters they are able to fix or assimilate.

By a reference to the *Gardeners' Chronicle* of 1845, page 656, will be seen the train of inductions by which I was led to believe that this force is evaporation at the leaves, and I need not, therefore, here recur to them. On this view the amount of soluble matters drawn from the soil will be in proportion to the superficial extension and exposure of the objects subjected to the various actions in the atmosphere which regulate the intensity and rapidity of evaporation. Submissive to these rules, in proportion to their degree of evaporation, or which amounts to the same thing, under similar exposures, in proportion to the surfaces their leaves expose to evaporation, must be the quantity of sap plants draw from the soil; and, as we can scarcely suppose the root of a plant to exercise an elective power, in proportion to the sap so drawn up must be that of those matters, nutritive or noxious, as are found in a state to be taken up by water within the range of root attraction; it matters not whether the plant can fix or assimilate only some certain of these elementary matters, it must equally deprive the soil of all. How those matters, which it cannot fix, are got rid of, is a very material inquiry; for if it returns them to the soil by the roots, no doubt the excrements of one family of plants will eventually afford nutriment to another family. Liebig appears to be of opinion that root excretions are wholly carbonaceous, and Dr. Lindley (*Gardeners' Chronicle*, p. 816, 1844), in speaking of the return sap, after performing its several offices, says, "A small part is perhaps given off by the roots, under particular circumstances; but this is probably a deranged function." From reasons I have elsewhere advanced, I believe that probability is in favour of these matters being got rid of by the leaves in the water which evaporates from them, and which thus bears a strong analogy to perspiration from the animal body, and which term has been appropriated by physiologists, as it were, to distinguish this excremental perspiration from that which is more purely aqueous. These matters have, agreeably to the opinions of all writers on the subject, been carried up through the body of the plant dissolved in water, notwithstanding the various affinities which must have endeavoured to lay hold of them in their way. Arrived at the leaves where these attractions have ceased to act, and where the water, putting on the form of vapour, retains them with still more energy, there can be no difficulty in the supposition that they, at least so much of them as are contained in the water which evaporates, are carried off with it in its volatilisation; for, according to Liebig, "A liquid during evaporation communicates the power of assuming the same state in a greater or less degree to all substances dissolved in it, although they do not of themselves possess that property."

Upon this view of the question, it is very evident that our larger leaved plants, those which we have, perhaps mistakenly, denominated ameliorating ones, are really more exhausting than our smaller leaved plants, our cereals, and which, by the by, so long as they continue in a green state, that is, in condition to draw nourishment from the soil, we do not class with the exhausting ones!

Upon this view, too, we must consider the opinion as erroneous, that our cereals or other seed crops, whose leaves begin to decay after the formation of their seeds, are more exhausting than those which continue in a leafy and growing state while they are ripening their seeds, for not only do those plants, in a great measure, cease to draw from the soil, in consequence of the destruction of those hydraulic engines which pumped up the soluble matters in the soil, but, as with the leaves, the roots decay, their extremities, on which are the sponges, being the first to do so, so the very hose and pipes are destroyed that form the communication with the soil. These plants, then, most surely depend for the perfecting

and ripening of their seeds on the stores already laid up within their stems, rather than on any nutriment they can continue to draw from the soil, their connection with the soil being now so curtailed as to be beneficial to them only so far as it prevents the too rapid, and therefore injurious, drying up of the plant, the little moisture which they still draw from the soil being but barely sufficient for this end. At this period occasional moisture in the air assists the ripening process.

But, to have done with theory, let us see what practice says. Mr. Lawes' experimental field, without manure, has grown Wheat for ten successive years with an average produce of 17 bushels, while, under the same conditions, it has not produced as many cwt. of Turnips—about the same amount of produce for twelve years; and the Rev. Mr. Smith double the quantity for nine years; and in none of these cases have the crops become deteriorated. In all these cases, natural causes, aided alone by mechanical labour, have been sufficient to produce in exhausted soils enough of food for the requirements of these crops; and so as to give such an abnormal return of them as has afforded a very fair and satisfactory profit to the growers, and in Mr. Smith's case to give a return equal to the average produce of manured land. But these natural causes are found altogether insufficient for the supply of the necessary food to those crops called ameliorating; for Mr. Lawes finds, under similar conditions, his Turnips degenerate to their normal state, and dwindle down to the size of Radishes. Indeed, every farmer knows that while a twelve-month's assiduous fallowing will secure him a reasonable crop of grain, that manures in addition are indispensable to the production of even an indifferent root crop.

Mr. Smith's system, sustained by the experiments of Mr. Lawes, will give a new epoch to agriculture. The discoveries of Mr. Lawes are put in practical execution on the interlining of his root and legume crops; for Mr. Lawes, in finding that Wheat crops may be grown in uninterrupted succession without degenerating, and therefore not requiring the intervention of other crops, has discovered that the case is totally different with respect to root crops; "that with no manure he has employed can he produce a second crop of Turnips in succession equal to the preceding one," and that, in fact, to obtain full crops of roots, a rotation of crops is necessary.

We are then taught a new lesson, that for the profitable production of grain, intervening crops of roots, &c., are not required; that all our ideas on the subject are reversed, and that it is really to these root crops that our rotations have been serviceable, while the tillage which was indispensable to them, and which really constituted their ameliorating effects, was all that was necessary to corn crops; that in making our grain crops fallow ones, we may safely dispense with root crops, as such, in connection with them.

In the greater necessity and demand for manure, or which is the same thing, in the fertility of the soil which leaf and root plants make, as is evident by its inability to return a second similar crop, is seen practically that they exhaust the soil in a greater degree than the cereal plants that are allowed to produce their seeds, which leave the soil in a state of fertility that admit of an independent repetition of them without any falling off, and thus practice equally with theory point to those crops as the real robbers of the soil. J. M. Goodiff, *Granard*.

#### Home Correspondence.

*Osiers*.—Osiers are adapted to low wet patches of ground, where scarcely any other crop can be adventured. They are largely grown in Holland, in Spain, and some other countries of Europe; and in England are perhaps most plentiful in the flat portion of Lancashire, where grounds of 60 or 70 acres each are not unusual, and are found also in the Great Level of the Fens. The land must be so situated that water cannot stand upon the surface for more than a few days at a time in summer; in winter, two or three months' flooding will be no disadvantage. Parallel grips or water-trenches should be dug about 3 feet apart; the earth thrown out raises the soil and improves the drainage. Sets, about 2 feet long, are then planted by being thrust half-way into the ground, in rows, and about 18 inches equidistant from each other, the trenches occupying spaces between every other pair of rows. The sets are to be purchased from old Osier-grounds, at the rate of 10s. per 1000, and about 12,000 are required to plant 1 acre. Great care should be taken to procure valuable sorts, as there are more than 20 different varieties of Osier, and these are also of varying quality. Several kinds may be grown upon the same ground. The stems must be left for two years to strengthen, and in the third autumn the Osiers may be cut. The cutting then comes annually, the flexible shoots being commonly from 6 to 8 feet long. The only management the land requires is the chopping-down and clearance of weeds once a year. If sold "green," the crops may either be disposed of by the acre or by the bunch. The Osiers when cut, are tightly tied up in bundles with an "ell-band," the bundles measuring 42 inches round at the distance of 1 foot from their thick end; and these bunches are commonly sold for 10d. or 1s. each. Osier-grounds have been known to produce a crop of 300 bunches per acre, which would amount in value to 12l. or 15l.; but a good yield may be reckoned worth 5l. or 6l. per acre, and an inferior quality often diminishes the return to less than half this sum. The main expense is the cost of the land; the cutting, &c., amount to but a trifling sum. Extensive growers do not generally sell their Osiers "green," but prepare and send them to

market "white." The process consists in setting up the Osiers immediately after cutting, with their thick ends a few inches deep in water—letting them remain until the sap ascends freely—and then peeling off the bark with an instrument for the purpose. They are then dried and sold by the ton weight. I. A. C.

*On the Comparative Merits of Oxen and Horses for Agricultural Purposes.*—I do not mean to say that oxen may be used entirely to supersede horses, but they certainly can with profit be used on most farms for ploughing, harrowing, rolling, &c. In the first place we will begin with a pair of steers or oxen at 3 years old, cost 22l., and a 5-year-old horse at 26l. The oxen are fed on Grass alone in summer, and on hay or cut straw and Turnips in winter. The horse has his peck of corn a day, with hay in winter, and Clover or Tares in the summer; therefore the cost of maintaining a horse will be quite equal to a pair of oxen, and the risk, farriery, &c., much greater. At the end of three years the pair of oxen will be worth 12l. more than the original cost, and the horse of less value; added to which the harness, &c., of the oxen costs less than the horse; oxen are also more steady in work, and less liable to accidents. I am now speaking of North Devon oxen, which are much better workers and walkers than any other breed, and will fatten at any age. The high-bred short-legged ox is the best. There is another advantage, that when oxen are not working they are paying for their keep in growth. G. T.

*Pig Feeding.*—As to feeding, there is a point which puzzles me in dealing with Ruminants. It is laid down that a bullock should be limited to about 7 lbs. weight of corn a day, when put up to fat, and a sheep to 1 lb. The line and lead are clearly drawn with Ruminants, if a man looks for profit. But how with a porker? A pig on all hands is allowed to fill himself, and eat as much as he pleases; and this is regarded as the logic of pig feeding, to deal out to him without stint. A. B.

*Laudanum.*—I am extremely sorry if I have said anything that was offensive to "W. C. S." I meant that the process to a farmer would be unnecessary trouble, as I have always found laudanum very efficacious, and is almost always at hand. Laudanum contains 3 grains of opium to a teaspoonful of proof spirit, about as strong as brandy. F. D.

*Land Drainage.*—I am asked to state my ideas on the subject of capillary attraction in soils. The statement on which I remarked was, "In some land here there is a vein of gravel at the depth of 5 feet, and if this is not bottomed the capillary attraction is not overcome, and the land is not thoroughly drained." The lack of proper drainage is attributed to capillary attraction; this supposes that water is held in suspension in the soil by capillary attraction, which would otherwise drain out; this I do not find to be the case. That the water will rise in the soil from the level of the water with which the gravel is surcharged is quite true, but only in quantity to supply the place of that evaporated or that taken up by vegetation. Suppose the gravel bottomed and the land thoroughly drained; after a drought, the water held in the soil by capillary attraction is evaporated more or less to the depth, say, of 3 inches; a rain-fall of 1½ inch replaces this water; to use your own expression, "it spreads in virtue of capillary attraction;" an additional inch falls, this sinks by gravitation through the soil and passes off by the drains, the soil retaining all that it has taken up by capillary attraction, and with which it will only part, as before, by evaporation, or the action of vegetation; any water not drained away will rise in the soil, but only to replace that so abstracted. Such is my idea of capillary attraction in soils. I am not yet in a condition to go further. J. C. C.

#### Societies.

##### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held, at the Society's house in Hanover Square, on Wednesday, the 6th of April. The following members of Council and Governors of the Society were present:—Lord Ashburton, President, in the chair; Earl of March, Earl of Essex, Earl of Chichester, Lord Berners, Sir Robert Price, Bart., M.P., Mr. Alcock, M.P., Mr. Raymond Barker, Mr. Barnett, Mr. Beasley, Mr. Blanshard, Mr. Bramston, M.P., Mr. Brandreth, Mr. W. G. Cavendish, Colonel Challoner, Mr. Evelyn Denison, M.P., Mr. Druce, Mr. Gadesden, Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Henry Hippisley, Mr. Fisher Hobbs, Mr. Holland, Mr. Hornsby, Mr. Chandos Wren Hoskyns, Mr. Hudson (Castleacre), Mr. Lawes, Mr. Lawrence, Mr. Miles (of Leigh Court), M.P., Mr. Milward, Mr. Mainwaring Paine, Mr. Pusey, Professor Sewell, Mr. Simpson, Mr. Thompson (Moat Hall), Mr. Turner (Barton), Captain Henry Vyner, Professor Way, Mr. Jonas Webb, and Mr. Woodward.

The following new members were elected:—

Griffin, Edward, Wolverhampton, Staffordshire  
Parsons, Henry, Haulbury, Crewkerne, Somersetshire  
Rowland, John, Neath, Glamorganshire  
Chadwick, E., Grimsdon Park, Tadcaster, Yorkshire  
Bayly, William, Bretwell, Burnham, Bucks  
Edwards, P. N., Brinsop Court, Hereford  
Eyles, Capt. Harry, R.A., C.B., Knockwood Park, Tenterden  
Myddelton, Robert, Gwarynne, Denbigh  
Drinkrow, John Wm., Tipthorpe House, Driffield, Yorkshire  
Napier, Hon. William, 1, Lower Belgrave Street  
Benn, Joseph, Jun., Spittle, Kendal, Westmorland  
Gobley, Walter, Wootton-under-Edge, Gloucestershire  
De Porquet, L. F., Fairkytes, Horncastle, Essex  
Budd, J., Palmer, Y-sta-la-fer, Swansea  
Blyth, John, Stanford-le-hope, Essex  
Farnworth, John Kay, Alderley Edge, Wilmalaw, Cheshire



Rea, Edward, 115, Wardour Street, Soho  
 Gillett, John, Minster-Lovel, Witney, Oxon.  
 Blunt, Francis C., Tooting, Surrey  
 Wilson, John, Pershore, Worcestershire  
 Smith, John, Panton Court, Churchdown, Gloucester  
 Birkin, Richard, Aspley House, Nottingham  
 Davies, William Keville, Croft Castle, Leominster  
 Hussey, Phineas Fowke, Wryley Grove, Walsall, Staffordshire  
 Vevers, John Braze, York Hill Court, Ledbury, Herefordshire  
 Herbert, Rev. John, Leigh Parsonage, Reigate, Surrey  
 Gwyn, Wm. Edward, Pirthoth, Carmarthen  
 Coldicote, William, Over-Norton, Oxfordshire  
 Ruddingham, John, Guiting Grange, Strat, Gloucestershire  
 Williams, Geo. Griffiths, Cwmcynllin, Aberystwith, Cardigan  
 Sessions, Jessie, Norfolk House, Spa, Gloucester  
 Hall, John, Bretforton, Evesham, Worcestershire  
 Chandler, Thomas, Haresfield, Gloucester  
 Thynne, Fred. George, Fleaford Lodge, Guildford, Surrey  
 Halsey, Thomas, Whitminster, Gloucester  
 Randolph, Captain Charles Wilson, Grenadier Guards  
 Downs, Henry, Manor House, Basingstoke, Hants.  
 Corfield, C. L., Windlesham Hall, Bagshot, Surrey  
 Bell, Captain Henry, Chalfont Lodge, Cheltenham  
 Leeming, Dan, Little Blackwood House, Halifax

**FINANCES.**—Mr. Raymond Barker presented to the Council the monthly report of the Finance Committee, from which it appeared that the current cash-balance in the hands of the bankers, including the Gloucester and composition special balances, amounted at that time to 3601l.

**PRIZE ESSAYS.**—Mr. Pusey, Chairman of the Journal Committee, reported to the Council the following awards made by the judges of essays and reports, competing for the prizes offered by the Society:—

- I. TO SYDNEY EVERSHED, of Albury, near Guildford, Surrey: the Prize of Twenty Sovereigns for his Essay on the improved method of cropping and cultivating Light Land, being the best Essay in the class of "Any other Agricultural Subject" for 1852.
  - II. TO JOHN B. SPEARING (Land-surveyor, Engineer, and Farmer), of Moulsoff, near Wallingford, Berkshire: the Prize of Twenty Sovereigns, for the best Essay on the relative advantage of Steam or other motive power applicable to Agricultural Purposes.
  - III. TO THOMAS ROWLANDSON, of Brompton, Middlesex: the Prize of Fifty Sovereigns, for the best Report on the Farming of Herefordshire.
  - IV. TO HENRY EVERSHED, of Albury, near Guildford, Surrey: the Prize of Fifty Sovereigns, for the best Report on the Farming of Surrey.
  - V. TO JOHN JEPHSON ROWLEY (Land Agent, and Valuer of Land and Tillages), of Rowthorne, near Chesterfield, Derbyshire: the Prize of 50 Sovereigns, for the best Report on the Farming of Derbyshire.
  - VI. TO FINLAY DUN, jun. (Lecturer on Materia Medica in the Edinburgh Veterinary College), of 41, Heriot Row, Edinburgh: the Prize of Twenty Sovereigns, for the best Account of those Diseases in the Sheep and the Pig, which either are or may become hereditary.
  - VII. TO THE REV. THOMAS BURROUGHS, of Gazeley, near Newmarket, the Prize of Twenty Sovereigns, for his essay on the Beau Turnip Fallow, as the best essay in the class of "Any other agricultural subject" for 1853.
- COMMENDATIONS.**—Farming of Derbyshire; motto, "Adscriptus glebae." Management of Sheep during Lambing; motto, "Health with Profit." Any agricultural subject, 1852; motto, "Beta."

**CHEMICAL INVESTIGATIONS AND LECTURES.**—Mr. PUSEY, as Chairman of the Chemical Committee, then laid before the Council the following report from Prof. Way, the consulting chemist to the Society:

I beg to make my usual report to you, of the operations which have been carried on in the laboratory during the past 12 months. The number of analyses made for members of the Society at the reduced fees, from the 1st of April, 1852, to the same date in the present year, is 179. They may be classified as follows:—

Limestones and marls	5
Soils	24
Guano	78
Superphosphate of lime	23
Various artificial manures	15
Coprolites, bones, and other phosphoric substances	11
Oil cakes	5
Waters	4
Miscellaneous substances	14

179

The number of analyses of guano made this year, is more than double that of the preceding year. The samples of superphosphate are much the same in number as last year, but it is worthy of mention that their quality is continually improving—a circumstance which is undoubtedly due to the increased intelligence of the manufacturers of artificial manures, and the eagerness with which they now avail themselves of the aid of experienced chemists. In affording every advice and assistance in my power to manure-makers, who are desirous of producing good manures, I believe that I am indirectly but materially promoting the objects of the Society, and the interests of the agricultural community. Since the last annual report a second paper on the "absorptive power of soils" has been published in the Journal of the Society. The object of this paper was to explain the cause of the phenomena which had previously been brought under notice in relation to this question, and nothing has since occurred to shake my confidence in the correctness of the explanation then given. During the last year I have made a good many experiments in relation to the action of lime on soils, and more especially in reference to the power of acquiring increased fertility by cultivation, and benefiting, in a higher degree, from the application of manure, which, I believe, lime imparts to soils. These experiments, which also involve the question of the absorption of ammonia from the air by soils, are most interesting, and likely to suggest many practical improvements. They are not yet, however, in a state sufficiently advanced for publication, and with the sanction of the Committee I purpose to continue the investigation during the coming year. The Committee are aware that at a late meeting of the Society, an account was given by me of the discovery which, in conjunction with Mr. Paine, I had lately made, of a large, and apparently inexhaustible supply of soluble silica in the lower beds of the chalk formation in Surrey. The examination of the different strata containing this mineral has occupied very much time and attention, and although in the nature of things a discovery, as it was not anticipated, could not have been recommended to the committee as a subject of investigation, I feel sure that its prosecution will receive the full sanction, and I may be allowed to point to it as a striking instance of the policy of the course which the committee has adopted, of allowing to the chemists of the Society a discretionary power in following out those subjects which may from time to time present themselves as well worthy of attention. It is hoped that this source of available silica will ultimately prove the means of accomplishing the production of the double silicates for agricultural use; and it has already been made to combine with lime so readily and inexpensively as to produce an exceedingly cheap compound. It must be left to experience to decide whether the silicate of lime so found will be of any value in practical agriculture, but should it be found, as there is great reason to hope it may,

that the compound, when applied to light land, possesses the property of strengthening the straw of Wheat, and of rendering the use of guano and other powerful manures more admissible and less uncertain for this crop, a most important step in the right direction will have been made, and the ultimate results of the discovery in question can hardly be foreseen. I have been requested by the Chairman of the Journal Committee to prepare for publication a detailed account of this investigation, which will consequently appear in the forthcoming Number of the Society's Journal. The Committee will see that although much has already been accomplished, much still remains to be done in working out the connections of these interesting subjects, and inasmuch as the chemistry of soils with which they are all intimately connected is at once both the most important and the most obscure of all the questions requiring investigation, I do not hesitate to recommend that they should be carried forward till nothing remains to be learnt concerning them. At the same time I would suggest that as the examination of the waters of agricultural drainage is likely to throw light on these questions, it should be added to the list of subjects recommended for investigation. I shall be happy to give two more lectures before the members of the Society in the present season, and the subjects which occur to me as likely to be interesting and useful are:—1st, The different methods proposed or available for saving the sewerage and other excrementitious matter of towns for agricultural use; 2d, The comparative nutritive value of the natural and artificial Grasses.

The Council adopted this report, and arranged that Professor Way's first lecture should be delivered to the Governors and Members in the Council-Room of the Society, on Wednesday, the 11th of May next; and the second lecture on Wednesday, the 15th of June; to commence in each case at the usual hour of 12.

**GLOUCESTER MEETING.**—Mr. Raymond Barker, Vice-Chairman of the General Gloucester Committee, reported to the Council the following statement of the proceedings of the Committee, in connexion with the preparations for the Society's ensuing country meeting, to be held at Gloucester, in the middle of July next.

1. That the extent of ground originally assigned for the show-variety be increased by the addition of three adjoining acres, and that the expense of levelling and draining such extra ground be borne by the Society.
2. That the attention of the Local Committee be called to the importance of making such arrangements, on the part of the authorities of Gloucester, in reference to tolls of every kind, that would otherwise be levied on exhibitors proceeding to the show-ground, as may lead to a satisfactory result at the time of the meeting.
3. That the question of accepting an offer of a supply of steam, generated at works nearly adjoining the show-ground, and easily to be conveyed into the trial yard, be referred to the Implement Committee of the Society.
4. That the contractor's offer for the supply of hurdles be accepted.
5. That Mr. Druce, of Eynsham, be requested to favour the Society by undertaking to value between the Society and Mr. Jones, as to the price to be paid for Wheat, Vetches, Clover, hay, straw, and other supplies required in the cattle and implement yards.
6. That Mr. Holland's liberal offer of 50l. for the institution of prizes at the Gloucester meeting for Vale sheep, be respectfully declined, in consequence of the committee's not being able to make such an arrangement of the proposed prizes, consistently with the Society's prize-sheet, as would fully meet Mr. Holland's object in desiring to institute such a class of prizes.
7. That the Secretary be directed to make the usual application to the various railway companies throughout the kingdom, in favour of the Society's exhibitors proceeding with their implements and live stock to and from the Gloucester meeting.
8. That the pavilion for the great dinner of the Society be erected in the Spa Gardens.

This report was adopted by the Council; and Mr. Druce, as one of their members, expressed the pleasure it would give him to act as the valuing referee between the Society and Mr. Jones, as proposed by the Committee.

**SECRETARY.**—On the motion of Mr. Pusey, seconded by Mr. Fisher Hobbs, and supported by Mr. Thompson, Colonel Challoner, and Lord Chichester, the following resolution was passed by the Council unanimously:—"That on account of the Secretary's long, faithful, and efficient services, his salary be raised by 100l. a year: and that the first payment of the increased salary commence in May next."

The President having informed the Secretary, on his return to the Council Room, of the great pleasure it gave him to communicate to him this unanimous resolution, the Secretary expressed to his lordship and the Council his deep and grateful sense of this most gratifying mark of their kindness and generous consideration towards him.

**AGRICULTURAL STATISTICS.**—The President informed the Council, that having been summoned by that department of her Majesty's Government forming the Board of Trade, to an interview on the subject of Agricultural Statistics, he had thought it to be his official duty as President, accompanied by the Secretary of the Society, who had been also summoned to attend such interview accordingly, for the purpose simply of receiving from the Board of Trade, and communicating to the Council, any request made to him on that important subject, leaving it to the Council to decide, whether the Society as a body, or only its members in their individual capacity, could consistently with its constitution take any distinct measures in promoting the collection of such statistical information.

The Council agreed that as such measures were not simply connected with the improvement of practical agriculture, but had a direct bearing on prospective legislation in Parliament, the Society could not by the following stringent condition of its charter entertain their discussion or promotion:

"And know ye further, that in granting this our Royal Charter to the said Royal Agricultural Society of England, we do hereby declare it to be our full and entire will and pleasure that we extend our Royal protection to its national objects, under the condition that a principle of its constitution shall be the total exclusion of all questions at its meetings, or in its proceedings, of a political tendency, or having reference to measures pending, or to be brought forward, in either of our Houses of Parliament; which no resolution, by-law, or other enactment of the said body politic and corporate, shall on any account or pretence whatever be at any time allowed to infringe."

**COUNTRY MEETING OF 1854.**—The Town Clerk of Lincoln attended the Council on the part of the Mayor and Corporation of that city, with a memorial and other documents connected with the Country Meeting of the Society to be held in 1854, at some place within the district comprised of the counties of Leicester, Lincoln, Nottingham, and Rutland.

The Earl of Yarborough transmitted a memorial on the part of the Lincolnshire Agricultural Society, of which his lordship is the President, in favour of the city of Lincoln as the place of such meeting.

These documents were referred to an Inspection Committee, consisting of Mr. Raymond Barker, Mr. Fisher Hobbs, Mr. Brandredth Gibbs, and Mr. Milward, with a request that they would pay a personal visit to the localities proposed, and report at the next Monthly Council on their capabilities for the purposes of the Society.

**PONIES.**—Mr. Fisher Hobbs having called the attention of the Council to the size of ponies qualified to compete for the Society's prizes at the Gloucester meeting; it was carried on the motion of Mr. Lawrence, that such ponies should not exceed the height of 13½ hands.

**GUANO.**—The Duke of Richmond favoured the Council by transmitting to them a communication addressed to his Grace by the Duke of Newcastle, H. M. Principal Secretary of State for the Colonies, enclosing letters from his Exc. Sir Henry Young, Lieutenant-Governor of South Australia, and Mr. Herschel Babbage, mineral and geological surveyor to the Crown in that dependency, on the subject of a research for guano and other manuring substances, undertaken by the late Government at the request of the Duke of Richmond, and in consequence of which, circular letters were transmitted last year from the Foreign, Colonial, and Admiralty Departments, urging their respective officers in every part of the globe to exert themselves in the discovery of valuable manures. These communications were the first return to such circular inquiry.

On the motion of Mr. Brandredth Gibbs, the best thanks of the Council were ordered to the Duke of Richmond, for the favour of these communications, which were referred, by the Council, to the Guano and Chemical Committees of the Society.

**GEOLOGICAL MAPPING.**—Mr. Trimmer having completed his geological map, on a large scale, of the estate of Sir Charles Elton, Bart., in Somersetshire, had the leave of the Council to submit it to the inspection of the Council, and explain its construction and advantages in an agricultural and mineral point of view, on Wednesday, the 20th of April, at 12 o'clock.

The Council then adjourned to their weekly meeting on Wednesday, the 13th of April, when Prof. Wilson would deliver a lecture on Flax.

## Reviews.

*The Poultry Book.* No. I. By the Rev. W. Wingfield and G. W. Johnson, Esq. W. S. Orr & Co.

THE first two Numbers will be devoted to the Shanghai breed, which seems to be the correct title of what are now called Cochins Chinas. The first chapter of No. I. contains the history of this breed, exceedingly detailed definitions and descriptions of true specimens, and some general remarks on management. The second chapter refers to the sub-varieties of Shanghai fowls; the third describes the poultry house and yard, and is illustrated by elevations, plans, and details of designs, as well as of existing establishments. The fourth chapter, though written discursively, and with unnecessary prolixity, contains a great deal of information on the expenses of keep and on the produce of Shanghaes; and No. 2 will commence with the fifth, which is to be on the management of breeding stock. The present Number is illustrated with three coloured plates, elegant enough for the drawing-room table, but overdrawn when examined in the poultry-house. This remark hardly applies to the "white cock" and "Jerry," but in the representation of Mr. Sturgeon's "Queen," she is drawn with a protuberant breast which never belonged to a Cochins China hen; and with legs so short, she might almost compete with Mr. Fairlie's "Creepies;" the bird is good enough to stand on her own merits without flattery. The work is amply supplied with wood-cuts wherever they are wanted, and enters at once upon the subject of which it is to treat—without preface or disquisition of any kind—a circumstance which in itself would lead one to expect greater terseness and closer substance in the volume, than a general review of this, its first number, can fairly be said to promise. There is more frequent appeal to authorities and more frequent extract from previous publications than we should have expected; the longest chapter in the present number, that on the comparative expense of the keep and produce of the Shanghai, containing about one quarter of extract matter chiefly from the pages of the *Cottage Gardener*. There is in the chapter, too, a greater parade of Mr. Baily's authority than, however unquestionable it be, we should have expected from those who, in the periodical alluded to, sanctioned or permitted the efforts that were made to detract from it. The works contains 48 pages in a number, and is, as we have said, elegantly illustrated. Though we have no doubt it will contain all the information existing on its subject, its style and its cost mark it out for use in the drawing-room rather than in the poultry-yard. The first, with the ornamental part of the work, we have



already referred to; and the second, we must confess, is a matter of little moment, so long as Shaughness shall at large sales fetch more than 3*l*. 3*s*. a head.

As regards some of the details to which it refers we may mention that from 8 to 10*l*bs. each should have been stated as the *extreme*, not as the ordinary weight of Cochins China hens. We do not believe it is the average of any yard in England, and it is far beyond any except where the birds are wrongly fed, and the bad practice of giving meat and liver is adopted. The adoption of weight as the true criterion of merit has caused much evil, and we cannot for a moment agree with the idea, that any standard of weight should be erected, according to the quotation in Mr. Sturgeon's letters. To ensure weight, unnatural feeding is resorted to, and birds, properly granivorous, become carnivorous in their habits; hence, a disease of internal fat, which has lately carried off many of the best birds in England, and is far more fatal than (if it is not often the cause of) what is called the Exhibition Fever. Weight can never be a criterion unless allied to every other point of excellence; if it once becomes the main point, then feeding for three weeks prior to the exhibition will always attain it, to the destruction of the bird, and the loss of the unlucky wight who may purchase. There is an important omission in the characteristics of the Shanghai hen: the long double ear-lobe immediately below the deaf-ear has escaped notice. The tail question in the cocks is hardly fairly treated, it is true "no tail at all" has been asked for, and it is still a desideratum. Probably Mr. Andrews, of Dorchester, has come nearer to it than any one else. We do not like either sickle or scimitar feathers. All birds honestly exhibited have two longer feathers in the middle of the tail, but they should be reversed and lie flat, rolling over like those of an ostrich. It will not, we think, be denied that the exuberance of tail is a mark of coarseness, and often of degeneracy; and as it is undesirable tails have been trimmed for exhibition, it is shendable the aim of a writer to destroy every possible excuse for such practices.

For houses and roosting places, perches and feeding, the book abounds with good suggestions. We were almost sorry to see the reprint of the various experiments in feeding, that had already appeared in the *Cottage Gardener*. The question remained an open one, and can only be fully answered when the birds are selected by both parties, and the food weighed or measured by them.

### POULTRY.

*Memoranda.*—I keep a stock of Poultry, of the Cochins and Silver Pencilled Hamburg varieties, and having daily a large supply of skimmed milk, I have lately converted it into curd and given to my birds, young and old. It does not seem to disagree with them, and they are fond of it. Would you advise a continuance of such food? [Yes.] I have set five Cochins hens this season, one of which only brought off one chick; the others appeared stupid, two of them getting on the same nest, &c. There were birds in most of the eggs about a fortnight old. I might add that this was during the frost. Was it in consequence of the cold, or are these birds bad sitters? [It was in consequence of cold. Birds sit in January out of the ordinary course of nature. They leave their nests then just as they would in May, but the eggs, which would be uninjured by an hour's exposure in the latter month, are spoiled by an hour's exposure in January.] Without further advice I dare not sit any more Cochins. I can corroborate what Mr. Baily says about the Cochins laying whilst with their chicks. I have one now with chicks five weeks old, and she lays daily; she is one of the Lovell breed. I have perches similar to those recommended by Mr. Baily, and the floor of one house is of the materials of an old wall; another of clay rammed hard and raised about one foot from the ground. What material would you cover the floors with—cut straw, fine gravel, sand, or sawdust? [Gravel.] Do you board up a part of the front, or open part of the storm-house; if so, how high? [Do not board at all.] Do you recommend the hens to sit in a different house to where their laying nests are? [Yes.] C. Pocklington, Boston. [Further answers next week.]

### Calendar of Operations.

#### APRIL.

*SOUTH OXFORD FARM, April 1.*—During the greater part of March the frost has been very severe; we have also had a considerable quantity of snow, but the strength of the sun at this season has prevented it from remaining any length of time on the ground; ploughing is still in a very backward state, it being often after midday before we could get on, and then only on dry land having a southern exposure. We have planted all our Beans and Peas and the greater part of our Oats, but have been unable to do anything to the land intended for Mangold and Carrots. We intend planting upwards of 100 acres of Barley this season, the greater part of which now requires one ploughing. The late dry weather has had a beneficial effect on our flocks; they are now healthy, and are doing as well as we can wish. There is still a good demand for store sheep at high prices in this neighbourhood. Couples have been sold at 6*s*., and wether sheep at 5*s*. per head. The mutton trade is on the decline, although the supply is very limited. There is a plentiful supply of fat hogs in our markets, which bring from 10*s*. to 10*s*. 6*d*. per score. Hay and Straw are rapidly disappearing, and should the frost continue much longer feed will be very short, as both Grass and Vetches are backward. G. W. M.

*OXFORDSHIRE.*—During the past month we have planted the Beans, Oats, Linseed, and Barley, as far as the sheep have eaten off the Turnips and Swedes, of which we have sufficient for another fortnight. Our sheep have gone on remarkably well, in spite of the wet winter; in fact, out of a flock of 400 fatting

sheep, we have lost only four since they were put on Turnips, up to the present time. Our tegs, which are cross bred, have been making 4*s*. per stone out of the wool, so that they have paid well for wintering. The lambing season has progressed satisfactorily, but we have rather more barren ewes than usual; that is to say, out of 315, 36 were barren and 40 have brought doubles, and have lost only two ewes and five lambs. Wool is still rising in price, and there is now very little in the hands of the growers, except the new clip. The young Wethers are looking well, but the quantity planted is under the average, owing to the wet autumn, which land is now planted with Barley and Oats. The winter Beans are looking well, having lately been horse-hoed; the frost has nipped some of them, but we hope to see them shoot out again. The young seeds are looking well, and have not lost plant; and if the present genial weather continues, we may expect some early feed. We have been breaking up a piece of Sainfoin, and as we have always experienced considerable difficulty in getting it breast-ploughed, we have been using Hart's improved scarifier, which carried away the prize at Lewes last year, and we do not hesitate in pronouncing it the very best scarifier, not excepting Biddle's and the Ducie cultivator. We have laid out a few acres of meadow land on the system so highly recommended and adopted by Philip Pusey, Esq., in the *Journal of the Royal Agricultural Society*; we intend to make our comments upon it in our next report. Labourers are well employed at advanced wages. [Will you be kind enough to give us your name and address.]

### Notices to Correspondents.

*ANALYSIS.* *Tyro.* You will need to send it up to London. A pint in a clean sealed bottle will do. But you should apply for instruction to the person to whom you apply for analysis. If you are a member of the Agricultural Society, Mr. Way's services are attainable; and, possibly, they may be whether you are a member or not.

*DOSES OF MEDICINE.* *A Dairyman.* Mr. Morton, Chemical Lecturer at the Veterinary College, has published a "Veterinary Pharmacopoeia," and Spooner's edition of White's "Compendium of the Veterinary Art," also contains a copious Pharmacopoeia. Both works are published by Longman & Co. W. C. S.

*TANK.* *Creditor.* It should be large enough to contain at least a month's supply of the sewage. A bricked cylindrical tank may easily be made tight enough. Gutta-percha tubing is best, and Messrs. Key & Burgess, of Newgate Street, have lately suggested improvements in their manufacture which make them still more efficient. They can advise, or Mr. Read, of Quadrant, Regent Street, about pumps.

*THE DRAINAGE OF SUBURBAN LANDS.* The paper on this subject published March 26, at p. 202, was by Mr. Marshall, C.E., of the firm of Messrs. Marshall and Tuthill, Engineers, 1, Great Queen Street, Westminster, as ought to have been intimated at the time.

*WOOD-MEAL.* *Hanley Castle.* We know of no experiment on its use as food for cattle, and should be glad to learn if any one has tried it. There is, we believe, no doubt that woody fibre may, by certain mechanical and chemical processes, be converted into substances having a value as food equal to that of the starch and sugar class of substances. Whether those processes have been successfully carried out in the case of the so-called wood-meal is another question.

### Markets.

#### COVENT GARDEN, APRIL 9.

The supplies of Vegetables are still no more than sufficient for the demand. New Hothouse Grapes are getting plentiful, and have fallen considerably in price. Fine-apples have not altered since our last report. Forced Strawberries fetch from 1*s*. to 2*s*. an ounce. Cob and other Nuts bring fair prices. The supply from the Continent of Green Peas, new Potatoes, Horn Carrots, Asparagus, Radishes, Globe Artichokes, and Lettuces, is still considerable, and the various articles are generally excellent in quality. Both Sea-kale and Rhubarb are pretty abundant. Potatoes are dear. Mushrooms are scarce. Cut flowers consist of Hyacinths, Primulas, Early Tulips, Roses, Cyclamens, Mignonette, Cinerarias, and Camellias.

#### FRUIT.

Pine-apples, per lb., 8*s* to 12*s*  
Grapes, hothouse, p. lb., 12*s* to 20*s*  
Strawberries, per oz., 1*s* to 2*s*  
Apples, dessert, p. bush, 10*s* to 13*s*  
Kitchen do., 6*s* to 12*s*  
Oranges, per doz., 1*s* to 2*s*  
Seville, p. 100, 7*s* to 14*s*

#### VEGETABLES.

Cabbages, per doz., 1*s* to 2*s*  
Brussels Sprouts, per hf. sieve, 2*s* to 3*s*  
Broccoli, per doz., 2*s* to 4*s*  
Greens, per doz., 4*s* to 6*s*  
French Beans, per 100, 1*s* to 2*s*  
Asparagus, per bundle, 5*s* to 9*s*  
Sea-kale, per basket, 2*s* to 2*s* 6*d*  
Rhubarb, p. bundle, 9*s* to 1*s* 6*d*  
Potatoes, per ton, 5*s* to 15*s*  
per cwt., 2*s* 6*d* to 5*s*  
Turnips, per doz., 3*s* to 4*s*  
Cucumbers, each, 6*d* to 2*s* 6*d*  
Celery, per bundle, 9*d* to 1*s* 6*d*  
Carrots, per doz., 6*s* to 8*s*  
Spinach, per sieve, 2*s* to 3*s*  
Onions, per bushel, 4*s* to 6*s*  
Spanish, p. doz., 2*s* to 5*s*  
Beet, per doz., 1*s* to 1*s* 6*d*

Lemons, per doz., 1*s* to 2*s*  
Almonds, per peck, 6*s*  
Sweet, per lb., 2*s* to 3*s*  
Nuts, Barcelona, per bush, 20*s*  
Cobb, 12*s*  
Chestnuts, p. bush, 8*s* to 20*s*  
Leeks, per bunch, 3*d* to 4*d*  
Shallots, per lb., 6*d* to 8*d*  
Garlic, per lb., 6*d* to 8*d*  
Lettuce, Cab., p. doz., 1*s* to 1*s* 6*d*  
Radishes, per doz., 2*s* to 2*s* 6*d*  
Endive, per score, 2*s* 6*d* to 3*s*  
Small Salads, p. pun., 2*d* to 3*d*  
Horse Radish, p. bundle, 1*s* to 3*s*  
Mushrooms, p. pott., 1*s* 6*d* to 2*s*  
Sorel, per hf. sieve, 6*d* to 1*s*  
Artichokes, Jer. do., 1*s* to 1*s* 6*d*  
Fennel, per bunch, 2*d* to 3*d*  
Savory, per bunch, 2*d* to 3*d*  
Thyme, per bunch, 2*d* to 3*d*  
Parsley, p. doz. bunches, 3*s* to 5*s*  
Mint, green, per bunch, 6*d* to 9*d*  
Basil, do., per bunch, 1*s*  
Marjoram, do., do., 1*s*  
Watercresses, p. 12 bun., 8*d* to 10*d*

#### POTATOES.—SOUTHWARK, April 4.

Since our last report there have been large arrivals, coastwise, foreign, and by rail, coupled with the fine weather, have caused a reaction in the trade, and prices have declined fully 10*s*. per ton. The following are this day's quotations:—Yorkshire Regents, 110*s*. to 160*s*.; Lincolnshire do., 90*s*. to 120*s*.; Scotch do., 100*s*. to 120*s*.; ditto reds, 90*s*. to 100*s*.; French whites, 90*s*. to 110*s*.

#### HAY.—Per Load of 36 Trusses.

*SMITHFIELD, April 7.*  
Prime Meadow Hay 84*s* to 95*s*  
Inferior do. ... 72 80  
Rowen ... 45 60  
New Hay ... 45 60

*CUMBERLAND MARKET, April 7.*  
Prime Meadow Hay 92*s* to 98*s*  
Inferior do. ... 85 81  
New Hay ... 85 81  
Old Clover ... 98 108

*WHITECHAPEL, April 7.*  
Fine old Hay ... 84*s* to 92*s*  
Inferior do. ... 70 80  
New Hay ... 85 81  
Straw ... 29 33

#### WOOL.

*BRADFORD, THURSDAY, April 7.*—Since last Thursday, several holidays have been observed, the consumption of wool has been lessened, and less inquiry by buyers. The prices which are now quoted, and said to have been realized, are such that it is impossible to use with any hope of ever realizing cost. The spinners have been anticipating some ease in the price of wool,

and have worked their stocks down in consequence, but it is now certain that no material reduction can be looked for until a supply of the new clip comes to market. Noils and brokes are very eagerly sought up at firm prices.

#### SMITHFIELD.—MONDAY, April 4.

There is a very considerable increase in the supply of Beasts, consequently trade is slow, and prices are lower than on Monday last. Several middling ones remain unsold. The number of Sheep is also much larger, and prices are rather lower, but a fair clearance is effected. Lamb is more in request, and rather dearer. Calves are more plentiful and trade is scarcely as good as of late. From Germany and Holland there are 902 Beasts, 1250 Sheep, and 176 Calves; from Spain, 370 Beasts; from Scotland, 700; from Norfolk and Suffolk, 2500; and 250 from the northern and midland counties.

Per st. of 8*l*bs.—s d s d  
Best Scots, Here- ... 4 0 to 4 2  
fords, &c. ... 4 0 to 4 2  
Best Short-horns 3 10—4 0  
2d quality Beasts 3 0—3 6  
Best Downs and  
Half-breeds ... 5 0—5 4  
Do. Shorn ... 4 4—4 8  
Beasts, 4677; Sheep and Lambs, 22,290; Calves, 203; Pigs, 190.

#### FRIDAY, April 8.

We have a cheerful trade for Beasts; the supply being moderate, and the weather favourable. Prices for best descriptions have slightly improved. The number of good Sheep on offer is very small, and consequently easily sold at a trifling advance. The change to cold operations against the Lamb trade; notwithstanding, quotations are not lower. Calves are plentiful, and the demand for them very limited. Our foreign supply consists of 113 Beasts, 900 Sheep, and 440 Calves; the number of Milch Cows is 110.

Per st. of 8*l*bs.—s d s d  
Best Scots, Here- ... 4 0 to 4 4  
fords, &c. ... 4 0 to 4 4  
Best Short-horns 3 10—4 0  
2d quality Beasts 3 0—3 6  
Best Downs and  
Half-breeds ... 5 2—5 4  
Do. Shorn ... 4 4—4 8  
Beasts, 632; Sheep and Lambs, 4300; Calves, 344; Pigs, 170.

#### COAL MARKET.—FRIDAY, April 8.

Eden Main, 18*s*. 6*d*.; Wallsend Haswell, 19*s*. 6*d*.; Wallsend Lambton, 19*s*.; Wallsend Stewarts, 19*s*. 6*d*.; Wallsend Tees, 19*s*. 6*d*.—Ships at market, 92.

#### HOPS.—BOROUGH MARKET, April 8.

Messrs. Pattenden and Smith report that the demand for both old and new Hops has improved during the past week, and the supply is very limited.

Mid and East Kents ... £5 0 0 to £3 8 0  
Weald of Kents ... 5 0 0 to 6 6 0  
Sussex ... 5 0 0 to 6 0 0  
Old Hops ... 1 10 0 to 3 10 0

#### MARK LANE.

*MONDAY, April 4.*—The supply of Wheat from Essex this morning was moderate, from Kent good, but the sale was slow, at about the prices of this day's sale, some portion remaining on hand towards the close. The sale of foreign was difficult, and confined to retail quantities at our quotations, but to effect a clearance less money would have been taken. In Flour there is very little doing. Fine Malting Barley sells readily at last week's prices; other descriptions are unaltered. Beans and Peas are a slow sale at late rates. For Oats, there is a better trade, at the extreme prices of last week.

#### PER IMPERIAL QUANTER.

Wheat, Essex, Kent, & Suffolk ... 42—50 Red ... 38—46  
— fine selected runs ... ditto 40—50 Red ... 44—52  
— Talavera ... 64—60  
— Norfolk ... Red ...  
— Foreign ... 40—58  
Barley, grind. & distill., 24*s* to 27*s* ... Chev. 25—34 Malting ... 26—30  
— Foreign ... grinding and distilling 26—30 Malting ... 30—33  
Oats, Essex, and Suffolk ... 17—20  
— Scotch and Lincolnshire ... Potato 22—24 Feed ... 17—22  
— Irish ... Potato 21—23 Feed ... 19—20  
— Foreign ... Poland and Biew 19—22 Feed ... 16—20

Rye ... 23—32 Foreign ...  
Rye-meal, foreign ... Tick 32—34 Harrow ... 32—34  
Beans, Mazagan ... 30*s* to 32*s* ... 30—34  
— Pigeon ... 33*s*—36*s* ... Winds 39—41 Longpod ... 30—34  
— Foreign ... Small 32—37 Egyptian 32—34  
Peas, white, Essex and Kent ... Boilers 38—41 Suffolk ... 40—42  
— Maple ... 32*s* to 35*s* ... Grey 30—33 Foreign ... 32—42  
Maize ... White ... Yellow ...  
Flour, best marks delivered ... per sack 38—46  
— 2d ditto ... ditto 23—38 Country ... 23—38  
— Foreign ... per barrel 22—26 Per sack ... 35—38

*FRIDAY, April 8.*—We have a large supply of foreign Wheat and Flour, the latter chiefly from Spain. Of English grain the supply is moderate, and prices are unaltered. To-day's market was badly attended, and the announcement of a sale of Flour by auction on Monday next, induced buyers to refrain from purchasing, even at a decline of 1*s*. to 2*s*. per qr. for foreign Wheat. Flour was quite neglected, some choice brands being offered at 2*s*. less and refused. Barley, Beans, and Peas remain as on Monday. For fine Oats there is a fair demand at extreme prices.

#### IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Feb. 26 .....	45 2	31 3	18 4	30 4	34 5	31 6
March 5 .....	45 9	31 7	18 3	30 9	34 8	32 6
— 12 .....	45 8	31 9	18 6	30 9	34 4	32 9
— 26 .....	44 9	31 10	18 9	30 3	34 2	32 11
April 2 .....	44 4	31 6	19 0	30 5	34 8	32 5
Aggr. Aver.	45 2	31 7	18 7	31 0	34 5	32 5

#### FLOUR QUANTITIES IN THE LAST SIX WEEKS' AVERAGES.

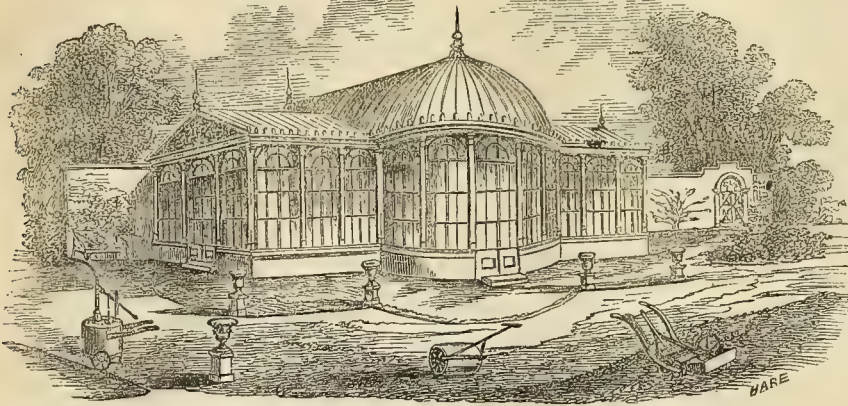
PRICES.	Feb. 26.	March 5.	March 12.	March 19.	March 26.	April 2.
45 <i>s</i> 9 <i>d</i> ...	...	...	...	...	...	...
45 8 <i>d</i> ...	...	...	...	...	...	...
45 5 <i>d</i> ...	...	...	...	...	...	...
45 2 <i>d</i> ...	...	...	...	...	...	...
44 9 ...	...	...	...	...	...	...
44 4 ...	...	...	...	...	...	...

*LIVERPOOL, TUESDAY, April 5.*—The imports of Wheat this week have been moderate, but of Flour we have had large supplies from the United States, France, and Spain. There was a good attendance of country millers and dealers at our Corn Exchange this morning, who purchased to a fair extent of American white Wheat, by holders submitting to a reduction of 2*d*. to 3*d*. per bushel from last Tuesday's prices. Flour declined 9*d*. to 1*s*. per barrel and sack, and did not move freely. White Indian Corn was rather easier to buy, but yellow being scarce, fully maintained the prices of last week. Oatmeal fully as dear, and in fair demand. Other articles of the trade moved slowly at late rates. *FRIDAY, April 1.*—There was a slender attendance of millers and dealers at this morning's market, and the general business was as limited as we have experienced for a length of time. Wheat was considered to be 1*d*. per bushel, Flour 6*d*. per barrel and sack, and Indian Corn 6*d*. per qr. under the prices obtained on Tuesday. Oatmeal supported late rates. There was no observable change in the value of other articles of the trade; all of them moved slowly.



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Greenhouses    Fountains    Game Netting    Do. Syringes    Garden Bordering  
Hot Water Apparatus    Ornamental Wire Work    Hurdles    Do. Rollers    Watering Pots  
Garden Vases    Flower Stands    Garden Chairs    Flower Labels    Garden Arches, &c.

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EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK. EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

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EDWARD AND A. WEEKS (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.

\*.\* One, two, and three-light Boxes always on hand.

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THE BEST IN DESIGN, THE BEST IN CONSTRUCTION, AND THE SIMPLEST IN PRINCIPLE.

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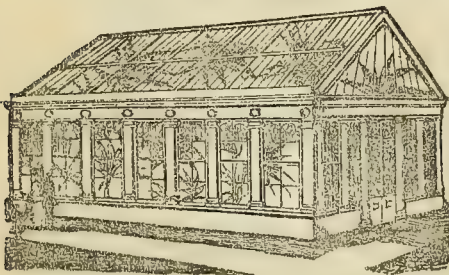
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G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

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## HORTICULTURE IN ALL ITS BRANCHES.



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#### HOTHOUSE BUILDERS.

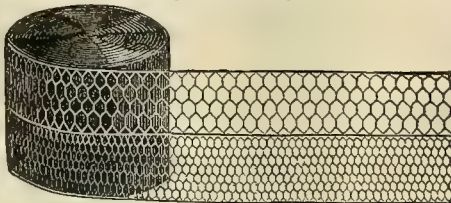


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GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING and cannot rust or corrode, made any width and length.



24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard. 24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. 0½d. per yard.

GALVANISED IRON SPOUTING, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

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SIZES—4 inches by 3, 4½ by 3, 5½ by 3.

At 12s. 6d. PER BOX:  
5½ by 3½, 6½ by 3½, 7 by 3½, 7 by 4, 8 by 4½.

CROWN SQUARES,  
At 12s. 6d. PER BOX:

6 by 4, 6½ by 4½, 7 by 5, 7½ by 5½.

At 14s. PER BOX:  
8 by 6, 8½ by 6½, 9 by 7, 10 by 8.

FOREIGN SHEET GLASS,  
PACKED IN CASES OF 200 FEET EACH:  
34s., 36s. and 38s., Case included.

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16 ounces ... 3d. per foot.	Under 6 by 4 ... 12s.
21 ounces ... 4d. "	6 by 4, 6½ by 4½ ... 13s.
26 ounces ... 5½d. "	7 by 5, 7½ by 5½ ... 15s.
32 ounces ... 7½d. "	8 by 6, 8½ by 6½ ... 20s.
	9 by 7, 8 by 6, 12 by 10, 13 by 10, 14 by 10, 15 by 10

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8½ " " 6½ " " 10 " " 8 "	10 " " 8 "
9 " " 7 " " 11 " " 9 "	11 " " 9 "
At 1½d. per foot.	At 1½d. per foot.

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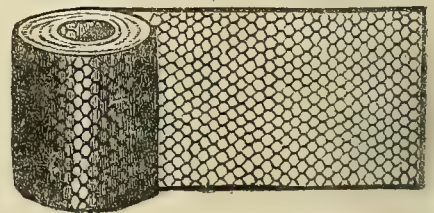
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2-inch " strong " ... 9 " "	6½ " "	
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1½-inch " strong " ... 10 " "	8 " "	
1½-inch " extra strong " ... 14 " "	11 " "	

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**HEAL & SON, Bedstead and Bedding Manufacturers, 196, Tottenham Court Road.**

**THE ROYAL EXHIBITION.**—A valuable newly invented, very small, powerful, waistcoat-pocket Glass, the use of a Walnut to discern minute objects at a distance of 4 or 5 miles, which is found to be invaluable for YACHTING, and to SPORTSMEN, GENTLEMEN, and GAMEKEEPERS.  
**TELESCOPES.**—A new and most important invention in telescopes, possessing such extraordinary powers that some— inches, with an extra eye-piece—will show distinctly Jupiter's ring, Saturn's Ring, and the Double Stars. They supersede every other kind, and are of all sizes for the waistcoat-pocket, (reading, Military purposes, &c. Opera and Race-course Glasses of wonderful powers; a minute object can be clearly seen from 1 to 12 miles distant.—Invaluable Acoustic Instruments for relief of extreme Deafness.  
Messrs. S. & B. SOLOMONS, Opticians and Astronomers, 39, Albemarle Street, opposite the York Hotel, London.

**BERDOE'S VENTILATING WATERPROOF LIGHT OVERCOATS** are the best and perfectly unobjectionable protection, as they effectually resist any amount of rain, prevent condensation, and the fatal objection to all other waterproofs, as too many have found to their cost, all air-tight materials being utterly unfit and dangerous for clothing. They are thoroughly respectable, entirely free from vulgar singularity, adapted for general use at all times equally as for rainy travel. Price 45s. Waterproof Overcoats, Capes, &c., of every description; one of the largest stocks in London, for selection.—**BERDOE, 96, New Bond Street, and 69, Cornhill, London (only).**

**WATERPROOF GARMENTS.**  
**EDWARD SPENCER and Co.** beg to invite the attention of Emigrants and all Persons going abroad to their Waterproof Garments, which are made of the best preparation of a Rubber hitherto produced in this country. They are not injured by the extremes of heat or cold, nor, like most articles of kind, irreparably damaged if touched with grease or oil. They breathe into every kind of outer garments, and suited to all possible circumstances of exposure to weather by sea and land, including of Coats, Capes, Wrappers, Overalls, Hats, Caps, &c., &c., &c., in all their various adaptations.  
Messrs. S. & Co. supply all kinds of Floats and Life Buoy, Patent Waterproof Water-tight Trunks, Bags, Portmanteaus, and all the latest travelling equipment, Packing-cases, &c. Labourers' &c., &c., at 3s. 6d. each.  
S. & Co. need not state that they have no connection with any other name, and desire to refrain from all those false and dangerous assertions of "cheapest and best."  
General Waterproof Warehouse, 116, Fenchurch Street, opposite Mark Lane.

**HOLLOWAY'S PILLS.**—AN UNPRECEDENTED CURE OF DROPSY BY THIS INFESTED MEDICINE. Extract of a letter from Mr. G. B. Holloway, dated Feb. 15, 1853. "To Professor Holloway, I have the pleasure in informing you of a most surprising cure effected by your valuable PILLS. Captain Jackson was afflicted with dropsy for upwards of 18 months, to such an extent that he was unable to move, and his limbs to be much swollen, and water to issue from the skin, and notwithstanding the various medical treatment, and the diff. rent medical men consulted, he was unable to be relieved until he commenced using your PILLS. He has now been perfectly cured." Sold by all Chemists and at Professor Holloway's Establishment, 211, St. Mark Lane, London.

**R HUBARB.**  
**FOR SALE, at 25s. per 100, VICTORIA, ALBERT, or LINNEUS.** Any quantity of the above description can be had in splendid condition—Apply to Mr. Wm. HARKETT, the Cottage, New Cross, Kent, adjoining the Brighton and Croydon Railway Station.  
Must be cleared within a fortnight from this date.

**CARNATIONS, PICOTEEES, DAHLIAS, PANSIES, PINKS, &c.**  
**JOHN SCHOFIELD and SON** have now ready a Descriptive Catalogue of the above Flowers. Strong healthy plants at the following rates:—Pansies, 4s. to 15s. per dozen; Carnations and Picotees, 10s. to 24s. per dozen pairs; Pinks, 4s. to 12s.; Dahlias, 6s. to 12s. per dozen; Verbenas, 4s. to 12s. per dozen. Also a few plants of Pansy FEARLESS (SCHOFIELD), 5s. 6d. each. Fearless obtained a first-class certificate at the National. A few pairs of Picotee ANN (SCHOFIELD), extra fine, medium red edge, 10s. 6d. per pair. Pansy Seed, selected from Show Flowers, 2s. 6d. per packet. Hollyhock Seed, from the finest show varieties, 2s. 6d. per packet. The Catalogue sent free. Early orders will secure strong plants.  
Knowthorpe, near Leeds, Yorkshire.

**TO AGRICULTURISTS.**  
**ALEXANDER PONTEY, F.H.S., NURSERY AND SEEDSMAN, Plymouth,** respectfully informs Agriculturists that he is prepared to supply in any quantity the undernamed Seeds, and also seeds of all the most approved sorts of Turnips, Mangold Wurzel, and Grasses; to the latter he invites especial attention, having been saved with the greatest care, and are warranted true to their kinds.  
**RUSSIAN, or SEVENTEEN WEEKS SPRING WHEAT:** The advantages of this Wheat are that it may be sown so late as the first week in May; it produces an abundant crop, and is particularly adapted for seeding out, being a sort that seldom goes down.  
**FISHER HOBBS'S ORANGE GLOBE MANGOLD WURZEL.** ditto.  
**SHORT TOP BRONZE SWEDDE TURNIP.** ditto.  
**LOTHIAN IMPERIAL PURPLE TOP SWEDDE.**  
**ALSKEE HYBRID CLOVER.**  
**N.B.**—A few quarters of true **BLACK TARTARIAN OATS.**

**A. P.** begs also to inform Amateurs that his Nurseries abound with all the choicest Plants for bedding out; the following are some of the most approved sorts which he can supply at 4s. to 6s. per dozen:—  
Verbenas. Scarlet Geraniums. Plumbagos.  
Petunias. Heliotropiums. Phloxes, &c., &c.  
Cupheas. Lantanas.  
**DAHLIAS**—Newest varieties, 21s. per dozen; other sorts, 6s. to 9s. per dozen.  
Catalogues of Farm and Garden Seeds, as also of Plants and Forest Trees, may be obtained on application.

**TANNED NETTING, for the protection of Fruit.**  
Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Waxed Netting for Avicaries, &c., at 3d. per square yard. Scrim Canvas, for Wall Fruit.  
At EDINGTON & Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may also be seen erected Emigrant Tents in great varieties on their latest improved principles.

**SHIRTS.—FORD'S EUREKA SHIRTS** are not sold by any hosiers or drapers, and can therefore be obtained only at 38, Poultry. Gentlemen in the country or abroad, ordering through their agents, are requested to observe on the interior of the collar-band the stamp—"Ford's Eureka Shirts, 38, Poultry"—without which none are genuine. They are made in two qualities, the first of which is 40s. the half-dozen, and the second quality 30s. the half-dozen. Gentlemen who are desirous of purchasing shirts in the very best manner in which they can be made, are solicited to inspect these, the most unique and only perfect fitting shirts. List of prices, and instructions for measurement, post free.—**RICHARD FORD, 38, Poultry, London.**

**TO GARDENERS, FLORISTS, SALESMEN, & OTHERS.**  
**TO BE LET, adjoining Gravesend, a large GREENHOUSE, PROPAGATING HOUSE, and a Range of BRICK PITS,** all heated by hot water or air flues. The stock of Plants, of first-rate order for sale during the Spring and Summer, to be taken at a valuation.—Apply to Mr. J. GOULD, 38, Windmill Street, Gravesend.

**EGGS OF THE PRIZE AYLESBURY DUCKS.**  
**THE SUBSCRIBER** is commissioned by the Proprietor to offer the above, warranted from the Birds that obtained Prizes at the Cheveley Park, Great Yarmouth, and the Great Metropolitan Exhibitions. Price 9s. per dozen, packed with perfect safety for any part of the United Kingdom.  
Orders, accompanied by Post Office orders or reference, to be addressed to **ISAAC BRUNNING, North End, Great Yarmouth.**

**PRIZE POULTRY EGGS FOR HATCHING.**—  
Prize Cochins China, 6s.; White-face Spanish, 12s.; Gold Poland, 6s.; Black Poland, 6s.; pure Dorking, from prize stock, 6s., from birds weighing 15 lbs. per couple; and pure Aylesbury Duck Eggs, 6s. per dozen.—Address to Wm. TURNER, Fleetpost, Winchfield, Hants. Letters to enclose stamp for reply.  
Cochins China, Spanish, Dorking, and other Poultry on Sale.

**FANCY POULTRY AND EGGS.**—Buff and Cinnamon Cochins, 3l. and 5l. the pair. A few good Pullets from 1l. to five guineas each. Black Cochins, 3l. and 5l. the pair. A few Pullets, 2l. each. Pure bred White Cochins, without a black feather, very fine, 8l. and 10l. per pair. Gold and Silver Pencilled Hamburgs, 15s. the pair. Gold and Silver Laced Sebright Bantams, 2l. and 3l. Black Spanish, 2l. and 3l. the pair. Polands, Black, 30s.; white, 5l. Gold and Silver Spangled, 2l. and 5l. White Silky Bantams, beautiful, 1l. 11s. 6d. Fresh Eggs, of Buff and Cinnamon Cochins, 10s. From Birmingham birds, 21s. per dozen. Black Spanish, 10s., and pure white faced, 30s. per dozen. Black Cochins, 20s. White Silky Fowl, 10s. Black Poland with white crests, 10s.; and milk white Poland, 30s.; Silver Spangled, 20s. Gold and Silver Pencilled, and Spangled Hamburgs, 6s. per dozen; box 1s.—Post Office orders payable to **GEORGE BOOTHBY, Louth, Lincolnshire.**

**GOLD PHEASANTS.**—Any one having Three or Four Hens to dispose of may hear of a purchaser by stating price and age to M. T., East Sutton, near Maidstone. (This Advertisement will not be repeated.)

**COCHIN CHINA FOWLS' EGGS.**—The Advertiser has Eggs, from some choice birds of the above breed, to dispose of, 10s. 6d. sitting of 13 Eggs, box included; also a few Pullets for sale.—Apply to **HENRY CORLAND, Chelmsford, Essex.**

**COCHIN CHINA FOWLS' EGGS** from very choice Birds, bred from Messrs. Sturgeon, Wingfield, and Dr. Gwynne's Stock. All from light-coloured and well feathered Birds, price 12s. 6d. per dozen, carriage paid to London.  
A few very superior Birds for sale. Price on application, enclosing a stamped envelope. Post-office orders payable to **ARTHUR HOEGGARD, Gray's, Essex.**

**COCHIN CHINA EGGS.**—An Amateur, who has some very handsome Cochins China Fowls, of a pure breed, Cinnamon and Buff, good in weight and symmetry, is willing to dispose of some Eggs, at 7s. per dozen. Payment, by Post Office order.—Address, X. Y., Post Office, Farnham, Surrey.

**COCHIN CHINA FOWLS.**—New Laid Eggs for setting. A few can be spared after the 10th April, at Two Guineas per dozen.—Apply, by letter, post paid, to Mr. W. J. BEERY, Chaldon, near Coulsden, Surrey.

**COCHIN CHINA FOWLS.**—A few pairs of light birds, heavily feathered to the toes, and of superior breed, price from 38s. to 60s. per pair.—Address Mr. THOMAS PAGE, Chatteris, Cambridgeshire.

**MRS. HERBERT'S White, Dr. Gwynne's Black, Sturgeon, Gwynne, and Andrews' BUFF COCHIN CHINA, Spanish Prize Stock, Black Polish, Silver-spangled Hamburg, and Gold-laced Sebright Bantams.** Eggs and Chickens from the above may be secured by an early application (enclosing stamped directed envelope), to B. P. M., 24, George Street, Great Yarmouth.—N.B. Two Buff Cochins China Pullets, and two Silver-spangled Pullets for sale.

**Sales by Auction.**

**COCHIN CHINA FOWLS.**  
**EXTRA SALE ON TUESDAY, APRIL 12, 1853.**

**M. R. J. C. STEVENS** begs to notify that he will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, London, on **TUESDAY, April 12, at 12 o'clock** precisely, a choice lot of **COCHIN CHINA** and other **POULTRY** (being selections from the stock of C. Cooper, Esq., of Guildford), some Metropolitan Prize Birds, and many others well deserving the attention of amateurs. Catalogues will be forwarded on receipt of a stamped directed envelope, enclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden.  
The next Periodical Sale will take place on **TUESDAY, April 19**, when Sales of **FANCY POULTRY** will be held on the First and Third **TUESDAYS** in every month, affording a facility to parties wishing to increase or diminish their stocks.—Forms of Entry and full particulars may be had by applying to Mr. J. C. STEVENS, as above.

**TO PLANT EXHIBITORS AND OTHERS.**

**M. R. J. C. STEVENS** has received instructions from Mr. W. J. Epps, Bower Nurseries, Maidstone, to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on **FRIDAY, April 22**, from 8 to 10 of the **FINEST SPECIMEN PLANTS** possible, consisting of Ericas, Azaleas, Pimeleas, Polygalas, Aphelexis, &c. The Ericas comprise the finest and most healthy plants known, and beautifully set with flower, of the following:—*Ferruginea*, *retorta*, *major*, *obovata*, *Wilsonii*, *toruliflora*, *Albertii*, *superb*, *Cavendishii*, *Masonii*, *Savileana*, *Hartwellii*, *viridiflora*, *elegans*, &c. Azaleas double red (magnificent plant) *Laternia variegata*, *Union ignescens*, *Incomparabilis*, *Gleditsiesii*, *Hebe*, *exquisita*, &c.—On view the day prior and morning of sale, and Catalogues had.

**TO GENTLEMEN, FLORISTS, AND OTHERS.**

**MESSRS. PROTHEROE and MORRIS** will sell by Auction, at the Mart, Bartholomew Lane, on **THURSDAY, April 14**, and following day, at 12 o'clock, a first-class collection of **CARNATIONS and PICOTEEES**, 300 Superb Standard and Dwarf Roses, a select assortment of Ornamental Trees and American Plants, Dahlias in dry roots, Paeonias, Ranunculuses, together with an assortment of Annual, Biennial, and Perennial Flower Seeds.—On view morning of sale; Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

**ISLINGTON NURSERY.**  
**TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.**

**MESSRS. PROTHEROE and MORRIS** are instructed to submit to public competition by Auction, on the premises, about the latter end of April (if not previously disposed of by private contract), the Erections of Greenhouses, containing a large quantity of Glass, Iron Columns, York and Valencia Paving, Ancient Capitals, Twisted Stone Columns, Flues, Furnaces, Fittings of Seed Shop and Counting-house. Also, Camellias, Daphne odoras, 3000 or 4000 Mezereon Stocks in Pots, Cactus fulgidus, Geraniums, &c., together with the Stock, Brickwork, &c. American Nursery, Leytonstone, Essex.

**COCHIN CHINA AND SPANISH FOWLS.**

**M. R. STRAFFORD** has received instructions from Mr. T. H. Fox, of the City of London Wire Works, 44, Skinner Street, to offer for sale by Auction, at the Bazaar, Baker Street, Portman Square, on **THURSDAY, the 14th day of April** next, at 12 o'clock precisely, the whole of his stock of **COCHIN CHINA POULTRY**, including some splendid Birds lately purchased by him, being the picked lot of the valuable collection of T. H. Potts, Esq. Some choice Birds of Mr. Andrews's Breed, including his celebrated Hen, and Birds related to her, a number of Prize Medal and commended Birds, selected regardless of expense. Also about 20 lots of **SPANISH FOWLS** of high character, including his Prize Birds at the Great Metropolitan Exhibition.—Catalogues may be had of Mr. STRAFFORD, 69, Guildford Street, Russell Square; at the Bazaar, Baker Street; and of Mr. Fox, 44, Skinner Street, Snow Hill.

**FARMING IMPLEMENTS, LIVE STOCK, MARQUEE, QUANTITY OF USEFUL IRON WORK, &c.**

**M. R. FRED. GODWIN** will sell by Auction, at the Farm, attached to the residence of R. Gunter, Esq., Earl's Court Road, Brompton, Middlesex (near the turnpike), on **THURSDAY, the 14th April**, at 12 for 1 o'clock, Farming Implements, Ploughs, Suffolk Wheel Drail, five Carts, two Wash Carts, three Waggon, four Horses, two fat Heifers, one Alderney Heifer, three Alderney Cows, 13 Pigs, one Sow, two large glazed Forcing Pits, a Marquee by Edgington, bags of Seed, useful Iron Work in Stoves, Pans, Pumps, Pipes, Tanks, Rails, Bells, Cart and Waggon Work.—On view two days prior to the Sale, and Catalogues had at the Lodge; at the Drayton Arms, Earl's Court; the Goat in Boots, Little Chelsea; and at the Auctioneers' Offices, 3, Halkin Terrace, Belgrave Square, London.

**TO GENTLEMEN, FLORISTS, AND OTHERS.**

**M. R. JOHN WILLMER** will Sell by Auction, at the Mart, Bartholomew Lane, London, on **WEDNESDAY, April 13, at 12 o'clock**, a first-rate collection of **CARNATIONS and PICOTEEES**; also **STANDARD, DWARF, and CLIMBING ROSES**, and other miscellaneous plants.—Catalogues at the Mart; and of the Auctioneer, Sunbury, Middlesex.

**TO GENTLEMEN, AMATEURS, FLORISTS, & OTHERS.**

**M. R. ALEXANDER** will sell by Auction, at the Mart, near the Bank of England, on **WEDNESDAY, April 13, at 1 o'clock** precisely, a first-rate collection of **CARNATIONS, PICOTEEES, PINKS, &c.**, the property of Mr. Herwood, comprising all the new and splendid varieties let out by him last season, together with a choice collection of named Hollyhocks from the stock of Mr. Bragg.—May be viewed on the morning of Sale; Catalogues had at the Mart; and of the Auctioneer, Shacklewell.



# ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

## ANNUAL COUNTRY MEETING FOR 1853,

FOR THE SOUTH-WALES DISTRICT, COMPRISING THE WHOLE OF SOUTH WALES, WITH THE ADDITION OF THE COUNTIES OF GLOUCESTER, HEREFORD, MONMOUTH, AND WORCESTER;

TO BE HELD AT THE

CITY of GLOUCESTER, in the Week Commencing MONDAY, the 11th of JULY.

**M**EMBERS have the privilege of a Free Entry; but Non-Subscribers are allowed to Compete, on the payment of 10s. on each Certificate for Cattle, Horses, Sheep, and Pigs; and 2s. 6d. on each Certificate for Poultry.

Forms of Certificate may be obtained on application to the Secretary, at the Office of the Society, No. 12, Hanover Square, London. All Certificates for the Entry of Implements (in which the space required for their Exhibition in the Show Yard is to be inserted), must be returned, filled up, to the Secretary, on or before the FIRST of MAY, and all other Certificates by the FIRST of JUNE, the Council having decided that in no case whatever shall any Entry be received after those dates respectively. On applying for Certificates, in order that the proper Forms of Certificate may be sent in each case, the number of the Certificate Form, corresponding to the Prize to be competed for, must be stated.

**All Prizes of the Royal Agricultural Society of England are Open to General Competition.**

### PRIZES FOR IMPROVING THE BREEDS OF AGRICULTURAL LIVE STOCK:—

Form.	CLASS.	No. of Certificate Form.	CATTLE.—(Continued.)	No. of Certificate Form.	PIGS.—(Continued.)
<b>CATTLE.</b>					
<b>SHORT-HORNS.</b>					
1	To the owner of the best Bull, calved previously to the 1st of July, 1851, and not exceeding four years old, 40l.	23	3. To the owner of the best Cow, in milk or in calf. 10l.	47	6. To the owner of the best Pen of Three Breeding Sow Pigs of a small breed, of the same litter, above four and under eight months old. 10l.
2	To the owner of the second best do. do. 20l.	24	4. To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 5l.		
3	To the owner of the best Bull, calved since the 1st of July, 1851, and more than one year old. 25l.	25	5. To the owner of the best Yearling Heifer. 5l.		
4	To the owner of the second best do. do. 15l.				
5	To the owner of the best Cow in milk, or in calf. 20l.	26	1. To the owner of the best Stallion for agricultural purposes, foaled previously to the 1st of January, 1851. 30l.	48	<b>PRIZES FOR IMPROVING THE BREEDS OF FARM POULTRY.</b>
6	To the owner of the second best do. do. 10l.	27	2. To the owner of the second best do. do. 15l.		
7	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 15l.	28	3. To the owner of the best Stallion for agricultural purposes, foaled since the 1st of January, 1851. 20l.	49	1. DORKING FOWL; more than one year old:—
8	To the owner of the second best do. do. 10l.	29	4. To the owner of the second best do. do. 10l.		To the owner of the best Cock and Two Hens. 5l.
9	To the owner of the best Yearling Heifer. 10l.	30	5. To the owner of the best Roadster Stallion. 15l.		To the owner of the second best do. 3l.
10	To the owner of the second best do. do. 5l.	31	6. To the owner of the best Mare and Foal for agricultural purposes. 20l.		To the owner of the third best do. 2l.
<b>HEREFORDS.</b>					
1	To the owner of the best Bull, calved previously to the 1st of July, 1851, and not exceeding four years old. 40l.	32	7. To the owner of the second best Mare and Foal for agricultural purposes. 15l.	50	2. DORKING FOWL; more than one year old:—
2	To the owner of the second best do. do. 20l.				To the owner of the best Cock and Two Hens. 5l.
3	To the owner of the best Bull, calved since the 1st of July, 1851, and more than one year old. 25l.	33	1. To the owner of the best Shearing Ram. 30l.		To the owner of the second best do. 3l.
4	To the owner of the second best do. do. 15l.	34	2. To the owner of the second best Ram of any other age. 30l.		To the owner of the third best do. 2l.
5	To the owner of the best Cow in milk or in calf. 20l.	35	3. To the owner of the second best Pen of Five Shearing Ewes of the same flock. 20l.	51	3. SPANISH FOWL:—
6	To the owner of the second best do. do. 10l.				To the owner of the best Cock and Two Hens. 5l.
7	To the owner of the best Heifer in milk or in calf, not exceeding three years old. 15l.	36	<b>SOUTHDOWN, OR OTHER SHORT-WOOLLED SHEEP.</b>		To the owner of the second best do. 3l.
8	To the owner of the second best do. do. 10l.	37	1. To the owner of the best Shearing Ram. 30l.		To the owner of the third best do. 2l.
9	To the owner of the best Yearling Heifer. 10l.	38	2. To the owner of the second best Ram of any other age. 30l.	52	4. COCHIN CHINA FOWL; Chickens 1853:—
10	To the owner of the second best do. do. 5l.	39	3. To the owner of the best Pen of Five Shearing Ewes of the same flock. 20l.		To the owner of the best Cock and Two Hens. 5l.
<b>DEVONS.</b>					
1	To the owner of the best Bull, calved previously to the 1st of July, 1851, and not exceeding four years old. 40l.	40	<b>LONG-WOOLLED SHEEP.</b>	53	5. GAME FOWL:—
2	To the owner of the second best do. do. 20l.	41	(NOT QUALIFIED TO COMPETE AS LEICESTERS.)		To the owner of the best Cock and Two Hens. 3l.
3	To the owner of the best Bull, calved since the 1st of July, 1851, and more than one year old. 25l.	42	1. To the owner of the best Shearing Ram. 30l.		To the owner of the second best do. 2l.
4	To the owner of the second best do. do. 15l.	43	2. To the owner of the second best Ram of any other age. 30l.		To the owner of the third best do. 1l.
5	To the owner of the best Cow in milk or in calf. 20l.	44	3. To the owner of the second best Pen of Five Shearing Ewes of the same flock. 20l.	54	6. HAMBURG FOWL; Golden and Silver Spangled, or Golden and Silver Pencilled:—
6	To the owner of the second best do. do. 10l.	45	4. To the owner of the best Pen of Five Shearing Ewes of the same flock. 20l.		To the owner of the best Cock and Two Hens. 3l.
7	To the owner of the best Heifer in milk or in calf, not exceeding three years old. 15l.	46	5. To the owner of the second best do. do. 10l.		To the owner of the second best do. 2l.
8	To the owner of the second best do. do. 10l.	47			To the owner of the third best do. 1l.
9	To the owner of the best Yearling Heifer. 10l.	48	<b>PICS.</b>	55	7. MALAY FOWL:—
10	To the owner of the second best do. do. 5l.	49	1. To the owner of the best Boar of a large breed. 15l.		To the owner of the best Cock and Two Hens. 3l.
<b>WELSH BREEDS.</b>					
1	To the owner of the best Bull, calved previously to the 1st of July, 1851, and not exceeding four years old. 20l.	50	2. To the owner of the second best Boar of a small breed. 15l.	56	8. POLAND FOWL:—
2	To the owner of the second best do. do. 10l.	51	3. To the owner of the best Boar of any other age. 5l.		To the owner of the best Cock and Two Hens. 3l.
3	To the owner of the best Bull, calved since the 1st of July, 1851, and more than one year old. 10l.	52	4. To the owner of the best Breeding Sow of a large breed. 10l.		To the owner of the second best do. 2l.
4	To the owner of the second best do. do. 5l.	53	5. To the owner of the best breeding Sow of a small breed. 10l.		To the owner of the third best do. 1l.
5	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.	54	6. To the owner of the best Pen of Three Breeding Sow Pigs of a large breed, of the same litter, above four and under eight months old. 10l.	57	9. TURKEYS:—
6	To the owner of the second best do. do. 5l.	55			To the owner of the best Turkey Cock and Two Hens. 5l.
<b>OTHER BREEDS.</b>					
1	To the owner of the best Bull, calved previously to the 1st of July, 1851, and not exceeding four years old. 10l.	56			To the owner of the second best do. 3l.
2	To the owner of the second best do. do. 10l.	57			To the owner of the third best do. 2l.
3	To the owner of the best Cow, in milk or in calf. 10l.	58			To the owner of the fourth best do. 1l.
4	To the owner of the second best do. do. 5l.	59			
5	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.	60			
6	To the owner of the second best do. do. 5l.				
7	To the owner of the best Yearling Heifer. 10l.				
8	To the owner of the second best do. do. 5l.				
9	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
10	To the owner of the second best do. do. 5l.				
11	To the owner of the best Yearling Heifer. 10l.				
12	To the owner of the second best do. do. 5l.				
13	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
14	To the owner of the second best do. do. 5l.				
15	To the owner of the best Yearling Heifer. 10l.				
16	To the owner of the second best do. do. 5l.				
17	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
18	To the owner of the second best do. do. 5l.				
19	To the owner of the best Yearling Heifer. 10l.				
20	To the owner of the second best do. do. 5l.				
21	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
22	To the owner of the second best do. do. 5l.				
23	To the owner of the best Yearling Heifer. 10l.				
24	To the owner of the second best do. do. 5l.				
25	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
26	To the owner of the second best do. do. 5l.				
27	To the owner of the best Yearling Heifer. 10l.				
28	To the owner of the second best do. do. 5l.				
29	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
30	To the owner of the second best do. do. 5l.				
31	To the owner of the best Yearling Heifer. 10l.				
32	To the owner of the second best do. do. 5l.				
33	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
34	To the owner of the second best do. do. 5l.				
35	To the owner of the best Yearling Heifer. 10l.				
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37	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
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47	To the owner of the best Yearling Heifer. 10l.				
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49	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
50	To the owner of the second best do. do. 5l.				
51	To the owner of the best Yearling Heifer. 10l.				
52	To the owner of the second best do. do. 5l.				
53	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
54	To the owner of the second best do. do. 5l.				
55	To the owner of the best Yearling Heifer. 10l.				
56	To the owner of the second best do. do. 5l.				
57	To the owner of the best Heifer, in milk or in calf, not exceeding three years old. 10l.				
58	To the owner of the second best do. do. 5l.				
59	To the owner of the best Yearling Heifer. 10l.				
60	To the owner of the second best do. do. 5l.				

SPECIAL PRIZES OFFERED BY THE HON. ROBERT HENRY CLIVE, M.P.

### SHROPSHIRE, OR OTHER GREY AND BLACK-FACED SHORT-WOOLLED SHEEP.

CLASS 1.	To the owner of the best Ram of any age ... ..	Twenty Sovereigns.
	To the owner of the second best do. ... ..	Ten Sovereigns.
2.	To the owner of the best Pen of five Ewes of any age, with their Lambs ... ..	Ten Sovereigns.
3.	To the owner of the best Pen of five Shearing Ewes ... ..	Ten Sovereigns.

### SPECIAL CONDITIONS.

- JURIES OF CONDITION will be appointed for the three divisions of (1) Cattle, (2) Sheep, (3) Horses and Pigs. Each Jury will be drawn by lot, by the Steward of each of these divisions, from the whole of the Judges comprised in it. Each Jury will consist of Nine Judges and one Steward. The Steward himself will not vote, but he will take the Jury's decision in each case by a majority of votes on a show of hands.
- The following notice will be printed in red ink at the foot of each CERTIFICATE OF ENTRY:—“All animals sent for exhibition which shall, in the opinion of the Jury, be in an over-fed condition, will be disqualified by the Jury before inspection by the Judges,” and a placard will be placed over the standing of every animal that shall be so disqualified, stating the reason of such disqualification.
- No BULL in Class 1 of any of the five divisions of Cattle will be eligible for a Prize unless a Certificate is produced of his having served not less than three different Cows (or Heifers) within the three months preceding the 1st of June in the year of the Show.
- No COW in MILK (and not in calf) will be eligible for a prize unless certified to have had a live calf within the twelve months preceding the date of the Show.
- No COW entered as IN CALF (and not in milk) will be eligible for a Prize until certified to have produced a live calf in due course subsequently to the Show.
- No HEIFER entered as IN CALF will be eligible for a Prize unless certified to have been bull before the 1st of March, in the year of the Show, and not to have been again in bulling subsequently to that date; nor will her owner afterwards receive the Prize until furnishing the Secretary a further certificate that she has produced a live calf before the 1st of February ensuing.
- No CATTLE will be eligible unless certified not to have been fed with milk subsequently to the 1st of January in the year of the Show.
- No CROSS-BRED animal will be allowed to compete in the “Other Breeds” division of cattle.
- All FOALS must be the offspring of the Mare along with which they are exhibited for the Prize.
- All SHEEP must have been really and fairly shorn between the 1st of May and the 1st of June inclusively, in the year of the Show.
- The Ewes in each pen must be of the same flock.
- No SHEEP will be eligible unless certified not to have been fed with milk subsequently to the 1st of January in the year of the Show.
- The three SOW-PIGS in each pen must be of the same litter.
- No BOAR or SOW will be allowed to be shown that cannot walk on account of over-fatness.
- No COCHIN-CHINA COCKS from which the principal tail-fathers have been removed will be qualified for prizes.

### RULES OF ADJUDICATION.

- As the object of the Society in giving the Prizes for Neat Cattle, Sheep, and Pigs is to promote improvement in breeding stock, the Judges, in making their award, will be instructed not to take into their consideration the present value to the butcher of animals exhibited, but to decide according to the relative merits for the purpose of breeding.
- If, in the opinion of the Judges, there should be equality of merit, they will be instructed to make a special report to the Council, who will decide on the award.
- The Judges will be instructed to withhold any Prize, if they are of opinion that there is not sufficient merit, in any of the Stock exhibited for such Prize, to justify an award. Should question, however, of disqualifying a whole class arise, the Judges shall consult with Stewards of the Yard, and their joint decision shall be final.
- In the Classes for Stallions, Mares, and Fillies, the Judges in awarding the Prizes will be instructed, in addition to symmetry, to take activity and strength into their consideration.
- The Judges will be instructed to deliver to the Director their award, signed, and stating numbers to which the Prizes are adjudged, before they leave the yard.

By Order of the Council,

JAMES HUDSON, Secretary.

\*\* Prize Sheets containing General Regulations may be had on application to the Secretary.







## MEADOW AND PASTURE GRASS SEEDS.

**THOMAS GIBBS AND CO., SEEDSMEN to the**  
ROYAL AGRICULTURAL SOCIETY OF ENGLAND, beg to state  
that the following Seeds are now finished cleaning, and are ready  
for sending out.

**GRASS SEEDS FOR LAYING DOWN LAND TO PER-**  
**MANENT MEADOWS AND PASTURES.**—The kinds used  
in these mixtures will be selected and apportioned to suit the  
nature of the soil.

Grass Seeds, in mixtures, for Irrigation.

Do. do. for Parks, &c.  
Do. do. for 2 and 3 years' lay.  
Do. do. for Garden Lawns, &c.  
Do. do. for Renovating Grass Land.

Italian Rye Grass—very fine sample, Improved Perennial Rye  
Grass, Annual or common do., and all kinds of Clovers, White  
Belgian, and Red Altringham Carrots; Yellow Globe, long Red  
and other Mangold Wurzel; Gibbs' new very large Cattle  
Parsnip, Swedish Turnips of various sorts, Gibbs' green top  
Yellow Hybrid Turnip, White-fleshed Turnips of various sorts,  
Drumhead and other Cabbages, Lucerne, Broom, Furze, Sainfoin,  
and all kinds of Agricultural, Kitchen Garden, and other Seeds.

Corner of Half-moon Street, Piccadilly, London.

## NEW AND RARE PLANTS.

**LOUIS VAN HOUTTE, NURSERYMAN, Ghent,**  
Belgium, desires to draw the attention of the Horticultural  
world to the following splendid Novelties, which he is now going  
to send out for the first time, in well-established plants, viz.:

**ALLOPLECTUS SCHLIMMII**, by far the most beautiful  
species of this fine genus: leaves very large, of a dark velvety  
green, underneath of a rich purple colour; flowers in large heads  
of purplish violet. It is highly recommended as a first-rate  
stove plant, alike attractive in foliage and flower. Price 10 francs.

**BEGONIA MINIATA**, a very fine species, combining the  
brilliant colour of *B. cinnabarina* with the graceful habit of the  
well-known *B. fuchsoides*. In foliage it resembles much the  
latter, but it surpasses fuchsoides far in brilliancy of colour, and  
has the great merit of being, even when small, a most abundant  
flowerer. Price 10 francs.

**CENTROPOGON TOVARENSIS**, a beautiful species, of  
vigorous habit, fine foliage, compact growth, and terminal bou-  
quets of rich purple flowers. It is a very fine flowering plant, doing  
very well in a greenhouse during summer, and admirably adapted  
for specimen culture. Price 10 francs.

**THYRSACANTHUS RUTILANS**, one of the most splendid  
Acanthaceae plants ever imported, of free growth, shining  
leaves, and easy flowering. The graceful pendant racemes attain  
2 feet in length, and produce a great number of long, tubular  
flowers of the most vivid carmine. The plant rests a long time  
in flower, and will soon be received in every select collection.  
Price 15 francs.

**FUCHSIA MINIATA**, a very distinct, beautiful species, of  
good habit, forming a moderately-sized branching and compact  
shrub, like *F. serratifolia*. The flowers are produced in abun-  
dant terminal bunches, of a brilliant orange-scarlet colour.  
Price 15 francs.

The above five Plants are direct importations of Mr. J. LINDES,  
already favourably known to the Horticultural public, through  
the great number of fine plants he has introduced.

**CALCEOLARIA VIOLACEA** (Tovelliana punctata), a striking  
novelty which I feel happy to introduce to general attention. I  
raised it from seeds received from Chilos. It forms a dwarf  
compact shrub, with neat persistent foliage of a leathery texture,  
quite a hard-wooded plant, without the least resemblance to any  
other known species of Calceolaria. The charming flowers  
appear in spring, and are of a clear sky-blue, with yellow throat,  
dotted with red points. It may be said that this is one of the  
most interesting plants that have been lately imported; for be-  
sides its great merit as the first REAL BLUE CALCEOLARIA, it is to  
be presumed that it may become, in the hands of skilful hybrid-  
isers, the mother of quite a new race of this so justly admired  
tribe. Price 10 francs.

**GERANIUMS, NEW FRENCH VARIETIES OF DIADEMATUM**,  
quite different from all others, and far superior in size, colour,  
and shape to any fancy varieties. They have been won by  
J. DUVAL, gardener to Mons. J. ODIER, at Belle-Vue, near Paris,  
from the well-known Diadematum, in diligently and patiently  
ameliorating this old kind through a long number of years,  
until he arrived to perfection, having obtained large size, good  
shape, and distinctness of colour and markings. They produced  
an immense sensation at last year's exhibition in Paris; and the  
large Golden Medal which was awarded it unanimously was but  
a feeble expression of the general admiration.

The following 10 varieties will be sent out in May next:—  
A. Mieliez, Jacques Duval, Triomphe de la Tour, Colonel Foisy,  
Général Eugène Cavaignac, Madame de Lamoricière, Gustave  
Odier, Gloire de Belle-vue, James Odier, and Etoile des Jardins.  
Subscription price for the set of these 10 varieties, 100 francs.  
(N.B. No discount on this price; only entire collections to be  
delivered.)

**NEW TREE PÆONIES** (Pœonia Moutan). The three follow-  
ing varieties have been raised by M. ROSTEAS, and having seen  
them when in full flower, I can warrant their extreme beauty:—  
Souvenir de Madame Knorr; flowers very large, very double,  
white suffused with tender rose, extremely delicate. Price  
25 francs.

Charles Rogier; silky white, centre petals all over striped,  
mottled and bordered with rose colour, like a Carnation;  
quite extra! Price 40 francs.

Remembrance of A. T. Downing; pure silky rose, very bril-  
liant, very double. Price 25 francs.

The set of the above three varieties, 80 francs.

**RHODODENDRON ETENDARD DE FLANDRE**, a most  
beautiful hybrid of *R. catawbiense* and *R. pont. Pardolot*,  
certainly one of the most magnificent varieties of hardy Rhodo-  
dendrons; flower-heads of enormous size and well formed; each  
individual flower large of good shape and texture, and rich colour;  
the upper petals promiscuously spotted with black, producing a  
striking effect. Young, grafted Plants, according to size, 15-  
to 25 francs.

**RHODODENDRON DUC DE BRABANT**, another splendid  
variety of *R. catawbiense*, which deserves the highest recom-  
mendation. Flowers semi-double, white delicately bordered with  
rosy lilac; upper petals marked with clear yellow, beautifully  
dotted with brown; flowers most profusely in large, close heads;  
and quite as hardy as the *R. Verreianum* f. pleno. Price  
15 to 25 francs.

(N.B. Some strong plants covered with flower-buds may be had  
from 60 to 100 francs each, according to size.)

**WEIGELA AMABILIS** (W. Metelerkampii), one of the  
finest shrubs which our gardens have received from Japan. I  
bought the stock of it, and can now offer good established plants  
at the very moderate price of 5 francs each, or 50 francs per dozen.

(N.B. Most of the above Novelties are already figured and  
described in the 8th volume of the "Flore des Serres," &c., of  
which the 6th number is about to appear. Price 38 francs per  
volume.)

Besides the above Novelties I beg to recommend my very select  
Collections of Roses, Camellias, Indian and Ghent Azaleas, Rhodo-  
dendrons, and bulbous Plants of all sorts, as well as the general  
collections of Stove and Greenhouse Plants, new French Ver-  
benas, Chrysanthemums, &c.

Orders may be addressed to me, or to my Agent in London,  
Mr. SIMMONDS, 5, Harp Lane, Great Tower Street, from whom  
also my Catalogues may be had on application.

N.B. Discount allowed to the Trade.

## SEEDS CARRIAGE FREE.—SEE BELOW.

## NEW FARM SEEDS—1853.

**RENDLE'S NEW CATALOGUE** is just published,  
and can be had on application, in exchange for 1d. stamp.

It contains descriptions of all kinds of Agricultural  
Seeds, with prices for every article, and will be found  
very useful to all Agriculturists, and those who take an  
interest in the cultivation of the soil.

**EVERGREEN RYE-GRASS, or DEVON EVER.**—This is a  
most valuable Grass for permanent pasture, and should be sown  
on all land where a fine Perennial and Evergreen Grass is  
required.

The Subscribers have contracted with some large growers in  
this County (Devonshire), and can supply the genuine article,  
free from noxious weeds, at 6s. per bushel.

**TRUE MARL or COW GRASS.**—The West of England is  
famous for this excellent variety of Cow Grass, which is of very  
permanent duration, and can be obtained GENUINE at the lowest  
market prices.

**PERMANENT PASTURE GRASS SEED**, in mixtures to  
suit various soils and situations, at the lowest prices.

The Subscribers have devoted much care and attention  
to this particular branch of the Seed Trade; and the  
large and increasing patronage they are daily receiving  
is the best proof they can offer of the quality and genuine-  
ness of the Seeds they supply.

**FINE LAWN GRASS**, for Lawns, Pleasure Grounds, or Orna-  
mental Parks.—The very finest Evergreen Grasses are selected  
for this purpose, and a fine sward will be obtained in a very short  
time, at less than a quarter the price of laying down Turves.  
Price 20s. per bushel; 3s. per gallon; or 1s. 3d. per lb.

**TRUE ITALIAN RYE-GRASS.**—The Subscribers have a  
very large stock, and if a quantity above 10 bushels is taken, the  
price will be reduced to 5s. per bushel.

**LARGE ALTRINGHAM CATTLE CARROT.**—The Sub-  
scribers can offer more than 2 tons of this excellent variety, at  
50s. per cwt, or 6d. per lb.

**MANGOLD WURZEL**, all the varieties, 1s. per lb.  
**BISHOP'S LAST and BEST PEA**, for field culture, 15s. per  
bushel, or 2s. 6d. per gallon.

**SCOTCH PERENNIAL RYE-GRASS**, 5s. per bushel; or 4s.  
per bushel, if a quantity above 20 bushels be taken.

**GRANITIC SEED BARLEY**, grown by George  
W. Fowler, Esq., on Dartmoor, at an elevation of 1100 feet,  
sowed last autumn in brilliant weather. 6s. per bushel.

All Orders for Seeds above £2 will be delivered  
CARRIAGE FREE to most of the Steam Ports in England  
and Ireland, and all the Railway Stations in the South  
and West of England.

For Catalogues and particulars apply to **WILLIAM E. RENDLE**  
& Co., Seedsmen by appointment to the South Devon Agricul-  
tural Society, and Royal Agricultural Society, Prince Edward's  
Island.

## SPECIAL CONTRACTS.

\* Noblemen, Clergymen, or Gentlemen requiring large  
quantities, special contracts can be made, at a great  
reduction in price.

EVERGREEN GRASSES FOR CHURCHYARDS  
AND CEMETERIES.

**SUTTON AND SONS** have had the honour of supplying  
many Clergymen and others with Grass Seeds for Churchyards  
and Cemeteries, which have given great satisfaction. Price of  
Seed, 1s. per lb. From many similar letters they extract the  
following, recently received.

From Mr. C. Judd, Gardener to his Grace the Archbishop of  
Canterbury.

"The Grass Seeds received from you succeeded admirably,  
and, although sown late, the growth was such that we were  
enabled to mow the churchyard in the autumn, and it has now  
the appearance of an established lawn of some years' standing;  
and my employer, the Archbishop of Canterbury, is quite satisfied  
with its appearance."

"Addington Park, January 7, 1853.

**SUTTON & SONS**, Seed Growers, Reading, can supply similar  
seeds to those sent to Addington Park, at 1s. per lb., or 18s. per  
bushel. Quantity required per acre, 2 bushels.

**ASH-LEAVED KIDNEY POTATOES**, and  
Jackson's Improved Kidney Potatoes, 5s. per bushel,  
delivered at the Colchester Railway Station.—Apply to Mr. B.  
CANT, Nurseryman, Colchester.—Essex.

**EDWARD GEORGE HENDERSON AND SON**  
have to offer the following **NEW PLANTS**, which will be  
ready to send out the first week in May:—

<b>LIBERTIA grandiflora</b> .....	10s. 6d. each.
<b>GERANIUM glaucum grandiflorum intermedium</b> 10 "	
Boule de Neige .....	7 "
<b>LOBELIA Roi Leopold</b> .....	7 "
<b>ERICA Burnettii</b> .....	10 "
<b>CALCEOLARIA Golden Chain</b> .....	7 "
Sultana .....	7 "
Compakta .....	5 "
<b>FUCHSIA Purple Perfection</b> .....	10 "
Duchess of Lancaster .....	10 "
Premier .....	10 "
<b>GLOXINIA imperialis</b> .....	7 "

For description of the above, see this Paper for April the 9th.  
Wellington Road Nursery, St. John's Wood, London.

CHOICE NEW GERANIUMS, FUCHSIAS,  
CINERARIAS, ETC.

**HENRY WALTON, Florist**, Edge End, Marsden,  
near Burnley, Lancashire, begs to offer the following  
GERANIUMS, in strong plants, at the low prices annexed, or 12  
for 1l. 10s.; purchaser's selection: *H. W.'s* selection of 12, 1l. 6s.,  
or 20 for 2l. 10s. hamper included; early orders are requested to  
secure strong plants to bloom early, viz. *Ariadne*, *Ambassador*,  
*Arctura*, *Bride of Abydos*, *Chloe*, *Commissioner*, *Claudiana*,  
*Eurydice*, *Enchantress*, *Elise*, *Exhibitor*, *Flying Dutchman*,  
*Ganymede*, *Herald*, *Illuminator*, *Julien*, *Lablache*, *Lavinia*, *Lord*  
*Gough*, *Lancashire Witch*, *Monteith*, *Mochanna*, *Purple Standard*,  
*Pulchra*, *Painter Improved*, *Rubens*, *Renown*, *Shylock*, *Surprise*,  
and *Rosy Morn*. The above 30 fine splendid varieties for 3l. 15s.,  
hamper included. Also a fine collection of good older show  
varieties, 9s. to 15s. per doz.

Also all the choice new FUCHSIAS of last season, in strong  
plants, 9s. and 12s. per doz., or 20 for 18s.; smaller, spring-struck,  
20 for 14s.; post free. All the older varieties 4s. to 6s. per doz.,  
good plants.

Also a large quantity of CINERARIAS, including all the new  
kinds of last year, 6s. 7s., and 12s. per doz., good strong blooming  
plants. For particulars, see Advertisement for March 26.

Catalogues may be had for one stamp. Pansies, fine show  
varieties, 4s. 6d., 6s., and 9s. per doz. Carnations and Picotees,  
9s., 12s., and 18s. per doz. pairs. Also a very large Collection of  
 Dahlias, Verbenas, Scarlet Geraniums, and other bedding plants,  
ready early in May. All orders accompanied with a Post Office  
order, payable at Marsden, Lancashire.

**ROBERT M. STARK, NURSERYMAN and SEEDSMAN**,  
1, Hope Street, Edinburgh, begs to intimate that his list  
of **FLORISTS' FLOWERS, BEDDING PLANTS, &c.**, for the  
season is now ready, and may be had on application. Choice  
assortments of every other article connected with the Seed Trade.  
**GARDEN, FARM, and FLOWER SEEDS** from select stocks.  
R. M. S. is removing in May to more commodious premises,  
145, Princes Street.—April 16.

**YELLOW GLOBE and LONG RED MANGOLD**  
**WURZEL**; Green-top Scotch and Skirling's improved  
Purple-top Scotch. The above have been sown from the finest  
transplanted roots, and can be depended on. Very moderate  
prices to the trade or growers.—W. J. Erss, Seed Grower and  
Merchant, Maidstone, Kent.

## STRAWBERRY PLANTS.—

In consequence of the severity of the past season in many  
parts, almost all of the above have perished, and old plants that  
may be still left will be so shaken they will not be worth the  
cultivation of another season. Those who wish to make good  
beds for the next year should put in young plants immediately,  
so as to give them the full 12 months' growth, in order that they  
may be well established and strong enough for fruiting in the  
following summer. Strong and healthy plants of the annexed  
varieties can be supplied:—Trollop's Victoria, 12s. per hundred;  
Cremont's Perpetual or Double Bearing Strawberry, 7s. 6d. ditto;  
Myatt's Eleanor, 5s. ditto; Early Prolific, 5s. ditto; Black Prince,  
5s. ditto; Keens' Seedling (true), 6s.; Alice Maud, 5s. ditto;  
Hautbois (the true old fruiting variety), 5s. ditto; Myatt's Sur-  
prise, 7s. 6d. ditto; Britannia, 7s. 6d. ditto; hamper and package  
free. Also a fine stock of that compact and much admired flower  
**MYOSOTIS VANGLEEKI**, which is a very hardy variety and  
well adapted for beds or rockwork, always flowering through the  
summer months. Plants that will bloom well this season, 5s. per  
dozen, postage and package free.

**NEW WHITE ROYAL VICTORIA BROCCOLI**.—Packets  
of this variety can still be supplied as follows: 3 ozs., 1s. 6d.;  
½ oz., 2s. 6d.; or 1 oz. 4s., postage and package free.

A remittance must accompany every order to the amount in  
penny postage stamps or Post-office order, when the whole, or any  
part of the above (as the case may be), will be immediately  
forwarded.

**EDWARD TILLY, Nurseryman, Seedsman and Florist**, 14, Abbey  
Churchyard, Bath.

**ROBERT DEBRON** begs to offer the following new  
**PELAGONIUMS and PETUNIAS**, feeling confident they  
will give the greatest satisfaction. They have been seen by  
several Nurserymen and Gardeners during the past season, who  
pronounced them distinct from any out. Orders were received at  
the time from some of the principal London Nurserymen.

**PELAGONIUM ADELINA**.—A beautiful delicate pink; a  
most profuse bloomer; in habit this plant is perfect; a strong  
grower, but very dwarf; a most decided improvement on those pink  
varieties already out; it attracts the attention of all who see it.  
Fine strong plants 5s. each; one over when three are ordered.

**PELAGONIUM ISLAND CHIEF**.—This was pronounced  
by one of the London Nurserymen distinct; of a rich Lobelia  
colour, a very free bloomer, rather stronger in growth than Tom  
Thumb; well adapted for bedding. Strong plants 5s. each; one  
over when three are ordered.

**PETUNIA SAINT CLOUD**.—This is a very novel and attractive  
flower; a beautiful clouded pink and white; the flowers are  
very large; in substance and shape equal to any out; a most pro-  
fuse bloomer. 5s. each.

**PETUNIA LAVINA**.—A fine veined pink and white; dark  
eye; a large bold flower; good substance and shape; a great ac-  
quisition in a collection. Strong plants 5s. each; one over when  
three are ordered.

**PETUNIA EASTERN BEAUTY**.—A fine large flower; colour,  
rich crimson; good substance and shape. Strong plants 5s. each;  
one over when three are ordered.

Good Petunias from 4s. to 12s. per dozen; Seedling Petunias,  
from a fine collection, 3s. per dozen. Plants sent out the first  
week in May.—**ROBERT DEBRON, Florist, Ely.**

HORTICULTURAL BUILDING AND HEATING  
BY HOT WATER.

**EDWARD and A. WEEKS** (late with J. WEEKS  
& Co.), Park Cottage, King's Road, Chelsea, are now in a  
position to execute any of the above work, in the very best  
manner, and at a reduced price. Materials and workmanship  
warranted best quality. Plans and estimates forwarded on applica-  
tion for all kinds of Horticultural Erections, also for the Heating  
of Churches, Hospitals, Halls, Offices, &c.

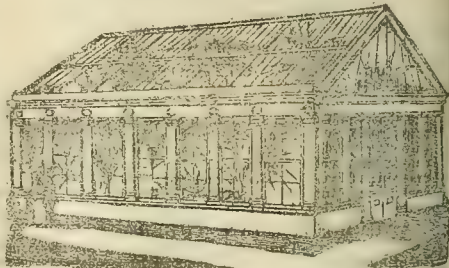
\* One, two, and three-light Boxes always on hand.

HEATING BY HOT WATER.  
EFFICIENCY GUARANTEED.

**HOT-WATER HEATING APPARATUS**, upon  
approved principles, supplied and fixed in Horticultural  
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G. & O. have been extensively employed by the Nobility  
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approved and scientific principles, for all purposes to which the  
application of Heating by Hot Water can be made available.



unknown, little flies, including pondiceros, -



bertiana, and monticola; a Cupressus, and two species of Juniperus. In addition, a small number of shrubs and herbaceous plants are mentioned, among which seems to be the evergreen Chestnut, *Castanea chrysophylla*.

STEAM-POWER being now extensively used for country purposes, it would seem desirable that it should be applied to FIRE-EXTINGUISHING WORKS wherever a steam-engine is already provided; and this might be done at a very moderate expense.

The works of this kind, on a small scale, are no other than those proposed in the year 1797 by the late Brigadier-General Sir SAMUEL BENTHAM, which were sanctioned by the Lords Commissioners of the Admiralty, and carried into execution in Portsmouth Dock-yard early in the present century, and subsequently in all the principal Royal Dock-yards. It may be well conceived that, for such vast establishments, the works would be more ample than would be necessary for a country establishment, but the chief features of the plan would be alike for both; an outline of the Portsmouth works may not, therefore, be superfluous.

There being a scarcity of fresh-water at Portsmouth, Sir SAMUEL recommended that a large supply should be obtained by sinking a deep well; which having been accomplished, he gave plans for pumping up the water by means of powerful steam-engines, and to raise the greater part of it to a capacious reservoir over high buildings; from that reservoir to distribute the water throughout the yard by mains as usual, and thus supply various houses and manufactories in the customary way. So far the plan differed little from ordinary water-works; but he conceived the novel idea of rendering them at the same time powerful fire-extinguishing works. For this purpose he devised the placing of fire-cocks upon the main, at distances of from 80 to 120 feet; those fire-cocks being furnished with screws ready for the screwing on of hose, they being also provided with appropriate screws. The effect of this arrangement was that, on the outbreak of fire, a single man sufficed for the screwing on of a hose to the nearest fire-cock, and then on turning a cock to obtain a large supply of water, and throw it upon the burning mass in a powerful jet. In actual service the six hose that could at the same time be worked by as many men, were found sufficient to extinguish several fires that broke out in the dockyard; but in case a conflagration were not thus subdued, he made a still further provision, namely, that of two powerful force-pumps worked by either, or both, of two 40-horse steam-engines; by their means water was forced through the mains with sufficient power to throw six jets of water of some inches diameter to a height of 70 feet, and to a horizontal distance of 120 feet.

In the building of the wood-mills, where the steam-engine and the pumps were fixed, the interior of the mills was provided on every floor with a pipe of large diameter connected with the reservoir; upon this pipe in every room was a stop-cock, and below it a permanently fixed hose, so that by simply turning the cock, water could instantaneously be projected to any part of the floor that might be on fire. There was also provision by another cock for drawing water into buckets. By the adoption of these same means Windsor Castle has been saved perhaps from utter destruction.

Now it is conceived that an apparatus similar to that at Portsmouth, though on a small scale, would well compensate for its cost wherever a steam-engine is employed. A great quantity of water for various purposes is necessary at different parts of home buildings, and it is cheaper to raise that supply by steam power, and to convey it to different parts by pipes, than to carry it by hand, so that the extra expense for fire-cocks is all that could be fairly charged to this part of the works in adjusting them for the extinguishment of fire.

In the day-time when the steam-engine is in use, it might immediately be turned from its ordinary work to the force-pump, and thus enable a powerful jet of water to be thrown in a few seconds over buildings or stacks that might be on fire; but at night, before the engine-fire could be got up, the conflagration might have gained a serious hold on the premises; hence the expediency of constructing a reservoir on the highest near building, in most cases the dwelling-house itself. An inhabited house is also the most convenient and the most economical place for such a tank, since for domestic purposes a great quantity of water is used on every floor, which could be obtained from a reservoir above, to save the trouble of carrying buckets upstairs. The same taps that would supply water for domestic purposes would be equally suitable for filling fire-buckets, and hose might either be permanently fixed to the pipe on every floor, or, where such hose might be unsightly, it might be provided with proper screws

for speedily fixing it on to the descending pipe. Supposing the fire to break out among farm-buildings, or in stacks of hay and corn, the reservoir being connected with the system of distributing pipes, water would be supplied to them under sufficient pressure to throw it over the building or stack on fire at the first knowledge of the danger, and till the steam-engine could be ready for work.

The same description of works might be introduced for the protection of country mansions; but in this case, also, the connecting fire-extinguishing works with those for the supply of water is of great importance, as also that the water-works should be applied to as many uses as possible. How frequently we have to lament the conflagration of noble buildings, for want of immediate means of subduing fire at its first outbreak? Nay, often more to be deplored than the destruction of the pile itself, is that of the valuables it contained—books, costly furniture, jewels, pictures, and other productions of high art. One would not fix a smoky steam-engine in the principal approach to some stately hall, but how few such there are where a proper apparatus might not be erected in some near court or nook, for steam power seems in general to be the cheapest, and the most convenient means of raising water to great heights. There may be, too, a few buildings which would be disfigured by a cistern on its roof; but in this instance, by the aid of professional skill, the difficulty might be often overcome, and a high reservoir constructed, if not on the spot, at some distance from it.

The keeping the apparatus in frequent use is essential to its constant efficiency: to what purposes, then, could it be advantageously applied? Various horticultural uses will immediately occur to intelligent gardeners: the irrigation of cultivated grounds, the syringing of plants in hot and greenhouses, of trees against walls, and even of many plants in pleasure grounds, the watering of lawns, and so forth. The shaping and planing of the wood-work required for horticultural buildings; sawing up timber into planks, cutting billet-wood, &c. &c., are other purposes, continually demanding attention, and attended with much expense for manual labour, in country places. But besides such uses, there are in all large establishments many domestic operations which would even be better performed by simple machinery than by hand; laundry work, such as mangling, and the greater part of the heavy labour in washing; not the rubbing out of soiled spots it is true, but the great bulk of linen requires little more than agitation in a sufficiency of hot water, either charged with soap, or alone for rinsings; in culinary business, the mincing and pounding of meat and vegetables, the laborious operation of kneading bread, &c.; so in the butler's department, knives might be easily cleaned by steam power, shoes brushed and polished, even many articles of plate would be as well, if not better, cleaned and burnished by proper machine-brushes than the same article could be by hand.

As several of the above-mentioned operations would require to be performed at the same time, either the steam engine provided must be superfluously powerful, or at sometimes it would be inadequate to the performance of its duty. To obviate such inconvenience on an extensive scale, Sir SAMUEL, in 1812, proposed that the water-works at Sheerness should be arranged so that, by a simple hydraulic apparatus, they should be applicable to occasional services; some 20 years afterwards the engineer of that dock-yard (Mr. MITCHELL) actually furnished the mains in that yard with means by which the steam-power of the engines might be applied at pleasure to occasional services; and the General Board of Health look to the high-service water works of the metropolis as affording to small manufacturers an inanimate force for temporary uses. In the same manner the herein proposed reservoirs for houses, gardens, and farms would afford means of applying force to several distinct machines at the same moment, though the water should be only occasionally replenished in the reservoir.

It may be observed that the importance of such reservoirs, and of the means so long ago exemplified at Portsmouth for rendering water always available at the first outbreak of fire, has been fully exemplified on the occasion of the late disaster at Windsor Castle; for there the conflagration was kept in check and extinguished, mainly by the pipes provided on every landing-place in the PRINCE OF WALES' Tower, the persons on the spot being well acquainted with their use; a particular essential to the prompt application of such works. On the other hand, a lamentable example was afforded last September, at Sheerness, of the want of familiarising persons on the spot with the application of such apparatus. A fire broke out there in the night, within 50 yards of the dock-yard wall, through which there were fire-cocks connected with

a reservoir holding 800 tons of water, so that 10 tons of water per minute might have been thrown upon the blaze, but no one present knew how to turn on the water, the engineer-people being all lodged in the new town a mile off, and even they were neglected to be roused; the fire had raged for nearly an hour and a half, when one of the lookers on perceived that no water was furnished from the dock-yard—there is none other at Sheerness applicable to fire-extinguishing—this man happened to be conversant with the yard water-works, he ran into the yard, did what little was necessary to apply them to use, a large body of water was immediately thrown on the burning houses, and the fire was extinguished in the course of a few minutes.

In the application of the plan above suggested the greatest error to be apprehended is a complication of the several parts of the apparatus, since the more simple they are made, the more effectual they are likely to be in use, not to speak of difference of first cost, and subsequent need of repair. Such details, however, belong wholly to the science of engineering; we wish only to draw attention to this very important subject.

SOME inquiry has been made respecting a certain BEGONIA called Prestonensis, exhibited Messrs. LUCOMBE & PINCE, of Exeter, some time since, when it was thought by the Horticultural Society worthy of a Certificate of Merit. A further acquaintance with it teaches us that the Certificate does not sufficiently represent its now ascertained good qualities. In point of beauty it yields to no perhaps it exceeds all the species of this favoured genus. The flowers are larger than in any of kind; they have the brilliancy of cinnabarina fuchsoides, and are fragrant, something like a Rose. The foliage is firm, deep green, and well proportioned to the flowers. Like the rest of the genus it is easily cultivated, and it seems as if it will flower for three-fourths of the year. Need we more?

We observe that our reporter has misunderstood the directions given by Mr. LOVEJOY for PRESERVING FRUITS, in the manner of the beautiful specimen exhibited by him at the last meeting of the Horticultural Society. As his method of management has interested in the eyes of many, we give his receipt in his own words.

"Pick the fruit from the stalks; put it into the bottles. Put one drachm of alum in four gallons of boiling water; let it stand till cold. Then fill the bottles; bung them tight, then put them into a copper of cold water, and let it to 176 degrees. Then tie them over with bladder and seal them."

The Raspberries and Mulberries preserved in this manner were as plump and transparent as first gathered. The other fruit was equally well. We understand that the quantity of alum, however pathetic as it is, must on no account be exceeded. A larger quantity makes the fruit hard, which of course be avoided.

#### GNIDIA PINIFOLIA.

THE delicious fragrance of this plant is of itself sufficient to secure it a place in the most select collection; but it is also a most profuse bloomer, each shoot bearing in a head of creamy white flowers, well guarded from damp and drying currents of air, their beauty and sweetness for several weeks. Many other choice plants, however, it is somewhat scarce, and requires careful management. It is not speedily propagated, but it is plentiful and cheap to render this of little consequence, and begins to save time, and probably disappointment too, by its propagation to those who devote exclusive attention to this department of gardening. In procuring plants select those that are dwarf and bushy, vigorous health, carefully avoiding pot-bound specimens; for when in perfect health and undisturbed, some attention is required to produce compact specimens, and there is little chance of effecting this unless they secure proper plants to co-operate with. In order to obtain the greatest possible growth the first season, the plants should be ready to be placed in a growing temperature in March; but if obtained at the present season, with management, they will make great progress in autumn. There is, however, no time to be lost who may purpose to make a commencement this autumn.

On receiving young plants from the nursery first thing to be done is to examine the roots, &c., and if this is defective clear away the soil, injuring the roots as little as possible, and in the same sized pots after securing drainage, but in case the roots are found abundant and active, shift into a pot a size larger to situation and temperature, a position close to glass, where the plants will receive all the light essential to the production of short-joint during the spring months; and, if this is secure



at atmosphere, the temperature may range from 45° to 10°, allowing it to rise 10° or 15° by day with air, a gentle sprinkling over-head on the mornings and noons of bright days will be beneficial; water must, however, be cautiously supplied at the root, and, with a st atmosphere, but little will be needed until the plants start into free growth. It will be necessary to tie or peg down the main shoots, and if the plants are y they should be cut back sufficiently to overcome defect; but where necessary this should be done, the plants allowed to start into growth before tying, for there is considerable risk in cutting back potted plants which are at all delicate; when they in vigorous growth they will require to have their ts frequently stopped; and this should be done in a alar manner, allowing the plants to make consider- progress, and the bases of the young shoots to ome tolerably ripe, when every branch may be larly pinched or cut back, and this may be followed till about the middle of July. When the weather ome mild the plants had better be removed to a frame, or pit, taking care that they do not sustain any ly by the change. Here less attention will serve to rly care for them than if they were retained in a lofty es containing a miscellaneous collection of plants. Air ld be admitted freely, except during the prevalence rying winds, when the lights should be raised on the tered side and the temperature kept down by throw- a slight screen over the glass; indeed, this will be ficial for a few hours in the middle of the day, ided it is used only on bright days, not kept on too y, and discontinued early in autumn; but beginners ery apt to shade too much. If all goes on well a and shift will be necessary, probably in June, and ous specimens may be afforded a rather liberal t at this season, observing to give it when they are ctive growth, and not immediately after cutting back; rather close and moist, and apply water to the soil ously until the roots appear to have taken to the h shift. Towards the middle of August begin to are the plants for winter, by gradually exposing n to the full influence of sun and air, and discontinue nking over head. At this season the lights should used only to protect the plants from heavy rains, they will be better left off at night, unless when is apparent. As soon as the weather becomes cold nsettled, remove the plants to their winter quarters, h should be near the glass, in a rather close part of greenhouse, and during the winter months they will ure no extra care except as regards a supply of r, and this must be moderate, as they are liable to r from any excess. Let the aim be to maintain the in a moist healthy state; the best way of effecting is to give a liberal watering when the ball becomes and no more until it is in that condition again.

ie plants may be allowed to flower in the green- e, which they will do about April, or they may be oved to any cool dry airy situation where their ance and beauty will be more under notice. After e decay of the blossoms cut the plants back closely, lace them in a warm part of the greenhouse till start into growth, when they may be shifted into r pots and placed in an airy pit to ripen their wood, ncrease of size is the object, they should be treated mended for last season. Plants which are of a ctory size may be placed out of doors, in a sheltered r, after the young wood becomes rather firm, and ed to remain there during the autumn; but where can be retained where they can receive the protec- of glass to ward off sudden rains, it will be advisable o place them in the open plant ground, and if ad there they must be removed to the greenhouse n in autumn.

od rich turfy peat, to which may be added about a rt part of turfy sandy loam, with a very liberal ure of sharp silver sand and a quantity of clean rds, broken small, or lumpy bits of charcoal, will a suitable compost for this plant; but unless light oam is obtainable it had better be dispensed with, e peat only. The soil should be broken up into e pieces, using the prime fibry portion only, and eely intermixing it with the sand, &c., before use. tting, secure good drainage by using plenty of rds, and press the fresh soil rather firm about the l. Alpha.

RAIN GAUGES.

I have drawn out tables containing the actual and dated amount of rain obtained by my large gauge in February and March. The inches of rain are ted by dividing the weight of rain by 226.26, this the weight of 1 inch of rain upon an area equal to uth of an acre. I have also noticed under what istances the rain has fallen at different periods, d find that when the rain falls perpendicular, or d so, the difference between the large and small g is not great; thus the rain which fell on the day t of the 14th of March, measured in the large e 7.14, and in the small gauge .665, being 7 per ts in the small gauge. In this instance there e no wind. On the 21 of March, with a high e there was 35 per cent. less in the small gauge, d the 22d 47 per cent. less. It appears, there- e, that the error in the small gauge is more or less r proportion to the angle at which the rain falls, and d is only correct when the rain descends perpen- . I find that the rain obtained in the small gages rather more than what has been registered at

Chiswick in the same period; and as the average amount of rain is about the same in both places, it proves that there is no error in the figures obtained.

FEBRUARY.	Weight of Water collected in Large Gauge.		Inches of Rain in Large Gauge.	Inches of Rain in Small Gauge.	MARCH.		Large Gauge, Weight of Water.	Large Gauge, Inches of Rain.	Small Gauge, Inches of Rain.
	lbs. oz.						lbs. oz.		
5	67	7	0.298	0.120	1	0	11	0.002	...
8	23	5	0.103	0.090	2	92	2	0.407	0.265
10	33	15	0.150	0.090	3	0	12	0.002	...
14	52	1	0.230	0.010	Morn. 5	10	5	0.045	0.030
16	0	6	0.001	...	After. 5	53	0	0.234	0.220
18	7	12	0.034	...	6	0	11	0.002	...
21	1	5	0.006	...	Morn. 7	17	8	0.077	0.070
22	20	9	0.091	0.050	After. 7	6	2	0.027	0.025
Morn. 23	1	10	0.007	...	Morn. 8	1	5	0.005	...
After. 23	7	12	0.034	0.020	After. 8	3	2	0.014	0.005
24	1	2	0.005	0.007	9	17	6	0.077	0.060
25	39	9	0.148	0.115	11	1	14	0.008	...
Morn. 26	38	5	0.173	0.095	13	2	9	0.011	...
After. 26	3	3	0.014	...	Morn. 14	51	2	0.226	0.210
27	2	10	0.011	...	After. 14	110	9	0.488	0.455
					15	1	15	0.008	...
					19	11	9	0.050	...
					22	126	7	0.558	0.310
					24	3	12	0.016	...
					25	11	2	0.050	0.010
					26	2	11	0.012	...
					27	3	4	0.014	0.006
					28	3	3	0.014	...
Total in Feb.	295	15	1.305	.597	Total in March	533	1	2.347	1.665
Rain registered at Chiswick from Feb. 4 to March 28 ... 1.81									
Do. do. Rothamsted, Small Gauge ... 2.262									
Do. do. do. Large Gauge ... 3.652									
Difference ... 1.390 = 38 per cent.									

—J. B. Lawes.

Home Correspondence.

**Stem Roots of Vines.**—I have a large Vinery under my care, principally filled with Black Hamburgs. They are all set—in fact, the berries are as large as Peas, and some of the bunches I expect will weigh 3 lbs. They are planted outside the house. The border has been covered with fermenting materials since the middle of December last. From that time to the present I have gradually increased the temperature of the border, along with that of the house, and now it has reached 70°, in which state I mean to keep it until the fruit begins to colour. On examining the surface the other day, I found strong healthy roots running beautifully through the rotten leaves, which were laid on to the depth of 6 inches, previous to the fermenting material being applied. The house is of course syringed morning and evening on all fine days, but in dull, cloudy weather, it is only steamed. Now some of the Vines have stem roots 3 inches long, while on others there is not one. I am satisfied, therefore, that these productions are not the result of too cool a border, the roots being all near the surface. Let us now see if superabundance of moisture in the atmosphere is the cause. Some years ago I had under my care two large Pine stoves, with Vines up the rafters. In one of these the Vines produced stem roots 6 inches long, but in the other not one was ever seen. Now, both houses were under the same treatment; they were started at the same time, kept equally dry or equally moist, and had nothing but a foot of rotten leaves on the borders, which, in every respect, were identical. But one of your correspondents says, "they are most numerous when the ground roots are kept active." In the above case, however, there could not be any unusual activity, yet I have never seen Vines produce so many stem roots. W. Watt, Aswarley Park, Folkingham.

**Temperature and Black Rain.**—I had intended to write before this, merely to point out the temperature recorded by my thermometer during the week commencing on Good Friday, which differs considerably from that published in the *Gardeners' Chronicle*. My instrument stands on the lawn, fully exposed, without covering of any kind, about 15 inches from the ground. It is a common day and night double thermometer, and the quicksilver always corresponds within 1° with the spirit (at all times when I have an opportunity of comparing them), so that I may assume them correct.

		Lowest.		Chiswick.	
March 24	...	25	...	25	...
" 25	...	12	snow	...	17
" 26	...	15	...	...	18
" 27	...	23	...	...	17
" 28	...	23	...	rain	27
" 29	...	19	...	...	21
" 30	...	23	...	...	26
" 31	...	23	rain	...	29
April 1	...	39	...	...	40
" 2	...	35	...	...	36
Average...	...	24.6	...	...	25.4

The 25th (Good Friday) shows the minimum during the previous night. I observed that Mr. Glaisher records 11° as the minimum of an exposed thermometer at that night at Greenwich. My instrument registered 26° last night (8th inst.) I am induced to write now for the purpose of mentioning a curious circumstance which my gardener told me this morning (9th inst.), that the storm which came from the north and passed over us yesterday left pools of water as black as ink, and the water-but at his cottage, which was at the time half full, was filled up by this black rain, so as to make the whole unfit for use. I presume the storm collected the smoke, &c., in passing over London to my place at Combe, between Croydon and Addington. Thomas Hankey. [From various sources of information it

appears that temperature, rain, and hail have been very unequally distributed of late. The minimum observations at Chiswick are taken from a registering thermometer placed in the open lawn, about a foot above the surface. Its indications are corroborated by those of other thermometers. In the register, the highest and lowest temperatures are those of the day stated and the following night. Mr. Hankey's lowest temperatures refer to the night preceding the day. For the sake of comparison, those at Chiswick for the above 10 days have been arranged according to that mode.]

**Heating.**—Seeing in your last number a communication from Mr. Charles Lucas, of Brentwood, respecting the heating of his house by means of a boiler and pipes and flue, I beg to say that I have had two houses in full operation on this plan for nearly four years, which have answered remarkably well. They were constructed for me by an intelligent young man at that time in my employment, who will himself write a better account in a future number. I have had great success with Pines and Vines from this mode, which is very efficacious for bottom and top heat, easily regulated, and very economical. At my request he also put up another one on this plan for a friend of mine, equally successful. John Biddulph, Sketty Park, near Swansea.

**The Laburnum.**—In a late Number a correspondent asks respecting the size of Laburnums. There was one not long ago at Boynton, near Bridlington, between 6 and 7 feet round, at 5 feet from the ground. There were also others there nearly as large, most of which have been blown down. I often think the Laburnum deserves more notice than it gets, both as an ornamental tree, which is extremely hardy, and also as affording a wood which has many valuable properties, and which is matured in a very short time. C. W. Strickland.

**Effects of the Late Winter.**—I find the following trees injured by frost at Boynton, near Bridlington, three miles from the east coast of Yorkshire, viz., Cupressus macrocarpa, very much injured, especially in the bottom of the valley, which was wet; Pinus insignis has been much hurt everywhere; Cupressus torulosa, less so; Taxodium sempervirens, only slightly harmed; Cryptomeria japonica, Pinus excelsa, ponderosa, Sabiniana, Webbiana, and Smithiana, not the least injured; Pinus Gerardiana suffers from damp, not at all from frost. The Deodar shows less signs of feeling the frost than the Cedar of Lebanon; the latter does not thrive well at Boynton, nor I believe anywhere on the Yorkshire Wolds. I forgot to mention that C. funebris seems perfectly hardy, not having been injured in situations where the others mentioned have been. At Nostell Priory, near Wakefield, I find the Cupressus macrocarpa and Pinus insignis injured by the frost; the Cryptomeria japonica very slightly so, and the Cupressus thurifera apparently not at all. C. W. Strickland.—The following is the state of trees and shrubs at Oulton Park, Cheshire: Sequoia or Taxodium sempervirens, foliage very brown, leaders and all late growths apparently dead for 9 inches; new buds prominent below that portion; Juniperus, the portion next to east of J. sinensis, nearly dead; macrocarpa, incurved shoots, inner portion green, outer as if scorched; Pinus insignis, one safe, other suffered at leader, both discoloured much; Cryptomeria, brown but safe, some seen by me at Messrs. Dickson's nursery, Chester, the other day, very brown; Hodgson's evergreen Oak looking very bad; Berberis Fortunei a good deal injured; Garrya elliptica, young points withered; Escallonia macrantha, almost unscathed—this hardy as a Laurustinus; Hybrid Rhododendrons, all showing the arboreum stamp, sadly blemished. Young plants in kitchen garden of Cupressus Goveniana much browned; ditto from the hills of Nepal also much browned; Pinus Benthiana dead. R. Errington.

**The Black Barbarossa Grape.**—I have taken the liberty of sending for your inspection a few berries of the Barbarossa Grape that I exhibited in October last. One of your contemporaries condemned the Horticultural Society for awarding the Banksian Medal to them, and stated that it might as well be thrown over London Bridge. I have no doubt that the Grapes may be kept for another month if required, fit for table, and I expect either myself or some other growers will exhibit old Grapes at your Chiswick May exhibitions at no very distant period. John Butcher, Stratford-on-Avon. [These Grapes are now nearly as good as Grapes ever are at Christmas; very little shrivelled, and of excellent quality. What Black Grape, except the Barbarossa, would keep thus? We hope Mr. Butcher does not hold us answerable for the opinions of other people.]

**Cottagers' Garden Shows.**—I inclose a copy of the rules of a large society which has been established many years with great success. If "T. H. M." (see p. 182), will favour me with his address, I shall be happy to inform him of the general management of our society of united parishes. The following are the rules alluded to:—Colwall, Coddington, Bosbury, and Wellington Heath Garden Club. I. The members are those inhabitants of the above-named parishes who subscribe to its funds and agree to be bound by its rules. II. The club shall be managed by a committee of four of the honorary members, one member from each parish (exclusive of the secretaries), to be chosen at an annual meeting. III. The members are to be of three classes:—1. Subscribers of 10s. per annum—honorary members, who may exhibit, but not take prizes; 2. Subscribers of 2s. 6d., whose specimens shall be marked with white tickets; 3. Subscribers of 6d., cottagers whose rent shall not exceed 6l. per annum, their specimens to be marked



with red tickets. The competition of each class will be separate. Prizes will be given to children for wild flowers and nosegays. IV. There shall be one show-day in the year. The committee shall appoint the day of each show, and give due notice thereof. The committee shall also choose the judges (who must be strangers), manage the show, and decide any matter not provided for in the rules. V. Members only shall be allowed to exhibit, and each specimen exhibited for a prize must have been grown by the member exhibiting it, on the ground in his own occupation. VI. Any subscriber attempting to gain a prize through dishonest means will not be allowed to continue a member. VII. All subscriptions must be paid in on or before the 1st day of November. The show will be held in the beginning of August.—Prizes will be given for: 1. The best cultivated cottager's garden amongst the members; 2. Fruits, vegetables, and flowers—the best of each; 3. The best collection of common vegetables; 4. The best collection of flowers; 5. Best specimen of corn grown on allotment ground; 6. The best show of honey from a single hive. Names of fruits, vegetables, &c., for which it is proposed to give prizes:—Apples, Pears, Plums, Cucumbers, Vegetable-marrows, Gourds, Beet-root, Potatoes, Onions, Leeks, Turnips, Carrots, Parsnips, Peas, Beans (Broad), Scarlet Runners, Cabbage, Cauliflower, Lettuce, Celery, pot herbs (best collection of), Rhubarb, and Mangold Wurzel. *William Urry, Colwall, Malvern, Worcestershire.*

**Application of Liquid Manure.**—Notwithstanding all that has been said respecting the use of manure-water, there is still, I think, room for a few further remarks on the subject. As to its profitability generally, no doubt remains; but this very fact may, perhaps, occasionally be the means of misdirecting its use. The method of applying it to the roots of plants is so well known, that it requires no comment; but as regards the kind of water suitable to certain sorts of plants, we are guided by guess; and a hope that all will succeed well, more than by any fixed principle of action. I have proved, more than once, that guano has a very injurious effect upon the Hyacinth; a quality of guano-water that will make a Camellia grow well, producing very dark foliage and large flowers, has, at least in my case, induced a weakly growth, or a state of torpidity in the Hyacinth; but the effect upon the latter flower is altogether changed, when common dunghill-water is employed, with which it will be found a difficult matter to overdo it, provided perfect drainage is secured, and nothing sour permitted to stagnate about the roots. The Balsam is another plant with which I have found guano not to agree, when applied while the plants were about six inches in height; some have perished, and others have become attenuated, having all the appearance of having been grown at too great a distance from the glass. I have found, however, that a good mixture of bone-dust in the compost of this plant has given it a robustness which it has not attained without it. I have also found its effects on Orchids to vary considerably, but syringing the basket, blocks, &c., with a mixture of weak guano and soot water, well clarified, has proved of advantage to all; when applying the same, however, in a much weaker form over the foliage, Zygopetalum Mackay and its varieties have become lengthened in the leaves and flower-stalk, so that the individual blossoms were placed at too great a distance apart, causing it to lose much of its effect; Oncidium ampliatum, on the contrary, was so much improved under the same treatment as, at first sight, to be mistaken for the larger flowered variety by good metropolitan judges. As a general rule I have found that all evergreen plants having considerable consistency in the leaves, delight in an occasional syringing with weak and clear liquid manure; and in endeavouring to work out this idea I applied it to some large Camellias which, owing to various causes, had got sadly unhealthy; a watering at the roots, together with a syringing, especially after a bright day, was doubtless the principal means of restoring them to perfect health. I syringed a large plant of Stephanotis floribunda in this way, had its roots reduced, and a considerable quantity of fresh soil added, without the loss of a leaf. I might lengthen these remarks, but perhaps enough has been said to direct the attention of others to the subject. *John Richardson, Parham Park, near Storrington, Sussex.*

**Packets of Seeds.**—Mr. Cole has accounted for a certain agent appearing to sell his Celery seed at 1s. the packet, whilst he charges 2s. 6d. Now, I can assure Mr. Cole that many dealers in the article could sell packets of the genuine seed at the above mentioned price and obtain a good profit by it. The word packet is of very slippery meaning, and indescribably useful to certain cunning vendors of seeds. They understand the rule of division, and applying it to Mr. Cole's packets, he will get the discredit of the half-thimbleful of seed sold for 2s. 6d. Of what use is this word packet in a dealer's list but to allow him to have the advantage over his customer of securing the sum to be paid, and giving no security in return for the value of the article sold? Let Mr. Cole and all respectable dealers in seeds discard this juggling word, and sell by the ounce, or, if that is too much, by the dram a voidupois. *L. Stephenson, Souldern, Oacon.*

**Transmission of Seeds.**—An excellent plan of sending seeds of aquatic plants from one place to another is to bottle them in distilled water, and hermetically seal the bottles. Likewise Lycopods; a plant of Lycopodium cespitosum was grown until it got established in a shallow bottle, and afterwards the morsel of soil in which it was

grown was moistened with distilled water, and then hermetically sealed. It was then despatched to Australia, but owing to some accident it was not sent off for some months, but in course of time it reached its destination, after a delay of nine months, alive and in excellent health. *J. IV.*

## Societies.

**LINNEAN, April 5.**—The PRESIDENT in the chair. Mr. C. A. Law was elected a Fellow. The Rev. Professor W. Hincks read a paper on the true nature of fasciated stems. He drew attention to the fact that those departures from ordinary growth called monstrosities were to be accounted for on general morphological laws. He quoted the opinion of Moqua-Tandon on these fasciated growths, in which that author had stated his opinion that they did not arise from a union of branches. The author exhibited a number of specimens, and gave his reasons for believing that they originated from the union of buds or separate axes of growth which were not separated by the usual internodes. He exhibited specimens of fasciated stems from the Linnean Museum, and from his own collection. The most curious forms were those of species of Coniferae, Fraxinus, Cotoneaster, Cheiranthus, Primula, and Ranunculus. A discussion followed, in which several Fellows took part. Dried specimens of Eichhornia speciosa from the neighbourhood of Santarem, were presented by D. Hanbury, Esq., jun. A specimen of Polypodium Billardieri, from Taranaki, New Zealand, was presented by James Yates, Esq. Several specimens of flowering plants, from the Chelsea Botanic Garden, were exhibited by Mr. Moore; amongst others, two new species of Begonia, three species of Nephrodium, and specimens of Bignonia speciosa, Asystasia scandens, and Melastoma cymosum. A specimen of a fossil species of Camptopteris, from the Whitby Museum, was exhibited by James Yates, Esq.

**ENTOMOLOGICAL, April 4.**—The PRESIDENT in the Chair. Amongst the donations announced were specimens of the larva of a lamellicorn beetle from Bogota, infested with a Sphæria of considerable size growing out of the front of the body (similar to the New Zealand caterpillar described and figured by Sir W. Hooker), presented by Mr. Jones Stephens, of Bogota. The larva is found in decaying timber and underground. Mr. Desvignes exhibited a beautiful specimen of Sphinx Celerio from Eastern Yorkshire; also a specimen of Anthidium maculatum, a species of wild bee, new to the English fauna, received from Mr. Buxton, who had taken it either in Yorkshire or Scotland. It is common in the South of France and Albania. Mr. F. Bond exhibited a ground beetle, Steropus madidus, infested with a hair worm (Filaria) about 4 inches in length, also another specimen of the same parasite in spirits, taken from the same species of beetle, not less than 15 inches long. Mr. Douglas exhibited female specimens of an apterous moth (Taleporia sp.), which had been reared from the caterpillar state by Mr. Wilkinson, and which had produced young without any intercourse with the male. Mr. S. Stevens exhibited a box of splendid insects recently collected in South America by Mr. Bates. Mr. F. Smith exhibited specimens of a Bruchus, from the Cape of Good Hope, reared from the seeds of Sophora myrtillifolia, together with a number of minute Chalcididae, which are parasitic upon the Bruchi. A note was read from the Rev. A. Wilson, of Edinburgh, on the employment of chloroform for stupefying and killing insects previous to pinning them for the cabinet. Mr. Douglas stated that in his opinion bruised Laurel leaves were a more efficacious and safe remedy. A note by the Rev. Joseph Greene was read, announcing the capture of Sphinx lineata at Youghal, in the south of Ireland. Also on the plan of collecting the chrysalises of moths by digging at the roots of trees, which he had found an extremely prolific mode of obtaining fine specimens. Lists were given of the species obtained from different trees, and it was stated that detached trees, and trees at the borders of woods, were more prolific than those in forests. A paper by Mr. G. R. Waterhouse was read, containing a revision of the British species of Ochthebius and Hydrochus, which he had been enabled to make, now that Mr. Stephens' collections have been acquired by the British Museum. Mr. Westwood took the opportunity of vindicating Mr. Stephens' memory against the sweeping condemnations pronounced against him, both at home and abroad. Mr. Waterhouse's examinations having proved Mr. Stephens to have correctly added to the number of the species of these genera in several instances. Mr. Westwood also read a memoir on some new genera of exotic Coleoptera, collected in China and Ceylon by Major Champion and Dr. Templeton.

## Books Received.

**Reform or Reject the Income Tax.** By J. G. Hubbard, Esq. (Longmans).—In this, which is chiefly a reprint of two letters in the Times, the author ably meets the objections that have been taken to the views explained in his former pamphlet.

**A Plea for Geology.** By E. P. H. Vaughan. (Trimmen). Pp. 20, 12mo.

**Ephraim's Treatise on the Cultivation of the Vine in Pots.** (Hall & Virtue).—A very small and very short account of an important subject, written by a good

practical gardener. People so often fail in this branch of cultivation that we can hardly have too much information concerning the methods pursued by those who are successful.

**Black's Illustrated Edition of Uncle Tom's Cabin,** is beautifully printed and profusely decorated with woodcuts, after designs by Sears and others. If the merit of the cuts is unequal, it must be owned by the most fastidious critic that many are little gems of art. The volume is brilliantly got up, and will be very acceptable to the admirers of this popular romance of real life.

**Wellington—his character—his actions—and his writings.** By Jules Maurel. (Murray's Railway Reading).—An admirable sketch, by the practised hand of an eminent literary man.

## Garden Memoranda.

**ROYAL GARDENS, FROGMORE.**—A visit to these great gardens, of which plans were given in our volume for 1849; is necessarily exceedingly interesting at any time of the year, but more especially so at the present season, when the various forcing houses are in full operation. Of Pine-apples alone, the quantity grown here is enormous, and of the excellence of the fruit or the health of the plants it is impossible to speak in too high terms. The varieties are chiefly Cayennes and Queens, and they are for the most part turned out of pots on beds of prepared soil over hot-water pipes; some of the suckers are, however, not even potted at all, but taken off the stools and planted out at once. The plants in the two Pineries in the principal range are now beginning to "show," and every one of them promises to fruit. Ripe Grapes may be obtained here nearly all the year round. The remainder of last season's crop was only out in the end of February last, and new Grapes have been in use now for some time. The very earliest are produced in a small house behind the principal Graperies. The Vines are planted out in a shallow bed or trough, as it were, set on supports in the middle of the house, and filled with prepared soil. The plants which are now yielding a fine crop of well coloured fruit are three years old, and the bed is full of soil and roots; but next season it is contemplated to throw them away and introduce fresh Vines, when only a portion of the border will be formed for them the first year, a layer being added to the front of it every season afterwards till the bed is again complete. In this way excellent early Grapes are obtained. The fruit in the principal early Vinery has nearly all changed colour, and if the Vines were less vigorous than they are, so heavy is the crop that it would be almost greater than they could advantageously carry. The bunches are not remarkably large, but they are compact and well-shaped. The succession crops are also abundant and fine, more especially that in a new half span-roofed house, where the bunches promise to be unusually large and excellent. The outside border of this house is warmed by hot-water pipes, encased in a flue which passes round it, and from which hot-air drains start at intervals, and run through to the back of the house. The spaces between these drains, whose sides are pigeon-holed, are filled up with brick rubbish, so that heat is enabled to traverse freely the whole bottom of the border, and it can be let up into the house inside, if desired, by means of small earthenware pipes or chimneys, placed there for the purpose. By similar means cold air can also be permitted to enter the drains from without, thus affording a convenient way of agitating and changing the atmosphere of the house, a desideratum which cannot fail to be productive of the best results.

In a late Vinery in the same range, the Vines are wholly moved outside and laid along the front of the house, leaving the interior free to be used for other purposes, and Mr. Ingram finds this to be one of the most useful houses he has; it is at present filled with a fine crop of French Beans, which are planted in rows on the floor. The Vines, which are all West's St. Peters, are easily introduced when wanted by lifting up the front lights and passing them in, and a little channel is made in the front wall to accommodate their stems which, when in their places, are enclosed by an iron cover, flush with the brickwork, making all complete and guarding the Vines from injury. This is the house from which the very latest Grapes are cut; Vines are also successfully grown in small pots here, to be placed in vases on the table; they have from five to eight bunches on each plant. In the earliest Peach-house, the fruit has finished stoning, and is now swelling rapidly. Both in this and the other Peach-houses the crops are abundant. In one of the houses we remarked a small tree of the Stanwic Nectarine, literally loaded with young fruit, and we were informed that scarcely a flower had missed setting. It was, however, stated to be very late in ripening. In the Plum house fruit was plentiful, and swelled satisfactorily. Of the varieties, the Victoria was stated to be most suitable for house work, and it is also a good kind for out of doors. Green-gage and Goliath are most precarious for forcing. In the early Cherry-house some of the May Dukes were ripe, and others were fast succeeding them. The trees are all in pots, but soon as they have fruited they are turned out of the pots and planted out in a long trench, from which they are again potted previous to their being wanted for "work;" but as two sets of trees are kept forcing, one lot is allowed to rest every alternate year. Two span-roofed Strawberry-houses have recently been erected, and are now filled with plants in full bloom. They stand on stages about a foot from the glass



loping both ways with the roof, the path being up the middle of the house.

While speaking of Strawberries, we must not forget to mention the great abundance of this fruit, which is scattered all over the different forcing-houses wherever there is a shelf for the plants to stand on; and we never saw forced Strawberries in such profusion before. Looking along the shelves they appear literally laden with fruit. The sort is confined to Ingram's Prince of Wales, which, as was stated last week, is a favourite at the royal table. It is a great bearer, good setter, and altogether a large and showy fruit. Out of doors it has withstood the severity of the winter much better than the British Queen, which is one of its parents, Keens' Seedling being the mother. Cucumbers are in use here all the year round. The autumn ones were grown in the late Vinery above alluded to, and then they were succeeded by those in the Cucumbers-houses, which are now furnishing plenty of excellent fruit. Melons, chiefly the Beechwood, are also grown largely here; some of the fruit in the various pits is already nearly 2 lbs. in weight. Early Potatoes are now being dug for table out of dung-pits, succeeded by a long range of cold pits; and early Horn Carrots grown under glass will soon be ready to "draw." Peas are likewise managed in the same manner; they are now coming into bloom, as is also a row in the open air close along the front of the Pine stoves, where they have had no protection whatever, proving that by taking advantage of the little heat that escapes from stoves a few early Peas may be gathered. We had nearly forgotten to mention that French Beans are produced in the floors of nearly all the houses. The Beans are sown in small square bits of turf, which are placed in the warm pavement above the hot-water pipes. Here they soon germinate, and they are afterwards planted in rows across the borders, turves and all. Vine-yes are also struck in this manner, and the plan promises to be useful in a variety of ways.

The greenhouse at the east end of the principal range of houses, and the stove at the west end, were both as gay as they could well be at this season of the year. The great ornament of the latter was, however, the admirable specimens of *Begonia manicata* and *nitida*, which it contained. These were great bushes, bearing numberless clusters of blossoms, at once striking and effective. We also remarked some good seedling *Begonias* of Mr. Ingram's raising, very high-coloured, and in some or two instances sweet-scented. In what may be termed the succession plant-houses, were, among other things, some good examples of *Tropeolum tricolorum*. A few of these were trained on globular wire trellises; but one or two occupied supports, consisting of a strong upright wire stem, with tiers of six arms to it. These arms were united at their ends by bent wire, so that the plant, after covering the main body of the trellis, appeared to festoon between wire point and wire point, giving the whole a pleasing shape, and serving at the same time to produce variety.

A Violet-pit was full of flowers; the sorts were the *espolitan* and *Tree Violet*, mixed together. The pit was span-roofed, and the Violets were planted on a ledge, corresponding on both sides with the slope of the roof. They were stated to have occupied this pit for 10 years, requiring no care, and every season blooming profusely. They come in before the Russian, which is at present flowering freely on a sloping bank in the open air.

As regards out-door trees and crops, we may safely assert that no great amount of injury has been sustained here, everything being some three weeks or so earlier than last spring. The Peach wall was in blossom on the 20th of March last year, and it is no more than in full flower now. The blooms are all safe, being protected by blinds made of cheese cloth or canvas, which, though perhaps somewhat expensive in the first instance, is not found to be dear in the end, being very durable and efficient. Some which has been in use these six years past are now nearly as sound as ever. They are moved up and down by ropes and pulleys in the following manner. Spars let into iron shoes or brackets at the bottom are allowed to fall against the wall at the top; blinds having a roller at bottom are placed over these supports; a rope is then fastened to the top of the wall near both ends of the blind, passed over behind the latter, turned over the roller at bottom, and then up the front of the blind to the top of the wall again, where, after passing through a pulley, it is led along under the coping to a double pulley in the centre, through which the two ropes are worked. In this way the shades can be moved up or down with the greatest ease; and of their great value, &c. in retarding the opening of the blossoms, by keeping them from them, and afterwards in protecting them, we need not say one word. Apricots on walls are also similarly protected, except a few over which double fishing nets have been placed, and on which the fruit is closely set. Those under the canvas are later; but are as yet unharmed. The same may be said of *Pears* & *Cherries* on walls, neither of which are sufficiently exposed to be harmed. The walls are everywhere beautifully covered with trees, which we need scarcely say are extremely well managed. The *Pears* especially, being pruned on the short spur system, look exceedingly neat, no unsightly protrusions occurring to offend the eye; in the case of sorts which do not bear on spurs, and which are trained horizontally, the young shoots are laid in between the main branches, similar to *Peaches*. We must also direct attention to the beautiful pyramidal trees which are planted at the

head of the slips and cross walks. These are not managed in the usual way, which is to shorten one tier of shoots as soon as it reaches the lower one to which they are tied. Those here are formed so that the upper tier of branches alternate with the lower one, by which means the shoots are permitted to lengthen till they in fact exhaust themselves, and thus a great amount of watery brushwood is obviated, and the trees are rendered much more fruitful. Plums are also similarly treated. Apples and bush fruit are all uninjured, and look as if they would produce a good crop. Even the trees on the curved wire trellises by the sides of the walks in the centre of the garden are covered with fruit-buds, all of which are, as yet, quite safe.

Among Vegetables, Peas have suffered the most, all those sown in autumn having been killed. Broccolies have stood well, and have been yielding fine heads during the whole of the winter. Some of the late autumn-planted Cabbages have been considerably injured, but they are now recovering. Brown Cos Lettuces have stood pretty well here, and a seedling, a cross between that and the Royal Cabbage, has not been hurt at all. It is therefore a valuable Cabbage Lettuce, and it was stated not to be so liable to run to seed as some kinds. Cauli-flowers under handlights have done well, and even a plantation in the open ground, set in November last, on the side of slight ridges, have stood unprotected and uninjured, and managed in this way they are found to come into use nearly as soon as those under glasses.

We may mention that in consequence of the stopping of the old Frogmore Road, considerable improvements have been made about the entrance to these gardens. New gate lodges have been built, fresh carriage drives formed, and a young plantation made, with a view to screen the gardens from the new Datchet Road, over Albert Bridge, from which a Mulberry avenue is to lead direct to the garden gate, and young trees have been planted for that purpose.

## FLORICULTURE.

PANSIES IN POTS.—I have seen nothing in a small way this season half so gay as a three-light box which I have filled with these delightful spring flowers. They are just now in full beauty, and my Duke of Norfolk, Sir Philip Sidney, Disraeli, Ophir, Robert Burns, Euphemia, France Cyclope, Mrs. Beck, Duke of Perth, and Climax are the especial admiration of all who visit my little garden. Those who have never cultivated the Pansy in this way have little idea what a profusion of really gay flowers is produced by this plant during the whole of the early months; and with proper attention they will blossom in good character till the latter part of May. As regards cultivation, Mr. Turner, who is perhaps the most successful grower of the Pansy we have, says: "Plants for early flowering should be potted up from the open ground in October. If the weather is open in the last week in January, or the first week in February, begin to repot generally, using soil consisting of good decomposed turfy loam, rotten manure, a little leaf-mould, and coarse sand, the latter in proportion to the nature of the loam. The soil should not be pressed hard with the hand; no water should be given for a day or two after potting. Before, as well as after this operation, the plants must be kept well up to the glass. They should have from two to six shoots, or strong leaders; and to keep them to these chosen shoots, a number of small ones must from time to time be removed. These cuttings answer the double purpose of strengthening the main shoots, and producing a stock of young plants, which will supply the place of the old ones when worn out." Keep the frames in which they are placed open whenever the weather is favourable, pulling the lights back, or tilting them up; maintain the plants in a growing state by watering them as often as they require it, going over them for this purpose every day. Plants that have several shoots should be tied into shape, placing the centre-branch upright in the middle, and the remainder at equal distances all round; but the plant must be shaped according to the number of shoots: three leading branches are sufficient if cut blooms only are required. Another advantage is, that the same plants, from the succession of bloom they produce, will answer the double purpose of exhibiting in pots or stands of cut flowers. After the potting, as above recommended, has taken place, take the earliest opportunity at which the ground is in a fit state, to plant out any stock not required to bloom under glass, or plants that have been wintered in stores, &c., which will bloom through May or June, and produce a stock of good healthy cuttings." By following the simple and inexpensive treatment just recommended; I am sure that those who take the little trouble that it entails will not fail to be gratified by a fine display of bloom, which, from its long continuance, will most certainly afford much gratification. A. D.

CALCUTTA HORTICULTURAL SOCIETY.—At the second monthly meeting for florists' flowers, held in the Society's Garden, on the 7th inst., the following seedlings were brought forward:—From Wishaw Castle, a *Camellia*; from Mr. Veitch, two seedling *Azaleas* (one of which, No. 2, was noticed in last month's report); from Mr. Carswell, two seedling *Camellias*; from Mr. Gould, twelve *Cinerarias*; and from Mr. Laing three plants of the same useful genus. The censors made the following awards:—First Class certificate to a *Camellia* named "Lady Belhaven," exhibited by Mr. Thompson. The variety was stated to have been raised at Woodhall (previous to the breaking up of that establishment), and flowered for the first time at Wishaw Castle. The bloom is rose pink, and measures 4½ inches across, but it is rather defective in the centre, the petals being convex, and arranged in a spirally imbricated manner. Letter of Commendation to a

purple coloured self *Cineraria*, No. 253, exhibited by Mr. Laing, of Dysart House. *Cineraria*, No. 4, exhibited by Mr. Gould, Balcarno, was considered to be of equal merit with Siewright's "Bride," to which a Certificate was awarded by the Society on 10th May, 1851, both being of a white colour. Named *Cinerarias*, to aid the censors by comparison, were received from C. K. Siewright, Esq., Mr. Laing, and Messrs. Downie & Laird, who also exhibited a plant of *Cheiranthus atropurpureus* in flower.

CATALOGUE received from Robert M. Stark, Edgell Hill Nursery, Dean, Edinburgh.  
DOUBLE SCARLET PRIMROSE: *J. C.* Very different in habit from the double white and purple; you are right, it appears to be miffy, and we fear constitutionally so.  
FUCHSIA: *W. A.* From what we could see of the crushed and flattened flower, it resembles a small bloom of *corymbiflora*.  
LONDON FLORICULTURAL SOCIETY: *T.* We learn that the final dissolution of this society has been settled on, and that circulars have been sent to all its members announcing the fact.

### SEEDLING FLOWERS.

CINERARIAS: *E. A.* *Westwood*. 17, petals of but half the necessary width; 6, pretty but small.—*W. D.* We abound in flowers equal in merit to that forwarded; it possesses no novelty, and the petals are small, ribbed and indented on their ends or tips.—*P. R.* 1, a small flower with bold disk, petal broad and obtuse, but indented and intensely reflexed; 2, poor and weedy; 3, of no merit; 4, ditto; 5, although not without faults may prove desirable; 6 is made poor by the insignificant disk; 7 reflexes; 8 has petals in the right position, and the colour is cheerful; still it is of no merit; 9 is very much notched; 10, worthless; 11, ditto; 12, the worst sent; 13 bad.—*R. C. K.* 4, good in colour; 2, the surface of the petal is too uneven, and the form too oval; 3, neat style of petal, with a good disk; 1, a bold and showy variety for decorative purposes, but wanting in what florists term properties.—*H. H. M.* *Traveller* was exhibited by Mr. Ivory, of Peckham.—*F. E. P.* Mary, a bold smooth sitting flower, with every appearance of being a free bloomer, one of the best submitted to us this season. Mrs. Rogers, good white with well defined tips and admirable disk; but the petals are both narrow and notched at their ends. *Hertford Beauty* is large and bold, but of no value among florists; it is, however, a capital market flower.

PANSY: *G. T.* A really handsome and well proportioned flower, we are only in doubt as to its dissimilarity; yellow ground varieties abound as they do, we want to see a few more faces before we can decide; at all events it is a good flower.

## Miscellaneous.

*Sale of Orchids.*—The following will give some idea of the kind of prices the collection of established plants realised, which was sold the other day at Stevens's:—*Phalenopsis grandiflora* (a fine plant), fetched 26*l.* 5*s.*; *P. amabilis*, 18*l.* 18*s.*; *Aerides crispum*, 18*l.* 18*s.*; *A. maculosum*, 4*l.* 10*s.*; *Saccolabium guttatum*, 17*l.* 17*s.*; *Laelia purpurata*, 13*l.*; *L. cinnabarina*, 3*l.* 15*s.*; *Cattleya Mossie superba*, 13*l.*; *C. lantiana*, 7*l.*; *C. quindio*?? 7*l.*; *C. Skinneri*, 6*l.* 6*s.*; *C. marginata*, 5*l.* 10*s.*; *C. labiata*, 5*l.*; *Calanthe vestita* (best var.), 8*l.*; *Vanda carulea*, (fine plant), 18*l.* 18*s.*; *V. Roxburghii carulea*, 5*l.* 10*s.*; *Galeandra Funckii*, 6*l.* 10*s.*; *Barkeria spectabilis*, 3*l.*; *Paphinia tigrina*, 3*l.* 3*s.*; *Ansellia Africana*, 3*l.* 3*s.*; *Cœlogyne cristata*, 3*l.* 5*s.*; *Dendrobium anosmum*, 6*l.* 5*s.*; *D. densiflorum*, 3*l.* 12*s.* 6*d.*; *Broughtonia sanguinea*, 5*l.* 5*s.*; and *Eria leucostachya*, 3*l.* 3*s.* Other lots fetched from 2*l.* to 3*l.* per lot.

*Gardeners' Benevolent Institution.*—Our readers will be pleased to know that Samuel Laing, Esq., M.P., Chairman of the Crystal Palace Company, has consented to preside at the anniversary festival of this institution, on the 13th of June next.

## Calendar of Operations.

(For the ensuing week.)

### PLANT HOUSES.

BRING forward the stock of plants recommended for blooming in July and August, by shifting such as require it, and allowing them more room. *Kalosanthis* will require neatly tying out, as these plants form beautiful globular-shaped plants, by a little management. *Fuchsias* will require a second shift, which should now be into their blooming pots, using a rich light soil for the purpose. The same will suit scarlet *Geraniums*, growing for specimens. These three plants can be well managed together. *Erythrina Crispa-galli* is another free-flowering plant, well adapted for the purpose; and not forgetting the different varieties of *Nerium*, so seldom seen, and yet we scarcely know more beautiful things, or any that repay cultivation better. To grow these in perfection, stout bushy plants should be selected, which, after being potted in peat and loam, should be placed in a pit, close to the glass; let them have a good heat through the summer, and keep them moist at the roots while growing. About August they should be kept drier, and have the glass taken off them every fine day, or placed at the foot of a south wall; by these means the shoots will get well ripened by the winter. Any dry airy house will suit them, and the following spring they may be forced into bloom with a little extra heat. If left in a house of moderate greenhouse temperature, they will not bloom before July and August, when they will surpass many new things grown in preference to this charming old plant. Some fine varieties may now be procured in the nurseries. Keep the conservatory as cool by day as is consistent with the health of the inmates; this will keep the plants longer in bloom, and be more enjoyable for parties inspecting them. Shading must be resorted to this bright weather, and some pains must be taken to supply the waste of moisture by the dry external air. Any delicate plants full of roots, which it is not desirable to shift at present, should have their pots inserted in one a size larger; filling the interstice between them with moss or saw-dust. This, if more generally practised, would save many a valuable plant; the action of dry absorbing air, on so porous a substance as a common garden-pot, soon extracts the moisture from the mass of earth inside; and however carefully attended to, many plants die from this alone in hot weather.—Orchids



are now progressing fast, and will require attention in shading daily, and gradually increasing the humidity of the house, so as to keep pace with the increase of solar light and heat. If the roof is covered with creepers, a little management in training them, to effect a judicious shading of the plants beneath, will save much trouble with the canvas outside (as it will only be needed on very bright days), and add much to the appearance of the house. See that plants on blocks, or suspended in baskets, are not allowed to get dry, which would have the effect of causing a check to the young growth, which should be encouraged as long as possible, to obtain strong, healthy plants. Watch for, and keep down insects. Plants in bloom should be removed to a house with a drier temperature, to prolong their period of flowering.

## FORCING DEPARTMENT.

**PINERY.**—The greater part of the summer fruit will now be swelling fast; and as the amount of light and solar heat has largely increased, a proportionate quantity of moisture must be applied, both to the plants and the air of the house: to obtain the latter, the paths, floors, &c., should be flooded with water several times a day, and at closing time let the plants and surface of the bed be well damped, to preserve the desired humidity. A slight shade of open thin canvas or netting (of which Haythorn's is the best), should be placed over the glass for a few hours during the middle of each bright day; this will keep the internal air more humid, but too much shading for such a plant as the Pine is more injurious than useful; towards evening a small portion of air may again be admitted; this will give strength and vigour to the plants and produce higher flavoured fruit. Remove as they appear useless suckers and gills, and keep the fruit in an upright position by proper staking. The increased solar heat will produce a corresponding increase to the bottom heat; this should be watched for, although a somewhat high bottom heat will not produce the mischief it would with a low house temperature, yet it should not exceed 90° or 92°, even at this time. Continue to shade newly potted plants until free growth commences; reduce it however, gradually, to inure the plants by degrees to the whole influence of light, keeping down the temperature by large admissions of air. Plants may appear to grow faster when shaded, and may be larger in size, but the cultivator will find those plants grown under a full exposure to solar light and a proportionate quantity of air will produce much the largest and best flavoured fruit, other conditions being equal.

**PEACH-HOUSE.**—When the fruit in the early house has gone through the critical period of stoning, the final thinning should take place. If, however, our directions respecting the previous thinning of the crop have been followed, at this stage but very few will require removing; in carrying this out, the size of the fruit and capability of the tree to perfect its crop should not be lost sight of. The borders inside and out may now have their maximum waterings, using liquid manure wherever a weak habit from poor soil or over exhaustion shows it to be necessary. In addition, a copious washing by the engine should be applied twice daily, early in the morning and at shutting-up time; and if advantage is taken of closing with a little sun-heat, a few additional degrees of heat may be given them. The house, however, should not stand higher than 50° at 6 a.m., while during the day it may range to 85°, if accompanied with air in liberal quantities. Keep a strict watch on the red spider, which the present dry weather will encourage. French Beans and Strawberries are great helps in introducing this pest to forcing houses, hence after this time they should if possible be accommodated by a house or pit to themselves. French Beans are subject to a still worse plague to gardeners—the thrips, the latter being very difficult to destroy. In Vineries, Peach-houses, and Melon pits, where the red spider shows itself, wash the back walls and other parts of the interior with the wash we recommended at page 200. Peach trees may be syringed with a mixture made by well stirring a small quantity of sulphur (in powder) in water; if the syringe or engine has done its duty, this will not be necessary. Cherries when beginning to colour, will require free exposure to light, and abundance of air to bring up their colour; at the same time the supply of water should be reduced.

## FLOWER GARDEN AND SHRUBBERY.

The cultivation of annuals for garden decoration has, in some degree, given way to the more permanent class of bedding out greenhouse plants, the principal varieties of which have been noticed. Yet some of the former will always find a place in the best arranged gardens, and a pretty general selection should at the same time be grown, for filling up vacancies, in borders of herbaceous plants, bulbs, &c., and particularly for dressing up the margin of shrubberies where the space between the line of turf and shrubs may be occupied with them, so as to hide the bad effects which bare soil always produces, and afford a gay appearance through the summer—and this at a trifling expense. For the latter purpose the present will be a favourable time for sowing, the ground having previously been well dug and prepared; the varieties are so numerous that it is scarcely requisite to give names, we will therefore only observe that the seed should be sown thinly, and as soon as the plants are large enough they should be well thinned, to allow a free growth. No idea of the beauty of annuals can be formed by the stunted patches we so generally see, owing to the common practice of sowing the seed in a patch, and allowing perhaps 50 or more plants to grow in a space where two or three only should have remained; those intended for beds (either in the formal or more natural

style of gardening), should be selected which continue a considerable time in flower; appropriating those of a dwarf habit near the walks; and placing the taller growing ones at a greater distance. Among the former, *Nemophila insignis*, *Clintonia pulchella*, some of the dwarf *Campanulas*, *Convolvulus minor*, *Brachycome iberidifolia*, *Portulacas*, *Saponaria*, *Tagetes*, *Alyssum*, *Fedia*, *Zinnia*, &c., may be named; and, in addition to many others, of which every seedsman's list affords a selection, Stocks, as a matter of course, will always be grown; and we recommend a trial of the new *Chrysanthemum*-flowered *Asters*, which have bright and distinct colours for beds, with the advantage of having erect flowers. Climbing Annuals, as *Tropeolum aduncum*, (Canary Creeper), *Convolvulus major*, *Loasas*, *Cobæa scandens*, *Ecemrocarpus*, *Maurandias*, *Lophospermums*, &c., should be sown in pots, three or four seeds in each, and when strong enough, should be planted to cover trellis, rustic work, poles, walls, &c. Some of these require sowing early (as formerly directed), to get sufficiently established; while the more hardy and strong growing kinds will succeed now. Do not forget to make one or two sowings of Sweet Peas to keep up a succession of bloom. As the planting-out season approaches, take every opportunity of hardening off the entire stock, that the change to complete exposure may be gradual, and the after growth progressive. Any plants which are kept in pots, and which appear pot-bound, should either be turned out into a frame or watered with liquid manure, as once in a stunted state there will be difficulty in again getting them to break freely. Mow, if the grass requires it, well rolling the ground first, to obtain a level surface for the scythe.

## FLORISTS' FLOWERS.

Attend as we directed last week to the potting off of Carnations and Picotees; be careful in seeing that no wireworms escape into the mould in which they are potted; should one of these troublesome insects get in the pot with such as *Lady Macbeth*, *Haidée*, or any of the new ones of this season, they would in a short time do considerable damage, when a little trouble bestowed on the looking of the mould might have obviated it; to make sure we would advise our friends to place some pieces of Potato in the pot, and look at them every morning, taking care to remove the pest, should any be in them. Tulips, kept protected, for at this season, should they get on them a hail-storm, it would make sad havoc with them. Auriculas: Take especial care of the frames during the night, taking care that the expanding blooms do not receive a check, for should they, they will perhaps have some difficulty in expanding; and during the intense heat of the day it would be advisable to cover the frame with canvas or netting, so as to break the direct rays of the sun. Pansies in pots, keep free from decaying foliage and the fly, as recommended in a previous Calendar.

## KITCHEN GARDEN.

The repairing of Box and other plants used for edgings to the walks, and for dividing the different quarters of the kitchen garden, having been effected, the gravel walks should either be turned over or a coat of fresh material added, having previously loosened the old surface. Let the whole be levelled and well rolled, repeating this (particularly after rain) till they become perfectly solid. In reforming them, round them slightly in the middle, for rain to pass easily to the sides; but no more than this, unless in very wet situations. The walks being thus set square, and the edgings, &c., in proper order, an appearance of neatness and good keeping will pervade the whole; and if our directions respecting manuring the vegetable quarters for the season have been carried out, the cropping and general management during the summer need not prevent any deviation from neatness and good order. The weather having again become very cold, slight protection should be afforded to young or newly planted vegetables; a row of short spray placed to windward, or a ridge of earth thrown up on the same side, will help to ward off the cutting winds we are now experiencing. Water new-planted things cautiously, and these in the morning, for the plants to become dry before night. Sow a few dwarf French Beans on a south border, and keep a supply in pots for transplanting early next month. Stick Peas as they advance, in the intermediate space between which plant out Cauliflower, &c., as the former will afford them a slight shelter.

(The Weather Report of last week, which miscarried through the Post Office, is now given.)

## STATE OF THE WEATHER NEAR LONDON,

For the week ending April 7, 1853, as observed at the Horticultural Gardens, Chiswick.

April.	Month's Age	BAROMETER.		TEMPERATURE.					Wind.	Rain.
		Max.	Min.	Of the Air.			Of the Earth.			
				Max.	Min.	Mean.	1 foot deep.	2 feet deep.		
Friday..	1	29.479	29.334	57	36	46.5	43	40	S.W.	.07
Satur..	2	29.752	29.644	56	36	46.0	43	41	W.	.00
Sunday..	3	29.705	29.510	54	42	48.0	43	41½	S.	.12
Monday..	4	29.769	29.662	62	50	56.0	41	42	S.W.	.14
Tues...	5	28.756	28.678	61	43	52.0	46½	43	S.W.	.02
Wed...	6	28.948	28.828	59	41	50.0	47½	45	S.W.	.02
Thurs...	7	29.806	29.736	57	32	44.5	45	46	W.	.00
Average..		29.779	29.642	58.0	40.0	49.0	45.0	42.6		.37

April 1—Rather boisterous; fine; clear at night; rain.  
 2—Cloudy; fine; hazy.  
 3—Overcast; slight showers; overcast.  
 4—Cloudy; very fine; mild, with rain at night.  
 5—Densely overcast; slight rain; clear.  
 6—Overcast throughout.  
 7—Overcast; very fine; clear at night.  
 Mean temperature of the week 4 deg. above the average.

## STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending April 16, 1853.

April.		Average Hightest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
							N.		E.		S.		W.	
							N.	E.	S.	W.	N.W.	S.W.	N.E.	N.W.
Sunday 10		58.1	33.8	44.5	11	0.26 in.	4	5	2	1	3	4	1	1
Mon. 11		54.8	35.7	45.2	14	0.51	1	6	2	3	4	1	2	1
Tues. 12		55.4	37.5	46.5	19	0.55	1	6	3	4	1	2	1	1
Wed. 13		56.0	38.5	47.2	16	0.55	1	6	3	4	1	2	1	1
Thurs. 14		57.1	37.7	47.4	11	0.31	1	6	4	5	1	4	1	1
Friday 15		57.6	39.5	48.5	16	0.47	1	6	4	5	1	4	1	1
Satur. 16		56.2	36.7	46.4	12	0.48	1	6	5	1	2	4	1	1

The highest temperature during the above period occurred on the 14th, 1852—therm. 73 deg.; and the lowest on the 16th, 1847—therm. 20 deg.

## STATE OF THE WEATHER NEAR LONDON,

For the week ending April 14, 1853, as observed at the Horticultural Gardens, Chiswick.

April.		Month's Age.	BAROMETER.		TEMPERATURE.					Wind.	Rain.
			Max.	Min.	Of the Air.			Of the Earth			
					Max.	Min.	Mean	1 foot deep.	2 feet deep		
Friday..	8	31.119	29.809	53	28	40.5	47	46	N.	.05	
Saturday	9	30.304	30.175	50	31	40.5	44.5	44	N.	.04	
Sunday	10	30.128	30.039	55	29	42.0	45	44	N.W.	.00	
Monday	11	30.161	30.082	60	37	48.5	44.5	44	W.	.00	
Tuesday	12	30.015	29.887	56	32	44.0	46	44	N.W.	.00	
Wednesday	13	30.057	29.892	48	22	35.0	45	43	N.	.04	
Thursday	14	30.145	29.999	57	31	44.5	45.5	44.5	N.	.00	
Average..		30.132	29.983	54.1	30.1	42.1	45.1	44.1		.14	

April 8—Fine; rain; thunder, with hail shower in afternoon (very heavy thunder-storm in London); clear at night.

9—Clear; fine but cold; overcast.  
 10—Overcast and cold; fine; overcast.  
 11—Clear, early a.m.; overcast; fine; overcast.  
 12—Clear; fine; overcast at night.  
 13—Cloudy, with cold north wind; hail-shower; rain; sharp frost at night.  
 14—Partially overcast; cloudy.  
 Mean temperature of the week 4 deg. below the average.

## STATE OF THE WEATHER AT CHISWICK, 1

During the last 27 years, for the ensuing week, ending April 23, 1853.

April.		Average Hightest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
							N.		E.		S.		W.	
							N.	E.	S.	W.	N.W.	S.W.	N.E.	N.W.
Sunday 17		57.0	35.9	46.4	14	0.32 in.	4	5	2	1	3	4	1	1
Mon. 18		57.0	37.0	47.0	13	0.49	1	6	3	1	3	4	1	1
Tues. 19		57.8	35.5	46.6	6	0.45	1	6	3	2	1	1	5	5
Wed. 20		59.1	36.3	47.7	13	0.39	2	6	3	1	1	5	5	5
Thurs. 21		58.1	38.1	48.6	11	0.75	2	5	4	1	1	5	5	5
Friday 22		59.1	39.2	49.2	14	0.82	2	3	7	3	1	4	4	4
Satur. 23		59.0	39.9	49.0	14	0.52	1	4	4	1	1	4	4	4

The highest temperature during the above period occurred on the 22d and 23d, 1842—therm. 75 deg.; and the lowest on the 16th, 1847, and 19th, 1852—therm. 20 deg.

## Notices to Correspondents.

**BELL GLASSES: L.E.B.** We advise you to apply to Mr. Hartley, of the glass works, Sunderland; who will, of course, make them if there is demand enough.

**BELLADONNA LILIES: Ignoramus.** You will find full directions for their management in our volume for 1849, p. 676.

**CEDAR SWAMPS: S.W.** These derive their name, we believe, from the deciduous Cypress, a hardy tree, but one that is perfectly naked in winter. *Spiræa Lindleyana* is quite hardy; it will succeed with the management (!) of a Lilac. Cedars of Lebanon thrive in swampy places, and are, perhaps, the best trees for you to plant.

**HERBARIUM PAPER:** It will save our readers and our own time if we state, at this season, when drying plants for the herbarium is commencing, that there is no paper known to us so fit for the purpose in all respects as Bental's. We are the more desirous of making this public because we find that unscrupulous stationers try to persuade their customers that this article has no peculiar merit, and even palm off a very inferior article upon the unwary. This, however, need not again happen, for Messrs. Bental now stamp every half quire with their name and address. We will even, in order to put a stop to the impositions that are practised, break through our usual rule and add to the genuine article is to be had of Taylor & Walton, in Gower Street; and of Ackermann & Co., in the Strand.

**INSECTS: Henslow.** Boiling water poured upon the nests and eggs of the black ants in your stove will destroy them. All the individuals which will shortly be found in the winged state must be destroyed to prevent fresh colonies being established. If you cannot find the nest, you may destroy great quantities of the wingless specimens by placing bits of liver in wide-necked bottles in their runs. These must, of course, be inspected every morning. Turpentine on rags thrust into their holes will also drive them away.—*T.B.* The insect found on the Pillar Rose is a young caterpillar of the Swallow-tailed moth (*Geometra sambucaria*).—*B.W.G.* The little insects found in your well are allied to the fresh-water shrimp (*Gammarus aquaticus*); they are bred in the water, and may most probably be destroyed by throwing a quantity of lime into it. Pray favour us with the locality of the well in question. *W.*

**JOYCE'S STOVES.**—Can any one oblige the undersigned with the information whether the stoves without a due (Joyce's) are still made, and where? *H. Wolferstone, Stalford, Tamworth.*

**NAMES OF PLANTS: P.P.** Next week.—*Clements.* *Fuchsia arborescens.*—*S.E.C.* 1, *Cornus mascula*; 2, *Acer rubrum*.—*A.E.* *Cornus mascula*, a native of Europe.

**POTATOES: Country Parson.** Leave all the shoots. Nine or ten are not too many when the plants are a yard apart.

**RUST IN GRAPES: Young Gardener.** They have possibly been exposed to streams of cold air when very young and tender. That would destroy the vitality of the skin and cause rust.

**SUN DIALS: W.M.R.** If you will refer to our volume for 1849, p. 312, you will find the information you seek.

**VINES: H.G.** Your fungus is not a fungus; the disease is as much a disease as the pimples on the face of a man who is over-eat and under-worked. The appearance which you have misunderstood are enlargements of the pulp and skin (parenchyma) of the Vine leaves, caused by their having grown in an atmosphere too damp and not skilfully ventilated.—*Anna.* They are attacked by the Vine mildew which has been so destructive of late years both in this country and on the continent.

**VINES IN POTS: O.H.C. of Hants.** Study Elphinstone on the Vine in Pots, just published, and Saunders on the same subject. It is impossible to judge from your statement what ails your own plants. Most likely the house is too hot, too damp, and unskilfully ventilated.

**WOODS AND FORESTS: M.P.** We know little of the Deputy Surveyors beyond what is recorded against them in Parliamentary papers. If, as we presume, you are yourself a member of the Legislature, you can study the subject by aid of the public documents in your possession; you will then perhaps discover that we have dealt as gently with the surveyors as is consistent with our duty; or if you think otherwise, you can find a parliamentary method of vindictive "hardly used," or as we say most incompetent public servants. You appear to think it a small matter that the crown-forests should have been brought by them to the present pass. Permit us, then, to inquire what your opinion would be if the Royal forests were your own?



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"Sewage manure, absorbed in charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage plants; we put half a pint to each Rose and Dahlia, sowed it in their row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. Glenn.

Mr. JOHN ANKITT, of the Canal Lock House, Kensington, writes:—"I consider your Sewage Charcoal Manure very valuable. I have tried it this season as a Manure for a small crop of Mangold Wurzel, and have a finer crop than when I used other manure. The quantity I used was 4 cwt. to half an acre."

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**WILLIAM E. RENDLE AND CO.** have much pleasure in stating that they have this season a very excellent assortment of Grass Seeds, suited for various soils and situations. They have paid great attention to this department of the Seed Trade, and can without hesitation say that they have given the best satisfaction to all who have favoured them with their orders.

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The kinds are most carefully saved, all noxious weeds being excluded. The selections will contain several species of Festucas, Loliums, Poas, and Trifoliums, in such quantities as will best suit the soil for which the selection is intended. We usually send 2 bushels of light seed and 12 lbs. of heavy seed per acre, which will be sufficient for most soils. The large increasing demand for Grasses for Permanent Pasture enables us to reduce the price to 25s. or 32s. per acre, according to the sorts required to suit the soil. Gentlemen in giving their orders are requested to state the quality of the soil, situation, &c.

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In Lawns or Ornamental Parks it is generally desirable to have a preeminence of fine Evergreen Grasses. All the coarser kinds will, therefore, be entirely excluded, and the sward will at all times present a luxuriant and handsome appearance. The price of the best Lawn Grass is 20s. per bushel, 8s. per gallon, or 1s. 3d. per lb.

The following Mixtures can also be supplied at the lowest market prices:—For Permanent Pasture and Hay in Orchards and other Grounds much overshadowed with Trees; for Heathy or Moory Lands which have been improved with a view to their producing better Pasture; for laying down Shallow Uplands and Sheep Walks; for Lands in Preparation for Irrigation; Mixture for renovating Old Pastures, Park Lands, &c.; Fine Grass Seed, for Pleasure Grounds, &c., kept constantly under the Scythe.

Mixtures can also be supplied for Pasturage and Cover in rich shady Woods, for improved Deep Mossy Ground, for Marshy Grounds, for Warrens and Light Sandy Soils, for Dry Gravelly Situations, and for Drifting or Blowing Sands.

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Apply to WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

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**SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES.**—Many Old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are sown early in the Season, the improvement in the Pasture will be very considerable, and at a small expense.

The following, just received from Riddlerworth Hall, near Thetford, Norfolk, is similar to hundreds of others sent us by former purchasers:—

"The Grass Seeds which I had from you in 1848 have stood very well, and the Pasture is now very good; the Renovating Seeds also that I had of you, I used in my park on spots where I had removed (by staking) a coarse sort of Wire Grass, and they answered remarkably well."

Quantity of Seed required, 8 lbs. to 12 lbs. per Acre. Price 1s. per lb. Carriage Free.

Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks. N.B. We have a very fine Stock of Mangold Wurzel and Carrot Seed.

**TRUE WHITE BELGIAN CARROT, AND YELLOW GLOBE MANGOLD WURZEL.**—The undersigned having a large Stock of White Belgian Carrot and Yellow Globe Mangold of home growth, can supply them at moderate prices. Purchasers of large quantities will be served liberally. Applications by post, stating quantity required, will be promptly replied to.—Address, SUTTON & SONS, Seed Growers, Reading, Berks.

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## CHELTENHAM AND COUNTY OF GLOUCESTER GREAT SUMMER EXHIBITION OF POULTRY, JUNE 1st AND 2nd, 1853.

Seven 5l., Two 3l. SILVER CUPS, and Seventy-five other Prizes are offered at this Exhibition. Schedules are now ready, and may be had by enclosing a fully directed 5-inch envelope and two postage stamps to Messrs. JESSOP BROTHERS, Secretaries, Cheltenham.

## POULTRY EXHIBITION AT EXETER.

**THE DEVON AND EXETER BOTANICAL AND HORTICULTURAL SOCIETY** purpose holding a POULTRY EXHIBITION at Exeter, in conjunction with the usual HORTICULTURAL SHOW, on FRIDAY, the 27th day of May next.

Competition for Prizes will be open to Residents in the four Western Counties only, and Non-Subscribers to the Society must pay an Entrance Fee. One calendar month's previous ownership of the specimens will be required.

The Prize List and Regulations will be ready for delivery on an early day, and may be had on application to

T. WILLIAM GRAY, Honorary Secretary.  
22, Cathedral Yard, Exeter.

## The Agricultural Gazette.

SATURDAY, APRIL 16, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, April 20—Agricultural Society of England.  
THURSDAY, — 21—Agricultural Imp. Society of Ireland.  
WEDNESDAY, — 27—Agricultural Society of England.  
THURSDAY, — 28—Agricultural Imp. Society of Ireland.

There are two sets of advantages to be derived from a knowledge of the full AGRICULTURAL STATISTICS of the country. The one affects the general interests of the nation, and therefore, of course, its government; the other affects the landed interests of the country, and more especially its farmers. It is the former, necessarily, out of which the national importance of the subject arises, and on



which, therefore, those who have urged the propriety of legislation on it can alone consistently argue. It is, of course, the latter out of which the agricultural interest of the subject especially arises, and on account of which we wish that the English Agricultural Society could officially have lent their aid to the proposed experiment. The fact is, that an inquiry for the information of Government to the extent to which it is necessary that they should be informed, and an inquiry for the information of agriculturists to the extent to which it is desirable that they should be informed, are two such very different things, that they might be carried on almost independently of one another; and the Agricultural Society might do its part in the work, one would think, and so far assist the Government in their attempt, without infringing that condition of its charter, which demands "the total exclusion of all questions at its meetings or in its proceedings having reference to measures pending or to be brought forward in either House of Parliament."

What Government ought to know is the annual produce of the whole country—the extent each year in Grass, grain, and green crops, and their average acreable produce respectively; together with the numbers of the different descriptions of live stock. Such knowledge would, however, be of very little use to the farmer; and that portion of the inquiry which makes it of agricultural interest might be almost entirely distinct—going into details which the other does not require, and especially aiming at results regarding mere localities and limited districts which would be of little use except to the farmer. And even if the full detail of the agricultural inquiry should include in its results those of the national inquiry also, as no doubt it would, we do not see that that ought to hinder a non-political society from undertaking the former. There is, surely, a great deal of what is and has been done by the English Agricultural Society which it is perfectly conceivable may hereafter be made the basis of legislation, but we do not see that its charter has been in the least endangered on that account; and we believe that, even when legislation has been proposed in reference to a particular subject, there have been instances in which that has not hindered it from pursuing its own course with reference to that subject, for the protection of the farmer from the very same source of harm from which it was proposed to protect him by legislation. When great alarm was created in 1848 by the appearance of the small-pox among sheep, although, we believe, a measure was proposed in Parliament for the protection of the British farmer, that did not hinder the English Agricultural Society from doing its best for the interests of its members and of agriculture generally in reference to this particular subject, although the information which it procured and published might have been, and perhaps actually was, the reason and the ground-work of the legislation that was proposed.\* Then, again, in reference to arterial drainage, on which the last number of the Journal contained a valuable paper, can any one say that that is a subject from the consideration of which the Society is precluded by its charter, because it is one on which nothing is more likely than that measures may be brought forward in Parliament. Indeed it seems absurd to suppose that the Society is prevented from furnishing information of immediate usefulness to its members, lest some of its members should make use of that information in other than their merely private capacity; for that is really what this strict reading of the charter amounts to.†

What as agriculturists we want to know is, not the whole annual produce of the country, but the produce and other agricultural circumstances of limited districts; and it is to an experimental inquiry of this detailed and piecemeal description that we think the English Agricultural Society might devote itself without fearing that it is endangering its charter, because some one may take it into his head to add up the several items of the account which it has procured, and argue, in his place in Parliament, from the usefulness of knowing the gross returns over the whole surface of the island, to the propriety of introducing a measure which shall enforce an annual return to that end from every occupier of land.

\* The discussion of this question before the Society took place on July 10, 1848. It was made the subject of correspondence between the Board of Trade and various public offices in this country during the interval between July 12 and August 4, and between the Foreign Office and her Majesty's Consuls at Calais, Boulogne, &c., between July 4 and August 10; and it was made the subject of two bills brought into the House of Commons on August 4.

† We cannot but regret that the Society, even in declining to undertake the experiment on agricultural statistics in any of its districts, did not accompany its resolution with an expression of its regret that it was prevented from undertaking the work, and did not express at the same time its sense of the agricultural importance of the experiment proposed to it. We are assured that the cold repudiation of the subject, which is all that it has manifested, will materially increase the difficulties of the Highland Society in conducting the experiment to a successful issue in the Scottish districts.

Whether the English Agricultural Society shall be induced to undertake an inquiry into the agricultural statistics of a limited district this season or not, at all events we think it is desirable that the experiment, whoever may have charge of it, should be so arranged as to aim especially at the agricultural instruction which, if successful, it might be expected to furnish. The returns desired are in the present case altogether optional on the part of those from whom they are to be obtained, and it therefore is the more necessary so to arrange the inquiry that its results shall be obviously useful to those who are asked to furnish them. It is in this way that the Highland Society has arranged the details of that portion of the experiment under its superintendence—as we may hereafter have occasion more fully to describe. In speaking of the limited districts whose separate condition it is agriculturally important to know, we refer to such as have a distinct agricultural character—breeding districts and feeding districts—corn growing districts, and dairying or grazing districts—countries of light and of heavy land respectively—of large farms and of small farms—of leaseholders and tenants at will—districts which are customers to one another, rather than self-dependent—and so on; and it is quite possible in general to divide out a county, and report the agricultural information regarding it, so as to make it of real commercial value—useful, we mean, to occupiers of land in the prosecution of their business. To take an instance, it would, we suppose, be possible so to time and conduct the inquiry that from its results the buyers of stock in one locality should know how far the breeders in another were able to supply their demand, so that both might have something more distinct and definite than the supplies at the earliest fairs, of the season to guide a judgment of their prospects throughout it. These fairs are not an accurate criterion of the amount of sheep or other stock in the county, and hence graziers often find that after they have bought in their stock at a dear rate, owing to the short supply at the earliest fairs, they have been wrong; the succeeding fairs have been well supplied, and sheep have become cheaper than was expected.

And if the business of the farm would be benefited by knowledge such as would be furnished by these district inquiries, there can be no doubt that the profession and the art of agriculture would derive much benefit as well. Would it not be instructive and suggestive, as regards agricultural practice, to know the results of farming on two districts precisely alike in natural circumstances, but differing in the terms on which the land is leased, in the size of the occupations, in some peculiarity of management, in the rotation of cropping adopted, in the quantity of stock maintained upon a given extent of land, and so on?—and would it not be well, for the due understanding of agricultural theory, to know the condition of farming in districts, alike as regards the artificial conditions of their agriculture—alike as regards the energy, intelligence, and ability of their farmers and their landowners,—but differing in one or more of the many natural conditions on which agriculture depends? On the value of periodical information of this kind, it is the testimony of the highest authority on the subject, that "we cannot over-estimate the scientific interest of a record of our national progress. How deeply interesting would a decennial agricultural census be if we possessed it only for a century back!"

There can be no doubt of it; and yet we also believe that if we had the full knowledge of the agriculture of but any one year, as regards all the particulars which a well arranged agricultural inquiry would include, over a district large enough to include every variety, and if we could arrange the facts thus known along with the circumstances out of which they had respectively arisen, this of itself, and without comparison with similar records of other dates, would be of inestimable value both to the science and practice of agriculture: we should, by means of it, at once acquire surer agricultural knowledge and more certain judgment than a long experience in any one locality could confer.

#### ON STEAM CULTURE.

Let us first make a few observations on the recent trials of the Marquis of Tweeddale. However much we admire the persevering energy which has brought us so far on the road to perfection, we still think there is room for improvement; considerable alteration in the machinery would be required to allow of its being economically used on limited holdings. The experiments were made with engines of a size which, by reason of the prime cost and the difficulty attending their transportation from place to place, could never be generally adopted. Engines of six or seven horse-power would answer every purpose better on farms ranging from 600 to 1000 acres, as we shall show. The time required to turn the plough at the end of every furrow is too great; the weight of the frame also must greatly

impede its progress, and act very injuriously, by compressing the subsoil on which it moves. Surely, a contrivance might be invented involving less loss of power. Even with these drawbacks, the result is most encouraging when compared with that of the common plough. We quote from the report: "in an ordinary working day of 10 hours the steam-plough is capable of ploughing 6 acres of land 15 inches in depth, at a cost of coke 5s., coal 2s.—7s.; five men at 2s. each, 10s.; oil and sundries, 3s.; total 17s." Here, then, we have land ploughed at 3s. 4d. per acre. In Essex, on the more penetrable clays, where labour is as cheap as in any county of England, the expense of ploughing an acre of land 4 or 5 inches deep is as follows:—two horses one day, 6s. 8d.; one man ditto, 1s. 4d.; total 8s. This cannot be done except under the most favourable circumstances; when going deeper, three horses are invariably used. In the far more tenacious soils of Sussex, with a higher rate of wages, and where the plough (which, from its huge proportions and sluggish motion, might be the great grandfather of its race) is drawn by four horses in a row, the common charge is 15s., and sometimes more. In the first case, there would be an absolute saving of 4s. 8d. per acre; in the last there would be a more than proportionate gain, on account of the great disadvantage attending the application of the common plough. Thus far we have shown that steam-ploughing per acre is cheaper than horse labour; but we go farther, and intend to prove that on heavy land, to substitute engines for the purposes of cultivation in the place of horses, would be a gain to the agriculturist. To do this we must take a particular farm into consideration. Suppose, then, a holding in Essex of 700 acres of moderately stiff land, 600 of which are arable and 100 pasture and copse, farmed on the 4-course shift system, and capable in most seasons of being ploughed by two horses to the depth of 4 or 5 inches. Allowing five ploughings in preparation for the Turnip-crop, one furrow for Barley, and one for Wheat, we shall find that 1050 acres are required to be ploughed annually. Fifteen horses would do the work on such a farm; and taking ploughing as almost two-thirds of the whole work, which we believe to be a fair calculation, we may say that 9 horses would be engaged in ploughing only. Let us supply their place by two steam-engines of 6-horse power; these, according to the Marquis's experiments, would do fully 5 acres in a day, or the 1050 acres in 210 days. The other 103 working days they would be employed in threshing, cutting chaff, crushing Beans, &c. In this way the whole of the corn grown on the farm might be threshed. The account then would stand thus:—

STEAM-ENGINES VERSUS HORSES.			
	£	s.	d.
2 portable steam-engines of 6-horse power	400	0	0
Interest of money at 5 per cent.	20	0	0
Wear and tear 5d. per horse power	60	0	0
	480	0	0
Deduct profit by the use of steam on 1050 acres, at 4s. per acre, the first year	210	0	0
	£270	0	0
9 horses, at 30l.	270	0	0
Interest of money at 5 per cent.	13	10	0
Wear and tear and risk	30	0	0
Total expense	313	10	0
	270	0	0
Balance in favour of steam ploughing	£43	10	0

Thus, although the first outlay is greater, it is more than compensated by the less cost of ploughing per acre in the first year. We have supposed a saving of only 4s. an acre, although we proved it to be 4s. 8d. in this way, allowing for the removal of the engines from place to place, and other incidental expenses. Having exhibited a profit in this instance, and that not an exceptional one, but on a farm where the expenses of horse labour are known to us, there is every reason to suppose the system might be practised to advantage on all heavy lands. The expediency of adopting it on light soils is not so apparent, on account of the beneficial action of the horses' feet, and the less expense of ploughing; but we doubt not, eventually, by a modification of the plough to circumstances, steam will entirely supersede the employment of horses. We have not allowed anything for the threshing done by the steam-engines. To show what a saving might be effected in this way, we cite Mr. Caird as an authority, who, in his "English Agriculture," says—"The cost of threshing and dressing corn by steam, averages 7½d. per quarter; by horse power, 1s. 7½d." So that in the article of Wheat alone, supposing the yield to be 3½ quarters to the acre, on our farm we should be 26l. in pocket. Again, who will deny that the extra depth of soil cultivated would be of great benefit to the farmer? We do not know how deep a 6-horse power engine would go, but it is certainly not necessary that a furrow should be turned to the depth of 15 inches at once, in many cases it would be folly to do so; the subsoil might be stirred at first, and so gradually exposed to the influence of the air without being brought absolutely to the surface. Once being moved, the superfluous water would percolate through the open fissures, constantly carrying with it fresh oxygenated air. The plough would gain a greater depth each time. Thorough draining is of course pre-supposed. The principal objection against the adoption of new improvements, machinery in particular, has always been that they throw the farmer out of his system, and entail great inconvenience by making the work unequal in different parts of the year; thus at harvest, on a farm of 600 acres of arable land, the whole 15 horses would be required to cart the corn, and



this is a plausible objection. The general use of one-horse carts would greatly obviate this difficulty, and we have no doubt other means would soon be found of surmounting it. At no other time could any inconvenience arise, as the manual labour would be diminished, and at the same time there would be a great accession to the available power on the farm at no expense, when unemployed and ever ready to do "a day's work in a day." That the introduction of machinery would have a most beneficial effect upon the agricultural labourer no one can doubt. Wherein does the difference between the mechanic and the ploughman exist? It is in the constant employment of the mind to which the former is accustomed. The labourer is not wanting in his powers of observation; on the contrary, they are generally acute, but of no use to him, because he is never brought to reason upon the phenomena which are presented to his mind, or to institute a single comparison. Allow him but the opportunity of developing his inventive faculties, which would be the effect of machinery, and he will not remain long behind his class. We have not time to enter into this extensive subject, but we hope the farmer will soon see it is to his advantage that the labourer should receive a more liberal education. Under these circumstances we are sorry that the list of prizes to be given at the next meeting of the Royal Agricultural Society does not contain one for the best adaptation of machinery to the cultivation of the land. We do not suppose what we have said on this subject will convince every one of the possibility of its practical application; we would not rashly take up any undigested theory, but feeling sure that sooner or later the use of steam will become as essential to the agriculturist as it now is to the manufacturer, we desired to draw the attention of those whom it chiefly concerns to the subject. *A Practical Farmer.*

### Home Correspondence.

**Transplanted Wheat.**—In further guidance of inquiring correspondents as to our present (April) management of transplanted, and thinned Wheat; presuming this work to be now completed, and the plants fully established in growth, we may mention that "hack-hoeing" between them should now be persisted in, in order to the encouragement and full development of the roots; every inch of the soil around each plant should be stirred two or three inches deep with a "hack-hoe," to admit air, &c., in preference to the barbarous horse-hoe, which cuts off and mal-treats the tender rootlets with too little mercy; not with the view of destroying weeds particularly, as none are supposed to exist amongst transplanted Wheat, on account of the thorough and late preparation of the land, a point of vast importance in the practice. The "hack-hoe," a sort of drill hoe, may be described as long and narrow, say two inches wide and six inches long, with a heavy eye and neck, somewhat straight in shape, and tapering from the eye to the edge. It may be observed, that a short and straight wrought handle is preferable, and a short man to ply the use of it, who is better able to perform all hoeing operations with precision, than a tall man. We have before stated that our motto is "singled" plants, for which we claim credit; leaving the distance of the plants, for the present, to the will and judgment of our contemporaries, who differ in opinion on this point, till further experiments are made and decided, though we hold it our belief, that from 6 inches to 9 inches apart to be the most proper distances. The "hack-hoe" will be found to be advantageous amongst crops of all kinds at this season of the year, and to perform the use of it well will cost about 5s. per acre, with a hopeful expectation of profiting treble the expense in return. *Abraham Hardy & Son, Maldon, Essex.*

**Soiling versus Haymaking.**—Occupying a farm in the south of England, with about 36 acres of meadow land, which has been mowed regularly every year, and the hay eaten in the winter by bullocks, &c., and having counted the cost of thus producing their food, and the return given for it by the animals that consume it, and finding always such return to be very small indeed, I have been thinking whether it would not pay better to buy in sheep about the middle of May, or as soon as the meadow had a tolerable swathe upon it, and feed off the Grass with them by moving it and putting it into coops in the same way as Tares are commonly folded; also to keep some bullocks in a yard near the meadow, and bring some Grass in for them every day, the sheep beginning at one end of the field, the bullocks at the other—by the time they met, would not the part where the sheep began folding be ready to eat for the beasts, and perhaps where the latter began there would be a little for the sheep. One meadow is 11 acres. Suppose then 200 sheep and five bullocks to begin it on the 14th of May, and suppose all these animals to eat on an average 40 rods per day, the field would then last 44 days—till the 27th of June. I know not if the above calculation be anything like what the beasts would require, everything, of course, depending upon the goodness of the meadow; but assuming it to be pretty near the mark, I suppose the Grass would not be too old for them in the 44 days; I wish to know if you think the sheep would injure the meadow by biting too closely. Should such a plan succeed, what a trouble would be got over. No haymaking—at least, we should require a little; and that is what I wish to get rid of, as it comes at a time when all the strength of the farm is required for Turnip sowing. *Leicestershire.* [Sheep may be folded on luxuriant Grass so as to eat the whole of it, by means of having inclined hurdles with intervals

sufficiently wide to permit them to put their heads through, and stretch forward two feet over the edge of the Grass along which they are planted.]

**Extract from Report on the Drainage of an Estate in Somersetshire.**—In the beginning of the year 1843, Mr. ——— visited the estate, and amongst other farms went over that occupied by Mr. ———, called the "—— Farm." With a view to improve his occupation, Mr. ——— commenced draining upon the system, as he understood it, of Mr. ———, and has attempted to drain some boggy lands on the side of a steep hill, with 1½ inch pipes, laid 4 feet deep, at regular intervals,—an operation, it need hardly be said, as erroneous in respect to the elementary principles of spring drainage as it is possible to conceive, and one which it would be a libel upon Mr. ——— to suppose he would have sanctioned. The drains have now ceased to act, and only serve as a costly illustration of the loss that may arise from precipitating theories which are applicable to one description of soil into the hands of the unskilled occupier who may apply them to another. The loss, moreover, is not confined to the drainage referred to, for it appears that the late ———, acting on the same advice, contracted with a pipe-maker in the neighbourhood, to supply half a million of small pipes (some only 1 inch in diameter) for use upon the estate, while it would perhaps be difficult to find an area of sufficient breadth upon which they can be used with benefit. Mr. ——— alleges that his drains have been stopped by the roots of Grasses which have grown into them, and although we are not able wholly to confirm the allegation, we can nevertheless state that we took up pipes laid 4 feet deep, in the middle of a Grass field, in which a web of roots was vigorously growing, and it was only a question of time how soon the pipes would be entirely choked up,—and it is not too much to say that such a result must follow the system adopted. The land operated upon is a porous boggy soil of unascertained depth, and loaded with aquatic vegetation, with a steep inclination of surface, and suffering from water issuing from the higher ground. It is obvious that gravity acts under such circumstances with considerable power; and as the volume of water issuing from the higher ground varies with the preceding rain falls, and evaporation varies with the character of passing seasons, corresponding variations must occur in the water level in the soil, and at some periods it must be much below the bottom of the 4 feet drain. At such times, and in all cases where the water level is not constant, the roots of plants, and we are inclined even to include perennial Grasses, in their search after moisture will penetrate much deeper than 4 feet; and having a liking for burnt clay, and being assisted by the freedom of the conduit, they accumulate rapidly within the pipes, and the growth will increase in luxuriance in proportion as the soil through which the roots have travelled to the pipes is more porous. It may be interesting to observe that having brought away from ——— some of the specimens of roots taken out of the pipes, and submitted them to Professor Lindley, he has expressed himself inclined to confirm our impression that they were the roots of perennial Grasses. *J. B. Denton, 52, Parliament Street, London.*

**Nitrate of Soda.**—In your Notices to Correspondents, p. 206, you say, nitrate of soda, if pure, will give no precipitate with nitrate of silver. The analysis of nitrate of soda, according to Hoffstetter, see p. 345 of "Knapp's Chemical Technology," is given as follows:—

Nitrate of soda	94.20
" potash	0.42
" magnesia	0.85
" lime	trace
Chloride of sodium	1.90
Sulphate of potash	0.24
Water	1.99
Insoluble matter	0.20
	100.00

As nitrate of soda is often adulterated, an easy method of analysis would be valuable to farmers who are now using a good deal of this salt. *J. R. Pearson, Chilwell.* [The addition of nitrate of silver is sufficient comparative test. Perfectly pure nitrate of soda will exhibit no precipitate with it; and the bulk of the precipitate, when there is one, will indicate the quantity of common salt which has been added.]

**Rooks.**—Every now and then some person writes in your valuable paper, complaining of the attacks of birds, particularly the poor rooks, as if they were a complete nuisance, and it were desirable to destroy them as quickly as possible. I cannot help thinking these are seldom practical farmers, and I am sure they are never acquainted with natural history, or they would not set the wages of a boy at 6d. a day against the good done by rooks. I believe many animals would live in peace which are now destroyed if natural history were as much taught in schools as Latin and Greek are attempted to be instilled into unwilling lads, who learn little and soon forget. I have known a boy cured of shooting rooks by seeing the contents of its bill, after having shot one which had been collecting food for its young ones. The attempt to remove an evil by destroying a race of animals, often defeats itself in an unforeseen manner. I know a parish where almost all the game were driven away or destroyed by rats, in consequence of the keeper having killed all the weasels. The man who scatters poison where anything may take it, in the hope of killing one kind of animal, is indeed a nuisance in any neighbourhood. *J. R. Pearson, Chilwell.*

**Ivy said to Produce Abortion.**—Since the appearance of my letter in the *Agricultural Gazette*, on the subject of Ivy for cattle, sheep, and deer feeding, I have been

favoured by the following, which appears to me an important communication, from Mr. James Joseph Nolan, of 33, Bachelor's Walk, Dublin. [A portion only of the letter has been published.]

"To Mr. EDWARD CARROLL.—Sir, Seeing an article of yours in the *Agricultural Gazette*, induces me to put you in possession of some facts relative to Ivy. I had two small handsome East India goats, of the lop-eared kind, both females. They took the buck at some days' difference from each other; my man collected Ivy off the walls, and they fed on it voraciously; we had on the following morning five immature kids, three from one and two from the other. I mentioned it to a medical friend of mine who was in the habit of shooting on the Dublin mountains, and at a time when the snow had continued to cover the Grass for some time, the mountain sheep had despoiled the rocks of their coats of Ivy, after which numbers of young lambs, abortions, were found in all directions about the mountain." [The power of Ivy in these respects is further illustrated by reference to known circumstances in the case of the bitch.] Having fully and maturely considered these cases, I think I have so far discharged my duty to your readers by putting them in the way of considering them also, lest any mishap should occur in their stock by the free use of Ivy, as recommended in the letter to which Mr. Nolan alludes. He will see I have omitted, on mature consideration, a portion of his letter which I am sure will merit the approval of my friend, without depriving your readers of any portion of his letter which all should or might safely read. In conclusion I feel bound to say that since my letter appeared in print, I had occasion to visit one of the best arranged farm establishments in this "the model county of Ireland," at Houtown House, the residence of S. D. Goff, Esq., whose farming operations are conducted by one of the most intelligent, industrious, and trustworthy men, I have ever met in this country, or "the sister isles," and I found the hard branches of the Ivy strewn about his cattle and sheep pastures, the leaves and young shoots having been eaten by their calves, cows, and brood ewes; and never have I seen, *cateris paribus*, so fine a collection of healthy calves and young lambs from the same number of dams, and without a single abortion. His intelligent steward, Mr. W. McKnight, told me, on the occasion to which I allude, that for many years he had been in the habit of using "the spare Ivy" for such feeding purposes, though having an abundance of Carrots, Mangolds, Turnips, and other green food, in winter; and never found any but the best results from such practices. Your readers have now the pros. and cons. on this matter as far as my information goes. If I have done wrong (which I do not myself believe) I regret it, and have made the best amends in my power. *Edward Carroll, Beg Erin, Westford, 6th April, 1853. P.S.* Just as I had concluded this letter I had a visit from a relative of mine, one of the most intelligent and industrious farmers in the county. I mentioned to him the subject of it, and he assured me that during the last winter's heavy snow, his sheep had been fed on Ivy, which they ate with avidity, without the least appearance of abortion as a consequence. He had them previously supplied with Turnips, hay, and Mangold Wurzel, all of which they would leave when seeing the caretaker coming with the Ivy. *E. C.*

### Societies.

#### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House on Wednesday last, the 13th April. Present: Lord ASHBURTON, President, in the chair; Earl of Essex, Earl of Lucan, Lord Berners, Hon. R. H. Clive, M.P., Sir Robert Price, Bart., M.P., Mr. B. Almack, Mr. Bethell, Mr. Bullen, Colonel Challoner, Mr. James Chapman, Mr. E. Davy, Mr. Festing, Mr. Foley, M.P., Mr. Freeland, Mr. Frere, Mr. Gadesden, Mr. Brandreth Gibbs, Rev. L. Vernon Harcourt, Mr. Fisher Hobbs, Mr. Holland, Mr. Kirkwood (Flax-Commissioner from Canada), Mr. Paine, Mr. Risler (of Versailles), Mr. Rowlandson, Prof. Sewell, Mr. Slaney, Mr. Smith (St. Albans), Dr. Somers, Mr. Spencer Stanhope, Mr. Crompton Stansfield, and Prof. Way.

#### LECTURE ON FLAX.

Professor JOHN WILSON (late Principal of the Royal Agricultural College, Cirencester) delivered a lecture on the treatment and application, agricultural and technical, of Flax.

He gave an interesting statement of the botanical character and geographical distribution of the Flax plant, and of references made to it and its manufacture into cloth by sacred and profane writers from the earliest period, particularly citing the opinion of Virgil, on its cultivation, and the details given by Pliny of the Flax fibre imported into Italy from Egypt. Prof. Wilson then stated the successive measures adopted, from the year 1172 to the middle of the last century, for compelling farmers to cultivate Flax, and public rewards since held out for inducing attention to the perfection of its manufacture. He proceeded to enumerate the various soils and the general conditions of the rotations connected with Flax cultivation, and especially to dwell on the necessity of deep cultivation, fine tilth of surface, and ready supply of manuring matter for the plant. He considered sandy loams and alluvial soils the best for amount of crop and fineness of fibre, and the crop best grown after Grass, Corn, root-crops. He entered into a full statement of the constitution of the Flax-straw, and its treatment by the dry mechanical, or the moist-



chemical process. He enumerated the various attempts at mechanical separation of the fibre, from 1812 to the present time, and the peculiarities of the several plans adopted at various times in this country and the continent for removing the glutinous matter by means of fermentation, chemical solution, and the application of hot water or steam without fermentation. He stated the decided advantages possessed by the latter new modes over the old systems, not only in saving of expence in time and labour, but in the removal of the glutinous matter in an innocuous form adapted at once to be mixed with the woody matter, and used as food for cattle. He concluded his lecture by describing in detail the plan of Watts, by means of which steam was passed upwards, in its state of vapour, through a mass of Flax straw, and being cooled by a refrigerator, forming the top of the vessel, was sent downwards back again through the straw, carrying with it, in solution, the glutinous matter from the fibre; and the improvement made on this plan by Buchanan, who, by means of alternate pressure and condensation of steam, forced forwards and backwards through the mass of Flax-straw successive bodies of warm water at such a temperature as not to coagulate the vegetable albumen contained in the plant. The action of this last process was shown successfully by an elegant experiment in glass vessels, which, as the spirit lamp was applied or withdrawn, continued its automatic process of the propulsion and retraction of fluid through the straw during the continuance of the lecture. Professor Wilson exhibited to members various samples of Flax-straw in its original state, and prepared by the above processes for scutching, as well as of manufactured articles in various stages of preparation. He also submitted to the members striking diagrams of the machinery referred to, and tabular statements of the analysis and value of different parts of the plant and of the glutinous liquor obtained from the straw, and beautiful coloured drawings, of natural size, of the varieties of Flax and different portions of the plant. He also entered into details connected with the commercial value of Buchanan's system, and with its adoption with advantage in farming districts.

On the motion of Mr. Slaney, seconded by Mr. Fisher Hobbs, the best thanks of the meeting were offered to Prof. Wilson for the very interesting lecture he had delivered to the members on that occasion. This was the first lecture on Flax Mr. Hobbs had heard that would induce him to grow that crop; for he could understand that with a boiler and a few other vessels, any farmer, by the means proposed, might economically reduce his Flax-straw into a state ready for scutching by the manufacturer.—Mr. Stansfield had grown Flax, but could not obtain a remunerative price for the straw.—Mr. Davy feared the machinery proposed would not prove so economical as that by which the mechanical process was carried out. He exhibited some fine samples of Flax produced without any application of moisture. He thought the oil ought not to be carried off from the straw, but to remain in it, and confer that soft flexibility which those samples had in which such oleaginous matter was left.—Mr. Slaney thought the cost to farmers would be high.—Mr. Bullen thought the proposed plan peculiarly applicable to ordinary machinery, to the steam apparatus in ordinary use in large and well-appointed farms: if so, this plan would prove a great boon to the producer of the raw material, whose great object was to be able to render the Flax as portable as possible. Transport of it, was to him, a vital question.—Professor Wilson stated that a machine of this kind, erected at an expence of 500*l.*, would turn out three tons of Flax-straw a day ready for the scutcher; and that a machine at 250*l.*, one ton a day. These machines were too powerful for individual farmers, and were intended for given districts of certain circuit in extent, under which circumstances the price of machinery would sink into an average item of comparative insignificance.

Professor Wilson was requested by the Journal Committee of the Society to prepare, by the 1st of May next, a complete detail of this lecture for the pages of the Journal; in order that the information then furnished by him to the Society might, with as little delay as possible, be given in a complete state to the members at large of the Society, through that medium.

The Council then adjourned to their weekly meeting on Wednesday, the 20th of April, when a Report would be read on the progress of the Claussen process of treating Flax-fibre, and an explanation given by Mr. Trimmer of his recent geological and mineral survey of the estate of Sir Charles Elton, Bart., in Somersetshire.

SOCIETY OF ARTS, April 8.—The following is a report of the paper, on *Recent Improvements in the Preparation and Treatment of Flax*, read by John Wilson, Esq., F.R.S.E., &c., published in the Journal of the Society. The lecture subsequently delivered by Mr. Wilson, on the same subject, before the members of the English Agricultural Society, in which the agricultural features of the subject were treated in somewhat greater detail, will, we understand, be published shortly in the Agricultural Journal.—The object of the present paper having reference rather to the technical than to the original history of Flax, I will merely describe the plant so far as is necessary for my purpose, and then proceed to discuss its economic application. It is generally seen in a cultivated state growing to the height of 2 to 2½ feet, flowering towards the end, and arriving at maturity towards the end of the following month. It is then harvested, and consists of a thin reedy stem, surmounted by a branching head, carrying at its

extremities certain small capsules or seed bolls. These are removed by means of rollers, and the stem, or straw, from which the fibre is obtained, remains. This straw consists of three parts—the centre, usually termed "shove," or "buon;" the fibre, which surrounds it; and the epidermis, or skin, which forms the exterior. Now the object desired is to separate this fibre from the other portions; and many different processes have been devised for effecting it. These may be all classed under two heads—those dependent upon mechanical principles, and those dependent upon chemical principles. In the former the operations are conducted in a dry state; in the latter, in a wet state. The most important mechanical processes are those invented by Lee, in 1812, which was favoured by a special Act of Parliament, and supported by a grant from the Irish Linen Board; by Hill and Bundy, in 1817; and more recently by Donlan, Davy, and others. The advantages of this principle are seen in the expeditious manner in which it is effected, when the crop is of a very inferior character, so as not to pay for the expence of steeping, &c., in districts where steeping is effected with difficulty, and in cases where coarse yarns only are required. On the other hand, it would appear that, owing to a large portion of the azotised substance of the plant remaining attached to the fibre, it is not suited for fine fabrics; the elements of fermentation exist, ready to be called into action by moisture, &c. The chemical processes are due either to the action of fermentation, which destroys the portion of the plant that binds the several parts together, and thus sets free the fibre—to the action of heated water or steam, which simply dissolves it out—or to the action of chemical agents, such as alkaline solutions, which effect the same end. By the fermenting process a portion of the plant is destroyed, the products of decomposition manifesting themselves in the shape of noxious and offensive gases. By the steam or hot water processes the matter dissolved out is rendered serviceable as a feeding substance, and no annoyance is occasioned. The common practice is either to steep the Flax in pools or in slowly running streams—in both, the mode of proceeding is the same; in the pool, owing probably to the increased temperature, the time required is from seven to 14 days; in the stream, from 14 to 21 days: in both cases the weather materially influencing the operation. In some districts the practice of dew-retting still exists, and this is always very irregular in its effects; in dry seasons it frequently fails. In 1846, Schenck's process of hot-water steeping was patented, and in 1848, a rettery on a considerable scale was established in Mayo. Upwards of twenty are now at work in different provinces in Ireland, besides several in this country. The principle of fermentation is the same in this as in the old process, but is now placed under the control of the operator, who regulates the action of the steep according to the quality of the Flax, or the article he wishes to produce. A great saving in time is effected—from 72 to 96 hours only being required instead of from two to three weeks, and a more regular and certain fibre is obtained. In some experiments instituted by the Irish Flax Improvement Society into the merits of the two methods of steeping, it resulted that in increased yield Schenck's gave an advantage of 20 per cent.; that in quality, two samples of Schenck's spun respectively to 70 and 101 lea yarns, while two samples of the same Flax, cold steeped, only spun to 60 and 96 leas. The use of hot water for accelerating the fermenting process has been known for a long while past, and is mentioned in the report of Class IV., by Professor Solly, the indefatigable Secretary to this Society. I must also refer you to the report for the very interesting particulars connected with the application of alkaline solutions as a substitute for the tedious and noxious process of fermentation in the preparation of Flax. You will there see that in 1747 the principle was made known by Lilljikeusens and Palmquist; and that in 1775, Lady Moira actually carried into practice the same process which has recently been brought before the public by Chevalier Claussen; while Gay Lussac, Berthollet, and other chemists, have added their testimony to the solvent powers both of alkaline and acid solutions. In the use of chemical agents a considerable expence is incurred, the matter dissolved out is wasted, and a chance of injury to the fibre exists. These objections are entirely met by Watts's process, which was patented last year, and is now in active operation at Belfast, and in progress in several other localities. In this, steam is the agent employed. The straw is confined in a suitable chest or chamber, steam at a certain pressure is blown in, and kept in action during from 10 to 12 hours; this is condensed by a simple arrangement, and, trickling down through the mass, carries with it the soluble matter of Flax, which is drawn off at the end of the operation, and is found to be well adapted for feeding purposes, having a value equal to distillers' wash. The subsequent operations of drying, scutching, &c., are conducted in the usual manner. The importance of this new process was immediately recognised, and a committee of investigation appointed by the Flax Society to institute "a careful and extensive series of experiments, with a view to compare it both in a practical and financial point of view, with the modes of hot and cold steeping generally practised." The committee made their report on the 3rd of November last, from which it appears that the whole operation, from the straw to the dressed fibre, was completed in 36 hours; that the cost of all the operations, not including the drying, for reasons stated, appeared to be under 10*l.* per ton of cleaned

fibre for labour, exclusive of general expenses; and that 10½ cwt. of straw, after being steamed for 11 hours, was reduced to 7 cwt. 0*qr.* 11*lbs.*, which, on being scutched, yielded 187 *lbs.* of Flax, 12 *lbs.* 6*oz.* of fine scutching tow, and 35 *lbs.* 3*oz.* of coarse tow. The samples were valued at 56*l.* to 70*l.* per ton. The yield on the heckles was good, and the yarns were pronounced equal in all respects to what is generally spun from Flax of the finer qualities. The report throughout was very satisfactory. Here, then, we have a process which presents the following advantages over the ordinary methods:—1. Great saving in time; 2. Economy of fibre; 3. Avoidance of any nuisance, and economical application of waste products. No sooner had the spinners reported favourably on Watts's fibre, than another process was patented by Buchanan, which appears to be an improved application of the same principle as Watts's; as the solvent power is clearly not due to the steam, but to the hot water occasioned by its condensation. In this the steeping is effected by repeated immersions in a bath of heated water, arrangements being made by which the temperature is never allowed to exceed a certain point. The process is quite automatic, and the mechanical means by which it is effected are very simple and very inexpensive. The Flax is placed in an open vessel, having a false bottom; a boiler generates the steam required; and between these two is placed a suitable vessel, having the same capacity as the steep-vessel, and communicating by means of pipes both with that and the boiler. This centre vessel is filled with water, and steam is blown in from the boiler. When condensation no longer takes place, the hot water is driven over into the vessel in which the Flax is laid, and completely immerses it. An overflow-pipe then acts upon a valve, which immediately cuts off the supply of steam from the boiler, and at the same time turns on a spurge of cold water into the centre vessel (or condenser); the steam is at once condensed, and the liquor drawn back from the steep-vessel, into which it had been previously forced. This operation may be repeated as often as desired; as, directly the condenser is filled, the cold water is cut off, and the steam again turned on. So far as experiments on a small scale have gone, it has been found that by ten immersions all the colouring matter of the Flax has been removed; these in practice on a commercial scale would not occupy longer than three hours. This, however has yet to be seen; works on an extensive scale are now in progress in Scotland for carrying out the process. In this the same advantages are obtained as in Watts's—great economy of time, and economy of products. Another great improvement is claimed by Buchanan—his method of drying the steeped Flax preparatory to scutching. This is usually a tedious and expensive part of the operation, the fibre always sustaining some injury from the necessary handling. He proposes to effect the desiccation in the vat in which the Flax is steeped, by means of dry warm air, which is driven through it in large quantities. This air is obtained in the required state by passing it through porous earthenware pipes, fixed in the lower part of the chimney shaft. The patentee's experiments induce him to believe that by his process the entire operation of converting the straw into dressed fibre may be effected in the working day of 12 hours, and that in all respects his products will be equally satisfactory with those obtained by Watts's process; while at the same time a great saving of manual labour, and consequent expenditure will be effected. The statistics of Flax show the important place it occupies in the economies of this country. Our requirements still considerably over-balance our powers of production, our average imports being 70,000 tons of Flax, 650,000 quarters of seed for crushing and sowing, and 70,000 tons of oil-cake—approximating in value five millions sterling; a large sum to be given annually to foreign countries for an article for the production of which our own is so peculiarly suited.—The Chairman moved a vote of thanks to Professor Wilson, for the information he had afforded on a subject which commended itself to the attention and interest of every one. He trusted that an impetus would be given to the growth of Flax, especially in Ireland, so that by mutual dependence in commerce the bonds between that country and Great Britain might be made stronger than they had hitherto been.

## Reviews.

*An Essay on the Systems of Agriculture and Rotations of Crops best adapted to the County of Carmarthen.* By Thomas Morgan. White & Sons, King Street, Carmarthen.

This is a prize essay, written for the Carmarthenshire Agricultural Society, and rewarded with the prize offered by Lord Emllyn for the best essay on this subject. It is, no doubt, calculated to be of much local utility, and may be read with advantage even by those engaged at a distance from the scene which it describes; but the slightest glance at its pages shows how far the information and suggestions which it contains fall short of the fulness in both respects which would have characterised it had the author been well acquainted with the agricultural statistics of his county. This, of course, is a deficiency which, however clearly it may be seen, can in no degree be chargeable upon Mr. Morgan; for no statement of the agricultural statistics of his county exists, and, therefore, probably no one under



the circumstances could have performed his task better than he has executed it himself. He describes the soils and climate of the county; and then "estimates," "thinks," and "supposes," its division into arable, pasture, wood, and water; and of the first division he discourses in detail.

The crops proper for the different sorts of soil are described one by one. Of April Wheat he says, "I have known this variety to have been sown after the middle of April and again reaped before the middle of August." And he then describes 10 different rotations, estimating their cost and their returns in detail. The most of them are extravagantly opposed to ordinary notions of what good agriculture requires; and accordingly very few of them prove profitable under his calculations. From none of them can he get a profit with Wheat at 5s. a bushel, Barley at 3s. a bushel, and Oats at 2s. a bushel, which he calls "present prices" (the essay was written in last autumn); and from very few does he reap any profit, Wheat being at 6s. 6d., Barley at 4s., and Oats at 2s. a bushel; but there are differences enough in the results obtained under the different circumstances to show that farm profit depends very much on the selection of a rotation as well as on the price obtained for agricultural produce.

The tract concludes with a glance at the rotations prevalent in other counties of the kingdom, from which we shall hereafter make an extract in another section of this Paper.

#### POULTRY.

**Eggs.**—The following curious circumstance, which may, perhaps, interest some of your readers, occurred in my poultry yard last week. An Aylesbury duck was suspected to have laid several eggs, which could not be found. She was penned up for the night on Saturday, and not let out at all on Sunday, still she did not lay, so she was kept in-doors all Monday, and in the evening she laid two eggs, one after the other, without leaving the nest. One of these eggs had no shell, and the other was very rough, though her eggs in general are quite smooth, and she has continued to lay as usual since that time. *J. R. N.*

Another of the Great Sales of Poultry took place at Baker Street on Thursday, by Mr. Strafford. The birds were the property of Mr. Fox, of Skinner Street, and comprised Cochins, Spanish, and Poland fowls. There was as usual a large attendance, and most of the leading amateurs and dealers of the day were present. Many of the birds were very good, but they were not brought up in such fine condition as were those of Messrs. Punchard and Potts. The high estimation in which Mr. Andrews's breed is held will be seen by those who have the opportunity of seeing a priced catalogue; a hen bred by that gentleman, No. 36, made 15l. 15s.; a cock "Captain," 27l.; a hen, No. 48, 18l. 18s.; another, No. 50, 16l. 16s.; No. 51, 10l. 10s.; No. 52, 13l. 10s. With the exception of No. 45, a cock, 43l., these were the principal prices realised. It is matter of doubt whether the result, as a whole, does not indicate decline in the value of these birds. They had been carefully selected, and many of them bought at great, almost unlimited prices, and yet the average was not four and a half guineas per head. This would have been a large, almost an incredible sum a few years since, but it is not equal to what we have seen in the last three months. 135 lots made 629l. 7s. Spanish appear to be rising in estimation; 25 lots went for 105l. 14s.; three hens sold for 30l. 10s., and one cock, 12l. The Polands were several of them very meritorious birds, but found little favour; 16 lots made but 17l. 1s.; certainly not more than one-third of their value, if estimated by the result of previous sales.

**POULTRY: G. L. E.** The quantity of food consumed in your yard will depend in a measure on the breed of your fowls. Extensive experience has taught me that Cochins eat more food than any others. A full-grown fowl will eat a gallon of corn in 11 days; but where threshing is constantly going on, and there is a stack-yard, and good grass-run for the birds, they need little feeding in the summer months; in the autumn they will nearly get their living on the adjoining stubbles, if they are not Cochins. These will not search for food. In such a yard as you describe, I should not feed much, except the sitting hens and those with chickens; of course they must feed, but in such a yard as you describe, they can only require much feeding by hand from November till May. Judgment must be exercised as to the quantity of food they have within reach, because it is extravagant to let them lose condition, and then eat double to get it up again. Ground food is the best and cheapest. — *W. R.* A black bantam, as such a bird is understood, should have no top-knot, the legs should be short, and the weight should not exceed 15 oz. Rose-combs are preferred, but the rule for them is not so imperative in them as in the Sebrights. — *H. F. W. G. S.* I have met with many instances lately of Cochins China hens dying apparently very thin, but in reality choked with internal fat. I had one sent to me a few days since, the little flesh she had was red, the skin dry and tight. Her crop was full. On opening it I found several lumps of calf's liver. Unable to get rid of this unnatural food, she had picked up pieces of crockery-ware, bones, and tobacco-pipes—all to no purpose. I found every organ of the stomach literally obstructed with fat, the liver of an immense size, and perfectly white, the gall-bladder nearly empty, and the intestines saffron colour. There was an egg in her, which should have been laid some days before, and in her efforts to lay it she died on the next day. It is a common complaint that these birds die suddenly, and I think it may be attributed to the fact that to attain weight they are improperly fed, and that such feeding induces an unnatural, and consequently unhealthy state of body. I mentioned it to a clever medical friend, who said it was clear that as Nature had provided fowls with capacity for digesting grain, with oesophageal worms, or chance pieces of meat, if you wished to alter the natural food, and substitute one of a totally different character, you must, to ensure impunity, first provide them with increased powers of digestion, or such results as those complained of in the case of *W. D.* The proper food for poultry is Treen and Treen Beans, and for doves Hemp seed or Wheat. *J. Baily, 113, Mount Street.*

#### Notices to Correspondents.

**APRIL WHEAT: W. H. D.** We know of but one variety of Triticum aestivum. It is a red chaffed red Wheat, and is sown or bearded.

**CLOVER SICKNESS: E. M.** The dressing named was intended to be scattered broadcast in May, and therefore certainly after the seeding. But it would, probably, be more efficient if applied earlier in spring, or some time in the previous autumn, during the first year of the young plant.

**GAS LIME: J. Rye.** It is hurtful to vegetation if used before it has been long exposed to the air, by which it becomes partially converted into the mild and useful gypsum. It is only, however, while it is hurtful to plants that it is also hurtful to insects.

**GYPHUM: L. P.** It is a good top-dressing, especially for Clover. Apply 3 or 4 cwt. per acre; but you must not hope by it alone to renew your Grass. Guano, or some other ammoniacal manure, is what you should apply.

**OXEN AND HORSES: Mr. Finney, Guildford.** says—I perfectly agree with your correspondent, "G. T.," "on the comparative merits of Oxen and Horses for agricultural purposes," and I should feel much obliged to "G. T." if he could inform me where the best North Devon can be bought in July or August.

**POULTRYMAN: A Subscriber.** That is a private matter. Mr. Tollet did not promise to send us the results of the analysis which Professor Way was about to make for him. If they prove of any considerable agricultural interest, we imagine they will be published in the Journal of the English Agricultural Society.

**WHEAT: Ruby N West.** See pages 218 and 219 about April Wheat.

\*As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

#### Markets.

##### COVENT GARDEN, APRIL 16.

Trade during the week has not been very brisk, nevertheless the supplies of Vegetables are still no more than sufficient for the demand. New Hothouse Grapes are getting plentiful, and continue to fall in price. Pine-apples have not altered since our last report. Forced Strawberries fetch from 9d. to 1s. 6d. an ounce. Cob and other Nuts being fair prices. The supply from the Continent of Green Peas, new Potatoes, Horn Carrots, Asparagus, Radishes, Globe Artichokes, and Lettuces, is still considerable, and the various articles are generally excellent in quality. Both Seakale and Rhubarb are pretty abundant. Potatoes are dear. Mushrooms are scarce. Cut flowers consist of Hyacinths, Primulas, Early Tulips, Roses, Cyclamens, Mignonette, Cinerarias, and Camellias.

##### FRUIT

Pine-apples, per lb., 8s to 12s  
Grapes, hothouse, p. lb., 10s to 15s  
Strawberries, per doz., 9d to 1s 6d  
Apples, dessert, p. bush, 10s to 15s  
— kitchen, do., 6s to 12s  
Oranges, per doz., 1s to 2s  
— Seville, p. 100, 7s to 14s

##### VEGETABLES.

Cabbages, per doz., 1s to 2s  
Brussels Sprouts, per hf. sieve, 2s to 3s  
Broccoli, per doz., 2s to 4s  
Greens, per doz., 4s to 6s  
French Beans, per 100, 1s to 2s  
Asparagus, per bundle, 5s to 10s  
Seakale, per basket, 2s to 2d 6d  
Rhubarb, p. bundle, 9d to 1s 6d  
Potatoes, per ton, 85s to 150s  
— per cwt., 5s to 9s  
— per bush, 2s 6d to 6s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 6d to 2s 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 4s to 5s  
— Spanish, p. doz., 2s to 5s  
Beet, per doz., 1s to 1s 6d

##### POTATOES.—SOUTHWARK, APRIL 11.

Since our last report the market has been well supplied, coastwise, foreign, and by rail, and there being a good many left from the previous week, together with the fine weather, has caused a further decline in prices and heavy trade. The following are this day's quotations:—Yorkshire Regents, 110s. to 160s.; Lincolnshire do., 90s. to 120s.; Scotch do., 100s. to 120s.; ditto reds, 90s. to 100s.; French whites, 85s. to 105s.

##### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, APRIL 14.**  
Prime Meadow Hay 85s to 95s  
Inferior do. ... 72 80  
Rowen ... 45 60  
New Hay ... ..  
CLOVER  
Prime Meadow Hay 95s to 100s  
Inferior do. ... 70 90  
New Hay ... ..  
Old Clover ... 100 110

**CUMBERLAND MARKET, APRIL 14.**  
Prime Meadow Hay 95s to 100s  
Inferior do. ... 70 90  
New Hay ... ..  
Old Clover ... 100 110

**WHITECHAPEL, APRIL 14.**  
Fine old Hay ... 86s to 92s  
Inferior do. ... 70 80  
New Hay ... ..  
Straw ... 28 32

##### WOOL.

**BRADFORD, THURSDAY, APRIL 14.**—The sales during the week have been limited; the prices demanded act as a barrier, and the accounts from the country are quite contrary to business being done. Nots and brokers are without change. Yarns.—The business doing is not different to that of many weeks past. The cost to produce yarns rules too high to enable the spinners to offer at prices at all satisfactory to the manufacturers.

##### SMITHFIELD.—MONDAY, APRIL 11.

The number of Beasts is very much smaller than on Monday last; trade is in consequence brisk, and higher rates are obtained. In some instances our highest quotation has been exceeded. The supply of Sheep is also smaller, but still larger than it had been previously to last Monday. There is not much advance in price, yet trade more active, and choicest qualities are selling better. Lamb is more in request. Choice Calves are rather dearer. From Germany and Holland there are 470 Rastars, 2170 Sheep, and 117 Calves; from Scotland, 460 Beasts; from Norfolk and Suffolk, 1700; and 300 from the northern and midland counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Here-  
fords, &c. ... 4 2 to 4 4  
Best Short-horns 4 0 — 4  
2d quality Beasts 3 0 — 3  
Best Down and  
Half-breeds ... 5 2 — 5 4  
Do. Shorn ... 4 4 — 4 6  
Beasts, 5518; Sheep and Lambs, 119,100; Calves, 151; Pigs, 2, 5.

##### FRIDAY, APRIL 15.]

We have a fair average of Beasts as regards numbers, but choice qualities are scarce. The demand is good, and best descriptions are rather dearer than on Monday. The number of Sheep and Lambs is larger than of late; however, they are in request at fully Monday's quotations—indeed, Lamb is rather dearer. Good Calves are by no means plentiful; therefore, the choicest descriptions make rather more money. From Germany and Holland there are 158 Beasts, 400 Sheep, and 202 Calves; from Spain, 800 Sheep; Norfolk and Suffolk, 400 Beasts; and 120 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Here-  
fords, &c. ... 4 2 to 4 4  
Best Short-horns 4 0 — 4  
2d quality Beasts 3 0 — 3  
Best Down and  
Half-breeds ... 5 2 — 5 4  
Do. Shorn ... 4 4 — 4 6  
Beasts, 5518; Sheep and Lambs, 5850; Calves, 252; Pigs, 225.

##### HOPS.—BOROUGH MARKET, APRIL 15.

Messrs. Pattenden and Smith report that the demand continues steady for all descriptions of Hops, and late prices are maintained.

##### MARK LANE.

**MONDAY, APRIL 11.**—Although the supply of English Wheat at this morning's market was small, it could only be disposed of at a reduction of 1s. per qr. upon the prices of this day se'night. Foreign, of which the arrivals are large, met a slow retail inquiry only, at 1s. to 2s. per qr. below our quotations of last Monday. The top-price of town-made Flour was reduced 2s. per sack, viz., 44s., and the unusually large arrivals from abroad, together with the auction which is advertised, has completely paralysed the sale. For Barley there is a fair trade at last week's prices. Beans and Peas sell slowly at late rates. Oats meet a fair demand, at the extreme prices of this day week.

**PER IMPERIAL QUARTER.**

	s.	d.	s.	d.
Wheat, Essex, Kent, & Suffolk ... White	39	53	Red	37—45
— fine selected runs ... ditto	41	58	Red	43—50
— Talavera	53	59	Red	—
— Norfolk	39	57	Red	—
— Foreign	39	57	Red	—
Barley, grind. & distill., 24s to 27s ... Chev.	25	34	Malt	26—30
— Foreign, grinding and distilling	26	30	Malt	30—33
Oats, Essex, and Suffolk	17	20	Feed	17—22
— Scotch and Lincolnshire ... Potato	22	24	Feed	17—22
— Irish	20	23	Feed	19—20
— Foreign	19	22	Feed	16—20
Rye	29	32	Foreign	—
Rye-meal, foreign	32	34	Foreign	—
Beans, Mazagan ... 29s to 31s ... Tick	32	34	Harrow	32—34
— Pigeon ... 35s — 36s ... Winds	39	41	Longpod	30—34
— Foreign	32	37	Egyptian	28—30
Peas, white, Essex and Kent ... Boilers	38	41	Suffolk	40—42
— Maple ... 32s to 35s ... Grey	30	33	Foreign	32—42
Maize ... White	37	41	Yellow	—
Flour, best marks delivered ... per sack	37	41	Country	21—27
— 2d ditto	21	27	Per sack	35—38
— Foreign	21	25	Per sack	35—38

##### ARRIVALS IN THE PORT OF LONDON LAST WEEK.

	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas.
Flour 23788 sks	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
— 15371 bbls	3564	1844	4358	608	739	179
English	—	—	13	12075	—	—
Irish	17273	8257	—	4322	199	122
Foreign	—	—	—	—	—	—

**FRIDAY, APRIL 15.**—The arrivals of English grain and Flour this week have been moderate, and good of foreign. To-day's market was badly attended, and scarcely any business transacted in Wheat, Flour, or spring corn, excepting Oats, which are in fair demand at full prices. In floating cargoes there is also nothing doing, but buyers would doubtless be able to purchase more advantageously than of late. Here, as well as in the other markets of the kingdom, we are unable to observe any amelioration of the previous dullness, and prices must be considered quite nominal for both Wheat and Flour. In the value of spring corn there is no alteration.

Accounts of imports of grain and Flour into the United Kingdom in the two months ended March, 1853, compared with the imports in the corresponding months of 1852:—

	1852.	1853.
Wheat	24,128 qrs.	577,696 qrs.
Other grain	394,577 "	445,835 "
Wheat meal or Flour	364,811 cwt.	568,591 cwt.
Other meal	256 "	195 "

##### ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English	Qrs. 2220	Qrs. 2090	Qrs. 2710	2550 sacks
Irish	8250	3600	4190	11070 bbls
Foreign	—	—	1590	—

##### IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
March 5	s. d. 45 9	s. d. 31 7	s. d. 18 3	s. d. 30 9	s. d. 34 8	s. d. 32 6
— 12	45 8	31 6	18 6	30 9	34 4	32 9
— 19	45 6	31 9	18 10	30 10	34 2	32 11
— 26	44 9	31 9	18 9	30 3	34 3	32 6
April	44 4	31 6	18 0	30 5	34 8	32 5
— 9	44 9	31 4	18 9	31 10	34 5	32 10
Aggreg. Aver.	45 1	31 8	18 8	31 3	34 5	32 8

##### Duties on Foreign Grain 1s. per qr.

##### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	March 5.	Mar. 12.	Mar. 19.	Mar. 26.	April 2.	April 9.
45s 9d	—	—	—	—	—	—
45 8	—	—	—	—	—	—
45 5	—	—	—	—	—	—
44 9	—	—	—	—	—	—
44 2	—	—	—	—	—	—
44 4	—	—	—	—	—	—

**LIVERPOOL, TUESDAY, APRIL 12.**—The receipts into this port during the week consist of a fair quantity of Oats and Oatmeal from Ireland, but of other articles thence, or anything coastwise, we have little to notice. Trade this morning has been tolerably steady, with a fair business transacting in Wheat, chiefly for the interior, at Friday's rates for all fresh qualities; inferior and stale descriptions are very much sought. There was good business doing in Flour, with a partial decline of 6d. per barrel since this day week. Barley is neglected to-day, but Malt, Beans, and Peas are steady, with a moderate demand. Oats and Oatmeal scarcely vary in value, but the trade is less active. — **FRIDAY, APRIL 8.** —The arrivals from Ireland and coastwise since Tuesday have been liberal of Oatmeal, but small of other articles. There was a good attendance of the town and country trade at this morning's market, who evinced more disposition to buy than of late, and a fair amount of business was done in Wheat and Flour, at about Tuesday's rates, the market closing rather better, especially for the latter article. Oats and Oatmeal remained without material alteration either in value or demand. The same may be said of Barley, Beans, and Peas. Yellow Indian Corn brought full prices where sales were made, but white was obtainable for 6d. per qr. less money.







**TANNED NETTING**, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh young Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas, for Wall Fruit.

At EDGINGTON & Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark; and at Brunswick Street, near the East India Export Dock, Poplar, where may also be seen erected Emigrant Tents in great varieties on their latest improved principles.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

**THE RHEOCLINE, OR SPRING COUCH**, portable without detaching any of its parts, softer than a Feather Bed, and which can be changed in One Moment from a Couch to either a Bed or Sofa, may be seen at COTTAM & HALLEN'S, 76, OXFORD STREET, where also is on view a great variety of METALLIC BED-STEADS, fitted with and without the patent RHEOCLINE, &c. &c., together with a large assortment of the patent Radiating and other STOVES, and every other description of IRONMONGERY.

**SHIRTS.—FORD'S EUREKA SHIRTS** are not sold by any hosiers or drapers, and can therefore be obtained only at 33, Poultry. Gentlemen in the country or abroad, ordering through their agents, are requested to observe on the interior of the collar-band the stamp—"Ford's Eureka Shirts, 33, Poultry"—without which none are genuine. They are made in two qualities, the first of which is 40s. the half-dozen, and the second quality 30s. the half-dozen. Gentlemen who are desirous of purchasing shirts in the very best manner in which they can be made, are solicited to inspect these, the most unique and only perfect fitting shirts. List of prices, and instructions for measurement, post free.—RICHARD FORD, 33, Poultry, London.

**WATERPROOF GARMENTS.** EDWARD SPENCER and Co. beg to invite the attention of Emigrants and all Persons going abroad to their Waterproof Garments, which are made of the best preparation of India Rubber hitherto produced in this country. They are not affected by the extremes of heat or cold, nor, like most articles of this kind, irreparably damaged if touched with grease or oil. They are made up into every kind of outer garments, and suited to all the various circumstances of exposure to weather by sea and land, consisting of Coats, Capes, Wrappers, Overalls, Hats, Caps, Boots, Goggles, &c., in all their various adaptations.

E. S. & Co. supply all kinds of Floats and Life Buoys, Patent Buoyant and Water-tight Trunks, Bags, Portmanteaus, and all articles of travelling equipment, Packing-cases, &c. Labourers' Caps, &c. 6d. each.

E. S. & Co. find it needful to state that they have no connection with any other house, and desire to refrain from all those false and vulgar assertions of "cheapest and best."

General Waterproof Warehouse, 116, Fenchurch Street, opposite Mark Lane.

**METCALFE and Co.'s NEW PATTERN TOOTH-BRUSH** and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the Teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—Is. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not often like common hair. Flesh-Brushes of improved graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY & Co.'s Sole Establishment, 180 n, Oxford Street, one door from Holles Street, London.

**METCALFE'S ALKALINE TOOTH POWDER**, 2s. per box. CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

**HOLLOWAY'S OINTMENT AND PILLS**, EXCELLENT REMEDIES FOR THE CURE OF BRONCHITIS, AND ULCERATED SORE THROATS. Extract of a letter from Mr. James Downing, of Paris Street, London, dated, March 30th, 1853. "To Professor Holloway.—Sir: Your Ointment and Pills have effected upon me a perfect cure of a dreadfully diseased throat, arising from cold, which ultimately terminated in bronchitis. The medical aid I received was unable to combat with the disease, and I was rapidly sinking under its influence. At this stage I had recourse to your Medicines, which in a few hours relieved me, and I am happy to inform you that in less than a fortnight I was entirely cured by them."—Sold by all Druggists, and at Professor Holloway's Establishment, 241, Strand, London.

**SOUND AND WHITE TEETH** are not only indispensable to a pleasing exterior in both sexes, but they are peculiarly appreciated through ideas as blessing highly conducive to the purpose of health and longevity. The great esteem in which the public have long held

**ROWLAND'S ODONTO, OR PEARL DENTIFRICE**, precludes the necessity here of entering into minute detail of its merits and the singular advantages it so eminently possesses over the usual powders sold for the teeth. It is sufficient to observe that ROWLAND'S Odonto not only has the property of removing the above beautiful organs of the mouth dazzlingly white, but it strengthens their organic structure, and fills the porous texture of rendering the breath sweet and pure. It should be used, in particular, be frequent that, when used in early life, it effectually prevents decay in the Teeth and Gums, effects all spots and discoloration, whatever the cause may be, and, in a word, secures the chief attributes of a perfect dentition. A LINE SET OF PEARLY TEETH. Price 25s. per box. BOTTLED BY ROWLAND'S Odonto, 10, Abchurch Lane, London. The above Odonto is sold by all the Chemists, Perfumers, and Druggists, in the Kingdom, and by the following:—Messrs. J. B. White & Brothers, Millbank Street, Westminster; Messrs. J. B. White & Brothers, 17, Smithfield Bars, City; and Messrs. J. B. White & Brothers, 17, New Park Street, Southwark.

**"WHERE SHALL WE GO THIS MORNING?"**—Such is usually the query over the breakfast table with visitors to London. Let us answer the question. If you can admire the most beautiful specimens of Papier-mâché manufacture which are produced in this country, displayed in the most attractive forms—if you want a handsome or useful Dressing-case, Work-box, or Writing-desk—if you need any requisite for the Work-table or Toilet—or if you desire to see one of the most elegant emporiums in London; then you will go to MECHTS, 4, LEADENHALL STREET, near the India House, in whose Show Rooms you may lounge away an hour very pleasantly.

**ASHLEY'S ANTI-DEPILATORY EXTRACT**, for strengthening and preventing the Hair falling off; prepared and sold wholesale and retail by ASHLEY, Perfumer, Brixton, in bottles; half-pints, 2s. 6d.; pints, 4s. 6d.; quarts, 7s. 6d. Also, ASHLEY'S CLEANSING POMADE, for freeing the head from scurf, and keeping it clean, in pots, 1s. and 2s. each. Also ASHLEY'S MEDICATED POMADE, warranted to cure the ringworm, scald heads, and all kinds of scrobitic eruptions; in pots, stamp included, 1s. 6d. and 2s. 6d. each. References of the highest respectability can be given. Wholesale Agents:—Barclay & Son, Farringdon Street; Sutton & Co., Bow Churchyard; Edwards, 67, St. Paul's Churchyard; Keating, 79, St. Paul's Churchyard; Butler & Harding, 4, Cheapside; Sanger, 150, Oxford Street; and may be had retail from all respectable Chemists in town or country.

J. ASHLEY can be consulted at his residence for 5s. on Mondays, from 2 to 6 o'clock. He has had unfeigned success in the cure of ringworms, scald heads, &c.

**BEAUTIFUL HAIR, WHISKERS, EYEBROWS,** &c.—ROSALIE COUPELLE'S CRINUTRIAR is the only preparation that can be relied upon for the growth of hair and whiskers, the restoration of hair in baldness, strengthening weak hair, preventing it falling off, and checking greyness. Persons who have been deceived by similarly named imitations will find that the genuine article has no equal. In pots and bottles 2s. each, through all druggists; or sent free by post for 24 penny stamps, addressed to Madame COUPELLE, Ely Place, Holborn, London. "It restored my hair after everything else had failed." Miss Small, Dorking. "The young man has now a good pair of whiskers." Mr. Yates, hair-dresser, Mutton. "It is the only preparation I can recommend."—Dr. Ure, Professor of Chemistry.

**GRATIS! GRATIS! GRATIS!** One Thousand Copies posted Weekly. Seventy-fourth Thousand, Library Edition. Sent free on receipt of Six Stamps, to pre-postage, addressed to Mr. LAWES, Medical Publisher, 2, Charles Street, Hatton Garden, London.

**EVERY MAN HIS OWN DOCTOR**; or, COMMON SENSE ON COMMON SUBJECTS. A Popular Guide to Health, addressed to the Young, the Old, the Grave, the Gay. By a Physician.

"To the married as well as the unmarried, we would particularly recommend this work, as being calculated to afford just that very necessary information as is too frequently sought in vain from other sources."—Atlas. Beware of a spurious and useless copy sold under a similar name.

**SPRING.** THE HUMAN BODY, like the vegetable world, undergoes complete renovation in the spring. An eminent naturalist and physiologist has lately put forth the startling theory that once in seven years every particle of the frame is entirely renewed, although the process is gradual. Be this as it may, what is certain is, that men, like plants in the spring, receive increased vigour and substance.

THE SPRING has always been remarked as a period when disease, if it be lurking in the system, is sure to show itself. The coldness of winter renders torpid the sanguiferous fluids of the body, and in this state of inactivity their evil to the system is not perceived; but at the spring these are aroused, and the whole system is contaminated. PARR'S LIFE PILLS, taken three every night for two or three weeks, will rid the body of all that is noxious, and produce health and comfort. Persons troubled with scrobitic affections are strongly advised to try them at this time of the year; in a few days they perceive the powerful clearing properties they possess, and thus be induced to continue them.

**TO THE PROPRIETORS OF PARR'S LIFE PILLS.** 42, Tringate, Glasgow, March 4th, 1853. GENTLEMEN,—I am requested by James Hutchison, overseer, Rutherglen, to express to you his gratitude for the great benefits he has derived from taking PARR'S LIFE PILLS. About nine years ago he was much afflicted with pains in the stomach and chest, shortness of breath, &c. He was advised to try PARR'S PILLS, and after taking them for some time he was completely restored to health. He is now 67 years of age, and although he scarcely ever expects to rival old Parr, he seems quite convinced that had it not been for his Pills he would never have reached his present age.

A sailor, some time ago, told me that he had been treated by a medical man for consumption, but finding no benefit, he commenced taking PARR'S PILLS, and he is now able to go to sea again.

Yours, &c. A. SCOTT. TO LADIES. PARR'S LIFE PILLS are especially efficacious in all the varieties of ailments incidental to the fair sex. Ladies even of the most delicate constitutions will find them particularly beneficial both before and after confinement; and for general use in schools they cannot be too strongly recommended. They mildly and speedily remove all skin eruptions, sallowness of complexion, nervous irritability, sick headache, depression of spirits, irregularity, or general derangement of the system.

**BEWARE OF SPURIOUS IMITATIONS.**—None are genuine unless the words PARR'S LIFE PILLS are in White Letters on a Red Ground, on the Government Stamp, pasted round each box; also the fac-simile of the Signature of the Proprietors, T. ROBERTS & Co., Crane Court, Fleet Street, London, on the Directions.

Sold in boxes at 1s. 1d., 2s. 9d., and family packets 11s. each, by all respectable Medicine Vendors throughout the world. Full directions are given with each box.

PARR'S LIFE PILLS can be had through any respectable Chemist.

**TO FLORISTS AND GARDENERS.**

**TO BE DISPOSED OF**, with immediate possession, 13 years' unexpired Lease of PERCY CROSS NURSERY, Fulham. There is an excellent eight-roomed House, and the ground, consisting of about one acre, has recently been fitted up, at great expense, with Hollies and every convenience.—For particulars, apply to Mr. Woods, Percy Cross, Fulham, Middlesex.

**FOR SALE**, about 1000 Tons South American BONE ASH, on WEDNESDAY, April 20, at 12 o'clock, at the London Commercial Sd. Rooms, Minning Lane.—Catalogues, &c., in due time by W. T. Goad & Rice, Brokers, 7, Mark Lane, London.

**FOR SALE**, an ornamental Iron CONSERVATORY, with engraving glass sides and semi-circular roof, 12 ft. 9 in. long, by 8 ft. 6 in. wide, fitted with hot water apparatus, and flower and rain cist. Price very moderate. Also an excellent three-light MELON FRAMES, with patent glass, and a smaller ditto. Apply to Mr. TAYLOR, Patent-Glass, North Audley Street, Grosvenor Square, London.

**TO GENTLEMEN'S GARDENERS & OTHERS.** TO BE LET, 3½ Acres of GARDEN LAND, well stocked with Fruit Trees, Vegetables, &c., with Greenhouse, Frames, and Stable. Rent, with Dwelling-house, 28l. per annum.—For further particulars, apply to F. SANGSTER, Seedsman, 252, Whitechapel Road, London.

**PRIZE POULTRY EGGS FOR HATCHING.** PRIZE COCHIN CHINA, 6s.; White-faced Spanish, 12s.; Pure-bred Dorkings, from Prize Stock, 6s., from Birds weighing 15 lbs. per couple; Extra large, true Aylesbury Duck Eggs, 6s. per dozen; Cochins, Spanish, Dorkings, Polish, and other choice Poultry on Sale. A remittance with all orders and letters to contain stamps for enquiries.—WM. TANNER, Fleet-pond, Winchfield, Hants. P. S. All orders above 12s., Carriage free to London.

**GOLDEN SPANGLED HAMBURGERS.** MR. H. CLAPHAM having a few EGGS to spare from the Golden Spangled Hamburgs which took the First Prize at the Birmingham Show in 1851 and 1852, also at Halifax in 1851, and at several local shows, offers them for Sale at 9s. per dozen. Also from his Silver Spangled, at 5s. per dozen.—Address, Mr. H. CLAPHAM, Aitworth House, Keigley, Yorkshire.

**COCHIN CHINA FOWLS.**—A few pairs of light birds, heavily feathered to the toes, and of superior breed, price from 38s. to 60s. per pair.—Address Mr. THOMAS PAGE, Chatteris, Cambridgeshire.

**COCHIN CHINA EGGS.**—An Amateur, who has some very handsome Cochins China Fowls, of a pure breed, Cinnamon and Buff, good in weight and symmetry, is willing to dispose of some Eggs, at 7s. per dozen. Payment, by Post Office order.—Address, A. Y., Post Office, Farnham, Surrey.

## Sales by Auction.

**COCHIN CHINA, GOLD AND SILVER POLAND, AND OTHER FOWLS.**

PERIODICAL SALE BY AUCTION ON TUESDAY, APRIL 19. MR. J. C. STEVENS' next Periodical Sale of FANCY POULTRY will take place at his Great Room, 38, King Street, Covent Garden, on TUESDAY, April 19, commencing at 12 o'clock precisely. Many of the Birds in this sale are of very choice quality, and from the stocks of several first-rate breeders and successful exhibitors. Catalogues will be forwarded on receipt of a stamped directed envelope, enclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

These Sales will be continued on the First and Third TUESDAY in every month. Persons wishing to introduce any lots may have Forms of Entry and particulars by applying as above.

**TO PLANT EXHIBITORS AND OTHERS.**

MR. J. C. STEVENS has received instructions from Mr. W. J. Epps, Bower Nurseries, Maidstone, to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, April 22, from 10 to 100 of the FINEST SPECIMEN PLANTS possible, consisting of Ericas, Azaleas, Pimeleas, Polygalas, Aphelexis, &c. The Ericas comprise the finest and most healthy plants known, and beautifully set with flower, of the following:—Fernigine, retorta major, obbata, Wilsonii, tortuosa, Albertii superba, Cavendishii, Massonii, Savileana, Hartnellii, vasiformis, elegans, &c. Azaleas, double red (magnificent plant) Leticia variegata, Union ignescens, Incomparable, Gledastensis, Hebe, exquisita, &c.—On view the day prior and morning of sale, and Catalogues had.

**BUFF COCHIN CHINA FOWLS.**

MR. STRAFFORD is favoured with instructions from Mrs. E. George, of the Rookery, Chaldon, Surrey, to Sell by Auction, at the Bazaar, King Street, Baker Street, Portman Square, London, on WEDNESDAY, the 4th of May next, upwards of 100 Lots of First-class BUFF COCHIN CHINA FOWLS, including her Prize and Commended Birds at Birmingham, the Great Metropolitan, Hitchin, Reigate, and other Shows.

Catalogues will shortly be issued, and further particulars given in future advertisements.

**HOLCOMB, NEAR DORKING, SURREY.** IMPORTANT SALE OF PURE SHORTHORNS, SHEEP, &c.

MR. STRAFFORD is favoured with instructions from Barrell Fuller, Esq., of Holcomb, near Dorking, to announce for sale by Auction, without reserve, on WEDNESDAY, the 20th of April next, his Entire Herd of pure bred SHORTHORNED CATTLE, consisting of between 40 and 50 head of Bulls, Cows, and Heifers, bred from stock of the highest repute. Also 120 Fat Southdown TEGS, with a well bred Nag Colt and Filly.—Catalogues, with the Pedigrees and other particulars, may be had upon application to Mr. STRAFFORD, 89, Guildford Street, Russell Square; and of Mr. LUCAS, at Holcomb, near Dorking.

**ISLINGTON NURSERY.** TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed to submit to public competition by Auction, on the premises, about the latter end of April (if not previously disposed of by private contract), the Erections of Greenhouses, containing a large quantity of Glass, Iron Columns, York and Valencia Paving, Ancient Capitals, Twisted Stone Columns, Flues, Furnaces, Fittings of Seed Shop and Counting-house. Also large Camellias, Dahpne odora, 3000 or 4000 Mezerion Stocks in Pots, Cactus fulgidus, Geraniums, &c., together with the Stock, Brickwork, &c. American Nursery, Leytonstone, Essex.

**GRANTCHESTER NURSERY, NEAR CAMBRIDGE.** EXTENSIVE SALE OF GREENHOUSES, RANGES OF PITS, TWO-LIGHT MELON BOXES, GREENHOUSE AND BEDDING PLANTS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by the Proprietor, who is declining the Nursery Business, to Sell by Auction on the premises, on the 16th, 17th, and 18th of May, at 11 o'clock each day, the whole of the Stock of the above Nursery, consisting of Stove and Greenhouse Plants, Dahlias, Pelargoniums, Camellias, Cinerarias, Roses, Verbenas, Petunias, Calceolarias, scarlet Geraniums, Lilium lancifolium album, &c.; also eight Greenhouses, in a good state of preservation, the fittings to the same comprising Burbridge & Hooley's Boilers, Iron Tanks, Hot-water Piping, Yorkshire Flag Stones, Slates, &c.; seven ranges of Pits, two-light Melon Boxes, &c.—May be viewed prior to the Sale. Catalogues may be had on the premises; and of the principal seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

**TO GENTLEMEN, FLORISTS, AND OTHERS.**

**MESSRS. PROTHEROE AND MORRIS** will sell by Auction, at the Mart, Bartholomew Lane, on Thursday, April 24th, and following day, at 12 o'clock, a first class collection of Curatians and Plectes; 800 Superb Standard and Dwarf Roses; a selected assortment of Ornamental Trees and American Plants; choice Dahlias, in dry roots; Paeonias and Ranunculus; together with an assortment of Annual, Biennial, and Perennial Flower Seeds. May be viewed the morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.



4, GREAT RUSSELL STREET, COVENT GARDEN, 1853.

## JOHN KERNAN,

IN OFFERING TO HIS FRIENDS AND THE PUBLIC THE ANNEXED

## LIST OF VEGETABLE AND FLOWER SEEDS,

WHICH INCLUDES EVERY NOVELTY INTRODUCED UP TO THE PRESENT SEASON,

BEGS TO ASSURE HIS CUSTOMERS THAT HE HAS SPARED NO TROUBLE IN SECURING EVERY ARTICLE AS GOOD AS IT COULD POSSIBLY BE PROCURED.

PEAS. Per qt.—s. d.		CRESS. s. d.		Scalet plants, according to age, per 100, 5s. to 10s.		Per packet—s. d.		Per packet—s. d.	
Early Emperor	1 0	Plain, per pint	0 6	Duilly's Early Scarlet Admirable Rhubarb, per root, 1s.	0 4	Hollyhock, fine mixed	0 6	Enothera Sellowii	0 3
Shilling's new early Grotto	1 0	American, per oz.	1 0	Myatt's Victoria do. (the largest in cultivation), 1s.	0 6	Ipomoea Burridgei	0 6	" Drummondii	0 6
Bishop's new long-podded	1 0	Water, per paper	0 6	Mushroom Spaw, per bushel, 5s.	0 6	" quamoelii	0 6	" densiflora	0 6
Fairhead's Champion of England	1 0	Mustard, per pint	0 6	Cornwell's Victoria Raspberry, per dozen, 2s. 6d.	0 6	" hybrida Kermesina	0 6	" macrocarpa	0 6
Fairhead's Surprise	0 9			All the fine new Raspberries, 2s. 6d. to 3s. per dozen.	0 6	" sina	0 6	And others	0 3
British Queen	1 0			Seeds of all the new Strawberries, Raspberries, Gooseberries, and Currants, per paper, 6d.; with Tree Seeds recommended to Emigrants.	0 6	And others	0 6	Papaver maculifolium	0 3
Knight's dwarf green and tall	1 0					Ipomopsis elegans	0 6	" nudicaulis	0 3
Scimitar	0 9					Isotoma axillaris	0 6	Poppy, carnation, mixed	0 3
Woodford or Nonsuch	0 9					Jacobaea, double crimson	0 3	Peas, sweet, all the colours	0 6
Victoria Marrow	0 9					" new lilac	0 3	separate or mixed	0 3
Dwarf green Mammoth	1 6					Kaufussia amelloides, for edging	0 3	Pentstemon, of sorts	0 6
Tall white do.	1 6					H AND S O M E F L O W E R S		Phlox Drummondii, various shades	0 6
With all other varieties worth cultivating.						M E N T A L G R A S S E S.		" Drummondii, white	0 6
						Lagurus ovatus (Hare's-tail Grass)	0 6	" Leopoldii (new)	1 0
						Agrostis pulchella	0 6	" new scarlet	0 6
						Briza gracilis	0 6	" oculata	0 6
						" maxima	0 6	Picotee, from named flowers	1 0
						Stipa pinnata	0 6	Platystemon californicus	0 3
								Potentilla Garnieriana	0 3
								" Russelliana	0 3
								" Thomasii	0 3
								Polyanthus, fine mixed	0 6
								Portulacca splendens	0 6
								" Thellusonii	0 6
								" grandiflora	0 6
								" striata alba	0 6
								" Gilliesii	0 6
								" yellow	0 6
								Primula sinensis (white fringed)	1 0
								" lilac	0 6
								" large crimson	1 0
								" cortusoides	0 6
								Rhodantho Manglesii	0 6
								Salpiglossis, new scarlet	0 6
								" very fine	2 6
								" fine mixed	0 6
								" new yellow	0 6
								Salvia, of sorts	0 6
								Sanvitalia procumbens	0 3
								Saponaria, calabrica	0 6
								" ocyroides	0 6
								Schizanthus Hookeri	0 6
								" Grahamii	0 6
								" retusus alba	1 0
								" humilis	0 3
								" Priestii	0 3
								" venustus	0 3
								Schizopetalon Walkerii	0 6
								" very sweet	0 6
								Spharnogyne speciosa	0 3
								Streptocarpus Rexii	0 6
								Silene Schafta	0 6
								" compacta	0 6
								" Stock, white pyramidal	0 6
								" Buck's Intermediate	0 6
								" 16 out of 20 will come double	0 6
								" Chapman's Scarlet	0 3
								" Ten-week	0 3
								" Shepherd's White	0 3
								" Purple	0 3
								Sedum cereuleum, for rock-work	0 6
								Sultan, yellow	0 3
								" white and purple	0 3
								Tagetes signata	0 3
								" lucida	0 3
								Thunbergia (see Climbers).	0 6
								Tropaeolum (see Climbers).	0 6
								Viscaria oculata	0 3
								" new dwarf	0 6
								" white	0 6
								Violet, Russian (ever-flowering)	0 6
								Verbena, a mixture of best sorts	0 6
								Wallflower, blood red	0 3
								" Double German	0 6
								" of sorts	0 6
								" changeable	0 6
								" 8 vars. of Imperial German 2 6	
								Zinnia elegans coccinea	0 6
								" purpurea	0 6
								" aurea	0 6
								" mixed from 20 separate varieties	0 6
								Ornamental Trees and Shrubs of all descriptions.	
								Cedrus Deodara, Cryptomeria japonica, Taxodium sempervirens, 2s. 6d. to 10s. 6d. each.	
								Named Double Anemones and Ranunculuses; Gladioli gandavensis, Queen Victoria, ramosus and floribundus; Tigridia pavonia and conchiflora; with many other flowering Bulbs and Herbaceous Plants, which may be planted out till the middle of May.	
								Carnations, Picotees, and Pinks, per pair, from 1s. to 3s. 6d.	
								All the best named Heartsease from 6s. to 30s. per dozen.	
								Fine named Dahlias, per dozen, 12s.	
								Chrysanthemums, new kinds, 12s.	
								Standard Dwarf and Climbing Roses, 1s. to 2s. 6d. each.	
								Rivers' Miniature Fruit Garden, with directions for culture and root-pruning, 2s.	
								Rivers' new edition of the "Rose Amateur's Guide," 6s.	
								Kivers' new Fruit Catalogue, 6d.	
								Paxton's "Cottage Calendar," 3d., which ladies and gentlemen should distribute to cottagers.	
								Collection of 24 Annuals, mixed, recommended by Dr. Lindley as suitable for Shrubberies, 5s.	
								Seeds for distribution by Gentlemen to their Tenants and Cottagers on the most liberal terms.	
								24 papers of Hardy Annuals, 5s.	
								Seeds selected and carefully packed for Australia, North and South America, India, and New Zealand, in the most secure way to arrive safe at any of the above places. A most beneficial thing to be taken by emigrants is "Onion seed."	

Ladies and Gentlemen relying upon the judgment and experience of JOHN KERNAN, instead of being supplied (as is often the case) with what is neither useful nor ornamental, may depend upon having a selection of the most useful and indispensable Vegetables to any amount named, by the parties forwarding him their orders. The same economy will be observed in the choice of Flower Seeds. J. K. feels it almost needless to observe that the liberality of discount will be with the amount.

Printed by WILLIAM BRADLEY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitechapel, in the City of London; and published by them at the Office, No. 3, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—SATURDAY, APRIL 16, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 18.—1853.]

SATURDAY, APRIL 30.

[PRICE 6d.]

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**HORTICULTURAL SOCIETY OF LONDON.**—NOTICE is hereby given that the first EXHIBITION of FLOWERS and FRUIT, in the SOCIETY'S GARDEN, will take place on SATURDAY, May 14, at 2 p.m.

Tickets, price 5s. each, can be procured at this Office, upon presenting the order of a Fellow; or, on the day of the Exhibition at Turnham Green, price 7s. 6d. each.  
21 Regent Street, London.

**HORTICULTURAL SOCIETY OF LONDON.** ORCHIDS.

The COUNCIL hereby give Notice, that in addition to any prizes offered in the printed Schedule, they will grant the following Medals to the Exhibitors who shall, at the Garden Meetings in May and June, obtain the two largest awards in the three classes specified, viz. :—  
Class X. The L G and G K.—Class XI. The G K and G B.  
Class XII. The G B and S G.

**ROYAL BOTANIC SOCIETY, REGENT'S PARK.**—The days appointed for the Exhibitions of PLANTS, FLOWERS, and FRUIT this season are, GENERAL EXHIBITIONS, Wednesdays, May 25th, June 6th, and 29th.

**AMERICAN PLANTS, Mondays, June 13th and 20th.**  
Tickets of Admission may be obtained at the Gardens, by orders from Fellows of the Society.—Price, on or before May 14th, 4s.; after that day, 5s.; or on the days of Exhibitions, 7s. 6d. each.

**CHEPSTOW HORTICULTURAL SHOW.**—To be held in the ruins of the Castle, on WEDNESDAY, the 8th June, 1853.

The Committee of Management of the above Show have great pleasure in announcing that they will give the undetermined sums, in addition to the usual prizes contained in their schedule, viz. :—

For the best collection of 15 Orchideous Plants, 1st prize .. ... £10 10 0  
2d ditto .. ... 3 3 0  
\*For the best collection of 12 Stove and Green-house plants, 1st prize .. ... 10 10 0  
2d ditto .. ... 3 3 0  
\* Calceolarias, Fuchsias, Orchids, Pelargoniums, and Cape Erias will be excluded from this collection.

Schedules of Prizes to be competed for on the above day may be obtained of the Secretary, Mr. JOHN F. HARTLAND, Welsh Street, Chepstow.

**SCOTTISH PANSY SOCIETY.—THE NINTH ANNUAL COMPETITION OF THE SCOTTISH PANSY SOCIETY** will be held in the New Music Hall, Dunfermline, on the third Tuesday of June next, at 12 o'clock.  
A. TAIT, Secretary.

**BEDDING PLANTS.**  
**JOHN HAYES, Florist, Farnham, Surrey,** begs to say that he will be prepared to send out Bedding Plants at the latter end of May, at from 1s. to 4s. per dozen.  
ESSEX HILLO (CUCUMBER), 6 Seeds for 12 postage stamps.  
VICTORY OF BATH MELON, 10 Seeds for 12 ditto.  
Descriptive Catalogues sent on the receipt of one postage stamp.

**FUCHSIA—"ENGLAND'S GLORY."**  
JOHN HARRISON is now sending out the above unsold FUCHSIA; strong, healthy plants, 10s. 6d. each; extra strong autumn struck plants, which will make fine blooming specimens in June, at 21s. each.  
J. H. warrants this unequalled White Fuchsia to give entire satisfaction; blooms of which can now be sent through the post in exchange for 12 postage stamps. Catalogues of Dahlias, Roses, Fuchsias, Geraniums, and other Greenhouse Plants, can be had on application.—Grange Nursery, Darlington, April 30.

**STREPTOCARPUS BIFLORUS.**—This beautiful little free-blooming herbaceous Plant (requiring the temperature of a stove or warm greenhouse), to which a Certificate of Merit was awarded at the Horticultural Exhibition at Chiswick on the 5th of May, 1852, will be ready for delivery on and after the 16th of May next, by JAMES VEITCH & Sons, at 7s. 6d. each, with the usual discount to the trade.—Exeter, April 30.

**NEW WHITE BEDDING GERANIUM.**  
AND C. LEE are now prepared to send out Captain Mangrove FLORIBUNDA, a bedding Geranium of dwarf habit and great merit. The flowers are white, with a small blush, and are produced in such profusion as to be a complete sheet of bloom throughout the summer. It requires a light soil, and will be found invaluable for bedding. Price 2s. 6d. each, 21s. per dozen, or 12s. the half dozen.—Nursery, Hammersmith.

## NEW PLANT CATALOGUE.

**RENDLE'S NEW PLANT CATALOGUE** for the present season is now ready, and can be had in exchange for one penny stamp.

It contains the lowest prices of all the best varieties of Geraniums, Dahlias, Indian Azaleas, Camellias, Chrysanthemums, Fuchsias, Petunias, Verbenas, Calceolarias, Ferns, Lycopodiums, Achimenes, Stove, Greenhouse, and Herbaceous Plants.

WILLIAM E. RENDLE & Co. have a very large stock of all the above, and the prices will be found exceedingly low.

All orders above £2 carriage free to most of the Railway Stations in the South and West of England, and to many of the principal Ports in England and Ireland. See Catalogue.

Apply to WILLIAM EDGUMBE RENDLE & Co., Nurserymen, Plymouth.

## CHOICE GERANIUMS.

**WILLIAM HUSSEY** begs to offer the under-named GERANIUMS for 18s., basket and mat included, fine healthy plants, in 5-inch pots, viz. :—

Ocellatum	Governor
Rowena	Loveliness
Generalissimo	May Queen
Major Domo	Cyp
Emily	Belle of the Village
Cristine	Conspicua
Nectar Cup	Constance
Pride of the Isles	Armada
Rosamond	Symmetry

Also a very fine healthy stock of Bedding Plants, from 3s. to 4s. per dozen.—Horticultural Gardens, Norwich.

## NEW ROSES, IN POTS, on the PLANETTU STOCK.

HYBRID PERPETUAL.	s. d.	Souvenir de la Reine des	s. d.
Baronne Hallez .....	1 6	Belges .....	5 0
Baronne de Morel .....	3 6	Spotted Queen .....	2 6
Comtesse Bathiany .....	1 6	Therese de St. Remy .....	3 6
Comte Odart .....	2 6		
Destiny .....	2 0	BOURBON.	
Duplessis Mornay .....	1 6	Madame Cousin .....	2 6
L'Enfant du Carmel .....	3 6	Prince Albert (PAUL'S) .....	7 6
Louise Odier .....	3 6	Paul et Virginie .....	2 0
Ludovic Letand .....	1 6		
Madame Fremion .....	2 0	PERPETUAL MOSS.	
Mère de St. Louis .....	5 0	General Orust .....	3 6
Olivier des Serres .....	2 6	Prince de Regal .....	2 6
Queen Victoria (PAUL'S) .....	2 6		
Rose de Soie .....	2 6	Madame Alboni .....	3 6

Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

**EDWARD GEORGE HENDERSON and SON** have to offer the following NEW PLANTS, which will be ready to send out the first week in May :—

<b>LIBERTIA grandiflora</b> .....	10s. 6d. each.
<b>GERANIUM glaucum grandiflorum intermedium</b> .....	10 6 "
— Boule de Neige .....	7 6 "
<b>LOBELIA Roi Leopold</b> .....	7 6 "
<b>ERICA Burnettii</b> .....	10 6 "
<b>CALCEOLARIA Golden Chain</b> .....	7 6 "
— Sultan .....	7 6 "
— Compacta .....	5 0 "
<b>FUCHSIA Purple Perfection</b> .....	10 6 "
— Duchess of Lancaster .....	10 6 "
— Premier .....	10 6 "
<b>GLOXINIA imperialis</b> .....	7 6 "

For description of the above, see this Paper for April the 9th. Wellington Road Nursery, St. John's Wood, London.

**STRAWBERRY PLANTS.**—Now, and for the next fortnight is the proper time to plant Strawberries to secure good bearing plants for next season.

Kitley's Goliath, hardiest of all the new .....	s. d.
Strawberries .....	5 0 per 100
Old Pine, best to preserve .....	3 6 "
Eleanor, large and fine .....	5 0 "
British Queen .....	3 6 "
A few of Rivers's Seedling Eliza, flavour exquisite .....	10 0 "
Globe .....	5 0 "
Elton Pine and Keen's Seedling .....	3 6 "

The above carefully packed and sent, upon receipt of Postage stamps, or Post Office order payable at Haverhill, for the amount of the number required.

A few hundreds of Hollyhocks, saved from the best named flowers, and kept separate, at 3s. per dozen, or 20s. per 100.  
DILLSTONE & Co.'s Nurseries, Sturmer, Essex, April 20.

**CEDRUS DEODARA.**—To the quality of its Wood, and its value as an Ornamental Tree, the talented Editor of this Paper has adduced proofs lately which we believe will induce many to plant it extensively. We, knowing its value, have for many years largely imported its seed, have circulated some hundreds of thousands through the country, and still possess a large stock of plants of various ages and sizes; and all being in suitable sized pots (except the largest size), they may for some time hence be transplanted with perfect safety.

We solicit the attention of those about to purchase to the following scale of prices, and beg to assure them that the plants cannot fail to give satisfaction, and that our earnest efforts shall be to insure it.

1 year, in single pots .....	20s. per 100; or 8l. per 1000.
2 years, in single pots .....	30s. "
15 to 18 inches .....	12s. per dozen, or 4l. per 100.
14 to 2 ft. .....	24s. per dozen, or 8l. per 100.
2½ to 3 ft. .....	42s. per dozen, or 16l. per 100.
3 to 4 ft. .....	60s. per dozen, or 20l. per 100.
5 to 6 ft. .....	15s. each; but may still be moved.
6 to 7 ft. .....	20s. each; but may still be moved.

All Orders of 2l. and upwards and delivered carriage free to London or Hull, and to any Railway Station within 150 miles of the Nursery.

YORK & Co., Royal Nursery, Great Yarmouth.

## CEDRUS DEODARA.

**JOHN HENCHMAN** has still a few Thousand fine one-year Seedling Plants, established in thumb pots, of this splendid ornamental and valuable Timber Tree, which are therefore in fine condition for planting out, at 20s. per 100.  
Fine plants, 9 inches to 1 foot, in pots, 9s. per dozen.  
Edmonton, April 30.

## MANGOLD WURZEL.

**YELLOW GLOBE MANGOLD WURZEL, RED GLOBE** Ditto, and others, may still be had, of superior quality, from JOHN SUTTON & Sons, Seed Growers, Reading, Berks.

## AGRICULTURAL SEEDS.

FOREST and ROSE TREES, &c.—PRICED LIST.

**PETER LAWSON and SONS'** Catalogues of the above for this season are now published, and may be had on application, or free by post from their Agent.

Also "Agrostographia; or, Grass Treatise," 2s. 6d.; and the Synopsis of the Vegetable Products of Scotland," price 10s. 6d.  
JOHN C. SOMMERS, 159, Fenchurch Street, London.

**GRASS SEEDS for Permanent Pasture; Cow Grass, or Perennial Red Clover; White Belgian Carrot, Mangold WURZEL, Swede and Turnip Seeds, DELIVERED CARRIAGE FREE.**

**WHEELERS' Priced List of Agricultural Seeds** sent post free on receipt of one postage stamp.  
J. C. WHEELER & Son, Seedsmen to the Gloucestershire Agricultural Society, Gloucester.

## EXOTIC NURSERY, CHELSEA.

**JAMES VEITCH, Jun. (Successor to Messrs. KNIGHT and PERRY),** begs respectfully to state that he has now in Bloom the following new and beautiful Plants, which he will be happy to show to all persons who may favour his establishment with a visit, viz., RHODODENDRON JASMINIFLORUM, HEXACENTRIS MYSORENIS, STREPTOCARPUS BIFLORUS.—April 30th.

**TRAPÆOLUM AZUREUM,** extra large Roots, 3s. 6d. to 10s. 6d. each.

**CHLORÆAS** (beautiful Terrestrial Orchids), Mixed species from Chili, 3s. 6d. each.

**LAPAGERIA ROSEA,** strong imported roots, 10s. 6d. to 21s. each.

Clapton Nursery, April 30. HUGH LOW & Co.

**WILLIAM BARRETT** begs to acquaint his friends and the public generally, that his Catalogue of NEW and RARE PLANTS is now ready, and will be sent on application. Camden Nursery, Camberwell, London.—April 30.

## LOBELIA "ST. CLARE."

**JAMES LAKE, NURSERYMAN, &c., Bridgewater,** begs to offer to public notice the above Seedling LOBELIA, which, for brilliancy of colour, profusion of bloom, dwarfness of habit, and beauty of foliage, cannot be equalled by anything in cultivation. Strong established plants the first week in May, 3s. 6d. each, or 30s. per dozen. The usual allowance to the trade. A remittance must accompany all orders from unknown correspondents.

AGENTS.—Messrs. E. G. Henderson & Son, St. John's Wood, London; Hurst & M'Mullen, 6, Leadenhall Street, London; and Mr. Charles Turner, Slough.

## TESTIMONIALS.

*Gardeners' Chronicle, August 7, 1852.*—"The most striking we have seen; an improvement on Feu de Roi; habit, dwarf and good."

*Gardeners and Farmers' Journal, Sept. 4.*—"A very fine variety, flowers large, colour vivid and intense, foliage dark and glossy, habit dwarf."

## JEFFRIES' "ATTRACTION" DAHLIA.

**WILLIAM B. JEFFRIES** begs to call the attention of his friends and the public generally to the above-named Splendid Dahlia, which ought to be in every collection. For full description see first page of *Gardeners' Chronicle*, April 16.  
Plants in May, 7s. 6d. each; one Plant will be presented when three are ordered.—Nurseries, Ipswich, April 30.

## GERANIUM—"MRS. JEFFRIES."

**WILLIAM B. JEFFRIES** begs to announce his intention of sending out in May the above-named splendid Geranium, which will prove a great acquisition to the Flower Garden, being an abundant bloomer, of a beautiful lilac colour, tinted with peach. Was greatly admired by all who saw it in flower last summer, especially by Mr. Beaton, late of Strubland Park; was also noticed by him in the *Cottage Gardener*.  
Plants in May, 5s. each; or six Plants for 25s.  
Nurseries, Ipswich, April 30.

## NEW AND CHEAP PLANTS.

**WILLIAM RUMLEY and SONS** have to offer the following, in fine healthy plants, hamper included, or free by post, on receipt of a Post-office Order, payable at Richmond.

**FUCHSIAS**, all the best new varieties of last season, 20 for 12s., 12 for 7s. 6d., or 6 for 4s.

**VERBENAS**, the best of last season, 6s. per dozen.

Ditto, good show varieties, 3s. to 4s. per dozen.

**GERANIUMS**, choice show varieties, 9s. to 12s. per dozen.

Ditto, scarlet and pink, 4s. to 6s. per dozen.

**DAHLIAS**, choice fancy varieties, 3s. to 9s. per dozen.

Ditto, choice fancy ditto, 4s. to 9s. per dozen.

**CINERARIAS**, strong blooming plants, 6s. to 9s. per dozen.

Ditto, smaller plants, 4s. per dozen.

**GREENHOUSE PLANTS**, choice varieties, 6s. to 9s. per doz.

**CHOICE BEDDING PLANTS**, 3s. to 6s. per dozen.

Choice Shrubby Calceolarias, Chrysanthemums, Petunias, Heliotropiums, Lobelias, Salvias, Anagallis, Viola arborea, major White Rocket, &c., 4s. to 6s. per dozen.

Our General Descriptive Catalogue of Soft-wooded Plants may be had on application.—Gilling, Richmond, Yorkshire.



## BEDDING PLANTS, ETC. ETC.

## YOUELL AND CO.

**BEG** to inform their friends and the public that their Stock of BEDDING PLANTS is numerous and fine this season, comprising all the novelties that they have thought worth attention, and submit the following List:—

**VERBENAS**, comprising such sorts as General Taylor, Zoe Mosier, Macrantha, Cardinal Wiseman, Iris, Judith, Olga, Cornelia, Virginia, General Bedeau, General Changarnier, Jean Bart, Model, Auricula, Stephanette, Albina, Montana, Marianne, Parfum Madeline, General Courtigies, Coresus, with all the fine old standard varieties, 4s. per dozen.

**VERBENAS**.—The following new varieties, 9s. per dozen:—Madam Dennis, Celina Malet, La Camargo, Adonis, Casanova, Zelia, Cerise Unique, Racine, Zenobia, La Flamboyante, and Richelieu.

**CALCEOLARIAS** (Shrubby).—Wellington Hero, Sultan, Shankleyana, Sulphurea splendens, Beauty of Montreal, Kentish Hero. These are indispensable in the flower garden; their brilliancy of colour and profusion of bloom renders them peculiarly adapted for "massing."

**Ditto** Wellington Hero (Henderson's), a fine variety of rich golden yellow, with large flowers, an excellent trusser, and very robust, 12s. per dozen.

**Ditto** Sultan, fine dark scarlet, large well formed flowers, fine trusses, an excellent variety, 6s. per dozen.

**Ditto** Shankleyana, fine rich dark orange, very choice variety, 9s. per dozen.

**Ditto** Beauty of Montreal, bright crimson, dwarf habit, a very free bloomer and distinct variety, 9s. per dozen.

**Ditto** Sulphurea splendens, fine yellow, 9s. per dozen.

**Ditto** Kentish Hero, orange bronze, fine standard variety, for bedding, 6s. per dozen.

**LOBELIA** erinus lucida, ramosoides, erinus alba and compacta. —Of these we consider lucida the most suitable for forming a light blue bed, ramosoides for a dark blue, and alba for a white one, 4s. per dozen.

**ANAGALLIS BREWERII**, fine large blue, 4s. per dozen.

**ANDROMEDA** rosea, rose and blue, 6s. per dozen.

**CENOTHERA RIPARIA**, a fine hardy perennial of dwarf compact habit, producing numerous light canary coloured flowers through the summer and autumn, a very excellent plant for bedding, 4s. per dozen.

**HELIOTROPE**—Corymbosum, Gem, Triomphe de Liege, Souvenir de Liege, Voltairianum. We possess many other varieties, but consider these the best; 6s. per dozen.

**PETUNIAS**—Crimson King, Rosy Circle, Beauté de Montins, Dudo, Gigantea, &c., 4s. per dozen.

**GERANIUMS**—Scarlet, of finest varieties, 6s. per dozen.

"White Unique (Henderson).—This fine variety, sent out last season, resembles the old Crimson Unique, so well known, a very desirable plant, 2s. 6d. each.

"Moore's Victory, fine brilliant scarlet, 1s. each.

"Shrubland Pet, crimson scarlet, with sweet-scented foliage, highly recommended for bedding, 20s. per dozen.

"Bagshot Park, Blandfordianum, Curate and Crispum—these fine hybrid varieties, 18s. per dozen.

"Lady Holmesdale, beautiful deep rosy pink, with white centre, large globular truss, and fine compact habit, 20s. per dozen.

"Fancy varieties, 9s. per dozen.

"The following Cape species—Ardens Major, 9s. per dozen; Quinquenervium, 2s. 6d. each; Bicolor, 1s. 6d.; Echinatum roseum, 1s. 6d.; triste, 1s. each.

**CHIERANTHUS MARSHALLII**.—This fine hardy perennial produces, through summer and autumn, spikes of sweetly scented rich orange coloured flowers, the colour of Erysimum Perofskianum, 6s. per dozen.

**Ditto** triste, the night-scented Stock, 6s. per dozen.

**OXALIS FLORIBUNDA**, one of the finest of our hardy perennials, producing its pretty pink flowers in profusion through the summer and autumn, excellent for bedding, 6s. per dozen.

**CAMPANULA CORALLINA**, a trailing hardy perennial, bearing a profusion of light blue star-shaped flowers, 6s. per dozen.

**SAPOONARIA OCMYODES**, fine trailing hardy perennial, admirable for rockwork or bedding, flowers borne in great profusion, of a light pink colour, 6s. per dozen.

**SILENE MARITIMA PLENO**, a hardy trailing perennial, large double flowers, of pure white, 6s. per dozen.

**STATICE MARITIMA ROSEA**, hardy perennial, of dwarf habit, throwing up numerous heads of deep-rose coloured flowers, a very pretty plant, 4s. per dozen.

**Ditto** Pseudo armeria—This handsome species produces flowers of a light rose colour, upon stems taller than the foregoing, 4s. per dozen.

**Ditto** latifolia, fine hardy perennial, with ample foliage, bearing spikes of feathery lavender-coloured flowers, 6s. per dozen.

**ROCKETS**, double white, 3s. per dozen; double purple, 6s. per dozen; crimson, 18s. per dozen.

**PRIMROSES**, the old double scarlet or maroon; we are fortunate in possessing a good stock of this rare though fine old plant. Strong plants, 12s. per dozen; double white, 8s. per dozen; lilac, 4s. per dozen; purple, 6s. per dozen.

**PENTSTEMON variabilis**, Vespersplankii, Clowesii, Marshallii, &c., 6s. per dozen.

**MIMULUS**, purpurea maculata, lateritia, elegans, Coleii, Duke of Wellington, Prince of Wales, Leo, Sagi Huras, Moodii—these fine varieties, 9s. per dozen.

**GAZANIA pavonia** and rigens, fine orange composite flowers, spotted with dark crimson, quite hardy, 9s. per dozen.

**ANTIRRHINUM**, Primrose Perfection, a beautiful clear primrose colour, of dwarf compact habit, the finest of its class, 9s. per dozen.

**ERINUS LYCHNIDEA**, a highly fragrant plant, with white flowers, 9s. per dozen.

**PHLOXES**, fine varieties, 9s. per dozen.

**POTENTILLA** MacNabiana, Bainsiana, Hopwoodiana, &c., 6s. per dozen.

**TIGRIDIA CONCHIFLORA**.—This fine hardy bulbous perennial is highly ornamental, throwing up spikes containing numerous large yellow flowers, spotted with bright red, and forms very handsome beds, 3s. per dozen, or 15s. per 100.

**DIELYTRA SPECIABILIS**, one of the finest hardy herbaceous plants ever imported into this country, bearing long spikes of bright rosy flowers of most unique form, whilst for early forcing it is surpassed by none; it is undoubtedly one of the finest among the very fine plants from China, 12s. per dozen.

**VIOLA LUTEA**, the Yellow Violet, a very neat distinct species, 9s. per dozen.

**GLADIOLUS INSIGNIS**, a fine robust species, producing during the summer and autumn months long spikes of glowing scarlet flowers, almost too dazzling to look upon, 9s. per dozen in pots.

**LILIU** lancifolium album, the beautiful white Japan Lily, 9s. per dozen.

**Ditto** ditto rubrum ditto, spotted and suffused with crimson, 18s. per dozen.

**Ditto** colchicum, quite new, flowers of the shape and size of the foregoing, of a bright yellow, very choice, 7s. 6d. each.

Our Stamped Catalogues are now ready, and may be had on application.

All Orders of £2 and upwards are delivered Carriage Free to London and Hull, as well as to any Railway Station within 150 miles of the Nursery.

Post Office Orders to be made payable to YOUELL & CO., Royal Nursery, Great Yarmouth.

**HOLLYHOCKS**.—The following superb varieties, 12s. per doz., viz., Walden Gem, Magnum Bonum, Princess Royal, Comet, Fireball, Rosea rubra, Eclipse, Mulberry Superb, Commander-in-Chief, Formosa, Venosa rubra, Flower of the Day, &c., &c.

**CALYSTEGIA PUBESCENS** (Double Convolvulus), a very ornamental hardy climbing plant, producing abundantly, at the axils of the leaves, large rose-coloured flowers, excellent for covering trellis, 6s. per dozen.

**CLEMATIS TUBULOSA**, an excellent and beautiful hardy herbaceous plant from Mongolia, bearing spikes of flowers of form and colour of the single blue Hyacinth, 9s.

**NEW BELGIAN DAISIES**, in 50 finest varieties, 4s. per dozen.

**PANSIES** (our collection comprises all the known varieties of merit), strong plants, 6s. to 12s. per dozen.

## CARNATIONS AND PICOTEES

In strong and healthy plants, at the following prices:—  
25 pairs of superb varieties of Carnations and Picotees, £ s. d.  
by name ... .. 3 0 0  
12 do. ... do. ... do. ... 1 10 0  
12 do. ... very fine ... do. ... 0 15 0  
Fine mixed border do. do., per dozen pairs ... 0 0 0  
True old Glove Carnation ... .. 0 12 0

## HARDY SHRUBS.

**BERBERIS DARWINII**.—For particulars of this fine new hardy Shrub see the report of the meeting of the Horticultural Society in last week's paper. Small well-established plants, 18s. per dozen.

**ESCALONIA MACRANTHA**.—Everybody has admitted the extreme beauty of this fine hardy Shrub who has hitherto grown it, and last winter has definitively settled the question of its hardiness. See the reports from time to time in the *Gardeners' Chronicle*. Strong plants, 18s. per doz.; smaller, 9s.

**CEANOTHUS RIGIDUS**.—This, too, is perfectly hardy, a remarkably free bloomer, and one of the most ornamental plants for walls at this season of the year that we know. Strong plants, 15s. per dozen; smaller do., 9s. per dozen.

**C. DENTATUS**, another fine species, 1s. 6d. each.

**LARDIZABALA BITERNATA**.—A fine new hardy climber, with ample foliage, sent out by Messrs. Veitch. Good plants, 5s. each.

**QUERCUS FORDII**.—A highly ornamental evergreen Oak, with dark glossy foliage, of compact and symmetrical form. Strong plants in pots, 1½ to 2 feet, 18s. per dozen; 2s. 6d. each.

**FORSYTHIA VIRIDISSIMA**.—A choice early spring flowering plant from China, producing panicles of light yellow flowers, suitable for walls. Strong plants in pots, 12s. per dozen.

**JASMINUM NUDIFLORUM**.—A most lovely plant, producing on the open wall about February, a profusion of large bright yellow flowers. No garden should be without it, as it is a perfect gem. Strong plants, 1s. each; 9s. per dozen.

**WISTARIA SINENSIS**.—Fine strong plants, 1s. 6d. each.

**ROSE** "Paul's Prince Albert," similar to "La Reine" in form, but white, with a bluish centre. Very choice strong plants, 5s. each; smaller do., 3s. 6d. each.

**ROSE** "Paul's Prince Albert."—This fine Rose has been figured in the *Florist*, with the former; it is a Bourbon, of a fiery crimson. Nice grafted plants, 5s. each.

## GREENHOUSE PLANTS, ETC.

**CAMELLIAS**.—Good strong plants, of the finest varieties, 30s per dozen.

**ERICAS**.—Fine bushy blooming plants, of the handsomest and best spring flowering kinds in large 48s, 12s. per dozen; smaller plants in large 60s, bushy, many showing flower, including numerous varieties of Ventricea, Cavendishii, intermedia, metuliflora bicolor, mirabilis, aristata vittata, propendens, ovata, perspicua nana, densa, strussla, daphneformis, rubra calyx, &c., &c.

**VERONICA ANDERSONII**.—This handsome free flowering plant cannot be too highly recommended; it is of easy culture, highly ornamental, and remains long in flower. Strong plants, 1s. 6d. each; smaller do., 9d.

**BURCHELLIA CAPENSIS NANA**.—This plant, a great improvement on the old Burcheilia, is of very compact growth, and produces abundantly its heads of orange-scarlet flowers. Flowering plants, 12s. per dozen.

**SOLLIA DRUMMONDII**, a neat blue flowering creeper, suitable for trellises, 18s. per dozen.

**ACACIA ARMATA** and **LINEARIS**, fine plants, full of flower, 9s. per dozen.

**MANDEVILLA SUAVEOLENS**.—This fine creeper, of robust habit, produces numerous bell-shaped, highly fragrant flowers, of the purest white, in large clusters. Strong plants, 1s. 6d. each.

**PASSIFLORA RACEMOSA**, **C. ERULEA**, the hardest and best for a greenhouse, producing in abundance its pretty purple flowers. Strong plants, 1s. 6d. each.

**PASSIFLORA BELLOTTII**.—A fine peach-coloured new variety, 2s. each.

**MITRARIA COCCINEA**.—This fine new shrub produced its fine scarlet bladdery flowers freely in our nursery last season, on plants in 48s. We confidently recommend it as highly ornamental; it makes a beautiful specimen. Strong plants, in large 48s, 1s. 6d. each; a few fine specimens, 3s. 6d. to 5s. each.

**PHILADELPHUS MEXICANUS**.—A neat dwarf shrub, producing flowers as fragrant as the Orange, 12s. per dozen.

**APHELIXIS**, fine varieties, flowering plants, 1s. each.

**CRASSULA LOUIS NAPOLEON BUONAPARTE**, new deep scarlet variety. Strong, 1s. 6d. each.

**STATICE PUBERULA**.—The prettiest, perhaps, of the genus, producing its pretty blue and white flowers nearly through the season. Strong plants, 9s. per dozen.

Numerous species and varieties of Greenhouse Plants, such as Illicium, Chorozema, Eutaxia, Kennedyia, Pimelea, Beaufortia, Correa, Cantua, Tecoma, Perium, Epacris, &c., &c. Our selection, 12s. per dozen; 75s. per 100.

**FINE STOVE CLIMBERS**, viz., *Passiflora alata*, 1s. 6d. each; *P. Bonaparte*, 1s. 6d. each; *P. princeps*, 2s. 6d. each; *Ipomoea metabilis* and *Leardi*, 1s. 6d. each; *J. Lee's Hybrid*, 2s. 6d. each; *Stephanotis floribunda*, 2s. 6d. each; *Stigmaphyllon ciliare*, 1s. 6d. each, &c., &c.

**EPHELLUM TRUNCATUM BRIDGESII**, Rackerii, violacea, and Russelliana, 1s. 6d. each. These are most beautiful, flowering through the dull months of winter.

**GLOXINIAS**, of the newest and best kinds, 9s. per dozen.

## FUCHSIAS.

We possess a fine collection of these, and where the selection is left to us, we shall take care to supply choice varieties, including those novelties that we have thought worth purchasing; well established plants, at 9s. per dozen. At this price we propose to include those sent out this season for the first time, that all may possess young plants of.

## NEW AND CHOICE FLOWER SEEDS.

FREE BY POST.

**MESSRS. WHEELER AND SON** have selected out of their large collection of Flower Seeds the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower-garden. They have marked each variety with its Botanical and English name—Height—Time of Flowering—Colour of the Flower—Manner of Growing—Whether Erect or Trailing, &c.—the Time it should be sown, and with other valuable Hints as to its cultivation.

In selecting these varieties care has been taken to exclude all shy-bloomers, or such as have an insignificant appearance, so that the collections will comprise only those which are really showy and handsome, and will prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The GERMAN STOCKS, ASTERS, ZINNIAS, LARKSPURS, &c., are most superb. The collections will be sent free by post to any part of the Kingdom at the following prices:—20 Extra Fine Varieties, all distinct, 5s.; 50 ditto ditto, 10s. 6d.; 100 ditto ditto, 20s.

J. C. WHEELER & Son, 99, Northgate Street, Gloucester.

Nurserymen and Seedsmen to the Gloucestershire Agricultural Society.

## FLOWER SEEDS FREE BY POST.—

50 Packets of Annuals, 8s. 6d.; 25 do., 4s. 6d.; 12 do., 2s. 6d. 25 Packets of Superior Annuals, 5s. 6d.; 12 do., 3s. 25 Packets of Perennials and Biennials, 5s. 6d.; 12 do., 3s.

Also every variety of KITCHEN GARDEN SEEDS of the best quality. Apply to ROBERT WESTMACOTT, Florist and Seedsman, Stuart's Grove Nursery, Fulham Road, Chelsea.

## RHODODENDRON JASMINIFLORUM (HOOKER).

—This lovely Greenhouse Plant was exhibited at Chiswick in May, 1850, when it was awarded the "First Prize" for new Plants. It is figured in the *Botanical Magazine* for July, 1850, Tab. 4524, with the following remarks by Sir W. J. Hooker:—"Few Plants excited greater attention among the visitors most distinguished for taste and judgment, than the one here figured. Many excelled it in splendour; but the delicacy of form and colour of the flowers (white with a deep pink eye); and probably their resemblance to the favourite Jessamine (some compared them to the equally favourite Stephanotis), attracted general notice."

It is a native of Mount Ophir, Malacca, where it was found by Mr. Lobb, at an elevation of 5000 feet; it thrives well in the greenhouse, is of a neat dwarf habit, abundant bloomer and beautifully scented with the delicate fragrance of the Auricula.

This lovely Plant is of easy culture, and Messrs. VEITCH and SON can confidently recommend it as deserving the most extensive cultivation. Fine plants will be ready for delivery on and after the 16th of May next. Largest size plants, 63s.; Second size plants, 42s.; with the usual discount to the Trade.

Exeter, April 30.

## STRAWBERRY PLANTS.

In consequence of the severity of the past season in many parts, almost all of the above have perished, and old plants that may be still left will be so shaken they will not be worth the cultivation of another season. Those who wish to make good beds for the next year should put in young plants immediately, so as to give them the full 12 months' growth, in order that they may be well established and strong enough for fruiting in the following summer. Strong and healthy plants of the annexed varieties can be supplied:—Trollop's Victoria, 12s. per hundred; Cremona's Perpetual or Double Bearing Strawberry, 7s. 6d. ditto; Myatt's Eleanor, 5s. ditto; Early Profuse, 5s. ditto; Black Prince, 5s. ditto; Keens' Seedling (true), 5s.; Alice Maud, 5s. ditto; Hantibus (the true old fruiting variety), 5s. ditto; Myatt's Surprise, 7s. 6d. ditto; Britannia, 7s. 6d. ditto; hamper and package free. Also a fine stock of that compact and much admired flower MYOSOTIS VANGLEEKI, which is a very hardy variety and well adapted for beds or rockwork, always flowering through the summer months. Plants that will bloom well this season, 5s. per dozen, postage and package free.

New WHITE ROYAL VICTORIA BROCCOLI.—Packets of this variety can still be supplied as follows: ½ oz., 1s. 6d.; 1 oz., 2s. 6d.; or 1 oz. 4s., postage and package free.

A remittance must accompany every order to the amount in penny postage stamps or Post-office order, when the whole, or any part of the above (as the case may be), will be immediately forwarded.

EDWARD TILLY, Nurseryman, Seedsman and Florist, 14, Abbey Churchyard, Bath.

## NEW STRAWBERRY, INGRAM'S "PRINCE OF WALES."

proved at the Royal Gardens to be the best Strawberry for Early Forcing, and Fruiting in the Autumn from forced plants, producing beautiful Fruit through the months of September, October, and November. The Fruit is of the first size, fine shape, and of a beautiful glossy red, flesh light red, solid, very juicy, and of exquisite flavour, 10 days earlier than the British Queen in the open air. The Fruit will bear carriage, consequently will be a useful market variety. It is of free growth, compact habit, hardy, and very prolific. It was raised in 1849, by Mr. Ingram, of Frognore, and now very extensively cultivated, for forcing, out-door culture, and autumn fruiting. A Bankian Medal was awarded it at the meeting of the Horticultural Society, 5th of April.

JAMES SMALL begs to call the attention of Gardeners, Market Growers, and the Public generally, to the above new Strawberry, which he has propagated for sending out, in April, 1853. Strong well rooted Plants, 3s. per hundred; 1s. 15s. for 50; 1s. for 25, box included. All persons wishing to secure Plants for Potting next season will please send their orders at once, which will ensure the strongest Plants.

Plants may be had of the following Agents, in London:—NOTTING and SONS, Seedsmen, 46, Cheapside; and DAW and COMPANY, Seedsmen, Moorgate Street. A remittance required from unknown correspondents, or reference in London.

JAMES SMALL, Nurseryman, Colnbrook, Slough, Bucks.

## MEADOW AND PASTURE GRASS SEEDS.

**THOMAS GIBBS AND CO., SEEDSMEN TO THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND**, beg to state that the following Seeds are now finished cleaning, and are ready for sending out.

**GRASS SEEDS FOR LAYING DOWN LAND TO PERMANENT MEADOWS AND PASTURES**.—The kinds used in these mixtures will be selected and apportioned to suit the nature of the soil.

Grass Seeds, in mixtures, for Irrigation.  
Do. do. for Parks, &c.  
Do. do. for 2 and 3 years' lay.  
Do. do. for Garden Lawns, &c.  
Do. do. for Renovating Grass Land.

Italian Rye Grass—very fine sample, Improved Perennial Rye Grass, Annual or common do., and all kinds of Clovers, White Belgian and Red Altringham Carrots; Yellow Globe, long Red and other Mangold Wurzel; Carrots; very large Cattle Parsnip, Swedish Turnips of various sorts, Gibbs' green top Yellow Hybrid Turnip, White-fleshed Turnips of various sorts, Drumhead and other Cabbages, Lucerne, Broom, Furze, Sainfoin, and all kinds of Agricultural, Kitchen Garden, and other Seeds.

Corner of Half-moon Street, Piccadilly, London.



GRASS SEEDS, SEPARATE OR MIXED,  
CARRIAGE FREE.

**SUTTON AND SONS** having for many years paid special attention to the laying down Land to Permanent Pasture, are well acquainted with the various soils of most parts of the United Kingdom, and the Natural Grasses and Clovers suitable for each locality.

MIXTURES FOR LAYING DOWN LAND TO  
PERMANENT MEADOW OR PASTURE.

Mixed expressly to suit the soil, according to whether it is heavy, light, or medium. The sorts contained in these Mixtures are grown in different localities, and gathered separately by the hand, expressly for this purpose, by which means all noxious weeds are excluded. They consist of the most nutritive kinds of Fescues, Poas, Sweet Vernal, Perennial Clovers, Loliums, &c., and each sort being kept separate, they are subsequently mixed in such sorts and proportions as are most suitable to the soil to be laid down. These Seeds can now be supplied for 24s. to 30s. per Acre, according to the sorts which the soil may require. The quantity we usually supply is 2 Bushels of Light Seeds and 12 lbs. heavy Seeds per acre; but if coarser Grasses, which have larger Seeds, 3 Bushels or more would be necessary.

Also, **SUTTON'S RENOVATING MIXTURE OF CLOVERS** and **FINE GRASSES**, for improving old Pastures, price 1s. per lb. 8 to 12 lbs. being sufficient per acre.

There are now but few Counties in England wherein Pastures may not be seen which have been formed with our Mixtures of Grass Seeds; it may therefore appear superfluous that we should publish anything in the way of testimonials. We will, however, quote the following from among many other letters now before us:—

From P. Pacey, Esq., Pacey, February 11, 1850.

"I was particularly pleased with your Grass Seeds, which I employed for laying down fresh broke land. It became a close, fine sward by August."

From the Rev. A. Huxtable, Nov. 19th, 1852.

"Mr. Huxtable has the pleasure of acquainting Messrs. Sutton that their Grass Seeds of 1851 have turned out admirably."

Our present prices are from 24s. to 30s. per acre, as see above.

We have also a superior Stock of Turnip Seeds, Mangold Wurzel, Carrot, and other Agricultural Seeds, Catalogues of which will be forwarded on receipt of one penny stamp.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

Goods Delivered Carriage Free.

QUEEN'S GRAPERIES AND NURSERY GROUND,  
PARK STREET & BEDFORD STREET, MARINE PARADE, BRIGHTON.

**E. SPARY** begs respectfully to return thanks to the Nobility, Gentry, Visitors, and Inhabitants of Brighton and its vicinity for their liberal patronage received during the past three seasons, and, in soliciting a continuation of their esteemed favours, invites attention to his display of **PLANTS NOW IN BLOOM**; also, to his extensive stock of healthy Geraniums, Cinerarias, Mignonette, Stocks, &c., &c. A select collection of Vegetable and Flower Seeds, and first-rate Dahlias, including the select new ones of the year (a Catalogue can be had on application), with a variety of Bedding-out Plants, Evergreen and Flowering Shrubs, fine Vines in pots for the present season planting.

E. S. also begs to announce that his extensive Graperies are at this time interesting, particularly to those who feel an interest in that scientific branch of Horticulture.

Bouquets and Flowers out to order.

N.B. Fine Plants of Dahlias Absalom and John Davis.

## INDIAN AZALEAS AND CHRYSANTHEMUMS.

## AZALEAS.

A CHOICE COLLECTION of this beautiful tribe of plants is now flowering in the **EXETER NURSERY**, and **LUCOMBE, PINCE, AND CO.** having a very large stock of fine healthy plants, are enabled to offer them at low prices. Selections can be made from the under-mentioned leading sorts, at 30s. per dozen, and larger plants may be had also at 42s. per dozen.

Anora (Pince's).	Hebe.
Barclayana.	Iveryana.
Broughtonia.	Juliana.
Coronata. (Pince's).	Leucomegiste.
Duke of Devonshire.	Lateritia grandiflora.
Double Scarlet.	Murrayana.
Dilecta.	Modesta.
Exquisita.	Optima.
Extranea.	Perryana.
Fernosa.	Rufulens.
Filder's White.	Symmetry.
Glory of Sunninghill.	Vesta (Pince's new white).
Gledastanesi.	Variagata.

## CHRYSANTHEMUMS.

Selections from the following first-rate sorts at 8s. to 18s. per dozen, **STRONG PLANTS**.

Adonis.	Fortune.	Plus IX.
Anaxo.	Graziella.	Perfectum.
Anais.	Hendersonii.	President Decaisne.
Arianne.	Jonquille.	Quasimodo.
Alveoliflorum.	Jason.	Rosa mystica.
Aramis.	Justine Tessier.	Rose Pompon.
Arazon.	La Rosette.	Reine Marguerite.
Atroment.	Louis Pitou.	Roi de Lilput.
Autumn.	Lysins.	Solfaterra.
Beau-Toulousaine.	Modele.	Surprise.
Christine.	Miss Kate.	Sataniel.
Crownsmace.	Ninon.	Sacramento.
Colibri.	Nelly.	Tacite.
Daphne.	Nelly Leclercq.	Versailles Defiance.
Diane Blanche.	Nini.	Zephyr.
Duport de L'Eure.	Phobus.	
Eliza.		

## BEDDING PLANTS.

All established in single pots, exceedingly strong and healthy.

Anagallis compacta ... 4 to 6	Hellotrops in sorts ... 4 to 9
Bouvardia in variety ... 4 to 6	Jacobina, double purple ... 4 to 9
Calceolaria Sultan ... 6 to 12	Linnaria reticulata ... 12 to 18
— sulphurea splendens ... 6 to 12	Lobelia erinus maxima ... 4 to 9
— yellow daisy ... 4 to 9	— compacta ... 4 to 9
Chrysanthus Marshallii ... 6 to 12	— Vitoria ... 9 to 18
Dichroa spectabilis ... 6 to 15	— splendens ... 9 to 18
Dahlia in variety ... 6 to 24	Potamo in variety ... 4 to 12
— Toziana ... 12 to 24	Phlox in variety ... 9 to 12
Geranium Cere Unique ... 9 to 18	Phlox Drummondii ... 9 to 12
— Bicolorata scarlet ... 9 to 12	Mayit variegata ... 18
— heteroglossa ... 9 to 18	Salvia in variety ... 6 to 12
— Tom Thumb ... 9 to 18	Verbena, including all the newest and best varieties of 1852 ... 6 to 18
— General ... 9 to 18	
— Flower of the Day 12 to 18	
— Fendersonii 12 to 24	

A liberal allowance of plants will be sent, gratis, to compensate for the cost of carriage.

Exeter Nursery, Exeter, April 30.

## NEW GERANIUMS.

**BASS AND BROWN** have a few well-established Plants of the following now ready, at the reduced prices annexed:—

Each.—s. d.	Each.—s. d.
Hoyle's Zaria ... 10 6	Foster's Rachel ... 10 6
" Astrea ... 10 6	" Optimum ... 25 0
" Lagoma ... 10 6	" Eleanor ... 10 6
" Basilisk ... 7 6	" Queen of May ... 15 0
" Albiva ... 7 6	" National ... 15 0
" Kulla ... 7 6	Dobson's Vulcan ... 15 0
" Novelty ... 7 6	" Jupiter ... 10 6
" Butterfly ... 7 6	" Spot ... 10 6
" Porcia ... 10 6	" Harriet ... 10 6
Henderson's Extravaganza ... 5 6	

The following 18 choice new varieties of last season may be had in fine plants, for 60s., or any 12 for 45s.:—Ariadne, Ambassador, Archibald, Chieftain, Colonel of the Buffs, Commissioner, Elias, Exhibitor, Ganymede, Gem, Herald, Lavinia, Mochanna, Monteith, Painter Improved, Purple Standard, Rubens, Shyllock. Choice varieties 6s., 9s., 12s., and 21s. per dozen.

## FINE BEDDING PLANTS.

VERBENAS.	s. d.
50 varieties, very choice ...	18 0
12 varieties, very fine, 3s. 6d. and ...	7 6
25 varieties ditto, 7s. and ...	12 6

Purchaser's selection from any of the following, very superb, new, of last season, 12 varieties for 15s., or the set of 18 for 18s.:—

Adonis	Juliet
Alba Magna	Madame Malet
Biel	Madame Le Gros
Beauty Supreme	Mons. Jullien
Celine Malet	Orlando
Conquerant	Ormsby Beauty
Diana	Parfum Madeline
Duchess of Kent	Standard
Eliza Cook	Zenobia

PETUNIAS.—Choice selections, per dozen, 4s. to 9s.

FUCHSIAS.	s. d.
50 varieties, very choice ...	20 0
Choice selections, per dozen, 4s. to ...	9 0
Henderson's three distinct dwarf varieties—Daring, Pet, and Globosa Perfecta, each ...	2 0
12 choice varieties of last season, including the last named 15 ...	0 0

DAHLIAS.	s. d.
Choice varieties, per dozen, 5s. to ...	9 0
Choice fancy ditto, per dozen, 5s. to ...	9 0

CHRYSANTHEMUMS.	s. d.
Large flowering, fine, per dozen, 5s. and ...	7 6
14 best new, of 1852 ...	16 0
Lilliput varieties, fine, per dozen ...	7 6
12 best new, of 1852 ...	12 0

Anagallis, 3 best varieties ...	per dozen 4 0
Bouvardia flava ...	" 9 0
— splendens ...	" 6 0
Cypripedium ...	" 6 0
Cyanthus lobatus, 1s. 6d. ...	" 12 0
Lantana, 3 varieties distinct ...	" 6 0
Linum flavum ...	" 6 0
Lobelia erinus maxima and racemoides, the two best dwarf varieties ...	" 6 0
Mimulus, in 4 fine varieties ...	" 7 6
Phlox Drum. Thompsonia, extra rich crimson ...	" 9 0
Salvia azurea compacta, each ...	" 1 6
" amabile, beautiful, each ...	" 1 6
" fulgens, per dozen ...	" 6 0
Veronica Andersonii, fine plants, each, 1s. 6d. to ...	" 2 6
Zauschneria Californica, per dozen ...	" 6 0

## SELECT HARDY PLANTS.

See Advertisement of a quantity of select and popular Hardy Shrubs, Plants, &c., in the *Gardeners' Chronicle* of March 26 and April 2.

Herbaceous Plants (colours and heights in Catalogue).

	s. d.	s. d.
" 100 distinct and showy varieties ...	30 0	50 for 17 6
" 25 ditto ditto ...	10 6	12 for 6 0
" 100 superior and new varieties ...	50 0	50 for 30 0
" 25 ditto ditto ...	17 6	12 for 9 0
" 25 fine vars., best adapted for rockwork 12 ...	0 12	for 7 6
Hardy Flowering Shrubs, 20 varieties, 12s.; 12 varieties ...	7 6	
Dwarf Rock Cistus, new and beautiful, very distinct, rich and attractive, the collection of 24 varieties ...	18 0	
Seakale Roots, strong, 1s. 6d. per dozen; per 100 ...	10 0	
Grayson's Giant Asparagus, fine 3 years, p. 1000, 3s.; p. 100 ...	3 6	

**BASS & BROWN'S SEED AND PLANT LIST** for 1853, free, for three penny stamps. Also, the **AUTUMN CATALOGUE** for three penny stamps, which contains the Roses, Herbaceous Plants, Hollyhocks, and other select Hardy Plants and Shrubs, Fruits, &c.; also the Cinerarias, Azalea indica, &c.

Remittances requested from unknown Correspondents. Post Office Orders payable to STEPHEN BROWN, or the Firm.

In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods to the amount of 20s. and upwards, free to all the Stations in London; also free, as before, to all Stations on the London and Norwich Line, via Colchester.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## NEW AND SUPERB PANSIES.

Adela, Turner's	King, Jennings'
Black Diamond, Parker's	Loveliness, Fellowes'
Blanche, Turner's	Miss C. Bouverie, Archer's
Blue Perfection, Bynes'	Maid of Athens, Handasyde's
Commander-in-Chief, Yonell's	Pompey, Hales'
Duke of Perth, Handasyde's	Robert Burns, Campbell's
Diadem, Fellowes'	Rubens, Hooper's
Duke of Norfolk, Bell's	Sir Philip Sydney, Fellowes'
Euphemia, Turner's	Sir John Franklin, Hooper's
Fair Flora, Bynes'	Sir J. Paxton, J. Dickson & Sons'
The above set of 20 Superb and New Varieties, 10s.	

Androses, Yonell's	Jenny Lind, Thomson's
Adela, Turner's	Juventa, Hooper's
Blanche, Turner's	Loveliness, Fellowes'
Blue Perfection, Bynes'	Mr. Beck, Turner's
Caroline, Turner's	Mrs. Beck, Turner's
Duke of Norfolk, Bell's	Ophir, Widnall's
Duke of Perth, Handasyde's	Prince of Orange, Hooper's
Emma, Lane's	Pompey, Hales'
Fair Flora, Bynes'	Queen of England, Fellowes'
France Cybele, Greaves	Sir Philip Sydney, Fellowes'

The above set of 20 Superb Show varieties, 12s.

Parties having duplicates of the above, others will be substituted of equal merit.

Helen (Hunt), Lucy Neal (Seckler), Masterpiece (Hooper), Malvern (Hooper), Polyphonus (Thomson), Diadem (Hunt), Bouverie (Turner), Aurora (Holly, Mrs. H. Hamilton (Nasmyth), Venus (Bynes), and the best of the older show varieties, 4s. per doz.

A few packets of Pansy Seed, selected from the best varieties in cultivation, at 1s. and 2s. per packet. Auriculas, Alpines, Polyanthus, Primroses, Carnations, Pinks, &c.

Post-office orders to be made payable at Middleton, Lancashire; priced and descriptive Catalogue on application.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester.

## NEW SHRUBBY CALCEOLARIAS.

CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

**J. WEEKS AND CO., CHELSEA**, have now to offer a most splendid and superb Collection of **SEEDLING SHRUBBY CALCEOLARIAS**, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all Shrubby they are perpetually in flower; and from the great variety and brilliancy of their colours, they are invaluable for the Conservatory or bedding-out.

J. WEEKS & Co., King's Road, Chelsea, London.

## 'COVENT GARDEN MARKET.

**W. AND S. GAINES, HERBALISTS AND SEEDSMEN**, beg to offer to Gardeners, Farmers, and others, the following Seeds:—Scarlet runners, 16s. per bushel; White Globe Mangold Wurzel, 9d. per lb.; Yellow Globe do., 9d. per lb.; Long Red do., 9d. per lb.; White Belgian Carrot, 3d. per lb.; also Wholesale and Retail Dealers in Gold and Silver Fish.

Post Office orders payable to W. & S. GAINES, on the Strand Money Order Office.

## NEW AND SELECT DAHLIAS.

**THOMAS BARNES** begs to invite attention to his unrivalled collection of **DAHLIAS**, of which he has now ready upwards of 10,000 fine healthy Plants. The following five show varieties, 10s. 6d. each, or 40s. the set, viz., Mrs. F. Sutton (Barnes), Anna Boleyn (Walpole), Agnes (Edward), Edward Miellet (Miquet), Transcendent (Cailloux)—Fancy Panorama (Barnes), Comte Merode (Cailloux), 7s. 6d. or 12s. the two. The above are highly recommended.

All the leading sorts of last and previous years, 6s. to 24s. per dozen. Good border varieties, 40s. per 100. Remittances expected from unknown correspondents. Descriptive Catalogues on application.—Dane Croft Nurseries, Stowmarket.

## BEGONIA PRESTONIENSIS.

**LUCOMBE, PINCE, AND CO.** respectfully inform the Public that they will commence sending out healthy plants of this beautiful brilliant-coloured **BEGONIA**, on the 12th of May next, at 10s. 6d. each, with one over to the trade when three are ordered. It is easily cultivated, and freely produces a long-continued succession of rich orange-scarlet flowers, which are very fragrant.

The London Horticultural Society awarded it a Certificate of Merit, and L. P. & Co. beg leave to refer to Dr. Lindley's high eulogium of it in the *Gardeners' Chronicle* of April 16 p. 244: "A more desirable plant cannot be met with; it is, indeed, the leading novelty of the season, and will find a place in every good collection."

Specimens of B. p. prestoniensis are now flowering in the Exeter Nursery, to which L. P. & Co. invite attention.

N.B. For the convenience of purchasers at a distance, Plants can be sent in a tin case, per post, for the extra charge of 1s. Exeter Nursery, Exeter, April 30.

**SUPERB DOUBLE HOLLYHOCKS**.—This being the best time for planting out Hollyhocks to produce fine show flowers this year, **WILLIAM CHATER** can still supply good plants that will bloom well, of the best varieties, at 40s., 30s., or 20s. per dozen, consisting of Walden Gem, Charles Baron, Safrano, Joan of Arc, Pillar of Beauty, Elegans, Queen, Mulberry Superb, &c., with others of first-rate quality.

CHATER'S improved Globe Aster Seed, separate sorts, for 1s. 6d.; mixed, 1s. per packet.—Nursery, Safron Walden, April 23.

**WHITE BELGIAN CARROT**.—GOOD SEED of this valuable Root may still be obtained of **JOHN SUTTON** and **SONS**, Seed Growers, Reading, Berks, who will forward a priced List of Agricultural Seeds on application.

**HEXACENTRIS MYSORENSIS**.—This extraordinary and beautiful new Climber (requiring the temperature of a stove or warm greenhouse) is perfectly distinct in its character from anything yet introduced. It was exhibited at Chiswick, on Saturday, the 8th of May, 1852, and received the "First Prize" for New Plants, and was indeed, on that occasion, the admiration of all who saw it.

It is a most abundant bloomer, producing its long pendulous clusters of large golden yellow and deep crimson flowers in great abundance, continuing in perfection for several months. The habit of the Plant is excellent, with neat dark green foliage, and is of easy culture. It is altogether a Plant of such first-rate quality and beauty, that Messrs. VITCH and SON feel every confidence in highly recommending it.

Good established Plants will be ready for delivery on and after the 16th of May next, at 21s. each, with one over to the trade when three are ordered.—Exeter, April 30.

## The Gardeners' Chronicle.

SATURDAY, APRIL 30, 1853.

## MEETINGS FOR THE ENSUING WEEK.

MONDAY,	May	2	Horticultural (Anniversary) ... 1 P.M. Entomological ... 8 P.M. Chemical ... 8 P.M. British Architects (Anniversary) ... 8 P.M. Linnæan ... 8 P.M. Civil Engineers ... 8 P.M. Pathological ... 8 P.M. Society of Arts ... 8 P.M. Geological ... 8 P.M. National Horticultural ... 3 P.M. Zoological ... 3 P.M. Antiquarian ... 8 P.M. Botanical ... 8 P.M. Friday ... 6 Royal Institution ... 8 P.M. Saturday ... 7 Royal Botanic ... 8 P.M. Medical ... 8 P.M.

COUNTRY SHOWS FOR THE ENSUING MONTH.—16th: Huddersworth and Lozells.—17th: Cheltenham.—18th: Kilsno.—19th: Oxfordshire, Bath, and Ireland Royal Horticultural.—25th: Nottingham Tulip.—23th: Midland Horticultural (Large).—31st: Hammersmith Fanny.

The growers of **ORCHIDS** will be glad to learn that the Council of the Horticultural Society, at their meeting on Tuesday last, determined to give the following valuable prizes, over and above what is named in the notices already circulated. To those who, in the two Exhibitions in the MONTHS of **MAY AND JUNE**, shall have gained the highest amount of Medals, the following Medals are to be given in addition, viz:—

In the class of 20 species, the Large Gold, and the Gold Knightian Medal.

In the class of 10 species, the Gold Knightian, and the Gold Banksian Medal.

In the class of 6 species, the Gold Banksian, and the Silver-Gilt Medal.

This gives the two winners of the highest awards in May and June, in the greatest class, 16s. and 10s.;



and in the next, 10% and 7%; while even the youngest collectors are to be encouraged to perseverance, by the addition of prizes, for so small a number as six Orchids, of 7% and 4%.

This plan of rewarding continued success, ought to give additional interest to the Chiswick meetings; and if attended by the advantages expected from it, may possibly lead to the extension of the principle to other classes of productions.

How far we have overstated the case against the immediate managers of the Woods and Forests, our readers may judge, after they have read the following extract from a speech made the other day, by Mr. CAIRD, at a meeting of the electors of Wigtown. We give it as it is reported in the *Ayr Observer*:—

"But, besides lessening the cost of the debt, the country might gain by rendering the property it possesses more productive. The Crown Lands, originally the property of the Sovereign, are, as you are aware, at the commencement of each reign, transferred to the country in lieu of the civil list. The civil list of her Majesty is a little under 400,000*l.*, and the revenue derived from her property seldom reaches 200,000*l.*, so that the country is apt to think it has the worst of the bargain. How unjust this is to the sovereign I will try to show you, and in doing so I speak altogether from public documents which are laid before Parliament, and are open to public scrutiny and comment. The sum I have mentioned is nearly all realised from the crown rents, feu-duties, and land revenue. A return is given in the Blue Book, to which I refer, showing that from the whole of the Royal Forests in England, a distinct branch of this department, the annual surplus receipt for each of the three years ending March, 1851, was 1180*l.* This was realised from a territory of nearly 120,000 acres, a net rent of about 2*d.* an acre! (Laughter, and cries of hear.) You will naturally suppose that this must be some barren country in some inaccessible district; but in the course of my agricultural tours I have seen the most of it, and you will be surprised to learn, that, on the contrary, it is all situated in the best parts of England, traversed by railways, close to navigable rivers—a wilderness in the midst of civilisation, exactly as it was in the days of William the Conqueror, eight centuries ago, a scandal to the British Government in the middle of the nineteenth century. (Great cheering.) I have no hesitation in saying, as a practical agriculturist who have seen a considerable portion of this territory, that the quality of its soil, and advantages of climate and position, render it capable of vast improvement. Nor can there be a doubt that the royal property, if it had been managed with the same economy as that of private individuals, would at this moment yield a revenue exceeding that paid by the country to the Queen. (Hear, hear.) This department, I am happy to say, is now under the management of a gentleman who thoroughly appreciates the importance of his work, and is not likely to rest satisfied with the present state of things."

It will be observed that Mr. CAIRD has taken a much more general view of the subject than ourselves. We have carefully confined our examination of Parliamentary papers to the mismanagement of the Woods and Forests; Mr. CAIRD, on the contrary, has extended it to all the Crown domains. We have not contemplated a greater eventual gain by skilful administration than some 60,000*l.* or 70,000*l.* a year. Mr. CAIRD estimates the net realisable revenue at 200,000*l.* Surely this matter deserves the serious consideration of the Chancellor of the Exchequer when looking to his Ways and Means; and of the House of Commons when they are told that the timber duties, or the Hop duty, cannot be repealed for want of such a sum.

It was a general remark in many parts of England, in the early part of last autumn, that there was something very peculiar in the growth of the SWEDISH TURNIPS. It was at first suspected, from the unusual elongation of the neck, that impure seed had been purchased, or old seed mixed with Rape; but the affection was too general to allow the first notion to be tenable for any considerable time, and the latter was contradicted by ocular evidence in those plants which survived the extensive disease to which the crops were subject. The matter has been recalled to our notice by the communication of a quantity of specimens of transplanted Swedes, every one of which exhibits a far longer neck than is usual in plants which, like those before us, have made little progress towards flowering. In a crop of 75 acres, 70 acres are most seriously damaged, almost every plant decaying just above the junction of the stem with the root. A careful examination of the specimens transmitted, for we have had no opportunity of inspecting the crop, seems to indicate two causes of decay—one consisting in a constitutional or accidental disposition to disease, the other in the

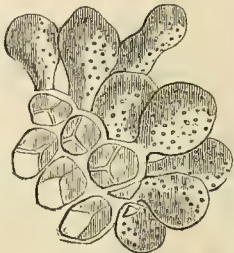
presence of the larvæ of insects. In most cases we have found larvæ in the decayed tissue; and in those instances where the corrupted spots are seated at some distance from the root, we have been able to trace the evil to a little orifice seated in the centre of the scars of the fallen leaves; but the lower patches are not so evidently of insect origin, and though, in one or two instances, we have found grubs in their centre, we are inclined to think that they are accidentally present, from the fact that, in almost every case, there is a cavity in the root, evidently of some standing, at a greater or less distance below the diseased tissue. This cavity is sometimes of considerable size, and seems to have arisen from a rupture of the cellular tissue, the ligneous fascicles being left free, and often considerably enlarged, and almost always stained of a dark brown or black, from infiltration of the ulmin or allied substances into which the diseased tissues have been converted by the process of decay. We have observed nothing peculiar about the diseased tissues themselves, but new cellular tissue has been thrown out from the walls of the cavities, forming little spongy bodies, the ultimate cells of which are globular, or slightly elongated, and finely granulated, so as to call to mind the beautiful cellular tissue which occurs where the carpels of Apples are fissured, a structure to which the attention of our readers was called some months since. In a few instances only, decay has extended laterally from the vascular bundles where they are adnate with the walls of the cavity. Notwithstanding the diseased state of the necks, which sooner or later destroys the plant entirely, the roots are remarkably sound beneath the cavity, while the upper part of the stem is perfectly healthy, and fails only in consequence of the malady cutting off all communication with the root below.

If we are right in our supposition, that the insect is not the only cause of evil, we have before us merely one of those numerous instances which tend to show that there are limits within which high cultivation must be confined, if we are to guard against disease; for it must always be borne in mind that the objects of cultivation are for the most part unnaturally developed in some particular organ or constituent, and that consequently such productions are peculiarly liable to decay wherever nutriment is supplied in too anomalous proportions for their exigencies. We are far from thinking that we have attained the utmost degree of perfection of which cultivation is capable, but we cannot too frequently remind our readers of the absolute necessity in the present condition of science of acquiring some sound notions of the constitution of the productions which occupy their thoughts, both as regards health and disease. It is quite clear that disease is far more prevalent in the vegetable world, at least as regards objects of cultivation, than it used to be; and it is to the intelligent cultivator alone that we can look for such remedies as may tend to prevent further deterioration, which is in some cases so inveterate as almost to lead us to despair of any ultimate amendment. *M. J. B.*

#### ERYTHRINA LAURIFOLIA.

This noble plant has long been common in collections, and where it is found in the form of a large, well-bloomed specimen, it is one of the most striking plants to be met with. It is easily cultivated, and nearly hardy; nevertheless many amateurs, and even some gardeners, find considerable difficulty in managing it well. The following hints will, it is hoped, enable any person possessing the convenience of a cold frame, to produce handsome specimens of it.

It is readily increased by means of cuttings, for which rather firm weakly shoots, slipped off with a heel, are best; they should be planted in well drained pots, filled with light, sandy soil, and placed in a rather close, moist, warm pit or frame, where they will soon emit roots, and become well established. The cuttings should be put in as early in the season as they can be obtained, afforded pot room as may be necessary, and be kept growing freely during the summer. When the wood is properly ripened in autumn the shoots may be cut down to within a few eyes of the base, and the plants placed in any dry cool situation for the winter; little or no water need be given to the soil at this season, and they should not be started into growth in spring by being placed in a warm house, except when it is desired to have them bloom early in summer. To grow them successfully in this way, a moist atmosphere, with a careful supply of water at the root, a light airy situation near the glass, and care to keep red spider under, are all essential points to attend to. When it is not wished to



Tissue from the Walls of the Cavities in diseased Turnips.

have the plants in flower early in the season, they should be kept cool and dry, till about the middle of April, when they may be placed upon the greenhouse stage, and liberally supplied with water, to bring the soil into a moist, healthy state, when the plants will soon start into growth. Large, old specimens, unless in tubs, will, however, be the better for being turned out of their pots, the balls reduced, clearing away as much of the exhausted soil as can be done without much injury to the roots, re-potting with good, fresh, rich soil, and giving plenty of pot-room. As the shoots advance in length, which they will do rapidly in the temperature of the greenhouse, carefully supply the plants with water; by no means allow the soil to become dry. The shoots should also be tied out, or pegged down, and such as are not wanted should be removed, leaving from 12 to 20, which will be as many as the plant can support. Towards the end of May or the beginning of June, the plants may be removed to a warm sheltered corner out of doors, where they will grow freely and produce flower-spikes, when they may be removed to the most desirable situation for the blooming season; and it is nearly wholly immaterial whether this is in the flower-house or a sheltered spot out of doors. It is of the greatest consequence, however, to keep the soil regularly moist, and to avoid anything which might occasion a check to the plants; for if this happens after they begin to show flower, it would probably all but ruin them for the season. I have seen very promising specimens, through being neglected with water, come to very little as regarded the display of blossom. Large plants will be greatly benefited by a liberal watering with clear manure water, which may be given alternately with clear soft water, especially after they begin to show flower. If properly managed they will remain some two months in full beauty. When their flowering is over for the season, water them sparingly, and if they are exposed to much rain, it will be advisable to remove them under glass, as the better the wood is ripened the stronger they will break the following season. The finest specimens of this Coral tree which I have ever seen, were growing in the open border, planted in a deep light rich soil, and, of course, thoroughly drained. Grown in this way they require some protection in winter, for if the crown were exposed to but a moderate degree of frost it would be killed. Shelter is, however, easily afforded by thatching the plant with a few inches of straw, sufficient to exclude frost and wet. Probably the better way, however, is to have a small frame and sash to put over them (after cutting back the shoots), surrounding the crowns with old tan, charcoal dust, or any substance to protect them from frost. The glass should be covered over with a double mat during winter, to exclude the sun's rays as well as frost, for the object should be to keep the plant at rest till towards the middle of April, when the covering may be removed from the glass, and also from the plant, but the frame should be allowed to remain till all danger of frost is past; the sash should be entirely removed, however, during bright warm days. Where a frame cannot be conveniently afforded, or would be objectionable from its appearance, a hand-glass may be substituted, which, with a little management, will answer perfectly. As to soil, any rich light material will suit perfectly for pot culture. Take light sandy turfy loam and leaf soil, in the proportion of three of the former to one of the latter, and add a quantity of sharp sand to keep the mass open after the fibre decays; and, if at hand, add a portion of thoroughly decayed cow-dung, which should be well intermixed with the loam, &c. *Alpha.*

#### THE HARTZ FORESTS.

THE forests are not only an important element of the picturesque, clothing the greater number of the mountains to their summit, but they may be said to be the very foundation of the prosperity of the poor inhabitants of the Hartz, whose subsistence more or less immediately depends on the mines and smelting houses, for which this district is so famous. These works are supplied almost exclusively by the neighbouring forests with the wood necessary for building and fuel; were the supply of wood lessened or cut off, or even rendered more expensive, these establishments would speedily come to an end, and the inhabitants of a densely populated district be inevitably thrown out of employment. Few of the mines are sufficiently remunerative to allow of the consumption, as fuel, of coal, which must be brought from a considerable distance and at some expense, and indeed some of the largest of them are worked solely for the generous purpose of affording employment to a large population entirely dependent on them. Wood is also the chief fuel of the peasantry. In such circumstances, it evidently becomes an important matter to preserve and uprear the old and new forests of such a district; and, I believe, in no part of the world are forests tended with such anxious care, both by Government and private parties, as in Hartz. From so early a period as the 16th century, the forest regulations (Forstordnungen) of the Hartz have been of such acknowledged practical value that they have, with justice, served as models, by which the management of all the forests throughout Germany has subsequently been regulated. Over the administration of forest affairs there presides a Court of Directors, under whom acts a very extensive and complete staff of officers, from the "Commissioner of Woods and Forests" down to the humble forester or woodman. The Court of Administration immediately superintends the duties of the forest commissioners (Ober-förster); subject to the latter are the



district foresters or superintendents (Revier-forster), who are immediately charged with the protection of the woods, and who are assisted by a numerous staff of forest overseers, huntsmen, wood-watchers, &c. Last, but certainly not least of all the official staff, are the woodmen, probably about 1500 in number, a very peculiar race in the Hartz, living to a great degree quite isolated from the world, shut up in their dense Pine forests, having laws and customs of their own. Once a year the whole staff attends a general meeting of the court, which investigates the industrial results of the whole year, regulates the supply of wood and charcoal for the ensuing year, and examines into all important business matters connected with the forests or their produce. This court acts also in conjunction with the court of direction of mines, there being evidently between the directors of mines and forests a community of interest. The whole forests of the district were measured and estimated in 1820, and this process takes place every 30 years. The superficial extent of the Hartz forests is at present upwards of 451,000 acres; they were formerly much more extensive, but have been gradually diminished by storms, dry-rot, and above all, by mismanagement, an unaccountable lavishness in the supply of wood to the peasantry and to the mines and forges having tended to produce a marked disproportion between the production and the demand. In 1524 and 1554, among other privileges and immunities granted to the Hartz and its inhabitants, the mines, and works therewith connected, were allowed (gratuitously!) the wood necessary for building and burning, and the inhabitants, on payment of a nominal forest-tax, were permitted to cut down according to their wants. The result of such a generous expenditure of timber was, as might have been foreseen, such an amount of its consumption, that it speedily became evident to every one that an opposite line of conduct, or preservative measures, were urgently called for. The iron-forges alone consume (annually!) 12,083,810 cubic feet of coal, and the various mines and smelting works upwards of 29,500,000 cubic feet of wood.

We may shortly notice the circumstances which tend to the destruction of the Hartz forests.

1. *Mismanagement* (lavish expenditure of wood, mal-culture, &c.).—This cause, which has been a fertile source of mischief in times by-gone, is becoming less and less frequent every day, from the better ideas instilled into the Government on matters of political and social economy.

2. *Storms*.—The exceedingly violent hurricanes and snow storms so prevalent in the Hartz, are very hurtful, especially to the Pines, which frequently grow in loose, rocky, gravelly, or sandy soils, to which their roots do not adhere very firmly. After every severe storm, we can see thousands of fine tall Pines torn up by the roots, scattered about in wild confusion. We probably do not overstate when we say that not less than 25,000 Pines are annually destroyed in the Upper Hartz by the wind alone. The great storms of 1800 and 1801 tore up, in the neighbourhood of Elbingenode alone, 315,106 trees; thus at once destroying the produce of 3000 acres of forest land. Accumulations of snow and ice, floods and torrents, lightning, &c., also contribute to thin the forests. Avalanches are particularly mischievous on the mountains and in the mountain valleys—often clearing away whole pieces of a forest or thinning patches in the thickest parts of it.

3. *Wild animals* also destroy large numbers of trees, by biting off the bark or young twigs—peeling away the juicy bark by blows with their horns, or tearing up the young plants. The wild doves and finches, in particular, commit great depredations—countless numbers of them attacking the pine-seed or chopping up the germinating plants; so that plantations of Pines in the young state must be watched night and day against these feathered robbers. The most deadly foes of the forests, however, are unquestionably various species of beetle, especially species of *Bostriehus* (e. g. *B. octodentatus*, *B. laricis*, *B. cnicographus*, *B. villosus*, *B. hylesinus*, *B. fraxini*), which burrow under the bark of the older trees and there deposit their eggs. Great care is taken by the woodmen to kill these animals before they lay their eggs; but notwithstanding all their efforts, many thousand trees annually fall victims to this scourge.

4. *Dry-rot*, which at one period, during last century, caused the destruction of 15,196 acres of forest land in the kingdom of Hanover alone.

As to the constituents or elements of the Hartz forests, they are divided into "Hochwald," "Mittelwald," and "Niederwald," according to their position on the mountain slopes. The forest is most extensive and luxuriant on the southern and eastern mountain slopes and valleys, and becomes more scanty the more we approach the north and west, and the higher we ascend. While, on the gentle slopes of the east and south borders of the range, the forest (consisting chiefly of Oak, Birch, Beech, and Fir) grows luxuriantly at an elevation of 1400 feet, on the north and west these trees are displaced at 1300 feet by the dismal Pine. The red Beech (*Fagus sylvatica*) is, especially in the Unterharz, a magnificent tall tree, probably next in point of importance to the Pine—constituting about one-third of the forests of the lower Hartz. *Carpinus Betulus*, the Hornbeam, besides being common in the woods, is greatly cultivated and thrives exceedingly well. The different species of *Quercus* are common in all the lower forests. The Maple (*Acer pseudo-platanus*), and Ash (species of *Fraxinus*), spring up abundantly in the Beech woods, and are also planted to a considerable extent on low bare

knolls. The Elm (*Ulmus campestris*) occurs comparatively sparingly in the lower forests. The Birch (*Betula alba*) is common in the "Mittelwald" as underwood—ascending the hills to an elevation of 2680 feet. On sheltered and sunny banks, about the base of the hills, we find here and there the Linden (*Tilia Europea*), wild Chestnut (*Jesulus hippocastanum*), Aspen (*Populus tremula*), and black Poplar (*Populus nigra*) on flat river banks and marshy plains, and also occurring in alpine regions at a height of 2650 feet, the Alder (*Betula alnus*) and the knotty Willow (*Salix caprea*) flourish as underwood. A number of experiments, conducted in the neighbourhood of Blankenburg, during the years 1730-50, show that the Hartz is well suited for the growth of a number of foreign trees (e. g. American Oak, Cherry, tame Chestnut, white Fir, northern Alder, &c.). On the hill slopes, here and there, may be noticed a few groups of the Larch (*Pinus larix*), which was first introduced into the Hartz in 1731. The Scotch Fir (*Pinus sylvestris*) is sparingly interspersed among the *Pinus abies* and *P. larix*. The Yew (*Taxus baccata*) grows, as a hermit, on a few barren rugged rocks, and the Juniper (*Juniperus communis*) on dry and exposed sandy hillocks. The Hazel (*Corylus avellana*) formerly thrived luxuriantly, but has lately disappeared from the forests on account of mismanagement. In the woods *Berberis vulgaris*, *Rosa canina*, and *villosa*, *Prunus spinosa*, and a number of our ordinary herbaceous plants grow plentifully. *Rubus Idæus* and *fruticosus* occur more sparingly on old walls and rocks. In the forests of the lower Hartz, the gloomy Pine (*Pinus abies*), is common; but it reigns exclusively—attaining a great height in those of the upper Hartz, and the value of its timber in this district is such, that in many places it would be difficult to say whether the Pine woods on the surface or the rich ores in the bowels of a mountain were the most valuable. The Pine did not formerly cover such an extent of the Hartz mountains as it now does, but has gradually replaced and displaced the Oak, Beech, Birch, &c., which have been destroyed by accident or mismanagement, and which ascended to a much greater height than at present, on the hills. The Hartz Pines are exceedingly handsome trees, rising to a great height (sometimes 120 feet), and thus making beautiful masts: the handsomest Pines I ever saw were in the valley of the Oker, near Goslar. This tree is daily extending itself in the Hartz, flourishing easily where no other forest tree could attempt to grow. It ascends the mountains to the height of 2800 feet, runs down into the lowland valleys—springs up on the thinnest strata of sandy soil—and even clings firmly to the clefts and fissures of bare rocks. Unfortunately its development comparatively seldom attains a high degree of perfection—the loose hold taken by its slender roots of the porous soils or rocks rendering it extremely liable to suffer from the winds, here so prevalent. *Dr. Lindsay in the Proceedings of the Botanical Society of Edinburgh.*

### Home Correspondence.

*Clothes*.—We have been desirous, for some time past, to meet the wishes of the public in regard to the supplying of "clothes;" and Messrs. Hartley are equally anxious to afford every facility. Two difficulties, however, present themselves; first, the cost of package, next the expense of carriage. The "clothes" being of one large size only (say 16 or 18 inches in diameter), it becomes necessary to have a very large package, which, in addition to the carriage, makes it more costly than the contents. We would suggest, that various sizes be nested within each other. If this would answer the requirements of the public, we could pack a greater number in a case, and the expense of transmission would be considerably reduced. We shall be happy to receive any suggestion from your correspondents, and we will do all we can, in conjunction with the manufacturer, to meet their wishes. *James Phillips & Co., 116, Bishopsgate Street Without.*

*Softening the Dried Skins of Birds*.—At p. 261 are some directions from Mr. Waterton for relaxing and stuffing the dried skins of birds. Every true lover of Nature must value anything from the pen of this distinguished naturalist and most accurate observer, but I wish to ask a question or two respecting the plan proposed by him. Is there not some mistake about the time that the skins are to remain in the water? as I think putrefaction would take place in four or five days, especially in warm weather. Secondly; would not the downy plumage of owls, &c., and the brilliant plumage of the humming-birds be injured by immersion in water? With respect to the latter, I have found the method pursued by my late friend Mr. George Lodges to answer admirably. His plan was to form a stand by fixing an upright wire in a block of lead about 3 inches square and an inch thick; to this wire several hooks, with their points upwards, were attached. This stand was placed in a shallow pan, nearly filled with water, and the skins, previously emptied of their contents, placed on the hooks, the beaks being upwards; a large flower-pot, with the hole at the bottom closely corked, was then placed over the stand and skins, and the whole put in a cellar or other place where the temperature did not vary much. In about 24 hours the skins were examined, and any remaining muscles cut away, and then placed on the hooks. In about three days they were perfectly relaxed, without the slightest injury to the feathers, and could then be mounted in the same manner as fresh skins. *Henry Doubleday, Epping.*

*Irish Asparagus*.—I have had a case of out-of-door Asparagus sent me from Limerick, by Mr. John

Abell, and as it is the first ever sent from Ireland to Covent Garden, I consider it of the greatest importance to that country, as well as to this; for it is a well-known fact, that we shall not have a single head of "natural" Asparagus round London this month. Mr. Abell's consignment was grown upon the plan laid down for field culture in my pamphlet, having only three or four inches of mould over the crowns, instead of 12 inches, as the London growers have. This immense covering not only weakens the plant, but deceives the public, as three-fourths of the stem passes into the waste-butt. I sold this Irish Asparagus to Mr. Lewis Solomon for 5s. per 100. *James Cuthill, Camberwell, April 25.*

*Stocking Rivers with Fish*.—I fear some of your correspondents who wish to breed trout on the new plan will be misled by a paragraph which appeared in your Paper of the 9th inst. In that paragraph they are recommended to apply to a tackle-maker at Clitheroe, who will probably be able to supply them with spawn. I fear they will be disappointed. I dare say no one in the kingdom has had more experience in the artificial breeding of trout and salmon than Ramsbottom has, nor is there a more honest straightforward fellow in all *Fishingdon*, or a better salmon-fisher, and fly and rod maker than he is; but he has no means of obtaining this roe without the permission of the proprietors of the brooks and rivers where the trout and salmon are to be met with, and this permission is not easily obtained, except by the personal friends of these proprietors, and Ramsbottom is not a man who will do such a thing in an underhand way; only get the permission for him and he will breed them by thousands and tens of thousands, provided he can have a nice stream (or even a good spring) in which they can be hatched. *T. G. Clitheroe.*

*Greasy Wool Round Vine Stems*.—My Vines are planted outside the house: the border is shallow, well drained, and protected with a tarpaulin in cold weather and at nights. I do not force early, but allow them to break naturally in the end of March, and then I apply heat, &c., to forward them. Having a Muscat and Grizzly Frontignan, a good heat is necessary. I desired the man who looks after the garden, under me (for I keep no regular well-educated gardener), to cover the stems of the Vines outside with wool, and wrap some old carpet round them, and also to put some wool round the stems where they enter the house, and for a foot or two inside where the draught strikes upon them when the front windows are open; he has used wool as it comes from the sheep, without cleaning of any kind, and it handles to me extremely greasy. I certainly should have chosen wool that had been well washed and cleansed, but the thing is never done. Do you think that very greasy oil wool used in this way can hurt Vines? [No.] Mine are so flourishing and have borne so very well, and such famous berries (Black Hamburgs, 3 inches in circumference), that I should be grieved to injure them, especially in a way that can at once be so easily remedied. The wool in question is such as has been cut off lately, and is thoroughly dirty and greasy. *R. Alcombe, Minchhead.*

*Well Shrimp*.—Since my first communication, the well from which the shrimps were taken, has been opened and cleaned out. Unfortunately it is again closed, so that I have no means of ascertaining the temperature of the water. The depth of the well is 16 or 17 feet; the quantity of water, when the covering of the well was removed, was found to be about 14 feet, and the deposit of mud at the bottom some 2 or 3 feet. The suction pipe rested on the mud. Since the well has been cleaned, the water has been pumped out of it several times. The animals still exist in the water, though not perhaps to so great an extent. There is also, I am informed, another well on the same premises where the creatures are found; but I do not hear that they are met with in any other wells in the immediate neighbourhood. *B. W. G.*

*The Effects of the Winter at Plymouth*.—The following are the results of an inspection of my arboretum at Plymouth during the past week. I must premise, however, that, in quality, much of my soil is a stiff clay, and its aspect is decidedly towards the cold—the north-east, and it is pretty much exposed to the keen blasts from that quarter. My larger nursery and arboretum are at Vinstone, about two miles from Plymouth, on the Tavistock Road. The arboretum itself is laid out agreeably to the natural arrangement of plants, and in the following notices of the effects of the weather, and the condition of the plants, I have generally spoken of them in families, comparing, when necessary, one branch of a family with another branch:—Young shoots of Moutans are much injured; *Magnolia exoniensis* has suffered more from the weather during the last season than it had for many years previously; my tree is fully 20 feet high; *Illicium religiosum* is not much injured; *Berberis nepalensis*, *macrophylla*, and *Wallichiana*, are not at all affected; the Berberry species from the Horticultural Gardens, marked No. 2, Dr. Royle, is not injured, and the same is the case with the beautiful *Fortuni*; *B. tenuifolia* is completely killed, while *trifoliata* is only partially injured; the *Cistus* family has suffered more than for many years; but the species from Malaga are uninjured; *Pittosporum Mayii* and *Tobira* are not hurt in the least; while *P. undulatum* has perished, and *P. glabratum* is much injured. The pretty *Hypericum nepalense* has escaped unscathed; *Audibertia* from California has died; *Coriaria nepalensis* has lost some leaves, but it is not seriously affected; *Euonymus fimbriatus* has withstood the effects of the weather, and looks admirably,



while *Deeringia japonica* has been killed; *Ilex latifolia* and *I. tarago* are not injured, but *I. Magellanica* and *I. ligustrifolia* have been much hurt; *I. Cunninghamii* looks healthy, and is hardy; *Rhamnus alaternus fol. argenteis* and *aureis* have been nearly killed, while the fine evergreen, *R. hispanica*, and the little *R. virgatus* remain unhurt; *Azara dentata* is a fine evergreen, and hardy; the *Rhus*, from the north of India, is very handsome, and quite hardy; the *Dorycnium sericeum* is much injured; the *Coronilla glauca* and *C. variegata* have both been killed; *Spiraea lanceolata*, which in ordinary seasons remains quite green, has lost its foliage, but the plant is uninjured; *Spiraea prunifolia flore-pleno* is not affected, and is now just coming into bloom; the *Spiraea* species from the Horticultural Society's Gardens are healthy and hardy, coming now into full leaf; *Rubus spectabilis*, and the sweet little *Crataegus crenulata*, are much injured, while the *C. pyracantha* (white-fruited) will make a splendid evergreen; *C. Mexicana* is stripped of its leaves, but it is full of large yellow fruit; *Stranvaesia glauca*, a splendid evergreen, is not in the least injured; the beautiful new evergreen, *Photinia dentata*, is not at all hurt, and it is now making young shoots several inches long. This, I think, will prove a very valuable evergreen. The *P. serrulata* is not so hardy; *Eriobotrya* (*Mespilus*) *japonica* is not injured; it is a splendid evergreen. *Pyrus versicolor* in most seasons is evergreen, but this year it has lost all its foliage, while the *Pyrus* species from China has not suffered; the *Calycanthus præcox*, major, and minor, are not injured; while *C. macrophyllus* is killed down to the ground. All the varieties of the *Deutzia* remain uninjured; and *Forsythia viridissima* is coming into bloom; while *Decumaria prostrata* has lost all its leaves, and is I fear dead; *Escallonia montevidensis* is much injured; as are also *E. macrantha*, *E. speciosa*, *E. grandiflora*, and *E. rubra*; I think however that the plants will recover. *Hydrangea japonica* has lost its leaves, but it is not seriously affected; *H. involucrata*, *H. altissima*, *H. quercifolia* are not injured; the handsome small evergreen, *Bupleurum fruticosum*, is not at all hurt; while *Aralia crassifolia*, *A. trifoliata*, and *A. pinnata* are severely injured; these plants have now stood out for several years, and are 8 feet high; *A. japonica* is not injured; the beautiful tall evergreen, *Benthamia fragifera*, is not at all harmed; in some parts of Cornwall it grows 40 feet in height. The evergreen, *Viburnum japonicum*, is uninjured; the species of *Caprifolium* from China is hardy, and now in full bloom—the flowers are deliciously fragrant; *Lonicera glauca* and *balearica* are very much injured; *Leycesteria formosa* is not hurt, while the Australian *Ozothamnus thyrsoides* is much injured. This plant is nearly 10 feet high, and is covered all the summer with pretty small white flowers, which are as sweetly scented as new-made hay. The charming *Erica arborea* and *E. australis* are not injured; nor the splendid *Andromeda formosa*. This rare plant produces leaves six times as large as those of the *Andromeda floribunda*. *Arbutus procera* is much injured, but it is recovering, and bursting into bloom; *Arctostaphylos tomentosa* is completely killed, and *Pernettya pilosa* is much injured, while *P. speciosa* remains unhurt. Several of the Nepal *Rhododendrons* have sustained considerable injury, while all the Sikkim species are unhurt. This class includes about twenty varieties. Of hybrid *Rhododendrons* raised by Mr. Cunningham, of Edinburgh, I have now in full bloom *R. vernum* and Sir Walter Scott. The Nepal *Azaleas* are not much injured, but the pretty little *Ardisia japonica* is much hurt. The Olive from Nikita is not in the least injured. The splendid *Myrsine undulata* has sustained far more injury than for many winters past; this plant will form a beautiful evergreen, with light leaves, for a sheltered situation; it is now 8 feet high. The *Fontanesia phyllæroides* is very much injured, but *Ligustrum japonicum* and *L. sempervirens* are both hardy and beautiful evergreens; *L. laricifolium* is nearly dead; *Fraxinus mexicana*, which generally maintains its green throughout the season, has now died back 2 or 3 feet; the splendid *Jasminum Wallichianum* and the species from the north of India and *J. nudiflorum* are perfectly hardy; *Buddlea Lindleyana* is much injured; *B. salicifolia* has been killed; so also *Veronica Andersonii*, *Lindleyana*, and *salicifolia* are much hurt. The pretty dwarf evergreen *Bridgesia stricta* is unhurt; all the *Phlomis* family are more or less injured, most of them far more than they have been for many years past; *Salvia candelabrum* is completely destroyed; *Laurus glandulosa*, a beautiful evergreen, is greatly injured, while *L. glauca* is killed; the lovely evergreen *Fabiana imbricata* is unhurt; most of the *Daphne* tribe are injured, but *D. Fortunii* is breaking out into bloom, and proves perfectly hardy; *Elaeagnus macrophylla* is much injured, and will not, I fear, stand our variable climate and cold winters; *E. japonica*, richly clothed in amber tinged leaves, is growing fast, and does not appear to have been affected by the cold; this plant will prove a valuable one for covering high walls. The charming little *Buxus rosmarinifolia* shows no marks of injury from the cold; I fear that *Prunus fragrans* is completely killed; the *Ulmus sinensis*, the evergreen Elm, has lost its leaves, but it is not injured; *Quercus virens* is much hurt, while *Quercus lanata*, *lanceolata*, and the beautiful *Q. glabra* remain uninjured. Several of the Mexican *Quercuses* are much cut up, but not killed; the beautiful *Garrya elliptica* is not injured, while *G. macrophylla* and *M. Padiana* are very much injured;

the splendid evergreen *Myrica californica* has stood uninjured; *Taxus adpressa*, *T. elegantissima* and many others are unharmed; while *T. marginata* is killed. Those noble specimens of the Pine family, *Pinus Montezumae* and *macrophylla*, are not in the least injured, whilst *P. Hartwegii* is dead; the foliage of *Pinus apulcensis* is partially affected; and many of the Mexican Pines have also suffered; *Abies Brunoniiana* stands without injury, as well as the *Araucaria Braziliensis* and *A. Cunninghamii*; *Cupressus Lambertiana* is not injured. This is a magnificent specimen; it is about 8 years' growth, and is 20 feet high, and 15 across, and the foliage, like a series of bright green feathers, extends from the very ground to the top. This tree is admired by all who see it. *C. Goveniana*, *macrophylla*, and *funbris* are not in the least injured; while the *C. lusitana* is nearly dead; the beautiful *Thuja Doniana*, *intermedia*, and *pendula* are not injured, after standing out for many winters. *Alex. Pontey*.

**Cheap Seeds.**—Having seen *Salpiglossis coccinea* advertised by two different firms, for very unequal prices, I was induced to purchase a packet of each (one at 2s. 6d., the other at 1s.), in order to ascertain if they were the same variety; but, unfortunately, I have not had the chance, for not a single seed has vegetated of the 1s. packet, while the other at 2s. 6d. is ready for potting off. I should have stated before, that both packets were sown on the same day, and both were subjected to the same treatment. *A Gardener*.

**Aphis-brush.**—The accompanying woodcut represents an instrument which I met with last summer, and is the most useful thing for removing aphides from Roses which I ever used. It does it with great rapidity, as well as with perfect safety to the most delicate shoot. It is easy to clear many bushes of these pests with it in the course of an hour. The handle is of steel, consequently it is elastic. The pressure of the thumb on one side, and of the fingers on the other, brings the two brushes together, and in this position they take off every aphis without injury to the foliage. The steel is half round, changing to flat at the bottom, where it begins to curve, and it is secured to the brushes by screws. I believe the contrivance was invented by a clergyman at Colchester, from which place I had it. The brush heads are  $\frac{3}{4}$  inches long, and the handles 1 foot. *J. H. S., Regent's Park*.

**Gas Heating.**—Allow me to recommend an "Old Subscriber" (see p. 261), not to think of using gas in his greenhouse, if he intends to make a "show place" of it. The gas, if used much and continually, will make such a show of his plants that he will quickly repent of his introducing it, and he will, I imagine, not be long in substituting some other plan. Hot water circulating in pipes has always appeared to me to be the best mode—but gas he will find both unpleasant and highly injurious. *A Young Subscriber*.—I would advise your correspondent on no account to have any combustion of gas in his greenhouse. Therefore the best way of applying heat will be from water-pipes heated by gas. I tried an ordinary gas-stove without a flue, in a greenhouse, and my plants have suffered much in consequence. *J. H. C., Bath*.

**Gardeners' Benevolent Institution.**—"A Working Bee" asks, "How is it that so many nurserymen and seedsmen in the United Kingdom have been appealed to in vain to support this institution (for the relief of aged and infirm gardeners and their widows); are they all so poor, or have they no sympathy with a class of men who have helped, both directly and indirectly, to raise them to positions of comfort, and, in many cases, of affluence?" Admitting this statement to be correct, let me ask, Why the list of subscribers exhibits such a paucity of gardeners' names? Is it that they have no sympathy for their 'poor brethren'? I shall not defend the nurserymen and seedsmen of the United Kingdom, or any one of them, but beg your attention to a few facts which your correspondent seems to be unaware of, namely, when the first meeting was called by advertisement in the autumn of 1833, to take place at the Turk's Head Hotel, in the Strand, for the purpose of considering the necessity of such an institution as the one we now have, the gardeners did not respond to that call. The nurserymen met, and on that occasion put down their money, and thus commenced to lay the foundation of the Gardeners' Benevolent Institution, which last year paid pensions to aged gardeners and their widows, to the handsome amount of 519l. At the first meeting only one gardener attended, and he never supported the institution. I do not "blush" for the want of sympathy on the part of nurserymen, but on the contrary, they have my grateful thanks for what they have done, assisted by benevolent gentlemen; although the institution is not so great, or so prosperous as its best friends and supporters could wish, yet, it is to the early labours of nurserymen and seedsmen that the merit is due, and not to any other class. Who is there who will not blush at the gardeners' want of sympathy for their own poor broken-down brethren? This is the gardeners' case (not the nurserymen and seedsmen); they should be put upon their trial, and I am much mistaken if abundant evidence cannot be brought forward to convict them of want of sympathy—if of nothing worse. Will your readers believe that there are only 60 noblemen's gardeners who are sub-

scribers to the institution; surely there must be four times that number of noblemen in the country who keep gardens and employ gardeners, besides a large number of landed gentlemen. Are they ignorant of the existence of the institution in question? Twenty-four pounds have been spent the last two years in advertisements, calling attention to it. At the coming election of pensioners, I trust that the subscribers will give their support and influence to those candidates who have at any time contributed to the support of others, by having been subscribers. *J. B. C., Clapham*. [The last paragraph appears to us to point directly to the reason why gardeners are not greater supporters of the charity. They see by experience that *pertinacious* begging letters enable persons who have contributed nothing to be elected pensioners, to the exclusion of others who have subscribed to the utmost of their means.]

**Potato Disease.**—I am sorry to inform you that the Potato disease has already made its appearance in, at least, one place in this neighbourhood. I saw an unmistakable case a fortnight ago in a frame of early Potatoes, the haulm of which was nearly all destroyed. *J. B. Whiting, the Deepdene, near Dorking, Surrey*.

## Societies.

**BOTANICAL, OF EDINBURGH, April 14.**—The President in the chair. The following papers were read:—1. On a new species of *Caulerpa*; by R. K. Greville, LL.D. 2. Remarks on British Plants. Part III.; by C. C. Babington, M.A., F.R.S. The author first noticed *Myosotis alpestris* of Schmidt, which he now considers to be identical with *M. suaveolens* of Kitaibel, and not to be (as conjectured by him in his Manual) a mere mountain variety of *M. sylvatica*. *M. alpestris* is distinguished from *M. sylvatica* by the attenuated base of the calyx, and by the absence of a keel in the fruit. He next alluded to the British species of *Thymus*. There are two British species, he stated, included under the name of *Thymus Serpyllum*, one being the true species and the other the *Thymus Chamædrys*. They are distinguished chiefly by their habit, and therefore require to be in a growing state, in order to be satisfactorily determined. In *T. Serpyllum* there is a difference between the flowering shoot and that which is intended to extend the plant. Quite prostrate and rooting shoots are produced each year, which grow from the end of the shoots of the preceding year, and do not flower; also, there spring from the other axils of these old prostrate parts of the plant, short erect or ascending shoots, which form a linear series, and each of which terminates in a capitate spike, consisting of a very few whorls, and which die back to the base after the seed has fallen. The growing shoot is perennial, but the flowering shoot is annual. In *Thymus Chamædrys* there is no such manifest separation between the flowering and growing shoots. The terminal bud often produces the strongest shoot, which itself ends in flowers differing thus from the terminal shoot of *Thymus Serpyllum*, which always produces a flowerless shoot. It wants the regularity of *T. Serpyllum*, and presents a dense irregular mass of leafy shoots and flowers intermixed. 3. Notes of a Tour in the Hartz Mountains in 1850. Part I.; by W. L. Lindsay, M.D. A part of this long communication will be found in another column of to-day's paper.

4. On the characters of the Natural Order Solanaceæ. By T. Anderson, Esq.

5. On the effects of the past winter on plants in the open ground, in Golden Acres Nursery; by Mr. P. S. Robertson. In the Pinetum there were no coverings of any sort given to the plants, in order to test how far they might be calculated to stand our climate, and these results now appear—*Juniperus drupacea*, *macrocarpa*, *rufescens*, *recurva*, *squamata*, *chinensis* (male and female), *excelsa*, *tetragona*, *dolabrata*, *sphaerica*, are not the least injured; but *Juniperus Bermudiana*, *flaccida*, *mexicana*, are all killed. *Widdingtonia juniperoides*, *cupressoides*, much injured but not killed. *Libocedrus Doniana*, one plant much injured, but another shaded from the sun's rays by a bush, quite fresh. *L. tetragona* and *chilensis*, both quite fresh. *Biota pendula*, *Thuopsis dolabrata*, *Cupressus funbris*, *Retinospora squamosa* and *ericoides*, *Taxodium heterophyllum* and *ascendens*, *Cryptomeria japonica*, *Cupressus macrocarpa*, sp. from Mexico, sp. from Simlah, all quite healthy and fresh. *Cupressus glauca*, injured but not killed. *Cupressus Goveniana*, *Lindleyi*, *thurifera*, completely killed down to the roots. *Pinus Brunoniiana*, *nobilis*, *religiosa*, *Nordmanni*, *cephalonica*, *amabilis*, *grandis*, *Pindrow*, *Webbiana*, *Finsap*, *Menziesii*, *orientalis*, *obovata*, *Khutrow*, are all fresh and healthy. *P. Brunoniiana*, evidently gets harder as it grows older; plants 1 and 2 years old, we have several times had killed, those now reported on are 4 years old. *Pinus Douglasii*, from home-saved seed, are some of them killed, others much injured, while others raised from imported seeds growing in the same place are fresh; the foliage of the latter is of a deeper green, broader, and with more substance. *Abies Jezoensis*, in a moist situation, is killed, but similar plants in a dry position are only partially injured; the plants are only two years old, and it is very probable that, like *P. Brunoniiana*, they may get hardy as they grow older. All the species of *Larix* and *Cedrus* have escaped uninjured; the newest one, *Larix Griffithii* (Hooker) seems quite hardy. *Pinus excelsa*, *monticola*, *ayacahuite*, *Lambertiana*, *parviflora*, *rudis*, *Hartwegii*, *Russelliana*, *macrophylla*, *Montezumæ*, *occidentalis*, *sinensis*, *Sabiniana*, *Gerardi-ana*, *Coulteri*, *muricata*, *radiata*, *tuberculata*, *insignis*,



Benthaniama, ponderosa, Bungeana, contorta, Massoniiana, Cembroides, Fremontiana, osteosperma—all quite fresh and uninjured. Pinus oocarpa, apulcensis, tenuifolia, leiophylla, filifolia, patula, australis—either completely killed or so much injured that there is little hope of them. Cunninghamia sinensis, in the open borders killed, plants against an east wall quite fresh. Arthrotaxis cupressoides, quite fresh. Sequoia sempervirens, gigantea—both considerably injured in last year's growth, the foliage much browned and scorched, but the plants are all giving indication of growth, and likely in a few weeks to be quite green. Podocarpus pungens, killed, and several others of large leaved species of this tribe. Phyllocladus trichomanoides—quite fresh against a south wall. Cephalotaxus drupacea, tardiva, Fortuni, Torreya nucifera—have all stood well, and are likely to prove fine hardy trees. Ephedra vulgaris, alissima, macrostachya—are all fresh. In the general collection of trees and shrubs, all the new Rhododendrons sent from Sikkim by Dr. Hooker were left unprotected, and they appear none the worse. R. Dalhousiae and R. argenteum excepted. Berberis Darwini, Fortuni, and Nepalensis have stood well, though the plants are rather small; the two new varieties of Tree Box from China, by Mr. Fortune, seem quite as hardy as the other sorts; Cerasus ilicifolia is considerably hurt in the open border, but a plant on an east wall is not. Ceanothus papillosus and C. dentatus are slightly damaged in the open ground and on a wall, but C. rigidus is not the least injured; this seems the best of the three. All the species and varieties of Arbutus have suffered slightly, except A. tomentosa; it seems quite hardy and highly deserving of more extensive cultivation. All the species of Escallonia are killed in the tops, both on the borders and walls; the new E. macrantha does not seem any harder than the older sorts; Fabiana imbricata is fresh in the open ground, and beginning to show flowers, Garrya elliptica and G. macrophylla are not injured this year, though last year they both were injured by less cold, but it was in April. Fagus betuloides and F. Cunninghamii are both very fresh and green on a south wall, the beautiful Hedera Roegneriana is also quite green; the new Hollies, Ilex cornuta and I. furcata, seem hardy and are looking well, but Hex diphyrena and I. microcarpa are much injured, and not likely to recover. Quercus glabra, Q. glaberrima, annulata, virens, are killed, but the new Q. agrifolia is healthy and fresh, so is Q. Mirbelii, which promises to be a fine sub-evergreen tree, and Q. Mexicana is fresh on an east wall. Elaeagnus reflexa on a west wall also looks fresh, and promises to be quite hardy. Considering the intensity of the frost and the dry bright sunshine which accompanied it during many days, the injury to plants, though considerable, is not great. [We have been obliged to take considerable liberty with the copy sent us of this report, in order to make it intelligible.]

### Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN. —In the greenhouse next the Orchard-house the beautiful Tropaeolum Triomphe de Gand, which is trained up one of the rafters, has been pruned in and neatly tied up. It has flowered beautifully in this situation all the winter, as have also two plants of it twined over trellises in pots in another house. The latter are, indeed, covered with beautiful large orange-scarlet flowers now, and are really two of the very gayest plants, and by far the most striking, which the house contains. In the same greenhouse, were plants of Mr. Barnes' Orchis longicornis, and also of the stronger growing O. speciosa, from Mr. Moore, of Glasnevin. Both are highly interesting species, which appear as yet to be perfectly cultivable in pots. In the curvilinear stove was a noble example of Cinnamomum erubescens with four large clusters of white blossoms, at the ends of strong spikes which issued from among ample and luxuriant foliage. Associated with it were the useful Eranthemum albidiflorum, Aeschynanthus speciosus, one of the handsomest of a very ornamental genus, and Justicia carnea superba, a plant which, if cut back after it has done blooming, will break out and flower a second, and even a third time in one season. Siphocampylus manettiaeflorus also formed a gay plant here, covered as it was with multitudes of bright red tubes tipped with yellow, and the violet-purple flowered Achemenes Escherii is one of the best of the smaller blossomed varieties. On the wall was Hoya cinnamomifolia, and festoons of purple blossoms from Passiflora racemosa were hanging plentifully from the roof.

The Camellia reticulata in a wooden box in front of this stove is at present one mass of large blossoms. All the care they require to have them in perfection is a glass light put over them to shelter them from wet, and now and then perhaps a mat on very cold nights. We need hardly say that the Camellia is perfectly hardy, and that the shelter is merely given to keep the flowers from being injured by cold wet weather, which discharges the colour from the edges of the petals, giving the flower a faded appearance. This was evidenced by the state of the blossoms expanded on some Camellias, which are growing against a north wall in the little flower garden, facing the pit we have mentioned. These are numerous and fine; but all more or less hurt by the wet. The Camellia is, however, well worth open air culture, on account of its fine evergreen foliage, and the beautiful blossoms which are readily protected if the spring should happen to be unfavourable. Ceanothus rigidus, in an open pit, is at present in full flower; and

exceedingly handsome it is at this season, the multitudes of deep blue blossoms having a truly striking effect.

In the glass wall a Camellia or two are in bloom, while Fuchsias have been killed down to the ground, and Tecoma australis is quite dead, as are also a Citron and a Grevillea; Viburnum suspensum is, however, unharmed, as are also Abutilon striatum and Lardizabala triternata; Witheringia superba has been killed to the ground, but it is pushing again from the root. A large Grosse Mignonne Peach, which was moved last autumn and placed in the division of this wall appropriated to fruit trees, is now in full flower, and is likely to set much more fruit than it will be desirable to leave on it. A Vine is just breaking; and a Pear is coming into leaf. As regards the inside temperature, it has been ascertained that when frost is severe the glass wall does not afford more than 4° of protection. On the two coldest nights of March, viz. the 24th and 25th, when the thermometer in the open air fell to 17° Fahr., that within the wall indicated 21°; it therefore affords little security from frost. It however ensures dryness, abundance of light, and an accumulation of heat is readily obtained if the sun shines only for a short time; it is, however, only when the frosts are over that these properties can prove advantageous to plants within it.

In one of Messrs. Rivers' and Ker's protected trellises, the Shanghai Peach is in full blossom, while the Acton Scot and the Chancellor varieties are out of flower. A crop of fruit is likely to be secured on this trellis this year by means of the use of straw protections from frost which killed the blossoms last year. One half of the trees on the Peach wall have also been protected by straw coverings 3 feet wide, fixed along below the coping boards, and kept off the trees by slight square spars of wood laid against the wall. The other half has been covered with common twine net, which has been found to be both durable and, in ordinary seasons, efficient. The blossoms on this wall are yet safe, and are nearly all set. The tree under Cottam and Hallens' Peach frame, whose west end has always been open, is certainly considerably in advance of others not so protected. The young shoots are longer, the leaves broader and healthier than those on trees exposed, and altogether its appearance seems to indicate a better climate. The fruit is also a trifle in advance of that on the open wall. It may, perhaps, be worth recording here the fact that, in the case of a Shanghai Peach planted against a part of the wall up which a chimney in operation passes, the side of the tree behind the flue has made young shoots more than 6 inches long, while the other half of the tree is no more than in leaf. Pears on walls are beginning to expand their blossoms, but vegetation is fortunately everywhere still very backward. The only tree in full bloom is the Trout Pear, or Forelle, whose flowers are quite bold and sound. Most of the fruit trees in the garden, with the exception of the very young ones, are in a condition to bear a full crop; the proving of new sorts may therefore be expected to be proceeded with this year, which could not be done during the few past seasons, in consequence of the blossoms being cut off by spring frosts. Several new fruits from Belgium and Angers have been received lately, and are planted out for trial. Certain kinds of Strawberries have suffered severely from the late frosty weather. British Queens have been much hurt, some of the plants being killed outright, while Keens' Seedling appears uninjured. Stirling Castle Pine, Old Pine, Eliza, Kitley's Goliath, Eleanor, and Mammoth, have all sustained more or less injury.

As regards the effects of frost on things in general, little can be added to what was stated in our last report. We can only repeat that shrubs and plants have suffered less here than in some other places. The Sikkim Rhododendron ciliatum is in full flower in the American garden, under a hand-glass; R. Edgeworthi is browned a little under a similar protection; and R. Dalhousiae has been quite killed, while R. cinnabarinum is unharmed; R. glaucum is in bloom under a glass in a house; the flowers are greenish white, tinged on the outside of the corolla with pink.

Some new annuals and other plants have been raised from seed, and potted off. Among them are the Scarlet Linum, so highly spoken of in French books on gardening; Tropaeolum Schuurmanianum, T. ornatum, Perilla nankinensis, with small purple leaves; Nemophilaurita alba, Silene regia, and S. pendula-alba; Nolana alba grandiflora; an Australian Passion-flower from Sir T. Mitchell, Schizanthus violaceus, and some Pines, the results of the Oregon expedition. Of the latter, we especially remarked Abies Pattoni and A. taxifolia, which, however, proves to be A. canadensis. The charming Aquilegia hybrida is also in flower here. Another batch of Kurdistan Oaks, alluded to last week at p. 263, has likewise been lately raised, and some of them are potted off. We also remarked Saracha procumbens, a new plant related to the Tomato, and which is to be tried as an esculent.

In the large conservatory the Camellias are still in perfection, and the house is altogether very gay. Several fine specimens of Rhododendrons are in bloom. Among them was an admirable example of R. cinnamomeum, producing noble heads of white flowers at the end of every shoot. The true R. arboreum was likewise in blossom, as were R. campanulatum, and the Ceylon R. roseum. Habrothamnus elegans, too, was in bloom here, together with some noble bushes of the brilliant Salvia gessneriflora, a Sage which is to the greenhouse or con-

servatory in winter and spring what Tom Thumb Geraniums are to the parterre in summer.

A trial has been made with "frigi domo" for covering Melon pits. It is found to answer better than mats, inasmuch as it not only affords more warmth, but it is lighter, and more easily rolled off and on than mats are. It is, therefore especially useful in economising fire heat, less of which is required with this than with mats.

Titicaca Maize has been planted out in a plot in the experimental department. The plants used on this occasion were raised in a little heat, those from seeds in the open ground last year having failed to produce corn. Although reported to be very hardy and early, it did not cob so well last season as the Forty-day Maize.

The garden generally is in very good condition; the trees are just putting forth their young leaves, and, as a matter of course, look fresh and beautiful; the Grass in the arboretum is short and green, and the borders, orchard ground, and other departments are all being put in order for the coming exhibitions. The iron tent is nearly ready for the reception of plants, the ridge of the roof and the top of the dome being glass, the rest wood, covered with zinc, altogether having a good appearance.

### FLORICULTURE.

FUCHSIAS.—When well grown, few plants are more admired than the Fuchsia; or, when well selected with regard to distinctness, make a better display on our exhibition tables, and yet, if we may judge from what are annually brought under our notice, growers seem to have paid and are still paying little attention to its skilful cultivation. On all sides improvement in other things is manifest, each season being an advance on the preceding one in this respect, but the poor feeble and attenuated Fuchsia appears to be an exception. I well remember at the exhibitions of a Society held at Wanstead that for years the Messrs. Fraser periodically staged collections of Fuchsias, which at that time were fair examples of growth and skill; they were short-jointed, well-furnished with bold foliage, compact, pyramidal, and abundantly flowered; these are the kind of plants one expects to see on a show day. I would ask, has a single specimen been shown of late combining these requisites? At the Surrey Zoological Gardens, and at the Vauxhall shows, there have been at one time not less than perhaps a dozen collections, numbering at least 100 plants, and I may safely assert that scarcely one of that number could lay claim to fine growth; large plants are not what is wanted, if obtained at the expense of all other necessary points. As a beginning, give us plants, say 2 feet high, and about the same through, free, and unrestrained, well furnished with branches and laterals at close and regular distances around the centre stem, and these so short-jointed and clothed with foliage that a comparatively solid bush is presented; then, and then only, may we expect to find a plant proportionately and adequately flowered. Contrast with the above a Fuchsia, feeble and elongated, say in an 11-inch pot, with a stake some 5 feet in length, stuck in the centre; it is tied to this stake at intervals of every 9 or 12 inches; at a goodly distance above the pot a stray side branch protrudes, at the end of which some five or six flowers may be seen weighing it down to the rim of the pot as a resting-place. Other branches, of the same description, may be found further up the stem, on the summit of which is a drooping tuft of flowers; and this is a picture of a modern grown Fuchsia. I could wish to see closer attention paid to differences of constitution in Fuchsias; this is a point more especially to be considered now, when the trade is sending out new varieties. The soil, for instance, should not be all of one consistence; for what will suit one sort may not answer another. Peat, loam, leaf-mould, and silver-sand should be the ingredients of your mixture, which should be made suitable to the wants of the particular plant you are potting, rather than to answer the whole collection; for varieties, naturally robust and vigorous, would starve on a diet which would surfeit less robust kinds. Fuchsias may with propriety be divided into two classes; the one, dark-wooded and slender in habit, with a disposition to form long joints; the other soft-wooded, i.e., green, robust, and short-jointed. Is it not wrong, therefore, to pot these differently constituted plants in the same mixture? Suppose a few spring struck plants, in 2-inch pots, to have been lately received from some nurseryman, and that a shift is necessary; before you commence, separate your plants into the two classes above alluded to; probably the first, or dark-wooded, will consist of the Gem of the Season, Commodore, Perfection (Banks), Cortona, Nil desperandum, Dr. Lindley (Banks), Grandis, Verrio, Clapton Hero, Splendissima, Ajax, Miranda (Turner), Scarletina reflexa, Dr. Smith, &c., &c.; while the soft-wooded kinds may include Lady Emily Cavendish, Amy, Empress, Hebe, Non-such, Napoleon, Joan of Arc, Ariel, Gigantea reflexa, Beauty of Deal, Dr. Grosse, Expansion, Esteem, Prince Arthur, &c. When so separated, give the former nice light compost; the latter, stronger ingredients; and the slender-habited varieties should not receive so liberal a shift as their more robust associates. A cooler situation should also be given to sorts of naturally slender habit; while to the strong kinds heat, moisture, and a stiffer compost may be afforded; and thus, by assimilating the treatment to the wants of the plants, better results will be attained than we have lately been in the habit of getting. As to the routine of after culture, it is not my wish to enter, but the grower who considers



well before he acts will not be at a loss to manage that part of the business. Let us hope, after this notice, to see Fuchsias brought forward in better condition than we have ever hitherto seen them. J. E.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY, April 26.—This, the first meeting for the season, took place at the Horns Tavern, Kennington, and was the best April show the Society has had for some years. Cinerarias, Auriculas, Azaleas, and Pansies were in excellent condition, and attracted particular attention. The following were the Awards:—Cinerarias, Nurserymen: 1st, Mr. C. Turner, Slough, with admirably managed plants, dwarf and bushy, of Nonsuch, Kate Kearney, Amy Robsart, Rosalind, Climax, Formosa, Queen of Beauties, Charles Dickens; 2d, Mr. Ivery, of Peckham, with Surprise, Rosalind, Teddington, Rose Mary, Queen of Beauty, Prima Donna, Star of Peckham, Cerito; 3d, Mr. Fairbairn. Pansies, Nurserymen: 1st, Mr. C. Turner, with fine blooms of Royal Sovereign, Ophir, Mrs. Hamilton, Flower of the Day, Miss Talbot, Lady Emily, Great Western, Duke of Perth, Robert Burns, Marchioness of Bath, Alfred the Great, Marian, Royal Visit, Thisbe, Euphemia, Pandora, Sir R. Peel, Sir J. Paxton, Sir J. Cathcart, National, Mr. Beck, France Cycole, Pompey, Duke of Norfolk; 2d, Mr. Bragg, Slough, with Sir R. Peel, Ophir, Lady Carrington, Duke of Perth, Viola, Ostreich, Elegant, Criterion, Elegantisima, Marchioness of Bath, Wonderful, Queen of England, Sultan, Caesar, Helen, Lucidum, Ibrahim Pacha, Sir J. Cathcart, Mr. Pennet, Euphemia, Pompey, Royal White, Pandora, Almanzor; 3d, Mr. Dobson, Isleworth. Amateurs: 1st, A. Lane, Esq., Wycombe, for 24 finely grown blooms, of the leading kinds. Auriculas, Nurserymen, 6 plants: 1st, Mr. Turner, with Taylor's Glory, Dickson's Matilda, General Bolivar, Page's Champion, Beeston's Fair Flora, No Plus Ultra; Mr. Turner also sent 24 finely grown plants of the finest varieties, not for competition. Amateurs, best pair of Auriculas: 1st, Mr. Miller, gr. to R. Mosely, Esq., for Lovely Ann, Taylor's Glory. Polyanthus: 1st, Mr. Turner, for George IV., Lord Randolph, Admirable, Cheshire Favourite. Miscellaneous Plants: 1st, Mr. Roser, Streatham; 2d, Mr. Over, Clapham; 3d, Mr. Hamp; the leading plants consisted of Hovea Celsi, Eriostemon myoporoides (finely grown and flowered), Epacris miniata, Erica Syrdiana (admirable specimen, of immense size), and a good Cavendishii. In the Nurserymen's Class, Messrs. Fairbairn took the 1st prize for 15 plants. Specimen Plants: 1st, Erica mutabilis, shown by Messrs. Fairbairn; 2d, Hovea Celsi, shown by Mr. Mockitt. We noticed a fine plant of Dielytra spectabilis, shown by Mr. Roser, of Streatham.

An Extra Prize for the best Auricula was awarded to Mr. Turner, for a finely grown plant of Taylor's Glory. Mr. Turner also obtained the 1st prize for the best plant of Page's Champion. The prize for the best Cineraria was awarded to a dwarf well-bloomed plant of Henderson's Rosalind, exhibited by Mr. Turner. For the best pair of Azaleas: 1st, Mr. Roser, for Duke of Devonshire and Smithii; 2d, Mr. Over, for Aurora and Duke of Devonshire; 3d, Mr. Hamp, for Rosea elegans and Formosa.

Seedlings.—Cinerarias: Certificates were given to the following varieties, which are of exceedingly good shape—Nivalis, exhibited by Mr. G. Smith, described by us in former reports; to Emily, exhibited by Mr. Ivery, Peckham, an improvement on Mrs. Sidney Herbert; South London (Bosnie), shown by Mr. Turner, white, delicately tipped with rosy-purple, fine shape; to Lady Camoys (Sutton and Son, Reading), better than Effie Deans. Pansies: Monarch, the finest in the Duke of Norfolk Class, 12 blooms of which were exhibited by Mr. Turner, and Mr. Thomson, a yellow ground variety, exhibited by Mr. Bragg. Polyanthus: shown by Mr. Mockitt, gr. to J. Allnutt, Esq., which also obtained the first prize as best Polyanthus in the room, lacing and ground colour of uniform rich yellow, with deep maroon ground.

### Miscellaneous.

**Sale of Mr. Epps' Heaths.**—What kind of prices these realised may be gleaned from the following. We need hardly say that all of them were fine specimens, varying from 2 to 4 feet through, and as much high. Obbata fetched 8*l.*; retorta, 8*l.* 10*s.*; Alberti superba, 5*l.* 5*s.*; tricolor rubra, 3*l.* 7*s.* 6*d.*; fastigiata lutescens, 3*l.* 3*s.*; ferruginea, 3*l.* 5*s.*; Macababiana, 3*l.* 10*s.*; Cavendishii, 3*l.* 5*s.*; Hartmelli virens, 4*l.* 10*s.*; Vasilora, 4*l.* 10*s.*; Wilsoni, 3*l.* 5*s.*; infundibuliformis, 3*l.* 3*s.* Other lots fetched from 1*l.* 10*s.* to 2*l.* 10*s.* each. A few Azaleas and other plants were also sold at the same sale, at prices varying from 2*l.* to 4*l.* per lot.

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

THE conservatory plants are now making active growth, and should be liberally supplied with water. Those growing in prepared borders must be frequently examined, to see that the roots are kept sufficiently moist. Take the opportunity of an early hour in the morning to give a good washing with the engine or syringe to everything excepting the plants in bloom; the house will then become dry and enjoyable by the forenoon—frequently clean over the borders; remove decayed leaves and flowers as they occur; let the paths, stone curbs, shelves, &c., be washed frequently, that the house may present a fresh and orderly appearance at all times. These directions should be enforced in all plant houses as far as possible. More air must now be given, and directly the nights become warmer, allow a little to remain; this low night temperature will do much to favour the growth of short-jointed wood, which in a house of this description, requiring to be frequently shaded, is difficult to obtain; and at the same time it will prolong the period of bloom to the inmates. Hybrid Indian Rhododendrons and Chinese Azaleas will now be in great beauty, and every care should be taken to preserve the blooms from damp and drip, which materially injure them. Supply the plants liberally with water at the roots, as during their blooming season they require large quantities. Most Heaths and hard-wooded plants will now either be in bloom or approaching that state. Air must now be admitted in large quantities, bearing, however, our previous directions about "currents" in mind. The great points in flowering plants are, in addition to a profuse show of bloom, clear and bright colours and healthy foliage. The two last are indicative of good health, and consequently of good culture, and are always additional recommendations to a plant. Abundance of air, a nicely managed system of

shading, sufficient to bring up the colour of the flowers without drawing the foliage of the plant; and proper attention to watering, &c., are items in plant cultivation which are rarely taught, either by calendars or books, but in which a little practice and discrimination will be necessary, to enable plants to be bloomed in the perfection we see them at the great exhibitions. Plants out of bloom should be placed where they can enjoy a rest for a short time before the new growth commences, or they break weakly. It should be remembered that when a plant flowers profusely, the powers of the plant are much weakened, and a space of time after blooming, longer or shorter, according to the habit of the plant, is necessary to enable it to recover its wasted energies previous to forming a new growth.

#### FORCING DEPARTMENT.

The principal work in this department will consist in carrying out our previous directions; as everything will now be at work, the requisite attention should be paid to each advancing crop, according as the state of its growth demands. We have adverted to the strict watch which should be kept on the red spider; for if allowed to get established on the foliage of Vines beginning to ripen, the consequence is that the injury it will commit to the foliage, before the Grapes are cut, will seriously compromise the chances of next year's crop; it is, therefore, of the utmost importance to attack the pest vigorously, whenever detected, that its ravages may be stopped before the period of ripening, when the means to eradicate it cannot be so well applied. The thrips is a still worse enemy to gardeners, for to effect its destruction is both difficult and expensive. On large-leaved plants as the Vine, if not very numerous, it may be kept down by carefully washing the infected leaves with weak tobacco-water, using a soft sponge for the purpose, that the leaves may not be injured; but on Peaches, Strawberries, and even when numerous on the Vine, nothing will serve to destroy them but repeated fumigations with tobacco; in most cases, three or four fumigations, with intervals of three or four days between each, will be sufficient. This is expensive work; but after various trials, we know of nothing cheaper, and the injury they inflict on the crops of forcing houses, Grapes more particularly, renders the expense a matter of necessity. The brown scale sometimes is troublesome on Peaches. This should be brushed off the shoots with a small painter's brush, dipped in strong soap-suds; but this pest seldom appears if the proper dressing was applied to the trees, previous to forcing them. We must again notice the strict necessity there is to remove such things as French Beans, Strawberries, and the like, from houses occupied with other crops (Pines excepted), at as early a period as possible, as they are generally the means of introducing the above into houses, where they are grown together; and the growth of stove and other plants, liable to be infested with insects, should always be avoided in such houses, for similar reasons.

#### FLOWER GARDEN AND SHRUBBERY.

The present has been an unfavourable spring for planting evergreens, owing to the prevalence of dry cutting winds. As it is more than probable that where much planting was intended part of it may yet remain on hand, we may observe that some kinds of evergreens may yet be safely removed, taking the precautions to water them at first planting, and occasionally afterwards; to well mulch the surface, and to damp the foliage over in the evenings of dry days. These attentions, which are indispensable should dry weather occur, will enable late-planted evergreens to start in most cases freely. We have found Hollies, Portugal Laurels, evergreen Oaks, Red Cedars, Arbor-vites, &c., take root more freely now than when planted earlier in the spring, when autumn planting cannot be effected. Continue to prick off annuals raised in frames into small pots, and harden such as are established preparatory to their turning out into the open ground. Those which have been potted some time should have another shift, rather than allow them to become stunted in their pots. Another sowing of annuals may now be made, either on an open border for transplanting, or on small squares of turf laid with the Grassy side downwards; when the plants are up, the pieces of turf with the plants may safely be removed to their final quarters. As the planting out season approaches, have every thing ready by hardening the plants, that they may experience no check by removal, and turning over and well working the soil, to get it into a proper state for planting.

#### HARDY FRUIT GARDEN.

Apricots should be frequently gone over, to destroy a small grub which coils itself among the leaves. Disbud carefully, first taking off all the foreright shoots, and the next time thinning out what is not wanted for wood. A slight thinning of the young fruit should be made.

#### KITCHEN GARDEN.

As the principal summer crops are now planted, attention will be requisite to keep up a proper succession of vegetables. To do this requires some forethought, and it is scarcely possible to lay down rules for guidance, considering so many circumstances are involved—the wetness or reverse of particular localities, and the texture and capacity of soils for resisting drought, and, however, the principal causes which require consideration in keeping up a continuous supply; such information, we need not say, is only to be obtained on the spot by actual experience. Lettuce, Spinach, and Radishes should be sown frequently, while Peas and Broad Beans must be put in to meet the demand; frequently hoe between these crops, and stick Peas before they get too

tall. Another crop of Scarlet Runner Beans may be planted, and successive crops of Cauliflowers, Walcheren Broccoli, and Cabbage. See the young Celery gets a good supply of water and plenty of air; checks are extremely hurtful to vegetables requiring to be quickly grown. Hoe between the crops of Onions, Parsley, Carrots, and Parsnips, and this is the best season for sowing the principal crops of red and silver Beet, Salsify, and Scorzonera, as they frequently run to seed when sown earlier. Assist by waterings the newly planted crops. See the Tomatoes are getting properly hardened off, to be transferred to spare palings, or open parts of the garden walls, next month. A few in some places may be tried on a warm sloping bank. Sow Sweet and Bush Basil, with Sweet Marjoram in gentle heat for transplanting; and make a sowing of those kinds of herbs required to keep up the regular supply. The first rain there is, let the herb compartment be put in order.

#### STATE OF THE WEATHER NEAR LONDON, For the week ending April 23, 1853, as observed at the Horticultural Gardens, Chiswick.

April.	Moon's Age.	BAROMETR.						TEMPERATURE.			Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean		Of the Air.	Of the Earth	1 foot 2 feet deep.		
Friday.. 22	14	29.486	29.315	51	38	43.5	464	45	45		E	.24
Saturday 23	15	29.879	29.755	54	33	43.0	46	44	44		W.	.59
Sunday 24	16	29.853	29.770	47	31	39.0	46	44	43		S.W.	.60
Monday 25	17	29.526	29.295	41	31	36.0	45	44	43		N.	.16
Tuesday 26	18	29.895	29.668	53	25	39.0	44	44	44		N.W.	.09
Wednesday 27	19	29.851	29.835	60	24	44.0	44	44	44		S.W.	.00
Thursday 28	20	29.821	29.718	56	40	48.0	45	44	44		E.	.60
Average ..		29.749	29.591	51.7	31.8	41.7	45.2	44.1				1.09

April 22—Rain; constant small cold rain.  
23—Overcast; fine; slightly overcast; showery.  
24—Clear early a.m.; heavy rain; overcast; heavy rain at night.  
25—Snow at 5 a.m.; cold rain; boisterous with rain; overcast.  
26—Clear; fine; overcast; frosty at night.  
27—Hoar-frost; clear, quite cloudless; exceedingly fine; frosty at night.  
28—Light haze; fine; overcast.  
Mean temperature of the week 7 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK, During the last 27 years, for the ensuing week, ending May 7, 1853.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 1	62.2	40.8	51.5	9	0.51 in	1	1	1	1	1	1	1	1
Mon. 2	63.4	41.1	52.3	9	0.72	1	1	1	1	1	1	1	1
Tues. 3	62.4	41.6	52.0	13	0.30	1	1	1	1	1	1	1	1
Wed. 4	63.3	41.2	52.3	11	0.69	1	1	1	1	1	1	1	1
Thurs. 5	62.8	41.5	54.6	17	1.56	1	1	1	1	1	1	1	1
Friday 6	61.2	40.4	50.8	13	0.63	1	1	1	1	1	1	1	1
Satur. 7	63.2	39.7	51.5	8	0.22	1	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 6th, 1850—therm. 51 deg.; and the lowest on the 24, 1852—therm. 25 deg.

#### Notices to Correspondents.

**ASTRO-METEOROLOGY:** *Mercurius.* We cannot inflict astrological speculations on the public. "Mercurius" should convey them to Luna, the limbo to which all brainless bodies are recorded upon high authority to be incessantly consigned.

**BACK NUMBERS.** Full price will be given for No. 44, 1852.

**CONFISERS:** *A Sub.* These will not bear manure of any kind which contains ammonia. Bone-dust or wood-ashes may suit them; but they do not want anything beyond good soil, suitable to their peculiar natures. All you have to do beyond that is to take care that the roots never become cramped, but have free liberty to spread. If to be removed, they ought to be transplanted carefully every 2 years.

**DOUBLE BLOSSOMED FURZE:** *Diss.* Cuttings taken now may possibly strike with you. Slip them off with a heel.

**HEATING:** *G. H.* For a house like yours, one boiler is about as good as another. The cheapest is the best. Three-inch pipes will be quite large enough.

**INSECTS:** *H. R. I.* The insects which attack your flower cuttings and seeds were too shrivelled up to allow us to determine the species; they are, however, the small worm-like larvae of one of the little species of Tipulidæ or midges. Watering the places infested with them with lime-water or tobacco-water will diminish their numbers, although it is difficult to exterminate them. *W.—M. B.* The little insects found in countless myriads in heaps on footpaths, are the *Podura vicia*, Linn., one of the species of spring-tailed insects. They appear to feed on decaying vegetable matter. *W.*

**NAMES OF PLANTS:** *York.* 1, *Mandragora officinalis*; 2, *Hycoscyamus*; 3, *Indeterminata*; 4, *Euphorbia myrsinites*; 5, *Scopolina atropoides*; 6, *Nonea flava*; 7, *Indeterminata* plant fruit—a weed; 8, *Fritillaria lutea*; 9, 10, 11, varieties of *Ilex aquifolium*—No. 10 being the only one that is remarkable.—*P. P. Paris.* 5, *Dendrobium Griffithianum*; 6, *Stenorhynchus orchoides*; 8, *Brassavola grandiflora*; 10, *Brassavola Martiana*; or some allied species—specimen insufficient; 12, *Catasetum semipertum*; 21, Apparently *Stanhopea Devoniensis*, out of spirit. The rest must wait till another week.

*G.* *Chrysosplenium oppositifolium.*—*Journeman Gardener.* No uncommon plant in such a state can be named. Your nearest friends would hardly recognise you if your head, arms, and legs were cut off.

**NELUMBUM LUTEUM:** *A. H.* We must search books for the further information you desire, and reserve our reply till next week.

**PEACH-HOUSE:** *A. M.* The proper temperature when the fruit is setting is that of a fine day in the beginning of May, with plenty of air. It is of more importance that the soil should not be chilled by cold water. Peaches should not have manure; or, at all events, it should be very old and decayed. Any strong manure will make them run to wood.

**POISONS:** *G. C.* You may poison a tree by introducing a solution of arsenic, or even opium, into the stem when the sap is beginning to rise.

**RATING GREENHOUSES:** *Sub.* We cannot undertake to give legal advice. You must consult your solicitor.

**RHODODENDRONS:** *Sub.* You must not add wood-ashes to the compost; a little charcoal might possibly be of some advantage; but we have no experience of it for Rhododendrons.

**TALLIES:** *T. B. P.* We are sorry to say we have none to recommend. Very nice ones made of glass tubes, in which printed labels are hermetically enclosed, were exhibited by Mr. Bohn to the Horticultural Society; but they are liable to break, and are not what you would call cheap. We have lately seen some stamped upon slips of gutta percha; but they are difficult to read; and we know not how they will stand. Probably slips of zinc, written upon with the ink prepared for such purposes, will most nearly meet your wishes.

**WOODS AND FORESTS:** *C. Y.* You have seen that we are not to be enjoeled. You will find that we are not to be intimidated. The cases are shameless as well as shameful, and must be treated accordingly.

**WOODLICK:** *J. W.* See pp. 216 and 261 of the current year's volume.



PERUVIAN GUANO.  
**CAUTION TO AGRICULTURISTS.**—  
It being notorious that extensive adulterations of this MANURE are still carried on,

**ANTONY GIBBS AND SONS,**  
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The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

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Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also **CORN MANURE** for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

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Superphosphate of Lime. Peruvian Guano.  
Calcined Bone. Wheat Manure.  
Fines ditto, for dissolving. Mangold Wurzel Manure.  
Bones, half-inch. Potato Manure.  
Ditto, dust. Sulphuric Acid.  
Ditto, fine, for dissolving. Gypsum.  
Animal Guano, or Dried Flesh. Nitrate of Soda.  
Manure, from South America.  
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Turnip Manure ... .. per ton £7 0 0  
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N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

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**PEAT CHARCOAL**, completely saturated with LONDON SEWAGE, will be found a most efficient Manure for any Crop; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the **SEWAGE MANURE WORKS, Stanley Bridge, Fulham**, and will be delivered at the London Terminus of the Railways at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt., for ready money only; it may be also procured from Messrs. G. Grass & Co., Agricultural Seedsman, 26, Down Street, Piccadilly; or from any other of the Company's Agents.

"Sewage Manure, absorbed in Charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dillies, Roses, and Cabbage Plants. We put half a pint of each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches of each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. GLENNY.

Thomas Cartwright, Esq., of Aynhoe Park, having had 2 tons in the spring, which he tried on Turnips, ordered 30 tons, and writes as follows:—"Nov. 7, 1852. I have used the Sewage Charcoal Manure largely this autumn on Wheat and Beans;" and he then adds: "On the whole, I like the Sewage Charcoal very much, and think it a very useful manure, and intend always to have some for my Turnips."

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"The Turnips Mr. Chandler refers to were the *Lincolnshire Reds*. I understood the growth by a ton per acre. I find it a very quick and certain grower."

The Reporter of the *Gardeners' Chronicle and Agricultural Gazette* (who was sent by the Proprietors of that Journal to inspect our sample ground in November last), says:—

"A compartment was allotted to Turnips containing about 40 sorts of Swedish and other kinds; of the former, the best appeared to be SUTTON'S Purple-topped, and Rivers' Stubble Suede. The largest Turnip in the grounds was the *New Lincolnshire Red*."

We have great confidence in recommending this as a superior Turnip either for sowing early to feed off for Wheat, or for late sowing, in either of which cases it attains a very large size.

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**THOMAS MAY, Secretary.**

**IRELAND.**  
**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

**SATURDAY, APRIL 30, 1853.**  
MEETINGS FOR THE TWO FOLLOWING WEEKS.  
WEDNESDAY, May 4—Agricultural Society of England.  
THURSDAY, May 5—Agricultural Imp. Society of Ireland.  
WEDNESDAY, May 11—Agricultural Society of England.  
THURSDAY, May 12—Agricultural Imp. Society of Ireland.

The agricultural world is not prone to accord to inventors or improvers in Husbandry matters a very wide credit for practical knowledge. In most other arts the last new discovery or design is followed in much the same spirit that the body of the army follows the pioneers, as a necessary and thank-worthy arm of the regular service, without whose useful advance it would often be a very awkward matter to get on at all. But the 'sappers and miners' of our eminently self-satisfied business are unfortunately circumstanced in this regard, that half their useful time is taken up in reiterating their credentials for practical knowledge and common sense at the challenge of every fresh comer; owing, for the most part, to the sheer want of any recognised rule of judgment amongst the straggling forces that have so little studied their field duties as to know very indistinctly what does or does not hold out a just claim to their attention. Half the principal farmers in the kingdom may have acknowledged, almost as a public benefit, the labours and studies of some indefatigable and accurate experimentalist, who may at the same time be seen in every periodical wading breast deep through a slough of derivative catechising from another half, who, declining the trouble of learning anything on their own account, make a merit of wearing the grindstone down to the iron, only because their own

dulness is so very dull, and their bluntness so very blunt.

This is not quite as it should be. In all pursuits there are certain recognised principles, certain admitted canons and axioms, which a man who doubts or is uninformed of, is by general consent discountenanced from occupying the 'time of the court' with teaching himself in public controversy what he ought to have learnt at home in his own primer. The existence of this inconvenience indicates a want of system very damaging to agricultural progress. There are few men indeed whose own experience has not often verified the axiom that what is paradox to your right-hand neighbour is truism to your left; but this is generally in matters on which the world is acknowledgedly half informed or ill informed, yet this ought hardly to be the case to-day in agriculture. It is difficult therefore to explain or account for the badgering that a man must make up his mind to, who for the first time attempts in practice the application of principles, however fully admitted in themselves.

In the now familiar instance of the *Lois Weedon* system of Wheat-growing, it has been curious to watch in the motley varieties of sentiment which our own free columns present, what world-wide antagonism and explosion can be created by the mere skilful adaptation and dovetailing to the production of a certain definite end, of a number of elementary principles of husbandry, so far from pretending to astonish by novelty that the most elegant acknowledgment the plan has received is that of having concentrated into the smallest and simplest shape the greatest number of known truths relating to the soil, the atmosphere, and the Wheat-plant, that could well be got together. Mr. SMITH has done one-half the agricultural community the great service of showing how little they had realised into action what they fully knew, and the other half, how very little they knew at all. Useful knowledge both; and still more useful the bringing them both to the same focus: for that attitude of mind which COLERIDGE calls the "angry indisposition to think" never gets such an effectual airing as in the company of those who never had any doubt whatever upon questions which it has just begun to doubt, because, in fact, it has only just begun to think about them at all.

Whoever had read and pondered over that curious text-book of cultivation, TULL'S works, one of the most quaint and genuine emanations from a reluctant pen that ever struggled into print, had already enjoyed the kind of pleasure which LUCRETIVS attributes to the mariner who views the struggles of a drifting craft upon the angry and pathless ocean from his own snug berth ashore—by enjoying at the hands of later chemists a key to most of those pertinent questions on the nutrition of plants which TULL scented out, and scratched and whined after, like a terrier at a rat's hole—perfectly confident it was there, and what it was like, but unable to get at it for the life of him, and that a busy and deserving life too.

The secret that mystified in succession the classical EVELYN and the homely TULL, but which neither could possibly elucidate in the then existing state of chemical knowledge, was, idly enough, suffered to shrink back for a century from experimental development in the field, till it fell luckily into the hands of the chemist: but there, in the successive laboratories of DAVY, BOUSSINGAULT, BERZELIUS, LIEBIG, and last, not least, our own PLAYFAIR and WAY, it has made such progress into clear daylight, and plain substantial form and meaning, that the men of TULL'S generation may rise up in judgment against the men of this, if we still persist in treating as a speculative mystery and debateable novelty a matter as well attested and established as any in the whole round of cultural principles, viz., the absorption of ammonia from the atmosphere under suitable condition of the soil to receive it; this condition resting entirely with the cultivator, on clay soil, and crowning the mere mechanism of labour with its richest rewards, if that mechanism be but rightly addressed to the chemical principles sought to be evolved.

To say that a system founded upon known truths, grasped at by the far-reaching sagacity of practice, even before chemically known,—will not 'become general,' chiefly because it is virtually impracticable to the plough (as JETHRO TULL found it, and for this reason in chief, failed to inaugurate it), is 'follering the plough' with a vengeance. If the spade or the fork can do upon clay land what chemistry shows that clay land requires to have done to develop its true capabilities, and the plough cannot, it is the plough's fault not the chemist's. Let the plough look to it. But in truth the question of 'becoming general' is one which is in no man's power to prophecy or dictate about, except in entire subordination to the intrinsic truth of the system itself and the



proved profitableness of its application. These will constitute the ultimate test; and if in the meantime there is something in the plan which harmonises with the instincts of many minds, in many places, and attracts experiment not only in every county of England, but in France, Germany, Canada, India, Australia, and the United States, it is somewhat bold to prejudge the issue of its generality, if indeed that be not already in some sort past adjudicating.

Again, to say that a system, true to science, and illustrating half a dozen of its happiest conclusions, shall stand still for want of 'hands,' if proved profitable, is simply nonsense. Hands come where there's work for hands to do; else, how did they gather round Manchester and Leeds, or turn a desert heath into the workshops of Sheffield? It is not surprising that people should be found arguing backward if they refuse to look forward. But 'hands' imply heads, and heads *pillows*: and where the blessed and humane law of Settlement and Removal has pulled down all the cottages and driven out the people as a pestilence, for a couple of hundred years and more, it is not to be wondered at, in the condign nature of things, that a time should come when the problem is reversed, and the puzzle how to get them back again. You must recover them, as you do tame fowl, by putting up hen-roosts and pigeon-holes: else, 'the diggings' will beat us hollow; and a canvass tent on the golden banks of the Yarra-Yarra prove a considerable chop more tempting than the most golden harvest that HOWARD'S plough or WINTON'S fork can extract here from acres without hearths and 'Home' without houses.

Whether the backward-seeming recurrence to the spade or fork is the true *excat* from the tender mercies of the plough on the clays, is another and larger question, which perhaps will scarcely fail to have presented itself to an agricultural philosopher who is so philosophical an agriculturist as the Author of ten editions of 'A Word in Season.' It may be that the very necessity, so powerfully disclosed by his system, of a more rational and efficient mode of culture of clay land may prove the hand-maid to invention; that the wish may prove father to the thought. It would not be the first time that so happy a result has been brought about by such antecedents. In the great steeple-chase of human invention, as in every other, it is the stiffest barriers that have occasioned the most triumphant leaps. Whoever takes the trouble to compare for a few thoughtful minutes the work of WINTON'S fork with that of the common plough on a stiff clay soil, is struck by a contrast so entire between their modes of action, that in balancing the future possibility of the application of steam to cultivation, he feels like a traveller whose road leads off in two different directions. He must take his choice; is he to attempt the problem of applying the steam-engine to the plough, an agent he has already begun to distrust on its own account, upon the clays? or is he to put his new wine into new bottles, and, having pronounced already in favour of a mode of treating clay which leaves it really cultivated and open to the atmospheric influences, shall he try whether this cannot be accomplished by steam instead of horses or hand labour, and so work the whole question at once? The general analogies which the history of invention affords would seem to point in this direction. To those who have not much considered it, it may look "the longest way round;" but there is an old proverb which answers that objection.

THE welfare of the LABOURING CLASSES occupies a much larger share of the public attention now than it has ever done before. And the ways in which it can be furthered are better understood. A good illustration of both these facts was given last Wednesday, when we had the pleasure of attending meetings connected with the subject, both of the English Agricultural Society and of the Society of Arts. At the former Mr. SLANEY brought forward a number of facts and suggestions connected with the improvement of cottages; and at the latter the Very Rev. the Dean of Hereford related a number of facts and urged a number of suggestions relating to the improvement of schools. Both of these gentlemen, by long personal labour in their respective departments of benevolent enterprise, have acquired the right to speak authoritatively on subjects connected with the improvement of the condition of the labourer, and especially that of the agricultural labourer, but it was instructive to observe how very far from the mere assertion of abstract principles and general or theoretical doctrines was the statement that each had to make. The former confined himself to details connected with the supply of water to cottages and the removal of water from them, and nothing was more repeatedly urged upon his hearers, by the latter, than that it was not writing and

talking on the subject that was wanted, but patient and persevering labour in individual localities.

The grand principle insisted upon by the Dean, and by no means infringed by Mr. SLANEY, was the necessity of preserving the independence of the labourer. If benevolence interferes with this, it is mischievous in its influence. Hence the evil done by many of those charities—educational and otherwise—which were so strongly denounced in the paper read before the Society of Arts; and hence the fact that the ability of a benevolent man on behalf of the general labouring population of this country is confined not by the limited means at his command, but by the limits of that small portion of their circumstances on which he can usefully bring those means to bear. The two chief points on which he can operate are, we believe, cottages and schools; and yet in both there is the liability to do mischief by interfering with that independence which must be left untouched. Hence the advantage of all such suggestions as Mr. SLANEY urged, by which improved circumstances may be attained at small cost, and therefore with but little increase to a fair rent; and hence the importance of such suggestions as have long been urged by the Dean of Hereford, and by which his school at King's Somborne, in Hampshire, and others which have copied its example, have become self-supporting.

The great secret of this hitherto rare result is, as is now well known, that mixture of classes in these schools, by which the higher payments claimed from the sons of farmers and tradesmen are made to supplement the lower payments received from the children of labourers. In addition to this, there is the higher payment claimed even from these latter than is generally demanded; and no part of the Dean's experience has been more valuable than that which proves the fact that labourers even prefer to pay this higher sum rather than receive education as a charity.

The prejudice against that mixture of classes of which King's Somborne was one of the first instances in England, has not operated to the detriment of the parochial schools of Scotland, where for many generations the children of farmers have received the elements of their education from the same master, in the same room, with the children of their labourers. And we believe that to a very great extent this prejudice will be found powerless in England, too, wherever it shall be fairly combated with that patient resolution which must be brought to bear on the subject of education if it is to be successfully accelerated at all, and which has so strikingly characterised the efforts hitherto of the Dean of Hereford.

We hope next week to be able to present a detailed report of the Dean's address. Our object at present has been merely to direct the attention of our readers generally to the subject, and to notice the gratifying illustration which both the Societies named afford of the interest which one's "neighbour," as well as one's "self," now-a-days excites.

#### HISTORY OF BRITISH AGRICULTURE.

No. I.

[For the following instructive paper we are indebted to the kindness of its author, Mr. James Crane, by whom it was last week read before the Kelvedon Literary Institute; and also to the good offices of the President of this institute—Mr. Mechi.]

IN attempting a sketch of the history of English agriculture, it is needless to dilate upon either the antiquity or the importance of the art itself. Food was man's primary want, and the tillage of the earth, which alone can minister to it, his first calling. The geographical position, the warmer and more genial climate of those nations of antiquity of which we possess records, permitted a culture, of which even the minutest details, were they to be had, would throw but little light on the origin or progress of husbandry in our own country.

The earliest authentic description of our island is found in the Commentaries of Cæsar, an illustrious Roman commander, who planned and executed an invasion of Britain about 50 years before the nativity of our Saviour, and who has left a history of his campaigns, which may be looked upon generally as the testimony of an eye-witness of the facts related. He found the country rather thickly inhabited by a people in a state of barbarism, and describes it as a waste of uncultivated pasture, with immense tracts of forest and coppice. He mentions that agriculture had been introduced on the south-eastern coast, about 100 years previously, by a colony from Belgium; and we learn incidentally that at least some portion near the coast was then cultivated, for we have an account of a furious onslaught by the natives, in which a Roman detachment was nearly cut off while attempting to secure a supply of food by gathering the ripened crops. As this event occurred during the last week in August, we find that, after a lapse of 1800 years, the season of harvest remains about as it then was. The natives of the

inland parts, ignorant of all tillage, lived on berries, roots, flesh, and milk.

From subsequent Latin writers, a few meagre, straggling glimpses are obtained of the state of agriculture among the Britons, as that they were ignorant even of so primitive an implement as the flail; and Strabo tells us that, though they had abundance of milk, they were unacquainted with the art of making cheese; and we are also told that they preserved their corn by storing the ripened ears in caves formed for the purpose. Although we have no proof that this wonderful people carried agriculture to any great pitch of excellence, even in Italy itself, still they held the art in high esteem, and we find the most illustrious of their heroes engaged in it. Indeed, many of their patrician names, the Lentuli, the Fabii, Piso, and Cicero, smack marvellously of an agricultural origin. Cæsar's stay in Britain was but short; a tribute was imposed, that was sometimes paid, and often withheld; and it was not till nearly a century later, during the reign of the Emperor Claudius, that the country was permanently occupied. One of the first points to which the attention of the invaders was directed, was the raising a supply of bread-corn for the supply of their legions. The Roman soldier at that time was everywhere the pioneer of civilisation: the legionaries and veterans engaged personally in the toil of the field, and were alone both the teachers and the fellow-workmen of the natives, whose labours they directed. The tribute of a certain quantity of corn, which the conquerors imposed upon every part of the country, as it fell under their dominion, obliged the natives to practise tillage, and they soon produced more corn than sufficed for their own use and that of the Roman garrisons.

The first colony founded in Britain by the conquerors, that of Camelodunum, was situate at the neighbouring town of Maldon, and another flourishing station was established at Colchester, before the founding of London itself. It may be partly owing to this early colonisation of the eastern counties, aided by their great aridity, so favourable to corn crops, that they owe their original pre-eminence in farming over the rest of the kingdom, a distinction which they have in some sort maintained through all subsequent time, and may, I think, taken as a whole, be fairly held to exhibit even at the present day.

As an evidence that even thus early, means were used to increase the fertility of the soil, I may quote from Pliny, who says, that before his time marl was employed as a manure by the ancient inhabitants of this island, although it does not seem to have been so used in Italy. He mentions it as having been found out in Britain and Gaul, and describes it as "a certain richness of earth, like the kernels in animal bodies that are increased by fatness;" and it was also employed by kindred nations on the continent, "for," says Varro (who was somewhat Cæsar's predecessor), "when I marched an army to the Rhine, in Transalpine Gaul, I passed through some countries where I saw the fields manured with white fossil clay." It is not at all improbable that many of the pits and ponds existing in fields at this day were thus dug out by our forefathers of that remote age.

That the produce of the island largely increased during the Roman occupation is attested by the account, if authentic, that large supplies of corn were sent hence to the store-houses of Rome itself, and it was, doubtless, from this surplus produce that Britain was called the granary of the western provinces.

The Emperor Julian, in the fourth century, built granaries to receive this corn; and on one occasion sent a fleet of 800 ships, described as "larger than common barks," to convey it to the mouth of the Rhine, whence it was sent up the country for the support of the plundered inhabitants.

We have, however, no account either of the modes of tillage or of the amount of increase obtained, but it may for various reasons be inferred that great advance was made in the art. Many of the princes and nobles visited Rome, some as captives indeed, and others as suitors or complainants, and the youth of the higher classes resorted thither extensively for education, where they must have become familiar with the elegant and popular agricultural writings of Cato, Virgil, the elder Columella, Palladius, and Pliny—distinguished lights of Latin literature. Many of those enrolled in the Roman armies returned from a service that had carried them through the greater part of the then known world, acquainted with the farming processes of regions far in advance of the native agriculture, and improvements would thus from time to time be effected. The introduction and spread of Christianity among both the Britons and their masters had, doubtless, also an influence upon an art so essentially peaceful, and in which the Christian priesthood, from its earliest establishment, has taken an active part.

On the final departure of their conquerors the Britons split up into factions, and principalities were speedily plunged into war among themselves, and exposed to the incessant attacks of their barbarous but more warlike neighbours—the Picts and the Scots. In their helplessness they invoked the aid of the Saxons, a fierce race from the north of Germany, who, like the enemies just mentioned, were also pagans. The first comers, pleased with the country, invited others of their compatriots, and in comparatively a few years were masters of the island. The Saxons seem to have had a special relish for war, and looked upon agriculture not merely with contempt—they regarded it with aversion. So inveterate was their jealousy of its peaceful in-



fluence that, among themselves, as Strabo tells us, they permitted no one to acquire a settled right in land, a fresh division being made every year, lest a love of property might diminish the ardour for war.

They depended chiefly for subsistence on their flocks and herds, regarding the cultivation of their lands as too ignoble for themselves, and leaving it, according to Tacitus, to their women and slaves. On their arrival they found the island abounding in numerous flocks and herds, which, their pastoral tastes prevailing, they immediately seized for their own use; and, after their settlement, they continued to follow pasturage as the chief means of subsistence. Little more is known of the state of agriculture in Britain during the Saxon era than that it was reduced to the lowest ebb.

In the division of the spoil the largest portions of the conquered lands of course fell to the lot of the princes, nobles, chiefs, and commanders, who divided the estates thus obtained into what were called inland and outlands. The inland were those lying around or contiguous to the dwelling of the owner, which he retained in his own possession, and cultivated by slave labour under the direction of a bailiff, and thus raised food for his family and establishment. These slaves were called villeins, the word at that time not having the same opprobrious meaning as now. They were bound to the soil, and might be transferred along with it. The outlands, those situate at a distance from the seat or mansion, were let to farmers called churls, at moderate rents, generally payable in kind, and embracing almost every article that entered into the ordinary consumption of a family. The farmers, for mutual protection in those lawless times, were driven to dwell together in villages, the cultivated land being unclosed, and to each hamlet was annexed a certain quantity of open pasture, which was enjoyed by the inhabitants in proportion to the extent of their land under tillage, a custom in which we see clearly the origin of existing common rights. In those days the division of labour was little understood; the ploughman was the maker of his own plough and harness, the first chiefly of wood, the other of Willow withes. The ploughs were drawn by oxen, of which eight formed a team, and about half an acre constituted a day's work.

The Saxons, in their turn, were attacked by innumerable swarms of pirates (known historically as Danes), also pagans, who for many years carried devastation through the country, and ultimately obtained the crown. These maritime freebooters seem to have had no idea whatever of agriculture, but shifted from place to place, as force or fancy urged; and thus for upwards of 600 years, from the exodus of the Romans till the Norman Conquest, this unhappy country was, with few brief intervals, the constant scene of massacre and rapine.

(To be continued.)

## ROYAL AGRICULTURAL COLLEGE.

### SESSIONAL EXAMINATION.—DESCRIPTIVE BOTANY.

#### MORNING.

A. Give such a general description of the different parts of plants as would be required for their Analysis and Classification, such as—

1. The Root—describing its more general forms.
2. The Stem—distinguishing its Classes.
3. The Leaf—pointing out the forms of most frequent recurrence.
4. The Flower—describing its various parts and their more prominent modifications.
5. Fruits—Their parts and distinctive characters.

B. Explain the general facts connected with the Natural History and Agricultural Economy of British Pasture Grasses, having reference more particularly to the following points:—

1. The names and arrangement of the organs of a Grass.
2. The principles of their Classification.
3. Facts connected with the distribution and growth of good and bad kinds.

#### ANSWERS BY MR. PEILE.

A. (1.) Root, or descending axis of a plant, is characterised by the absence of buds or leaves, by the absence of woody matter, except in old trees, and in most plants by the absence of pith and colouring. The roots serve to hold the plant firm in the ground, and to extract moisture and nutritious matter from the surrounding soil. For this purpose they have a number of cellular bodies called spongioles at the extremities of the rootlets. Roots have a variety of forms, such as the moniliform, or necklace shape, the tuberos and tuberculated, the fusiform, which is the shape that tap roots generally take. Exogenous plants usually send out a tap root first from the seed, but endogenous have a number of short radicals sent out first, from which roots spring afterwards, and acrogens have fibrous roots.

(2.) The stem, or ascending axis of a plant, varies considerably in different orders of plants. Exogens have a wood and bark distinct, also medullary rays and concentric rings and pith, and the wood increases externally, the bark internally. Endogens have a bark with difficulty separable from the wood—or rather stem, as it is hollow—containing no pith, and only having woody bundles placed at intervals to give strength to the stem, and being closer together near the bottom than in the rest of the stem. They increase in a manner internally. Acrogens have no bark which can be separated from the wood, and they increase in Ferns by additions to the top of the stem, and in thalloids by addition of cells externally. Stems take usually a round shape in exogens, but in endogens they are sometimes round, sometimes oval, sometimes triangular, &c. Again, stems in all classes, have different armatures, sometimes

hairs or thorns, &c. Stems grow in a variety of ways; the generality are upright, others procumbent, others kneeling, others climbing, others creeping, others twining, others sending out scions, as the Strawberry. Some stems have leaves on them opposite each other, others have them placed alternately.

(3.) The leaf is an expansion of the bark of a plant, having an extension of the wood of the plant as its framework. The parts of a leaf are the blade, the midrib, the nervures, and the petiole, which in sessile leaves is absent. Exogenous leaves have net veins, endogenous parallel veins, and acrogens have forked veins or nervures. Leaves have an outer covering of colourless flattened cells, which give them a shining appearance. They have variable quantities of green colouring matter called chlorophylle, and a number of stomata or pores placed on both sides of the leaf, but generally preponderating on the lower side. All these are cellular in their structure. Some leaves have hairs, others are smooth. Some of the most common forms of the margins of leaves are the serrated and the crenated, other leaves are smooth, others lobed and irregular. Leaves take on a variety of forms, peculiar to different plants, which forms are all expressed by certain terms.

(4.) The flower in exogens is generally the most showy part of the plant; but in many endogens, as Grasses, it is not showy at all, having merely the same colour as the leaves. All parts of the flower of plants are modifications of leaves. The calyx or cup is the part of the flower next the stem, and generally consists of several pieces or sepals, which in some cases are all cemented together, so as only to form one cup. The calyx is generally green in colour, and acts as a protection for the internal structures of the flower. Sometimes it falls off as soon as the flower breaks out, at other times it is persistent. The corolla is generally the showy part of the flower, and consists of a number of petals, which mostly alternate with the sepals of the calyx. The corolla includes the limb, claw, and blade, and assumes a variety of shapes in different species of plants, as the campanulate or bell shape, the ligulate or strap shape, the rotate, &c. The stamens, or male organs of a flower, are usually placed alternately to the corolla, and consist of the anther, which may be double or single, and which contains the pollen and filament or stem. The pistil is usually placed in the most central part of the flower, and in upright flowers is shorter, and in drooping flowers longer than the stamen. The pistil, or female organ of the flower, consists of the stigma at the top, which sometimes has bristles, to receive the pollen, and which it passes down the style to the germen, where fecundation takes place. The pistils frequently are the same in number as the stamens. On their differences, however, the Linnean classification has been founded, with reference to the following facts, the orders being found on the pistils, the classes on the stamens:—1st, with reference to the number of stamens; 2d, their situation; 3d, their arrangement; 4th, their mixed condition; and 5th, their presence or absence. In this way Linneus has divided the whole vegetable kingdom into 23 classes, which have stamens, &c., and one class which has none, and is called Cryptogamia.

(5.) Fruits are the seed of a plant, with its covering. The fruits may either be dehiscent, indehiscent, or bracteaceous. Dehiscent fruits can be opened without damaging the fruit, and contain their seed in a cartilaginous box. They are divided into the follicle; the legume, which has no partition down the centre; the silique, which has a partition, and the siliculate, a small variety, as the Shepherd's Purse; and lastly, the pod or box shape. In indehiscent fruits the seed cannot be got at without tearing away the fleshy pericarp in which it is enclosed. Fruits of this kind are divided into the Drupe or Cherry, which is intermediate between the dehiscent and the indehiscent, the Pome or Apple, &c.; the Pepo, as the Cucumber, Melon, &c.; the berry, &c. Bracteaceous fruits have a kind of scales, or hardened bracts, as in the Fir cone, &c. (The fruit is the matured pistil of a plant.) The parts of the fruit are the pericarp, epicarp, and endocarp, which are terms applied to the different forms in which the fleshy matter is arranged, as the Apple, Nut, &c.

(6.) The seed is attached to its covering by the umbilicus, which in the Bean tribe is attached to the hilum or scar. The seed may be described as the matured ovule of a plant. In exogens it is dicotyledonous, in endogens it is monocotyledonous, and in acrogens acotyledonous. The cotyledons contain nutritious matter, as starch, &c., which on exposure to a proper amount of moisture and air, but in the absence of light, is converted into sugar, and is taken as food by the cotyledon leaves, which are sent upwards, and which are also assisted by the nourishment which the root takes up. The seed is covered by the testa, which in some cases has prolongations by which it works its way into the ground. Some seeds of the lower orders of plants consist of mere single cells.

B. (1.) The parts of a Grass are the stem, and the leaves, which are placed alternately. The leaves are divided into the sheath, or that part which wraps round the stem, the edges not being attached but merely overlapping, and being kept stationary by a ligule or strap, and the blade of the leaf, which is generally of a long narrow shape, the lowest leaves being the largest, and in some plants having hairs on them, in others smooth. Hairs on leaves of Grasses are often indications that a plant belongs to sterile soils, and contains very little nutritive matter. The stems of Grasses are generally upright, sometimes underground,

sometimes creeping, and sometimes have stolons. The roots are fibrous. The flowers are either spiked or diffuse, and consist of a calyx, the parts of which are called glumes, or paleæ, the corolla, and usually three stamens and two pistils, on which facts the classification of plants depend. The corolla generally encircles the seed, and as in the Barley, it has a prolongation called an awn. The glumes of the calyx vary considerably in different plants, being sometimes smooth, sometimes hairy, or ciliate, &c. The flower usually rests on the pedicel, which in some cases is absent. The seeds are monocotyledonous, and the leaves parallel veined.

(2.) British Grasses are divided into three classes, according to the number of their pistils and stamens. 1st class, two pistils, two stamens, as the Anthoxanthum; 2d, one pistil, three stamens, Nardus; 3d, two pistils, three stamens, all other Grasses. The third class is subdivided into three groups, depending on the number of flowers to each calyx: 1st, plants with only one flower to each calyx, which are also either spiked or diffuse, as the Alopecurus, &c.; 2d, plants with two flowers to each calyx; and 3d, with many flowers to each calyx, as the Bromus Grass, &c.

(3.) Of the 123 British Grasses, there are 34 indicating good land, 42 indicating bad land, 17 sandy land, 10 wet, and 20 which do not indicate the character of any soil in particular, as the Poa alpina. Among the Grasses indicating good land we mention the Poa pratensis, Alopecurus pratensis, Avena flavescens and pubescens, Hordeum pratense, &c. Among the bad Grasses the Arrhenatherum, the Bromus sterilis and mollis, Brachypodium, &c. Among the sandy Grasses the Ammophila and Hordeum marinum. Among the wet the Catabrosa, the Aira cæspitosa, &c. The knowledge of the fact that certain Grasses indicate certain soils is of great importance to the farmer, as it not only enables him to find out the nature of the soil with which he has to deal, but it tells him how that by so improving a soil as to drive away bad Grasses, Nature will lend him a helping hand in filling up their places with good ones. A good Grass is one which will supply plenty of herbage all the year round, and that herbage of a nutritive character. No rough Grasses are good; in fact, hairs on the leaves of Grasses often indicate a sterility of soil, and show that there is generally a lack of moisture. To ensure plenty of herbage a Grass should be a perennial, so that after a crop of hay has been taken off, the leaves, &c., which are left will supply a large quantity of aftermath, which is of great importance, and which is not obtained from annual plants, as they die away after they have been mown, and yield no aftermath. Again, it is necessary that Grasses for pasture should begin to grow early in spring. A knowledge of the nature and habits of different Grasses is of great importance in laying down land to pasture, or in preparing it for irrigation or common meadows. The best seeds for upland pastures will include the Avena flavescens and pubescens, the Cynosurus cristatus, Poa pratensis, Fescues, with which may be conjoined Dutch Clover and Perennial Rye-grass. For meadows the Dactylis glomerata, Alopecurus pratensis, Hordeum pratense, Poa pratensis, Avena pubescens, and Agrostis stolonifera, will make a very good pasture.

## Home Correspondence.

*Furrow Draining; its disadvantages.*—Mr. Bailey Denton has very amusingly shown the loss to the land which is consequent upon laying drains in the furrows, in place of operating irrespective of them, by instancing the greater purity of the water the deeper drains discharge; and as the practice of furrow draining is recommended only on the ground of saving of expense, and by attributing greater facility of access for the water into the drains, it will be useful to examine as to whether or not these advantages are really to be found in favour of a practice against which there are very serious objections. It is more particularly in those districts of England where the surface still lies in the ancient high ridges or lands formed at an early period of its cultivation, for the purpose of casting off the water, that furrow draining is recommended. These ridges or lands are generally of irregular widths, varying from 18 to 30 feet, and often differing as much as 15 and more feet in the same field; they usually wind down the slope, and are laid round, so as to give a gradual fall of from 1 to 2 feet from the centre into the furrows. At the present time there is an indisposition on the part of the tenants to get rid of these high ridges. They as yet are unacquainted with the perfect drainage which clay soils admit, and their attention has not been given to the loss their land sustains by the water running off the surface. But with the adoption of effectual drainage, and with a better acquaintance of the uses of rain, the necessity for keeping the surface in this form will be seen to no longer exist, and farmers will become desirous of freeing their land of the impediments to cultivation and perfect vegetation that these ridges present, and they will see the importance of having the ground laid so that every drop of rain may sink into it, and the soil may gain the additional fertility which its descent gives it. When the advocates for furrow draining bring in support of it the saving of expense, by the shallower cutting in the furrows, and urge that a readier passage for the water into the drains is presented in the furrow, they leave out of consideration the additional cost they incur in the



larger number of drains and the greater lengths of each drain, which is consequent upon keeping the uneven distances and winding courses of the old furrows; and omit that, whilst the saving in one instance is merely a reduction in price of the labour, there is to be set against it the whole cost of the additional draining, including both the labour and pipes; so that in reality, although the price of the cutting may be less by going in the furrows, the expense per acre will be more—to say nothing of the mischief to the draining, from being governed in laying out the drains by the direction and breadths of the ridges, and not by the best inclination of the ground and strength of the soil, and of having the drains tortuous and at uneven distances, in place of running straight and at regular intervals.” And with respect to the readier passage for the water into the drains, and its supposed quicker discharge in the furrows, surely the error of this will be seen when we trace the passage of the water into the underground drains. To suppose that the water enters on the top of the drains is to at once decry the utility of underdraining; for, if the water so entered the drains, their action would be limited to draining the space above them, depth would lessen rather than increase their activity, and open furrows would answer every purpose. But experience has fully shown that covered drains are useful in making the ground between them porous, so that the rain, when the land is thoroughly drained, sinks perpendicularly where it falls, till it reaches the level of the drains, and is then hindered from accumulating upwards by the vents there given to it. This being so, the situation of the drains can make no difference to the flow of water into them; they will be as active on the ridge as in the furrow. But if this be not so—if they do not make the ground porous—that is to say, if the water had still to run over the surface to reach the drains and entered on the top of them, Of what utility could they be? The water without them would be caught and carried off by open furrows, and depth of drains could be of no advantage. *Hewitt Davis, 3, Frederick Place, Old Jewry, London, April 27.*

**Peat Charcoal.**—The subject grows upon one as researches proceed. Since my last notice, the deodorising and attractive forces which it exerts upon urine, in the various stages of decomposition which that fluid undergoes, have been the chief points of investigation. The constituents are very numerous and perplexing, even when voided by the human subject in a state of health; but when in that condition wherein it exists in the fluid state of town sewage, serious difficulties must superabound. Fresh, healthy urine almost invariably shows an acid reaction, converting the blue colour of litmus paper into a red; yet this acid is speedily lost, and in a few days gives place to a sensible development of volatile ammoniacal gas, tainted with a foul and putrid odour. In this condition, if a strip of glass, moistened with muriatic acid (spirits of salt), be held over it, abundance of white fumes will be seen to fall upon the surface of the liquid; and particularly if the glass be held just within the neck of a phial half filled with the alkaline urine. If an ounce of it be carefully poured in a glass containing about an ordinary tumbler full of fine dry peat-charcoal, and thoroughly mixed with it, the putrid odour will soon be overcome, and the ammoniacal gas also; hence the delusive idea that the peat has combined with that powerful fertiliser. But if, after waiting a few minutes, the moistened peat be transferred to a glass funnel (guarded with a little tow or a piece of muslin, to prevent the passing of the peat), and soft water be poured over the mass, slowly and in small quantities, till clear drops fall into a clean phial or test-tube, and the stopper of a muriatic-acid bottle held within the vessel, a heavy vapour of sal-ammoniac will be produced, which will fall down in a sort of column, till it reaches the filtered liquor. I have just performed this experiment, and have detected—besides a faint saline flavour—carbonate of lime, chlorine, sulphuric acid, potash, and ammonia. Peat-charcoal therefore permits the above, and traces of other chemical matters, to escape through it, and also to be expelled from its own substance by the affinities called into play by the blending of the decomposing urine with it. It is a certain fact, proved by the experiments of Messrs. Thompson and Way, and confirmed by my own repeatedly-varied processes, that ammonia and its salts, and many alkaline salts, as well as organic colouring substances, are arrested and held fast by any sound agricultural loam, compared with which peat-charcoal is comparatively inert. Who, then, would think of paying 2*l.* 5*s.* or 3*l.* per ton for an article which must be employed in great quantities to deodorise the filthy sewage of a town, at the imminent risk of, at least, polluting the air, and rendering it offensive to the inhabitants? *J. Towers.*

**Rooks.**—Observing a letter in your journal of the 16th inst. in favour of the harmlessness of rooks, signed J. R. Pearson, and in which he says, “I cannot help thinking those are seldom practical farmers who complain of them as if they were a complete nuisance.” Now, as a practical farmer, I will give you my experience of their depredations, and leave your readers to judge whether these birds are or are not a nuisance. Last spring I sowed a field with Wheat, which was entirely destroyed by them, as was also another entire field of Beans, as well as another of Barley, and by their stocking the Clover seed was also lost. In this neighbourhood, as there is a free school, there are no children to be hired at 6*d.* a day to scare them, or I would gladly give it, for this spring my enemies are again in full force, and my time is incessantly employed

in firing at them, though with very little chance of a better result than saving half my crops, perhaps. Many, like your correspondent before mentioned, suppose they only do good, by taking worms, &c.; but seeing is believing, and if any of your readers wish to be convinced that rooks are more harmful than harmless, I would recommend them to examine their Bean or Pea fields after a flock of rooks have just risen from their breakfasts about half-past 5 in the morning; they will find plenty of holes but no Beans in them. So great a pest do I find these birds, that I think they should be considered vermin just as much as hares or rabbits, and tenants should be allowed to destroy them as such, for it is a hard case indeed to pay rent and tithes for land which produces nothing but food for the landlord's rooks, who keeps them for neither profit nor pleasure that I can find out, except he may have a fancy for the music of their cawing, which, if it be sweet to him is a death knell to me, knowing that not only have I no hope for my crops, but that my seed Wheat, even, would have been much better thrown to my pigs and fowls. I write this fearing your correspondent's letter in favour of rooks may induce a few more landlords to form rookeries, thinking they are rather conferring a benefit upon their neighbours than otherwise. *A Practical Farmer, who considers Rooks a “complete nuisance.”*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House in Hanover Square, on Wednesday, the 27th of April: present, Lord ASHBURTON, President, in the Chair; Lord BERRERS, Hon. R. H. Clive, M.P., Sir John V. B. Johnstone, Bart, M.P., Sir Montague Cholmeley, Bart., Mr. Raymond Barker, Mr. H. Raymond Barker, Mr. Birmingham, Mr. Bullen, Mr. D. Burton, jun., Rev. Thomas Cator, Colonel Challoner, Mr. Capel Cure, Mr. Dyer, Mr. Fisher Hobbs, Mr. Hyett, Mr. Majendie, Mr. Manning, Mr. J. Chalmers Morton, Mr. Paget (Ruddington Grange), Mr. Paine, Mr. Parkins, Mr. Pocock, Professor Simonds, Mr. Slaney, Mr. Reynolds Solly, Mr. Spencer Stanhope, Mr. Crompton Stansfield, Capt. Henry Vyner, Prof. Way, and Mr. H. W. White.

**COTTAGERS' WELLS AND PUMPS.**—Mr. Slaney, of Walford Manor, Salop, favoured the Council with the results of his experience in obtaining convenient supplies of water for the various detached labourers' cottages on different parts of his estate, in that county, by very simple and inexpensive, but effective means; to the adoption of which he had been led, by becoming acquainted, during his connection with successive sanitary commissions, with the absolute necessity of an adequate supply of water to the poor, within a moderate distance from their homes. He described the simple mode by which the wells were sunk, and stated the cost of the pump complete, at from 3*l.* to 5*l.*, as made by Caswell, of Wolverhampton.—Col. Challoner referred to the great advantage he had derived in point of economy and efficiency, from the adoption of Warner's pumps.—Mr. Hyett made remarks on the contamination of well-water, arising from the use of iron and leaden pipes.—Prof. Way mentioned the jannapping process of Dr. Smith, of Manchester, by means of which red-hot iron, plunged into a certain bituminous composition, received a very hard protective coating.—Mr. Crompton Stansfield explained the operations of the late Mr. Scott, of Leeds, in sinking wells, and referred to his own experience of the rapid oxidation of iron under particular circumstances. He doubted the durability of the bituminous varnish to which Professor Way had alluded.—Mr. Paine explained the application he had made of the drainage water, from a few fields, to supply the wants of a village lying upon another geological formation.

Mr. PAGET and Professor SIMONDS communicated information connected with the inoculatory process carried on in this country and abroad, with a view to subdue the virulence of the symptoms of cattle labouring under pleuro-pneumonia, and with the complete report on this subject, in preparation for immediate publication in the Society's Journal.—Mr. Bailey Denton's model mapping, and Mr. Domolo's paper on swamp drainage, were referred for consideration at the weekly Council on the 25th of May.

The Council then ordered their usual acknowledgment, for the communications then made to them, and adjourned to their monthly meeting on the 4th of May.

## Farmers' Clubs.

Avr, April 19.—We abridge from the *Agri Observer* a portion of a speech lately delivered by Mr. Caird, on the occasion of a public dinner to himself at Wigtown.

In addressing a burgh constituency in the midst of an agricultural district, if I now touch on subjects connected with rural prosperity, it is needless for me to say that their interests are intimately connected with those of the farmer; and especially as I see so many of my friends, the enterprising farmers of Wigtownshire, in this room, do I think it proper to refer to a subject of much importance to them. I refer to the supply of guano. Little more than ten years ago, this substance was unknown to British agriculture, though it had been used in Peru for upwards of three centuries. There is not a farmer in this room who does not consider it, in a greater or less degree, now almost indispensable to good management. The supply is known to be practically inexhaustible; all that has yet been taken from the islands is a mere scratch on the surface; and yet the world is shut out from the benefit of this amazing natural source of fertility. The guano islands belong to Peru, and she may dole it out as she pleases. America and England applied a wiser principle to their gold mines in California and Australia, and people of all nations are

admitted to search for gold on payment of a uniform license. This is what I think we have a right to ask of the Peruvian Government—that they should sell this substance at its value to all who choose to come for it, and that the trade would thus be thrown open to the competition of the world. There cannot be a doubt that the effect of this would be to reduce the price very considerably. Now, this is a question which not only affects the landed interest, but is of great importance to the shipping interest, as well as to the nation at large. I will not weary you with calculations, but I may just state that the application of half a million tons of guano to the Wheat crops in this country would increase the annual produce by five million quarters, and thus do away with any need of foreign importations. Instead of paying to the foreigner ten millions sterling for this supply, we would get it from our own fields for four. Nor is this the only source of fertility for the worn-out corn fields of Europe which Peru possesses. On the Pampa of the Tamarugal, an elevated plain, stretching 80 miles along the foot of the Andes, and only about 10 miles from the coast of the Pacific, there exists an inexhaustible supply of nitrate of soda. It may be dug like gravel, and all that is needed for its transport to the coast is a good road, as it is now, for want of a road, must be carried on the backs of mules. This is even a more powerful manure for corn than guano. As at present managed and transported, it costs from 16*l.* to 18*l.* a ton in this country; but there can be no doubt whatever, that, by prompt application, it could be brought here at a cost of less than one-half its present price. Most fortunately, this deposit is not confined to Peru, but extends into the contiguous territory of Bolivia, so that here is a rival to the guano monopoly. Now, surely an interest so important as agriculture is entitled to expect from the Government the benefit of its aid in doing away with the monopoly of the Peruvians. I ventured to suggest to the First Lord of the Admiralty, in January last, the advantage of sending out a steamer or other exploring vessel for the express purpose of searching out deposits of guano. As much impressed with the importance of a cheap and abundant supply of guano as I was, Sir James Graham, while he declined to recommend an expedition for the purpose, did me the honour to say that he would, in accordance with my suggestion, renew the orders to the Admiral in the Pacific, to instruct his officers, in cruising in those latitudes, to make this an object of their search. I likewise pressed this subject on the attention of the President and Secretaries of the Board of Trade, and I have reason to know, not without some effect. There is another question in which it has been my fortune to take a prominent part—agricultural statistics. In all other branches of business in this country it has been thought necessary to have accurate information accessible to the public, so that some idea could be formed of the extent of supplies, and the varying circumstances which influence the prosperity of different pursuits. While the supply of wine, of tea, and coffee, and silks—the extent of the cotton and woollen manufactures—the produce of mines—even the number of miles run over by railway trains, are accurately known, the supply of corn, the staff of life, is left to conjecture. After every harvest there comes a period of doubt; and instances in our own time have shown that the price of corn was, under the influence of this uncertainty, enhanced to the people by an amount equal to nearly the whole taxation of the country, while there proved actually at the time to have been almost a sufficient supply. Trade was deranged, great importations made, and when the truth at last came out, large fortunes were lost by the sudden fall of prices to their true level. All this might have been prevented by accurate returns of the produce of the harvest, the expense of obtaining which is not for a moment to be compared with the importance of the information. I am glad to say that this subject has at last been taken up by the Government in an earnest spirit, and with a reasonable prospect of carrying it into effect. I would not detain you so long on subjects connected with agriculture, if I did not see around me many of the best farmers of the district. Encouraged by that I will venture a little further on this matter. I dare say you will all recollect that in the spring of 1849, I published a little pamphlet on high farming. It had a wonderful success, and in proportion to that success, its author was denounced by the organs of a certain party with a virulence of language seldom now to be met with in political controversies. In reference to that pamphlet, I would only say that the lapse of years has confirmed the truth of its principles, and I am happy to add, in regard to its much discussed balance-sheet, that my friend Mr. McCulloch will this year realise a net return greatly exceeding that which was then published. But at the very time that I was undergoing a harrowing from “Blackwood,” denounced in every shape and form as the enemy of the farmer, that very month I had written to Sir Robert Peel a letter on the subject of the proposed drainage loan, Sir Robert's answer to which I shall take the liberty of reading. I will not trouble you with my own letter, further than to explain its purport, which was, that it was a common practice in Scotland for landlords to charge the whole of the repayment of the drainage loan on their tenants, and that, however great the improvement, it was a hardship that the tenant should be obliged to bear the whole expense. I suggested that this might be obviated by an extension of the time for repayment to such a number of years, as that 5 per cent. would pay principal and interest, thus relieving the tenant to the extent of 1*l.* per cent. or 15*s.* a year on every 1000*l.* expended on drainage, without forming any additional burden to the landlord. I farther advocated an extension of the objects of the loan to farm-building and fences.

SIR ROBERT PEEL TO MR. CAIRD.

Drayton Manor, March 25, 1850.

“DEAR SIR,—Before I left London, I had an interview with the Chancellor of the Exchequer, on the subject on which you wrote to me. I do not think that it would be advisable to extend the period for the repayment of the advances on account of drainage, and as I think it would be impossible to interfere by legislative enactment with the arrangements between landlord and tenants in respect to the relative charge to be borne by them on account of the repayment of advances, I do not see how the extension of time would benefit the occupying tenant. I am told there are cases in which the landlord makes the occupying tenant pay 7*l.* per cent. on account of draining, for which he himself pays 6*l.* If he were to pay 5*l.* what should prevent him making a similar charge on the occupying tenant? I hope, from what passed between us, and communications which I have subsequently had with him, the Chancellor of the Exchequer will make some provision for farm-buildings and fences.—Faithfully yours, (Signed) ROBERT PEEL.”

You see the interest Sir Robert Peel took in the subject, and the reason he gave why this extension of time could not be granted. Yet this great man, who was at that very time told in the House of Commons that his name was cursed by the farmers in every market town, charged only 4 per cent. to his own tenants for his outlays on drainage. It is not necessary for me to vindicate his memory; and as I think it would be impossible to interfere in the universal prosperity and comfort of all classes in this country, and chiefly in the vastly improved circumstances and prospects of that class whose lot it is to earn their bread by the sweat of their brow.

## POULTRY.

**Top-knotted Fowls.**—Under the new classification of poultry it has become fashionable to call all fowls with crests or tufts of feathers on their heads by the name of Polish. I am at a loss to understand from what reason, since Poland certainly has nothing to do with the origin of any of our breeds of fowls; the name is a misnomer, or at least a corruption of something else; nor am I inclined to consider all the top-knotted varieties of domestic fowls of the same origin. The following are



the varieties which I think should be acknowledged. The Padua fowl, so called from the fact of their having been cultivated in Padua, a Venetian legation of Austrian Italy, chief town Padua; they are described as being very large fowls, the cock so tall that it can peck crumbs from a common dining table, and often weighing as much as 10 lbs.; the comb moderate sized, behind which is a large tuft of feathers, which is still larger in the hens; their voice hoarse, eggs large, legs yellow, plumage various; they are supposed to be descended from the Gallus giganteus of Sumatra; does not this description answer to a tufted Malay? Poles were also a large fowl; they were of Spanish extraction, but where the Spaniards first obtained them is a matter of doubt, most likely from some of their western possessions. St. Jago has been named, but which St. Jago is not specified; they were introduced by the Spaniards into the Netherlands, from whence we obtained them. The Poles were very large roundly built fowls, rather low on the legs, which were dark slate or lead-coloured; they were destitute of combs, and had large top-knots of feathers on their heads that fell over on all sides; they were considered good layers, and of excellent quality of flesh. There were three varieties of colours: the black, with white top-knots; the white, with black top-knots; and the spangled, the ground-colour of which was a mixture of ochre yellow, and black, each feather having a white spangle at its extremity. These three varieties are now very scarce, if, indeed, they are not quite extinct. The Hamburgs (by this name I allude to the tufted fowls formerly known by that name, and not to the Dutch every-day layers, which are now generally known by it), were, and still are, imported from Hamburg. I believe them to be a mongrel of the Poles. They are smaller, their tufts are not so large, and are fringed by a small comb; they have generally a profusion of beard and whiskers; their legs are dark, and their plumage is either golden or silver, laced or pheasant; the laced marking is where the feathers, either golden or silver, are edged or bordered with black, giving them an imbricated appearance. The pheasant marking is where the feathers, either of gold or silver ground coloured, are marked or dotted with black at the extremity only, resembling the feathers of a cock pheasant's neck, whence the name. This marking is often (improperly I think) called spangled. Poles, Polish, &c., such as are now generally known by these names, are a mixed lot; crosses from the foregoing, and perhaps also from some others, and consequently varying considerably, whence arise the disputes respecting the beards, &c.: beards or muffs are pre-eminently a characteristic of the old Hamburgs, but it did also occasionally occur in the Paduans and Poles, as it frequently does in all other tufted fowls. There is a tufted cuckoo, or slate-coloured fowl known as Egyptians or blue Poles. Also a common white tufted fowl called the lark-crested fowl. And a variety of game fowls, with small tufts, used to be very plentiful some years back, and esteemed for their courage, from which I think it is evident that all tufted fowls can hardly be considered of one common origin. *B. P. Brent, Basildon Green, Sevenoaks, Kent.*

**Names of Breeds.**—Not being an exhibitor, but an ardent amateur, I justify my signature, stand aloof from the wars of opinions, and seldom interfere. A resident in London I have little convenience for keeping fowls, but if I had I should keep Cochins. On mentioning this to a brother Spectator, he said there is no such fowl; there are Shanghaes. I protest against this continual and whimsical change of name, it involves me in a labyrinth. People were content to call them Cochins, and they have been known as such for years in England. If nothing is to be gained by superior and erudite publications but confusion such as we have had for years in the Hamburg classes; and if our newly-acquired knowledge is to be set aside by every fresh writer, why then, I say, "A plague on all new books, my masters." *Spectator.*

**Poultry.** *Inquirer.* Much depends on the manner in which your fowls are fed, and their laying will be in proportion to their keep. I have not the necessary spare time to go into the calculations that would enable me to answer all your questions with certainty. I can only state my belief, that more eggs, or, if you will, a greater weight of food, may be obtained from Hamburgs than Cochins in the course of a year, at a given cost for feeding. The original cost of the birds to be set aside, and not to enter into the calculation.—*R. F. To secure eggs in the winter, you must keep chickens hatched in the previous spring. H. M. Arnagh.* The disease of which your chickens die, whether pip or roup, is probably caused by damp and cold weather. They require stimulating food. I would advise you to feed twice every day, with stale crumbs soaked in cold water, and to give them pounded pepper mixed with catnip. If your locality is damp I would advise you to counteract this treatment; if it is not, it will be only necessary till weather clearer appears. I have no doubt that will remove the cause of complaint. *J. Bost, 113, Mount Street.*

### Miscellaneous.

"Our Labour-Book is remarkably well calculated for keeping a distinct account of the labour devoted to each kind of stock, and to each field; and this is a most important matter on an arable farm, to be able to see in what manner the money is expended. We conceive that the proper direction of labour is the most vital point of all; for if labour is badly directed there is certain ruin, sooner or later, to every ordinary farmer. Sheep, cattle, and horses, if badly attended to, cause a daily, and therefore a heavy annual loss. Every young farmer should devote his particular attention to the labour department. For instance, last year the cost of

miscellaneous labour on this farm was 154l. 15s. 11d. Now, this sum was paid for jobbing—a good part of it for wet days and all that kind of employment which could not be put to the debit of any one kind of stock, or any one field. The sum paid was large, and unremunerative to a great extent—miscellaneous expenses should always be narrowed into as little bulk as possible. Such expenses, in fact, represent so much money paid for one scarcely knows what. The sheep last year cost for attendance 69l. 1s. 2d., this went for one shepherd constantly employed, and assistants in winter for cutting Turnips, &c. The cattle cost 35l. 7s. 9½d., the pigs 18l. 1s. 2d., for feeding horses 14l. 1s. The fences cost 27l. 7s. 8d., roads 10l. 4s. 8½d., the rest of the labour was charged under the head of each field, and for threshing, &c. By keeping an account of those matters, one is enabled to compare notes with others, and to draw conclusions as to whether the attendance on stock cost too much or not. The whole of the live stock here last year cost 1367l. 10s. 1½d.; on some farms of the same extent, with a very little more stock, the annual expense for attendance upon the live stock amounts to nearly 3000l. There appears a mystery about this, until it is explained that when all the live stock is kept together in convenient buildings, instead of being dispersed in several places, the necessary labour is much reduced. By a well kept labour-book, one is enabled to see how much money is spent for threshing out all the crop; how much is spent for all the green crop hoeing, and many other things which it is desirable and satisfactory to know. The labour-book prepared in a tabular form is not difficult to keep, nor is much time required for it; we have not yet practised that system of book-keeping to know what every crop of corn, Grass, or roots pays, or loses, in a decidedly accurate form. That great desideratum still remains. It would not be difficult to approximate to correctness in such an account, provided one had time for that attention to the minutest details, which could alone enable us to make anything like such an approximation. But the difficulty of assigning a correct money value to everything to or by which the farm is Dr. or Cr. is so great, as to render accuracy extremely difficult. Were this easier, the plan would be to open an account in the ledger with each field or division of the farm, each kind of stock, &c.; and if we would keep this account accurately, the balance on each account would show how much we lost or gained by each field, each lot of beasts, &c. &c.; as it is, we do not attempt more than an account with each species of corn, &c., such as Wheat, Barley, Oats—each species of stock, such as sheep, cattle, pigs, and so on; and an analysis of the labour, together with other memoranda in our possession, would always enable us to form a tolerably correct idea of the cost of any particular crop; while to attempt such an elaborate and theoretical form of accounts as some recommend, would be a great waste of time, which no one who has a farm to manage could be supposed to do. Every farmer ought to keep plain and correct accounts; but when too much is attempted, less than nothing is done. We think every one on entering a farm should have a valuation of live and dead stock, and the acts of husbandry clearly defined. The first book necessary to enter this is a ledger, where a copy of it should be made; there should then be a heading for each kind of live and dead stock, &c., with the numbers and cost entered under these headings; the purchases and sales of each kind of goods for the year should be written, and the difference of valuation from one year to another should also be entered. For example, we shall notice the sheep account. The valuation of the flock at first starting may be 10000l.; the sheep are made debtor to this amount; all the purchases of sheep made throughout the year should be entered under the 10000l.; all the sales which are made throughout the year should be placed to the credit of the sheep, and the valuation of sheep at the year's end must be added up with the sales, when the balance will show what this kind of stock has done during a twelve-month. Every other account should be kept in the same manner; when an abstract at the year's end forms a balance-sheet. Of course a cash-book is required by every farmer as well as a journal, and other minor memorandum-books. The payments and receipts in the cash-book should all be analysed and placed under respective heads in the ledger, when the accounts at any time show plainly what is doing. Tradesmen's accounts form a large item in many so called balance-sheets; that head requires much attention, as most kinds of goods in tradesmen's bills belong to some of the distinct departments of the farm, and should be put under them as a matter of course, or the professed balance-sheet amounts to nothing. For instance, some bills include payment for seed corn, for feed corn, for meal, for oilcake, for bran, for carriage, &c. &c. Now, when such bills are written into the cash-book in a lump, that is not the proper manner. If the oilcake goes to the cattle they should be debited with it, and so on respectively, or no accuracy is attained. It is quite common to hear of tradesmen's bills on a farm amounting to some hundreds of pounds a year—all of which are thrown together, whilst the pigs, the cows, or sheep, are shown off as having made a handsome profit. Tradesmen's bills in a balance-sheet should be as much avoided as miscellaneous labour in the labour-book; they are both very mysterious and unsatisfactory items. Every bill should be dissected, analysed, and classified, according to its nature. That is the best method of knowing how one gains or loses." *Guide to the Agricultural College Farm, Cirencester.*

### Notices to Correspondents.

**ARTIFICIAL MANURES:** *Twyndail.* For Swedes, 3 cwt. of of guano, and 3 cwt. of superphosphates, per acre. The same for Man gold Wurzel, with 2 cwt. of salt, which has been found especially useful for that crop.

**DISEASE IN LAMBS:** *O. Sayle.* We have not met with the disease in our locality. It certainly resembles pleuro-pneumonia, but whether of the peculiar typhoid character of this complaint, or a simple inflammation of the lungs and their envelopments, it is difficult to say. The treatment we would recommend is the administration of two or three grains of white hellebore, internally, to each lamb; a seton in the brisket, and equal parts of iodide of mercury ointment and tartarised antimony ointment, rubbed into the sides. *W. C. S.*

**FERNS, &c.:** *W. Jones.* You must persevere in removing all that appears above ground, and ultimately that which is below the surface will die. Perhaps irrigation might assist you. About Ash-roots, see the *Chronicle* side of the Paper, p. 280.

**FOOD FOR HORSES:** *Esher.* Skim cows' milk will be of assistance to a foal. Mangold Wurzel is not injurious to horses, but a useful food when they can be induced to eat it. *W. C. S.*

**GORSE:** *W. B.* The Ulex stricta or Irish Whin is not propagated by seed, but by cuttings. It produces but few flowers.

**HOOVEN:** *Alpha.* Hoven, or metorization, is produced by the decomposition of the gases of the food, and is induced by indigestion. There are various remedies, according to the extent and amount of the disease: 1 ounce of sulphuric ether, with a pint of warm water, or 1 ounce of hartshorn, with water, will often succeed. The hollow probang passed down the throat, will often afford relief by permitting the gases to escape, but sometimes it is necessary to pierce the flank. *W. C. S.*

**LATHYRUS:** *W. B.* There are various species spoken of by Lawson as well deserving further experiment for agricultural purposes, especially Lathyrus latifolius, sylvestris, and pratensis, the last of which is eaten readily by cattle, but the former are not relished by them. No mention is made of grandiflora.

**MANGE:** *G. S.* The animal has, no doubt, become infected with mange, which may produce its effect in a single day, though a space of 10 days, or a fortnight is necessary to enable the Acarus Equi, the presence of which insect constitutes the disease, to breed and extend the infection. *W. C. S.*

**SAMUELSON'S DIGGER:** *W. B.* We have seen it at work, and will next week refer to its performance in detail. Meanwhile we may say, that in the state in which the land was when we saw it at work, the machine broke it up, and comminuted it from 8 to 9 inches deep, in a very perfect manner, root weeds being left so as to be easily withdrawn and gathered up.

**ERRATUM:** *Q in the Corner.* At page 265 (col. c), of April 23, in the 7th line of the Leader, for "over-flowed marshes," read "overflowed marshes." [Thanks.]

### Markets.

#### COVENT GARDEN, APRIL 30.

Notwithstanding the continued unfavourable of the weather, Vegetables are improving, both in quality and quantity. A few forced Peaches still make their appearance. Hothouse Grapes have not altered in price since our last report, and the same may be said of Pine-apples. Forced Strawberries fetch from 9d. to 1s. 6d. an ounce. Cob and other Nuts bring fair prices. The supply from the Continent of Green Peas, new Potatoes, Horn Carrots, Asparagus, Radishes, Globe Artichokes, Endive, and Lettuces, is still considerable. Both Seakale and Rhubarb are abundant. Frame Potatoes fetch from 2s. to 3s. per lb. Mushrooms are scarce. Cut flowers consist of Hyacinths, Primulas, Tulips, Roses, Cyclamens, Mignonette, Cinerarias, Azaleas, and Camellias.

#### FRUIT

Pine-apples, per lb, 8s to 12s  
Grapes, hothouse, per lb, 10s to 15s  
Strawberries, per doz, 9d to 1s 6d  
Apples, dessert, p. bush, 10s to 15s  
— Kitchen, do, 6s to 12s  
Oranges, per doz, 1s to 2s  
— Seville, p. 100, 7s to 14s

#### VEGETABLES.

Cabbages, per doz, 1s to 2s  
Brussels Sprouts, per hf. sieve, 2s to 3s  
Broccoli, per doz, 2s to 4s  
Greens, per doz, 4s to 6s  
French Beans, per 10, 1s to 2s  
Asparagus, per bundle, 5s to 10s  
Seakale, per basket, 2s to 2s 6d  
Rhubarb, p. bundle, 6d to 1s  
Potatoes, per ton, 85s to 150s  
— per cwt, 5s to 6s  
Turnips, per doz, 2s 6d to 5s  
Cucumbers, each, 6d to 2s 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz, 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 4s to 5s  
— Spanish, p. doz, 2s to 5s  
Beet, per doz, 1s to 1s 6d

#### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, April 28.**  
Prime Meadow Hay 84s to 95s  
Inferior do. ... 70 80  
Rowen ... 45 55  
New Hay ... ..  
Clover ... 95s to 108s  
Second cut ... 70 95  
Straw ... 30 34  
E. J. DAVIS.

**CUMBERLAND MARKET, April 28.**  
Prime Meadow Hay 95s to 100s  
Inferior do. ... 80 90  
New Hay ... 100 110  
Inferior Clover ... 88s to 95s  
New clover ... 90  
Straw ... 36 40  
JOSHUA BAKER.

#### COAL MARKET.—FRIDAY, April 29.

Holywell, 16s. 3d.; Eden Main, 17s. 3d.; Townley, 14s. 9d.; Ravensworth West Hartley, 14s. 9d.; Wallend Hetton, 18s.; Wallend Lambton, 17s. 9d.; Wallend Stewarts, 18s.; Wallend Tees, 18s.—Ships at market, 137.

#### POTATOES.—SOUTHWARK, April 25.

During the past week this market has been fully supplied, both coastwise and by rail, and many parcels being left unsold from the previous week has caused a further decline in price, and very dull trade. The following are this day's quotations:—Yorkshire Regents, 100s. to 105s.; Lincolnshire do., 90s. to 120s.; Scotch do., 100s. to 120s.; ditto reds, 80s. to 90s.; French whites, 80s. to 100s.

#### WOOL.

**BRADFORD, THURSDAY, APRIL 28.**—There is at present a heaviness in the wool market; no one seems satisfied with what is doing. The prices demanded here are too high for the consumer, and the country dealers and growers are anticipating a realisation higher than can be met here, consequently the whole trade is in a peculiar position, especially at this very important period, the eve of a new clip, when stability and activity ought to be the leading features. It is to be feared that the spirit of speculation may effect some mischief, for although wool was safe at last shear-day's price, the advance now sought may make it perilous; for the Bradford trade never did support extreme prices, except for a limited period, and that to the discomfort of the trade afterwards. Brokers and nolls are steady, and the stock on hand generally light.



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**NOW ON SALE,** the following kinds of **GUANO**: Angamos, superior to Peruvian; Bolivian, from Upper Peru, equal to Chincha; Lobos Island, Shark's Bay, Saldanha Bay, African, Patagonian. Each parcel has been carefully tested on its arrival, and the quality guaranteed by chemical analysis. Apply to G. J. ASHTON & Co., 11, Mark Lane, London.

Printed by WILLIAM BRADLEY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLET EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of St. Andrew's, in the Parish of St. Andrew, London, and at the Office of Mr. S. Charles, at the Office of Mr. S. Charles, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to THE EDITOR.—SATURDAY, APRIL 30, 1853.



## [PRICE 6d.]

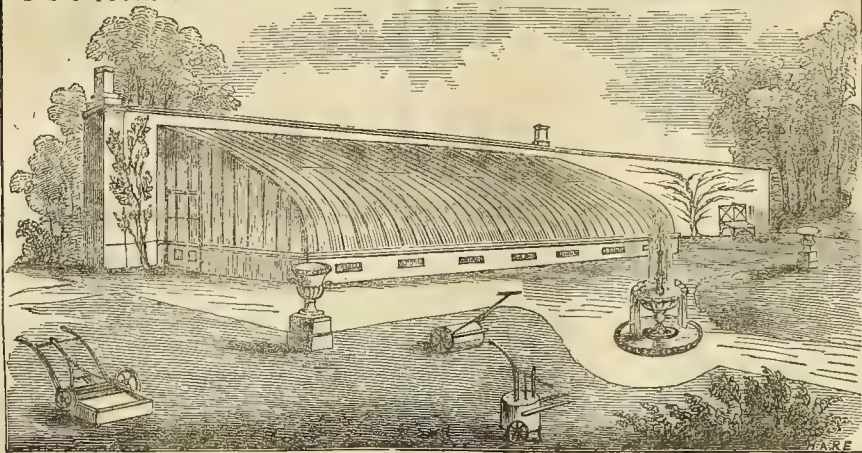
**GRAY AND ORMSON, Danvers Street, Chelsea**  
London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Merchants; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.



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2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

A New Show Room devoted entirely to Articles of Horticulture.  
ILLUSTRATED CATALOGUES UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
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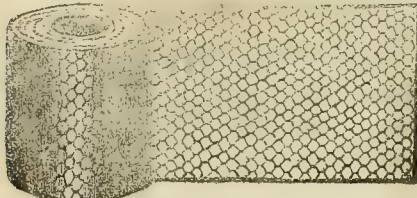
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EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

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**FRUIT TREES, POULTRY, RABBIT, SHEEP, AND CAT FENCING.**—Worsted Netting to protect the bloom of Peach, Nectarine, and other Trees, Flower, or Seed Beds from frost, blight, and birds, two yards wide, 5d. per yard. New Twine Netting (tanned if required), one yard wide, 1½d. per yard; two yards wide, 3d. per yard; four yards wide, 6d.; half-inch mesh ditto, two yards wide, 6d. per yard. Tanned Netting, two or three yards wide, 1½d. per yard; four or six yards wide, 3d. per yard, or 5s. per 100 yards, one yard; 10s. per 100 yards, two yards; and 20s. per 100 yards, four yards wide. Elastic Hexagon Garden Net, or Scrim Canvas, 4½d. per square yard. Cocoa Nut Fibre, or Hemp Sheepfolding Net, of superior quality, four feet high, 4d. to 6d. per yard. Rabbit Net, four feet wide, 1½d.; six feet wide, 2½d.; eight feet, 3d. per yard. Each edge corded ½d. per yard extra, suitable for poultry fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c., at W. CULINGFORD'S, No. 1, Strathmore Terrace, Shadwell, London. Orders by post, with Post Office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Tents, Marquee, Rick Cloths, Tarpsaulin, Lines, Rope, Twine, &c., made to order.

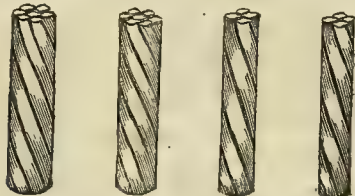
GALVANISED WIRE GAME NETTING.—  
7d. PER YARD, 2 FEET WIDE.

	Galvan- ised.	Japaned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 "	6½ "
2-inch " extra strong "	12 "	9 "
1½-inch " light "	8 "	6 "
1½-inch " strong "	10 "	8 "
1½-inch " extra strong "	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

**HENRY J. MORTON, PATENT GALVANISED IRON ROOFING WORKS, 91, ALBION STREET, LEEDS, AGENT FOR PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES.** The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

**GALVANISED GAME AND POULTRY NETTING,** very strong and neat, NEVER REQUIRES PAINTING and cannot rust or corrode, made any width and length.

24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.

24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. 0½d. per yard.

**GALVANISED IRON SPOUTING,** Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalt Roofing Felt, &c. Apply at 91, ALBION STREET, LEEDS.

**TANNED NETTING, for protecting Fruit Trees** from Frost, Blight, and Birds, and as a Fence for Fowls, Pigeons, Tulip and Seed Beds, at 1½d. one yard wide; 3d. two yards wide; or 6d. four yards wide. From JOHN KING FARLOW'S Fishing Tackle and Net Manufactory, 3 and 4, Crooked Lane, London Bridge. Orders, with remittances over 20s., carriage free.

**TANNED NETTING, for the protection of Fruit** Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas, for Wall Fruit.

At EGGINGTON & CO.'S, 17, Smithfield Bars, City, and Old Kent Road, Southwark; and at BRUNSWICK STREET, near the East India Export Dock, Poplar, where may also be seen erected Emigrant Tents in great varieties on their latest improved principles.

## HORTICULTURE IN ALL ITS BRANCHES.



J. WEEKS &amp; Co., King's Road, Chelsea,



## HOthouse BUILDERS.



Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.

## WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

Patent Pump ... £ 15 0

Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... £ 3 0 0

Larger sizes if required.

To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER &amp; SONS,

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water, Fire Engines, &amp;c.



## REDUCTION IN PRICE.

## WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.



## BOYD'S SELF-ADJUSTING SCYTHE, APPROVED BY PRINCE ALBERT,



And universally recommended by practical and scientific men. This Scythe, when out of use, shuts up like a knife. It can be adjusted to any angle in one minute (even by persons unused to the implement), without the assistance of blacksmith or forge. It may be used by amateurs, as well as regular labourers, without fear of accident or injury, thus rendering mowing an easy, safe and economical operation.

To be had of all Ironmongers, Nurserymen, &c., in the kingdom, and wholesale and retail at W. DRAY & CO.'S Agricultural Implement and Machinery Warehouse, Swan Lane, London. A liberal discount allowed to the trade.

W. DRAY & CO., Engineers, &c., are Agents for all the leading Implement Makers in the kingdom. All goods are charged at Manufacturer's prices.



**ROBERT SORBY AND SONS, Sheffield, Inventor** and Sole Manufacturers of the Registered STEEL-POINTED SCYTHE, REAPING-HOOK, and HAY-KNIFE (for which an Extra Prize was awarded at the Yorkshire Agricultural Society Show in 1852).

This improvement surpasses every other invention in Scythe Hooks, and Hay-knives, and will be found to combine the two great essentials—superior construction and undoubted excellence of quality.—To be had of most respectable Ironmongers and Seedsmen in the Kingdom.

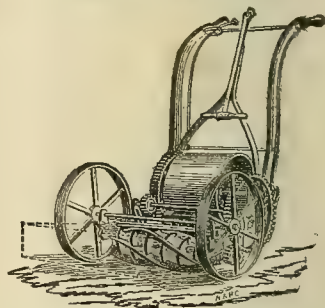
## IRON HURDLES.

**STEPHENSON AND PELL, 61, Gracechurch Street, London; and 17, New Park Street, Southwark, Manufacturers of every description of Iron Fencing, beg to call the attention of Noblemen and Gentlemen to their present prices.** HURDLES:—for Sheep, 6 feet long, 3 feet high, with 5 bars at 4s. 6d.; and for Cattle, 6 feet long, 3 feet 3 inches high, with 5 bars at 5s. each.

## IMPROVED GRASS-CUTTING AND ROLLING MACHINE FOR CUTTING THE GRASS OF LAWNS, &amp; NEW AND POWERFUL DOUBLE-ACTING LIFT AND FORCE PUMP.

FOR LIQUID MANURE AND GARDEN AND GENERAL PURPOSES. Drawings, particulars, and testimonials forwarded free on application to WILLIAM DODDS & Co., 102, Leadenhall Street, London.

J. AND H. FERRABEE, PHOENIX IRON WORKS, NEAR STROUD, GLOUCESTERSHIRE.



## "BUDDING'S" LAWN-MOWING MACHINE, WITH REGISTERED IMPROVEMENTS, No. 3074.

J. and H. FERRABEE have this year made further improvements in their Mowing Machines, which may be used with equal facility over open unbroken lawns as pleasure grounds, between flower beds and on verges, no practical whatever being required to work them.

**HAND MACHINES** are made of three sizes, cutting at several widths of 16, 19, and 22 inches. The smallest may be worked by one man, the others require the assistance of strong boys.

**HORSE MACHINES** are made of two sizes, one cutting 30 inches, and the other 36 inches wide. They are very strong and powerful Machines, capable of cutting the longest and roughest Grass usually met with on lawns and pleasure grounds.

PRICES:—16-inch Hand Machine	£ 5 10 0
19-inch "	6 0 0
22-inch "	6 0 0
30-inch Horse Machine	14 0 0
36-inch "	16 0 0

J. & H. FERRABEE'S Illustrated and Descriptive Catalogue Agricultural Steam Engines, Machines, and Implements will be sent free by post, on application.



## NEW PLANT CATALOGUE.

**RENDLE'S NEW PLANT CATALOGUE** for the present season is now ready, and can be had in exchange for one penny stamp.

It contains the lowest prices of all the best varieties of Geraniums, Dahlias, Indian Azaleas, Camellias, Chrysanthemums, Fuchsias, Petunias, Verbenas, Calceolarias, Ferns, Lycopodiums, Achimenes, Stove, Greenhouse, and Herbaceous Plants.

WILLIAM E. RENDLE & Co. have a very large stock of all the above, and the prices will be found exceedingly low.

All orders above £2 carriage free to most of the Railway Stations in the South and West of England, and to many of the principal Ports in England and Ireland. See Catalogue.

Apply to WILLIAM EDGUMBE RENDLE & Co., Nurserymen, Plymouth.

## NEW SHRUBBY CALCEOLARIAS.

CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

**J. WEEKS AND CO., CHELSEA**, have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all Shrubby they are perpetually in flower: and from the great variety and brilliancy of their colours, they are invaluable for the Conservatory or bedding-out.

J. WEEKS & Co., King's Road, Chelsea, London.

## THE LEADING NOVELTY OF THE SEASON, "BEGONIA PRESTONIENSIS."

**LUcombe, PINCE, AND CO.** will commence sending out this beautiful brilliant-coloured BEGONIA, on the 12th inst., at 10s. 6d. each. It can be easily cultivated, in any greenhouse, where it will continue flowering throughout the summer and autumn.

Dr. LINDLEY, in the *Gardeners' Chronicle* of the 16th ultimo, says—"In point of beauty it yields to none, perhaps it exceeds all the species of this favourite genus. The flowers are larger than in any other kind; they have the brilliancy of carnations, and fuchsoid, and are fragrant, something like a Tea Rose. The foliage is firm, deep green, and well-proportioned to the flowers. Like the rest of the genus, it is easily cultivated, and it seems as if it would flower for three-fourths of the year. Need we say more?"

All the Horticultural publications speak highly of its merits. It will certainly find its way into every good collection, and give universal satisfaction.

N.B. A few fine specimens for immediate flowering at 21s. each, for the convenience of purchasers at a distance. Plants can be sent in a tin case, per post, for the extra charge of 1s. Exeter Nursery, Exeter, May 7.

## THE ELVETHAM LONG RED MANGOLD

**WURZEL**.—This is a very superior new variety, exclusively in our possession, raised on the estate of Lord Calthorpe, at Elvetham, Hamb; our stock of Seed is limited this season. Price 1s. 8d. per lb.

From Charles Paget, Esq., Ruddington Grange. "The difference was so great between the Elvetham and the other Long Red Mangold that I should have preferred it at three times the price of the other."

From Mr. Houghton, Steward at Lord Calthorpe's, Elvetham. "Elvetham Mangold Wurzel is the best sort we ever had; nothing else will go down here and all the way to Guildford. I certainly should use nothing else, except on poor and thin land, where the Yellow Globe would be more suitable."

**YELLOW GLOBE**, and other sorts of MANGOLD WURZEL, from selected roots, at lower prices.

JOHN SUTTON & Sons, Seed Growers, Reading, Berks.

**MESSRS. J. AND H. BROWN** offer the following selected PLANTS, &c., which they will forward to any part of the Kingdom.

	s. d.
25 Azaleas, new hardy Belgian varieties on their own roots, with flower buds, one of a sort by name, for	20 0
25 American Azaleas, do. do.	15 0
25 Hardy American Plants, one of a sort by name	10 6
12 Hardy Heaths and Kalmsias, one of a sort	6 0
12 Rhododendrons, including Scarlet, White, and Rose, hardy varieties	12 0
New hardy Yellow Rhododendrons, each	5s. 6d. to 7 6
Fine hardy Scarlet Rhododendrons, 2 feet, per dozen	10 0
6 Fine hardy Magnolias, one of a sort, in pots	10 6
Cedar of Lebanon, 3 feet, well grown in pots, per dozen	10 0
Deodara or Cedar of the Himalayas, 1 to 2 feet, per dozen	10s. to 15 0
(Araucarias, Cryptomeria, and Conifers of all kinds, see List.)	
Climbing Roses of choice sorts, in pots, per dozen	6 0
12 Tea-scented Roses, one of a sort, by name, in pots	9 0
Wistaria sinensis, extra fine, in pots, 15 to 30 feet, each	3 6
12 Hardy Passifloras, Jasmines, and Clematis of sorts	10 0
12 Greenhouse Azaleas, one of a sort, blooming plants	25 0
30 Choice Camellias by name	45 0
24 Choice Geraniums, one of a sort, by name	16 0
12 Orchideaceous Plants, choice species, good plants	30s. to 50 0
12 superb Gloxinias and Achimenes	10 0
Cinerarias and Calceolarias, show varieties, per doz., 9s. to 12 0	
Fancy Geraniums, new sorts, per dozen	9s. to 12 0
Verbenas and Petunias, newest varieties, per doz.	6 0
6 Lilium lancifolium, one of a sort, for	12 0
First-rate show Pinks and Pansies, per doz.	6s. to 9 0
First-rate Carnations and Yellow Picotees, per dozen, 9s. to 12 0	
Chrysanthemums, show and Pompon varieties, 6s. to 8 0	
Phloxes, New Perennial Belgian varieties	10 0
12 Pansies, new white, pink, and bluish, of sorts	8 0
25 Hardy Herbaceous Plants	7 6
Hardy Ferns and other plants, for rockwork, per dozen	8 0

A large assortment of Bedding-out Plants of all kinds at the usual advertised prices.

Garden Seeds of all kinds. A selection of the most approved Flower Seeds, 25 papers, 5s.; 40 papers, 10s., sent free by post. Also Catalogues of the same. All who are planting New Gardens, Pleasure Grounds, Conservatories, &c., should see our General Catalogue.

Albion Nursery, Stoke Newington, London.—May 7.

**HEXACENTRIS MYSORENSIS**.—This extraordinary and beautiful new Climber (requiring the temperature of a stove or warm greenhouse) is perfectly distinct in its character from anything yet introduced. It was exhibited at Chiswick, on Saturday, the 8th of May, 1852, and received the "First Prize" for New Plants, and was indeed, on that occasion, the admiration of all who saw it.

It is a most abundant bloomer, producing its long pendulous clusters of large golden yellow and deep crimson flowers in great abundance, continuing in perfection for several months. The habit of the Plant is excellent, with neat dark green foliage, and is of easy culture. It is altogether a Plant of such first-rate quality and beauty, that Messrs. Verrill and Son feel every confidence in highly recommending it.

Good established Plants will be ready for delivery on and after the 10th of May next at 21s. each, with one over to the trade when three are ordered.—Exeter, May 7.

## CHOICE GERANIUMS.

**WILLIAM HUSSEY** begs to offer the under-named GERANIUMS for 18s., basket and mat included, fine healthy plants, in 5-inch pots, viz.:

Ocellatum	Governor
Roweana	Loveliness
Generalissimo	May Queen
Major Domo	Cuy
Emily	Belle of the Village
Cristine	Conspicuous
Nectar Cup	Constance
Pride of the Isles	Armada
Rosamond	Symmetry

Also a very fine healthy stock of Bedding Plants, from 3s. to 4s. per dozen.—Horticultural Gardens, Norwich.

**EDWARD GEORGE HENDERSON AND SON** have to offer the following NEW PLANTS, which will be ready to send out the first week in May:—

<b>LIBERTIA grandiflora</b> ... ..	10s. 6d. each.
<b>GERANIUM glaucum grandiflorum</b> intermediate 10 6	
Boule de Neige ... ..	7 6 "
<b>LOBELIA Roi Leopold</b> ... ..	7 6 "
<b>ERICA Burnettii</b> ... ..	10 6 "
<b>CALCEOLARIA Golden Chain</b> ... ..	7 6 "
" Sultana ... ..	7 6 "
" Compacta ... ..	5 0 "
<b>FUCHSIA Purple Perfection</b> ... ..	10 6 "
" Duchess of Lancaster ... ..	10 6 "
" Premier ... ..	10 6 "
<b>GLOXINIA imperialis</b> ... ..	7 6 "

For description of the above, see this Paper for April the 9th. Wellington Road Nursery, St. John's Wood, London.

## NEW GERANIUMS.

**BASS AND BROWN** have a few well-established Plants of the following now ready, at the reduced prices annexed:—

Each.—s. d.	Each.—s. d.
Hoyle's Zaria ... ..	10 6
" Astrea ... ..	10 6
" Lagoma ... ..	10 6
" Basilisk ... ..	7 6
" Albiva ... ..	7 6
" Kulla ... ..	7 6
" Novelty ... ..	7 6
" Butterfly ... ..	7 6
" Portia ... ..	10 6
Henderson's Extravaganza 5 6	
Foster's Rachel ... ..	10 6
" Optimum ... ..	25 0
" Eleanor ... ..	10 6
" Queen of May ... ..	15 0
" National ... ..	15 0
Dobson's Vulcan ... ..	15 0
" Jupiter ... ..	10 6
" Spot ... ..	10 6
" Harriett ... ..	10 6

The following 13 choice new varieties of last season may be had, fine plants, for 60s., or any 12 for 45s.:—Ariadne, Ambassador, Aethusa, Chieftain, Colonel of the Buffs, Commissioner, Elise, Exhibitor, Ganymede, Gem, Harald, Lavinia, Mohanna, Monteth, Painter Improved, Purple Standard, Rubens, Shylcock. Choice varieties 6s., 9s., 12s., and 21s. per dozen.

## FINE BEDDING PLANTS.

VERBENAS.	s. d.
50 varieties, very choice ... ..	18 0
12 varieties, very fine, 3s. 6d. and ... ..	7 6
25 varieties ditto, 7s. and ... ..	12 6

Purchaser's selection from any of the following, very superb, new, of last season, 12 varieties for 15s., or the set of 18 for 18s.:—

Adonis	Juliet
Alba Magna	Madame Malet
Ariel	Madame Le Gros
Beauty Supreme	Mons. Jullien
Celine Malet	Orlanda
Conquerant	Ormsby Beauty
Diana	Parfum Madeline
Duchess of Kent	Standard
Eliza Cook	Zenobia

PETUNIAS.—Choice selections, per dozen, 4s. to 9s.

FUCHSIAS.	s. d.
50 varieties, very choice ... ..	20 0
Choice selections, per dozen, 4s. to ... ..	9 0
Henderson's three distinct dwarf varieties—Darling, Pei, and Globosa Perfecta, each ... ..	2 0
12 choice varieties of last season, including the last named 15 0	

DAHLIAS.	s. d.
Choice varieties, per dozen, 5s. to ... ..	9 0
Choice fancy ditto, per dozen, 5s. to ... ..	9 0

CHRYSANTHEMUMS.	s. d.
Large flowering, fine, per dozen, 5s. and ... ..	7 6
14 best new, of 1852 ... ..	16 0
Liliputian varieties, fine, per dozen ... ..	7 6
12 best new, of 1852 ... ..	12 0

Anagallis, 3 best varieties ... ..	per dozen 4 0
Bouvardia flava ... ..	9 0
" splendens ... ..	6 0
Cuphea platycentra ... ..	6 0
Cyanthus lobatus, 1s. 6d. ... ..	12 0
Lantana, 3 varieties distinct ... ..	6 0
Linum flavum ... ..	6 0

Lotus berinus maxima and racemoides, the two best of varieties ... ..	6 0
Millinus, in 4 fine varieties ... ..	7 6
Phlox Drum. Thompsonia, extra rich crimson ... ..	9 0
Salvia azurea compacta, each ... ..	1 6
" amabile, beautiful, each ... ..	1 6
" fulgens, per dozen ... ..	6 0
Veronica, Andersonii, fine plants, each, 1s. 6d. to ... ..	2 6
Zauschneria Californica, per dozen ... ..	6 0

## SELECT HARDY PLANTS.

See Advertisement of a quantity of select and popular Hardy Shrubs, Plants, &c., in the *Gardeners' Chronicle* of March 26 and April 2.

Herbaceous Plants (colours and heights in Catalogue).

	s. d.	s. d.
" 100 distinct and showy varieties ... ..	80 0	50 for 17 6
" 25 ditto ditto ... ..	10 8	12 for 6 0
" 100 superior and new varieties ... ..	50 0	50 for 30 0
" 25 ditto ditto ... ..	17 6	12 for 9 0
" 25 fine vars., best adapted for rockwork 12 0		12 for 7 6
Hardy Flowering Shrubs, 20 varieties, 12s.; 12 varieties ... ..	7 6	
Dwarf Rock Cistus, new and beautiful, very distinct, rich and attractive, the collection of 24 varieties ... ..	18 0	
Seakale Roots, strong, 1s. 6d. per dozen; per 100 ... ..	10 0	
Grayson's Giant Asparagus, fine 3 years, p. 1000, 30s.; p. 100 3 6		

**BASS & BROWN'S SEED AND PLANT LIST** for 1853, free, for three penny stamps. Also, the AUTUMN CATALOGUE for three penny stamps, which contains the Roses, Herbaceous Plants, Hollyhocks, and other select Hardy Plants and Shrubs, Fruits, &c.; also the Cinerarias, Azaleas India, &c.

Remittances requested from unknown Correspondents. Post Office Orders payable to STEPHEN BROWN, or the Firm.

In order to reduce the cost of transit to distant purchasers, we have now made arrangements for the delivery of Goods to the amount of 20s. and upwards, free to all the Stations in London; also free, as before, to all Stations on the London and Norwich Line, via Colchester.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## FINE SHORT GRASSES FOR LAWNS.

**SUTTON'S FINEST LAWN GRASS SEEDS** will produce a beautiful close Lawn, free from weeds, in a few weeks. The present is the best season for sowing. Price of Seed, 3s. per gallon or 21s. per bushel. Quantity required per acre, 2½ bushels; or for improving old Lawns, half a bushel. Instructions enclosed with each parcel.

JOHN SUTTON & SONS, Seed Growers, Reading, Berkshire.

## MEADOW AND PASTURE GRASS SEEDS.

**THOMAS GIBBS AND CO., SEEDSMEN** to the ROYAL AGRICULTURAL SOCIETY OF ENGLAND, beg to state that the following Seeds are now finished cleaning, and are ready for sending out.

**GRASS SEEDS FOR LAYING DOWN LAND TO PERMANENT MEADOWS AND PASTURES.**—The kinds used in these mixtures will be selected and apportioned to suit the nature of the soil.

Grass Seeds, in mixtures, for Irrigation.	Do.	do.	for Parks, &c.
Do.	do.	do.	for 2 and 3 years' lay.
Do.	do.	do.	for Garden Lawns, &c.
Do.	do.	do.	for Renovating Grass Land.

Italian Rye Grass—very fine sample, Improved Perennial Rye Grass, Annual or common do., and all kinds of Clovers, White Belgian and Red Ayrshire Carrots; long Red and Red Globe Mangold Wurzel; Gibbs' new very large Cattle Parsnip, Swedish Turnings of various sorts, Gibbs' green top Yellow Hybrid Turnip, White-fleshed Turnips of various kinds, Drumhead and other Cabbages, Lucerne, Broom, Furze, Sainfoin, and all kinds of Agricultural, Kitchen Garden, and other Seeds.

Corner of Half-moon Street, Piccadilly, London.

## RHODODENDRON JASMINIFLORUM (HOOKER).

This lovely Greenhouse Plant was exhibited at Chiswick in May, 1850, when it was awarded the "First Prize" for new Plants. It is figured in the Botanical Magazine for July, 1850, Tab. 4524, with the following remarks by Sir W. J. Hooker:—

"Few Plants excited greater attention among the visitors most distinguished for taste and judgment, than the one here figured. Many excelled it in splendour; but the delicacy of form and colour of the flowers (white with a deep pink eye); and probably their resemblance to the favourite Jessamine (some compared them to the equally favourite Stephanotis), attracted general notice."

It is a native of Mount Ophir, Malacca, where it was found by Mr. Lobbs, at an elevation of 5000 feet; it thrives well in the greenhouse, is of a neat dwarf habit, abundant bloomer and beautifully scented with the delicate fragrance of the Auricula. This lovely Plant is of easy culture, and Messrs. VEITCH and SON can confidently recommend it as deserving the most extensive cultivation. Fine plants will be ready for delivery on and after the 16th of May next. Largest size plants, 63s.; Second size plants, 42s.; with the usual discount to the Trade.

Exeter, May 7.

## CHOICE GERANIUMS, in strong Plants, with

Flower Buds.—Ajax, Arethusa, Ariadne, Aspasia, Blanche, Chieftain, Chloë, Elise, Eurydice, Floribundum, Ganymede, Generalissimo, Loveliness, Magnet, Major Domo, Mont Blanc, Ocellatum, Painter Improved, Purple Standard, Shylcock, Trianon Queen, Volcano, Magnificent.—12 of the above for 21s.

Fancy do.—Albion, Annette, Anais, Carlotta Gris, Enchantress, Exquisite, Hero of Surrey, Jenny Lind, Marion, Picturata, Prima Donna, Lady Rivers, Orestes, Minerva, Modesta, Princess, Marie Reine des Francs, Bonquet tout fait.—12 of the above, 12s. Bedding Plants in good order. The best Verbenas, and new varieties of last year's Dahlias, and Fancy Dahlias of the very best sorts are offered at low prices, which can be had of SAMUEL WALTERS, Nurseryman, &c., Hilperton, near Trowbridge, Wilts.

## The Gardeners' Chronicle.

SATURDAY, MAY 7, 1853.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, May 9	9	8 P.M.
Law Amendment	9	8 P.M.
Geography	10	8 P.M.
Syria Egyptian	10	8 P.M.
Civil Engineers	10	8 P.M.
Medical and Chirurgical	10	8 P.M.
Zoological	10	8 P.M.
Royal Soc. of Literature	10	8 P.M.
WEDNESDAY, — 11	11	8 P.M.
Society of Arts	11	8 P.M.
Graphic	11	8 P.M.
Antiquarian	11	8 P.M.
THURSDAY, — 12	12	8 P.M.
Royal	12	8 P.M.
Astronomical	12	8 P.M.
FRIDAY, — 13	13	8 P.M.
Philosophical	13	8 P.M.
Royal Institution	13	8 P.M.
SATURDAY, — 14	14	8 P.M.
Horticultural Gardens	14	8 P.M.

COUNTRY SHOWS FOR THE SEASON.—16th: Handsworth and Loxley.—17th: Cheltenham.—18th: Kilsno.—19th: Oxfordshire, Bath, and Ireland Royal Horticultural.—20th: National Tulip (Notts).—23th: Midland Horticultural (Derby).—31st: Hammersmith Fanny, and Nottingham Horticultural.

For many a long year we have insisted from time to time upon the immense practical importance of BOTTOM-HEAT to plants. We have endeavoured to demonstrate that every plant demands some bottom-heat, a great fact that seems to be universally ignored; for to this day the term is usually limited to the result produced by a heap of fermenting tan or stable litter, or by tanks and pipes of hot water. Nothing can be more unfortunate. Such an opinion is a cataract upon the horticultural eye; the blindness it produces, if not total, is enough to envelope objects that should be clear and well defined, in an intellectual fog.

Bottom-heat, in a philosophical sense, is that temperature of the earth under which a plant acquires its utmost healthy development. It commences with 33° Fahr. and ends below 90°. If it rises higher, it either enfeebles vegetation or arrests it; in the latter of which cases its action is limited to the maturation of organs, their formation having been previously completed.

The temperature demanded by the roots of a given plant is that with which Nature provides the plant in the countries where it grows wild; it is, however, no fixed amount, but varies with season, being lowest at the commencement of growth, gradually increasing and acquiring its maximum of intensity when the fruit is ripening. The consequence of its insufficiency is seen in the spring we are now experiencing; the soil is about 4°



colder than usual; and no vegetation can make progress except that of northern latitudes. The effect of a bottom-heat less than plants require is seen in heavy undrained land, compared with the same when deeply and thoroughly relieved of its superfluous moisture; the stunted Wheat of a hundred farms bears witness to the first; the generous vegetation of Lois Weedon testifies to the second. The removal of water is only in part the cause of the difference observable in the two cases; where water is carried off, temperature rises; even as much as 8° or 10°, an enormous gain, equal to the removal of a garden 10 degrees to the southward. It gives to the land of Hampshire the underground climate of Castile.

We cannot repeat just now the reasons why the roots of plants are so much affected by temperature; it is sufficient to state that the fact is so, and that nobody can be a really good gardener who does not make this point his daily study. The circumstance which has led to a revival of the subject in this part of our journal is a question that one of our correspondents has put respecting the flowering of an aquatic called *Nelumbium luteum*. This plant is generally unwilling to blossom in this country; but it is recorded in the "Botanical Magazine" that it once did so with Mr. SYLVESTER, at his seat at Chorley, in Lancashire. The causes which led to the success are thus stated by Mr. SYLVESTER himself:—

"Its flowering I believe to have been the consequence of an accidental circumstance, which I shall mention. I had hitherto treated it like the red, or eastern species, from an impression that it was confined to the most southern and warmest portion of North America; the pots of both being plunged in a cistern of water, kept at a heat of about 85°, and as the plants grew very vigorously, and appeared to be in health, I did not try any other situation. They had never shown any disposition to bloom until the present season, when, in consequence of the gardener having left a smaller opening than usual in the flue which passes under the cistern, and which is entirely closed in the winter, the water remained at about 70° or 75°, and the house was altogether cooler than in previous summers. Under these circumstances, while the red species threw up a number of flower-buds, none of which came to maturity, two out of the three plants of the yellow-blossomed sort flowered and are ripening seeds. The house and the water have since been warmer, and *N. speciosum* is now, though later in the season, coming into bloom. I have no doubt that, like many of the aquatic plants of North America, *Hydropeltis*, the *Nymphaeas*, &c., which grow (and occasionally bloom during a very fine summer) in a shallow pot in this garden, the *Nelumbium* will be found sufficiently hardy to bear our winters, if the roots be plunged in water, deep enough to protect them from the frost, and raised near to the surface during summer. But I am not very sanguine in hoping that it will be brought to flower in the open air, or in water warmed only by the sun; as those plants which are above the water, such as *Pontederia cordata*, *Hibiscus palustris*, &c., appear to require a greater degree of heat for this purpose than our summers afford. My experience, however, is confined to this county (Lancashire), where the climate is inferior to that of our eastern and southern counties."

Nothing can more plainly show the importance of regulating bottom-heat; while the water stood at 85° the eastern, tropical *Nelumbium* flowered, but the western cis-tropical plant produced nothing but leaves. The water in which it grew was unnaturally hot; but as soon as the temperature fell permanently to 75°, the conditions in which Nature originally placed the yellow species were fulfilled, and it brought forth its blossoms; but on the other hand, the fall of 10° chilled the roots of the more delicate oriental plant, and it became too feeble to flower, until its roots once more received their natural stimulus.

A better illustration of the visible effects of the heat proper to the roots of each species being carefully provided, cannot be found. Let us hope that the time is not distant when men will all know that the case of the yellow *Nelumbium* is only an instance of the existence of a UNIVERSAL LAW, which all plants whatsoever, whether on the farm or in the garden, must obey.

In the report made last Monday by the COUNCIL OF THE HORTICULTURAL SOCIETY to the Fellows assembled at their anniversary meeting, the following paragraph occurs, to which we think attention should be drawn.

"With a view to the greater extension of the utility of the Monthly Meetings in Regent Street, and to the further encouragement of good cultivation at all seasons and in all branches of gardening,

the Council gave public notice, last October, that Medals and Certificates of Merit would be given at each General Meeting during the years 1852 and 1853, according to a Schedule and under certain regulations thereto annexed; not, however, to the exclusion of other objects of horticultural interest, for which prizes would continue to be given, provided the exhibitions possessed conspicuous merit. A trial of this plan, during the six winter months, although not attended with all the advantages expected from it, partly from the very bad weather, partly, as it would seem, from gardeners not being prepared for the change, and in some measure from the difficulties inseparable from all unexpected alterations, has upon the whole worked so well as to induce the Council to continue the plan, hoping more especially that the admission of kitchen garden produce to exhibition will have the effect of improving that most useful branch of horticulture as much as public exhibitions have stimulated the more attractive, but not more important departments, of flower and fruit gardening."

We should think there is not a person of intelligence in this country who will not cordially join the Council in the expression of this hope; for it cannot be denied that the kitchen garden is woefully in want of improvement. The truth is, that for many years past—for more than a quarter of a century—the cultivation of esculent vegetables has been regarded as a branch of horticulture altogether inferior to that of flowers. No encouragement has been offered to the former at the great metropolitan shows; in country places esculents have been only looked for from the hands of peasants; and everything has been sacrificed to the showy but unsubstantial decorations of my lady's drawing-room. Not that we would undervalue the latter in the slightest particular; on the contrary, they richly deserve all the patronage they have received; for, after all, they represent the highest possible amount of horticultural skill, and pre-eminently contribute to the perfection of the art of gardening. They have become too, like our race-horses and our prize cattle, the envy and amazement of all other nations, who in vain endeavour to rival us; so that it is not too much to call them symbols of Anglo-Saxon skill and energy. We have therefore uniformly given them all honour, and we shall never cease to do so.

But we feel, with others, that in our eagerness to worship the beautiful we have too much forgotten the useful. Our gardens are like too many of our peasant schools; in our anxiety to disseminate learning, we forget to teach the arts which give people value as servants, or wives, or husbands. A girl is taught to read and write, but not to make a pudding or get up linen; a boy is pushed on in his cyphering, but can neither groom a horse nor wait at table. In like manner, a gardener is made a proficient in getting up a "specimen plant," but knows nothing of a crop of Onions; he can grow an Orchid at Christmas, but a Lettuce then is beyond his skill.

It is to put an end to this state of things that the new regulations of the Horticultural Society have been especially framed; and we earnestly trust they will succeed. It has been painful to see to how low a pass kitchen gardening in private gardens has sometimes come; and how unconscious people are of their own condition. The contrast between British and foreign kitchen garden produce, as seen in Regent Street, has been unfavourable to us, all possible allowance having been made for climate. Let us hope that better times are coming, and that by degrees the productions of our kitchen gardens will equal in excellence those of the fruit and flower garden. There are no finer Grapes in the world than the English; no country approaches us in decorative gardening. Why, then, can we not have Cabbages and Lettuces, and Celery, roots of all sorts, and herbs of all sorts, equally worthy of Englishmen? Surely the country gardeners, who are most concerned in this question, have the same energy as those of London; the spirit of emulation cannot but be as strong in the provinces as in the suburbs of a great metropolis; and we will not believe, till the experiment now in progress shall have failed, which will never happen, that a kitchen garden is the limbo to which all the blockheads of horticulture are specially consigned.

On Tuesday, the 24th of May, medals are offered for the "best collections of vegetables." It concerns the honour of gardeners that these prizes shall be well contested. Another opportunity occurs on the 28th of June, and a third on the 26th July; and there are now offered, in addition to the Society's medals, two prizes, of three guineas and two guineas each, to the gardeners who, having exhibited English produce on each occasion, shall be found to stand highest at the end of the third meeting.

A FRESH supply of Orchids has been received from Mr. WARCZSEWICZ, and is about to be sold at

STEVENS'S rooms. (See advertisement.) Having this time had an opportunity of examining carefully the dried specimens sent home with them, we are able to say with confidence that the following are undoubtedly quite new, viz.:—*Epidendrum Friderici-Guilielmi*, *giganteum*, and *sclerocladum*; *Maxillaria conica* and *cinnabarina*; *Anachaste sanguinea*, *Chysis plana*, *Catasetum secundum*, *Brassia villosa*, *Eriopsis altissima*, *Gongora cymbiformis*, and *Masdevallia rufolutea*. Mr. SKINNER is of opinion that he has identified all these with the specimens and drawings to which we apply the names; but there is in addition a considerable number of *Odontogloss*, *Oncidium*, and *Maxillarias* also undescribed, though not susceptible of being identified with the drawings, &c. The pages of STEVENS'S catalogue explain the peculiarities of each new species, and should be consulted by buyers. It will be seen that many are plants of very striking beauty.

#### COLUMNEA SCHIEDEANA.

THE curiously formed blossoms of this plant, and their somewhat singular colour and odd markings, render it far from being uninteresting. If it does not arrest the attention of every beholder, it at least possesses considerable attractions for those who have a taste for a combination of the curious and the beautiful. It is, moreover, a plant of free growth, with a compact habit, and is easily cultivated, producing its blossoms very freely throughout the summer and autumn months. A warm moist atmosphere is essential to its successful growth, and unless kept in a rather warm situation during the summer it will not continue making wood and producing flowers throughout the season; but when removed to a cool situation, while in flower, the blossoms remain long in perfection, and thus treated it retains its beauty as long as most plants.

Cuttings of either old or young wood root freely, if planted in sandy peaty soil, and placed in a warm moist situation—as a Cucumber frame or by cutting through the bark of a branching stem and surrounding it with moss, and keeping this moist, a strong plant may be obtained in the course of a few weeks. In whatever way the young plants are obtained, they should be potted singly as soon as they are sufficiently rooted to bear handling, and placed in a close, moist, shady situation, till they have become established, when they should be inured to more exposure to light and air; but they must be retained in a warm, moist temperature. The plant is of a branching habit, and under proper treatment requires little stopping; nevertheless some attention will probably be required to secure a compact, bushy specimen, and the shoots must be properly kept tied out, so as to admit light and air among the branches. As the plants advance in growth, attend to their wants as regards pot-room, but avoid large shifts, which are unnecessary, if not injurious for this plant; maintain a moist, growing atmosphere, and sprinkle the plants over-head, with the syringe, morning and evening. With good management, and a proper situation in which to grow the plants, cuttings rooted early in spring will make nice little specimens by the end of October, when they should be removed to a cooler and drier situation, and may be wintered in a temperature of from 50° to 55°; if sparingly supplied with water, however, they will not be injured if the night temperature, during their season of rest, does not exceed 45°; indeed, I have wintered the plant safely in a close corner of a greenhouse where the temperature was frequently below 40°.

Plants of moderate size, after being kept dry and cool for a few months in winter, will flower profusely the following spring; but if good sized specimens are wished, a second season's growth will be necessary, and in this case, they should be placed in a moderately warm moist situation early in spring. After placing them in heat, until they exhibit signs of active growth, give water sparingly to the soil, but moisten the foliage, &c., frequently with the syringe. When they start into growth turn them out of their pots, and examine the roots, clearing away any unkind soil, and repot in the same pots, or others, one or two sizes larger as may be necessary. After potting, give a gentle sprinkling with the syringe frequently, but be sparing of water at the roots, until the latter have struck into the fresh soil. Attend, also, to tying out, and properly regulating the branches, and remove the blossoms as they appear. By keeping the plants in a warm, moist situation till the middle or end of June, and encouraging active growth, fair-sized specimens will be obtained, which will flower profusely throughout the autumn months, by merely removing them to a light, airy situation for a fortnight, and keeping them rather dry at the root. This will check their tendency to growth, and by returning them to their former situation, they will soon become covered with blossoms; they should, however, be retained in a rather warm house while in blossom, as removing them to a cool, airy, place, would tend to shorten their season of beauty. Plants that are allowed to flower early in the season may be removed to a warm part of the greenhouse, or to any situation where they will not be exposed to drying currents of air. After flowering, the specimens should be thinned out, removing the taller shoots, which is preferable to cutting back the whole of the branches, and serves the same purpose of keeping the specimens bushy; and, if convenient, they should be encouraged to make some



growth before placing them in their winter quarters. With a little attention to cutting back the over-tall shoots, and keeping the roots in a healthy state, the plants will last for many seasons.]

Turf peat in a rather coarse state, with a liberal admixture of clean potsherds and silver-sand will form a suitable medium in which to place the plant. Few plants are better adapted than this for growing in baskets suspended from the rafters of a warm house. Alpha.

### Home Correspondence.

**Colouring Grapes.**—One of your correspondents states that bottom heat is detrimental to the colouring of Grapes. The Vines here, in no less than five houses, are subjected to bottom heat, and they colour their fruit satisfactorily, as do also some old Vines treated in the same way. From this it may be inferred that the evil is not attributable to the application of bottom heat, but rather to the reverse; for as the ripening of the fruit depends on the healthy action of the leaves and roots, bottom heat is needed to stimulate the latter, in order that the branches and leaves may be supplied with food whenever such is required. By this means the Vine is kept healthy and vigorous; great care being taken to preserve the leaves in as healthy a condition as possible, so that the functions of the plant may not receive a check. When the Grapes begin to colour, a brisk temperature is kept up, and air is admitted more freely, with a view to ensure comparative dryness. The early house is now ripening a crop of well coloured fruit, the Hamburgs are a fine black, beautifully tinged with violet; the crop to each Vine is 20 bunches, and the berries have obtained the goodly size of from 3 to 3½ inches in circumference. G. B., *An Under Gardener, Raby Castle.*

**Eradicating Water Lilies.**—I am cleaning out an old fish-pond, about 1½ acre in extent, in which mud, leaves, &c., have accumulated during many years, to the depth in some places of 1 yard. On the surface of this mass of mud are great numbers of the roots of the common yellow Water Lily, which during the last 10 years has increased so rapidly as to entirely cover the pond. In summer, therefore, all appearance of water is lost. You will see, by the specimen which I have sent, that the main root emits numerous shoots, and these shoots again emit small fibres. In the deeper parts of the pond I have got completely rid of both roots and fibres, but in the shallower parts these shoots and fibres have struck down below the natural bottom of the pond; portions of them, therefore, detached from the main roots have been left. Now the question which I shall feel greatly obliged to you to answer is this:—Will these detached portions of shoots and fibres grow, left as they are now in the pond, or must I sink the bottom another foot or so, in order to get rid of this troublesome plant? G. A. Luard, *Blyborough Hall, Kilton in Lindsey, Lincolnshire.* [The small lateral shoots to which you refer are roots, and will not grow. If you fail in eradicating the plant, it is because you leave behind pieces of the main stem.]

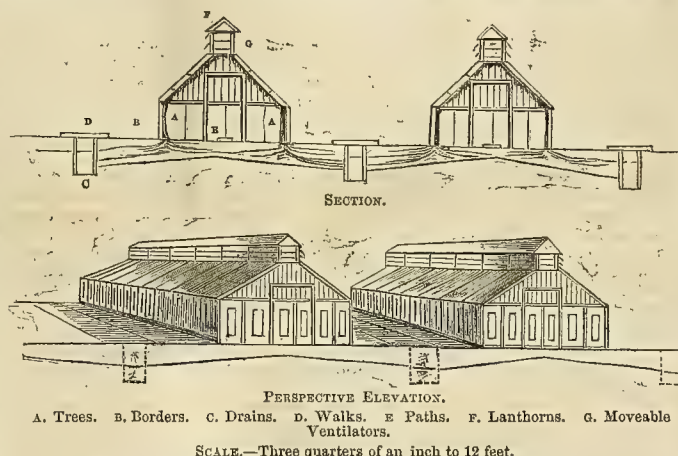
**Gas Heating.**—I am no advocate, as it might be seen, for warming horticultural structures by means of gas. Notwithstanding, I take pleasure in affording an "Old Subscriber" (see p. 261) all the information in my power, seeing that (contrary to what I had hoped) he has not been answered in the way he wished. I would advise him to apply to Mr. Ledger, gas-fitter, 137, Bishopsgate Street, London, for one of his registered gas-stoves, and have it fixed in the greenhouse in question, near the front, and in such a position that the funnel, which must be attached, and which must be made of sheet iron, and be about three inches in diameter, may be conducted two-thirds of the distance along the front of the house. If convenient, it would be well to allow it to run along the end of the house as well, when it might make its escape. As this funnel is attached for the purpose of carrying off deleterious air caused by the combustion of the gas, the joints in it must be made air tight. Your correspondent will then have nothing to fear in regard to obnoxious air, at least from the gas. Respecting the expense, it will be found to be quite double that of water or flues. The first cost, however, in completing the apparatus will not be nearly so great as for either of those methods. I should have said that the burner (which is a ring), which belongs to the stove should be made to screw on and off at pleasure, so that it might be taken out occasionally for the convenience of cleaning out the small holes through which the gas passes to be burnt. Mr. Ledger will, I have no doubt, instruct small needles made for this purpose; also instructions for fixing the whole, which might, in fact, be done with little trouble by any ingenious country blacksmith. Chas. Lucas, *Brentwood.*

**Cuthill's Black Prince Strawberry.**—When this Strawberry was first introduced, there were some doubts whether it would be as productive when forced as it proved to be in the open air. I was induced to give the sort a fair trial, from the favourable opinion my employer had given of them after visiting Mr. Cuthill's nursery, at Camberwell, where he saw many plants with more than 200 blossoms, most of which came to maturity. Those I have forced this season have surpassed any other sort I have ever tried; they not only force remarkably well, but they come forward earlier, and do certainly prove very prolific. I have counted from 150 to 200 blossoms on one plant, and have had 60 Strawberries ripe and ready for picking in the same pot. Never in all my experience have I witnessed such a

display of blossom, as well as fruit. Although the fruit is not so large as that of Keens' Seedling, it is a good average size, but the flavour is certainly superior. I do not, therefore, hesitate in pronouncing the Black Prince to be a most valuable, as well as prolific Strawberry, enabling a gardener to supply his employer's table in abundance, and the market gardener to be well remunerated for his trouble. Before concluding, I beg to remark a peculiar variation in the blossoms, many of which are the usual colour, and others of a beautiful deep red. Thos. Webb, *Gardener to Sir Jasper Atkinson, North Frith, Hadlow, Kent.*

**New Plummet Level** (see p. 181).—Perhaps Mr. Lucas may be unaware of the existence of a similar instrument to that which he has described at the page above alluded to; but, so long ago as 1840, I constructed the instrument in question, while attempting to form a dendrometer; and about five or six years since, I applied it to the common level used by masons, of 6 feet in length, for determining the number of feet or inches fall, in any given length. My quadrant level was furnished with a plate of brass for the degrees, and was covered with glass, to prevent the action of wind. The radius was 6 inches. M. Ennis, *Milford.*

**Orchard Houses.**—In a former communication (see p. 742, 1852), I suggested a plan for the arrangement of fruit and kitchen gardens, which I considered would be an improvement on the present mixed system. As it has been remarked to me that the chief difficulty would consist in the proper placing the houses and borders, such as I have already described, I have been induced to send the accompanying sketches, which will perfectly illustrate my idea. To those contemplating extensive alterations, either in the remodelling or laying out of new gardens, I think the plan is well worthy of consideration; and especially that of experienced gardeners. The houses might be of any size required, but I think for Peaches, Nectarines, Apricots, Cherries, &c., 12 feet in breadth would be sufficient, and 12 feet between the rows of houses; this would allow about 6 feet inside each, 6 feet outside for the roots of the trees, and which



I consider ample for any sort of fruit-tree. The houses should be just sufficiently high in the middle to allow a tall gentleman to walk through upright, thus the trees would be convenient for training without the aid of steps; there would also be every convenience for regulating the roots as well as the branches. The water from the roofs of the houses and the drains might (if there was no other supply) be conveyed into a tank, which might be made to contain enough to supply the gardens. I am perfectly satisfied that if the plan was carried out in full, the houses properly constructed, a perfect control over ventilation, with good soil and drainage, and good after management, success would be complete. In this variable climate, daily experience teaches me that this or some other system must ultimately be carried into effect; things would then be in their right places, and could receive proper treatment, gardeners could then dispense with nail-bags and their accompaniments, and instead of men being stuck up against a wall, perhaps in a cold winter's day, with cold hands and chattering teeth, those services might be directed to something more rational. James Russell, *Gardener to Lieut.-Colonel Ames, the Hyde, St. Albans, March 5.*

**Instinct of the Beetle and Butterfly.**—Some few years ago, in the course of the spring, a blackbird had been shot in my garden, and thrown carelessly upon a plot of ground, which had been recently proposed for planting. As I was one day walking round my garden I observed that near the spot where the dead bird lay, there appeared a slight excavation on the surface of the soil, the earth being thrown on one side in small granular particles. This arrested my curiosity, and led me to the spot for some time, day by day. Every day I observed that the excavation increased, and after a while, to my surprise, I saw that the head of the dead bird had been drawn into the hole; and as I still continued my observations, I found that every day the body gradually disappeared, till at length there was nothing left that was visible but the tip of the tail, and the earth all round was made smooth, and even quite closed up. At this part of the process I felt some curiosity to see by what means the disappearance of the bird had been accomplished, when, to my surprise, on opening the hole, I found three or four large black beetles feasting away on

the dead body, and they seemed much alarmed at my intrusion on their domain, and began to scamper off in all directions, as if they apprehended some violence from me. Now, these beetles must have laboured very hard in what they did; first, in scooping out the hole, and then in drawing in the dead bird, and covering it up in the way it was done; and then, after all, to be disappointed of their feast, was rather too high a price paid for the gratification of my curiosity. The other circumstance to which I allude is that of the butterfly, and what I am going to state relates to what is called, I believe, the admiral tribe. About five years ago I observed in one of my bedrooms, soon after the autumn commenced, two butterflies stuck on the ceiling side by side. Being out of reach, and in a corner, they were left alone, and as the spring came on they disappeared. The same was repeated for two or three years. They always took to the same room, and were stuck on in the same place. Last spring, thinking to see what the result would be, I closed the room, as I thought sufficiently secure to prevent their escape; but going into it some days after, I discovered that there was a small crevice at one of the windows, where I found one butterfly lying dead, not being able, as I thought, to get out, and by means of which crevice the other had made his escape; for there was only the dead one to be found in the room. Now what appears to me the most remarkable feature in this case is, that last autumn two butterflies of the same description took up their abode in the same room, and exactly in the same spot; and there they are suspended at this moment. The question is, are these two fresh flies who have found out these snug quarters? Or did the one which escaped by the crevice the spring before find out a mate, and introduce him, or her, to this hybernatory? And then another question arises, are these facts consonant with what is generally supposed to be the instinct and fate of these gaudy flies? R. S.

**Potato Disease.**—I have an "unmistakable case" of this, not only in the haulm, but also in the tuber; for, on taking up some about a week ago, I found more than one-half so much affected as to be of no use. I shall not get, in a 2-light frame, any more than enough for a couple of dishes. W. H. Wheeler, *Aldershot, Farnham.*—Disease has been more severe amongst my early Ash-leaved Kidney Potatoes this year than ever I have experienced it before. It showed itself the last week in March, just above the surface, turning the stems black. I also found that a few of the tubers were affected, and before they were all used plenty were diseased quite through. Wilham Hopps, *Crow Nest, Halifax.*

**Effects of the Late Winter.**—In no instance has any protection been given to any of the under-mentioned

plants, which are growing at Biddulph Grange:—Berberis Darwini is perfectly hardy and coming into flower; its foliage, which had been green throughout December and January, turned to purple by the February frosts. Berberis nepalensis lives, but does not thrive out of doors; it and B. acanthifolia are lovely objects in a conservatory. Lardizabala triternata is injured, but not killed. Quercus glabra is hardy; Cerasus ilicifolia is not in the slightest degree injured; Viburnum suspensum is destroyed, although, as the plant had not been properly seasoned, the trial must not be considered conclusive; Garrya macrophylla is much injured, while G. elliptica is untouched. Among Conifers Libocedrus chilensis appears to be hardy; Saxe-Gothæa conspicua perfectly hardy; a new variety of Cryptomeria japonica (sent out by Messrs. Veitch) much harder than the common variety; the latter being browned and in some situations injured; the former neither injured nor discoloured. Pinus radiata, P. Benthamiana, P. Russelliana, P. Hartwegi, P. Montezumæ, all of which I perceive have suffered in more favoured situations, are perfectly untouched. Pinus insignis has some of its late growths nipped; P. californica has the ends of its leaves browned, otherwise it is uninjured; P. Lambertiana, and all that section of the genus is unscathed. Abies Nordmanniana is perfectly hardy, and apparently the only species (of its section), that is never—at least with me—injured by late frosts. Many species of Cupressus and Juniperus seem to have suffered capriciously; e.g., C. Goveniana has one-half of its branches killed, while the other half escapes; C. thurifera, and C. Uhdæana are killed; C. torulosa, in some cases, is much injured, in others not at all; C. Lambertiana and C. macrocarpa are hardy, and C. funebris is hardy, which surprises me, as my first plants were killed with a much slighter degree of frost than we have had this winter. J. B.—I find that I have fared pretty well, considering the character of the season. Two plants of Dielytra spectabilis have stood the winter without the least injury; both have thrown up strong flowering shoots a foot high, which are showing bloom. My Cistus have (some of them) lost their leaves, but none are killed. Ceanothus varieties have also suffered somewhat in



their leaves, but none are killed. The Roses have suffered, and some are killed. *Fred. Beadon, North Stoneham, Hants.*—At p. 54 of the current year's volume, I named some plants which had stood out here three years, but this winter has been too severe for some of them. *Ceanothus dentatus* has been killed, and a large bush of *thyrsiflorus* has been cut to the ground. *C. rigidus* has stood without losing a shoot, and is now coming into flower. *C. papillosus* has been a little injured. *Sedum Sieboldi*—a beautiful rock plant—*Epacris heteronema*, and *Abelia floribunda*, have stood well, even although the thermometer has indicated as much as 22° of frost. *Cupressus Udeana* has been nearly killed, as has also a plant of *Cupressus macrocarpa*, or *Lambertiana*; this latter was sent from the Horticultural Society's Garden in 1848, while a fine plant of *Cupressus Lambertiana*, sent from Messrs. Knight and Perry, has stood well in a more exposed situation. There is a striking difference in the habit of the two, so much so that I doubt whether they are the same; the plant from the latter place is more than 10 feet high, and throwing its branches out horizontally, similar to the Cedar of Lebanon, without a shoot injured by frost. *Cupressus torulosa* has stood satisfactorily; *Pinus patula* is looking well, as is a fine plant of *P. ayacahuite*; also *P. Sabiniana*. Most of the common evergreens have been frost-bitten in the young shoots here. *Thorp Perrow, Yorkshire.*—*Pinus Devoniana*, *Hartwegi*, *Teocote*, *Montezumæ*, *macrophylla*, *Lindleyana*, and *Cembroides*, as are green as can possibly be wished for, while *P. patula* and *leiophylla*, which had been moved late last autumn, have the points of the shoots in some instances killed, and the foliage generally very much browned. Plants which had not been removed have escaped injury. *P. Fremontiana*, *Gerardiana*, and *insignis* remain in full health, as do also *P. australis* and *muricata*. *Abies Brunoniana* has a few of the leaves browned, but it is now making excellent growth; *Nordmanniana*, *grandis*, *nobilis*, &c., are uninjured, also *Hudsoni*; the beautiful *Libocedrus chilensis* is in perfect health, although it was making growth till the very last; the rich looking *Thuja aurea* is unhurt; *T. pyramidalis* has some of the branches killed, while *T. Wareana* is not injured in the least; *Cupressus thurifera*, and elegans, *Lambertiana*, *torulosa*, and the elegant *Goveniana* and *funeris* are all flourishing freely, although the two latter were in some instances more than ordinarily exposed to the full sun, and cutting draughts of wind; *C. macrocarpa* is also unhurt. *Juniperus Bedfordiana* is very much injured, in some cases quite killed, in others, the plants remaining fresh; *J. Bermudiana* is dead, *J. squamata*, *flagelliformis*, *excelsa*, *chinesis*, *echiniformis*, *macrocarpa*, *flaccida*, and *pendula* are all hardy, and doing well. I had nearly forgotten to name the elegant *Thuja pendula*, which is also in the best condition; *Taxodium sempervirens* has had the young growth much browned; *Taxus adpressa*, *Dovestonii*, *Harringtoni* (or *Cephalotaxus pedunculata*), are all looking well; the *Deodar* and *Cryptomeria japonica* could not look better, the latter has not been of that rusty colour as was anticipated; *Ilex latifolia*, *Shepherdii*, *diphyrena*, *nobilis*, and *maderensis*, are looking well; that fine evergreen *Ligustrum japonicum* is not the least injured, the same may be said of *Euonymus alatus* and *japonicus*; the fine *Laurus regalis* has proved quite hardy, as have *Garrya elliptica* and *Ceanothus cuneatus* against a wall; the new and really handsome *Berberis Darwini* has stood without receiving the slightest injury—in one instance it is now expanding its rich blossoms, and is a most valuable addition to our hardy plants; *B. nepalensis*, *glumacea* and *Fortuni* are quite hardy; *Olea europæa* has had its top killed; *Daphne collina* and the beautiful *D. japonica* are very hardy—the latter kept expanding its blossoms during the severe weather; *Escallonia macrantha* is hardy; *E. rubra* and *montevideensis* have had about nine inches of the young shoots killed, and the greater part of the leaves fallen, but they are now pushing buds with great vigour; *Viburnum suspensum* is much injured, having just previous to the frost made such vigorous shoots; *V. plicatum* is quite hardy; *Quercus mexicana* is slightly injured at the extreme point. The various species of *Magnolia* have somewhat suffered in the loss of a few leaves; *M. Soulangeana* and *conspicua* are now expanding their delicious blossoms; and vegetation, which has been much retarded, is making rapid progress. *J. M'Ennes, Mr. Young's Nursery, Milford, near Godalming, Surrey.*—With me in Ireland, *Pinus Montezumæ* has been killed; *P. patula* very much browned, *P. pseudo-strobus* the same, while *P. Hartwegi* has not been so much hurt. *Cupressus thurifera*, a plant 6 feet high, has been killed to the ground; *C. funebris* nearly so; *C. lusitanica*, a tree about 16 feet high and 18 feet in diameter, has had the young shoots killed back about 6 inches, while *C. macrocarpa* near it has not been touched; *Sequoia (Taxodium) sempervirens* is very much injured, as is also *Cunninghamia sinensis*. In the spring of 1851 we planted out two plants, one of the Oyster Bay Pine (*Frenela triquetra*) and one of *Widdingtonia cupressoides*, to try if they would stand our climate; they have done very well, enduring the winter of 1852 without injury, although one night in February we had as much as 12° of frost; they have, however, been completely killed this winter. We had a plant of *Jasminum revolutum* against an ornamental wall facing the south, and on the night of the 12th February the stem was rent in pieces by the frost, although the thermometer only showed 16°; *Benthamia fragifera* was also much injured; *Garrya elliptica*, growing

beside it, was not touched, while six varieties of evergreen Oaks had their leaves nearly all destroyed. This place is about 369 feet above the level of the sea, and is about 20 miles inland from the south-east coast, 80 from the west, and about 120 from the north. *W. Hyndman, Gardener, Browne's Hill, Carlow.*

## Societies.

HORTICULTURAL ANNIVERSARY, May 2.—J. M. STRACHAN, Esq., V.P., in the chair. The following were the more interesting matters introduced into the annual report from the Council. After adverting to the extremely unpropitious season that has now elapsed, the important announcement was made that although the revenue derived from exhibitions was diminished to the extent of 1820%, nevertheless the whole addition to the liabilities of the Society did not exceed 211. 16s. 5d.

The Garden Exhibitions were probably more rich in finely cultivated plants, and more free from bad ones, than they have been in any former year; showing that horticultural skill is not only advancing, but is becoming more generally diffused. The attendance was however nearly 4000 fewer than in 1851, owing to the excessive coldness of June 12, the day on which it has been customary for the greatest number of visitors to attend, and which itself presented a falling off of 4664. We give a few additional extracts:—

"The cost of medals was augmented by the sum of nearly 200%. beyond that of 1851, no less than 12277. having been expended upon that head alone. The attention of the Council having been directed to this point, the Exhibition Committee was instructed to consider whether in preparing the schedule of prizes for 1853 some arrangement could not be made for diminishing this head of expenditure. The Committee found that there had been for many years a progressive increase of charge for medals; that in 1842 it was in round numbers only 719l., in 1851 1033l., and in 1852 1227l., so that in 1852 the value of the awards exceeded that of 1851 by 1947l., and that of 1842 by 508l.; and it was possible that if the schedule of 1852 remained in force, the sum awarded in 1853 might amount to 17377. 5s. On analysing the details of the schedule of 1852, it became evident to the Committee that the great increase in the cost of medals arose principally from two causes, the one a system of separate showing, by nurserymen or market gardeners and private growers, and the other from the magnitude of the prizes offered for Orchids, which alone received 1891. 5s. in 1852, a larger sum than was given to any other class, except collections of stove and greenhouse plants. The Committee, after a very careful consideration of the various documents brought under their notice, came to the conclusion that the system of separate showing was carried to a needless as well as injurious extent, and that there no longer existed any sufficient reason for placing Orchids so high among other classes of exhibition. The Council entirely concurred in the former of these recommendations, and with respect to the latter, they determined for the present season to reduce the scale of prizes for Orchids. At the same time, taking into consideration the great and increasing interest which attaches to the exhibition of these gorgeous plants, they have resolved to give, in addition to the medals already offered in the printed schedule, the following extra prizes:—viz., to those who, in the two exhibitions in the months of May and June, shall have gained the highest amount of medals, the following medals in addition, viz.:—In the class of 20 species, to the first exhibitor the Large Gold, and to the second the Gold Knightian medal. In the class of 10 species, to the first exhibitor the Gold Knightian, and to the second the Gold Banksian medal. In the class of 6 species, to the first exhibitor the Gold Banksian, and to the second the Silver-Gilt medal.

"The Council having ascertained that the admission of Fellows to the garden exhibitions, at an early hour, accompanied by one friend, was unattended with inconvenience, have had very great satisfaction in extending the privilege so as to enable any Fellow or some member of his family as his representative to enter early in future with two friends instead of one. By this arrangement the Fellows of the Society and their personal friends have now the power of viewing the exhibitions an hour and a half earlier than visitors not accompanied by Fellows of the Society.

"A large number of varieties of fruits having been introduced to cultivation since the last edition of the Fruit Catalogue was published, Mr. Thompson has been instructed to prepare a supplement to it, which will be ready in the course of the ensuing summer.

"It will be within the recollection of the Society that in the year 1850 the distribution department of the Garden was re-organised on the retirement of Mr. Munro, in whose charge it had been for many years, and by the construction of better houses for the propagation of plants. The Garden Committee report that this change has proved satisfactory; that a better class of plants is now provided for distribution among the Fellows; and that many imported plants, which there had been previously no sufficient means of multiplying, had been sent in some abundance to the applicants. It also appears that the number of demands upon the Garden still remaining to be complied with is very much smaller than it has been at any time for more than twenty years. The Council had, however, previously found that the new plants obtained for dispersion had ceased to be sufficient to satisfy the just expectations of the Fellows of the Society; that little was to be

expected from the Scotch expedition to Oregon, to which the Society had subscribed, and that fresh importations of seeds and plants had become necessary. It was therefore announced at the last anniversary that the Council felt the period to have arrived when it was desirable once more to despatch a collector of plants in search of horticultural novelties, and that it was under consideration whether one might not be advantageously employed in some of the temperate regions of South America. The unsettled state of the Argentine Provinces having, however, compelled the Council to pause, and some negotiations with a naturalist in South America having failed, the Council provisionally availed themselves of the very liberal offer of Mr. Phillips, one of the agents of the Mining Company of Real del Monte in Mexico, to permit their officers to collect a supply of seeds of the valuable Coniferous and other plants inhabiting that locality, and an expenditure of 50% in defraying the expenses of the collectors was authorised. Subsequently, after much consideration, the unexhausted richness of Mexico in fine plants, its varied climate, and the rapidity with which it can now be reached, have finally induced the Council to take that country once more for a collecting ground; but they have determined that the agent to be sent there shall no longer, as on former occasions, travel incessantly from place to place. They believe that it will be more economical as well as more advantageous that the collector should remain stationary in some rich field until he has gleaned all that is most worth having, before he is transferred to fresh ground; and they have to announce that a committee has been appointed which is engaged in arranging the details of the enterprise. It has already been settled that Mount Orizaba shall be the first district to be explored; and the committee have every reason to believe that they have engaged the services of a collector who will skilfully and energetically fulfil the trust reposed in him.

"With a view to the greater extension of the utility of the monthly meetings in Regent Street, and to the further encouragement of good cultivation at all seasons and in all branches of gardening, the Council gave public notice, last October, that medals and certificates of merit would be given at each general meeting during the years 1852 and 1853, according to a schedule and under certain regulations thereto annexed; not, however, to the exclusion of other objects of horticultural interest, for which prizes would continue to be given, provided the exhibitors possessed conspicuous merit. A trial of this plan, during the six winter months, although not attended with all the advantages expected from it, partly from the very bad weather, partly, as it would seem, from gardeners not being prepared for the change, and in some measure from the difficulties inseparable from all unexpected alterations, has, upon the whole, worked so well as to induce the Council to continue the plan, hoping more especially that the admission of kitchen garden produce to exhibition will have the effect of improving that most useful branch of horticulture as much as public exhibitions have stimulated the more attractive, but not more important departments, of flower and fruit gardening. The following is a return of the number of medals awarded in Regent Street between April 1, 1852, and April 1, 1853:—1. Flowers, 41; 2. Fruits, 41; 3. Vegetables, 12.

In conclusion, the Council trusted "that this recapitulation of what has been effected during a year of considerable difficulty, and of the measures which are in progress for the future, will satisfy the Society that its interests have been cared for to the utmost extent of the means which have been available. The object of the Council has been to render the corporation useful to the Fellows as well as to the country; to increase its sphere of activity in every practicable manner, and at the same time to preserve its finances in a secure position; for all experience shows that whatever appearance of prosperity may attend a lavish expenditure exceeding the means of defraying it, such a system must eventually prove as fatal to a public association as to an individual. It is this feeling which has led them to pause before entering upon costly undertakings, and to administer all the branches of their administration with the utmost economy. If they have at last resolved upon incurring some expenses to which the Society has of late been unaccustomed, it has been in the full conviction that the finances of the Society will be improved, that its real utility will be greatly extended, and that the public will support them effectually by joining in greater numbers an institution of indisputable public value."

The ballot for Council and officers then took place, when the Duke of Northumberland, the Right Hon. L. Sullivan, and James Gadesden, Esq., were elected new members of Council, in the room of Lord Ashburton, Sir C. Lemon, and W. W. Salmon, Esq. The Duke of Devonshire was elected President; J. R. Gowen, Esq., Treasurer; Dr. Royle, Secretary; and Messrs. Charwood and Stevens Auditors for the ensuing year.

LINNEAN, April 19.—R. BROWN, Esq., in the chair. Dr. A. Gibson was elected a Fellow. The Rev. W. Hince presented specimens of the fruit of *Simaba Cedron*, the "*Cedron*" of New Grenada, and one of the wanted remedies for snake bites. Mr. Westwood read a paper on the presence of a species of water-shrimp, hitherto unknown in England, in a well near Maidenhead. The author believed it to be identical with the *Niphargia stygia* of Schödte, a shrimp which had only been hitherto discovered in the caverns of Carniola, where also the *Proteus anguinus* is found. Mr. Westwood drew attention to the fact of the absence of eyes



in this genus, and referred to the researches of various naturalists, from which it appears that fish and other animals living in subterranean waters are blind, or nearly so.—Mr. Newport read a paper on the ocelli and antennæ of the parasitic genus *Anthrophorabia*, and pointed out that the male of these creatures had only a single ocellus or eye on each side of the head, whilst the female had compound eyes.

May 3.—ROBERT BROWN, Esq., in the chair. William Clarke, Esq., was elected an ordinary Fellow. Professor von Schlechtendahl and Monsieur Tulasne were elected honorary Foreign Fellows. Dr. Boott, William Spence, Esq., and Francis Walker, Esq., were elected Auditors of Accounts for the ensuing anniversary meeting. Dr. Wellitsch presented 300 specimens of dried plants collected by himself in Portugal. Mr. Thomas Moore presented a collection of dried Ferns. A model of the restored monument to the memory of Philip Miller, in Chelsea Churchyard, was presented by Dr. Iliffe. The conclusion of Mr. Bunbury's Notes on the Vegetation of Buenos Ayres and neighbouring districts, was read. The materials for this paper were derived from the observations of the author himself, and from an extensive herbarium formed by the late Mr. Fox. For the region to which his observations applied the author proposed the name *Argentina*, from the river Plate, which ran through the principal districts examined. The most remarkable feature of the *Argentina* region was the absence of trees or shrubs. The tropical species are less numerous than in the Brazilian Flora, and the aspect of the vegetation is somewhat European, from the large number of species introduced from Europe. Amongst these may be mentioned the common Fennel, which abounds to such an extent in certain districts, that the inhabitants can calculate on the occurrence of a particular wind by the smell of the Fennel. Other European plants are the *Trifolium repens*, *Echium violaceum*, *Sonchus oleraceus*, *Medicago denticulata*, *Lolium perenne*, *Hordeum marinum* and *pratense*. The *Argentina* Flora differs very considerably from that of Chili, especially in the absence of shrubs, and the prevalence of herbaceous species. It has little or no analogy with the North American Flora in the same latitudes, on the other side of the tropics, and has few features in common with the Flora of the Cape of Good Hope. The paper concluded with some general remarks on the families and species which most characterise the Flora of the *Argentina* region.

## Notices of Books, &c.

*Wight's Icones Plantarum Indis Orientalis.* Vol. VI. 4to. Baillière.

At last this truly great work is terminated, its 2101 excellent plates having illustrated the vegetation of India more completely than it had ever been before. How such a publication could have been prepared in a climate like that of Madras—by what means the fingers of an Indian artist have been taught precision and his eyes a knowledge of perspective which would be meritorious in a European, it passes our skill to explain. It is, however, evident that the great moving power which has performed these wonders is the energy and industry of the indefatigable author, who, at a distance of 300 miles from his printing-office, has kept Indian compositors and lithographers in good working order, and, without access to the great European sources of information, has produced a work of which any resident in London or Paris might be proud. Now that he has returned to his native country, we are persuaded that men of science will welcome him as such an ally should be welcomed.

The present volume contains numerous illustrations of Peppers, difficult Urticaceous plants, and still more difficult Endogens, a large proportion of which belongs to the Zingiberaceous order. The new genera are—1, *CHAMABAINIA*, related to *Pouzolzia*; 2, *ASTYLIS*, a diceious plant, referred to *Antidesmads*; 3, *CHORIZANDRA*, a Euphorbiaceous genus resembling *Phyllanthus*; 4, *MACCELLELANDIA*, a Lythrad, named after the most incompent of all editors, and we trust a bad genus; 5, *HEMTEROCARPUS*; 6, *DICTYOSPERMUM*; 7, *DICHESPERMUM*, related to *COMELLYNA*; and 8, *GOVINDOVIA*, which is, we fear, the same as *Tropidia*.

Among other points of interest we observe that the curious product called *Cattimandoo* (not *Callimandoo*), a new substance analogous to gutta percha, is pronounced to be the juice, not of *Euphorbia trigona*, but of a distinct species, as we long ago suspected.

*Alison's History of Europe* (People's Edition).—A very neat re-issue of this celebrated work, in monthly shilling numbers. It will be welcome to many even among those who could have bought the dearer editions, if it had not been for the thousand other uses for which their money is required.

*The Life of Marshal Turenne.* By the Rev. T. O. Cooke. (Longman's Traveller's Library).—Remarkably dull and ill written.

*Life of Lord Bacon* (Murray's Railway Reading).—An acceptable reprint of one of the best and most interesting of Lord Campbell's Lives of the Lord Chancellors.

## Garden Memoranda.

EXOTIC NURSERY, KING'S ROAD, CHELSEA.—The retirement of Messrs. Knight & Perry from this well-known nursery, and its recent occupation by Mr. Veitch, who is liberally introducing to it many of his fine new plants from Exeter, have, as a matter of course,

caused a little alteration to be already apparent in the general aspect of the houses; but it is not in-doors alone to which changes are to be confined; we understand that the centre walk within the square formed by the glass-houses is to be margined with standard Bays, so as to represent a grove of Orange trees; and that the houses themselves are to be fresh painted and heated with hot water instead of flues, with which some of them are at present warmed. The main central walk is to be margined with Grass on each side, behind which are to be arranged Conifers in pots, and behind them again are to be formed beds of specimen Deodars and other large Conifers from the Exeter nursery. For the present the aquarium is intended to be the receptacle for examples of the magnificent Pitcher-plants, which everybody knows the Messrs. Veitch possess; but by-and-by it is contemplated to have a house built expressly for their accommodation on the other side of the walk, immediately opposite their present temporary abode. In the aquarium just mentioned is an admirable collection of Nymphaeas, all of which are flourishing in a most luxuriant manner in an excellent slate tank. The blue *Nymphaea* was in full blossom, and *N. dentata*, a noble plant, was covered with buds. *N. rubra* was also here associated with several plants of the rare and more robust *N. Devoniana*, accompanied by many other interesting aquatics. We also remarked, in the further end of this house, a fine specimen of the Tree Fern, *Dicksonia squarrosa*, whose wide-spreading, noble fronds have a very striking effect. This was set in the tank; but not in the water, which was kept off it by a barrel, in which the pot containing the Fern was placed. A little further on was a large lean-to house, filled with small Orange trees in pots, all of which are just coming into bloom. These consisted of both standards and dwarfs of suitable sizes for ordinary decorative purposes.

Camellias are at present flowering freely on an open wall, with a north aspect, near this Orangery; and, notwithstanding the unfavourable weather we have had, their blossoms are really very brilliant and perfect. We now come to a little stove in which, "for the time being," Orchids were mixed with many rare plants of other kinds. Here were the great *Medinilla magnifica*, with 12 bunches of showy inflorescence; the lovely *Streptocarpus biflorus*, whose flowers are twice as numerous, large, and fine, as those of *S. Rexii*; *Statie Halfordii*, perhaps the best of all the tree Staticeas, and one which is always in flower; and last, but not least, the singular and handsome red and yellow-flowered *Hexacentris mysorensis*, a twiner which seems as much adapted for pot culture as for the rafter of a stove. Among Orchids were *Aerides virens* coming nicely into blossom; a profusely flowered specimen of *Dendrobium moniliforme*; also the rare *D. Dalhousieanum*, *D. tortile*—an interesting species, *Cattleya Skinneri* unusually well coloured, a noble example of the Sweet-Vanda (*V. suavis*), and *Dendrobium anosmum*, a kind related to but handsomer than the Rhubarb-scented *D. macrophyllum*, and without the unpleasant smell which belongs to the latter. In a small greenhouse opposite this stove were several very fine plants of the noble-looking *Lilium giganteum*; one of them was so far advanced in flower that it is thought it will be in good condition for showing at Chiswick on the 14th. The foliage of this plant is large and fine, and the flower stalk is about 5 feet high, surmounted with a cluster of some nine flower-buds, which when expanded must be very striking. As to the hardiness of this Lily, we learned from Mr. Veitch that it had stood out in Devonshire last winter, where they had 17° of frost, and that bulbs in the ground then, are now pushing freely. The charming Jasmine-flowered *Rhododendron* was also in bloom here, along with some nice specimens of *Dielis* *spectabilis*, *Azaleas*, and other gay plants. The long show-house at the entrance was likewise well furnished with blossom, produced by *Rhododendrons*, *Azaleas*, *Cinerarias*, *Deutzia gracilis* in the shape of little standards, with interesting heads of white flowers, and other plants of that description. Near the fountain in the conservatory was a noble example of *Berberis Darwinii* which has proved itself everywhere to be quite hardy, and which is certainly one of the most ornamental plants that has been introduced to our gardens for many years. Of this Mr. Veitch has a fine stock, as well as of the two rare Conifers *Saxe-Gothaea conspicua* and *Fitz-Roya patagonica*. Van loads of plants are arriving from Exeter every day; it cannot be doubted therefore that this nursery will be much more attractive than ever it has yet been, arising from the difference of plants flowered in the fine climate of Devonshire, compared with the same things brought into blossom under the murky atmosphere of suburban London.

## FLORICULTURE.

THE DAHLIA.—I observe that Mr. McDonald, of Drummond Castle, states, in the "Scottish Florist" for May, that the "great objection to the more general cultivation of this very ornamental plant is the difficulty of keeping the roots in a fresh state through the winter;" and he further instances Annie Salter, let out last season, as having been all lost except a few roots, attributing the failure in many instances to "too high cultivation." Now, I think it is pretty well known in the south that Annie Salter was not generally cultivated last season; that, in fact, it was only grown by a few,

and, proving to be very fine; the roots were eagerly bought up by the trade, in order to enable a sufficient supply to be propagated to meet the expected demand for the variety this season. This is, I apprehend, more the cause of the sort disappearing than the loss of the roots; again, I do not quite agree with the advice given in the same article, under the head "New Varieties." I would caution private growers, whose purchases are generally confined to one plant each of the best sorts, not to "take a cutting from the main stem as soon as it can be got," as Mr. McDonald directs; and my reasons for advising a contrary practice are so well explained by a writer in the "Florist and Garden Miscellany" for May, that I imagine I cannot do better than reproduce his statement here. He says, "Nevertheless I am desirous to warn the uninitiated among you against an error I once committed, and of which I repented, as usual, when too late. Thus it happened: I was over-covetous, and wanted to obtain two plants at the price of one; no sooner therefore had I obtained my supply from the nursery than I set to work; deliberately cut off the head of each individual, and proceeded to strike the severed tops in heat. By this operation I certainly doubled the number of my new plants, but at the same time I so weakened them in constitution that they became incapable of producing either early or perfect blooms." This, then, is surely well calculated to operate as a caution to beginners not to make too free with the main stem of their young plants. J. E.

NATIONAL FLORICULTURAL SOCIETY, May 5.—Mr. E. SPARY in the chair. There was a full and interesting meeting on this occasion. Conspicuous among novelties were two plants of a French *Azalea* named *Debuté de l'Europe*, forwarded from Lids by Mr. Mieller; the variety was much admired by all present, and richly merited the First Class Certificate which was awarded it. The petals are broad and well rounded, of good substance, and altogether the flower is one of good medium size; ground colour flesh, becoming pale towards the edge, striped and mottled with pale carmine or rose-pink. A First Class Certificate was also awarded to a double *Polyanthus* from Mr. Dobson, of Isleworth; the flowers are red bordered with yellow. It will make a showy border flower. A Certificate of Merit was given to *Polyanthus* Prince Albert, shown by Mr. Mockett, gardener to J. Allnutt, Esq., Clapham Road; this flower was noticed by us last week, in our report of the South London Show. A similar award was granted to *Cineraria Optima* (Bousie), a flower much in the way of Lady Hume Campbell, but larger and with a darker coloured disk. This came from Mr. Turner, of Slough. Several varieties of *Pansies* were staged by Mr. Bragg, Messrs. Schofield, Mr. Turner, and Mr. Edwards; a flower, named Mr. Thompson, maintained the distinction it received the other day at the Surrey. *Monarch* (Hale) was also again shown in first-rate condition; and one called *Magnificent*, from Messrs. Schofield, was noticed as a showy and bold variety for border purposes. A chaste *Cineraria*, named Mrs. Foster, would doubtless have received a high award, but it was insufficiently in flower. A nice *Cineraria* was staged by Mr. Keynes, as were also several single blooms of *Polyanthuses*. Collections of *Cinerarias*, *Pansies*, *Primulas*, *Auriculas*, &c., for reference in case of need, were staged by Messrs. Henderson and Son, Mr. Turner, Mr. Bragg, Mr. Miller, and Mr. J. Edwards.

CARNATIONS, &c.: *Enquirer*. If you have drained well, you need have no fear of heavy rains; but you should set the pots on strips of wood, say an inch thick.

CATALOGUES received from Mr. H. G. Burnell, Victoria Buildings, Belfast; Mr. E. Spary, Queen's Graperies, Brighton; and Mr. Barnes, Camden Nursery, Camberwell. Also schedules of prizes of the Gloucester Horticultural (show days 13th, 14th, and 15th July); Scottish Pansy (show day June 21st); Farnham Horticultural (show day June 14th); and Chesham Horticultural Societies (show days June 8th and Sept. 20th).

DAHLIAS: *A. B.* It may be presumed that all seed which has been sown is up; the plants should, therefore, be potted off. It is a bad practice to permit them to occupy the pans till they have become drawn and weakly. If seeds are worth the trouble of sowing, surely they deserve some attention afterwards.

HOLLYHOCKS: *J. H.* All will now be planted out for the general bloom; but a few spring-struck plants may be put out for September. Top-dress the early plants with rotten manure, and keep them clear of slugs; stakes will be required in the end of the month for the most forward sorts. It is not generally known that tall stakes are not needed; strong ones, firmly placed in the ground, and the spike well secured, are all that is required. It is at the bottom the spike gives way if it gets loose.

### SEEDLING FLOWERS.

ALPINES: *E. G.* Exeter. 3 and 4 are the best; 2 is large, but very rough; 6 is small and rough; 1 is of a mongrel colour; 5, notched.

CALCEOLARIAS: *R. C.* As far as we can judge from the shrivelled-up blooms sent, your flowers are equal to most of the sorts usually grown. We like 1 much, but it is impossible to determine its true form, owing to the cause just referred to. Few subjects travel so badly as *Calceolaria* blooms.

CINERARIAS: *J. R. Ramsey*, 3, a very useful flower, and deserving cultivation; 4, for colour good; 11, pretty, but too small; 1, deficient in texture and breadth of petal; the disk is also insignificant and out of all proportion with the outline of the bloom. Some of the figures not discernible.—*G. R.* 2-53 is desirable, on account of its well-formed bold disk of the richest puce, surrounded by petals of average form, but of good colour, being bluish tinged with the softest peach; 1, 3, 4, 5 have little to recommend them.—*Lyston*. None from 1 to 12 are of sufficient merit to be worth keeping; 7 is bright, but in no other way equal to Amy Robarts.—*A. B. C.* 1, 2, 3, of no value for exhibitional purposes.—*M. B.* 1, 2, 3, 4, 5, of no value as show flowers; 6, Grandis, deep and rich purple self, and a free bloomer; *Polyanthiflora*, cheerful, pretty, and good.—*T. D.* Not received.

PANSY: *Y. Y.* The indentation, if permanent, on the lower petal, will detract from an otherwise neat and well-proportioned flower. We like its general characteristics much.

POLYANTHUSES: *E. A.* Three very pretty flowers, the worst defect is a want of denseness in the yellow or ground colour; 1 has every disposition to produce a good truss, 12 tips, and of these seven are fully blown.—*H. M. A.* Of no value.

RHODODENDRONS: *W. E.* *Hursley* is handsome, but does it flower late enough to be out of the reach of spring frosts?

## Miscellaneous.

*The Society of Arts.* We understand that Professor Solly has resigned the office of Secretary of the Society of Arts; that the appointment rests with the Council; that the election will take place July 6, and that there will probably be many candidates.



## Calendar of Operations.

(For the ensuing week.)

## PLANT DEPARTMENT.

THE conservatory and other climbers should be frequently examined, to prevent a confused growth. Kennedyas, &c., if crowded, should have their shoots thinned after they have done blooming, as their new growth will then commence. Climbers in pots, training on wires and trellis work, will likewise require watching. The different Ipomoeas and Thunbergias being subject to red spider, should be well syringed, to prevent the pest gaining ground; another fine trellis plant, Jasminum grandiflorum, is frequently subject to scale, which, if not kept down, soon disfigures the plant; wash them frequently with brown soap lather, or try Clarke's preparation. Where a large quantity of hardy shrubs is annually forced, either to decorate the drawing-room or conservatory, it is not desirable to pot a fresh stock each season, as a number of the deciduous shrubs, as Roses, Lilacs, Thorns, Honeysuckles, &c., may by proper treatment be made to bloom for several successive seasons; select, therefore, the most suitable plants, when removed from the houses, and give them some kind of temporary shelter, to gradually harden their foliage; those cramped for pot room, shift into a size larger pot, in rich turfy loam; towards the middle of the month plunge them in an open situation, that the wood may get ripe early; these plants, from having been previously forced, will bloom earlier than the new stock, of which a portion should each year be potted, to replace such as become useless for further work. Cut down and place in a cold frame the choicest Cinerarias for suckers, and put in a stock of Chrysanthemum cuttings for autumn display. As spring flowering plants for the stove and for cutting, we know of no more useful class of plants than Begonias. Now will be a good time to commence with a stock for next season's display; as they go out of bloom allow them a short rest, in a rather dry house, when they may be partially disrooted and repotted, pruning in any struggling shoots. Keep them close and syringe frequently, when they will soon commence growing. Abundance of light and a tolerable share of pot-room are necessary to insure fine plants. Above all, keep them a good distance apart, that the fine foliage of some of the species may have full room to expand. As the plants advance, liquid manure may now and then be given. Their period of blooming is from January to May. As a guide for selecting—nitida, cinnabarina, discolor, manicata, ramentacea, and Martiana, are all showy and easily grown kinds.

## FORCING DEPARTMENT.

VINERY.—Although in a former Calendar we recommended, where very late Grapes were required, that the Vines should be retarded from breaking in the spring, yet it must be borne in mind that after they have once started into growth the treatment must vary; for the most important part of the Vine's growth is comprised between that period and the setting of the fruit; and it is important for the formation of sound healthy wood, and perfect bunches, that they be assisted by artificial means during that stage. Hamburgs and the more hardy Grapes will require to be kept near 65° (as a night temperature), as they approach the time of flowering; but the Cannon Hall and common Muscat, with the Damascus and West's St. Peters, will require an additional 5° as they get into bloom; and this heat should be maintained till the berries are wholly set, when a slight diminution of temperature may take place, and the treatment be regulated by the time when the crop is wanted to ripen. Regulate the growing Vines, so as to keep them as evenly balanced as possible. To effect this it will sometimes be necessary to keep the lower spurs on a par with the uppermost ones, to allow them to grow for some time after the former ones are stopped; this will help to counteract the flow of sap upwards, and balance the growth of the tree. PINERY.—Attend to keeping a humid atmosphere to the swelling fruit, and the earth about the roots moderately moist, using occasionally weak manure water. Of this, we still think soot-water as good as any, but it may be made of various other fertilisers, equally good; always stipulating, that it is used in a clear state. Where extra heavy fruit is the object, all suckers should be removed as they appear, and some growers take out the centre of the crowns, to check their growth and assist the swelling fruit—a practice we think objectionable, where the beauty of the fruit is a consideration. On warm afternoons, syringe copiously, and close up with a temperature of 90°, giving air again towards evening. Whenever indications of changing colour appear, withhold the syringe, and allow them no further supplies at the root. The succession plants will be growing freely, and our previous directions on the importance of allowing them a free exposure to light, with abundance of air, should be acted upon. As the roots have now made some progress, water may be more liberally given. See that the bottom-heat is steady at about 85°.

PEACH-HOUSE.—The early house may now safely have an advance of temperature, by night as well as by day. At this stage they will bear forcing freely; keep, however, the syringe at work twice or thrice daily; tie in the shoots as they advance, and expose the fruit to the free action of light, if a high colour is wanted. The borders should be kept well watered, but manure water will not be of much service to the early crop after this time. Bring on the succession houses by attending to the requisite culture, in accordance with their stages

—for which see our former directions. British Queens are liable to red spider; to keep this down, ply the syringe well till they are in bloom, and after they are set; and the inside walls, &c., of the pit-house should be washed with the sulphur mixture. The fruit of the "Queens" will require some kind of support, owing to the length of the footstalk.

## FLOWER GARDEN AND SHRUBBERY.

The late rains will be favourable for recently planted shrubs, and now the soil is damp, no time should be lost in completing whatever, in the shape of planting, or bedding-out young nursery stuff, remains on hand. If not done previously, the herbaceous ground should now be well cleaned and neatly raked over; this cannot well be done sooner, in consequence of many species being late in vegetating. Fill up vacancies, either from the reserve-ground, or by sowing annuals in the intermediate spaces. Large plants of some genera, as Phloxes, Asters, &c., generally throw up too many flowering shoots; where such is the case, thin them out at once, so as to obtain, not only fine heads of bloom, but increased strength to the remaining shoots, to enable them to need less assistance from stakes. Hollyhocks for late blooming may still be planted; as it is better, where they are grown extensively, to plant at two or three times, to insure a succession of bloom. These showy plants are admirably adapted for planting in long lines, and parallel to straight walks, walls, &c., where they produce a grand effect. As the state of the soil and weather are now favourable for commencing with the bedding-out stuff, a start should be made with the half-hardy plants first, as Antirrhinums, Pentstemons, &c., which may be followed by Calceolarias, Verbenas, and similar plants, reserving Heliotropes, and the more tender kinds of Geraniums, for the latest planting, when the danger from frost, of any severity, may be supposed over. One of the principal points in pleasure-ground scenery is the beauty of the turf, which should be kept at all times closely cut, if perfection is aimed at, but more particularly at this season, when by frequent mowings, cutting the Grass as low as possible, the foundation of a close-bottomed turf will be laid for the season; on poor sandy or rocky soils, the verdure must be maintained by occasional waterings with liquid manures, or dressings with guano, &c.

## FLORISTS' FLOWERS.

In the southern parts of the kingdom there will be a difference in the bloom of Tulips, of at least ten days, in comparison with those in the north. In the former localities the petals begin to show their colours, and some judgment must be used in covering the bed with an awning; at all events, where not sufficiently forward, the net to prevent damage by hail-stones must still be retained. Look over the "off buds," and where promising buds appear, insert a stick by the side, and cover with a hand-glass. Auriculas should be moved to their blooming stage; this should have a northerly exposure, and be covered with a light awning. To prevent damage by side winds or draughts, curtains made of net may be let down whenever the weather is unpropitious. Examine carefully beds of seedling Polyanthus and Pansies. Very considerable interest will now attach to these. We consider them the most pleasing part of the florist's pursuit. What anxiety, hopes, and fears, are his! And we may say, what pride and joy he experiences when some seedling of his own beats an established favourite. Mark anything new and distinct in colour and character; and though the flowers may have defective points, still it will be advisable to save seed, in order if possible to improve on these, and at the same time perpetuate whatever is desirable in their habit, colour, or form. When the weather is suitable, plant out Dahlias in properly prepared soil; water and mulch the land with rotten horse-manure; this prevents evaporation, and is highly beneficial. The same remarks apply to Hollyhocks.

## KITCHEN GARDEN.

Seedling plants of Cauliflowers, Cabbage, &c., raised this present spring should be pricked off, when large enough to get stocky for final transplanting. As the future growth of the Brassica tribe depends much on not being drawn when young, some attention should be paid to this point when they are in the seedling state, for the best after-culture rarely compensates for the first neglect. As the time for sowing the principal crops of winter and spring Broccoli and Greens is now at hand, select, if possible, an open piece of ground, rather poor than rich; let the seed be sown thinly, and when large enough to handle, prick them out on a similar soil. To carry out the above directions, among the numerous varieties inserted in the seedsmen's lists, not more than three or four are necessary. A crop of the Globe Artichoke should now be planted for producing a late supply of heads. We have in former Calendars given directions for preparing ground for these and other permanent plants; on this the young side shoots taken from the old stools may be planted in lines 4 feet apart and 18 inches between the plants; or trenches may be dug 18 inches wide and the same in depth, in which some well rotten manure should be dug, and the plants put out as above. Keep the hoe at work between growing crops when the ground is dry; stick Peas as they require it, and thin out Spinach, Lettuce, and other crops, as they advance; keep down weeds, never allowing them to seed, or much after trouble will be entailed. Now is a good time to look over the herb ground. With us Sage, Thyme, and even the hardy Rosemary, are nearly all destroyed by the late frosts. Seeds of the above, and similar things, should be sown for a supply

of young plants; and the old plants, where alive, should be carefully layered, for the same purpose. Divide Chamomile; pot Marjoram, Burnet, &c., and plant in fresh soil. Peppermint, transplant, and dress with short dung. Rosemary, Lavender, and other plants used for distilling or drying, should be cleaned, and vacancies made up. Sow Sweet Basil and Marjoram two or three times during the season on a warm border, for use in a green state, as well as for drying. Keep a good lookout for slugs, &c., which the late rains have brought out, dusting the quarters over early, especially on damp mornings, with fresh slacked lime, and hand picking, are the most effectual means of destroying these pests.

STATE OF THE WEATHER NEAR LONDON.  
For the week ending May 5, 1853, as observed at the Horticultural Gardens, Chiswick.

April and May.	Moon's Age.	BAROMETER.		TEMPERATURE.				Wind.	Rain.
				Of the Air.			Of the Earth		
		Max.	Min.	Max.	Min.	Mean	1 foot 2 feet deep.		
Friday, 29	21	29.634	29.586	56	37	46.5	46	E.	.38
Saturday, 30	22	29.508	29.655	56	31	43.5	47	S.W.	.00
Sunday, 1	23	29.835	29.808	68	40	54.0	48	S.E.	.00
Monday, 2	24	29.869	29.748	64	47	55.5	49	E.	.06
Tuesday, 3	25	29.802	29.658	55	47	51.0	50	E.	.38
Wednesday, 4	26	30.073	29.942	35	39	47.0	50.8	E.	.00
Thursday, 5	27	30.141	30.014	61	31	46.0	50	E.	.00
Average		29.887	29.788	60.7	38.9	49.7	48.6		1.02

April 29.—Cold rain; slightly overcast at night.  
30.—Overcast; very fine; clear at night.  
May 1.—Clear, very fine; clear at night.  
2.—Slight haze; fine; overcast; rain at night.  
3.—Constant rain throughout.  
4.—Densely overcast and mild; hazy.  
5.—Very fine throughout; clear at night; frosty air.  
Mean temperature of the week 2 deg. below the average.

STATE OF THE WEATHER AT CHISWICK.  
During the last 27 years, for the ensuing week, ending May 14, 1853.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 8	62.7	41.7	52.2	10	0.57 in.	5	5	5	5	4	6	1	2
Monday 9	62.2	40.7	51.5	10	0.60	5	4	4	4	3	5	4	6
Tuesday 10	62.0	39.8	50.9	9	0.10	5	5	5	5	6	5	5	2
Wednesday 11	62.6	41.5	52.1	10	0.29	5	5	5	5	4	4	4	4
Thursday 12	63.4	41.7	52.6	13	0.40	3	5	7	1	4	4	4	2
Friday 13	63.8	39.7	51.7	12	0.22	3	5	5	5	5	5	4	3
Saturday 14	63.4	40.9	52.2	10	0.56	3	5	5	1	3	5	4	1

The highest temperature during the above period occurred on the 12th, 1833—therm. 81 deg.; and the lowest on the 11th, 1838, and 14th, 1851—therm. 27 deg.

## Notices to Correspondents.

APHIS BRUSH: *S.H.I.* asks where the aphid brush, figured at p. 278, may be procured. We should think any brushmaker could make such a tool.

AQUATICS: *J.W.* We are unacquainted with "the New Water Lily, called Antropodium spinescens."

BLUE PENTSTEMON: *Chaucer.* Probably you mean Pentstemon spicatus.

CONFESSORS: *H.B.C.* Sow your seeds in pure yellow loam now, and place them in a cold frame. If they are ripe, they will vegetate; they do not require heat.

CUCUMBERS: *H.S.L.* Too much moisture and too little ventilation are evidently the cause of your Cucumbers going off like the one sent. As to mildew, if that should show itself, keep it down by sulphuring immediately the parts affected.

DANDELIONS: *N.T.* You can only extirpate them by pulling up in wet weather and preventing their flowering. If you persevere, that is effectual.

GLAZING: *E.E. Hartley's* rough plate glass is not fluted. If you have bought fluted glass you must put the fluted side outwards.

HEATHS: *H.W.* Now is as good a time as any for shifting young plants. The shifting of specimens had better be deferred until after they have done flowering.

INSECTS: *W.R.* The use of the Cambridge roller will certainly be beneficial in destroying the grubs of the dark-moth; it must, however, be used immediately after the ground is ploughed up, or they will escape into crevices too deep for the roller to reach them.—*T.R.* The little caterpillars found with their cases, like grains of Rice in the husks, are those of a small moth of the genus *Astragrus* (or *Coleophora*). The cases are of silk spun by the insects themselves, and which subsequently serve for cocoons. Will you oblige us by sending a few more inclosed in a pill-box, those sent being crushed in the envelope.

IPOMOEAS: *H.W.A.* *I. arabica*, Quamocil Michauxii, Nil, and *Lutea* will flower bedded out in the open air, provided they are raised in heat and treated like tender annuals.

NAMES OF FRUITS: *C.A.A.* Your Apple is the Easter Pippin, or, as it is frequently called, the French Crab.

NAMES OF PLANTS: *P.P. Paris.* 7, An Epidendrum with which we are unacquainted, perhaps the obscure *E. sisyrinchifolium*; 11, *Oncidium ascendens*; 13, *Melia Shepherdii*; 14, *B. patula* var.; 15, *B. verucunda*; 16, 17, 18, 20, Varieties of *B. acutipetala*; 16, *Batemanniana* is another, and probably *B. havanensis* does not deserve to be distinguished; they are all too near *B. verucunda*, as is *B. pubellula* of the Hort. Par.; 19, *B. patula*; campanulata is quite different, and not in cultivation (?); 22, *Burlingtonia venusta*—*H.R.* *Dendrobium nobile* and a new species of *Maxillaria*.—*G.Berry.* 1, *Saccolabium umbellatum*; 2, *Dendrobium Palpebre*.—*Sub.* *Myosurus minimus*.—*Sub.* *Genista canariensis*; the *Begonia* looks like *hydrocotylifolia* but is knocked to pieces.—*A.H.* We should translate rivularis "brook" in the sense of an adjective, as in brook-lime. It is not the same as riparius, but should signify growing in a little current of water. We dare say, however, that the two words are often confounded. In *Mimulus* it is used correctly. As to the *Anemone*, it is said to grow *secus rivulos* in Nepal. *Daphne japonica* is a white-flowered plant, like *D. indica*, and perhaps not distinct.—*H.G.L.* One is *Odonoglossum*, unknown to us; the other is a *Maxillaria*, of which flowers have been received from several correspondents, but not, we believe, described. We cannot say more without seeing the plants themselves when in flower.—*W. Wood.* *Podisoma Juniperi* Sabine, a fungus.—*Redwood.* *Scilla sibirica*; *Fritillaria lutea*.

ORCHIDS: *J.H.H.* Williams's is the only book on the subject The advertisement is an imposition.

PRESERVES: *Sub* and *H.A.F.* Mr. Lovejoy has, we believe, as yet confined his plan entirely to fruits. He has not tried vegetables. The time the fruit is to be exposed to heat (176°) should not be one minute. The alum should be weighed by apothecaries' weight.

STRAWBERRIES: *M. Atkinson.* Your seedling is distinct, large, and showy; fruit, a regular cone, and well coloured to the very top; a good bearer, and if well favoured an acquisition.

THE TURNIP: *Turnip grower.* It is an imposition. See our No. 13, p. 198, of this year.

VIOLA LUTEA: *Anon.* Messrs. Veitch, we believe, grow it in a rather shady situation, and in a mixture of loam, leaves, and sand.

VINES: *Sub.* The green shoots can be made to unite by the process of inarching.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

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Superphosphate of Lime. Peruvian Guano. Calcined Bone. Wheat Manure. Fine ditto, for dissolving. Mangold Wurzel Manure. Bones, half-inch. Potato Manure. Ditto, dust. Sulphuric Acid. Ditto, fine, for dissolving. Gypsum. Animal Guano, or Dried Flesh. Nitrate of Soda. Manure, from South America.

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PEAT CHARCOAL, completely saturated with LONDON SEWAGE, will be found a most efficient Manure for any Crop; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, and will be delivered at the London Termini of the Railways at 60s. per ton, and in quantities less than half a ton, at 4l. per cwt., for ready money only; it may be also procured from Messrs. G. GINS & CO., Agricultural Seedsmen, 26, Down Street, Piccadilly; or from any other of the Company's Agents.

"Sewage Manure, absorbed in Charcoal, is a first-rate fertiliser we have tried it on French Beans, Dahlias, Roses, and Cabbage Plants. We put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. GLENNY.

Thomas Cartwright, Esq., of Aynhoe Park, having had 2 tons in the spring, which he tried on Turnips, ordered 30 tons, and writes as follows:—"Nov. 7, 1852. I have used the Sewage Charcoal Manure largely this autumn on Wheat and Beans;" and he then adds: "On the whole, I like the Sewage Charcoal very much, and think it a very useful manure, and intend always to have some for my Turnips."

**ARTIFICIAL MANURES, &c.**—Manufacturers and others engaged in making ARTIFICIAL MANURES, may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

Gentlemen desirous of receiving instructions in chemical analysis and assaying, will find ample facility and accommodation at the College.

**ROOT-GROWERS** applying by Letter to the Subscribers may rely on receiving direct from the Works CONCENTRATED MANURES of every kind on the best possible terms, and of the highest quality, which the combination of science, skill, and experience is enabled to produce.

SPONNER'S SUPERPHOSPHATE OF LIME has, during the past seven years, earned more prizes in the South of England than has been obtained during this period by the aid of every other Manure hitherto introduced.

SPONNER & BAILEY, Agricultural Chemists, Bone Mills and Manure Works, Eling, Southampton.

Soils and Manures Analysed.

N.B.—The copyright of Mr. Spooner's Prize Essay on Root Crops belongs to the Bath and West of England Agricultural Society, and will be published in its Journal.

## MR. SAMUELSON'S PATENT DIGGING

MACHINE, capable of digging 4 acres per day, with four to six horses, price 23l. 10s., in now at work daily in the neighbourhood of Banbury. Agriculturists, road, and railway contractors, and others interested in its operation, may see it by applying to Mr. B. SAMUELSON, Britannia Works, Banbury.

BUILDING'S LAWN MOWER, with SAMUELSON'S REGISTERED IMPROVEMENTS, lightening the draft by one-half, and enabling one unskilled labourer to work it unassisted; reviewed and commended in the "Framingham Journal," of February 1. Price 5l. 10s. and 6l. Larger sizes for pony draught, 7l. 5s. and 10l.

Apply as above, or to any Ironmonger, or Implement Dealer in town or country.

DR. S. NEWINGTON'S DIBBLES have been proved for many years to answer admirably for planting Mangold Wurzel Seed, at a proper and uniform depth, with 7, 8, or 9 depositors.—C. H. GABRIEL, Surrey Chambers, Arundel Street, Strand.

N.B. A man can plant two acres a day, covering in the seed at the same time.

**THE CONSERVATIVE LAND SOCIETY.**—The Sixth Public DRAWING for Priority of Choice of Allotments on the Society's Estates, will take place at the Offices, 33, Norfolk Street, Strand, London, on SATURDAY, May 14, at 12 o'clock. The Eighth Purchase of Land has just been made at Forest Hill, a few minutes' walk from the station on the road to Lewisham. This Estate commands a most extensive view, Windsor Castle being seen from the summit, and is within sight of the Crystal Palace at Sydenham. All persons taking Shares on or before the 13th inst. will participate in the advantages of the next day's Drawing; and if their numbers be drawn, will be enabled to exercise their right of choice on the Forest Hill property. Shares paid up in full at once are entered immediately on the Order of Rights.—Applications for Shares and Prospectuses to be addressed to CHAS. LEWIS & RUNNEN, Secretary.

**THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.**—Incorporated by Act of Parliament, 12 and 13 Vic., c. 91.

OFFICES—52, PARLIAMENT STREET, LONDON.

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Empowered by Act of Parliament to execute all works of Drainage (including Outfalls through adjoining Estates), to erect Farm Buildings, and to carry out every kind of permanent improvement upon Estates, under settlement or disability; to provide the money or to enable the landowner to employ his own capital and execute the works by his agents, under the superintendence of the Company; the amount of the outlay and the attendant expenses being charged upon the property by way of annuity, extinguishing the debt at the rate of 6l. per cent. for Farm Buildings, and 5l. per cent. for Drainage, Roads, and other improvements.

Applications to be addressed to WILLIAM CLIFFORD, Sec. Offices—52, Parliament Street, London.

## WEST KENT POULTRY EXHIBITION.

OPEN TO ALL ENGLAND.

TO EXHIBITORS OF POULTRY, PIGEONS, AND RABBITS. The Certificates of Entry are now ready, and may be had, with the Prize Lists, on application to B. THOMAS, Secretary, Lion Inn, Farningham. A Gold Medal and upwards of 100l. will be awarded.

## POULTRY SHOW.—THE FIRST ANNUAL

LONDON GREAT SUMMER POULTRY SHOW will be held at the BAKER STREET BAZAAR on WEDNESDAY, 27th, THURSDAY, 28th, and FRIDAY, 29th JULY. The Prize Lists and Rules will be ready for delivery after May 20, upon application to JAMES HENRY CATLING, Secretary. Offices at the Bazaar.

## SMITHFIELD CLUB, 1853.—The Christmas Show

will be held in the Bazaar, King Street, Baker Street, Portman Square, London, on December 6th, 7th, 8th, and 9th, 1853. Prizes and Medals to the amount of nearly 800l. are offered in the following divisions:—

## CATTLE.

Devons Scotch, Welsh, or Irish Breeds  
Herefords Other pure Breeds  
Short Horns Cross or mixed Breeds.

## SHEEP.

Long Woolled Sheep Cross Bred Sheep  
Short Woolled Sheep.

## PIGS.

Pens of Pigs.

## EXTRA STOCK.

CATTLE SHEEP PIGS.

Prize Sheets, giving all particulars, may be had on application to the Hon. Secretary. N.B.—The last day for entering both Stock and Implements is Saturday, November 5.

B. T. BRANDRETH GIBBS, Hon. Sec.  
Corner of Half-moon Street, Piccadilly, London.

## ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

LECTURE.—On Wednesday, May 11, at twelve o'clock, Professor WAY will deliver before the Governors and Members, in the Council Room of the Society, a Lecture "On the Comparative Nutritive Value of the Natural and Artificial Grasses."

JUDGES.—Members of the Society are requested to send to the Secretary, on or before the 23rd instant, the names of persons they recommend to act as Judges of Stock or Implements.

GENERAL MEETING.—The May General Meeting will be held on Monday, the 23rd of May, at Eleven o'clock in the forenoon.

By order of the Council,

JAMES HUDSON, Secretary.

London, May 7.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, MAY 7, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, May 11—Agricultural Society of England.  
THURSDAY, — 12—Agricultural Imp. Society of England.  
WEDNESDAY, — 13—Agricultural Society of Ireland.  
THURSDAY, — 14—Agricultural Imp. Society of Ireland.

WE had the pleasure of seeing Mr. SAMUELSON'S DIGGING MACHINE at work the other day, near Banbury, where it is being made. It is rather a forking than a digging machine—acting by prongs, not by cutting surfaces or edges. The land over which it was drawn was in a very fit condition for the successful operation of the machine—being a friable calcareous loam, somewhat stony, neither wet nor dry, and having been already ploughed. Before the machine, it was lying fallow, as one might expect it in April, having been untouched since an autumnal ploughing—firm enough to walk across conveniently, and here and there green with Couch

Grass. After the machine, it was loosened so that you sank 2 or 3 inches in the soil, and a walking-stick thrust in showed it to have been moved some 8 or 9 inches deep; the Couch was lying loose either on or in the soil; the furrow slices were altogether lost, the land being perfectly mouldered and disintegrated. In the operation, six horses, two and two, were used—the simple-looking two-wheeled, small machine revolving behind them, and the prongs projecting from it sinking in the land some 8 or 10 inches, lifting the earth in their onward revolution, and being cleaned from it by a comb of teeth, properly arranged for the purpose, so that all the earth fell down behind in a broken comminuted state—that was the whole affair.

Some of our readers may remember an extraordinary looking implement shown at Bristol some years ago, when the English Agricultural Society held their Annual Exhibition there. It was intended to be a digging machine. It consisted of a large wooden roller, from whose surface there projected spoon shaped spikes, spirally arranged. These spikes the inventor intended should dig the land as the roller was drawn across it: unfortunately, however, the first trial of the implement was on the public show ground. It was let down upon the surface of the field, and, gathering soil amongst its teeth as it proceeded, very soon became an enormous cylindrical mass of earth, in which these teeth were completely hidden. Its first trial was in fact its last, and the failure was complete. The spiral arrangement hindered the adaptation of any cleaning comb; and the absence of such a means of keeping the teeth clean, rendered them useless.

Now, in Mr. SAMUELSON'S forking machine, the teeth are arranged circularly—in fact, every circle of 12 teeth is a separate rowel, revolving freely on an axle—a very heavy rowel, though, so that the teeth may force their way into the land; and between the rowels—of which there are seven, 6 inches apart, strung upon the axle—those tongues, or cleaning teeth, to which we have alluded, project, acting as scrapers, or as a cleaning comb, so as to free the rowels of the earth they lift. One of the most ingenious features in the machine is the construction of these rowels; they consist of heavy cylindrical blocks of iron 12 inches in diameter, and some 4 or 5 inches wide, from whose surface there project 12 teeth 10 or 11 inches long, curved so as to enter the earth perpendicularly as the machine revolves. These cylindrical blocks are bisected; each consisting, in fact, of two cylinders of half the width bolted together; and the bolts, together with the die sunk upon the touching surfaces of these cylinders, serve to hold the teeth. Between the blocks are heavy washers, hanging very loosely on the axle on which the whole is strung, so that their revolution and suspension do, together, assist not only in facilitating the motion but the cleansing also of the whole.

In the machine we saw at work, six good horses, taking a width of about 3 feet 6 inches at a time, can get over between three and four acres a day; and the land certainly was very efficiently forked. In a case of which we have just heard, 5½ acres were thus forked in 6¾ hours. The machine costs from 20l. to 25l.; and if it shall effect under ordinary circumstances, and in the long run, what we saw it do for half an hour under the favourable circumstances in which it was then placed, it will be cheap enough.

It seems to be adapted to general use; but especially, we think, for the interval forking of the land in the system of row cultivation of grain crops recommended by Mr. SMITH. We hope that the weather may be favourable for its trial at Gloucester, where we understand it is to appear. It is, however, constantly at work just now near Banbury, where any one may see it; and there are, we believe, several at work in other parts of the country.

An interesting and important debate took place last Monday, at a meeting of the London Farmers' Club, to which, however, unfortunately we cannot at present do more than make a very meagre reference. The subject was the TRANSFER OF LAND—the many difficulties which oppose it, and the improvements that would result from facilitating the process. It was ably introduced by Mr. FISHER HOBBS, and among the subsequent speakers we may refer to Mr. SIDNEY and Mr. BAKER of Writtle, as having especially contributed to the value of the discussion.

Mr. HOBBS showed that the subject was one in which all classes were interested. The national importance of it was obvious—much of the comparatively unproductive state in which the land at present existed might thus be explained. The landlord's interest in it was obvious—were estates easily saleable they would be worth a higher number of years' purchase in the market. The



tenant's interest in it was obvious, as was fully illustrated by Mr. SIDNEY; every man wanting a farm was affected by it, for he very often could not get the improvements for which he justly looked to his landlord, owing to the inability of the latter, who was a mere tenant for life, with all the responsibilities of full ownership resting upon him, and only the means of discharging them furnished by a very limited interest in his property. And the labourer's interest in it was also obvious, as was well shown by Mr. BAKER, who pointed out that all the difficulties in the way of selling land existed in their full extent, however small a portion of the estate might be for sale, so that building plots were not to be had, and labouring men, instead of being scattered evenly over the country in cottages of their own, became driven up in towns, often very far from the farms where they were employed.

Remedies were suggested: amongst which registration courts, either local or central, for preserving a record of every incident affecting titles, and official maps, for identifying localities, held of course a prominent place, as they have done in all previous discussions of the question: and to the objection on the score of the public exposure they would make of the present state of things, it was replied, that the equal publicity as regards wills, which have always been open to inspection, was in practice found to be no publicity at all, for no one but those interested ever thought of using the privilege of inspection, though every one in fact possessed it.

We think, however, that one of the most important remarks made in the course of the evening was to the effect that the club would do well to confine its attention to the denouncing and exposing of the evil, without venturing upon the suggestion of remedies. The evil is a thing on which a Farmers' Club may well speak authoritatively, for no one better than the members of such a club can by experience know it, and their assertion of it will therefore be listened to with respect by those with whom the duty of finding a remedy rests. The resolutions arrived at affirmed—1st, the existence of the difficulties connected with the transfer of land; 2d, the evils arising from them; and 3d, the need of amendments in the laws relating to conveyancing.

THAT any legislation on TENANT RIGHT IN IRELAND will satisfy the extreme party on either side is not to be expected: take, for instance, those persons, whose doctrines we entirely repudiate, who, under the pretext of protecting the tenant, would deprive the landlord of his just rights over his property, render him utterly dependent on his tenant, who, under one plea or other, might claim a perpetuity of interest in his farm—an absolute inheritance of the land; and this, too, without even paying a rent. That tenants in Ireland can be so unreasonable in their expectations is matter of notoriety. We have, however, a case before us so whimsically illustrative of this fact, and so new to Englishmen accustomed to regularity and correct dealings in the matter of rent, that we adduce it here.

The following is a verbatim statement of an account forwarded to one of the London companies by a tenant, holding in the north of Ireland 239 acres of land of different qualities, at the average rent of 2s. 5½d. per acre—total 297. 2s., viz:—

A.	R.	P.
120	3	6 at 9d. per acre.
19	2	14 at 1s. 3d. "
6	0	34 at 1s. 6d. "
33	2	17 at 2s. "
4	3	13 at 2s. 6d. "
7	0	32 at 3s. "
4	2	31 at 4s. "
1	3	4 at 4s. 6d. "
13	3	34 at 6s. "
11	0	34 at 7s. 6d. "
5	0	0 at 9s. "
1	1	14 at 10s. 6d. "
0	3	34 at 11s. 6d. "
7	0	20 at 13s. "
Roadway	0	3 22
239	0	29

The arrear of rent amounted to 99%, and the tenant memorialised for an *abatement*, and possibly would have flourished as a martyr under the oppressive system of landlordism if he had been ejected for non-payment of five years' rent, or refused the privilege of disposing of his interest at a high figure, to another occupier.

Yet it is unquestionably true that serious grievances have oppressed the tenant-class in Ireland. The comforts of the small farmers especially, were unheeded by many, nay, by a great majority of landlords; and laws apparently the most inequitable, in favour of the landlord, have disgraced the statute-books, as if the object had been to

extract money from the tillers of the soil for the purpose of putting it in an unjust proportion into the pockets of the owners or middlemen landlords. The landlords were perpetually legislating for themselves, often oppressing as well as neglecting their miserable tenantry, who, on the other hand, were constantly opposing cunning, duplicity, and fraud, as their defensive armour against a false and vexatious system. Who would not pronounce that to be a severe and oppressive law which authorised any landlord, who chose to believe that a tenant was meditating fraud, to seize on a growing crop before a year's rent was due, put keepers on it, at a heavy expense to the tenant, and harvest and sell it as expeditiously as he could? Yet this was an absolutely necessary law to guard the landlord against many a dishonest tenant who would otherwise collect his friends and neighbours together on a moonlight night, reap the corn and transfer it before morning to some distant locality, where it would be threshed and turned into cash for his sole benefit. One thing at least is evident, that tenants meditating flight and dishonesty had no beneficial interest in their farms, that they were nearly verging on ruin, or wretched speculators at best from hand to mouth, and that a landed proprietary with tenants of such a sort could not be in an enviable and independent condition. We shall not, however, enter into details, showing faults and difficulties on both sides, such as none but Irishmen, familiar with the ways of their fatherland, can correctly understand.

The necessity of legislation for landlords and for tenants is obvious. The DEVON report recommended legislation long since to settle the subject of tenure, and give security and encouragement to tenants for their outlay in improvements in those cases—not exceptive ones, but the rule itself—in which landlords did not execute improvements. D.

#### HISTORY OF BRITISH AGRICULTURE.—No. II. (Continued from page 233).

It was to the monks that agriculture, like many other branches of knowledge, owed its preservation during the ages of intellectual darkness which followed the fall of Rome. As the pagan Saxons, and in after years their equally pagan successors the Danes, were converted to Christianity, they endowed many religious establishments, founded numerous monasteries, and made large gifts of land to the church. Some of these comprised tracts of enormous extent; but it should be borne in mind that, in a thinly peopled country, land is the least costly, although the most enduring of all gifts. Many of these districts had been utterly wasted, and would probably in no other way have been restored to cultivation. The earlier monks were generally a worthy class of men; the secular members of the brotherhood spent much of their time in cultivating with their own hands the lands belonging to their monasteries, and in directing the labours of their serfs and tenants, and thus it happened that the church lands were much better cultivated than those of the lay proprietors. The venerable Bede, in his life of Easterin, Abbot of Weremouth, tells us, "that this abbot, being a strong man, and of an humble disposition, used to assist his monks in their rural labours, sometimes guiding the plough by its stilt or handle, sometimes winnowing corn, and sometimes forging implements of husbandry with a hammer upon an anvil."

The records of the Heptarchy contain abundant evidence of the itching of the Saxon princes and legislators to regulate all the affairs of agriculture by statute. Numerous laws were made for fixing the price of all kinds of tame cattle, directing the manner in which they were to be pastured, and for preserving them from robbers and beasts of prey. The rent of land was also fixed by statute, and not by agreement between the parties. By the laws of Ina, the illustrious king of the West Saxons—who founded the English College still existing at Rome, and who flourished about the year 700—a farm of 10 hides or ploughlands was to pay the following rent: 10 casks of honey, 300 loaves of bread, 12 casks of strong ale, 30 casks of small ale, two oxen, 10 wethers, 10 geese, 20 hens, 10 cheeses, one cask of butter, five salmon, 20 lbs. of forage, and 100 eels. The greater part of the crown lands in every county were farmed in this way by churls or farmers, who in general appear to have been freemen and soldiers. The mode of occupation was also regulated by law; one of the earliest enactments extant on the subject, previous to the time of Edward the Confessor, ordains "that a husbandman, possessed of 20 hides of land, should leave 12 sown with corn when he gave up his tenancy." The stock and cattle were usually furnished by the owner of the land, and charges are found, in some old manorial records, for the hire of the lord's plough. Land was generally so little valued that, even so late as the tenth century, four sheep were deemed equivalent to 1 acre, and a horse to 5 acres of common average pasture.

Immediately after the Norman Conquest, William proceeded, like a man of business, to take an account of his prize, and the result still exists in the record known as Domesday Book, a most extraordinary work when we consider the period of its compilation. It contains an account of all the arable land in the kingdom, with the exception of the four northern counties, then little more

than tangled forests, the annual value of each parish or manor, the name of the proprietor, and other varied and extensive statistical information. The invading army had been recruited with all the enterprise of Brabant, Flanders, and Normandy, countries far in advance of England in the practice of agriculture, and among his victorious followers did William share nearly the entire land of the kingdom which he had confiscated. To most of the grants was attached a condition of military support, to ensure which, each chief again divided his spoil among his special retainers on similar conditions, and thus the greater portion of the land was held on military tenure. With the Normans the business of life was war; its pleasure, the chase. Numerous and extensive tracts of country were converted into forests for the express purpose of harbouring wild animals; and laws of extreme severity were enacted against all trespassers, the violation of them being punished in the case of some beasts by death, and, for destroying less valued animals, by loss of limb or privation of eyesight. The land contiguous to their castles was cultivated by their villeins or serfs; the more remote parts being let to tenants, who, in addition to a portion of the produce as a rent, were bound to render certain personal service to the lord in harvest, to cart wood or stone, and otherwise do his bidding. We are told by Ingulphus, abbot of Croyland, that Richard de Rulos, lord of Brunne and Deeping, the chamberlain to the Conqueror, was much addicted to agriculture, and delighted in breeding horses and cattle. Besides inclosing and draining a great extent of country, he embanked the river Welland (which used every year to overflow the neighbouring fields) in a most substantial manner, building many houses and cottages upon the bank, which increased so much that in a short time they formed a large town called Deeping, from its low situation. Here he planted orchards, cultivated commons, converted deep lakes and impassable quagmires into fertile fields, rich meadows and pastures, and, in a word, rendered the whole country about it "a garden of delights." The good abbot, from whose writings the above extract is taken, was himself an extensive improver, by drainage and inclosure; and influenced by his example, the inhabitants of the neighbouring town of Spalding resolved to partition and cultivate their marsh lands, which soon proved to be of the most fertile description.

"The Norman clergy, especially the monks, were still greater improvers," says Loudon, "than the nobility, and the lands of the church, particularly of the convents, were conspicuous for their superior cultivation. For the monks of every monastery retained such of the land as lay most convenient in their own possession, which they cultivated with great care, under their own inspection, and frequently with their own hands." It was so much the custom of the monks at this period to assist in the cultivation of their lands, especially in seed time, hay time, and harvest, that the famous Thomas à Becket, after he was Archbishop of Canterbury, used to go out to the field, with the monks of the monasteries where he happened to be residing, and join with them in making their hay and reaping their corn. This indeed is mentioned by the historian as an act of uncommon condescension in a person of his high station in the church; but it is sufficient proof that the monks of those times used to work with their own hands, at some seasons, in the labours of the field; and, as many of them were men of genius and invention, they no doubt made various improvements in the art of agriculture. The monks were also large reclaimers of marsh land and other wastes bordering on the sea and rivers, both by warping and embankment. Between the time of Edward I. and the Reformation, large portions of the fens in Lincolnshire and Somersetshire, and of Romney Marsh in Kent, were rescued from the sea by the efforts of the religious. Somner cites a charter of marsh land thus rescued, from Phlegmund, Archbishop of Canterbury, from 889 to 915; and this is not supposed to have been the earliest. The names of the Kentish marshes (Becket's, Baldwin's, and Boniface's) bear evidence to this day of the portions recovered during the primacy of those prelates respectively. The 26th canon of the general Council of Lateran, held 1179, affords a further proof that the protection and encouragement of all concerned in agriculture was an object of attention to the church: for by that canon it was decreed, "that all Presbyters, clerks, monks, converts, pilgrims, and peasants, when they are engaged in the labours of husbandry, together with the cattle in their ploughs, and the seed which they carry into the field, shall enjoy perfect security; and that all who molest or interrupt them, if they do not desist when they have been admonished, shall be excommunicated."

Marl seems to have been the chief manure, next to dung, employed by the Anglo-Norman, as it had been by the Anglo-Saxon and British husbandmen. A statute passed in 1225 (10th Henry III.) gives every man leave to sink a marl pit in his own ground, without being fined. When a marl pit was sunk in ground that did not belong to the King, but which happened to be near a forest, prosecutions were instituted in the forest courts, which imposed heavy fines for the offence, as the pit occasioned danger to the hunter. By 12th Edward I., 1283, the sheriff and owner are instructed to make inquisition concerning marl pits next the highway. There are leases on record, granted at this early period, which compel the tenant to make use of marl. It was considered much more durable than sand or lime, for the old adage was, that "a man doth sands for himself, lime for his sonne, and marle for his grandchilde." Summer following of lands designed for Wheat, and



ploughing them several times, appears to have been a common practice of the English farmers of this period. For Giraldus Cambrensis, in his description of Wales, notices it as a singularity in the husbandmen of that country, "that they ploughed their lands only once a year, in March or April, in order to sow them with Oats; but did not, like other farmers, plough them twice in summer and once in winter, in order to prepare them for Wheat."

In a law work entitled "Fleta," supposed to have been written by some lawyers confined in the Fleet Prison in 1320, the entire management of a farm is fully and sensibly described, full directions given for performing every operation, and the duty of the bailiff or steward of a manor clearly defined. In this work is propounded a dictum that a farmer could pay no rent, and must himself be a loser, if he could not obtain six bushels from an acre.

That at an early period burning was in some instances resorted to, in order to restore the fertility of pasture, may be inferred from a passage in the writings of Bacon, who says "some historians maintain that when Guyenne (a province of France) was in the power of the English, the inhabitants of Bordeaux and the adjoining cantons presented a petition to the king of England praying that he would prohibit his subjects in Sussex and Hampshire from setting fire to the heaths in the end of April, as they usually did, for the operation, they said, caused a wind which was very injurious to their Vines."

(To be continued.)

## FARM LEASES.

I HAVE been engaged in preparing a form of farm lease, to be used on a property for which I do business as factor or land-agent, and having just received a proof of it in type, I inclose it for your examination. My object in doing this is, that, as some of the clauses are new in terms, they may, if you think them worthy of notice, be criticised in the pages of the *Agricultural Gazette*. Till I ascertain whether this proposal will be acceded to, the printing of the intended impression has been stopped, so that I may be in a position to recommend to the proprietor the adoption of any good suggestions thrown out by yourself or your correspondents, in the event of the subject being brought before them. I am the more desirous to have a diversity of opinion expressed on this important question when I consider that the form now proposed, if once adopted, is likely, with some trivial alterations, to be used on several extensive properties in Scotland.

I may mention that the estate for which this form of lease has been prepared is well sheltered with Hawthorn and Beech hedges; between 30 and 40 miles of which are annually switched, and kept in excellent order (in the wedge shape), from hedges being constantly employed for this purpose. The principal hedger keeps an accurate account of the work done on each farm; and on the first ensuing rent day the tenant pays a proportion of the outlay, in conformity with the terms of his agreement. It will also be observed that there is no reservation of game in this form of lease, that being left for private arrangement between the parties, as circumstances may render necessary. *J. Lockhart Morton, Dundas Street, Edinburgh, 28th April, 1853.*

## ARTICLES OF SET OF FARMS ON THE ESTATE OF —, IN THE PARISH OF —, AND COUNTY OF —.

1. The tenants shall reside on their farms. The entry to the arable lands shall be at the term of Martinmas, and to the houses and pasturage at Whitsunday thereafter.

2. Assignees and sub-tenants, legal or conventional, and cottars, without the written consent of the proprietor, are excluded. Cottars, where sanctioned, shall only possess by the year, and they must be removed by the tenants at the first term of Whitsunday, after timeous written requisition of the proprietor or his factor to that effect.

3. The proprietor reserves power in his option to resume possession of the subjects let, in case the tenants shall become bankrupt, or shall execute a trust-conveyance of their leases or crop, or stocking for behoof of their creditors, or shall allow a sequestration to the extent of one half-year's rent to be awarded against them; and the proprietor, in any of these events, may resume possession of the subjects let at the first term of Martinmas and Whitsunday thereafter respectively.

4. The proprietor reserves all sand, gravel, stone, freestone, limestone, coal, and other minerals in the lands, with power to search for, work, and take away the same, and to occupy such grounds, and erect such workmen's houses and buildings as may be necessary for working, charring, or manufacturing the minerals, or for making roads and railways to facilitate their transport to market or elsewhere;—the value of the ground taken or occupied to be ascertained as after specified.

5. The proprietor also reserves power to make drains, ditches, dykes, and water-courses, to build bridges, make and alter roads, and to dress, prune, cut, remove, and replant or extend plantations; and the tenants shall be bound to preserve, with the greatest care, all growing woods, plantations, and trees upon their farms, and shall be responsible to the proprietor for any damage done thereby by themselves, families, or cottars; and under breach of this regulation they shall not allow cattle or stock of any kind to stray in any of the enclosed plantations, for the preservation of which they are also prohibited from keeping goats upon them, they are kept in the house.

6. The landlord reserves power to resume possession of any part of the lands for the purpose of fencing, building, planting, enclosing, or for other improvements; also power to straighten, enclose, and extend lands, either with any of his own farms or with any neighbouring proprietor, the tenants receiving compensation for the ground taken, or paying for the ground added to their farms by any of those undertakings.

7. Power is reserved in the option of the proprietor to insure against fire the whole dwelling-houses and farm-buildings on the lands to their full value, the tenants being bound to repay him the annual expense of insurance at the first rent collection after making the disbursement.

8. The sworn appraisers of the estate are constituted the sole judges and referees between the proprietor and tenants, for ascertaining the compensation to be given the tenants for any ground resumed by the proprietor, or to be paid to him, in exercise of the reserved powers contained in article 4th hereof; as also for fixing any damage occasioned to the proprietor through

breach of any of these articles, and for fixing the value of the premises to be insured under article 7th hereof; and the award to be pronounced by the appraisers shall be final and conclusive on both parties; declaring that until the final decision of the appraisers, the tenants shall not be allowed to retain any part of their rents in respect of any unadjusted claim of compensation of whatsoever nature.

9. The stipulated rents shall be payable by the tenants to the proprietor at the mansion house of the estate, or at such other place as he or his factor may from time to time appoint; and that at two terms in the year, Whitsunday and Martinmas, by equal portions, with a fifth part more of liquidate penalty in case of failure, and the legal interest of each term's rent after the same becomes due till paid, beginning the first term's payment at Whitsunday first after entering to the ploughable land, and the next term's payment at Martinmas thereafter for the first year's crop and possession, and so on yearly at the terms aforesaid, during the currency of the leases; and in addition to the rents the tenants shall pay all the public and parochial burdens which are or may be imposed on tenants by law.

10. The outgoing tenants shall leave the houses and other farm erections in a tenable state of repair, to the satisfaction of the sworn appraisers on the estate, for the time being, otherwise they shall be liable for the expense incurred in putting them into this condition, as the same shall be found by these sworn appraisers, and which deficiency, when so ascertained, shall be exigible from the outgoing tenants as an additional rent for the last year's possession, and payable to the proprietor with the last half year's rent, and for which additional rent he shall be entitled to sue for sequestration, and use any other remedy competent by law for recovery of rent, and the incoming tenants by obtaining them — which shall be acknowledged to be the case when they take possession — shall be bound, by receiving the necessary foreign or home-grown wood from the proprietor, to keep them in a similar state during the whole of their occupancy. No buildings of any description shall be erected without the written consent of the proprietor; and at removal, no doors, windows, nor any other article usually recognised as a fixture shall be carried away by the outgoing tenants. In the event of the proprietor erecting at the request of the tenants any additional houses and offices, the tenants shall cart the necessary materials, and pay to the proprietor at the usual terms an additional annual rent calculated at the rate of five per cent. on such outlay.

11. The proprietor reserves the power of draining annually to his own or his factor's satisfaction one-twentieth part of the extent of the farms; and besides carting all the materials, the tenants shall be bound to pay an additional yearly rent, beginning at the first term after the execution of the works, amounting to five per cent. on the money so expended, and they shall further be bound regularly to clear the discharging outfalls of the drains from all vegetable or other obstructions, and failing their doing so, the proprietor shall be entitled to do it at their expense, and the amount of the expenditure so made shall be sufficiently instructed by the accounts of the workmen employed by the proprietor.

12. During the currency of the leases the tenants shall manage their farms according to the rules acknowledged in the district as those of good husbandry. They shall not strip the land of turf or surface soil, neither shall they sell nor remove from the ground any dung or straw without the written consent of the proprietor; and at removal, whether at the expiry of the leases or previously, the tenants shall be bound to leave both the unused dung and straw upon the ground for the incoming tenant, by whom they shall be paid. The tenants shall also be bound to spread mole-hills, pull up and destroy docks and other weeds, and failing their doing so within three days after being required by the proprietor, he may order the same to be done, and charge the expense thereof against them at the next rent collection.

13. The tenants shall be bound during the last four years of their leases to cultivate their farms according to a four-course rotation of cropping, having annually one-fourth thereof in Turnip or other cleansing green crop, two-fourths in grain crops, and one-fourth in Clover or Grass crops. For all purchased byre or stable manures applied to the soil during the last year of the leases, and for all oilcake or other similar feeding stuffs used during the same period, the tenants, in the event of their leases not being renewed, shall be repaid one-half the purchase price by the proprietor or incoming tenant, but they shall be required to give satisfactory evidence of the purchase and use of such manures or feeding materials, and the sum must not exceed in quantity and cost the average of the four previous years.

14. The outgoing tenant shall be bound to sow along with the last white crop of their leases following a Turnip or fallow break, a proper quantity and quality of mixed Grass and Clover seeds, and to harrow and roll in the same in a suitable manner, without remuneration for the labour. They must also preserve the young Grass from being hurt or pastured by live stock, or otherwise, during or after harvest; and in that event, and should the roots give evidence in the spring that the seeds have been of the proper kind, these shall be paid for by the proprietor or incoming tenant, on receipted accounts being produced for the same, but the outgoing tenants are to have no claim to the crop of Ryegrass and Clover growing at their removal.

15. When the tenants enter to the farms, the live hedges and the gates shall be put in such a state of repair as the proprietor's hedgers as the principal hedger may deem necessary to make them fenceable; and thereafter they shall be kept up at the expense of the proprietor and tenants, the whole operations thereon to be under the direction of the head hedger on the estate for the time being, whose certified account of the proportion of the expense payable by the tenants shall be held as sufficient authority for charging the same against them at the first rent collection after the expense has been incurred. The proportion of the expense of repairs payable by the tenants shall be as follows:—For all interior hedges and gates, and for all roadside fences and openings, one-half the cost of labour and material, and for all plantation hedges and gates, one-fourth the cost thereof. When the proprietor forms new sub-division hedges for the promotion of such improvements as he may be desirous to see effected, he shall do so at his own expense, but such hedges shall thereafter be kept in repair at the joint expense of the landlord and tenants as aforesaid. If the tenants desire to have new fences formed, and the proprietor agrees to comply with their wishes, it shall be in their option either to pay, at the first rent day thereafter, one-fourth the expense of such hedges, or interest on the total outlay at five per cent. per annum for seven years, when the payments shall terminate. In either case the tenants shall, from the time the hedges are formed, pay for their being kept in repair the same as the other hedges on their farms. During the last year of the leases, the proprietor's hedgers shall put the whole fences in a suitable state of repair for the incoming tenants, and the due proportion of the expense thereof shall be paid by the outgoing tenants, in conformity with the previously-mentioned rules.

16. The tenants shall hold themselves bound to keep all the ditches on their farms properly secured and water clear, to the satisfaction of the proprietor's hedger for the time being, who, in the event of negligence on their part, shall not be bound to make notice in writing that such ditches must be cleaned; and failing their giving attention to this intimation, the proprietor or his factor shall be empowered to direct the same to be executed at the expense of the tenants, and which shall be fully instructed as a charge against them by the discharged accounts of the workmen, and shall be exigible from the tenants at next rent collection. The outgoing tenants shall in a similar manner be bound to leave all the ditches in a satisfactory state for the incoming tenants. The tenants shall further be bound, during the entire period of their occupation, to maintain the entrance and abutting roads of their farms in a satisfactory state of repair, and failing their doing so, the overseer of the estate shall, after giving them intimation in writing as aforesaid without effect, proceed to repair such road at their expense.

17. The tenants shall not keep an Inn, or sell spirits, or other

excisable liquors, without the written consent of the proprietor, under pain of forfeiting their leases at the proprietor's option.

18. In case the tenants shall manage or crop the lands contrary to the several regulations prescribed in articles 12th, 13th, and 14th hereof, or any of them, they shall pay to the proprietor an additional rent at the rate of 5s. sterling per acre for each acre or part of an acre so managed or cropped, and of 2s. sterling for each cart load of dung or straw sold or removed contrary thereto, and that not as a penal but as a pactional rent, payable at the next rent collection; and in case the tenants shall admit cottars, or by themselves, their families, cottars or dependants, shall injure the woods, destroy fish or game, or keep goats or dogs, contrary to the foregoing regulations, they shall pay to the proprietor a penalty of five pounds sterling for each offence; and in case the tenants shall allow horses, cattle, sheep, or other beast, to pasture or stray in the enclosed plantations, in breach of these regulations, they shall, for every transgression, pay to the proprietor five shillings sterling for each animal so kept or found trespassing, payable these several penalties at the next rent collection, over and above compensating the proprietor or his tenants for the damage which may be actually sustained by the transgression.

19. In case any of the tenants conceive that they have any legal claim against the proprietor for implement of any of the conditions of their leases, they shall be bound, within ten days after the 31st day of December in each year, to state specifically in writing to the proprietor or his factor the nature of such claims for the year then ended, otherwise all such claims shall be held to be foreclosed and discharged, and all right of action therefor be barred and excluded.

20. On the separation of the crop from the ground before the term of Martinmas of the last year of the lease, the sworn appraisers shall inspect the condition of the farms in respect to the fulfilment of the foregoing conditions; and in the event of their reporting that said conditions have not been fulfilled, and that the farm has thereby been deteriorated, the amount of such deterioration shall be fixed by them, and shall be binding on both parties; and the tenants shall thereafter be bound either to give satisfactory security to the proprietor for making good the deterioration, or leave such value of stock and cropping on the ground as may cover the full demands of the proprietor for rent and other prestations due by the tenant.

21. The tenants shall be bound to remove from the houses, lands, and other subjects let, at the expiry of their leases, without warning; and in case they continue to possess after that period, without a new agreement, they shall respectively pay double the stipulated rent until they do remove. Yearly tenants, and tenants possessing by tacit relocation, must give written intimation to the proprietor or his factor of their intention to remove on or before the 1st day of January in the year of their intended removal, otherwise, in the option of the proprietor, and without prejudice to his power to remove within the statutory period, they shall be held as tenants for another year.

22. All questions arising between the outgoing and incoming tenants regarding these articles shall be referred to the proprietor or his factor, whose award shall be final.

## KILWHISS v. ROTHAMSTED.—No. VI.

THERE is another important principle in which I differ from Rothamsted, which is implied in Mr. Lawes' writings, and broadly stated by some of his followers, that Wheat takes its carbon from the atmosphere—the Turnip from the soil. My own opinion is, that any plant which is in the condition to absorb any of its nitrogen from the atmosphere is also in the condition to absorb its carbon. This appears to be the general law in Nature, and I should like much if Mr. Lawes would point out any facts which can be regarded as exceptions to it in our agricultural practices. I hold his experiments, if rightly interpreted, favour this view. Therefore the fallow plants, whether they may belong to the Gramineaceous or Leguminous family, may be considered to be carbon-collectors when they are nitrogen-collectors, and *vice versa*. It was in strict conformity to this law that I said in one sentence in my former remarks on the Turnip, that "carbon was no doubt essential" as a manure. Mr. Lawes eagerly grasped at this statement, but I only applied it to the Turnip grown by the market-gardener, as contrasted with the Turnips grown in our rotations. I hold that we ought to consider carbon useless as manure for Turnips in agriculture; but in market gardening it may be considered to have not merely a passive but an active agency when the Turnip is grown where it cannot take any of its nitrogen from the atmosphere. Mr. Lawes in overlooking this important distinction not only twists my meaning, but considers I have given countenance to many of his propositions to which I cannot give my assent.

Mr. Lawes has repeatedly quoted the words "longevity" and "vitality," as throwing a great deal of light on the principles of Turnip culture, his expression being "the vitality and longevity of the plant is much increased" by ammoniacal manures; he ought also to have given us the passage where he has told us very plainly that its importance was merely casual. These are his words:—

"There is, however, a casual advantage in having a somewhat full supply of nitrogen in the soil for those of our Turnips which are to be eaten late in the season; for the plants so grown, whilst they have a less favourable proportion of bulb, yet owing to the increased vitality and hardness which result from the nitrogenous manure, the bulb is better fitted to stand the winter temperature without injury." (*Journ. R. A. S.*, vol. viii, p. 564.)

What other advantage would accrue to the Turnip than a mere casual one from a liberal supply of nitrogen in the manure, though its "orbit of growth" extended from January to December, if it did not secure bulb? In that case, "the unprofitable habit of the plant would only be more fully exhibited." The more rain the more leaf. Few would have mentioned the words "longevity" and "vitality" under all circumstances. Did not Mr. Lawes, at the very commencement of his paper on "Turnip Culture" block up the gateway of truth, and actually throw himself and lead his friends into the breach against the current and correct belief of the importance of nitrogenous manures? Why, my opponent condemned all as "superficial" observers who would recommend "the direct application of nitrogenous manures with the view of favouring to the greatest extent the development of leaf as a means of securing bulb." If the "vitality" and "longevity" of the Norfolk Whites were unexhausted under the nitrogenous manures, why not lengthen their "orbit"? I will only



repeat what I said formerly, that this is "the dilemma about which so much ingenuity has been wasted." Had Mr. Lawes been fully aware of this principle, which I pointed out to him, the Norfolk Whites would not have been humiliated under 10 cwt. of Rape-cake and 3 cwt. of sulphate of ammonia with the extraordinary result of average weight of bulbs 0.5 lb. If another month had been added to their orbits, and sufficient space been given for the plants to grow, we might have had at least 5.0 lbs. Under similar treatment, where there is a "continuity and large amount of rain," the bulbs would not have been other than "fusiform;" but now hear a serious charge against me:—"Certainly no critic at once competent and honest, when we afterwards speak of natural agencies of season, as being 'much more favourable to the growth of the Turnip in Scotland and the north and west of England than in the eastern counties,' would represent us as meaning a large fall of rain alone. We freely grant that then the explanation now given would have been needed for ignorant and careless reading." (*Agricultural Gazette*, 4th Sept.)

I must give the passage to which Mr. Lawes refers before I vindicate myself from this very bold charge.

"Rape-cake, as containing a large amount of organic matter (!), is an admirable manure for the Turnip as a substitute for farm-yard dung; it may be employed in conjunction with superphosphate of lime—the former being sown broadcast, the latter drilled with the seed. Peruvian guano, which contains a large quantity of ammonia as well as phosphates, is found to be a much more certain manure for Turnips in Scotland, where the fall of rain is large, than in those parts of England where it is much less. Indeed the natural agencies of season are much more favourable to the growth of Turnips in Scotland and the north and west of England than in the eastern counties."

Then, according to Mr. Lawes, we are first to suppose that he only intended his readers to understand that the superior effects of Peruvian guano in Scotland arose from the crop being more certain than when the seed was placed too near the manure. His statement "had only reference to some admitted uncertainty, especially in the absence of rain during the early stages of growth." But the same thing might have been said, with as much truth, in regard to Rape-cake. In fact, Rape-cake is a very uncertain manure in dry seasons; it is also relatively a more valuable manure for Swedes in Scotland than guano. It is where the "orbit of growth" is greatest that Rape-cake is valuable, in proportion to the amount of nitrogen which it contains, because it yields up its nitrogen more slowly than guano, and tends to promote growth at the end of the season. Mr. Lawes, in not understanding the true principles of manuring, exactly reverses the value, according to circumstances, of the two manures. And further, it is surely well-known, that Rape-cake is a much better manure than guano for Wheat. But in this instance these "scientific" experiments were only designed to warn the labourer in the scale of intelligence amongst British farmers, that they ought to beware of the destructive effects of Peruvian guano, when drilled or applied too close to the seed; the same warning ought to have been given as to Rape-cake, for the benefit of all such readers.

I ask who understood what Mr. Lawes meant by "natural agencies of season," before I showed him and others the true action of nitrogenous manures in relation to climatic influences—these agencies could easily be held to mean nothing or anything. The following is a new formation in order to endeavour to escape from me:—

"The effect of ammoniacal manures on Turnips is greatly to increase the 'vitality' and 'longevity' of the plant, and we have further distinctly admitted that where, as in Scotland, owing to the 'natural agencies of season,' the orbit of growth of the plant is much extended, compared with many other localities; under such circumstances, direct ammoniacal manures, such as Peruvian guano, will be advantageous."—*Agricultural Gazette*, 19th June.

To say nothing of the inaccuracies still existing in this amendment, with what grace can Mr. Lawes now talk of "longevity" and "vitality," when he formerly told us that they were merely of casual importance! And when did he "distinctly admit" that ammoniacal manures might be used with greater advantage in Scotland, where the "orbit of growth" was greater? It was only after his orbit of vision had been enlarged by my criticisms. But, at all events, if the more certain action of Peruvian guano in the passages which I have already fully extracted "had only reference to some admitted uncertainty, especially in the absence of rain during the early stages of growth," then he must have been a very careful and most intelligent reader who could suppose that the "natural agencies of season" had any other reference than to this same "admitted uncertainty." Mr. Lawes surely forgets that the two sentences were consecutive—they are linked together in application of meaning, whatever that may have been originally. I maintain, in justification of myself, that the "orbit of growth" is a newly-invented phrase in the Rothamsted vocabulary, it has not yet reached the *Royal Journal of Agriculture*, so far as I am aware. Am I not entitled to call upon Mr. Lawes, as a candid man, to give that passage in his writings "where he has distinctly admitted that where, as in Scotland, owing to 'natural agencies of season' the orbit of growth is much extended, compared with many localities, under such circumstances, direct ammoniacal manures, such as Peruvian guano, will be advantageous?"

It can be said with great certainty that no one but myself has made the discovery why Mr. Lawes considered that ammonia might be directly applied to Turnips in Scotland, it is only to be regretted that he has made so bad a guess after he had me as a guide; but I am not yet done with his "natural agencies of

season," neither in regard to Scotland nor to England. My next article will have reference to this subject.

To interpret Mr. Lawes' meaning appears to be a far more difficult task than to find out truth by a fundamentally different method. Did any other writer or reader ever learn that Mr. Lawes meant to include "greater orbit of growth" in "natural agencies of season?" Let us search for evidence on the subject; here is a witness, either an "ignorant" or a very "careless" reader; I bring him up to justice, so Mr. Lawes can make an example of him if he chooses. We heard nothing of the "orbit" from him, it was "the fall of rain alone" which enabled the Turnip to dispense with "carbon" in Scotland. He obtained the ear of a highly respectable and very widely circulated journal, and propagated the previous error—an error for which I have narrowly escaped from being impaled upon the columns of the *Agricultural Gazette*, for merely saying of the original passage—"if there was any meaning in it, there was a double fallacy in it." The little word put into italics was evidently to call particular attention to the opinions entertained at Rothamsted, as the writer does not usually employ this as a means of giving force to his writings. I will only say that I have not a very exalted idea of the progress we are making in the chemistry of agriculture, when I find our best practical writers tumbling over such material.

The Turnip "converts into food the refuse of the corn crops (!), aided, as already mentioned, by the application of superphosphate, which in the warmer parts of England is a certain manure for Turnips (!); superphosphate of lime, while a specific (!) for the Turnip crop in the warmer and drier parts of Britain, is not relatively so valuable in the north or west, where there is sufficient moisture for guano (!). In such a climate guano is probably the cheaper manure for the Turnip crop."—*Caird's "English Agriculture,"* page 463.

Mr. Lawes has further tried to escape from my criticisms, and to shelter himself behind his doctrine of "excess" of ammonia for Turnips. From this position it is necessary that I dislodge him in my next and last. *R. Russell, Kilwhiss.*

### Home Correspondence.

*Capillary Attraction.*—I have waited for some time to see whether any more experienced drainer would come to my assistance in the matter of capillary attraction, but as there seems to be no present hope of this, I must say what I can for myself. I can best explain what I mean by capillary attraction by taking as an example a field before and after draining—in fact, one of my own. I found this field in some parts thoroughly wet, even in dry weather, and on sinking a trial hole I found a gravelly stratum at the depth of 4 feet, in which the water rose and stood at a level of 3 feet below the surface; and, to dry this, I brought up a drain 5 feet deep, which bottomed the gravel and dried the field completely. Now let it be admitted that capillary attraction and hydrostatic pressure balance each other at a certain point; and admit, for the sake of argument, that this is the case at the depth of 3 feet, I say I overcome the capillary attraction (so far as is required for agricultural purposes) by lowering its level, say to the depth of 2 feet; but that is not all. I also sink the water level below the loamy soil through which it ascended by capillary attraction; and bring it underneath the stratum of gravel in which there is little or no capillary attraction, owing to the size of the pebbles of which it is composed. This is what I meant when I said I overcame capillary attraction by draining. *T. G., Clitheroe.*

*The German Green* specified by your correspondent "E. R. F. S." I do not particularly recollect, but the German Brunswick green, oxychloride of copper, is lime proof; while the English green of the same name, made with chrome yellow and Prussian blue, is yellowed by lime; and so, generally, copper greens bear the action of lime being only more or less blued by it, and mostly returning to their colour in course of time; while the colour of Prussian blue (and of course its green compounds) is quite and permanently yellowed by lime. The cheapest and simplest copper green for water colour is made by dissolving 1 lb. of sulphate of copper (blue vitriol) in 2 or 3 pints of boiling water, and then well mixing in 5 or 6 ounces of slaked lime. It is blue at first, but gradually greens, when laid on, by the air and light. Skilful plasterers generally understand the details of its application under the name of vitriol green. *J. Prideaux.*

*Transplanting Barley.*—In consequence of the dearth of seed Potatoes, many cottagers and allottees cannot procure sets to plant their gardens with, and are at a loss to know what to plant with advantage. We at once point them to the growth of Barley, as it is now too late to transplant Wheat. Any time in May, Barley may be transplanted, where plants are procurable, with a certainty of securing a profitable crop, and we advise them to follow the rules laid down in our pamphlet, viz.:—To transplant in double rows, 9 inches apart, and 9 inches distant in the rows, leaving 5 feet spaces between each double row, for the growth of the Savoys, Broccolies, Cabbages, Scarlet-runners, Turnips, Swedes, Mangold Wurzel, &c., to be raised and nursed on reserve ground previously to July, when they may be finally planted between the Barley, with a fair chance of success, after reaping nearly an ordinary crop of corn of the finest quality; also straw for their pig, which every poor man, who has a garden or allotment, ought to be able to possess, in order that a supply of manure

may be on hand for a future season, to be used as soon as the winter crops are cleared off. It would be well if prizes were awarded more generally to cottagers and allottees for the best specimens of corn grown on allotments, or in cottage gardens. *Hardy and Son, seed-growers, Maldon, Essex.*

*The Critical Time for Rooks.*—Shoot as many young ones as you can in May and June. Skin a few dozens, rub the skins with arsenical soap, and stuff them with hay; when sowing Wheat, &c., in October or November, throw a few of the skins (stuffed) on the field, and the rooks will not alight on it. In the next spring, when Oats, Barley, Potatoes, &c., are sown, do the same, and they will not alight. In every rookery some hundred young ones are shot in May or June, and farmers can always obtain enough of them (or of the skins), from the landlords. If you will not adopt this cheap and easy plan, do not complain of their depredations, and recollect also, that rooks are beneficial to the farmer 10 or 11 months out of the 12. *Rookwood.*

*Sparrows.*—I can sympathise with "Anti-Passer," but I cannot subscribe to his conclusions. He falls into the illogical error of arguing from the exception to the rule. Here is a pet patch of very precocious Wheat, occupying most probably an isolated position, perhaps in a populous locality, to which sparrows are addicted. The Wheat, I suppose, was a good ten days a head of all the Wheat in the neighbourhood. Now, is it to be wondered at that all the sparrows in the vicinity should attack it, instead of taking a moderate toll as they do when they have all the district in the same state of forwardness? And is it fair to denounce them for this very partial evil? Study these same birds from now till August, and see them searching the expanding buds and blossoms, and the whole vegetation. They are destroying by myriads, foes of a most formidable character. And against a good so universal, let not "Anti-Passer" be allowed to place the petty damage of a pet patch of Australian Wheat, vexatious, as it no doubt was to him. *An Enquirer.*

### Societies.

#### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held at the Society's house, in Hanover Square, on Wednesday, the 4th of May. The following members of Council and Governors of the Society were present:—Lord ASHBURTON, President, in the chair; Earl of Yarborough, Lord Southampton, Lord Bridport, Hon. R. H. Clive, M.P., Sir Matthew White Ridley, Bart., Sir Charles Lemon, Bart., M.P., Sir John V. B. Johnstone, Bart., M.P., Sir Robert Price, Bart., M.P., Mr. Raymond Barker, Mr. C. Barnett, Mr. S. Bennett, Mr. H. Blanshard, Mr. Brandreth, Mr. Burke, Mr. W. G. Cavendish, Colonel Chalonier, Mr. Crosskill, Mr. Evelyn Denison, M.P., Mr. Druce, Mr. Gadesden, Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hornsby, Mr. Hudson (Castleacre), Mr. Kinder, Mr. Lawes, Mr. C. Lawrence, Mr. Milward, Mr. Mainwaring Paine, Mr. Sillifant, Mr. Simpson, Mr. Slaney, Mr. Crompton Stansfield, Mr. C. Hampden Turner, Mr. Turner (Barton), Captain Henry Vyner, Professor Way, Mr. Jonas Webb, Mr. Wilson (Stowlangtoft), and Mr. Woodward.

The following new members were elected:—

Melville, Alexander S. Leslie, Branton Hall, Lincoln  
Wormald, John, Brunswick House, Charlton-Kings, Cheltenham  
Muspratt, Sheridan, M.D., Royal College of Chemistry, Liverpool  
Franklyn, William Norris, Northlands, Horsham, Sussex  
Goodyear, John, Watford, Hertfordshire  
Roberts, Wightwick, Trethill, Sheviok, Cornwall  
Telfer, John, Cuning Park Farm, Ayr, Scotland  
Pearce, William, Kinvier Hill Farm, Stourbridge, Worcestersh.  
Hitchman, John, M.D., Mickleover, Derby  
Timmis, Richard, Wolverhampton, Staffordshire  
Harkes, William, Lostock, Knutsford, Cheshire  
Mason, Captain George, Manor House, Yateley, Hants  
McDermott, Edward, South Terrace, Camberwell  
Hayes, John Higson, Frodsham, Cheshire  
Cliffe, Henry, Gloucester  
Gunter, Robert, Earl's Court, Old Brompton, Middlesex  
Ingram, Joseph, Wigton, Lancashire  
Wright, Robert, Moore Farm, Taunton, Somersetshire  
Sutton, Martin Hope, Reading, Berkshire  
Jervoise, F., Rotherfield Park, Alton, Hants  
Craven, Thomas, Manningham, Bradford, Yorkshire  
Clay, Patrick, New Waterhaugh, Berwick-on-Tweed  
Redwood, Isaac, Cae-Wern, Neath, Glamorganshire  
Matthews, James, Boulston, Newport, Gloucestershire  
Trimmer, Joshua, Wilmington, Dartford, Kent  
Smith, Samuel, Upper Wells Farm, Brookthorpe, Gloucester  
White, Henry William, Monar, Ross-shire, Scotland  
Robinson, John, Gloucester  
Higgins, Thomas, the Barton, Cirencester, Gloucestershire  
Marriott, Thomas, Flore, Weedon, Northamptonshire  
Griffiths, John, The Weir, Hereford  
Olliphant, Henry, Easton, Lincolnshire.

**FINANCES.**—Mr. Raymond Barker presented to the Council the monthly report of the Finance Committee, and the usual quarterly statements of the accounts of the Society, from which it appeared that the general current cash-balance in the hands of the bankers was 3300l. This balance included the Gloucester subscription, and 800l. as the special balance on account of life-compositions. The Council adopted the recommendation of the committee that this special balance should be invested as permanent capital in the purchase of stock in the public funds. The Council also adopted the recommendation of the committee, that the directors of the county of Gloucester bank should be requested to act as the local bankers of the Society during the period of its ensuing country meeting.

**LINCOLN MEETING.**—Mr. Raymond Barker, Mr. Brandreth, Mr. Fisher Hobbs, Mr. Milward, and Mr. Brandreth Gibbs, having been appointed by the Council



the last monthly meeting to act as an Inspection committee for personally visiting the sites and accommodations offered to the Society for the purposes of the country meeting of next year, the report of this committee was read, and the various localities exhibited to the members on a large map, and plans of the city of Lincoln and its vicinity, furnished by the authorities. The Knight Worshipful the Mayor and the Town-Clerk of Lincoln, accompanied by the Hon. A. Leslie Melville, and Mr. Torr, the well-known agriculturist of that district, then appeared before the Council as a deputation representing the authorities of the city, and the gentry and farmers of the county of Lincoln, for the purpose of advocating the claims of that part of England for the country meeting of the Society; and the Earl of Yarborough, as President of the North Lincolnshire Agricultural Society, supported the memorial sent in by that body, strongly recommending such choice to be made by the Council. These gentlemen respectively having furnished to the members present every information required of them, they received from the President the best acknowledgments of the Council for the kind trouble they had taken in attending the meeting of that day. It was then resolved unanimously, on the motion of Mr. Raymond Barker, seconded by Mr. Fisher Hobbs, that the City of Lincoln should be the place of the country meeting of the Society, for the year 1854; subject to the standing condition, that in the course of a fortnight from that day the mayor, on the part of the authorities of that city, enter into the usual agreement with the Secretary of the Society, acting in the name and on the behalf of the Council, under the powers of the Royal Charter; that the offers and stipulations on which the decision of the Council had been made, should be guaranteed under their hands respectively, and the seals of their respective corporations.

**COUNTRY MEETING OF 1857.**—The Council then proceeded, according to established regulation, to determine the district for the country meeting to be held four years in advance; and, decided on the motion of Colonel Challoner, seconded by Mr. Milward, that such district shall be formed of the counties of Dorset, Somerset, Wilts, and Hants.

**JOURNAL.**—Mr. Pusey, Chairman of the Journal Committee, reported that, should no unforeseen impediments arise to retard the publication of the number of the Journal now in the press, it would make its appearance early in June.

**STEWARD OF IMPLEMENTS.**—On the motion of Mr. Iamond, seconded by Mr. Brandreth Gibbs, Mr. William George Cavendish, of Burlington House, Piccadilly, was appointed the Steward-elect of Implements at the Gloucester Meeting.

**JUDGES.**—The Council decided that nominations by members of the Society, made for Judges of Stock and Implements for the Gloucester Meeting, should be received up to the 23d inst., the day of the general meeting, and the whole list then printed for the inspection and remarks of any member of the Society, who should make application to the secretary for a copy of such list; the selection and appointment of such judges being made by the Council at their Monthly Council on the 1st of June—no exhibitor, however, of stock or implements being allowed to vote.

**GLoucester MEETING.**—Mr. Raymond Barker, Vice-Chairman of the General Gloucester Committee, reported the favourable progress of the works for the ensuing country meeting, and the recommendation of Wednesday, the 13th of July, as the day of the Pavilion Dinner of the Society.

**GENERATION OF STEAM.**—Colonel Challoner, Chairman of the Implement Committee, reported the active measures taken by the committee for the construction of a steam-boiler for supplying steam to work the fixed engines at the Gloucester Meeting; and their expectation that each boiler would be completed in time to the satisfaction of the committee, and to that of the consulting-engineer of the Society.

**HOUSE-LIST.**—The Council, in pursuance of the terms of the bye-laws, agreed to the House-List of Council to be recommended to the members at their ensuing general meeting.

The president laid before the Council a letter addressed to his lordship by the Earl of Clarendon, enclosing a communication from his Excellency the Count Walewski, on the subject of the great exhibition of agricultural and industrial products to be held in Paris, in May, 1855. A communication was also received from Sweden, announcing that the great agricultural meeting of that kingdom would be held on the 15th of August next at Lidsköp, and inviting members of the Society to attend on the occasion, when Messrs. interpreters, and every other facility would be afforded for their convenience and accommodation.

The Council adjourned to their weekly meeting on Wednesday, the 11th inst., when Professor Way would deliver his lecture to the governors and members, on the chemical constitution of agricultural Grasses.

**SOCIETY OF ARTS, April 29.**—A paper was read by Very Rev. the Dean of Hereford, on the Importance of giving a Self-supporting Character to Schools for the Labouring Classes, from which, as published in the Journal of the Society, we make the following judgment:—

The Dean had been frequently quoted as having demonstrated the necessity of the principle of self-support as applicable to national education. This, however, needs some explanation. He spoke as follows:—The success of the schools established at King's Somborne in Hampshire, demonstrated in the most satisfactory manner the adequacy of the principle to effect the objects I had in view. But I do not consider that their success

did prove the adequacy of the principle of self-support for certain other objects with which it was never connected in my own mind, and which must be provided (excepting in the most favoured localities) by other means. The expenses of a school are divisible into two distinctly marked parts. First, there are those expenses which are incurred antecedently to the schools being set to work; I mean the expenses incurred in purchasing the site, in building the school and teachers' houses, in providing suitable school-fittings and apparatus, and in educating and training the teachers. These expenses also are, to speak generally, incurred once for all. The other kind of expenses are incurred annually; they are permanent expenses—they represent the cost of keeping the school at work, as the former represented the cost of starting it; they consist of the salaries of teachers, of the cost of books and other needful apparatus as the school progresses, of the outgoing for repairs, and a few other items of this kind. Now it was to these latter permanent annual expenses (which I beg to observe have always been the most difficult to meet), that I endeavoured to apply the principle of self-support; and to this extent the King's Somborne schools, as you will see from the statistics I shall quote, have been, and continue to be, thoroughly successful. In the case of Somborne, the first class of expenses to which I alluded, were met by liberal assistance from the Committee of Council on Education, from the National Society, the Diocesan Board at Winchester, and by subscriptions from myself, and others connected with the property of the parish. From the first, I determined to spare no expense in anything connected with the well-working of the schools, having an entire confidence in the principle, that this would, in the end, be the best economy. These views were justified by the result, and the success of the experiment; and although a considerable sum, as regards this first class of expenses fell upon myself, this, thrown over a few years, made the school less expensive to me, as clergyman of the parish, than the ordinary village school. This class of expenses, however, ought not to be left or thrown upon private individuals; but every parish or school district ought to be enabled to charge themselves legally with it. The property of the parish of King's Somborne was rated at about 6000*l.* per annum. Taking this first necessary outlay at 900*l.*, and supposing there had been the power and disposition on the part of the ratepayers to charge themselves with it—throwing it over a period of 30 years, as is done in the case of building workhouses—how very light a burden this would have been, considering the advantages resulting from it! And although I should at that time even if there had been the power, have despaired of getting the ratepayers to agree to it, yet, with the light which has broken in upon them, through the school itself, during the last 10 years, this question assumes a very different aspect. You see, then, my object was a limited one; and in speaking of the King's Somborne school as a self-supporting one, the word "self-support" is intended to apply to the working of the school after it is once fairly established. The parish contained, by the census of 1841, a population of 1125, of whom about 800 lived in the village, and the rest were scattered over an area of about 8000 acres. The farms were large, many of them having been formed of two, three, or four occupations, making the case proportionably less favourable to the success of the plan I had in view. The parish is a purely agricultural one, and in a purely agricultural district; and at that time, and for a long period of years, the poor-rates had been extremely heavy, giving it a bad notoriety in that respect over the neighbouring parishes. There was, therefore, nothing in the circumstances of the neighbourhood, or parish, nor in the history or character of the people, to pre-dispose them towards making greater sacrifices for their children, for the purposes of securing some servicable degree of education, or of enabling them to do it, than would be found elsewhere. My aim from the first was to unite in the same school the children of the labouring classes and of their employers, being persuaded that the only means by which the children of the latter, in our rural districts, were likely to get an education equal to their wants, was by bringing it home to them at a cheap rate; and that if this were done, they would, in the end, gladly avail themselves of it, notwithstanding any prejudice against the mixture of classes, which I knew to prevail. This union of classes also was necessary to give the plan any chance of success, and the result has proved, in a most convincing manner, that where the instruction is good, and such as to meet the requirements of the parish and neighbourhood, that all difficulties may be overcome. The schools were built on plans recommended by the Committee of Council on Education, and were opened in October, 1842. The rates of payment were, for the children of labourers, 2*d.* and 1*d.* per week; 6*s.* a quarter for the children of the employers of labour, and for those known to be able to pay it, living within the parish, and 10*s.* for a similar class living in other parishes. The annual amount of school payments for the first eight years from its opening, are as follows:—

		Payments, including books, &c.		Books.	
		£	s. d.	£	s. d.
1st Year, from Mich., 1842 to	Mich., 1843	56	17 3	Of this.....	7 5 5
2d do., to Mich., 1844	1844	68	11 7	"	8 0 5
3d do. "	1845	84	6 1	"	11 5 3
4th do. "	1846	93	5 5	"	15 8 0
5th do. "	1847	145	0 6	"	18 8 1
6th do. "	1848	167	3 7	"	30 2 1
7th do. "	1849	167	16 7	"	39 2 7
8th do. "	1850	174	4 9	"	41 1 8

These figures are a most satisfactory proof of the success of the schools, both as to numbers and the classes of life from which the children came. The greatest increase in any one year is 52*l.*, 1*s.* 1*d.*, between Michaelmas, 1846, and Michaelmas, 1847, and this is owing to the improved process of teaching given to the school, by the introduction of pupil teachers and other advantages arising from the minutes of the Committee of the Council on Education, issued in that year; and also to the impulse in favour of the schools both in the parish and district, arising from the practical conviction which had now been brought home to the parents, that their children were getting a good and really servicable education. You will never prove this to them as a matter of theory; it can only be brought home to them by experiment. The amount paid for books and other school necessities, it will be observed, increased year by year, and at the end of the eighth year it is five times the amount paid in the first; in fact, so soon as the children became thoroughly interested in what they were learning, all difficulties were at an end, and the parents cheerfully and readily did all that could be expected of them. It was the introduction of the reading books of the Irish Board of Education, at the cheap rate at which they are to be had, which led to the purchase of books to this large amount in these schools. For the first two or three years the books purchased were almost entirely the ordinary reading books; this led to a taste for the introduction of others, and of cheap maps, both into the schools and into their homes, and for every 10*l.* spent in the purchase of cheap school books, it has led at least to 20*l.* being spent on other books, thus opening out a market where none existed before; so that I very much doubt whether, even on trading principles, the London publishers are altogether right in the views they have taken up as regards the books published by the Irish Board. The amount of payment in some members denoted the number attending the schools, but it will not be uninteresting to add a few more particulars on this head. The schools opened at first with 28 children, which, at the end of the year, increased to 106; and I perfectly recollect that, during this first year, more than 30 children were taken away or sent away by myself, because they would not conform to the rules; these, almost without exception, were glad to be allowed to return.

At the end of the 2d year ..... 110 No great increase.  
" 3d " ..... 144  
" 4th " ..... 168

And at Midsummer, 1850, they had gradually increased to 219. Of these 31 were paying 10*s.* per quarter, and came from other

parishes, many from a considerable distance; and there were as many as 20 lodging in different respectable cottages in the village, some from Monday morning to Friday night, going home for Saturday and Sunday. There were 21 paying 6*s.* per quarter, sons of tradesmen and employers of labour in the village; and 164 paying 2*d.* and 1*d.* per week. The author then proceeded to describe some of the results already obtained in other schools, where a more or less similar system had been adopted; the influence exerted by the Government Boards of Education; and lastly, the nature and effects of the numerous and large charitable institutions designed to advance education, but too frequently, from the manner in which they are managed, tending rather to retard than to promote it.

The Earl of Harrowby proposed a vote of thanks to the Dean for his deeply interesting paper. He was struck with his plan, as it seemed to meet two or three difficult questions in regard to education. The first was—how to get the funds; and the next was—how to educate the children of the middle classes, where they were thinly scattered over the surface of the land. The plan they had heard described seemed to meet these difficulties. By thus combining, in one plan, the education of the middle and poorer classes, the funds were raised from the former, who could pay liberally, to aid in providing a superior education for the latter. Another difficulty was—how to provide a good education for the middle classes. This was a question which every one must feel pressing with more urgency every day. Unlike the poor, who were generally willing to receive assistance, the middle classes were accustomed to pay for all they received, and anything which might appear eleemosynary in its character was highly repulsive to them. Now, the Dean's plan just seemed to meet the case; by educating, in one school, the son of the farmer or tradesman and the son of the labourer, both would receive a good education, whilst the fact of the former being able to remain longer at school would give him the advantage which would preserve the relative social position of the two.

POULTRY.

**Eggs.**—Some of your correspondents inquire about the best method of keeping eggs fresh; and as we have a plan here which I have not seen mentioned in any of the replies which have been given to these inquiries, I send it to you, particularly as I find it better than any I have seen mentioned:—Take a half-inch board of any convenient length and breadth, and pierce it as full of holes (each  $\frac{1}{2}$  inch in diameter) as you can, without risking the breaking of one hole into another—I find that a board of 2 feet 6 inches in length and 1 foot broad has five dozen in it, say 12 rows of 5 each; then take four strips of the same board of 2 inches broad, and nail them together edgewise into a rectangular frame of the same size as your board; nail the board upon the frame, and the work is done, unless you choose, for the sake of appearances, to nail a beading of three-quarters of an inch round the board on the top; this looks better, and sometimes may prevent an egg from rolling off. Put your eggs in this board as they come in from the poultry-house, the small end down, and they will keep good for six months if you take the following precautions:—Take care that the eggs do not get wet either in the nest or afterwards (in summer, hens are fond of laying among the nettles or long grass, and any eggs taken from such nests in wet weather should be put away for immediate use); keep them in a cool room in summer and out of the reach of frost in winter, and then, I think, the party trying the experiment will have abundant reason to be satisfied with it. I find there are some in my larder which I am assured have been there nearer eight months than six, and which are still perfectly fresh and good; in fact, it is the practice here to accumulate a large stock of eggs in August, September, and October, which last until after the fowls have begun to lay in the spring. If two boards are kept, one can be filling and the other emptying at the same time. This is an exceedingly good plan for those persons who keep a few fowls for the supply of eggs to their own family; but would, perhaps, not do so well for those who keep a large stock of hens, as it would take up too much room. I have endeavoured to account for the admirable way in which eggs keep in this manner, by supposing that the yolk floats more equally in the white, and has less tendency to sink down to the shell, than when the egg is laid on one side; certainly if the yolk reaches the shell, the egg spoils immediately. Will some of your correspondents favour me with their opinion? T. G.

**POULTRY: B. W. G.** There is nothing in the food you give to cause diarrhoea among your fowls. I believe Cochlin Chinas are more subject to it than other fowls; and it often follows the state of internal fatness from which many die. It is also a consequence of feeding on meat. I should think that, in your case, the water from the manure causes it, as it must be unwholesome for them. Provide them with pure water, and give them some chalk and Cayenne pepper, mixed with oatmeal, for a few days; also a little boiled rice. J. Bailey.

Calendar of Operations.

MAY.

**OXFORDSHIRE, May 3.**—Since our last report we have planted all the barley, which has been up green more than a fortnight, except about 20 acres of the last planted. We have made a trial on a portion of it, with Blech's patent fertilising powder, which we will allude to hereafter. Our Wheat is looking well, all of which have been once horse-dung, a portion twice, at a cost of about 8*d.* per acre. The last lot of our fattening pigs was in Smithfield yesterday, all of which have realised a good average throughout the season. Our ewes and lambs have eaten off the Rye, and are now on an excellent piece of Trifolium; they continue very healthy, and we have only lost one lamb since our last. We can see a decided improvement in the meadow laid out upon the system before alluded to; and as we have only tried the experiment on a portion, we shall be enabled to give a comparative



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# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 20.—1853.]

SATURDAY, MAY 14.

[PRICE 6d.

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A Prize of 3l. will be given for the best collection of Six Pelargoniums—varieties—in No. 24-sized pots. A second prize of 1l. 10s. will also be given.

A Prize of 2l. 10s. will be given for the best collection of Six distinct species of Stove or Greenhouse Plants, which shall not contain more than two of the same genus—excluding Pelargoniums, Fuchsias, and Calceolarias. Persons exhibiting in this class will not be allowed to compete for the 5l. prize.

### NURSERYMEN.

A Prize of 4l. will be given for the best collection of Six Pelargoniums—varieties—in No. 12-sized pots. A second prize of 2l. will also be given.

A Prize of 3l. will be given for the best collection of Six Pelargoniums—varieties—in No. 24-sized pots. A second prize of 1l. 10s. will also be given.

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A Prize of 5l. will be given for the best collection of 10 distinct species of Stove or Greenhouse Plants, which shall not contain more than two of the same genus—excluding Pelargoniums, Fuchsias, and Calceolarias.

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All productions must be on the grounds by 11 o'clock.

CHARLES WALLIS, } Hon. Secretaries.  
WILLIAM WATKINS, }

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## RHODODENDRON JASMINIFLORUM (HOOKER).

This lovely Greenhouse Plant was exhibited at Chiswick in May, 1852, when it was awarded the "First Prize" for new Plants. It is figured in the *Horticultural Magazine* for July, 1850, Tab. 424, with the following remarks by Sir W. J. Hooker:—

"Few Plants excited greater attention among the visitors than distinguished for taste and judgment, than the one here figured. Many excelled it in splendour; but the delicacy of form and colour of the flowers (white with a deep pink eye); and probably their resemblance to the favourite Jessamine (some compared them to the equally favourite Stephanotis), attracted general notice."

It is a native of Mount Ophir, Malacca, where it was found by Mr. Lobb, at an elevation of 5000 feet; it thrives well in the greenhouse, in a neat dwarf habit, abundant bloomer and beautifully scented with the delicate fragrance of the Auricula. This lovely Plant is of easy culture, and Messrs. VEITCH and SONS can confidently recommend it as deserving the most extensive cultivation. Fine plants will be ready for delivery on and after the 16th of May next. Largest size plants, 13s.; Second size plants, 4s.; with the usual discount to the Trade. Exeter, May 14.



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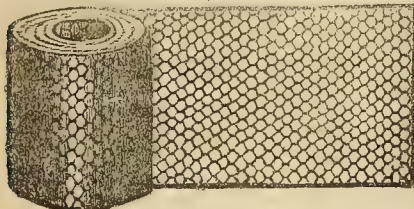
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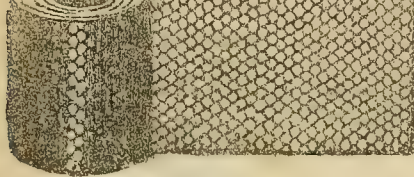
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2-inch " extra strong "	12 "	9 "
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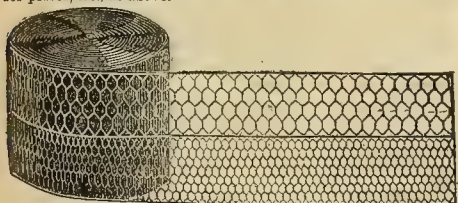


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**HOT-WATER HEATING APPARATUS**, upon approved principles, supplied and fixed in Horticultural and other Buildings, by **WILLIAM DODDS & CO.**, Heating Engineers, 102, Leadenhall-street, London. First-rate references if required.

## HORTICULTURE IN ALL ITS BRANCHES.



**J. WEEKS & Co.**, King's Road, Chelsea,



## HOTHOUSE BUILDERS.

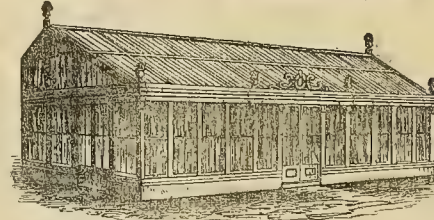
The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The **HOT-WATER APPARATUS** (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. **J. WEEKS & Co.**, King's Road, Chelsea, London.

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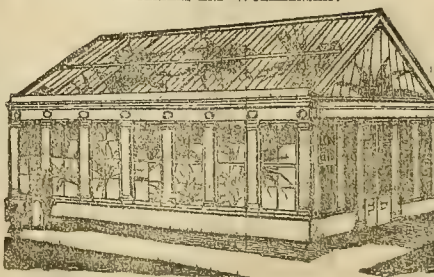


**JAMES WATTS**, Hothouse Builder, Claremont Place, Old Kent Road, has 200 CUCUMBER and MELON BOXES and LIGHTS of all sizes, ready for immediate use, made of well-seasoned materials, packed and sent to all parts of the Kingdom.

HOTHOUSES, CONSERVATORIES, &c., made and fixed complete at a considerable reduction, and Garden Lights of every description. References may be had to the Nobility, Gentry, and the Trade, in most of the counties of England.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON**, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

## ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON**, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.

WAREHOUSE, 87, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long.	Squares in boxes, 100 feet each.
Under 6 by 4	...
6 by 4, 6 1/2 by 4 1/2	...
7 by 5, 7 1/2 by 5 1/2	...
8 by 6, 8 1/2 by 6 1/2	...
9 by 7, 9 1/2 by 7	...
10 by 8, 10 1/2 by 8	...
11 by 9, 11 1/2 by 9	...
12 by 10, 12 1/2 by 10	...
13 by 11, 13 1/2 by 11	...
14 by 12, 14 1/2 by 12	...
15 by 13, 15 1/2 by 13	...
16 by 14, 16 1/2 by 14	...
17 by 15, 17 1/2 by 15	...
18 by 16, 18 1/2 by 16	...
19 by 17, 19 1/2 by 17	...
20 by 18, 20 1/2 by 18	...
21 by 19, 21 1/2 by 19	...
22 by 20, 22 1/2 by 20	...
23 by 21, 23 1/2 by 21	...
24 by 22, 24 1/2 by 22	...
25 by 23, 25 1/2 by 23	...
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97 by 95, 97 1/2 by 95	...
98 by 96, 98 1/2 by 96	...
99 by 97, 99 1/2 by 97	...
100 by 98, 100 1/2 by 98	...

Large Sheet of No. 16, very superior, packed in cases of 100, 200, and 300 feet, at 2d. to 2 1/2d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Flat Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments; Fern Shades and Dishes.

## GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

**JAMES PHILLIPS** and Co. have the pleasure to

hand their present prices of Glass for Cash.—

**SHEET SQUARES.** In Boxes of 100 feet.

**CROWN SQUARES.** In Boxes of 100 feet.

	£	s.	d.		£	s.	d.
Under 6 by 4	...	...	...	0	12	6	...
6 by 4, and 6 1/2 by 4 1/2	...	...	...	0	13	0	...
7 " 5, " 7 1/2 " 5 1/2	...	...	...	0	15	0	...
8 " 6, " 8 1/2 " 6 1/2	...	...	...	0	15	0	...
9 " 7, " 9 1/2 " 7	...	...	...	0	15	0	...
10 " 8, " 10 1/2 " 8	...	...	...	0	15	0	...
11 " 9, " 11 1/2 " 9	...	...	...	0	15	0	...
12 " 10, " 12 1/2 " 10	...	...	...	0	15	0	...
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## EVERGREEN GRASSES FOR CHURCHYARDS AND CEMETERIES.

**SUTTON AND SONS** have had the honour of supplying many Clergymen and others with Grass Seeds for Churchyards and Cemeteries, which have given great satisfaction. Price of Seed, 1s. per lb. From many similar letters they extract the following, recently received:

From Mr. C. Judd, Gardener to His Grace the Archbishop of Canterbury.

"The Grass Seeds received from you succeeded admirably, and, although sown late, the growth was such that we were enabled to mow the churchyard in the autumn, and it has now the appearance of an established lawn of some years' standing; and my employer, the Archbishop of Canterbury, is quite satisfied with its appearance."

Addington Park, January 7, 1853.

**SUTTON & SONS**, Seed Growers, Reading, can supply similar seeds to those sent to Addington Park, at 1s. per lb., or 18s. per bushel. Quantity required per acre, 2 bushels.

## MEADOW AND PASTURE GRASS SEEDS.

**THOMAS GIBBS AND CO., SEEDSMEN to the ROYAL AGRICULTURAL SOCIETY OF ENGLAND**, beg to state that the following Seeds are now finished cleaning, and are ready for sending out.

**GRASS SEEDS FOR LAYING DOWN LAND TO PERMANENT MEADOWS AND PASTURES.**—The kinds used in these mixtures will be selected and apportioned to suit the nature of the soil.

Grass Seeds, in mixtures, for Irrigation.

Do. do. for Parks, &c.  
Do. do. for 2 and 3 years' lay.  
Do. do. for Garden Lawns, &c.  
Do. do. for Renovating Grass Land.

Italian Rye Grass—very fine sample, Improved Perennial Rye Grass, Annual or common do., and all kinds of Clovers, White Belgian and Red Altringham Carrots; long Red and Red Globe Mangold Wurzel; Gibbs' new very large Cattle Parsnip, Swedish Turnips of various sorts, Gibbs' green top Yellow Hybrid Turnip, White-fleshed Turnips of various sorts, Drumhead and other Cabbages, Lucerne, Broom, Furze, Sainfoin, and all kinds of Agricultural, Kitchen Garden, and other Seeds.

Corner of Half-moon Street, Piccadilly, London.

## NEW AND SELECT DAHLIAS.

**THOMAS BARNES** begs to invite attention to his unrivalled collection of DAHLIAS, of which he has now ready upwards of 10,000 fine healthy Plants. The following five show varieties, 10s. 6d. each, or 40s. the set, viz. Mrs. F. Sutton (Barnes), Anna Boleyn (Walpole), Agnes (Edward), Edward Miellet (Miquet), Transcendent (Cailloux)—Fancy Panorama (Barnes), Comte Merode (Cailloux), 7s. 6d., or 12s. the two. The above are highly recommended.

All the leading sorts of last and previous years, 6s. to 24s. per dozen. Good border varieties, 40s. per 100. Remittances expected from unknown correspondents. Descriptive Catalogues on application.—Dane Croft Nurseries, Stowmarket.

## NEW VERBENAS, ETC.

**DRUMMONDI, SCARLET KING, and BLUE BONNET**; the former a free bloomer, of good habit; it was exhibited at the Horticultural Gardens at Chiswick on the 10th July last, and was noticed in the subsequent number of the *Gardeners' Chronicle* as very attractive; the two latter are profuse bloomers, and altogether very desirable varieties for either pot or bedding. Strong plants, 3s. 6d. each, or 12s. per dozen.

**CONWAY'S SCARLET PELLAEONUM, KING OF NEPAUL**, large horse-shoe leaf, habit of Tom Thumb, one of the newest and best varieties for bedding; 9s. to 12s. per dozen.

**PET SUPERB**, a pink variety; 12s. per dozen.

**FLOWER OF THE DAY (LEE'S)**; 9s. to 12s. per dozen.

**MOUNTAIN OF LIGHT**, 5s.; and **GOLDEN CHAIN**, 2s. 6d. each.

**HELIOTROPE (HENDERSON'S) VOLTAIREANUM NANUM** and **ANTIRRHINUM HENDERSONI**, 1s. 6d. each.

A large assortment of Geraniums of all descriptions—Fancy, Scarlet, and Variegated; also Heliotropes, Lobelias, Petunias, Antirrhinums, with every variety of bedding plants at reasonable prices.

MARY CONWAY, Earl's Court Nursery, Old Brompton, London.

## BENJAMIN R. CANT, St John's Street Nursery,

Colchester, offers the following:

**NEW VERBENAS**, 6s. per dozen.

Camille, Celina Mullet, Conquerant, Duchess of Kent, Edward Milson, Favourite, General Bampiere, Gentle Adele, Juliette, La Messange, Louis Miellet, Mazeppe, Madame Malet, Madame Lacharme, Monsieur Bouchage, Ormsby Beauty, Olga, Princesse Navarre, Racine Romulus.

**NEW FUCHSIAS**, 1s. 6d. each, or 15s. per dozen.

Ariel, Exquisite, Gem of the Season, Hendersons, Joan of Arc, Leader, Model, Nil Desperandum, Novelty, Pendula, Resplendent, Standard of Perfection, Splendissima.

**MISCELLANEOUS.**

Scarlet Geranium Gem, Flower of the Day, Master Sparks.

Shrubland Pet, and the Amazon, 1s. each.

Cerise Unique, Princess Alice, Queen of Summer, 6s. per dozen.

Mountain of Light, 1s. 6d. each.

Heliotrope Voltairreanum nanum, 1s. each.

Phlox Drummondii Mayi variegata, and Thompsoni, 6s. per doz.

**NEW HARDY SHRUBS.**

Berberis Darwini, 2s. 6d. each. Lonicera, new species, from

Deutzia gracilis, 1s. 6d. each. China, 2s. 6d. each.

Escallonia macrantha, 1s. 6d. each. Mitrasia coccinea, 1s. 6d. each.

**CHEAP PLANTS FOR THE MILLION.**

**HENRY WALTON, Florist, &c., Edge End,**

Marston, near Burnley, Lancashire, begs to offer the following, at the low prices annexed, all in strong healthy plants:—

**GERANIUMS.**—Ambassador, Arethusa, Bride of Abydos, Chloë, Commodore, Claudiana, Eurydice, Eucharis, Elise, Exhibitor, Flying Dutchman, Generalissimo, Juliette, Lablache, Lavinia, Lord Gough, Lancashire Witch, Monteith, Mochanna, Purple Standard, Pulchra, Painter Improved, Rubens, Surprise, and Rose Morn. 12 of the above, 30s.; 12 of H. W.'s selection, 25s., or the set for 31, hamper, &c., included.

Scarlet Geranium, Hendersoni, 1s. 6d. each. Fuchsias, new varieties of last year, such as Nil Desperandum, Honey Bell, Joan of Arc, Cortona, Splendissima, and others, 1s. each, or 9s. per dozen. Dahlias, new choice varieties of last year, 9s. and 12s. per dozen, or 1s. 6d. each; older varieties, good show flowers, 4s. 6d. and 6s. per dozen. Verbenas, Mons. Jullien, National and Ormsby Beauty, Purple Rival, the best new sorts of last year for bedding, 6s. per dozen; other varieties, 3s. 6d., 4s. 6d. and 6s. per dozen. Cupheas, Scarlatina, Bedding Geraniums, Petunias, Heliotropes, Mimulus, &c., &c., equally cheap. Geranium, Shrubland Pet, 1s. each, or 9s. per dozen. Bedding Fuchsia, Pet. Darling and Globosa perfecta, 1s. each, or 9s. per dozen. Cinerarias, strong blooming plants, new varieties sent out last season, 1s. 6d. each, or 12s. per dozen; older varieties, suitable for bedding or pot culture, 4s. 6d. and 6s. per dozen. Chrysanthemums, the best show kinds, 4s. 6d., 6s., and 9s. per dozen, post free. Pentstemon variabilis, latterly, 1s. 6d. each.

Descriptive lists of the above may be had for one stamp. It is particularly requested that all orders be accompanied with a Post Office Order made payable at Marston, Lancashire.

## CHOICE BEDDING PLANTS, ETC.

**HART AND NICKLIN, Florists, &c., Guildford**, having a large stock of healthy Plants, offer them at the under-named prices:—

FANSIES, fine named flowers ... .. 5 0  
DAHLIAS, new and fine show flowers ... .. 6 0  
VERBENAS, including Smith's varieties ... .. 5 0  
PETUNIAS, the best kinds ... .. 4 0  
GERANIUMS, Scarlets ... .. 3s. to 4 0  
Pancies ... .. 4s. to 5 0  
HELIOTROPEs, best sorts ... .. 3s. to 4 0  
FUCHSIAS, last year's varieties ... .. 6 0  
CALCEOLARIAS, Sultan and Sulphurea Splendens 5 0  
other varieties ... .. 3 0  
PHLOX DEPRESSA ... .. 5 0

All Plants true to name. No charge for package. Carriage paid to London. Post Office Orders payable at Guildford, Surrey.

## EDWARD GEORGE HENDERSON AND SON

have to offer the following NEW PLANTS, which will be ready to send out the first week in May:—

LIBERTIA grandiflora ... .. 10s. 6d. each.  
GERANIUM glaucum grandiflorum intermedium 10 6  
Boule de Neige ... .. 7 6  
LOBELIA Rot Leopold ... .. 7 6  
ERICA Burnettii ... .. 10 6  
CALCEOLARIA Golden Chain ... .. 7 6  
Sultana ... .. 7 6  
Novelty ... .. 5 0  
Compacta ... .. 10 6  
FUCHSIA Purple Perfection ... .. 10 6  
Duchess of Lancaster ... .. 10 6  
Premier ... .. 10 6  
GLOXINIA imperialis ... .. 7 6

For description of the above, see this Paper for April the 9th. Wellington Road Nursery, St. John's Wood, London.

## NEW GERANIUMS.

**BASS AND BROWN** have a few well-established

Plants of the following now ready, at the reduced prices annexed:—

Each.—s. d.	Each.—s. d.
Hoyle's Zaria ... .. 10 6	Foster's Rachel ... .. 10 6
" Astrea ... .. 10 6	" Optimum ... .. 25 0
" Lagoma ... .. 10 6	" Eleanor ... .. 10 6
" Basilisk ... .. 7 6	" Queen of May ... .. 15 0
" Abiava ... .. 7 6	" National ... .. 15 0
" Kulu ... .. 7 6	Dobson's Vulcan ... .. 15 0
" Novelty ... .. 7 6	" Jupiter ... .. 10 6
" Butterfly ... .. 7 6	" Spot ... .. 10 6
" Portia ... .. 10 6	" Harriet ... .. 10 6
Henderson's Extravaganza 5 6	

The following 18 choice new varieties of last season may be had, fine plants, for 60s., or any 12 for 45s.:—Ariadne, Ambassador, Arethusa, Chieftain, Colonel of the Buffs, Commissioner, Elise, Exhibitor, Ganymede, Gem, Herald, Lavinia, Mochanna, Monteith, Painter Improved, Purple Standard, Rubens, Shylock. Choice varieties 6s., 9s., 12s., and 21s. per dozen.

## FINE BEDDING PLANTS.

**VERBENAS.**  
50 varieties, very choice ... .. 15 0  
12 varieties, very fine, 3s. 6d. and ... .. 7 6  
25 varieties ditto, 7s. and ... .. 12 6

Purchaser's selection from any of the following, very superb, new, of last season, 12 varieties for 15s., or the set of 18 for 18s.:—

Adonis	Juliet
Alois Magna	Madame Malet
Ariel	Madame Le Gros
Beauty Supreme	Mons. Jullien
Celine Malet	Orlanda
Conquerant	Ormsby Beauty
Diana	Parfum Madeline
Duchess of Kent	Standard
Eliza Cook	Zenobia

**PETUNIAS.**—Choice selections, per dozen, 4s. to 9s.

**FUCHSIAS.**  
50 varieties, very choice ... .. 20 0  
Choice selections, per dozen, 4s. to ... .. 9 0  
Henderson's three distinct dwarf varieties—Darling, Pet, and Globosa Perfecta, each ... .. 2 0  
12 choice varieties of last season, including the last named 15 0

**DAHLIAS.**  
Choice varieties, per dozen, 5s. to ... .. 9 0  
Choice fancy ditto, per dozen, 5s. to ... .. 9 0

**CHRYSANTHEMUMS.**  
Large flowering, fine, per dozen, 5s. and ... .. 7 6  
14 best new, of 1852 ... .. 16 0  
Lilliputian varieties, fine, per dozen ... .. 7 6  
12 best new, of 1852 ... .. 12 0

Anagallis 3 best varieties ... .. per dozen 4 0  
Bourvardia flava ... .. " 9 0  
" splendens ... .. " 6 0  
Cuphea plantensis ... .. " 12 0  
Cyanthus lobatus, 1s. 6d. ... .. " 6 0  
Lantana, 3 varieties distinct ... .. " 6 0  
Linnum flavum ... .. " 6 0

Lobelia erinus maxima and racemosoides, the two best dwarf varieties ... .. 6 0

Mimulus, in 4 fine varieties ... .. 7 6

Phlox Drum. Thompsoni, extra rich crimson ... .. 9 0

Salvia azurea compacta, each ... .. 1 6

" amabile, beautiful, each ... .. 1 6

" fulgens, per dozen ... .. 6 0

Veronica Andersoni, fine plants, each, 1s. 6d. to ... .. 2 6

Zauschneria Californica, per dozen ... .. 6 0

## SELECT HARDY PLANTS.

See Advertisement of a quantity of select and popular Hardy Shrubs, Plants, &c., in the *Gardeners' Chronicle* of March 25 and April 2.

Herbaceous Plants (colours and heights in Catalogue).

s. d.	s. d.
" 100 distinct and showy varieties ... .. 30 0	50 for 17 6
" 25 ditto ditto ... .. 10 6	12 for 6 0
" 100 superior and new varieties ... .. 50 0	50 for 30 0
" 25 ditto ditto ... .. 17 6	12 for 9 0
" 25 fine vars., best adapted for rockwork 12 0	12 for 7 6

Hardy Flowering Shrubs, 20 varieties, 12s.; 12 varieties ... .. 7 6

Dwarf Rock Cistus, new and beautiful, very distinct, rich ... .. 15 0

Scakato Routs, strong, 1s. 6d. per dozen; per 100 ... .. 10 0

Bayss's Giant Asparagus, fine 3 years' p., 1000, 30s.; p. 100 3 6

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## TESTIMONIALS.

*Gardeners' Chronicle*, Aug. 7, 1852:—"The most striking we have seen; an improvement on Feu de Roi; habit, dwarf and good."

*Gardeners and Farmers' Journal*, Sept. 4:—"A very fine variety flowers large, colour vivid and intense, foliage dark and glossy, habit dwarf."

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## The Gardeners' Chronicle.

SATURDAY, MAY 14, 1853.

## MEETINGS FOR THE ENSUING WEEK.

DAY	DATE	MEETING	TIME
MONDAY	May 16	Chemical	8 P.M.
		Statistical	8 P.M.
		British Architects	8 P.M.
		Pharmaceutical (Anderson)	11 A.M.
TUESDAY	17	Civil Engineers	8 P.M.
		Pathological	3 P.M.
		Literary Fund	3 P.M.
		Society of Arts	8 P.M.
WEDNESDAY	18	Geological	8 P.M.
		Royal Institution	8 P.M.
FRIDAY	20	Acoustic (Anniversary)	2 P.M.
SATURDAY	21	Royal Botanic	3 P.M.
		Medical	8 P.M.

COUNTRY SHOWS FOR THE PRESENT MONTH.—16th: Handsworth and Loughborough; 17th: Cheltenham; 18th: Kelso; 19th: Oxfordshire, Bath, and Bristol; 20th: Plymouth; 21st: National Tulip (Notts); 22nd: Midland Horticultural (Derby); 23rd: Hammersmith Fanny, and Nottingham Horticultural.

We recommend to the notice of those who imagine that what is supposed to be **VEGETABLE PHYSIOLOGY** in Professor **LIEBIG's** works really deserves that name, an unpretending volume on the **Vegetable Cell**, by Professor **MOHL**.\* It will then be seen how great the difference is between brilliant speculations and ascertained facts; and that much of what persons unacquainted with such subjects have found most seductive in the works of the great chemist is either wholly illusory or open to the greatest doubts. We have never attempted to conceal our astonishment that any philosopher, and no one would withhold that name from Professor **LIEBIG**, should have ventured to apply without the least hesitation the facts, or supposed facts, with which he was familiar as a chemist, to the interpretation of vital phenomena, of the precise nature of which he did not possess even elementary knowledge. Whether we were right or not, a perusal of Professor **MOHL's** admirable treatise will show.

No two men can be more different than **LIEBIG** and **MOHL**; both possessing talents of the highest order; and both dealing with the same subject. The one a seductive writer, master of all the literary arts, by which a reader is hurried along, from conclusion to conclusion, without seeing how to disentangle the argument, or suspecting the very foundation on which it rests to be a shifting sand. The other didactic, if not dull, never attempting to build up fine theories, but painfully explaining the truth as far as it is known, and pointing out what appear to be the fallacies or errors which hasty observation has introduced into his subject. Nor is there much similarity in their translators, each of whom has evidently caught the very spirit of its author.

**MOHL** considers that no one phenomenon in vegetable life is intelligible without a knowledge of the nature of cells; that is to say, of the minute apparatus through whose simultaneous agency all phenomena are caused; and in this he is undoubtedly right. **LIEBIG**, on the other hand, plunged into his argument without knowledge of the nature of a cell; it was as if he had attempted to explain the gigantic convulsions of the atmosphere before having studied their feeble equivalents in a laboratory. No wonder, then, if botanists rose in arms against his doctrines; nor is it at all surprising that those of England decline concurring in the "testimonial" which chemists and geologists, adopting the fashion of the day, are now desirous of presenting him on his removal from Giessen to Munich.

To those who wish to know on what foundations

\* Principles of the Anatomy and Physiology of the Vegetable Cell. By HUGO V. MOHL. Translated by A. HENFRY, F.R.S. 8vo. VAN VOORST. Pp. 155.



vegetable physiology really rests, we recommend the diligent study of Prof. Mohr's important work. They will thus learn to distinguish between the certain and the doubtful, the ascertained and the speculative, the possible and the specious. It is true that a large part of his statements is necessarily the same as what is found in all standard modern works on vegetable physiology, but facts are seen from a new point of view, always in connexion with the action of the cell; and the whole question is treated in the truest spirit of genuine philosophy. He sits, in truth, upon the judgment-seat of science, to which his great reputation, as an observer, and as a calm dispassionate reasoner, may be said to have raised him, by the common consent of modern botanists. His judgment is, no doubt, fallible, like that of other men; but it must always be received with respect.

Let any one compare the language of the following extract, relating to the longevity of vegetation, with the exaggerated speculations of writers to whom we would not more particularly allude:—

"The peculiarity of their organization, and the unlimited power of growth of plants, offer many difficulties to the definition of the duration of plants, and have given rise to many incorrect theories. Every individual cell, and every individual organ, has a determinate end to its life; but the entire plant has not, since the individual shoots run through their periods of development quite independently, and only share in the weakness of age of the older organs when these are no longer able to convey to the young shoots the needful amount of nourishment, in which case the latter do not die from deficiency of vital energy, but are starved. It therefore depends wholly upon the mode of growth of a plant whether this occurs or not. When a plant possesses a thallus spreading horizontally by the growth of its circumference, it can annually extend itself into a larger circle, after the old parts in the centre have been long decayed, as is seen in old specimens of crustaceous Lichens, in the fairy rings caused by fungi, &c. In like manner when a higher plant has a creeping stem, and possesses the power of sending out lateral roots near the vegetating points, and in this way conveys nourishment directly to the young terminal shoots, the latter are wholly independent of the death of the older parts of the stem and of the primary roots, and there exists no internal cause for death in such a plant. It is truly a different plant every new year and vegetates in a new place, but there is no definite boundary between it and its predecessors; such a plant is like a wave rolling over the surface of a sheet of water; it is every moment another and yet always the same. Thousands of inconspicuous plants, of Mosses, Grasses, Rushes, &c., have vegetated in this manner upon peat bogs and similar localities perhaps for thousands of years. Plants with upright stems are placed in much more unfavourable circumstances. It has been declared of these also, and particularly of the Dicotyledonous trees (DE CANDOLLE, 'Physiologie Végétale,' ii. 984), that they have no internal cause for death, but I believe incorrectly. Examples of very old trees, such as DE CANDOLLE collected (*e.g.*, *Taxus* 3000, *Adansonia* 5000, *Taxodium* 6000 years old, &c.), only prove, naturally, that death occurs at a very late period in many plants placed in favourable circumstances, but not that it does not necessarily happen. To me there appears to exist in all trees, whether they belong to the Dicotyledons, or, like the Palms, to the Monocotyledons, an internal cause which must produce death in time—namely, the increasing difficulty of conveying the necessary quantity of nourishment to the vegetating point, resulting from the elongation of the trunk from year to year. Even when the force which carries the sap up suffices to raise it to 200 feet or more (many Palms, as *Ceroxylon andicola*, *Areca oleracea*, attain a height of 150—180 feet; some *Coniferae*, *e.g.*, *Pinus Lambertii*, *Abies Douglasii*, of more than 200 feet), yet a maximum is reached there, and the terminal shoot is less perfectly nourished every succeeding year, becomes stunted more and more, and the tree at length dies.

"If we are surprised at the intensity of the vegetative force of individual plants, in consequence of which it re-appears with new, unweakened energy in every bud, so must we marvel at the force committed to so simple an organ as a cell is, if we reflect what an influence it exerts upon the total economy of nature, as one of the grandest of phenomena. The plant lives almost solely upon inorganic substances; its cells are chemical laboratories in which these are combined into organic compounds. The plant prepares in this way not only the nutriment required for its own development, but also the food on which the entire animal kingdom depends. But plants not only nourish animals, they maintain the air in a fit state for their

respiration, since their breathing process removes carbonic acid from the atmosphere and replaces it by oxygen gas.

"In all these functions the plant is thoroughly dependant upon the outer world; its food is brought to it without its own co-operation, by water and air; its respiration takes place without activity of its own, through a penetration of its substance by gases with which it is in contact, in consequence of a physical law; not even does its internal circulation of juices depend on a mechanical activity of a circulating system; thus every necessity for motion is removed. It is true we here and there meet with movements in this or that organ, but these, occurring isolated in the vegetable kingdom, are also altogether of subordinate kind in the individual plant. They also are committed to the cells."

It will be evident that an experienced author who holds opinions like these, will be no advocate of the unlucky theory of degeneration, upon which so many fastened with surprising tenacity some years ago. "Thousands of experiments," says Professor MOHR, "have shown that the young shoots of old trees, when used as grafts, slips, &c., furnish as strong plants as the shoots of young trees; even in the Palms (*Phoenix dactylifera*) experiment has shown that the apex of the stem, when its vegetation begins to slacken in an old tree, grows again into a strong tree when cut off and planted in the earth. Not one single experiment speaks in favour of the opinion promulgated by KNIEN, that all parts of a tree have a common end to their life, and that the different trees which have been raised from one and the same tree by grafts, decay about the same time as the parent plant. A whole series of cultivated plants (I will only mention the Vine, the Hop, the Italian Poplar, and the Weeping Willow) are propagated by division, without any decreased power of vegetation ever being seen. Nothing was in greater contradiction to the laws of vegetable life, than the frequently expressed opinion, that the Potato disease of recent years was to be ascribed to a degeneration of the Potato plant, arising from the unceasing propagation by tubers."

This alone serves to show how inseparably practical questions are united with exact, and therefore minute physiological knowledge. Prof. Mohr's whole volume, indeed, is an illustration of the same truth. If he sometimes over-estimates the practical importance of certain disputed questions, as we think he does, it must be owned that he errs on the side of real science, as must be expected from a philosopher who holds all phenomena to be so inseparably connected, that a misinterpretation of one can scarcely fail to lead to wrong conclusions regarding others.

#### FRANCISCEA CONFERTIFLORA.

THIS fine stove plant is of comparatively recent introduction, and therefore, as yet, it is not so generally known as it deserves to be, being a first-rate addition to this useful genus. Its great heads of pale blue or lilac flowers, each measuring 1½ inch across, when produced in profusion, have a really striking effect, and they last a long time in perfection. Its cultivation does not differ much from that of other varieties; a temperature of from 60° to 70° during active growth, suitable soil, water, and general cleanliness, are all that is required to ensure success.

Young plants of it may now be bought in from nurseries at a moderate price. After they are received, place them for a few days in a close warm situation, in order that they may recover from any injurious exposure to which they may have been subjected during removal. Then, if well rooted, and otherwise healthy, and in a growing condition, give a moderate shift into well drained pots, one or (in the case of strong plants) two sizes larger than those they are in. After potting remove them to a close warm pit or frame where a moderate bottom-heat is maintained, and keep a moist atmosphere about them, giving gentle waterings as required, and a slight shading during bright sunny days, the foliage being liable to burn in a close atmosphere. When growth has commenced freely the young shoots should be stopped at a well placed joint. After the buds have again started strongly, which will soon be the case if the roots have made good progress, a second shift should be given into larger pots, proportioned to the strength of the plants; and they should be again placed in heat. They should receive every encouragement to make vigorous growth, so as to get the wood ripened well by the end of September, after which a drier and cooler atmosphere is requisite to ensure a period of rest. A temperature of from 50° to 55° is most suitable during winter, water being given sparingly, but in sufficient quantity to prevent the foliage being injured by a long period of drought. If fair-sized specimens are wished for, the plants should be pruned back a few joints in February or March; and after the wounds are healed, placed in heat as before, to start them into growth; but if bloom is desired this season, pruning must be deferred, as the flowers are produced

on the points of last year's wood. Blossoming, in a small state, however, considerably weakens the plant, and I therefore prefer growing it a second season, before it is permitted to flower. If pruned, as already stated, and placed in heat, the buds will break kindly, and the plants may then receive a shift into the pots in which they are destined to bloom in the following season. Previous to re-potting, carefully examine the ball, and remove any impure soil, drainage, &c. The pots now used may be from 12 to 15 inches in diameter, and they should be well drained. In the progress of growth the shoots should be once or more stopped if necessary, and neatly tied out, to allow light and air to reach the inside branches. The former operation should be completed as early in the season as is consistent with the formation of a well shaped plant. This will allow more time for the production of robust, well ripened wood for the next year's bloom. The winter treatment may then be the same as before.

The period at which the flowers would be most desirable must influence the time of commencing to force the plants. If started in January they will be in bloom in March or the early part of April, or they may be retarded for a considerable period. When the flowers begin to expand, a cooler and drier atmosphere will preserve them for a length of time in perfection. After this period the plants will require judicious pruning, repotting if necessary, and otherwise treatment like that previously given them. By timely attention to potting, pruning, &c., as may be expedient, they will continue to increase in size and beauty for many years. Cuttings of this plant root freely, if young half-ripened shoots are taken off for the purpose during summer. They should be inserted in silver sand in a well-drained pot, covered with a bell-glass, and placed in heat. They will root in five or six weeks, and if potted then into 4-inch pots, they will make nice plants for the ensuing spring.

The soil I find best adapted for it is two-thirds fibrous peat, and one-third good turfy loam, with a liberal addition of silver sand; the two former should be broken into small lumps, but not sifted, except for young plants. In potting large specimens, it is advisable to add a liberal supply of potsherds to the soil, or wood charcoal, broken to the size of a small nut. This will assist in preserving the ball in a healthy, open condition. If those pests, mealy-bug or brown scale make their appearance, lose no time in clearing them off. With early and careful attention, the habit of the plant affords small chance of a safe retreat for these unwelcome visitors. *Alpha.*

#### PALMS AND BAMBUS, WITH PINES, &c., AT CONSIDERABLE ELEVATIONS ON THE HIMALAYAS. BY MAJOR MADDEN.

HAVING resided for several years in the British portion of the Himalaya mountains, and more especially in the province of Kemaon, which borders on the Nepalese territories, I possessed opportunities for examining its botany, which up to that period had been investigated by native collectors only, and was thus enabled to determine the western extension of a number of plants, the existence of which had been supposed to be limited by Nepal. Among these were several Palms, on the distribution and association of which, and the inferences to be drawn therefrom, I propose to offer a few facts for consideration. 1. The most common of these Palms is one which Dr. Royle has designated *Phoenix humilis*, and which he supposes may be identical with *Ph. acaulis* of Roxburgh, and which is probably a mere variety of *Ph. sylvestris*, the wild Date tree of India, useless for its fruit, but yielding abundance of sap, which, in Bengal, is largely employed in the manufacture of sugar. *Phoenix humilis* occurs in great abundance and beauty in the forest belt all along the base of the mountains, up the warm valleys of the great rivers, and ascends the mountains to 5500 feet, being plentiful at that elevation in the vicinity of Almora, the capital of the province, and in one or two instances which came under my observation reaching even a thousand feet higher. In its dwarfed form, *Phoenix humilis* is found at least as far N.W. as the Sutluj river, and is the only one of the family which, probably owing to the aridity of the climate, is to be met with in that region.\* In several places in Kemaon (Dwarahat, for instance) I noticed its arborescent state (*Phoenix sylvestris*), attaining the height of 40 to 50 feet at an elevation of 5000 feet above the sea, surrounded at no great distance by extensive forests of *Pinus longifolia* and *Quercus incana*, the inferior limit of the former tree being about 2000 feet above the sea level.

2. *Harina* (*Wallichia*) *oblongifolia*, a very beautiful Palm, first described by Mr. Griffith, and observed by him in Assam. This I found in abundance in the damp and very warm valleys of the Surjoo and Kalee rivers, near the Nepalese frontier at Burmdeo, and for many miles up the interior, but never ascending higher than 3500 or 4000 feet on the mountain sides, and only where the localities afforded abundance of shade and moisture. To the N.W. of the province it occurred in the Burmouree Pass, and in the valleys below the recently formed station of Nynce Tal; and still further west it just reaches the Patlee Doon, a valley in the S.E. of

\* Advancing to the N.W., however, in the Khybur Pass, and generally in the low, arid, mountainous parts of Eastern Afghanistan and Beloochistan, in latitude 26°—35° N., we find abundance of *Chamerops* *Ritchiana* Griffith, *Maizurree* of the Afghans, a dwarf species seldom above 2–3 feet high, and if not identical with, closely allied to *Ch. humilis*, the only European Palm flourishing in very nearly the same latitudes, and in a very similar climate.



Gurhwal, beyond which a careful examination failed to detect any trace of it. This Palm, the leaves of which bear a great resemblance to those of *Corypha* or *Arenga*, and afford a very durable thatch, forms dense thickets, and never attains the arborescent form.

3. *Chamerops Khasyana* (Griffith), of which a plant raised from seeds sent home in 1847 is before the meeting, was first met with and described by Mr. Griffith, in the Khasya (or Cosseeah) Hills, between the plains of Bengal and the Burhampootra river. As this eminent botanist remarks, it comes very near *Ch. Martiana* of Wallich, a native of Nepal, at 5000 feet elevation; and further researches will, in my opinion, tend to the conclusion that they are, in fact, one and the same species. Mr. Griffith's description, as detailed in the Calcutta "Journal of Natural History" is appended, with a few observations of my own, to justify the opinion which I have formed of their identity. As defined by this botanist, *Chamerops Khasyana* occurs in four localities in Kemaon, besides another (the Dhuj mountain), where I was informed on good native testimony of its presence in considerable quantities. Of these stations, the most remarkable for its elevation and the abundance and perfection of the Palm, is the Thakil mountain, named from it, an enormous mass of magnesian limestone reposing on clay slate, in the eastern extremity of Kemaon, its loftiest summits attaining the elevation of 8221 feet above Calcutta; the base of the mountain, as marked out by the deep gorges of the Surjoo and Kalee rivers, only 1500 feet above the sea, and occupied by a tropical vegetation, cannot be under 60 miles in circuit. The zone of *Pinus longifolia*, which forms vast forests on its declivities, extends vertically from 2000 to about 7000 feet; the summits, for perhaps 400 feet, are denuded of all arboreal vegetation, and exhibit, as usual in the Himalaya, bare tracts of mere rock,\* or meadows of luxuriant Grass (*Rhaphis Roylei*, *Arundinella*, *hirsuta*, &c.), *Ophelia*, *Gentiana*, *Saxifraga*, *Primula*, &c. Below these comes the zone where flourish luxuriant forests of *Quercus incana*, *lanata*, and *floribunda*, *Acer*, *Ilex*, *Pavia*, *Rhododendron*, *Andromeda*, *Symplocos*, *Taxus*, *Berberis*, and other northern forms; amidst these, in damp, shady glens on the north and south-east, but chiefly on the north-west exposure, the *Chamerops* is found in great numbers, forming clumps and rows, the trees rising from 30 to 50 feet high, each with its superb crown of large flabelliform leaves, rattling loudly to the breeze. At 6 feet from the ground the stems are 2 feet in circumference, but become thicker above. The flowers appear in April and May, and the fruit, which is of a dark glossy blue, about half an inch long, ripens in October, and at the period of my visit (March 20, 1847), lay strewn in abundance at the foot of the trees, where large beds of snow remained unmelted, and where rich beds of *Primula denticulata* were in full bloom. The lowest specimens observed were at 6500 feet, but they reached their perfection in numbers and stature at 7800, from which we may fairly infer that had circumstances been favourable, by the addition of some thousand feet to the altitude of the mountain, they would have ascended considerably higher. But in the site actually occupied by them, the mean annual temperature cannot be under that of London, and though the summer be very warm, snow generally covers the ground from November till March. On the ascent of the mountain, *Phoenix* was abundant, both in its dwarf and arboreal forms, at 4000 feet, while *Harina* forms extensive thickets in the river valley at its base.

*Chamerops Khasyana* appears also to occur on Dhuj mountain, a few miles north-east of the Thakil; on the Kalemoudee range between the rivers Ramgunga and Goree; and in the valley of the Surjoo near Bagesur. In the north-west of Kemaon I discovered dwarf specimens in two localities, viz., at the base of the Sutoonga mountain south-east of the Gagur Pass, in very dense forest at 6500 feet elevation; and on the Berchoola, a spur of Bhutkot mountain, considerably further in the interior, and at about 8000 feet elevation. In neither of these stations could I find any examples with stems beyond a foot or two high, and this circumstance, as well as the fact that inquiry and investigation failed to detect any trace of their extension to the north-west, leads me to conclude that these points form the limit of the species in longitude. I must add, however, that, in a paper addressed to Baron von Humboldt, the late Dr. W. Hoffmeister states that in the province of Gurhwal, on the descent from Dhunpoor to the Alacananda river (the main arm of the Ganges), he came upon a forest of *Pinus longifolia* at 6800 feet; "and it is very remarkable that the *Chamerops Martiana* (Wallich) is here in immediate contact with it, some tall stems of that Palm being even scattered in among the Pines" ("Travels in Ceylon and India," English translation, p. 495). But in 1849 I went over this very ground, and, on the most careful scrutiny, no such trees were to be seen or heard of; and it is certain that in his letters written on or near the spot, as well as in the "Synopsis of Vegetation" (pp. 307, 507) for this very route, no Palm is mentioned except *Phoenix humilis*, which I myself also found to be common, and occasionally arborescent; and such I doubt not is what Dr. Hoffmeister really intended. I had the pleasure of meeting him at Simla the same year (1845) that he made his journey, and being then engaged in some researches on the Coniferæ of the Himalaya, and having never then visited Kemaon

and south-east Gurhwal, he very kindly furnished me with some brief memoranda on their occurrence in those districts; and here too I find *Phoenix humilis* alone mentioned in the locality specified. Hence I am justified in considering the stations on Bhutkot and Sutoonga in Kemaon as the most westerly at which *Chamerops* has hitherto been observed.\* A species of *Musa* (Plantain or Banana) is indigenous and abundant at a considerable elevation (7000 feet) in the eastern Himalaya north of Assam, and nearly to the same level in Sikkim. I have observed it only in one spot in Kemaon, the Bylehheena Pass, at about 4000 feet elevation, and was told that it occurred much more abundantly at a short distance, in the valley of the Kalee; but as I had not time to verify the report, it need not be more than thus briefly alluded to.

There is, however, one more genus of the Monocotyledones, and allied to the Palms, worthy of introduction here, from the very great elevation to which it reaches in the Himalaya, and from its affinity and resemblance to the tropical genus *Bambusa*; I allude to the genus *Arundinaria* of the section *Bambuside*, of which at least four very distinct species occur in the Himalaya, and which have been referred to a new genus (*Thamnocalamus*) by my friend Dr. Falconer. They are familiarly known to European residents in the mountains as the "Hill Bamboo," and to the mountaineers of Gurhwal as the "Ringal," altered to "Ningala" in Kemaon. Of these, the lowest species in the vertical section is *Arundinaria falcata*, growing from 3500 to 8500 feet, and, like the rest, forming extensive and close thickets. The second is the *Arundinaria utilis* of Mr. Edgeworth, the Deo Ningala (or Divine Ningala) of the natives, occurring from 7000 to 9000 feet. The third is variously named *Geewassa*, *Purkha*, *Jhoomra*, *Szura* (*Jurboota* in Nepal, where all these species are also found); I am not aware that this is yet described; but its principal difference from the next is that the stems are solitary, not in clumps; it occurs from 7000 to 10,600 feet. The fourth species is the *Tham*, in Nepal *Khaputra*, also undescribed, at least unpublished, which has its zone from 8500 to 11,500 feet; only 500 feet, or less, below the inferior limit of the perpetual ice of the glaciers, and, with the second and third species, occupying nearly the entire zone of all the Coniferous trees of the Himalaya, *Pinus longifolia* excepted, which is below them. The most useful and remarkable of the four is *Arundinaria utilis*, which grows in fine clumps of many slender stems, from 20 to 40 feet high, extremely durable and applied to a great variety of purposes. The plant, like the true *Bambu*, flowers but rarely, and the stems then die and fall. I was fortunate enough to collect considerable quantities of the seed near Pindree in 1846, which has, I believe, produced all the plants living in Great Britain and Ireland: three years afterwards, in a second visit to the Alpine Himalaya, the stems which had fallen and died in that season were still perfectly sound, and I believe that the third and fourth species are nearly if not altogether as durable, but they never attain the stature of the Deo Ningala.

The bearing of the foregoing facts on the phenomena of geology is so obvious as to require little comment; the considerations most pressing on our attention being the necessity of great caution in drawing inferences as to the nature of climate from the presence of supposed tropical forms in ancient rock formations, and the facility with which we can now account for the juxtaposition of those forms with those of known temperate regions.

Here are Palms, *Bambus*, Bananas growing amongst and above Pines, Firs, Cedars, Cyresses, Yews, Oaks, Maples, Hazels, Ash, and almost all the deciduous trees proper to a cold region of the globe. During violent storms and heavy rains it cannot but happen that some of these should be overthrown and buried beneath the huge landslips so prevalent at such crises, and there become fossilised to the perplexity of a succeeding race of geologists! Their difficulties and their errors might easily be enhanced and fortified by the addition of a very possible contingency in the animal kingdom, viz., the presence of the larger carnivora. The leopard is a constant and only too troublesome inhabitant of the Himalaya up at least to 9000 feet, and commits great depredations on the flocks. The tiger, too numerous at the base, and in the hot valleys of the Kemaon and Gurhwal mountains, is, I think, merely an occasional, though by no means very rare, visitor at that altitude in search of the larger deer; I have myself several times seen their foot-prints on the snow, with other marks of their having passed between 8000 and 9000 feet; at which elevation one friend of mine met a tiger in a thicket of Deo Ningala; and another, who was on a shooting excursion, fired at and wounded one up as high as 10,000 feet. Now, it is not at all impossible that one or more of these should perish in a storm and be buried in the same deposit as the Palms and Conifers, &c., and thus render the problem greatly more complicated.

So much for the mountains and the sub-tropical forms which flourish there; but the same result will be equally brought about in the hot plains of India by the

transport of the northern plants through the agency of rivers and torrents. The Khasya hills, where Griffith first met the *Chamerops*, rise like a wall from the flats of Bengal, and in many parts of the Himalaya the exterior range rises in precipices to the height of 6000 to 8000 feet, clothed to the brink with Oak, Ash, Maple, Pine, Cypress, Siberian Crab, &c.; immediately beneath is the vegetation of the tropics. The cliffs are wearing slowly back, and many of these Oaks, &c., must be carried down by their own weight and by the torrents to form the most heterogeneous mass with the *Naucleas*, *Cinchonas*, *Vaticas*, of the Terai Belt.

These reflections are forced on the mind at once in such localities as Nynce Tal Station in Kemaon.

But we may safely extend our view to the lower course and deltas of the three great rivers which ultimately drain the Himalaya—the Indus, the Ganges, and the Burhampootra. Mooltan and Sindh, on the first of these, are in many places covered with groves of *Phoenix dactylifera* and a forked Palm, which I suppose to be *Hyphæne Thebaica*, the Doom Palm of Upper Egypt: Behar on the Ganges, in like manner, abounds in the fine Palm *Borassus flabelliformis*; and in Bengal, *Phoenix sylvestris* and *paludosa*, *Areca Catechu*, and *Cocos nucifera*, often form great woods. Annually, during the floods, the great rivers bring down numbers of the Himalayan Coniferæ, which, were the country uninhabited, would be carried to the sea and deposited with the spoils of the deltas themselves in the new formations which the mud and silt of these great rivers are known to be slowly depositing.\* We should thus be presented with the association of Palms and Pines, the occurrence of which is so well ascertained in the coal-measures and far up into the tertiary series; and even though we were able to demonstrate that these trees were *in situ*, we have still the alternative to dispose of, that to the present day Palms and Pines actually flourish on the same ground, before we can legitimately argue from their juxtaposition any anomalous conditions of the atmosphere, differing greatly from our present experience. The existence of the mammoth in the cold regions of Northern Asia, provided with hair and fur to protect it from the severity of the climate, might *a priori*, warrant a presumption of an analogous fact in the vegetable kingdom, namely, the existence of Palms, or other tropical families, so organised as to enable them to contend with a very low temperature.

This phenomenon now rests on actual observation, and is quite in accordance with facts in other branches of natural history, zoology, ornithology, and conchology, where several familiar instances might be alleged of tropical genera with few, or even solitary species extending far into the arctic and antarctic zones, where their occurrence and discovery immediately and extensively modified, or even reversed, conclusions drawn from the presence in geological formations of cognate forms. And such uncertainty must continue to rest on the result of our researches, till, abandoning the maxim, absurd in science, that "the exception proves the rule," we cease to look too exclusively to genera, and allow to species their proper place and weight in our systems. *Extracted, with a few omissions, from the Annals and Magazine of Natural History for May 1853.*

### Home Correspondence.

*Propagation of the Heliotrope.*—My plan is as follows:—At the end of July I select tops of young shoots, from 3 to 4 inches in length, cut them square, *i. e.* horizontally, at the bottom, close under a leaf, taking a few of the lower leaves away; I then insert them in a mixture of loam, rotten leaf-mould, and a little sand. I do not top them. I generally put from 40 to 50 cuttings in a broad shallow pot, and place them in a cold frame, sprinkling them now and then, to keep them moderately moist, and shading them from the sun; in this way rarely one in 40 fails to grow. When rooted, I pot them off, from four to six in a pot, according to the size of the latter, preferring a certain number in one pot to a multitude of small pots. They are then stopped, and may remain until the following March, when they must be potted off singly, for the decoration of the parterre. *W. Brown, Melrose.*

*Early Melons.*—Two ripe Melons were cut at Ponty Pool Park on the 5th and 9th inst., the one green and the other scarlet fleshed. They weighed respectively 2 lbs. and 4 lbs., and were well flavoured. The same house also contains between 20 and 30 fine fruit swelling off, many of which are larger than the above. They are planted 3 feet from the glass and trained to one stem until they reach the trellis. *A Subscriber, May 10.* [We have only seen two very poor fruit in Covent Garden Market this year as yet.]

*The Weather in Scotland.*—So unsettled has been the weather here (Renfrew) during the last three weeks, that we anticipate our finest Pear-blossom will be much injured, although Apricots and Peaches, on open walls, have set pretty well with us, and are a considerable size. Cherry and Pear-trees are in full flower, and I doubt they will scarcely escape destruction after such nights as we had on Sunday the 8th and Monday the 9th inst. On Sunday evening it snowed pretty freely, intermixed

\* A phenomenon, by the way, which illustrates the prophecy in Micah, li. 12. "Therefore shall Zion for your sake be plowed as a field, and Jerusalem shall become heaps, and the mountain of the house as the high places of the forest."

\* A species of *Chamerops*, called Hemp Palm, has recently been discovered by Mr. Fortune in the northern provinces of China, Chekiang and Kiangnan, where the winters are excessively cold. Plants sent to Kew in 1848 have "braved unharmed, and unprotected by any sort of covering, the severe winter now passed, 1849-1850" (*Bot. Mag.*, March 1850, quoted in proceedings of Bot. Soc., May 13, 1852). If this be *Ch. Martiana*, it proves the great endurance and hardness of that species; if different, it affords an additional corroboration of the line of argument adopted in the text.

\* I can speak from observation as to the number of Pines brought down by the Sutlej; and as long since as the age of Alexander the process must have been the same, for the fleet with which he descended to the mouth of the Indus was constructed of them. There is a regular business in catching the floating trees, and not a very safe one; for such is the impetuosity of the rivers that the men employed are sometimes drawn by the timber (to which they have fixed large hooks) into the current, and are infallibly lost.



with hail, and hard frost set in at night. On going to the garden this morning (Tuesday), I fell in with large pieces of ice nearly half an inch in thickness. Among other things hurt eight days ago, with frost, were flowers of a large *Camellia*, called *Dickinsonii*, which is trained to an open wall, where it receives no protection whatever in winter, and it is always in exuberant health. A few days before the downfall of its blossom, I counted as many as 53 expanded flowers on it. This garden is about eight miles from the sea, and stands 124 feet above the level of the latter. The latitude is 55° 48' N., longitude 4° 37' W. of the meridian of Greenwich. *J. M'Pherson, Castle Semple, May 10.*

*Easter Beurre Pear.*—My father sent to his employer's table, the week before last, several dishes of this Pear in excellent preservation and good in quality. The fruit was the produce of a standard tree, some of the crop of which ripened at intervals from before Christmas last until the above period. Was not the latter unusually late for this variety—especially for the past season? If I remember aright, your columns recorded instances of the premature ripening of the Easter Beurre last season, and I know I received private information to that effect. *J. Taylor, jun., May 7th.*

*Cheep Seeds.*—Like your correspondent "A Gardener" (see p. 278), I, too, purchased packets of *Salpiglossis* seed from the same advertisers which supplied him. The seed from both packets have come up well, and, so far as I can judge of them in a young state, they appear to be true to name; but they have this difference belonging to them, viz., that the 2s. 6d. packet would make about three 1s. packets. *M. C.*

*Pepper.*—This is invaluable for many gardening purposes; as, for instance, for dusting upon young Melon and Cucumber plants to protect them from various insects, dusting on Peas and other young crops to protect them from birds and slugs, &c.; and where gardeners and amateurs are much annoyed by cats scratching, for scaring away the latter. Just try a little of it on puss's nose, and see how she will sneeze. Pepper does not appear to injure plants, and therefore its uses are unlimited. If dusting Mushroom beds with it would keep off woodlice, that alone would be worth hundreds of pounds to the gardening world. I hope that some one will try it for this purpose, and give us the result. I am aware that woodlice will eat any plant, however nauseous; but a good peppering may possibly be too much for them. *James Cuthill, Denmark Hill, Camberwell.*

*Hot-air Heating.*—Most of the apparatus for warming and heating structures by hot air, by water, or by steam, have been either connected with existing chimneys, or where new ones have been made, they have been in the interior of buildings, hence the frequent conflagrations that have resulted from their use. The first hot-air apparatus I happened to have seen for warming manufactories was that of the Messrs. Strutt, at Belper, in the year 1803; it had been constructed with great attention to the means of preventing accidents from fire, and one peculiarity of it was that the whole of the immediate heating apparatus—fire-place, air-chamber, and chimney—was not in the factory itself, but on the outside of it, and nowhere communicating with the interior, except by passing in a pipe, through its walls, air already raised to the desired temperature. A similar precaution might with facility be taken in regard to most heating apparatus by water, steam, or air. No heat need to be lost thereby, since, by surrounding the fire with either water or air to be heated, the whole heat of the fuel might be imparted to either, excepting only that necessary to insure a proper draught in the chimney shaft. For a small apparatus for house warming, the chimney might be carried up against the outside of the house wall at little more cost than is incurred by customary means of connecting the apparatus with some existing flue. Where the establishment is large—Windsor Castle, for example—it would be well worth constructing an apparatus entirely detached from the main pile, as was suggested in some observations relative to a Record Office, in the "Mechanics' Magazine" of July 28, 1849. That there is no difficulty in conveying steam to a distance, was exhibited in the Crystal Palace in 1851; smoke is actually conveyed to a considerable distance in a mansion, not long since erected, where, to get rid of the nuisance of smoke, the whole of it has been carried far away from the house in a subterranean channel. The danger arising from foul chimney shafts has been much increased since the abolition of climbing boys. Not that a shaft cannot be well cleansed by machinery, but because the mode usual in the metropolis is injudicious; the inflexible wooden poles in use frequently damage the brickwork of the chimney, inasmuch that in one recent instance, in sweeping the kitchen chimney, a brick was forced out from a dividing partition in the shaft, and in consequence kitchen smoke poured into the drawing room from behind the skirting board. The Russian mode of sweeping chimneys, said to be used in Edinburgh also, seems far preferable to the London practice. At St. Petersburg, a circular brush is attached to a very flexible cord, and immediately below the brush a globular iron ball; the sweeper ascends to the roof of the house, and, in the shaft to be cleansed, inserts the iron ball; its weight carries down the brush, sweeping away the soot. Where this is not at first satisfactorily accomplished, the apparatus is drawn up again, then let fall a second or a third time, till the business is effected. The flexibility of the rope admits of the passage of the apparatus through elbowed flues, and the weight being a globe, has no angles to injure brickwork. This mode has been tried here for two

successive years with complete success, although the apparatus used was of the usual kind, but inserted at the top instead of the bottom of the chimney, and the register having been shut down, no soot came into the room. In the above-mentioned factory at Belper, the internal pipes for conveying heated air were double, the one pipe being of iron, the other of earthenware. Each floor of the factory was provided with a simple self-acting valve for opening or closing more or less the hot-air aperture, thereby regulating the heat of the atmosphere within the room, so as to keep it always of the desired temperature; moreover, this was a considerable safeguard against conflagration, for, supposing the heat in any part of the factory to rise materially, the valves would close both the apertures for the exit of air from the air chambers, and that for the entrance of the outward air to the fire, and thus extinguish it. *B.*

*Popular Errors.*—Permit me to direct attention to a case of superstition which lately came under my notice, and which intimately concerns gardeners.—A near neighbour of mine, a "jobbing gardener," took upon himself to remove some Parsley-plants, to a more convenient part of a garden which he was dressing; after that, the proprietors of the garden had some illness amongst their cattle; a horse, a calf and a pet lamb died, but luckily the veterinary surgeon (so called), happened to look over the garden hedge, and immediately saw (as he said) the cause of all the evil (the transplanted Parsley). He declared to the lady that he would not have a root of Parsley transplanted in his garden for 50*l.* The consequence was, that when the gardener entered the garden again, he found the Parsley gone, and himself threatened that if ever he did such a thing again, he should lose his place of work instantly. Could it be believed, that a man 40 years of age, and who sets himself up as a veterinary surgeon, should not know better? After a *post mortem* examination, he gave it as his opinion that the horse died from a disease on the brain, caused by a blow on the head. As I know gardeners generally are not aware of the evil effects of transplanting Parsley, I have thus thought it well to put them on their guard! I will not offend you by asking your opinion on the matter. *J. W., Birmingham.*

*Cedar of Lebanon* (see p. 263).—I cannot give you any information as to the value of the wood of this Cedar; but, regarded as an ornamental tree, Mr. Kemp has not done more than justice to it in his interesting observations, at p. 165. About the year 1823, my father planted, on the then forming lawn here, several plants of it; they were of the usual nursery size. Three of them, and those not in all respects the largest, now measure as follows:—

No.	Height.	Through branches.	Girth of stem at 3 feet from ground.
1	40 feet	38 feet	6 feet.
2	30 "	36 "	6 " 6 inches.
3	40 "	34 "	5 " 8 "

These trees have enjoyed no unusual advantages; they are in an open situation, and exposed to the prevailing winds; but, on the other hand, a great deal of the ground around them has been "made," and they are well placed as to drainage, owing to the contiguity of a "Ha-ha," or sunken fence: the soil in which they grow is of a strong character. It is interesting to observe the variation in habit of this Cedar; hardly one of the trees here but has peculiarities of its own in this respect. No. 2 is beautifully dependent, its branches weeping to the ground. I would mention that we have a Deodar, now about 15 feet high, that greatly resembles the Cedar of Lebanon, both as to colour and general rigidity of habit, but on closer inspection you find the pliable shoots, and other characteristics of the Deodar. *J. Taylor, jun., Oakley, Beds.*

*Softening Dried Skins.*—I did not intend to pursue this subject beyond a mere outline; but the courteous interrogatories of Mr. Doubleday (who, I feel, greatly overrates my supposed acquirements in ornithology) ought not to be passed over without an answer. I hasten, then, to observe, that water cannot possibly injure the plumage of birds, be it that of the owl or that of the humming bird. Steep the most delicate and downy feather of any bird in the creation (for months if you choose) in water, and it will come out the better for it, verifying the old saying of the poet, "merces profundo? pulchrior evenit." Oil, on the contrary, or any greasy substance whatever, must do harm; harm that it is nearly impossible to remove. Hence, to affirm that a bird lubricates its feathers with the contents of an oil gland, is a rash and untenable proposition. I can conceive that the plan used by the late much-lamented Mr. Loddiges may do for the rudiments of taxidermy; but it will be deficient when applied to the higher operations of this art, which hobbles on very lamely in the march of modern improvement. *Charles Waterton, Walton Hall.*

*Winter Vegetables and Salads.*—Every gardener who has called upon me of late has expressed much pleasure at the Council of the Horticultural Society having at last perceived the necessity of encouraging winter vegetables and salads; and I have no doubt you will see the Society's tables crowded with tender and choice things next winter. Gardeners who can grow the finest specimen plants, by a little application can also grow the finest vegetables and salads. Perhaps you may have forgotten that I showed a Scarlet Runner 10 feet high, with plenty of flowers and Beans upon it, in May 1834, when with Laurence Sullivan, Esq., at Fulham; and by digging up the roots, saving them in damp mould, and again planting them in large pots, those fine Beans

might as well be produced plentifully all the winter, and perhaps with much less difficulty than the dwarf Bean. Let gentlemen only give full scope to their gardeners, and you will soon see the Paris growers beaten, as has long ago been done in the case of flowers; but, possibly, there are still gentlemen who do not care about encouraging these fine things. I will just instance a case which happened to myself once. I carried off 14 prizes at a provincial show, and was coolly told the next morning by my employer that he would not allow me in future to take more than two prizes, one for vegetables, and the other for flowers. No gardener wishes to be behind his neighbour in producing good things. I lived in another place, where I was allowed a barrow of dung to every 10 square yards of ground; of course I was obliged to steal the rest, or what sort of vegetables could I have produced? And the best of it is that those very stingy gentlemen are the most particular in having good things, and expect them to be produced like magic. The London market-gardeners now produce the very finest early vegetables that are to be found anywhere. Lettuce is an exception; they have not as yet attempted to grow them as fine as the Paris growers. In that case they would at least require 6*d.* first-hand, and as Londoners are a beef-eating people, they consume fewer vegetables than the Parisians, who are great vegetarians. The question then is, how are fine Lettuces, &c., to be produced cheap enough? The great glass manufactories have not yet shown us bell-glasses or cloches, such as I saw in Regent Street at 6*d.* or 7*d.* apiece. There is another consideration too; where are gentlemen's gardeners to get seeds of things true? Remember, those things that have been imported from Paris, are grown by little market-men, who only save a little true seed for their own use, that is a point we cannot well get over. If that is once overcome, then I venture to predict that the English gardener will as far surpass the foreigner in tender winter things, as he has done in other departments of gardening. The time will soon be here when Chicory should be sown. Don't let that be forgotten; because if an English gentleman likes it as a salad in France, why not in England? Plenty of cheap glass erections, with hot water pipes, big pots and plenty of rich mould, will effect wonders in this country yet. The site for vegetable forcing grounds might be in an out-of-the-way part of the garden; and on that account the constructions might be made up in a cheap and rough scale. Why not grow fine Cauliflowers in pots? all the world knows that the finest crops of early Potatoes are always produced in pots with plenty of air and heat. A Lettuce house ought to be low and very airy, with the command of a little heat. Closely shut up and badly ventilated places will not do at all; it is better never to attempt the growth of a thing than to do so without proper means. Peas and French Beans, if you can get them to grow, are best from two-year-old seed, which does not push so luxuriantly, and the plants come much sooner into bearing; and an old Potato kept over summer and planted in autumn would be ready by Christmas. After that force them in pots, not in the loose ground in a frame at all. *James Cuthill, Camberwell.*

*Effects of the late Winter.*—The following is the way in which a few of our plants out of doors have fared here:—*Benthamia fragifera*, much injured; *Buxus balearica* and *Cistus formosus*, unhurt; *Clematis azurea grandiflora*, on an east wall, unhurt; *Erica australis*, a little injured; *E. mediterranea*, the same; *Forsythia viridissima*, unharmed; *Garrya elliptica*, points of shoots killed; *Ilex balearica*, unhurt; *Jasminum nudiflorum*, against a wall, uninjured; *Jasminum revolutum*, on east wall, much hurt; *Ligustrum lucidum* and *Berberis fascicularis*, untouched; *Photinia serrulata*, much injured; *Quercus suber*, the same; *Spirea japonica* and *Thea viridis*, uninjured; *Vaccinium myrsinites*, much hurt; *Cupressus torulosa*, rather browned. Of herbaceous plants:—*\*Alstroemeria*, *Van Houtte's*, not at all harmed; *Dielytra spectabilis*, more than two feet high, and covered with flower, quite uninjured; *Epimedium colchicum*, *E. macranthum*, *E. muschianum*, and *E. grandiflorum*, all unhurt; *Jasione perennis*, the same; *(Eranthis speciosa)*, killed, but it was a moved plant; *Pentstemon McEweni*, unhurt; *\*Platycodon grandiflorus* and *Silene Schafta*, uninjured; *Statice pseudo-armeria*, very much damaged, except on a dry bank; *\*Statice speciosa*, unhurt; *Veronica Lindleyana*, much injured, but not killed; *\*Lilium speciosum* and *\*L. testaceum*, unhurt. These two last are coming up very strongly indeed. And lastly, permit me to add that *Calandrinia umbellata*, in a peat bed, is quite unhurt. Those marked thus \* are grown in a peat bed. While writing, I should be glad to know whether this is a common case; last year I had a plant of *Lilium testaceum*, which formed a number of bulbs at the crown instead of flowers. These I left till they became brown, and planted them at once in peat; they have all come up and are doing well. I should have added that on the night of Good Friday my register thermometer, in an exposed situation, 18 inches from the ground, marked 7°, or 25° of frost. *A. R., Bromley, Kent.*

## Societies.

ENTOMOLOGICAL, May 2.—J. O. WESTWOOD, Esq., V.P., in the chair. Donations of books presented to the library by the Royal Academy of Belgium, the Berwickshire Naturalist's Club, Messrs. Lacordaire, De Saussure, &c., were announced. The chairman



stated, in reply to some inquiries which had been made as to the precise species of scale insect selected as the subject of the next prize essay, which had been announced under the name of the muscle scale, that it is *Coccus conciliiformis*, the species extremely abundant in the neighbourhood of London, and probably also all over the kingdom, which, in the full grown state of the female, appears on the stems and shoots of the Apple, in the shape of a minute muscle shell; and that it is required that the prize essay should also contain the most approved practicable remedies for its destruction. Mr. H. Doubleday exhibited a drawing of an extraordinary variety of *Polyommatus Alexis*, and Mr. F. Bond a specimen of a new species of *Psyche*, allied to *P. radiella*, being the *Ps. margine-nigrella* of Brund, taken in the north of England. Mr. Edwin Shepherd exhibited a singular variety of *Melitea Euphrosyne*, and specimens of the very rare *Aleucis pictaria* from Dartford Fence, and a *Fidonia atomaria* from the neighbourhood of Worcester, with entirely brown wings. Mr. Wilkinson exhibited specimens illustrating the remarkable economy of *Lithocolletes Nicellii* and *Elachista albifrontella*. The larva of the latter species cuts oval pieces of leaves, which it attaches together in pairs, residing between the opposed surfaces. Mr. Stevens exhibited specimens of two fine species of Goliath beetles from Port Natal, and the chairman announced the capture, by Mr. Weaver, in Scotland, of *Elater tristis*, and *Boleophagus crenatus*, two beetles, new to the British fauna. A note was read on the employment of chloroform as a very effectual and rapid means of killing insects for the cabinet. Sulphuric ether had also proved effectual, and Mr. Dutton stated that he had found prussic acid equally so, a single drop being sufficient to kill 50 insects. The chairman mentioned the discovery of *Niphargus stygius*, of Schiodte, a blind shrimp hitherto found only in the caves of Carniola, in a well near Maidenhead. He had also, in examining some specimens of *Pe-la* in a crude state, communicated to him by Mr. Daniel Hanbury, discovered specimens of the males of the *Coccus sinensis*, and also not less than three species of *Encyrtus*, one of great beauty, which are parasitic on the *Coccus*. A notice by Count Nicelli on the genus *Lithocolletes* was read, communicated by Mr. Stainton. A note was also read by Mr. Spence, on the inroads made by the *Termes lucifugus* in the sea-port towns of France. A copy of Mr. Stainton's catalogue of the *Bibliotheca Stephensiana* was also distributed to the members.

### Garden Memoranda.

MAWBEY HOUSE, SOUTH LAMBETH, THE RESIDENCE OF J. THORNE, ESQ.—This is one of those neat suburban villas which have long been plentiful near London, and which form agreeable retreats to our wealthy citizens after the more active labours of the day are over. Facing the entrance gate to Mr. Thorne's house is a large oval clump of the finer kinds of *Rhododendrons* and hardy *Azaleas*, both of which promise to bloom profusely this year, with the exception of a hybrid very closely related to *R. arboreum*, which, instead of forming flower buds, has run to wood. Some seasons, however, this sort has bloomed freely. Behind or on the west side of the house is a neat little lawn, about half an acre in extent, bounded on the right by a piece of wall covered with ornamental plants, a greenhouse, and a stove; and on the left by a wall, which, about two years ago, was fronted with glass, in the shape of a lean-to house, about nine feet in width, and 105 feet in length. This is filled with purple and scarlet *Rhododendrons*, *Camellias*, *Orange trees*, and other plants that succeed best in a greenhouse temperature; for, although it is furnished with excellent hot-water pipes, they are employed only to keep out frost. This house is kept gay with flowering plants all the year round, and when the *Orange trees* are in blossom, the air is quite loaded with their fragrance, so that at all times and during all kinds of weather it forms a delightful promenade. A week or two ago we remarked here a very fine specimen of *Camellia tricolor*; it was at least eight feet high, proportionately bushy, and literally loaded with elegantly striped semi-double flowers. *Fuchsias* bloom well on this wall, as do also *Morello Cherries* (one or two of which have been allowed to remain); but the latter do not set their fruit so well as when they were on the open wall. What fruit does set, however, is larger and finer than when the trees were wont to be exposed. Against the small piece of open wall on the other side of the lawn is a good plant of the *Exmouth Magnolia*, which is one of the finest of this noble genus, and examples of *Escalonia macrantha* and *Ceanothus dentatus*. Of the latter two plants it must be mentioned, however, that the *Ceanothus* has been killed by the late severe weather, while the *Escalonia* is entirely uninjured. The greenhouse above alluded to is at present gay with *Cinerarias*, *Azaleas*, *Pelargoniums*, and plants of that kind. Among the *Pelargoniums* were *Rollison's Unique*, and what is called *Lilac Unique*, both distinct kinds, and very useful for cutting from; their neat, compact clusters of flowers being very effective in bouquets. We also noticed some well cultivated specimens of *Cape Heath* and other hard-wooded plants. In the stove, which is furnished with a tan pit, were a great many excellent *Dipladenias*, *Ixoras*, *Gardenias*, and other shrubs, together with some *Amarylids* and *Gloxinias* in bloom. Mr. Hamp, the gardener, is very successful in the growth of *Amarylids*, and he raises great quantities of them from seed, which he sows immediately it is ripe, in pans, in a little sandy loam and leaf mould, and

pushes it on in a little heat. In this way he gets plenty of nice blooming plants, and he has also a chance of obtaining something good in the way of hybrids. The *Cavendish Musa* has several times fruited well in this stove; but last year the heart of the plant became decayed, through water lodging in it, an evil to be guarded against by cultivators, who may wish to grow this useful Plantain, and who have no other accommodation for it than a mixed stove. On the west of the ornamental ground is a small park containing a few deer, and in one corner of it some common and ornamental poultry, the whole being surrounded by a shady walk; and on the south side are the kitchen garden, Graperies, Pineries, and forcing pits. In the kitchen garden there is at present a fine show of blossom, both on *Pears* and *Plums*; but owing to the situation being low and very damp, the best blooms are generally cut off by spring frosts. Apples do better, because they flower later. *Marie Louise*, *Beurré Rance*, and other good sorts of *Pears*, in the shape of standards, look, however, as if they would fruit well this year, their blossoms being as yet perfectly safe. Bush fruit promises to be abundant. Cabbages, like those in most town gardens, get long in the leg, and *Strawberries* run greatly to leaf; but this fault is found to be considerably diminished by obtaining loam from a distance and mixing it with the light soil of the garden. Indeed, both vegetables and fruit are reported to succeed better with this addition than with dung, which is exchanged for the loam. Mr. Hamp used to cultivate *Apios tuberosa* here as an esculent; but he has now given it up. He could not get the tubers large enough in one year to be worth attention, and those of two seasons' growth were too hard to be useful. It is, however, a good ornamental plant. In the earliest *Vinery* *Grapes* have been ripe some time. The bunches are well coloured, but small, which is owing to the *Vines* being very old; we understand that they are to be destroyed as soon as they have done fruiting, and new ones planted in their room. A house of *Vines* planted two years ago made rods last season 14 feet in length, and promises to bear a good crop this year. In order to have an abundance of *Grapes*, however, and, at the same time, not to overload the young *Vines*, Mr. Hamp has here and there introduced pot *Vines*, the shoots from which are trained up the rafters, and are showing well. This *Vinery* is intended to yield ripe fruit during the last three months of the year. In the tan pit, in the centre of the house, are *French Beans*, planted in *Seakale* pots, which are thus made to answer two purposes in the same season. In the *Pineries* the plants are clean and strong, and some of them are throwing up fine fruit; but this is not general, owing to their having been planted out before they began to "show." The succession plants are in pots, and look very promising; indeed, Mr. Hamp is well known to be a good *Grape* and *Pine* grower, having been fortunate enough to carry off first prizes on several occasions for these fruits, at the great shows at Chiswick. *Cucumbers* have just been removed from the *Cucumber house*, and *Bromham Hall* and *Trentham Hybrid Melons* planted in their place, to be trained on trellises as the *Cucumbers* have been. These again will be succeeded by *Cucumbers* in autumn, which will be "in cut" all the winter. *Strawberries* in pits are bearing and flowering freely; they are wintered in heaps on their sides among coal ashes, and are introduced to the forcing pits in succession as they are wanted.

### FLORICULTURE.

THE POLYANTHUS.—Dr. Horner's excellent instructions respecting the culture of this flower, in the "Florist" for 1848, induced me to try it in my little suburban garden; and although I am not entirely out of the reach of the smoke of our great metropolis, yet I have succeeded with it even beyond my expectation. Dr. H. says:—"Amongst the whole range of florists' flowers, not one is of more easy cultivation than the *Polyanthus*; and yet I know that I rightly tell the experience of the majority of florists when I say, that with no flower have they generally been so unsuccessful. The great fault lies in the fruitless attempt to grow it in pots. It is not difficult to account for its impatience of pot culture, which is perhaps referable to several causes. Thus, when so circumstanced, it is subjected to a lack of that degree of moisture so acceptable to it; which may arise from inattention to watering, lightness of soil, or drying of the pots. It may in part depend on the cramping of its roots; for the *Polyanthus* grown in the open border is most prolific of long, thick, fleshy, fibrous roots. But chiefly, I conceive, it is dependent on the confinement within the cold frame, and which no attention to airing can obviate; inducing a paleness and softness in the leaves and flower-stem, strongly contrasting with the firm, crisp, yet succulent and luxuriant green foliage of those which are grown in the open bed. The only sure guidance in the artificial cultivation of a plant is the observance of its natural condition and habitat. And where grows the *Primrose*, in its wild luxuriance, but in the shaded lane or woodland? And though it is sometimes seen to adorn in the spring the sunny bank of a hedgerow, yet, ere the summer's sun can visit it, even there it will be found that *Flora* has kindly sheltered her favourite amid the shadowing growth of others of her train. The *Polyanthus*, then, should always be grown in a cool bed, or open border, which has an eastern aspect, or which is otherwise wholly shaded from the summer's sun, for it is most impatient of heat and drought,

and, it may be added, of confinement and smoke also; and hence it can never be well grown in the immediate vicinity of large towns. Good and retentive sod soil from an old pasture—of this four parts, enriched with one other part of old cow manure, and two of decaying leaves or rough vegetable mould, afford it the most acceptable medium of growth. Though the leaf-mould is not wholly necessary, yet it will ever be found, both in respect to the *Auricula* and the *Polyanthus*, that wherever there occurs in the soil a little mass of decaying leaves and sticks, there the roots will be most numerous and vigorous. Such practical hints or natural tendencies the observant florist ever treasures up; and it is by their observation and application that he becomes a more successful cultivator than his fellows." Now the above advice is admirable for persons who, like Dr. Horner, may probably have a garden possessing any situation they may think proper to choose for their favourites; but I am confined to a small rectangular slip, bounded by low walls, and therefore I have to suit my practice to my position. I am ever anxious to have the greatest display I possibly can in all my borders, be they shady or not, in early spring, and therefore, as *Polyanthuses* are well adapted for my purpose, I plant them plentifully all round my garden in autumn, after my bedding plants are removed; they stand there all the winter, requiring no protection, and in spring they come into bloom beautifully. This season they have been, and are still, quite the admiration of all who have seen them. As soon as they have done blooming I move them to a shady corner, where I keep them all the summer, and by autumn they are in good condition for transplanting again into the open borders. Such, then, is the treatment I give this my favourite spring flower. If required for the purpose of exhibition or for ornamenting a cool airy greenhouse, or even a cold frame, they may readily be taken up with a ball of earth without injury, and potted, being at the same time liberally supplied with water. When no longer required for such purposes, they must be returned to their summer quarters. J. D.

CATALOGUES received from Mr. Wm. Hamilton, Cheapside London; and from Messrs. E. G. Henderson, Wellington Road Nursery, St. John's Wood.

CINERARIAS: *W. Winfield*. A classification of these could as readily be made as one of *Hollyhocks*, *Dahlias*, *Tulips*, *Pansies*, &c., and we admit the utility of such a step, simplifying, as it would, the selection of a dozen distinct and dissimilar sorts. The hint shall not be thrown away.

FUCHSIAS: *Enquirer*. *Glory* (Banks) is of the dark-wooded class, and needs the kind of treatment recommended at p. 279 for that division. *England's Glory*, and *Duchess of Lancaster*, are light flowers, the former with scarlet, the latter with purple corollas; *Incomparable* belongs to the latter class, but we have not yet seen it.

### SEEDLING FLOWERS.

AZALEAS: *H. T.* 2 and 4, white self, very much withered; 1, dull red self, ditto; 3, slightly tinged purplish carmine on bluish ground; 5, beautifully and regularly flamed rose-pink on white ground; by far the most interesting of your batch. We should like to see it again.

CINERARIAS: *X. Y. Z.* A bold and striking flower, but of no value for purposes of exhibition; reflexed petals cannot be tolerated now-a-days.—*W. R.* & *S.* Very large indeed, measuring fully 14 inch in diameter; otherwise of no value.

CALCEOLARIAS: *G. T.* 1, deep yellow ground, strikingly blotched with deep crimson brown; small; mouth too large for the size of the flower, smooth, and tolerably globular. 2, paler ground colour than 1, and with fewer markings, of similar colour; nothing new. 3, creamy ground regularly spotted with small crimson blotches; in form a shallow oval. 4, good in outline; small. 5, clear uniform yellow, with one dense blotch of deep crimson about one-third the size of the flower; desirable. 6, a repetition of 2, but smaller. 7, primrose ground, except the shade of the small dottings; no novelty. 8, blotches of the richest crimson, boldly blended on a rich yellow ground.—*Z.* All of the yellow ground and crimson spot class, and possessing no novelty.

EPHEDRUM: *D. D. W.* Your seedling appears to be smaller than *E. speciosum*, but better coloured, and altogether very handsome.

GLOXINIAS: *J. H.* A very nice variety, and well worth preserving.

### Miscellaneous.

Spot on the *Pelargonium*.—That what is called "spot" exists more or less every year cannot be denied, and generally from August to January. To many this has been one of the most mysterious things connected with the cultivation of this popular flower, and has been handled both by growers and writers with some timidity, some attributing the cause to one thing and some to another; but as far as my experience has gone, the matter has been settled in my own mind long ago. My belief is that the sole cause of spot is too much wet received by the plants just before and after they are cut down. How often are plants cut down while in a perfectly sodden state! This may be regarded as the first step to spot, and such a practice should always be avoided. A little consideration will prove this system to be perfectly wrong; for when plants are cut down in a wet state they bleed, and in many instances I have known them bleed to death. The *Pelargonium* cannot be too dry when it is cut down, and as the plants advance in growth the moisture may be increased. Another precursor of spot is, that in many places the plants are allowed to stand out of doors exposed to all weathers, &c., after they are cut down, which is very injurious to their constitution; and when they are watered every plant receives some, whether it requires it or not, and this is often done with a large, rosed watering-pot. Such a course I very much disapprove of, and those who follow it can expect nothing less than the spot for their pains; besides, after the plants are watered at night, a storm may perchance "blow up," and still they are unprotected, the plant that has had too much water already still receiving



more. I have no doubt that many of your readers, as well as myself, have seen the pots full of water two or three days after rain. Is not this, I would ask, injurious to the constitution of the plant? A dirty, broken frame is equally objectionable, and I believe it helps to bring about spot; but if the frame is clean, the lights washed, and the glass mended, it is very serviceable till September; nevertheless the plants should have abundance of air, the lights only being on during damp weather, and at night air should be given by tilting the lights at the back. The plants should also stand on some hard level bottom, for too much care cannot be bestowed on them for some time after they are cut down. It is very discouraging to a gardener to see his plants in such a state as the spot brings them to, after, as he thinks, he has done all he could to prevent it. The plants require to be constantly gone over and the spotted leaves removed, and other extra trouble taken, which, if commenced well at the proper time, could have been saved. In my opinion, the preparation of the soil is one of the most essential things; but of this I shall treat at length at some future time. To the above remarks I would add, that my mode of management, as regards cutting down, &c., will, if carried out, I am sure, be a preventive to this disease. The treatment will answer for any locality. By July, many of the varieties will have done flowering. Give them all the sun and air you possibly can, in order to ripen the wood and prepare them for cutting down, previous to which let them become perfectly dry, then cut them slanting to the eye, leaving three or four eyes to break from. The wound will soon heal over; but if inclined to bleed a little, unslacked lime put on will soon stop it. When healed, they may be placed in a frame prepared as I have directed above, and a little water may be given—just enough to damp the soil. Keep the frame close for a few days, to induce them to break vigorously; but as soon as the eyes are fairly broken, air must be given. When sufficiently broken, they may be shaken out and disrooted, using a sharp knife, and cutting off all straggling roots. Re-pot them into soil previously prepared as follows:—One barrowful of turfy loam, four shovelfuls of rotten cow-dung (the older the better), and an 8-inch pottful of silver-sand. This compost should be well chopped over with a trowel, not sifted. If the plants were previously in 8-inch pots, put them into 6-inch ones, using an inch or two of drainage, which should be crocks broken into pieces about the size of a small Bean. When potted, water with a fine-robed watering-pot; place them in a frame as before directed, and keep them close till the plants have become established, just damping them overhead two or three times a week. As soon as they have sufficiently recovered from the shift, air must be abundantly given night and day, sheltering from heavy rains, and keeping them clean from green-fly. The plants should be housed by the middle of September. The house should be thoroughly cleaned down, and the glass and stages, floor, &c., well washed. The plants may then be placed the distance apart which is allowed them to bloom in; they will require but little water to keep them in good health; watch for green-fly, and fumigate the moment it is perceived. The above is exactly the kind of treatment my plants have received; and I never remember seeing them finer than they are now. I cannot close these remarks without saying that those who think the spot is confined to certain varieties are not much acquainted with the disease; it attacks all sorts, more or less, under the same treatment, from Sylph, Matilda, Album multiflorum, &c., which are some of the oldest varieties in cultivation, down to Rosamond, Emily, and many others, both older and newer. If, as I before observed, the plants are exposed to wet, cold winds, &c., after they are cut down, the spot will overtake any variety; but I admit that some sorts are more affected than others. To those who have the spot, I would recommend the house to be kept dry, and the temperature about 45° giving air at all favourable opportunities. J. Dobson, in *Turner's Florist*.

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

We have before observed that where any considerable number of plants is grown there can be nothing like a set time for repotting them, as in this the period in which any particular class of plants are wished to be in bloom, and the purpose for which they is intended, must be kept in view. It is, however, most likely that many stove and soft-wooded plants will now require a shift to grow them on, in addition. Plants intended for blooming next autumn and winter, and which have been mostly propagated this present spring, should now be potted off, or pinch back any straggling shoots to form them into compact plants, and after keeping them close for a week or 10 days to encourage them to make fresh roots, gradually allow them more air and light until they will bear a free exposure to both. As stove plants advance allow them plenty of room, particularly to plants whose foliage constitutes an important item in their appearance. The syringe must be in constant use to keep down insects, assisted by fumigating, where thrips are likely to get established. The white and brown scale are best kept under by carefully hand washing the infected plants with a strong lather of brown soap and water. Soft brushes or pieces of sponge should only be used for this purpose, that no injury may be done to the leaves. Achimenes should now be placed where more air can be given; stake out neatly as the shoots advance. Gloxinias, like the

above, require a partially shaded situation and moist heat. Gesneras may be treated in the same way, with the addition of more light. Amaryllis, &c., should be removed to the conservatory or show-house for blooming, where they are a great acquisition. Mark any very striking varieties for seeding; after blooming plunge them in a little bottom heat in a frame near the glass, to perfect their growth. Fires to the stoves and Orchid house will still be necessary.

#### FORCING DEPARTMENT.

VINERY.—Remove any fermenting material which may have been left on the borders of the early houses; as the warmth of the covering will most likely have drawn the roots to the surface, a dressing of decayed turf or rotten dung should be spread over the surface of the border, to preserve them; after the Grapes in the early house are cut, great attention should be paid to preserve the foliage healthy for the next three months; the engine should be frequently applied to keep down red spider, which the dry air of the house during the ripening of the Grapes will perhaps have encouraged. As the success of next season's crop will mainly depend on this after treatment, on no account neglect the above precautions. If the present foliage is unhealthy, or the Vines are weakly, a partial fresh growth may be permitted to furnish healthy leaves, but this growth should be stopped when three or four joints are formed; if, on the contrary, the existing leaves are healthy, it will be better to preserve them than to encourage a fresh growth to any extent; this treatment will enable the Vines to increase their roots, and form the necessary secretions for next season's crop. Abundance of air and light are indispensable auxiliaries. Keep a drier air to houses containing Grapes ripe or ripening, and admit air liberally.—Melons now swelling will require a moderate amount of water; if the plants are growing in mere loam, liquid manure should be given; be particular that the bottom heat is maintained at a steady point, a deficiency or excess of heat at this stage would most materially interfere with the swelling of the fruit. To preserve the soil in a medium state of dryness, to save frequent waterings, the surface of the bed may be covered with common flat tiles, or broken brick-bats; this will be found a useful plan for dung-frames or low pits, as the fruit and foliage are kept free from contact with the damp earth. Great attention should be paid to preserve the principal leaves from injury. The fruit of plants growing on trellises should be placed on a thin piece of board suspended under the plants. After the fruit is three parts swelled, a fresh growth may be permitted, if the plants are intended to produce a second crop. Cucumbers, like the above, require almost daily attention to grow them through the summer; they will require a moderate amount of bottom-heat, but should be shaded from the direct action of the sun; without shade the foliage is apt to get unhealthy, through excessive exhalation, and the fruit becomes bitter in consequence.

#### FLOWER GARDEN AND SHRUBBERY.

In this department the next few weeks will be devoted to filling up the flower garden beds and clumps, intended for the summer and autumn display; and now a change has taken place in the weather, every exertion should be made to get the planting out completed with all possible dispatch; and premising the plants intended for each bed have been previously determined, and hardened off, no great difficulty will be met with in filling up the beds. Some allowance must, however, be made in regard to the time when it is wished to have the principal display of flowers; if early, the plants will require planting thicker, and need not be stopped. And if not before a later period in the summer, somewhat thinner; and the flower-buds should be pinched off as they appear, till the plants have filled the beds. There are two objects principally held in view in arranging the planting of parterres and flower gardens; one is to produce a striking effect by employing plants only of a decided colour, principally red, blue, and yellow, using white for separating the different divisions. When the colours are well contrasted, this plan is very effective, particularly when viewed from a distance, and is well adapted for situations where the beds are not numerous, and where there is a considerable breadth of either Grass or gravel to overpower; yet a repetition of the same thing, however brilliant, is seldom so pleasing on a close examination as where variety both in form and colour has been called in, and where the gradations into which the primary colours run have been arranged in accordance with the rules governing their distribution. There is now no lack of colours to effect this, as nearly every class of bedding-out plants presents sufficient variety for the purpose. In single beds or in the mixed flower garden, a deal may be accomplished in this way, by using a decided colour for the centre, and surrounding it with plants of the same kind, but of less intense colour, which should gradually diminish from the centre as a point to the sides. This, with well contrasted edgings, particularly for the larger beds, will be found more generally pleasing than where masses of one colour are only employed. Select a shady border, and give it a good dressing of rotten dung, or leaf soil, slightly forked in, for planting with the runners of the different kinds of Violets for forcing; the Neapolitan is the best for frames or pots, and the runners will now be found in proper state for removing; plant them 8 or 10 inches apart; water them abundantly in dry weather, and pinch off the runners as they appear; if the soil is rich and open, they will grow into stout bushy plants by the autumn, and may then either be potted or planted into pits for forcing.

#### HARDY FRUIT GARDEN.

The disbudding of Apricots, Peaches, &c., should be followed up at intervals, that no unnecessary check may be given to the trees by the removal of a large number of buds and shoots at one time. With young and vigorous trees three or four weeks may elapse before the final thinning out, which in that case may be done at five or six times, which will prevent the mischief we have pointed out above, as well as better equalise the growth of the year's wood. In cold exposed situations, instead of entirely removing each useless shoot, pinch them back to one or two eyes; these will form short spurs during the summer, and prove useful in contributing towards next season's crop, as the flowers produced on these spurs generally set better than on the young wood usually left. Various kinds of aphides will now make their appearance, which should be kept in check by syringing the infested trees with weak tobacco water; our own plan is to mix the above with common soap-suds, and to add flowers of sulphur. The suds cause the mixture to adhere to the young foliage and shoots, and the sulphur being added will be found a great preventive from the attacks of red spider.

#### KITCHEN GARDEN.

Ground should now be got in readiness for planting out the early crops of Celery. Trenches 3 feet apart, and 18 inches deep by the same width, should be thrown out, into the bottom of which dig in some well rotten manure; this will bring the bottom of the trench to within 6 or 8 inches of the surface. The dung and soil should be well mixed before putting out the plants. To grow Celery of an extra size, a wider space between the rows is requisite; but the above will be sufficient for moderate-sized heads. Well harden off the plants before transferring them to the trenches.

#### STATE OF THE WEATHER NEAR LONDON.

For the week ending May 12, 1853, as observed at the Horticultural Gardens, Chiswick.

May.	Moon's Age.	TEMPERATURE.										Wind.	Rain.
		BAROMETR.		Of the Air.			Of the Earth						
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.					
Friday..	6.28	29.94	29.57	50	35	42.5	49.4	48.3	N.E.	.00			
Saturday	7.29	29.69	29.50	42	28	35.0	48.9	47	N.	.02			
Sunday	8.30	29.65	29.50	53	29	41.0	46.6	46	N.W.	.02			
Monday	9.1	29.40	29.40	52	36	44.0	46	45	S.	.24			
Tuesday	10.2	30.029	29.77	56	27	41.5	47	45.4	N.W.	.02			
Wednes.	11.3	30.078	29.068	56	31	43.5	47	45.4	N.E.	.13			
Thursday	12.4	29.958	29.23	57	42	49.5	47	45.3	E.	.00			
Average ..		29.836	29.678	52.3	32.5	42.4	47.3	46.0		.65			

May 6—Light clouds; cloudy; overcast.  
7—Densely overcast; cold rain; clear; frosty.  
8—Frosty, early A.M. masses of white clouds; overcast; clear;  
9—Rain, and boisterous; heavy showers.  
10—Cloudy and boisterous; cold, with showers; cloudy.  
11—Clear; fine; clear.  
12—Fine; rain at night.  
Mean temperature of the week 94 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending May 21, 1853.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 15	64.7	40.8	52.7	7	0.41 in.	2	7	2	1	8	4	2	1
Mon. 16	66.2	43.8	55.0	10	0.31	5	1	5	2	3	1	1	1
Tues. 17	68.6	45.0	56.8	10	0.58	1	5	4	—	—	—	—	—
Wed. 18	64.8	44.0	54.4	10	0.17	1	5	5	4	—	7	4	3
Thurs. 19	65.3	44.6	54.9	11	0.50	2	5	6	2	2	7	3	1
Friday 20	65.0	44.8	54.9	11	0.61	1	5	6	3	3	3	1	1
Satur. 21	65.8	45.2	55.5	11	0.28	3	9	8	2	—	3	1	2

The highest temperature during the above period occurred on the 15th and 17th, 1853—therm. 86 deg.; and the lowest on the 15th, 1850—therm. 35 deg.

#### Notices to Correspondents.

CLIMBERS: W. F. Try the following in your conservatory: *Mandevilla suaveolens*, *Kennedy*, *Marrattia*, *Hardenbergia macrophylla* and *monophylla*, *Tecoma jasminoides*, *Tropaeolum Triomphe de Gand*, *Tacsonia manicata*, and *Dolichos lignosus*. For hardy sorts take *Clematis montana* and *C. azurea grandiflora*, *Caprifolium gratum*, *Passiflora caerulea*, *Eccremocarpus scaber*, *Aristolochia Sipho*, *The Virginian Creeper*, and *Climbing Roses*, together with such summer drapery as *Tropaeolum canariense* and *Lophospermum Hendersonii*.

INSECTS: Rev. H. H. The minute insects which have attacked your young Cotton plants are a species of *Acarus*, very like that which infests old flour. Its supposed origin is under consideration. W. T. E. E. The grubs which have attacked your Barley in such numbers are the larvae of one of the smaller species of daddy-long-legs. They are nearly full grown, and have therefore already done the greatest amount of mischief. They are so tough that rolling will not kill them; watering the plants with brine, or a solution of nitrate of soda, will probably be beneficial if the plants are in drills. It is when the flies are arrived at the perfect state, which will be the case in a few weeks, that they must be hunted after, and destroyed by sweeping the plants with a bag net. W.

LILIES OF THE VALLEY: Z. They will not flower unless they are strong. If you plunge the pots now, give them a top-dressing of very rotten manure, and that will probably produce the requisite strength during the summer. Berberis Darwinii is hardy; *Cantua dependens* is, we regret to say, not, in the neighbourhood of London.

NAMES OF PLANTS: *Journeymen*. Looks like a morsel of *Marvel of Peru*; we repeat that such fragments cannot be determined. —C. F. Some Moss—apparently a *Tortula*—in so young a state that its real structure is unascertainable. Wait till the fruit is ripe. —Mary. *Dilytra formosa*.—N.W.S. *Epidemium alpinum*. —A.B. Some species of Poplar; probably *Populus nigra*. —Anna Emily. The plant is *Lathraea squamaria*. As regards Dandelions, see our No. for last week, p. 296. —O. F. I. *Fritillaria Meleagris*, very young; 2, *Saxifraga cespitosa*. As to Peaches, we take it that they should consist of one variety only. —Meta. *Pteris serrulata*; very common in hot-houses. S. —M. B. The yellow variety of *Muscari moschatum*, one of the sweetest of plants.

POTATOES: R. M. We do not find any *Botrytis*; but plenty of rotteness and green-fly.

TRADE MEMORANDA: F. & Co. We have no right whatever to do what you ask of us, in the absence of distinct proof of its necessity. What you suggest is a serious matter, attended by great moral as well as legal responsibility.

Misc: Donald McCleod. If you will send the advertisement to the Office we will inform you the charge.



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Home-made Linseed Cake. Linseed for feeding. Rape Cake. Linseed Oil.

## MANURES.

Superphosphate of Lime. Peruvian Guano. Calcined Bone. Wheat Manure. Fine ditto, for dissolving. Mangold Wurzel Manure. Bones, half-inch. Potato Manure. Ditto, dust. Sulphuric Acid. Ditto, fine, for dissolving. Gypsum. Animal Guano, or Dried Fish Manure, from South America. Nitrate of Soda.

Orders addressed to DIXON & CARDUS, Linseed Mills and Artificial Manure Works, Northam, Southampton, will receive prompt attention.

## GUANO AND OTHER MANURES.

**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

**MANURES.**—The following Manures are manufactured at Mr. Lawes's Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0  
Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## SEWAGE CHARCOAL MANURE.

**PEAT CHARCOAL**, completely saturated with LONDON SEWAGE, will be found a most efficient Manure for any Crop; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, and will be delivered at the London Terminus of the Railways at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt. for ready money only; it may be also procured from Messrs. G. Grass & Co., Agricultural Seedsmen, 26, Down Street, Piccadilly; or from any other of the Company's Agents.

"Sewage Manure, absorbed in Charcoal, is a first-rate fertiliser: we have tried it on French Beans, Dahlias, Roses, and Cabbage Plants. We put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first!"—*The Garden*, by Mr. GLESSNY.

Thomas Cartwright, Esq., of Aynhoe Park, having had 2 tons in the spring, which he tried on Turnips, ordered 30 tons, and writes as follows:—"Nov. 7, 1852. I have used the Sewage Charcoal Manure largely this autumn on Wheat and Beans;" and he then adds: "On the whole, I like the Sewage Charcoal very much, and think it a very useful manure, and intend always to have some for my Turnips."

**ARTIFICIAL MANURES, &c.**—Manufacturers and others engaged in making ARTIFICIAL MANURES, may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NISBET, F.G.S., &c., Principal of the Agricultural and Chemical College, Kensington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

Gentlemen desirous of receiving instructions in chemical analysis and assaying, will find ample facility and accommodation at the College.

**ROOT-GROWERS** applying by Letter to the Subscribers may rely on receiving direct from the Works CONCENTRATED MANURES of every kind on the best possible terms, and of the highest quality, which the combination of science, skill, and experience is enabled to produce.

**SPOONER'S SUPERPHOSPHATE OF LIME** has, during the past season, earned more prizes in the South of England than has been heard of during this period by the aid of every other Manure hitherto introduced.

SPOONER & BAILEY, Agricultural Chemists, Bone Mills and Manure Works, Lings, Southampton.

N.B.—The copyright of Mr. Spooner's Prize Essay on Root Crops belongs to the Bath and West of England Agricultural Society, and will be published in its Journal.

## MR. SAMUELSON'S PATENT DIGGING

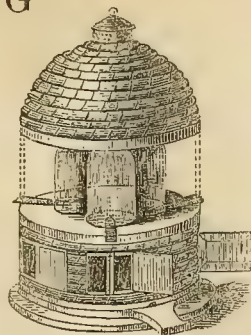
MACHINE, capable of digging 1 acre per day, with four to six horses, price 250. 10s., *given at rent daily* in the neighbourhood of Banbury. Agriculturists, road and railway contractors, and others interested in its operation, may use it by applying to Mr. B. SAMUELSON, Banbury Works, Banbury.

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Apply anywhere, or to any Ironmonger or Implement Dealer in town or country.

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Austen & M A slan, 168, Tringate Street.—Dublin, J. Edmondson & Co., 61, Dame Street.

## BEES AND BEEHIVES.

**MILTON'S Improved BEEHIVES**, in great variety, including the Double Cottage Straw Hive, price 10s. 6d. (for which the Prize Medal of the Great Exhibition was awarded). Also his newly-invented Bee-feeders, and every article connected with the Apiary.

The PRACTICAL BEE-KEEPER, price 2s.; Sheets of Illustrations, price 6d., at J. MILTON'S Beehive and Honey Warehouse, 10, Great Marylebone Street, Cavendish Square, London.

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Every information will be given at the Offices of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter.

THOMAS MAY, Secretary.

## ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND desires to receive Tenders from Innkeepers or others to contract for the supply of a COLD DINNER, at GLOUCESTER, on WEDNESDAY, the 13th of JULY next, in the Society's Pavilion, constructed to accommodate 800 persons.

Printed forms of Tender may be obtained on application to the Secretary, 12, Hanover Square, London, and must be returned to him, filled up, on or before MONDAY, the 30th of May, the Society not binding itself to take the lowest Tender.

By order of the Council,

JAMES HUDSON, Secretary.

London, May 14, 1853.

## ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Members of the Society are requested to send to the Secretary, on or before the 23d instant, the Names of Persons they recommend to act as Judges of Stock or Implements.

The GENERAL MEETING will be held on MONDAY, the 23d of MAY, at Eleven o'clock in the forenoon.—By order of the Council, JAMES HUDSON, Secretary.

12, Hanover Square, London, May 11.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, MAY 14, 1853.

## MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, May 13—Agricultural Society of England.  
THURSDAY, — 19—Agricultural Imp. Society of Ireland.  
WEDNESDAY, — 23—Agricultural Society of England.  
THURSDAY, — 26—Agricultural Imp. Society of Ireland.

THERE is still time to sow MANGOLD WURZEL seed with sufficient prospect of a good crop. We have sown it so late as the first week in June, and so early as the last week in March; and while the latter end of April is its best seed time for the south of England—for if sown earlier it is liable to run to seed, while if sown later it will not attain its full weight, per acre, before the winter frost shall check its growth—yet we would far rather have a crop of it sown so late as the middle of May, than a crop of Swedes sown a month or five weeks later.

Of course this remark applies to the south of England only. Swedes sown so late in Scotland would no doubt be of very little value, but so also would a crop of Mangold Wurzel. If the seed has been lying in damp sand during the heavy rains of the past two weeks, these rains will not have much hindered or delayed the crop, and if planted now, after being sprouted in a warm damp atmosphere, the young plants will appear as soon as if, without previous treatment, they had been sown three weeks ago, and exposed since to the cold wet weather which, during these weeks, we have experienced.

There is none of our green crops that bears transplanting so satisfactorily as Mangold Wurzel. It is a difficult point in the case of a field in good order, either for seed or for plants, in the end of

June, to determine whether to sow Swedes or transplant the thinnings of the adjoining Mangold Wurzel field. When both crops are treated according to their need, we believe that in the case of our climate in south and central England it is an easier thing to grow 30 tons of the Wurzel than it is to grow 20 tons of Swedes, per acre; and while per ton the latter may be the better food of the two, yet, *per acre*, which is the true unit of comparison for the farmer, it is unquestionably much the inferior. And even in the case of the transplanted crop, 24 and 26 tons are by no means an uncommon produce when the work has been well done; so that those who wish to have a store of useful food for stock in March and April next year, after the Swedes are done, and before the Italian Rye-grass and the Rye are ready, need not despair, even should they lose their Mangold Wurzel's seed time—for even in the middle of next month they can secure that crop by transplantation.

To do the thing as well as it can be done at present requires that the seed, some 6 or 7 lbs. per acre of the field to be sown, shall have been lying in damp sand, and occasionally moved, during the past five or six days; it requires, too, that the land be in good tilth, clean and deeply cultivated, manured in rows 24 or 26 inches apart, and now lying in drills at that interval: it is desirable that the soil should be a somewhat adhesive loam, but of course now a perfectly friable mould in good heart, clean and rich. In order to the last particular, besides some 15 tons of farm-yard manure deposited in the rows, it will be well if 2 cwt. of guano, mixed with an equal weight of common salt, have been spread broad-cast over the open drills with the manure spread in the furrows, just before those drills were split so as to cover the manure.

The land being now in that condition, the common Turnip drill without seed may be drawn over the field in the regular way, leaving, of course, shallow furrows on the top of every ridgelet. And the seed may then be sown or set by hand. This can be done by boys or women, and need not cost more than 1s. 6d. an acre. Facing the side of the drill (looking, therefore, across the whole), with the right foot on the top of it, and his left side towards the direction in which he is moving, the boy places two or three seed-balls in the furrow, holding them with all the fingers of his right hand, so as to hinder their being too deeply pressed into the land; he then puts his right foot on the top of them, which ensures sufficient earth being thrown down upon them as a cover. Then, with a 12 or 14 inch stick, held in the left hand, he marks the distance to the next place in the channel, and again deposits two or three seeds, moving his left foot in the furrow, and his right foot on the ridgelet 12 or 14 inches at a time successively. He can thus get over half an acre a day, and will find that in that time he has sown about 3 lbs. of seed. The plants come up in small bunches, 12 or 14 inches apart; they are soon large enough to be singled out, which is done by laying down the best plants with the left hand, and sweeping all the rest away at a stroke with the right. Successive horse-hoeings and two hand-hoeings constitute the cultivation of the crop during June and July. In September, the plants which are going to seed may be pulled, and given to pigs or cattle. Towards the end of October or November, the crop may be pulled, carted to heaps, and roughly thatched, and by-and-by earthen up against a winter's frost, for use in spring. And it is surprising how great a body of roots may be stored together in this way without any risk of heating, rotting, or spoiling. Last week, at Tiptree, we saw a magnificent sample of last year's Mangold Wurzel crop, as fresh as the day they were drawn. Larger roots we never saw, and of better quality they could not be. The crop had exceeded 40 tons per acre, and there they were in the month of May, as good a food as cattle could receive—at their very maximum of quality indeed—though drawn six months before, and stored since then 3 or 4 yards wide, and 3 yards high.

There is no cheaper food, per ton, for stock than Mangold Wurzel grown successfully, as any one may grow it easily on suitable land in south and central England.

We add a few words more on the subject of AGRICULTURAL STATISTICS. It is plain, as we have already said, that the actual facts which will be collected will be only a portion of those which have to be ascertained, before the mere basis of that estimate which will be the grand result of the experiment can be said to have been laid.

It is possible to ascertain the extent of our different crops, and the numbers of our different sorts of live stock; and these, if we had them, might be made the ground-work of an estimate of



our annual agricultural produce. Our theory, for at best it would be only an estimate, would then be based upon facts. But optional returns will not furnish us with this basis; they will give merely a portion of the facts required—probably in the English case not 50 per cent. of the whole, and the remainder having to be estimated as probable, not recorded as true, our estimate will in fact be built upon a mere theory; and every one knows how valueless and untrustworthy are speculations so founded. If a regular system of cultivation prevailed in any district whose whole extent was known, it would only need that that extent be divided among the several crops, according to the frequency of their occurrence in the prevalent rotation or succession, and the number of acres under each would be ascertained without the need of any assistance from the cultivators. And probably Norfolk would admit of such a method of calculation better than any other county, the four-field, or Norfolk rotation being, as is well known, the prevalent scheme of cultivation there. But, unfortunately, prevalent as it may be, it is not universal. It is even common, and among the best cultivators, now to let Clover come round once in eight years, instead of four; and the rule is thus broken, without its being known what the proportion is in which the exception to it prevails. We suppose that the men who will fill up the forms of the collectors will be the best farmers and most intelligent men of their respective neighbourhoods—perhaps also the largest occupiers—but these are precisely the cases whose circumstances are already known as being under the prevalent rule of cultivation. It is amongst the majority, perhaps of acres, certainly of occupiers, including the small farmers, and the less intelligent, skilful, and able of the agriculturists of Norfolk, whence no return will be obtained, that all the exceptional cases, the irregularities, and the peculiarities occur, ignorance of which will falsify the result of the inquiry; for being under no rule they cannot be made the subject of a general estimate. All this, then, shows the difficulties in the way of an inquiry unenforced by law, and it strengthens of course our previous remarks on the importance of employing an agency in this inquiry which will command the respect of the agricultural body—one to which they would more willingly lend their assistance than they will to a mere Government officer.

The only way in which these difficulties can be diminished is by employing men of known intelligence in the various sub-districts or even parishes—the smaller, of course, the better—to furnish estimates of the extent of the crops in the unreturned portions of those districts. The gross total will still be an estimate, instead of an actual statement of fact, but the facts which it does contain will be supplemented by the trustworthy judgments of a large number of trustworthy men; and it will form a better foundation for further proceedings than the rough estimates of the collator would be, who should judge from the facts actually returned of the nature of those which remained.

It will be in some such way as this that the counties of Roxburgh, Haddington, and Sutherland, will be made to describe themselves. The scheme of the Highland Society, developed in an adjoining page, will not only ensure a much larger proportion of actual returns than will be received in the English district, but it also contains within itself the means of a much safer estimate of the unreturned remainder.

#### HISTORY OF BRITISH AGRICULTURE.—No. III. (Continued from page 299).

HUSBANDRY, under one or other of its forms, was as favourite a subject of legislation with the Anglo-Norman lawgivers as it had been with their Anglo-Saxon predecessors, and it seems to have been alternately unduly cherished, or unfairly chilled. Our statute-book seems but a record of a continuous and futile attempt to regulate the price and supply of articles of food. The first statute that has come down to us, having for its object to establish a uniformity of price and measure, was passed in 1262, in the reign of Henry III., which appears to be a revival of an older law, called "the assize of bread and ale."

In the year 1315 (Edward II.), the perpetual rains and cold weather having not only destroyed the harvest, but produced a mortality amongst the cattle, the Parliament endeavoured to moderate the price of provisions, and enacted rates at which articles of food were to be sold. Stow, however, informs us in his Chronicles that things could not be purchased at these rates, for people would not bring them to market. So the act was revoked, and people left to sell as they could; for, as the chronicler shrewdly remarks, "a trade will do as it can, and never be forced one way or the other."

By the 7th Henry IV. (1406), farmers and villeins were permitted by law to send their children to school.

In the early part of the following reign, that of Ed-

ward III., a more liberal commercial policy was adopted, trade encouraged, and the export of grain permitted, as may be seen by an extract from the statute 9th Edward III., c. 1 (1335), "That all merchants, strangers, and denizens, and all other and every of them, of what estate or condition soever they be, that will buy or sell corn, wines, flesh, fish, and all other food and victuals, wools, cloths, wares, merchandise, and all other things vendible, from whencesoever they come, by foreigners or denizens, at what place soever it be, city, borough, town, seaport, fair, market, or elsewhere within the realm, may freely, without interruption, sell them to what persons it shall please them, as well to foreigners and denizens, excepting always the enemies of our lord the king and of his realm."

This early inauguration of free trade seems to have been followed by results little anticipated. An extensive export trade in corn sprung up, agriculture flourished, trade was prosperous, and employment became so general that the Government was alarmed, and a law called Statute of Labourers (25th Edward III.), complains in the preamble of "the insolence of servants, who endeavoured to raise their wages upon their masters."

About 25 years later, in 1360, we have the first act passed forbidding the export of corn.

Thirty years later (17th Richard II., 1394), the statute of 1360 was repealed, and express encouragement given to the export of corn by the king's subjects; and by subsequent statutes the power was conceded of exporting without the king's license, when the price of Wheat at the port of shipment did not exceed 6s. 8d. per quarter.

1463 (3d Edward IV.), first restrictive Corn-law forbid, for the benefit of the home grower, any importation when the home price was under 6s. 8d., the export being prohibited by the same statute when the home price exceeded that sum. Thus the trade was cramped both ways; "I fear me we shall have a right strange world," says Mrs. Margaret Paston, in a letter to her son, dated January 29th, 1474; eleven years afterwards, "there is none outland suffered to go out of this country as yet: the king hath commanded that there should none go out of the land. God amend it, when his will is." The protective statute had probably stimulated tillage beyond the demand of the home market; and the prohibited export had thus created the then new, but to our generation the familiar paradox "the curse of plenty."

The long peace which followed on the close of the wars between the rival houses of York and Lancaster, and the accession of the Tudors, tended greatly to enhance the material prosperity of the country; and towards the close of the century we learn from Fabrian (temp. 1486), that Wheat had reached 24s. the quarter. As wealth increased, more capital was applied to land, rents advanced, and arable began to approximate in value to pasture land. In the hands of a richer tenantry farms began to increase in size by consolidation of smaller holdings, authority again takes alarm, and by the 4th Henry VII. (1488), is forbidden the demolition of any farm house to which 20 acres of tillage were attached.

The desire of encouraging native manufactures early led our Kings and Parliament to tinkering with the trade in wool. Flanders was at that time the principal seat of the manufacture, while England, from its great extent of pasturage, was probably the chief source of supply for the staple. The superior skill, and perhaps larger capital of the Flemings, rendered them constant competitors for the produce of the English clip, and, no doubt, raised the price upon the native clothier. Various legislative devices were contrived to prevent or mitigate this evil, as it was reckoned, and much ingenuity probably displayed by the farmers, flock-masters, and merchants, in evading these enactments. As early as Edward III. special courts had been organised to determine offences connected with the wool trade, and 4th Edward IV., c. 4, provides "That whereas by subtle bargains made in buying of wools, before that the sheep that bear the same be shorn, the cloth-makers of this realm can well nigh find none to be sold, to the great grief of them which have been accustomed to have their living by the means of making cloth, &c., it declares that agreements for wool unshorn shall be void, except by clothiers." Grafton in his Chronicle, while speaking in praise of the statesmanship and political sagacity of Edward IV. in negotiating treaties of friendship with foreigners, notices an amity procured with Henry, King of Castile, and John, King of Aragon, at the conclusion of which amity he granted licence and liberty for "certayne Cotsolde sheep to be transported into the country of Spayne, which have so there multiplied and increased that it hath turned the commodity of England much to the Spanish profit, and to no small hindrance of the lucre and gayne which was before time in England raised of wool and fell." It has been asserted upon what appears to be reasonable ground that the "certayne Cotsolde sheep," thus transported to Spain 400 years ago, is the original stock of the now celebrated merino.

(To be Continued.)

#### ROYAL AGRICULTURAL COLLEGE.

##### SESSIONAL EXAMINATION.—VEGETABLE PHYSIOLOGY.

###### AFTERNOON.

1. Describe the minute anatomy and functions of leaves, and point out any facts of practical importance in agriculture that may be deduced from a knowledge of these.
2. Point out the sources of the food of plants, and explain the methods by which it is conveyed through the plant-structure.

3. What are the circumstances to be attended to in the production of new sorts or varieties of plants, such as Wheats, Turnips, &c.?

4. Describe the operations of grafting and budding, and state the advantages of employing them.

5. Explain the methods of treatment which should be adopted in the successful cultivation of timber and fruit trees, and point out the principles upon which these depend.

6. Describe the "Smut brand" (*Uredo segetum*), "Bunt" (*T. caries*), and "Red rust" (*Puccinia graminis*) of Wheat, and explain their causes and remedies.

ANSWERS BY MR. PEILE.

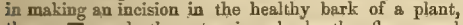
(1.) Leaves carry on the functions of respiration, exhalation, and circulation, by means of the stomata or cellular pores, described in this morning's paper, which see for the rest of the anatomy of leaves. When the sap of a plant is pumped up from the roots, and passes through the wood till it reaches the leaves, it contains very little except water and soluble inorganic salts, which it has derived from the soil. In its progress through the leaves, it is exposed to the carbonic acid gas which the stomata inspire from the atmosphere, and which is decomposed into carbon and oxygen; all of the latter, not wanted for the organism of the plant, is given off, while the carbon is retained in the sap. At the same time also, during sunlight or a dry atmosphere, any superfluous moisture is given off, thus concentrating the sap; and in this state the sap descends by the bark, and deposits woody and other tissues in its course. Without leaves, none of the above-mentioned processes can be carried on in the vegetable system, and the plant ceases to grow, and after a time begins to decay. From a knowledge of the functions of leaves in carrying on these processes necessary to vegetative life, many practices performed in transplantation, &c., of trees are derived; but as roots of plants absorb water and soluble matters from the soil first, and pass them to the leaf to elaborate or digest, the roots are as necessary to the life of a vegetable as the leaves, and hence, whenever a plant shows signs of disease, these parts must be first examined. It is evident that if roots have been injured or removed from the plant, the leaves will be requiring and getting rid of moisture faster than the roots can supply it, consequently disease will ensue. On the other hand, if the leaves are crippled, and the roots acting vigorously, the plant becomes dropical, and ceases to grow, on account of the superfluous moisture, &c., in its system. In transplanting, pruning, and propagation by sets, &c., these facts must never be lost sight of if success is desired, as an excess of leaves over roots, or *vice versa*, are equally injurious to the health of the plant, be it tree or cutting. With regard to the minute anatomy of leaves, it may be mentioned that the nervures and midrib are fibrous, whereas the intermediate spaces are strictly cellular.

(2.) The sources from whence plants derive food are the atmosphere and the soil. The atmosphere supplies them with carbonic acid and moisture to a certain extent; the soil supplies moisture, and all the organic and inorganic constituents necessary to the growth of a plant. The roots are the most important organs in supplying the latter constituents, which they absorb in a soluble state by means of the spongioses or cellular bundles placed at their extremities. The roots absorb these matters in a fluid state, and by the pumping action of the leaves, which exercises its power through the whole plant, the fluid is passed up to the wood of the stem of the plant, through the cells of which it passes by exosmosis or endosmosis, or the principle on which rarer and denser fluids change places. By the wood, the sap is passed to the leaves, in which the process of elaboration, already mentioned, proceeds, and after which the sap, which is now thicker, begins to descend between the bark and the external wood, and in its passage it deposits gradually new woody matter called the cambium. Plants cannot take or refuse noxious matters as they like, whether by their leaves or roots, and consequently many plants are frequently poisoned by the inhalation of sulphuretted hydrogen, chlorine, and other deleterious gases.

(3.) In producing new sorts of plants, the object is not only to obtain a variety of plant which possesses some of the qualities of both the parent plants, but also to perpetuate that variety. In the production of new varieties of such plants as Turnips or Wheat, by the hybridisation of any one plant of the same species with another of that species, the plan is to take the matured stamens of one variety and shake them over the pistils of the flower of another variety which have been previously prepared, by cutting away the stamens. After fecundation has taken place, the seed ought to be carefully preserved, and then taken and sown in another soil and district, quite unlike the one in which it was produced, and its soil ought to be changed frequently, which is the grand point in the cultivation of all corn crops in particular. With regard to Turnips and Cabbages, the same principles will apply in producing variations in form, &c. 1st. The plant should be removed from the soil in which it naturally grows; 2d. During cultivation its soil should be changed as often as possible; 3d. With regard to Cabbages, their growth should be checked as much as possible, to make them deposit cellular matter in various parts, such as at the base of the leaves and on the flower stems; if, however, the stem is not checked in its growth, such varieties as the common green, &c., are produced. Again, by sowing plants at all times of the year, and preserving the seed of any of the plants which may be fortunate enough to come up varieties of the same plants can be produced, which will be adapted for cultivation at all times of the year, a matter of especial importance in garden produce. The winter Wheat and other cultivated varieties of winter



corn have been introduced from colder countries to this climate, but by careful cultivation such varieties may be produced from any kinds of corn.

(4.) There are several kinds of grafting, but there are certain general rules always to be attended to. 1st. That kind of grafting should be selected which the operator can best perform; 2d. The smaller the graft is, the more likely it will be to succeed, of course as long as it is not too small; 3d. The bark of the graft should be brought as much as possible in apposition with the bark of the stock, and the wood with the wood, and the sections or incisions should be perfectly clean; 4th. The parts should be kept moist by clay, dung, or anything else, and the parts should be kept lightly together; 5th. The stock and graft should both be as healthy as possible, and of the same species; 6th. It should be performed in the spring. The different kinds of grafting are—whip, tongue, cleft, rind, saddle, peg, shoulder, approach, side, and inarch. Approach and side-grafting can only be performed in adjoining trees, and the graft branch is not cut off from the original tree till it has become perfectly united to the new stock. The advantages obtained by grafting are that it ensures the production of certain varieties of fruit at an earlier period than by any other method of cultivation, and it allows of grafts, &c., being carried to a great distance with comparative ease and safety, the only precaution with regard to the graft being that the section be as clean as possible, and the end covered up with sealing wax, to prevent its bleeding. Budding should always be done during the summer months, and merely consists in making an incision in the healthy bark of a plant, thus: , and then turning back the flaps, and inserting the bud of another tree, which has been cut off as clean as possible, leaving only a very small piece of wood, inserting the bud between the flaps, and fastening it down with a piece of India rubber band. The only care necessary is to cut the bark so as to fit as accurately as possible round the bud. Two or three buds may be tried first, and if they succeed others may be inserted, and the branches and leaves of the tree may be pruned. Budding, if carefully carried on, is of very great use in the flower-garden in producing varieties of Roses, &c., and cannot be said to be so generally useful as grafting—at any rate as far as regards fruit trees.

(5.) In growing timber the object is to produce tall poles as straight as possible. The first principle, then, is, to place the plant at an early age in that very spot where it is intended to grow, as transplantation shortens the life of a plant, and trees that grow sporadically always make the finest trees. Trees for timber should be planted thick at first, as it makes them grow tall and straight; but as they grow and fill up the ground, all the worst ones may be cut down. The branches of trees intended for timber ought never to be lopped, as any loss of leaves of course checks the growth of the plant, which is of much more importance than any benefit which can be derived from a few branches, &c., used as firewood. In the cultivation of fruit trees the system to be pursued must be nearly directly opposed to that which we have just described; for, instead of tall, straight poles, small trees with large branches are required, so that there may be an extra development of leaf function, or rather of leaves modified into the form of fruit. This state of growth is brought on by frequent transplantation, which checks the development of the stem and causes the plant to send out extra branches and extra leaves and fruit. For this same reason fruit trees should not be placed too close together, both for the sake of thorough ventilation and exposure to the rays of the sun, so necessary to ripen fruit and also to allow of full play for the branches.

(6.) Smut brand, or *Uredo segetum*, is a small fungus which attacks the chaff scales of Wheat; Bunt, or *Uredo caries*, attacks the insides of the grain, and is also a fungus, by which, instead of the farina of the grain, nothing is left but a black powder; and the red rust, or *Puccinia graminis*, attacks the straw and leaves of Wheat, and is, like the other two, a fungus.

All these fungi are the consequences, and not, as is generally supposed, the causes, of the disease commonly known as blight in Wheat. The real cause of the disease is the state of the atmosphere, as acting on a plant in a debilitated condition, caused by a rapid growth. This rapid growth may be attributed either to manuring the land too heavily, or a wet season, or the nature of the soil; at any rate, the plant becomes debilitated, a sort of congestion of some of the vessels takes place, a decay commences, and immediately all the diseased parts are covered with small fungi, whose peculiar office is to appropriate the ammoniacal matters even off during this partial decay of the plant. All these fungi contain nitrogen, but they differ in appearance, according to their different situations on the plant. The smut brand is found on the chaff scales; the Bunt appropriates the nitrogenous matters given off during a decay of the farina, and the red rust makes its appearance on the leaf and stem of the plant. A grain diseased with *Uredo caries* does not lose its pistils, but in the healthy plant fall off.

There is no way of curing this disease in the growing ant. The only treatment must be preventive, such as only growing Wheat on sound land, and not manuring too strongly; also by steeping the seed in sulphate of copper or arsenic, all the small and unhealthy grain are destroyed, and consequently no plants but those which came from healthy seed come up, and they are less likely to become diseased. There are certain seasons, never, when nearly all crops, strong and weak, steeped or unsteeped, are attacked by these diseases, which

no artificial means can prevent. The general plan of treatment here laid down will, if carefully attended to, go far to prevent the disease.

#### AGRICULTURAL STATISTICS.

THE following is an abridgment of the statement by the Directors of the Highland and Agricultural Society of Scotland, which was submitted to the President of the Board of Trade, last year, and on which the present resolution of Government, in reference to that subject, has been based:—

The great importance of a proper system of agricultural statistics has long been recognised by the Highland and Agricultural Society of Scotland, and the views of the Society have, on more than one occasion, been submitted to Government. In 1847 a memorial on the subject was laid before Sir George Grey by the Duke of Montrose, at that time President of the Society; and having been communicated by Sir George to the Earl of Clarendon, the President of the Board of Trade, a correspondence ensued between that Board and the Society in reference to a measure then contemplated by Government.

The Directors do not think it necessary to dwell on the national importance of agricultural statistics; this, they conceive, is generally admitted, and is set forth in the memorials above referred to. They would submit, however, that the object is one, which not only demands the introduction of a measure, calculated to give effect to it in the most comprehensive and satisfactory manner, but also warrants such public expenditure as would necessarily be incurred. They have carefully considered the alternative modes suggested by Mr. Labouchere, and they feel themselves called on to represent the necessity of a "general and comprehensive scheme," and the inexpediency of attempting in Scotland to "collect such returns in a particular portion or district of the kingdom, by means of local machinery already existing, which might be found available for that purpose."

It appears to the Directors that, to be of any real value to Scotland, agricultural statistics must give not only the number of acres under each kind of crop in a district, but also the average acreable produce, with sufficient accuracy to make the result exhibited, a safe guide to the agriculturist, the capitalist, and the statesman; and that to exist, would be regarded as collected as to be unworthy of confidence, would be hazardous and objectionable. They conceive it to be of the utmost importance, with a view to arrive at such accuracy, that the investigation should be conducted in a uniform manner, and that the returns from all parts of this country should be collected, arranged, and verified on one principle, and by means of a corresponding agency. They also consider it indispensable that the agents employed should possess that practical knowledge of agriculture which is necessary to enable them to detect error or fraud, and to verify the returns made to them.

Such being the conditions which appear to the Directors necessary to the satisfactory execution of the proposed measure, they do not hesitate to express their conviction that there is not now in operation in Scotland, for any other purpose, machinery or agency that could fulfil those conditions, and that if the measure is to be carried out, a special machinery must be organised for the purpose.

The Directors are aware that various existing agencies have been suggested—the county police, in a few counties where such a force has been organised—the parochial boards for the relief of the poor—the clergy, and the schoolmasters, have all been suggested as available; but none of these could fulfil the conditions that have been stated. They could neither conduct the investigation with uniformity nor with the practical knowledge necessary to a near approximation to accuracy. No reliance could safely be placed on the information obtained by such means, and the effect of making the attempt would be to discredit the measure.

In Scotland, success could not be obtained without the co-operation of the farmers, particularly those of the smaller class; and the Directors do not think that this would generally be accorded to any of the agencies above referred to. The interference of the police, where it exists, would be regarded with jealousy; the parochial boards, having to levy assessments on the annual value of lands, their inquiries would excite suspicion, and sectarian differences have diminished or destroyed the disposition of many of the farmers to co-operate with the officers-bearers of the Established Church.

For these and other reasons which they abstain from stating in detail, the Directors are of opinion that, although it be difficult to estimate too highly the value to this country of a general measure efficiently carried out, it would not be advisable that the Government should sanction for Scotland any measure of a local or partial character; and they would proceed to offer some suggestions as to the manner in which a general and uniform mode of collecting information, that could be relied on, might in their opinion be established.

The first points to be considered, and perhaps the most difficult to determine, are the subdivision of the country into suitable districts, and the agency or machinery to be employed. In 1847 the Government proposed to adopt the subdivision into parishes, and to entrust the execution to the parochial boards, which were to have named an "enumerator" for each parish, to collect and arrange the returns. But, in addition to objections already stated against employing those boards, the Directors, having communicated with the chairman of the Board of Supervision, do not hesitate to express their opinion as to the inaptitude of the parochial boards for the duty, while at the same time too minute a subdivision would employ a very numerous staff and involve either great expense or very inferior qualifications in the agents, and consequent deterioration of the results.

It has also been suggested that the collection of the returns should be by counties, but the extent of a county would generally make the task too onerous to be undertaken by one person, and the variety of its agricultural features and products in different districts might render it difficult or impracticable to find a person well qualified to take supervision of sheep farming, mixed husbandry, and dairy farming, though he might be thoroughly cognisant of one of these systems.

The Directors think it would be preferable to form parishes into groups, with reference to their agricultural products, in such a manner as to associate, under one official agency, a certain number of contiguous parishes, characterised by the same physical features, by a like system of farming, and by similar products. Were this arrangement resolved on, the Society could give material assistance in carrying it out. For 60 years they have been accustomed to associate parishes in connection with their local shows, on precisely the same principles as are now suggested in connection with statistical returns; and from the experience thus acquired, and the local knowledge and influence possessed by the Society, the Directors have no doubt that they could submit to the Government a satisfactory arrangement for the subdivision of the country into such districts.

It has already been stated that the Directors do not consider any existing machinery available for the purpose contemplated, and no agency that may be organised will be successful unless it obtains the co-operation of the farmers. The surest means of attaining this object would be, it is believed, to commit the execution of the measure, as far as possible, to the hands of the agriculturists themselves. With this view they would suggest that for each district or group of parishes the Board of Trade should appoint a paid enumerator, and a small committee of proprietors and tenants to assist gratuitously in estimating the acreable produce. The enumerator should be a person intimately acquainted with the practical agriculture of his district, and possessed of a character for integrity, ability, and experience, such as would entitle him to the confidence of the public. His

duties would be to collect, arrange, and verify the returns; to submit them to the district committee, and finally to lodge them with the sheriff of the county, by whom they would be forwarded to the Board of Trade. The agriculturists would thus be approached by one of themselves, and not by the officers of any Board, and his proceedings would be reviewed by a committee of their own number. Here also it might be in the power of the Directors to assist materially in carrying out such a plan. They have from time to time had committees of their members operating in most of the districts of Scotland, and it would be easy to reorganise them. They do not apprehend much difficulty in inducing competent parties to undertake the duties of enumerator for a moderate remuneration. They rather think that the office would be aspired to by farmers, factors, and land valuers for reasons irrespective of the mere amount of salary, as it would confer a certain status on its holder, and would be the means of creating for him employment as an agricultural adviser and arbitrator in the many questions which occur connected with land. The Directors need only advert to the very superior class of men whose services as inspectors were obtained by Government under the Drainage Act.

The nature and extent of the returns will form an important element in any measure that may be introduced. It is conceived that the objects of the inquiry must go beyond the mere extent of acreage under different crops, and that means must be provided for arriving at the amount produced per acre. This can be done in two ways—by the direct return of the farmer, or by an average estimate for each district. The Directors would prefer the latter. Were the farmer immediately called upon to state the exact quantities of different crops raised by him, he would probably consider the measure as inquisitorial, and be led to regard its ulterior purposes with jealousy. This would interfere with his co-operation, and in many cases would tend to induce mis-statement. The committee would therefore suggest that the direct returns by the farmer should be limited to the nature of his rotation, the number of acres under different crops, and the quantity of stock belonging to him, and that the yield per acre should be left to be estimated upon an average for the district by the enumerator and the committee above alluded to; they could have little difficulty in arriving at conclusions, probably more correct than those derived from direct returns on the part of the farmer, while the measure itself would be stripped of many elements of unpopularity and consequent weakness.

The Directors will, at this stage, only advert to one other point. In 1847 it was at first intended to provide for the expense of the measure then in contemplation by a parochial assessment to be raised with the poor-rate, and afterwards it was proposed to levy it with the land tax. That tax, however, has been in many instances redeemed, which renders the latter mode inapplicable, and the strongest objections are entertained in Scotland to employing the Poor-law machinery to levy or extend other rates; but the Directors would submit that the benefits of the measure would accrue equally to the consumer as to the producer—that the objects would be strictly imperial, and that the means of effecting them ought therefore to be provided from the public purse.

It would afford the Directors much gratification to learn that any of the foregoing suggestions have met with approval; and they can confidently offer the co-operation of the Society they represent in giving effect to them, or in aiding to carry out any measure which may be adopted by the Board of Trade. They would conclude by observing that, while to no part of the kingdom would a system of agricultural statistics be more beneficial than to Scotland, it could be organised there with greater facility and at less expense perhaps than either in England or in Ireland. It may be assumed that three-fourths of the area of Scotland are permanently occupied as grazing land; it is extremely improbable that any material alteration of this proportion will hereafter take place; and in calculating the annual expense of any special plan for obtaining the statistics of Scotland, this large portion of its surface must in a great measure be kept out of view. The arable portion again is all, or mostly all, let on lease under regular rotations and by measurement, the particulars of each farm being defined and recorded in written agreements. With such checks it becomes easy to ascertain and difficult to misrepresent either the acreage of a farm, or the nature of its rotation of crops, while the prevalence of similar rotations over certain districts will materially facilitate a correct approximation to the acreable produce. It is believed that the system of leases and character of agriculture in Scotland would go far to simplify and economise the collection of statistical returns from the arable parts of the country, while in the grazing districts the trouble and expense would be comparatively trifling.—By order of the Directors.

(Signed) JOHN HALL MAXWELL, Secretary.  
Edinburgh, March 25, 1852.

#### Home Correspondence.

**Peat Charcoal.**—Having observed in your paper of April 30 an article signed J. Towers, in which the writer states, as the result of his experiments, that peat charcoal has no peculiar power in purifying sewage from its ammoniacal impregnation, so as to form manure, I beg to state that the failure of Mr. Towers must have arisen either from his experiments having been conducted on too small a scale, or from some other cause, not fully explained; for it can easily be shown that peat charcoal, under proper management, not only does take up the ammoniacal salts, but that they can subsequently be fixed, so as to form one of the most valuable manures in the country. *Geo. E. Lane, Superintendent of the Sewage Charcoal Works, Stanley Bridge, Fulham.*

**Roots.**—Permit me to add my testimony to that of "A Practical Farmer" to prove the destructive propensities of roots, and also to prove the inefficiency of boys in preventing their ravages. I have been for 50 years a farmer, in a district surrounded by rookeries, and during the whole of that time have seen the vast amount of damage done by them to the farmers, but could never perceive any benefit to be derived from them to be at all compared with the loss sustained. Some years ago I had seven acres of winter Beans; near one half of them were destroyed by roots. They commenced their depredations when the Beans were just coming up, and they again attacked them as soon as the pods were filled, notwithstanding I had a boy employed about 13 weeks to keep them off. My loss in Beans could not have been less than from 10 to 15 qrs. This is one case out of a great number I could produce to prove the destruction caused by roots, and the folly of depending on boys. I have frequently found them either asleep or sitting over a fire which they had kindled in a sheltered corner, and nearly the whole of the field covered with roots. Having looked at the dark side, I will now for the benefit of my brother farmers describe what I have found to be a most effectual remedy, not only against their depredations, but I have found it to be equally efficacious in preventing the ravages of pigeons. Seven years ago I had a 9-acre field of Barley, which promised to be a heavy crop. This field was situated within



50 yards of a neighbouring pigeon-house. As soon as the Barley began to fill in the ear, the pigeons commenced their depredations in the middle of the field. This was near six weeks before harvest; and I calculated that from the number of pigeons, and the length of time to harvest, that they would destroy one-half the crop, or more than 30 quarters of Barley. What was to be done? I knew, from experience, the futility of employing boys. In this dilemma a thought struck me that if I shot a few of them, cut them in pieces, feathers and flesh, altogether, and strewed them about in the place where they had begun their depredations, it might possibly frighten them away. I did so, and from that time to harvest I could never see a single pigeon alight on the field. This plan is equally effectual with rooks; when their mangled companions are strewed on the ground, they will fly screaming over them, round and round, and then take themselves quite away. Hoping that others may receive the same benefit I have done from this communication, I subscribe myself another *Practical Farmer*.

*Estates*.—The personal superintendence of landed property by the owner, or at least a knowledge of the extent of an estate, as well as its value, however small, would be the means of improving the annual income of many a man, who now receives his rents without inquiry, and in many instances is perfectly ignorant of the locality in which his land lies. The proprietor may have been told that his money is buried, either on the hills or in the vale, but of the real value and capability of the estate or farm he must trust to report. How many circumstances enhance the worth of land, which it is necessary to comprehend!—viz., natural and artificial drainage, the nature of the subsoil, supply of water, as well as water-power, the vicinity of a market, good roads, convenient buildings attached to the holdings, with many other minor things which will occur to persons conversant with agricultural commerce; which, by the way, is as much a trade as selling broadcloth and sheeting. Many imagine that a farm on the hills is less lucrative than one in valleys; but considering the relative rent, extent of run, &c., the former pays well, whilst the latter, from the admission of grain, is depreciated. The difference of value is caused by one being adapted for breeding sheep, which fetch a high price, and the other being calculated to grow grain, which is low in the market, comparatively speaking. We may, therefore, conclude that the hill farmer flourishes, whilst he in the vale can just keep his head above water. Before complaining of the effects of opening the ports, which can never be shut again to the exclusion of Wheat, it would be advisable for all landlords, however cheap they may have obtained their property, to visit it themselves, and ascertain under their own eyes what rent it will produce, fair towards both master and man. This trouble would put many a pound into the pockets that need it. If the landed interest look back upon years that are passed, how bitterly must they repent the lavish expenditure upon contested elections; to attain a shadow, throwing away the substance which might have been judiciously employed in improving their patrimony, now saddled with mortgage upon mortgage, till the broad acres can scarcely be said to belong to the ostensible owner. Yet, in spite of past experience, too many are again ready to rush into useless expense; to gratify whom or what?—agents and others, who swallow up everything, and leave a wreck behind. What a melancholy *exposé* has followed the inquiry of the Irish commission! What has happened in one country is likely to occur in the other, without the assistance of a particular court. No doubt property is changing hands in England to a vast extent, not from unforeseen misfortune, but from long neglect and carelessness, and not having courage to examine into personal affairs—delegating such an important duty to a deputy, when even he does not reside in the locality, but merely visits the spot as a matter of business. Thus are miseries entailed on those who come after, which no prudence can combat; and the man who ought to succeed to an excellent income is obliged to become an exile from his native land. In many cases it may not be too late to retrieve an error. From whatever cause property has been allowed to become involved, whether idleness, pride, selfishness, or all combined, the incubus must be shaken off and replaced by an energetic and determined spirit, resolved to conquer all difficulties in spite of the sneers of the world and the desertion of ephemeral friends, mere sunshine hangers-on during the days of feasting and folly. It is difficult to descend the ladder of popularity—agreeable enough to ascend and reach in prosperity, rather a broken reed to rely upon in adversity. It requires some resolution to say the word, retrench, and act upon it; nevertheless, how delightful is independence—a man living within his income whatever it may be, defying the bailiffs, despising the false glitter and ostentation which can only be indulged at the expense of others, and your own inward dissatisfaction. A man feeling that he is trenching upon the outer edge of his income should look matters boldly in the face, and reduce his establishment before the Rubicon is passed; borrowing money on mortgage—a dangerous precedent—leading ultimately to the destruction of the largest fortune, without a ray of hope to stop the mad career of the spendthrift. The usual resource of an improvident landowner is a residence abroad to nurse the property, which means a fear to meet those who have known him in affluent circumstances, but whose opinion and hollow friendship are not worth a thought, if they desert a man in his

utmost need—"the hare with many friends." Professions are cheap, and too often mean nothing—Practice is rather more troublesome, and therefore in too many instances laid aside. *Falcon*.

*Oats and Turnips*.—Can any of your correspondents give me any information as to the comparative advantage of Oats or Turnips for milking cows? A neighbour farmer of mine feeds his stock, of 28 cows, during the winter almost wholly on crushed Oats and chaff in preference to Turnips, and states that the cows keep their condition much better and get up to their quantity of milk quicker by this plan. He gives four measures of Oats, at 3s. or 3s. 6d. per measure, where the same cows would eat a ton of Turnips worth 14s. The cost of the two is, therefore, about the same, or rather in favour of the Oats. *Constant Subscriber*.

*Rooks*.—We set a rat-trap, baited with a Bean, and if possible catch one unhurt; then cut his wing, and tie him by the leg, with three or four yards of string, to the tip end of a small stake; though thus confined, the fellow will eat if he is fed. We thus leave him about two days, to the terror of himself and his companions, and then kill him, leaving him at the same place; during his bondage in life, and after death, many hover over him, as if condoling his misfortune, but none dare to alight. The destruction that small birds make, however, is intolerable. No person can grow a good sample of some kinds of seeds or of corn where many small birds exist. We sometimes sow a large breadth of Radish, purposely for them to ravage with impunity; and, by this means, save in good condition many more valuable crops. A neighbour once grew a large piece of Radish, and not an atom of seed was secured fit for sale, on account of the linnets and finches, at a loss of at least 10%; whilst we, in an adjoining ground, gained from the same circumstance not less than 30%, by the saving of a fine piece of Cauliflower and various other seeds. Prevention, if not the destruction of predatory birds, is necessary, as the sad losses occasioned by them cannot be so well spared in these free-trade times as in times gone by. Some one has said in the *Agricultural Gazette* that whoever advocates the destruction of small birds is a nuisance to the community. Surely, there is no more inconsistency in destroying a race of birds, when they become a pest to a neighbourhood or country, than an overabundance of wild beasts, rats, mice, slugs, caterpillars, wasps, and insects of various kinds; yet enough is known of natural history to deem it not prudent to foster these creatures when they evidently become a pest to man, though wisely created for unforeseen purposes, and above our weak comprehension. *Hardy & Son, Seed Growers, Maldon, Essex*.

*Predatory Birds*.—The injury sustained by farmers from birds seems to be but vaguely understood or appreciated, excepting by those persons who have suffered from their depredations; and it ought not to be deemed very unreasonable if—when facts are adduced of great ravages committed by the feathered tribes—complaint should be made of the great encouragement of rookeries, or of discontinuing the very useful practice of paying boys for destroying sparrows. If "An Inquirer," or "T. G." would have the goodness to look again at my note in No. 5, for January 29, they will not find any recommendation of wholesale destruction, but merely a few practical hints on the best means to abate a nuisance. I admit that rooks in moderate quantities, if well watched, are very useful; wire-worms, especially, they will pick up in great quantities, but if not well shot down while young in the rookery in spring, they will increase and multiply beyond endurance; for after they have once acquired strength of wing they are too wary to be much diminished in number by any means that can be devised. The sight of a gun is generally sufficient, and an old man will be more serviceable than two or three boys. I think they are capable of injury a longer time than is supposed; Wheat seeding commences with October, and, as in this last season, sometimes extends until spring corn is sown (February), and that is not finished generally until May 1. June witnesses their attacks upon early Peas, Potatoes, and young Turnips, July and August on the growing crops of corn, so that instead of their injuries being inflicted on two months out of 12, I believe it will be found that you are liable to damage for 10 months out of 12. I am inclined to believe the good they do is over-estimated; it is a rare thing to kill an old rook; when one is taken, pass a knife through his fine, muscular breast, and extract the gizzard, in which will be generally found corn of some sort, with a worm or two, very seldom a locust, always a grub or larva; but of the larvæ, how many sorts belong to flies, moths, or beetles, prejudicial to corn or root crops? As a naturalist, I am partial to rooks; they are a cheerful, industrious, and sagacious family, but they are also keen competitors for property, and if not well looked after, will diminish profits. One gentleman recommends poison. I confess I do not like his plan, if ever so effective; but you cannot poison larks, which I contend will do as much mischief as crows to Wheat when peeping from the ground in November, and they are the most difficult of all birds to scare. Some benign enthusiasts would spare sparrows, which may be classed with mice and rats among the pests of a farm. I am aware that in spring the various caterpillars found on the Hawthorn supply them with food; but sparrows do not compensate for their mischief to corn by any advantages that can be placed to their account. They are impudent, voracious, and chattering thieves; I would deal "just shot" among them without compunction. Chaffinches also destroy much seed corn, and the united effect of all these pilferers sadly

mitigates against the theory of thin seeding, for it is really necessary to allow as much corn for birds, slugs, and wireworms as would be sufficient for a crop. *J. W., Peterborough*.

## Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND. A WEEKLY COUNCIL was held at the Society's House in Hanover Square, on Wednesday, the 11th of May. Present, Colonel CHALLONER, Trustee, in the Chair; Lord Camoys, Lord Bridport, Sir Matthew White Ridley, Bart., Sir Charles Lemon, Bart., M.P., Mr. Raymond Barker, Mr. Birmingham, Mr. Bullen, Mr. D. Burton, jun., Mr. Cavendish, Mr. Clarke (Swakelys), Mr. John Clutton, Mr. Darnborough, Dr. Daubeny, Mr. Dyer, Mr. Edgington, Mr. Edwards, Mr. Gadesden, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Lawes, Mr. Majendie, Mr. Manning, Mr. Dyce Nicol, Mr. Odams, Mr. Parkins, Mr. Ramsay, Mr. Rowlandson, Mr. Severn, Professor Simonds, Mr. Slaney, Mr. Spencer Stanhope, Mr. Stansfield, Mr. Martin Sutton, Mr. R. Trench, Mr. Tunno, Captain Henry Vyner, and Professor Way.

NATURAL AND ARTIFICIAL GRASSES.—Professor Way, consulting chemist of the Society, submitted to the inspection of the members the tabular results he had obtained, during the last three years, from his chemical investigation into the relative nutritive value of the natural and artificial Grasses. These results were given in two tables, one of which contained the 20 analyses of natural Grasses, and the other 13 analyses of artificial Grasses, and 7 analyses of weeds; showing the proportion of water in the fresh plant, and the relation of each Grass in its dried and undried state to albuminous and fatty matter. He gave a detailed statement of the valuable investigations undertaken in 1842, at the expense of the Duke of Bedford, and carried out by Mr. Sinclair, under suggestions by Sir H. Davy, for the purpose of ascertaining the composition and qualities of different Grasses, and the reason of their superior produce in particular cases. In these experiments the test of nutritive value was supposed to consist in the amount of soluble extractive matter obtained from equal weights of the several specimens of Grass. It is now, however, known that such extraction will give but a very imperfect indication of nutritive value, vegetable food being at the present day divided into the *nitrogenous* class, including albuminous and cheesy matter, the leguminous food of Peas, &c., and matter generally of an animal character; and the *non-nitrogenous* class, including starch, gum, sugar, and fatty matter. In the first class, the nutritive substance is partly soluble and partly insoluble, the cheesy and leguminous matter being only soluble under certain circumstances; in the second class, the nutritive substances are generally soluble. It was under these great and contradistinguished divisions that the investigation he had undertaken under the direction of the chemical committee of the Society had been pursued. He offered the results obtained simply as data on which inquiry might proceed, not as exponents of any assumed theory on the important question of the conversion of vegetable food into animal substance, on which so many distinguished physiologists and chemists held different opinions, and which, he thought, would receive its best solution by cautious induction from incontrovertible facts. He referred to the siliceous nature of the stems of natural Grasses, and to the opposite character of those of the artificial ones. He also cautioned the members against too hasty a conclusion of the value of produce from weight or bulk, which in many cases resulted from the large proportion of water the plant contained: he advised rather a consideration to be made of the per centage of dry solid matter obtained, as a surer guide to such relative value. He cited and illustrated cases of the deception that might arise from such estimation of the value of a crop; and entered into a detailed statement of the mode in which the Grasses had been collected by Mr. Bravender, and sent to him daily in closed tin cases: leaving the full elucidation of these details and his views generally on the subject to be given in a paper he was preparing for the Journal of the Society, to be published next month.—Colonel Challoner referred to the probable advantage of Professor Way's double silicates for Grass-lands, deficient in the siliceous matter required for the natural Grasses.—Mr. Lawes favoured the members with a statement of those deductions connected with the feeding of animals on nitrogenous and non-nitrogenous food, which he had drawn, not from theoretical assumptions, but from actual experiments on animals themselves. He pointed out the discrepancies arising in the present state of our knowledge, from the application of any assumed general rule on this subject, to cases of feeding. This result did not justify him in regarding nitrogen as an indispensable agent; in these cases: if he made any assumption would be in favour of the non-nitrogenous compound constituting the food of animals, the nitrogenous being thrown away or wasted, while the non-nitrogenous was retained; but, without assuming the peculiar function of nitrogen in the animal economy, the truth in this, in other cases, might lie midway between the extreme and some relation hereafter be assigned between the two classes of nitrogenous and carbonaceous food be adapted for the purpose under each given circumstance. He entered into very interesting details connected with the striking results obtained by him in the course of experiments on the feeding of animals. These will



given to the members in the pages of the new number of the Society's Journal, now in the press.—Dr. Daubeny remarked, that the results of Mr. Lawes's observations upon the superiority of non-nitrogenised over nitrogenised substances in feeding animals might be accounted for on this simple principle, namely, that the growth of an animal, beyond a certain point, depended rather upon the increase of fat than upon the increase of muscle. The production of the former would be favoured most by administering starch, sugar, and gum, and that of the latter by the albumen contained in the plant; consequently, it must, he thought, be bad economy to supply any animal with a larger amount of nitrogenised matter than was necessary for making up the waste of muscle. He would also venture to make another remark, in order to supply what appeared to him an omission in Professor Way's very able and useful communication; namely, that according to theory, the most profitable time for cutting the natural Grasses would be just when the largest accumulation of saccharine matter has already taken place. This would be just at the time when the flower begins to be developed, after which the secretions would undergo a continual diminution by being applied to the perfecting of the seed, for the use of which Nature had originally raised them up. He concluded by observing that these, likewise other theoretical suggestions, must of course be tested by practice; but he could not sit down without expressing his opinion that the collection of such data as those which Prof. Way had brought together in the tables then hung up in the room would be of great service in suggesting experiments which might eventually lead to a more economical use of the Grasses employed in agriculture.—Mr. Slaney then favoured the Council with a very clear and striking statement of what he considered the points at issue in the controversies connected with the great question of feeding animals. In fact he considered it to be always highly advantageous to the practical farmer when "doctors disagreed;" for, in such cases, there ensued that discussion of real fact, and that gradual elimination of non-essential considerations, which eventually led to a sounder knowledge of the subject. He referred to the different characters of the artificial and natural Grasses, in respect to amount of nitrogen contained in each, and to the statements of Prof. Way and the experiments of Mr. Lawes, in reference to feeding properties in each case. He could not, however, help drawing a marked distinction between the quality of milk and fatness of an animal, and that nervous development of much which conferred strength; and for each of these opposite effects, the different classes of food he thought might be administered with great advantage. He understood from Prof. Way that the natural Grasses on which he experimented had not been grown separately in plots, but taken indiscriminately from the pastures on which they had grown; this, Mr. Slaney thought, did not give an equal area of natural grass, to which, by the tables, it appeared so much inferior, because in the former case the natural pasture would furnish a considerable proportion of weeds.—Mr. Andrew Gibbs pointed out, at the request of the members, the comparative permanence of the artificial Grasses on which Professor Way had made his analysis. Dr. Rowlandson considered the annual value of the natural Grasses to preponderate over that of the other branches in husbandry. He complimented Professor Way on the interesting results he had obtained in this investigation of Grasses; only those who knew the labour of arriving at such results could fully estimate it. However, perceived two omissions in the list, which could be well at some future time to supply, namely, of Timothy Grass and the Yarrow: the value of the former was well known, and although it was not able to introduce too much of the latter in light soils, it was generally speaking a useful adjunct. He had for fourteen years made the cultivation of the latter an object of his study. He referred to the various animals made of particular Grasses; cows, he remarked, would eat the soft meadow Grass, while a horse would starve before they would touch it. However, however, all the year round, and I enter in a small proportion into every crop, yielding, as it did, as good a crop on land as any other Grass. Science and practice, he added, would eventually be found to meet; their mutual divergence arose from overlooking small but vital conditions. He fully concurred with the observations of Dr. Daubeny and Mr. Slaney: he agreed with Mr. Lawes, to a certain extent only, that the strength or money-making power of vegetable food should be attributed to the non-nitrogenous rather than to the nitrogenous compounds. When in North Wales, some years ago, he was told that it was a well known fact that cows fed in pastures of Clover and Tares, the latter was always indifferent; but that a dairy woman from a part of the district made the best cheese from a field on nothing but Tares and Clover, some secret element being alleged as the cause of her success. Mr. Slaney had afterwards an opportunity of meeting this dairy woman, and he learned from her that the secret of her success consisted in housing the cows, and having the Tares and Clover carried home to them; in this case the cows were always good, while it was always indifferent when the cows were fed in the field. This circumstance, he thought, partly explained the views both of Dr. Daubeny and Mr. Lawes. The exercise of the cows in the leguminous plants consumed the butter, and produced a larger amount of cheesy matter through

the secretion of the milk, leaving the cheese poor in butter; while in the case of cows at rest in the house, the butter was not consumed but eliminated with the milk, and passed into the cheese, which was accordingly of richer quality. In the feeding of pigs, too, Mr. Rowlandson did not consider either leguminous or starchy food alone so profitable, when both were mixed and given together. The quick breathing power of young lambs required nitrogenous matter to form part of their sustenance.

Mr. Ramsay, of Newcastle-on-Tyne, then moved the best thanks of the meeting to Prof. Way, for his valuable and interesting statement. He could fully perceive that the subject was one of the highest importance; but one also on the threshold of which we could only just be said to have fairly entered.—Mr. Fisher Hobbs seconded the resolution, remarking, that there was no branch of farming so little understood as that of the management of natural and artificial Grasses. He hoped these inquiries of Professor Way would direct attention to the subject, and lead to researches not only into the properties of the Grasses themselves, but also into the adaptation of particular varieties for different soils, in order that hereafter the Grasses may be cultivated by farmers to greater advantage than they have hitherto been done.—Colonel Challoner, in putting the question from the chair, alluded to the modest manner in which Professor Way, as a man of science, had submitted his investigations to the ordeal of practical corroboration; such a mode of procedure being advantageous to the Society and honourable to himself. The Society ought not to be governed, in its endeavour to be useful, by the *ipse dixit* of either the propounder of abstract science, or the mere isolated facts of the practical man; but the two ought mutually to lend aid and light to each other in advancing the cause of rational science or that sound economical practice. The meeting, he considered, was also much obliged to those gentlemen who had favoured them with their results of experience on the subject brought before them. These weekly meetings of the Council, open to all members of the Society, were not intended to lead to the discussions of a debating society, but to enable members interested in particular branches of farming to compare their different opinions and practical results with each other, and with those scientific principles which were from time to time enunciated by the Professors of the Society.—The thanks of the meeting were then unanimously voted to Prof. Way, who acknowledged in suitable terms the compliment paid him.

The Council adjourned to their next weekly meeting, on the 18th of May.

#### POULTRY.

**Early Chicks** in this district are very scarce. Many farm and cottage yards are at this time without any, and but few have birds hatched so early as April. Fanciers have experienced the same want of success. The eggs have either been starved by the prolonged absence of the hens during the frost, or by their running their nests, and in most cases the chicks hatched have been very weak, taking from two to four days to bring them off, and consequently many deaths have taken place. I have reared a few Cochin China chicks, hatched in the middle of February, which were attacked by cramp caused by the excessive cold, and were saved by the use of cod liver oil, and the feeding upon Oatmeal slaked with milk, and mixed with Onion tops, as recommended by Mr. Baily. I do not know of more than one person here besides myself who has been successful in rearing chicks so early this season. A few days ago, hearing an unusual noise in one of my hen-houses, I cautiously opened the door, and found a hen chasing a mouse, whilst her chickens were in a state of great excitement at the unusual hubbub. The hen at length succeeded in killing her game, and called her chickens, who immediately began picking at the little animal, and a few minutes afterwards the hen swallowed the animal entire. *Pocklington, Boston.*

**Eggs.**—"Sexagenaire" can bear testimony to "G.T.'s" plan of keeping eggs being excellent. She has now in use an egg-stand, on the same principle, which was her mother's before she was born. It is of Oak, 19 inches by 14 inches, and 18 inches high, having four tiers of shelves, pierced to hold four dozen each, 16 dozen in all.

**POULTRY: S.R.** You do not state in what way the fowl's feet are affected by rooting on a bar of iron. If callosities have formed on the ball of the foot they will be troublesome to get rid of, and the only plan is to confine him entirely to a run where he is constantly on the Grass. If the feet are poisoned by it, poultice with Lily root, and open it with a razor as soon as it is fit; wash them thoroughly with warm water two or three times every day till well. While the poultices are on, the bird may be kept in a large basket full of soft hay, but I think it better he should be on dry Grass. Give him none but soft food, till he is recovered.—*J.M. Cantelo's* hydro-incubator may be made very useful where it is wished to rear much poultry or game, more particularly in the summer when Nature does so much towards rearing all young poultry. I would advise to set eggs under the hens and in the incubator at the same time, and by these means to make every hen take charge of at least 20 chickens or pheasants. Although impossible in cold weather, this would be easy in summer, and very advantageous. The other questions can be better answered in Leicester Square.—*Dorchester.* I have seen a brood of game fowls with dark-crests, that is, a tuft rising from the crown and falling over backwards; the tuft is a small one, nor did I ever see one of them, among the birds of those who are successful in making, in these days. There was a pen of them exhibited last December at Birmingham.—*H.C.* Never your question: If I were to try I should put the eggs in sand rather than hay. I believe a temperature of 98° will hatch them, but I should think at this time of year you will have no difficulty in getting broody hens. If I were to

attempt what you purpose I should turn the eggs daily.—*A.H.I.* I must answer your questions as they occur. Bantams are good layers, but old birds lay later than young ones, and perhaps yours, except the two, are old; then the weather has not been propitious, and doubtless all 30 eggs are from the two pullets. A common bantam will lay from 60 to 70 eggs delicate, as the Sebright. I have some of the last named in full lay, and they have been for some time. They are good-laced Sebrights; then come the partridge, black and white, all very beautiful, but of course in the latter the beauty is more in symmetry than colour. The Spanish are very bad sitters; all, as no dependence can be placed in them. They are not generally a table fowl; their flesh is excellent, but their black legs are unsightly. Their eggs being larger are more valuable than those of other fowls, and the price you mention is less than their value. When eggs are sold at 9s. per dozen, they are for sitting; and if your Spanish fowls are first class, you will have no difficulty in making even more than that. Many have been sold during the last two years at 5s. each. To the amateur, poultry offers little remuneration, unless he can breed prize stock. To enter for a market is not a lucrative pursuit. Competitions and exhibitions have quite altered the features of the question. To a successful competitor, and consequent owner of choice birds, an income of hundreds of pounds is secured, so long as the present excitement lasts; but to the breeder of poultry, as an article of consumption, large profit must be dependant on producing it very early, in fact, out of season; and this is accompanied with a sacrifice of time and exertions that would be more remunerative if employed in almost any other pursuit; indeed, none but a poor person will ever undertake it. I consider Barley bad food without change. I prefer Oatmeal, both from economy and for the well doing of the birds. I will endeavour to go more into detail next week. *J. Baily, 113, Mount Street.*

#### Calendar of Operations.

##### MAY.

**FORFARSHIRE GLENS, May 2.**—At the date of my last, Feb. snow had been lying for some days, with hard frost; from that time to March 5, the storm continued with daily increasing severity, wind generally blowing a strong gale from the north-east, with heavy snow showers and blinding ground drift, varied now and then with a calm clear day. There was a breathing time of ten days, from the 5th to the 15th, with a moderate thaw, which partially cleared the low grounds and relieved the hungry flocks, but followed by a like period of frost, snow, and drift, from the north-east, more bitter than before. Since the 25th the weather has been generally dry and cold. Ploughing was resumed about the 3d or 4th of April, and sowing commenced about the 10th. The snow still lies in huge masses on the southern sides of the neighbouring hills, and has only within a few days disappeared from some of the fields. The sowing time has been favourable, but a little later than usual, and the earliest sown corns are coming up strong and regular. Potato planting is but just commencing. An ungenial atmosphere has hitherto prevailed, consequently there is little vegetation, and cattle are generally still in winter quarters. Stock sheep have generally weathered the blast, but with considerable loss of fat and muscle. Hogs get a few Turnips during the spring months, and have improved since the storm abated. Ewes are nursed on the best sheltered parts of the pastures, where the tender herbage first appears, and all other sorts are turned to the glens to make shift as best they can. The lambing season has been favourable, and the produce abundant; but a more full supply of Grass will be immediately wanted to secure full development. One certain effect of the severity of the past winter and consequent leanness of the stock, will be a deficient crop of wool; a lean ill-wintered sheep is invariably covered with a light and coarse fleece, by increase of quantity is, however, likely to be more than made up by increase of price. Fed beasts, both sheep and cattle, command a ready sale at very high prices, and lean stock for grazing are equally in demand and but little cheaper. Those who require to purchase largely at this season are looking forward with gloomy suspicion to the autumn, when a corresponding amount of stock has to be disposed of; but should the golden shower continue falling, and the wheels of a busy commerce continue moving, and the muscles of a toiling population keep expanding, food will be consumed and still more food will be wanted. *S.*

#### Notices to Correspondents.

**ANALYSIS OF SOILS: A Constant Reader.** See the Appendix to Professor Johnston's Lecture on Agricultural Chemistry.

**ANNUITY: M.W.K.** The inquiries you make do not come within our province, but we will state what we find in Willich's Popular Tables on the subject:—With money at 3 and 4 per cent. respectively an annuity of 100l. is worth 1000l. and 966l. respectively, to a man 60 years old; and with money at the same rate of interest the present value of 2d. a year for 90 years is 62d. and 48d. These two facts will enable you to determine the question which you seem to entertain, but which you have not explicitly put.

**COAL TAR: E.S.** Coal tar and lime, or the former alone, are mentioned as being very effective in keeping wet out of railway arches. See "Our Iron Roads," p. 167. Can any one describe its application?

**COW: P.O.D.** Previous to calving the bowels should be got into a healthy and rather relaxed state by means of an aperient, and afterwards some vegetable tonics, such as Gentian 2 drachms, Ginger 2 drachms, should be given daily in gruel. A little Linseed cake will be desirable food; a mild stimulant, such as hartshorn and oil, may also be rubbed on the loins. *W.C.S.*

**CURING CLOVER HAY IN COCKS: J.W.** The practice spoken of in the popular tale, "Queechy," vol. ii., chaps. 2 & 11, is, we presume, the very common practice known in this country, and depending upon the principle, acknowledged by the best hay-makers, of making the hay with as little exposure as possible. **GUEST EWES: W.** These are ewes that do not have lambs after taking the tup; they should be in good condition in April so as to be at once brought to market. It not seldom happens that their barrenness is owing to their high condition in the autumn.

**MALT KILN DUST: J.W.** We should suppose this manure to be more powerful than soot. But we would not dabble under Maudslow seed in the manner described in the Royal Agricultural Society's Journal, No. 26, p. 713. We would rather mix it with the general dung-heap.

**MANGOLD WURZEL: Rns.** It may still be planted, two or three berries in each place, dibbled in and covered very shallow, in rows 26 inches apart and in places 12 or 14 inches apart in the rows. It will take about 6 lbs. of seed per acre.

**NETTING FOR SHEEP: C.R.** We do not know Heythorn's netting. Perhaps your question may induce him to advertise.

**NUTRIENT OF SODA: N.M.** Sow it at the rate of 1 or 1½ cwt. per acre, in wet weather, over Grass, Clover, and young grain crops. **PURINS, &c.: A Young Dairyman.** Mr. Mechl has not forgotten his promise.—In some dairies it has been the practice to remove the milk by exit pipes in the bottom of shallow cisterns, but it is not a common plan.

**ROOKERY: G.H.B.** We fear, and his efforts vain to direct the rooks where to build. It has been said that eggs of rooks hatched, and the young reared by other birds in the required spot would result in the establishment of a rookery. The following is, however, an instance of success:—"We sent to a distant rookery, not nearer than ten miles, as the crow



## Markets.

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CUMBERLAND MARKET, May 12.

... 80s to 90s	Old Clover ...
... 90s to 100s	Inferior do

COAL MARKET.—FRIDAY, May

POTATOES:—SOUTHWARK, May

WOOL.

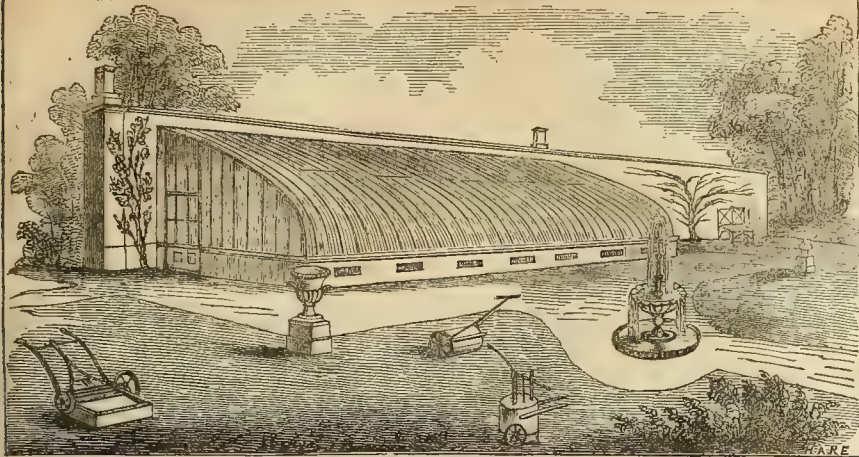
There is a steady demand, and firm  
We have nothing to add more

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complaint of want of profit.



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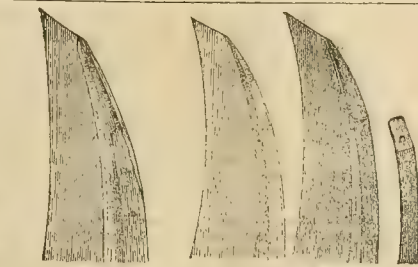
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struments	Horticultural Ham-	" Scythes	" Scythes
Daisy Rakes	mers and Hatchets	" Scythes	" Scythes
Dibbles	Hoes of every pattern	" Scythes	" Scythes
Dock Spades	Hotbed Handles	" Scythes	" Scythes
Draining Tools	Ladies' Set of Tools	" Scythes	" Scythes
Edging Irons and	Labels, various pat-	" Scythes	" Scythes
Shears	terns, in Zinc, Por-	" Scythes	" Scythes
" Stands in Wires	celain, &c.	" Scythes	" Scythes
and Iron	Lines and Reels	" Scythes	" Scythes
Fumigators	Marking Ink	" Scythes	" Scythes
Galvanic Borders and	Mattocks	" Scythes	" Scythes
Plant Protectors	Memoranda	" Scythes	" Scythes
Garden Chairs	Metallic Wire	" Scythes	" Scythes
Seats	Milton Hatchets	" Scythes	" Scythes
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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MILLY EVANS, of No. 7, Church Row, Stoke Newington, both in the County of MIDDLESEX, Printers, at their Office, in Lombard Street, in the Precinct of Whitchurch, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to the Editor.—SATURDAY, MAY 14, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 21.—1853.]

SATURDAY, MAY 21.

[PRICE 6d.

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**ROYAL BOTANIC SOCIETY, REGENT'S PARK.**  
—The FIRST EXHIBITION this season of PLANTS and FLOWERS will take place on WEDNESDAY next, MAY 25. Tickets of Admission may be obtained at the Gardens by Orders from Fellows of the Society, price 5s. each, or on the day of the Exhibition, 7s. 6d. each.

**BEDDING PLANTS.**  
**WOOD AND SONS, NURSERYMEN AND SEEDSMEN,**  
Nursery Place, Old Kent Road, and Bowyer Place, Camberwell, beg to offer strong Plants for the above purpose at 25s. per 100, or 3s. per dozen. Comprising Pelargoniums, Scarlet Geraniums, Verbenas, Petunias, Ageratum, Calceolarias, Fuchsias, Double Senecios, Heliotropiums, Lobelias, Salvias, Lantanas, Mimulus, Cupheas, Gaillardias, Gazanias, Pentstemons, Double Intermediate Stocks, Dahlias, &c., &c.

**NEW GERANIUMS.**  
**BASS AND BROWN** have a few well-established Plants of the following now ready, at the reduced prices annexed:—

Each.—s. d.	Each.—s. d.
Hoyle's Zaria .....	10 6
" Astrea .....	10 6
" Lagoma .....	10 6
" Basilisk .....	7 6
" Albiva .....	7 6
" Kulla .....	7 6
" Novelty .....	7 6
" Butterfly .....	7 6
" Fortia .....	10 6
Henderson's Extravaganza ..	5 6
Foster's Rachel .....	10 6
" Optimum .....	25 0
" Eleanor .....	10 6
" Queen of May .....	15 0
" National .....	15 0
Dobson's Vulcan .....	15 0
" Jupiter .....	10 6
" Spot .....	10 6
" Harriett .....	10 6

The following 18 choice new varieties of last season may be had, fine plants, for 60s., or any 12 for 45s.:—Ariadne, Ambassador, Arctura, Chieftain, Colonel of the Buffs, Commissioner, Elise, Exhibitor, Ganymede, Gem, Herald, Lavinia, Mochanna, Monteith, Painter Improved, Purple Standard, Rubens, Shylack. Choice varieties 6s., 9s., 12s., and 21s. per dozen.

## FINE BEDDING PLANTS.

**VERBENAS.**  
50 varieties, very choice .....

12 varieties, very fine, 3s. 6d. and .....

25 varieties ditto, 7s. and .....

Purchaser's selection from any of the following, very superb, new, of last season, 12 varieties for 15s., or the set of 18 for 18s.:—

Adonis .....	Juliet .....
Alba Magna .....	Madame Malet .....
Ariel .....	Madame Le Gros .....
Beauty Supreme .....	Mons. Jullien .....
Celine Malet .....	Orlanda .....
Conquerant .....	Orchid Beauty .....
Diana .....	Parfait Madeline .....
Duchess of Kent .....	Standard .....
Eliza Cook .....	Zenobia .....

**PETUNIAS.**—Choice selections, per dozen, 4s. to 9s.

**FUCHSIAS.**  
50 varieties, very choice .....

Choice selections, per dozen, 4s. to .....

Henderson's three distinct dwarf varieties—Darling, Pet, and Globosa Perfecta, each .....

12 choice varieties of last season, including the last named 15 0

**DAHLIAS.**  
Choice varieties, per dozen, 6s. to .....

Choice fancy ditto, per dozen, 6s. to .....

**CHRYSANTHEMUMS.**  
Large flowering, fine, per dozen, 6s. and .....

14 best new, of 1852 .....

Liliputian varieties, fine, per dozen .....

12 best new, of 1852 .....

Anagallis, 3 best varieties .....

Bouvardia flava .....

" splendens .....

Cuphea platycentra .....

Cyanthus lobatus, 1s. 6d. .....

Lantana, 3 varieties distinct .....

Linum flavum .....

Lobelia erina maxima and racemoides, the ..

two best dwarf varieties .....

Mimulus, in 4 fine varieties .....

Phlox Drum. Thompsoni, extra rich crimson ..

Salvia azurea compacta, each .....

" amabile, beautiful, each .....

" fulgens, per dozen .....

Veronica Andersoni, fine plants, each, 1s. 6d. to ..

Zauschneria Californica, per dozen .....

**SELECT HARDY PLANTS.**  
See Advertisement of a quantity of select and popular Hardy Shrubs, Plants, &c., in the *Gardener's Chronicle* of March 26 and April 2.

Herbaceous Plants (colours and heights in Catalogue).

" 100 distinct and showy varieties .....

" 25 ditto ditto .....

" 100 superior and new varieties .....

" 25 ditto ditto .....

" 25 fine vars., best adapted for rockwork 12 0

Hardy Flowering Shrubs, 20 varieties, 12s.; 12 varieties ..

Dwarf Rock Cistus, new and beautiful, very distinct, rich ..

and attractive, the collection of 21 varieties .....

Seaside Rocks, strong, 1s. 6d. per dozen; per 100 ..

Grayson's Giant Asparagus, fine 3 years, p. 1000, 30s.; p. 100 ..

Bass & Brown's SEED AND PLANT LIST for 1853, free, for ..

three penny stamps. Also, the AUTUMN CATALOGUE for ..

three penny stamps, which contains the Roses, Herbaceous Plants, ..

Follyhocks, and other select Hardy Plants and Shrubs, Fruits, ..

&c., and also the Cinerarias, Azalea indica, &c.

Remittances requested from unknown Correspondents. Post ..

Office Orders payable to STEPHENS BROS., or the Firm.

—In order to reduce the cost of transit to distant ..

purchasers, we have now made arrangements for the ..

delivery of Goods to the amount of 20s. and upwards, ..

free to all the Stations in London; also free, as before, ..

to all Stations on the London and Norwich Line, via ..

Colchester.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## NEW PLANT CATALOGUE.

**RENDLE'S NEW PLANT CATALOGUE** for the present season is now ready, and can be had in exchange for one penny stamp.

It contains the lowest prices of all the best varieties of Geraniums, Dahlias, Indian Azaleas, Camellias, Chrysanthemums, Fuchsias, Petunias, Verbenas, Calceolarias, Pinks, Anemones, Achimenes, Stove, Greenhouse, and Herbaceous Plants.

WILLIAM E. RENDLE & Co. have a very large stock of all the above, and the prices will be found exceedingly low.

All orders above £2 carriage free to most of the Rail- way Stations in the South and West of England, and to many of the principal Ports in England and Ireland.

See Catalogue.

Apply to WILLIAM EDGUMBE RENDLE & Co., Nurserymen, Plymouth.

**WANTED TO PURCHASE,**

**DURING THE EXISTING SEASON,**

**A FEW HOUSES OF GOOD GRAPES,**

" " PINE APPLES

" " PEACHES AND NECTARINES

**A QUANTITY OF GOOD MELONS.**

Apply, stating the quantity, quality, and when ready for market, to

**GEORGE TAYLOR, JUN.,**

**FRUIT SALESMAN,**

**St. John's Market, Liverpool.**

**NEW WHITE BEDDING GERANIUM.**

**JOHN AND CHARLES LEE** beg to offer Geranium

**FLORIBUNDUM**, a bedding variety, of dwarf habit and

great merit. The flowers are white, with a small blotch, and are

produced in such profusion as to be a complete sheet of bloom

throughout the summer. It requires a light soil and will be

found invaluable for bedding. Price 2s. 6d. each, 21s. per dozen,

or 12s. the half-dozen. Also,

**GERANIUM WILLMORE'S SURPRISE**, 5s. each, 42s. per doz.

" **MOUNTAIN OF LIGHT**, 3s. 6d. each.

" **OF THE DAY**, 12s. per dozen.

Nursery, Hammersmith.

**CHRYSANTHEMUMS.**

**LUCOMBE, PINCE, AND CO.**, of the Exeter

Nursery, Exeter, possess a fine stock of **CHRYSANTHE-**

**MUMS**, very stout plants, fit for show this season, of very

superior sorts, 6s. to 12s. per doz.; and all the new varieties of

last year, 18s. per dozen.—Catalogues may be had on application.

N.B. Their fine new Begonia Pres-antiensis is now being sent

out, price 10s. 6d. each.

**JENNINGS' SEEDLING VERBENA**, "CON-

**QUEROR OF EUROPE**.—This beautiful variety is

the best Lilac ever offered to the public, and received a first-

class Certificate last season. Can be seen in bloom at Messrs.

H. FOWLE and Son's, Holland Nursery, Holland Street, Ken-

nington. Strong plants, 2s. 6d. each.

**EVAN EVANS, GARDENER, Kilwendage, Newcastle**

Emlyn, South Wales, can supply Gardeners and Green-

grocers with **PINE-APPLES** of superior flavour, also **GRAPES**,

on having a reference for payment, if the prices are approved of.

**ROBERT KENNEDY, Florist, has on Sale a most**

valuable importation of **TREE FERNS**, from South

Africa (per steamer from the Cape), to which he would call the

attention of purchasers of this magnificent class of plants.—

Bedford Conservatory, Covent Garden.

**INDIAN AZALEAS.**—A very choice Collection of

this beautiful tribe of Plants is now flowering in the **EXETER**

**NURSERY**; and **LUCOMBE, PINCE, AND CO.** having a large stock of

fine healthy Plants of all the leading varieties, are enabled to

offer them at low prices, viz., 3s. to 30s. per dozen, and larger Plants

may be had also at 42s. per dozen.—Catalogues may be had on

application.—Exeter Nursery, Exeter.

**BEDDING PLANTS, &c., Established in Single Pots,**

selection left to ourselves, 3s. per dozen, viz. Scarlet

Geraniums, Verbenas, Calceolarias, &c. See Spring Catalogue

which may be had by enclosing two postage stamps.

**VERBENA TRIFIDA ODORATA**, white, very sweet

scented, half shrubby, growing from one to two feet high; when

grown in greenhouse is in bloom throughout the winter; 12s. p. doz.

(AZALEA INOICA; specimen plants now in bloom.

H. LANE & Son, the Nurseries, Great Berkhstead, Herts.

**NEW SEED WAREHOUSE.**

**CHARLES ALEXANDER**, late of the Firm of

**DICKSONS & Co.**, begs most respectfully to intimate to his

friends and the public that he has commenced business on his

own account in the premises, No. 32, West Register Street,

where, by strict attention to business, keeping everything of the

best quality, and selling at the lowest remunerating profit, he

hopes to obtain a share of public patronage.

Edinburgh: 32, West Register Street, May 21.

**WHITE BELGIAN CARROT, WURZEL GLOBE**

AND LONG RED MANGOLD WURZEL SEED, and

all other Agricultural Seeds, can be obtained in any quantity

from **WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.**

Also the **LINCOLNSHIRE RED GLOBE TURNIP**,

**RENDLE'S SWEDE**, and all other kinds of Turnips, Descriptive

Catalogues of which can be obtained on application, for one

penny stamp.

**PRIZE TURNIP SEED.**

**MR. MILNE**, of Kinaldie, PURPLE-TOPPED

**YELLOW TURNIP**, which obtained the Highland and

Agricultural Society's Gold Medal in 1852, is now offered by the

Subscribers at 1s. per lb. The Turnips from which the Seed

was taken were inspected by the following rules, viz.: 1st, by

the purity of the stock; 2d, by the symmetry of the form; 3d,

by the apparent hardness of the variety; 4th, by its apparent

capability of yielding a bulky or heavy crop. Remittance or

reference required from unknown correspondents.

BENJAMIN RIDG & Co., Seedsmen.

Aberdeen, N.B.—May 21, 1853.

## ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.

Under the Patronage of Her Most Gracious Majesty THE QUEEN.

THE SECOND EXHIBITION of the Season will take place on

TUESDAY, the 31st of MAY, at the ROYAL SURREY

ZOOLOGICAL GARDENS (open to all Exhibitors), when

prizes will be awarded for the following productions, viz.: Mis-

cellaneous Plants, Specimen Plants, Orchideous Plants, Pelar-

goniums, Fancy Pelargoniums, Cape Heaths, Azaleas, Tulips,

Heartsease, and Vegetables.

The following Exhibitions will also take place at the Royal

Surrey Zoological Gardens—on Thursday, June 30th; Tuesday,

July 26th; and Tuesday, Sept. 6th; open to all exhibitors.

Rules and Lists of Prizes may be obtained from the Secretary,

J. T. NEVILLE, Ebenezer House, Peckham, Surrey.

## SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.

—THE SECOND EXHIBITION OF FLOWERS

of the above Society will be held at the Horns Tavern, Kenning-

ton, on WEDNESDAY, 1st June, 1853, when Prizes will be awarded

for the following productions, viz.:—TULIPS, HEARTSEASE,

PELARGONIUMS, and Fancy Varieties. In addition to the

Prizes offered by the Society, Mr. R. J. LAWRENCE, of Hampton,

offers Five Pounds' worth of Tulips, to be divided into four Prizes.

Members only to compete for Prizes, other persons may send

Plants, Flowers, and other productions, but not for competition.

First Class Certificates will be awarded to Seedling Florist

Flowers, for such as may be deserving of the same. The follow-

ing Exhibitions will also take place, viz.:—Tuesday, 28th June;

Thursday, 28th of July; Wednesday, 14th of September; and

Wednesday, 23d of November.

Subscriptions, 20s. per annum, entitling each member to the

privilege of attending all Flower Shows, Lectures, and Meetings

of the Society, of Exhibiting Flowers, Plants, &c., their own

growth, in competition for Prizes, without any charge for entry,

and also to have two free admissions for friends at each Flower

Show or Lecture. Honorary Members, 10s. per annum, will have

the same privilege, with the exception of not exhibiting Plants,

Flowers, &c., for competition. List of Prizes, and the Rules of

Society may be had at the Horns Tavern, Kennington, and of

the Honorary Secretaries, pro tem, JOHN BUSHEL, Esq., Lower

Kennington Lane; WILLIAM TRAHAR, Esq., 5, Kensington Gore.

Admission to Members and Honorary Members at 2 o'clock;

admission to Non-members, 1s. each.

## THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—THE TENTH ANNIVERSARY FESTIVAL.

In Aid of the Funds of this Society, on MONDAY,

JUNE 13, at the London Tavern, Bishopsgate Street.

SAMUEL LAING, Esq., M.P., in the Chair.

Stewards.

The Right Hon. LAWRENCE SULIVAN.

Sir JOSEPH FARRON.

John Jackson Blandy, Esq.

William Henry Bodkin, Esq.

Henry G. Bohn, Esq.

R. L. Chance, Esq.

Thomas Clarke, Esq.

Wm. F. G. Farmer, Esq.

Thomas Fuller, Esq.

Thomas Grissell, Esq.

Captain O. V. Harcourt, R.N.

Arthur Henderson, Esq.

Tickets, 21s. each; Ladies' Gallery Tickets, 3s. 6d. each, to be

had of E. R. CUTLER, Secretary.

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## HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, MAY 14, 1853.

## AWARD OF THE JUDGES.

## THE LARGE GOLD MEDAL.

1. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for 20 Stove and Greenhouse Plants.

## THE GOLD KNIGHTIAN MEDAL.

1. To Messrs. Fraser, of Lea Bridge Road, Essex, for 20 Stove and Greenhouse Plants.
2. To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for 20 species of Exotic Orchids.

## THE GOLD BANKSIAN MEDAL.

1. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 15 Stove and Greenhouse Plants.
2. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for 6 Stove and Greenhouse Plants in 20-inch pots.
3. To the same, for 12 varieties of Greenhouse Azaleas.
4. To the same, for 10 varieties of Cape Heaths.
5. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids.
6. To Messrs. Veitch & Son, for 15 species of the same.
7. To Mr. Terry, Gardener to Lady Puller, of Youngsbury, Herts, for 12 varieties of Roses in pots.
8. To Messrs. Lane, of Great Berkhamstead, for the same.
9. To Mr. Turner, of Slough, for 12 Pelargoniums in 8-inch pots.

## THE LARGE SILVER-GILT MEDAL.

1. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for 15 Stove and Greenhouse Plants.
2. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 6 Stove and Greenhouse Plants in 20-inch pots.
3. To the same, for 6 distinct varieties of Greenhouse Azaleas.
4. To Mr. Meredith, Gardener to the Duke of Sutherland, F.H.S., at Cliveden, for 6 Stove and Greenhouse Plants in 13-inch pots.
5. To Messrs. Rolleston, of Tooting, for 15 species of Exotic Orchids.
6. To the same, for 10 varieties of Cape Heaths.
7. To Mr. Blake, Gardener to J. H. Schröder, Esq., F.H.S., for 10 species of Exotic Orchids.
8. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 new kinds of Greenhouse Azaleas in 8-inch pots.
9. To A. Rowland, Esq., F.H.S., for 12 varieties of Roses in pots.
10. To Messrs. Paul, of Cheshunt, for the same.
11. To Mr. Ivison, Gardener to the Duke of Northumberland, F.H.S., at Sion, for a collection of Indian Rhododendrons.
12. To Mr. Roser, Gardener to J. Bradbury, Esq., of Streatham, for 10 varieties of Cape Heaths in 11-inch pots.
13. To the same, for 6 Fancy Pelargoniums in 8-inch pots.
14. To Messrs. Veitch & Son, for Lilium giganteum.
15. To Mr. Dobson, of Isleworth, for 12 Pelargoniums in 8-inch pots.
16. To Mr. Turner, for 6 Fancy Pelargoniums in 8-inch pots.

## THE CERTIFICATE OF EXCELLENCE.

1. To Mr. Speed, of Edmonton, for 15 Stove and Greenhouse Plants.
2. To Mr. Taylor, Gardener to J. Coster, Esq., for 6 Stove and Greenhouse Plants in 13-inch pots.
3. To the same, for 6 varieties of Cape Heaths in 8-inch pots.
4. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for 10 species of Exotic Orchids.
5. To Mr. O'Brien, Gardener to G. Reed, Esq., F.H.S., for 6 species of Exotic Orchids.
6. To the same, for 10 varieties of Cape Heaths.
7. To Messrs. Rolleston, for 6 of the newer kinds of Greenhouse Azaleas in 8-inch pots.
8. To the same, for a collection of Variegated Plants.
9. To Messrs. Fraser, for 6 distinct varieties of Greenhouse Azaleas.
10. To Mr. Francis, of Hertford, for 12 varieties of Roses in pots.
11. To Mr. Gaines, of Battersea, for a collection of Indian Rhododendrons.
12. To Mr. Jarvis, Gardener to J. Ruck, Esq., of Croydon, for 10 varieties of Cape Heaths in 11-inch pots.
13. To Mr. Roser, Gardener to J. Bradbury, Esq., of Streatham, for 12 Pelargoniums in 8-inch pots.
14. To Mr. Westwood, of Acton Lane, for the same.
15. To Mr. Robinson, Gardener to J. Simpson, Esq., of Pimlico, for 6 Fancy Pelargoniums in 8-inch pots.
16. To Mr. Ayres, of Blackheath, for the same.
17. To Mr. Constantine, Gardener to C. Mills, Esq., of Hillingdon, for 6 Calceolarias in 8-inch pots.
18. To Mr. Hoare, Gardener to Sir J. Bailey, Bart., F.H.S., for a Lemon Queen Pine-apple, weighing 5 lbs. 4 oz.
19. To Mr. Bray, Gardener to E. Lousada, Esq., of Peak House, Sidmouth, for a Prickly Cayenne Pine-apple, weighing 4 lbs. 1 oz.
20. To Mr. Bradley, Gardener to S. M. Peto, Esq., F.H.S., for Black Hamburg Grapes.
21. To Mr. Jennings, Gardener to the Earl of Derby at Knowlsey, for Sweetwater Grapes.
22. To Mr. Martin, Gardener to Sir H. Fleetwood, Bart., F.H.S., for Black Frontignan Grapes.

## THE LARGE SILVER MEDAL.

1. To Mr. O'Brien, Gardener to G. Reed, Esq., F.H.S., for 15 Stove and Greenhouse Plants.
2. To Mr. Over, Gardener to W. M. Mullen, Esq., of Clapham, for 6 Stove and Greenhouse Plants in 18-inch pots.
3. To the same, for 10 varieties of Cape Heaths in 11-inch pots.
4. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 10 species of Exotic Orchids.

## NEW SHRUBBY CALCEOLARIAS.

CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

J. WEEKS and Co., CHELSEA, have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The sorts being all Shrubby they are perpetually in flower: and from the great variety and brilliancy of their colours, they are invaluable for the Conservatory or bedding-out.

J. WEEKS &amp; Co., King's Road, Chelsea, London.

## NEW AND SELECT DAHLIAS.

THOMAS BARNES begs to invite attention to his unrivalled collection of DAHLIAS, of which he has now ready upwards of 10,000 fine healthy Plants. The following five show varieties, 10s. 6d. each, or 40s. the set, viz., Mrs. F. Sutton (Barnes), Anna Boleyn (Walpole), Agnes (Edward), Edward Miellet (Miquet), Transcendent (Cailloux)—Fancy Panorama (Barnes), Comte Merve (Cailloux), 7s. 6d., or 12s. the two. The above are highly recommended.

All the leading sorts of last and previous years, 6s. to 24s. per dozen. Good border varieties, 40s. per 100. Remittances expected from unknown correspondents. Descriptive Catalogues on application.—Dane Croft Nurseries, Stowmarket.

5. To Mr. Ivison, Gardener to the Duke of Northumberland, F.H.S., at Sion, for 6 species of the same.
6. To the same, for specimens of Garica Papaya.
7. To Mr. Taylor, Gardener to J. Coster, Esq., for a collection of Helichrysma.
8. To Messrs. Lane, for 6 of the newer kinds of Greenhouse Azaleas in 8-inch pots.
9. To the same, for 6 distinct varieties of Greenhouse Azaleas.
10. To the same, for a collection of Indian Rhododendrons.
11. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for 6 varieties of Cape Heaths in 8-inch pots.
12. To Messrs. Fairbairn, of Clapham, for a single specimen of Erica Cavendishii.
13. To Mr. Woolley, Gardener to H. B. Ker, Esq., for a collection of Hothouse Ferns.
14. To Mr. Turner, for a collection of Auriculas.
15. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for Pultenea ericifolia.
16. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for Tetratheca ericifolia.
17. To Mr. Gaines, for 6 Fancy Pelargoniums in 8-inch pots.
18. To Mr. Pestridge, Gardener to W. Newnham, Esq., of Englefield Green, for 6 Calceolarias in 8-inch pots.
19. To Mr. Davis, of Oak Hill, East Barnet, for a Black Jamaica Pine-apple, weighing 3 lbs. 2 oz.
20. To the same, for Black Hamburg Grapes.
21. To the same, for Sweetwater Grapes.
22. To Mr. Bradley, Gardener to S. M. Peto, Esq., F.H.S., for Grizzly Frontignan Grapes.
23. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Trentham, for 6 Murray Nectarines.

## THE SILVER KNIGHTIAN MEDAL.

1. To Mr. Jarvis, Gardener to J. Ruck, Esq., for 6 Stove and Greenhouse Plants in 13-inch pots.
2. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for 10 species of Exotic Orchids.
3. To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for 6 species of the same.
4. To Mr. Stuart, Gardener to T. Huggins, Esq., of Streatham, for a collection of Helichrysma.
5. To Mr. Falconer, Gardener to A. Palmer, Esq., of Cheam, for 6 distinct varieties of Greenhouse Azaleas.
6. To Mr. Speed, of Edmonton, for 6 varieties of Cape Heaths in 8-inch pots.
7. To Messrs. Veitch & Son, for a single specimen of Hexacentris myrsinitis.
8. To the same, for Cattleya Mossiae.
9. To Mr. Wilmer, of Sunbury, for a collection of Auriculas.
10. To Mr. Turner, for 12 Pansies in 8-inch pots.
11. To the same, for 6 Cinerarias in 8-inch pots.
12. To Mr. Turnbull, Gardener to the Duke of Marlborough, at Blenheim, for a Smooth Cayenne Pine Apple, weighing 3 lbs. 5 oz.
13. To the same, for Keens' Seedling Strawberries.
14. To Mr. Jennings, Gardener to the Earl of Derby, at Knowlsey, for Black Hamburg Grapes.
15. To the same, for May Duke Cherries.
16. To Mr. Allport, Gardener to H. Akroyd, Esq., of Dodington Park, Nantwich, for Black Frontignan Grapes.
17. To Mr. Munro, Gardener to Mrs. Oddie, Colney House, St. Alban's, for a Greengage Melon.

## THE SILVER BANKSIAN MEDAL.

1. To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for 6 Stove and Greenhouse Plants in 13-inch pots.
2. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 6 species of Exotic Orchids.
3. To Mr. Over, Gardener to W. M. Mullen, Esq., for a single specimen of Hoya imperialis.
4. To Messrs. Rolleston, for Coleus Blumei.
5. To Mr. Westwood, for 6 Fancy Pelargoniums in 8-inch pots.
6. To Mr. Bragg, of Slough, for 12 Pansies in 8-inch pots.
7. To Mr. Constantine, Gardener to C. Mills, Esq., for 6 Cinerarias in 8-inch pots.
8. To Mr. Perkins, Gardener to Viscount Combermere, of Combermere Abbey, Cheshire, for Keens' Seedling Strawberries.
9. To Mr. Tindall, Gardener to C. H. Leigh, Esq., of Pontypool Park, for a Pontypool Melon.
10. To Mr. Busby, Gardener to S. Crawley, Esq., F.H.S., for 6 Brown Turkey Figs.
11. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Trentham, for May Duke Cherries.

## THE CERTIFICATE OF MERIT.

1. To Mr. Summerfield, Gardener to J. S. Venn, Esq., of Highbury, for 6 species of Exotic Orchids.
2. To Mr. Over, Gardener to W. M. Mullen, Esq., for 6 distinct varieties of Greenhouse Azaleas.
3. To Messrs. Fraser, for a single specimen of Epacris miniata.
4. To Mr. Edmonds, Gardener to the Duke of Devonshire, F.H.S., at Chiswick, for Rhododendron Victoria Regina.
5. To Mr. Woolley, Gardener to H. B. Ker, Esq., for Bifrenaria sp.
6. To Messrs. Lee, of Hammersmith, for Friesia peduncularis.
7. To Mr. Moore, Botanic Garden, Chelsea, for Tritoma Rooperi.
8. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Trentham, for fruit of Musa Cavendishii.
9. To the same, for fruit of Musa Cavendishii.
10. To Mr. Dobson, for 12 Pansies in 8-inch pots.
11. To the same, for 6 Cinerarias in 8-inch pots.
12. To Mr. Wiggins, Gardener to E. Beck, Esq., F.H.S., for the same.
13. To Mr. Dew, of Ham, for Keens' Seedling Strawberries.

## FOR SALE, 800 AURICULAS AND 600 TULIPS.

—For prices, &amp;c., apply to H. CRANE, Southgate, Middlesex.

## BENJAMIN R. CANT, St. John's Street Nursery,

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NEW FUCHSIAS, 1s. 6d. each, or 15s. per dozen.  
Ariel, Exquisite, Gem of the Season, Joan of Arc, Leader, Model, Nil Desperandum, Novelty, Pendula, Resplendent, Standard of Perfection, Splendissima.

MISCELLANEOUS.  
Scarlet Geraniums G-m, Flower of the Day, Master Sparks, Shrubland Pet, and the Amazon, 1s. each.  
Ceres, Princess Alice, Queen of Summer, 6s. per dozen.

Heliotrope Voltairianum nanum, 1s. each.  
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Wellington Road, St. John's Wood, London, beg to offer the following PLANTS, which they can with confidence recommend. Catalogues, containing the general collection of Plants, priced and described, will be sent, post free, on application:—

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" Gem of the Season ... 2 6	" Marginatum, do. ... 10 6
" Commodore ... 2 6	" Queen of Fancies, do. ... 10 6
" Nil Desperandum ... 2 6	" Triumphant, do. ... 7 6
" Roi des Fuchsias ... 2 6	" Advancer, do. ... 5 0
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MESSRS. BAKER can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

GARDEN ORNAMENTS.—A very extensive Collection of Vases, Statues, Sun-dial Pedestals, Figures of Animals, may be inspected any day, between the hours of 9 and 5, at AUSTIN and SEELEY'S Artificial Stone Works, 1 to 4, Keppel Row, New Road, London.

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of Blight upon Roses, Wall Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra strong, in jars, 1s. 3d., 2s. 6d., 5s., and 10s. (jars included); fit for use, per gallon, 1s. 6d. (jars, extra). For Thrip, Scale, Green-fly, and Red Spider, add 3 parts water to 1 part Composition. Destruction will be greatly accelerated upon infested Cucumbers, Melons, and Plants in pits and frames by Syringing and shutting-up early. Specimens might be dipped into the liquid without the least injury to flowers or foliage. Wall Fruit Trees and Roses have been Syringed while in full blossom with the most beneficial effects, and the former even up to the ripening of the crop. For Mealy Bug the Composition may safely be used in its full strength, as any portion of the liquid reaching the roots will act as a manure. For Testimonials, see last page of 'Gardener's Chronicle' of March 12—37 and 38, Oxford Street, Southampton.

## BENTALL'S BOTANICAL DRYING PAPER is

manufactured expressly for Drying Specimens of Plants for the Herbarium, and has been found to surpass every other article hitherto employed for that purpose. With a peculiar adaptation for preserving form and colour, it combines the requisite qualities of strength and great absorbent power; and may be said to be indispensable to every Botanist who is desirous of having his specimens well preserved. It has received the most unqualified approbation of many eminent Botanists, who have tested its merits, among which may be mentioned Sir W. J. Hooker, Royal Botanic Gardens, Kew; Professor Lindley, of the Royal Institution; Professor Balfour, of the University of Edinburgh; C. C. Babington, Esq., Cambridge, &c.

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## WATERPROOF PATHS.—Those who would enjoy

their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

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The sameness, too, of the plants comprehended in general collections, is destroying the interest which would otherwise be taken in such remarkable examples of skill. For what do the spectators say? If you point out any points of excellence, the answer is, "Oh! very fine, certainly; but these are only stove and greenhouse plants, and we always find them here. They come year after year, and I really do not see any difference between one show and another." It cannot be denied that this is too true. Pimeleas, Boronias, Eriostemons, Allamandas, and Polygalas, form the staple, to which are added some Azaleas, an Epacris perhaps, a few Heaths, and an Aphelexis or two. But we submit that these do not constitute such a collection of stove and greenhouse plants as interests the public. Many belong to other parts of the exhibition, some are hackneyed, and of no more importance than a "Swiss giantess" at a fair; and the whole

Italian Rye Grass—very fine sample, Improved Perennial Rye Grass, Annual or common do., and all kinds of Clovers, White Belgian and Red Attingham Carrots; long Red and Red Gibb's Mangold Wurzel; Gibb's new very large Cattle Parsnip, Swedish Turnips of various sorts, Gibb's green top Yellow Hybrid Turnip, White-headed Turnip of various sorts, Dutch and other Cabbages, Lucerne, Broom, Fuzze, Stinkin, and all kind. of Agricultural, Kitchen Garden, and other Seeds.

Corner of Half-moon Street, Piccadilly, London.



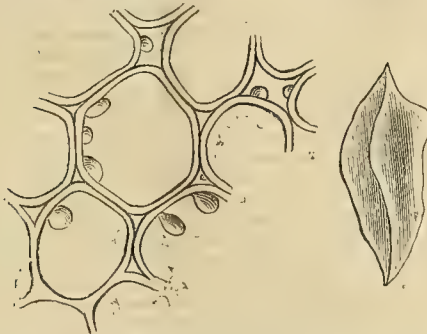
contribute in the least possible degree to that variety which is the charm of an exhibition. It will be seen that five collections contained *Pimelea spectabilis*, four *Boronia pinnata*, six an *Aphelaxis*, and eight or nine *Epacris grandiflora* or *miniata*. That this requires total alteration admits of no doubt, and we wonder that men so sharp-witted as the exhibitors should not see how such a want of variety ruins the interest which their great horticultural skill would otherwise command.

Absolute novelties were sparing. Mr. VITCH was, however, able to produce, for the first time in Europe, the celebrated *Lilium giganteum* of India, in admirable beauty; and its specimen furnishes conclusive evidence that the proportions of this plant are, in old specimens, quite as colossal as report has made them. Mr. VAN HOUTTE produced a particularly handsome *Aphelandra*, with deep-green leaves, beautifully marked with white stripes; it, however, received no reward, having been exhibited in a wrong class. The Garden of the Society contributed a small specimen of *Rhododendron Edgworthi*, one of the Sikkim kinds, now flowering for the first time. Its blossoms were of the largest size known in the genus; cream-colour, a little dashed with pink, and more fragrant than words can describe; their perfume, although intense, yet so aromatic, as to be in no wise oppressive to even the most delicate organisation. Other plants, of less interest, and all the further details of this extraordinary "show," will be found reported in another column.

The number of visitors during the afternoon was 2381.

Though there is but little difference in the phenomena presented by the cells and vessels of diseased vegetable structures, as far as they are appreciable by the microscope, the external appearance of the parts themselves assumes forms varying greatly in colour, consistence, and general habit. We have already pointed out one or two singular instances in the diseased stems of the Cabbage tribe; and we now call attention to a remarkable case which has lately occurred. Every one must have observed the unhealthy condition of the stems of Broccoli during the present spring, partly arising from the long-continued late frosts, and partly from the marked changes of temperature and other atmospheric conditions to which they have been subject.

Within the last fortnight we have observed very few cases in which disease did not exist to a greater or less extent; sometimes confined to the lower portions of the stem, but frequently infesting the whole of the internal substance, and ascending even into the head. In one case, in which decay had made great progress, and the tissue was in consequence strongly discoloured and saturated with moisture, a cavity occurred about half way down, from which a watery fluid gushed out on division, and from whose walls, especially in the upper part of the chamber, proceeded a number of winged processes, calling to mind such achenia as those of *Tripteris*, or similarly-shaped capsules; of a firm but not brittle consistence, with the surface remarkably



even; and, though everything around was dark and stained by the chemical matters produced during the process of decomposition, of the most beautiful ivory white, indeed resembling somewhat the laminated pulp observable in the half-formed teeth of the calf. The processes were not always regular, but all of them more or less winged, and it was easy to trace above their connection with the corrupted tissue, which was evidently disposed in separate lobes continuous with the processes. On microscopic examination, it appeared that they consisted entirely of cellular tissue, in which, though the texture was firm, many of the contiguous walls had partially lost their cohesion, so as to leave very large intercellular spaces, the walls themselves, both externally and internally, being studded with pearl-like globules. The peculiar aspect of the processes can scarcely, however, be due to this, as we did not find the structure universal. It is very difficult to understand how substances of such a pure white could exist in the midst of matter saturated with the brown-tinted

products of decomposition, while the cells of which they were composed were apparently more than usually permeable to the fluids in which they were immersed. The humates and ulmates were probably confined to the lining membranes of the corrupted cells, though occasionally they seem to penetrate and discolour everything with which they are in contact; and the fluid possibly little more than water set free during the act of decomposition.

In many stems the same spongy tissue occurred which we lately figured from the cavities of diseased Swedish Turnips, and which we have no doubt is capable of generating roots, as in an instance recorded in the *Gardeners' Chronicle* last year, or even buds. We have figured one of the winged processes and the tissue of which it is composed. M. J. B.

THE LOVERS OF NATURAL HISTORY will learn with much pleasure that Dr. HARVEY, of Trinity College, Dublin, is about to visit Australia, under the joint auspices of the University and of the Royal Dublin Society, for the purpose of exploring the natural history, and especially the Seaweeds of the southern coasts of that continent. The Australian shores are well known to be rich in varied and curious forms, but as yet they have been very imperfectly explored; naturalists and collectors who have hitherto visited Australia having chiefly attended to other departments. Dr. HARVEY may, therefore, hope to reap an abundant harvest of new and beautiful species, particularly among the more delicate and perishable kinds; and it is his intention to make up collections for sale. We understand that the specimens will be carefully preserved, with as much attention to neatness in displaying them as circumstances will admit. The filiform kinds will be displayed on white paper.

Dr. HARVEY's first collections will be made in Western Australia, at various points along the coast from Swan River to King George's Sound. Three or four months will be devoted to this locality. He will then proceed to Sydney and Van Diemen's Land, and we have reason to believe will eventually visit the coast of Chili. Since the collections will be delivered in the order in which they are subscribed for, and must necessarily be limited, those who desire to participate in the results of this expedition should lose no time in sending their applications to "THOMAS HARVEY TODD HUNTER, Esq., Dublin." The price will be 2*l.* 5*s.* for every hundred species.

#### CYRTANTHERA MAGNIFICA.

This really useful plant is a desirable addition to the many ornamental kinds of *Justicia*, a genus to which it is allied. Although usually treated as a stove plant, it is sufficiently hardy to thrive well during the summer months in the ordinary temperature of a greenhouse, but it should be guarded from cold piercing winds, which are injurious to its fine foliage. It is a free growing species, of dwarf habit, and flowers freely on the young shoots, when three or four joints in length. Its fine spikes of rosy-pink flowers are produced singly on every shoot, and it may be had in bloom at almost any period of the year, if attention is duly timed to suit this purpose. With proper regard to stopping, and a sufficiency of pot room, the same plants may be flowered two or three times during summer. A cool dry situation will prolong the blooms for some time in perfection.

Cuttings of this plant root quickly, if inserted in sandy soil, and placed in a hotbed or other suitable situation. March is the best time for striking them. They will be well rooted in three weeks or a month, and may then be potted singly in 5-inch pots, and placed in a close house, with a temperature of from 55° to 60°. When well established stop the leading shoot, and as the pots become filled with roots shift into 10-inch ones, setting them in the same temperature again, shading slightly on bright sunny days, and keeping up a moist atmosphere. As growth advances stopping should be continued at the first or second joint of each shoot, until a sufficiency is secured to form a compact specimen. When stopping is discontinued, the plants should be permitted to enjoy all the advantages of light, and a liberal supply of air should be given them in mild weather so as to keep the shoots short-jointed and robust until the flower spikes appear. By attention to this matter a fine head of bloom will be obtained, and the plant can then be placed in any required situation. After flowering prune back the shoots a joint or two, and place the plant in a close atmosphere. When starting into larger growth slightly reduce the ball of earth, shift into larger pots if convenient, and pursue the same treatment as before, except that little stopping will be needed, if the shoots are well balanced and sufficient in number to form a compact plant. After flowering it should be kept moderately dry and cool, and during the autumn and winter months a temperature of from 45° to 50° will suffice.

If early flowers are in request, the plants may be pruned back about Christmas, and placed in heat. Surface the pots with fresh soil, and water more freely as the plants advance in growth. If well managed, these will flower in March or April, according to treatment,

&c. After this time of flowering I prefer young stock for the next bloom, and therefore I throw away the plants, unless large specimens are required; but the after the second year are seldom so fine in foliage as younger plants.

The soil I make use of in growing this plant is a compost of equal parts turfy loam and peat well broken up, without sifting; to these are added a liberal supply of wood charcoal, broken small, and a sufficiency of sharp sand to preserve the porosity of the soil. When the flower spikes are formed, liquid manure water should be given twice a-week until the flow begin to expand, when it may be gradually discontinued. This is used in a clear state, and in strength proportionate to the vigour of the plant. Guano water is of the best liquid manures for this or any other wooded plant. If green-fly or thrips should make their appearance, fumigation should be resorted to, but in health this plant has few enemies among insect tribe. Alpha.

#### ENTOMOLOGY.

##### THE WEEVIL OF THE POTATO-STEM.

THE continued existence of the still mysterious Potato disease gives to every new supposed origin an amount of interest which might not otherwise be bestowed on the subject. I therefore feel no hesitation in publishing the following notice of the supposed cause of the attack made by this disease upon the Potato crops in North America, with which I have been favoured by Josiah Forster, of Tottenham; although the fact of particular species of insect to which the mischief assigned being not only unknown in the Old World, also there being no species with similar habits known in Europe, at once renders it evident that our disease is either be different from the American, or that insect in question cannot be the true cause of its origin.

Mr. Robert Smith, of Philadelphia, to whom we are indebted for our knowledge of the circumstances stated below, observes that, "a circumstance of much apparent importance has occurred recently in the probable discovery of the cause of the 'potato' through Ireland, &c., that I write at once, in order if the cause is the same with you as with us, it may at once thoroughly investigated before the season is far advanced for observation. A neighbour and friend of mine, a lady of some eminence as a naturalist and writer, has found in her Potato field a considerable decay in the tops of the Potatoes, and after a careful and accurate examination, has become convinced that a small weevil, of which I enclose a description, is the cause of the decay. In cases where the plant droops and dies, she finds, I believe uniformly, either the insect in one of its stages or plain marks of its depredations.

"The weevil deposits its egg near the root of the potato, whence the insect works its way down, eating on the pith till it reaches the Potato itself. The results of a careful examination by an entomologist I enclose, and insect should be searched for at the base of the stem, and after once finding it, probably thousands can be found in similar places. One objection lies at the basis of this hypothesis. It is that the examinations that have been made in your country would have been likely to have discovered it, and yet this apparently has before followed from examination in our country, the disease is widely spread. The subject is so worthy of a most careful examination and test, that, if this be the cause, a remedy may be found in cutting the tops at a certain stage. Indeed, we have



accustomed to hear of cutting off the tops as a remedy, the rot, without the cause being assigned. An explanation elsewhere than in our neighbourhood is the theory.

"I enclose what of specimens the post will allow, and of the results of your examination inquiries I shall be interested to hear."

The communication of Miss Margaretta M. Germantown, above referred to, is as follows:

"The *Curculio trinitatus* of Melsheimer (*Curculio trinitatus*, Say; *Baridius vestitus* of Schönherr), its eggs on the leaf-buds of the Potato-vines from three on a stalk. The eggs, which are bright orange-red, are placed singly, and not more than one on a bud; when hatched, the grubs are pale, but soon change to a pale yellow colour, penetrate through the buds into the stem, with their heads downward, they eat their way to

When fully grown, they construct their cocoons



Although these could certainly not be compared with the magnificent plants from Ealing Park, they were, nevertheless, excellent examples of good cultivation. Indeed, the great distinguishing feature of the show was that there was not a badly grown plant to be found in it.



yellow; pink with orange spots; and Aureum.

Roses in pots were wonderfully fine, and unfavourable season we have had for.

Both those from amateurs and nurserymen were extremely well grown and bloomed, and the colours of the flowers were well brought out. I need not say therefore that they attracted much attention. In the class of private gardeners, Terry, gr. to Lady Puller, of Youngshub, was first; and A. Rowland, Esq., of Lewes, was second. The nurserymen who showed were Messrs. The Francis, and they were rewarded in the same manner, which their names appear. Among the varieties produced, none excelled the favourites, Charles Duval, Coupe d'Or, and



Chénéfolé, Devoniensis, Niphetos, Bougere, Augustine Mouchet, Baronne Prevost, Mrs. Elliott, Auberon, Duchess of Sutherland, Queen, Madame de St. Joseph, Paul Perra, Souvenir de la Malmaison, and William Jesse; among sorts more recently brought into notice were the glorious Géant des Batailles, Caroline de Sausal, Souvenir d'un Ami, and Vicomtesse Decazes.—Mr. Francis had some nice little plants in small pots; they were worked on the Manetti stock, which is found to answer well for that purpose.

CAPE HEATHS were numerous, and notwithstanding the backwardness of the season, they were generally well flowered. Excellent large plants were furnished by Messrs. May, Rolisson, and O'Brien; specimens in 11-inch pots, by Messrs. Roser, Jarvis, and Over; and in 8-inch pots by Messrs. Taylor, Dods, and Speed. Among the different varieties we remarked Hartnell, denticulata moschata, ventricosa coccinea minor, intermedia, propendens, perspicua nana, vestita rosea, elegans, vasiflora, Beaumonti, dilecta, foveides elegans, Cavendishi, suaveolens, Macnabiana, mundula, fastigiata lutescens, nitida tortuliflora, tricolor, aristata major, and other sorts. A seedling from Mr. May, called Victoria, bids fair to be an acquisition; and Messrs. Veitch sent a large and very fine variety in the way of Aristata, called Imperatrix, a seedling of Mr. Story's.

**SINGLE SPECIMENS.**—The best were confined to Erica Cavendishi, a noble bush from Messrs. Fairbairn; the new brown and yellow flowered Hexacentris mysorensis from Messrs. Veitch; a very large and fine plant of Hoya imperialis from Mr. Over; and a good Epacris miniata from Messrs. Fraser. Hoya imperialis also came from Mr. Carson; Azalea amona from Messrs. Standish & Noble; a very handsome Heath, called Devoniana, from Messrs. Fairbairn; Pultenaea stipularis from Mr. May; Epacris miniata from Messrs. Fraser; and Eclipse from Messrs. Veitch.

A few novelties were produced, by far the most striking among which came from Messrs. Veitch, in the shape of a fine specimen of Lilium giganteum, some account of which was given at p. 295. The rest consisted of Pultenaea ericifolia, a violet and yellow flowered species of considerable beauty, from Mr. May, gr. to Mrs. Lawrence; the lilac-flowered Tetratheca ericifolia from Mr. Green; the Bifrenaria already adverted to, from Mr. Woolley; a small morsel of the long-lost Friesia pedunculata, from Messrs. Lee, of Hammersmith; and Tritoma Rooperi from Mr. Moore, of the Apothecaries' Garden, Chelsea. The last-named plant comes from Caffraria. It has much the aspect of T. Burchelli, but still it differs from that species in several important particulars. If it should prove hardy, it will be a handsome addition to our borders.

A collection of MISCELLANEOUS PLANTS, chiefly variegated, was furnished by Messrs. Rolisson. It consisted of various species of Anectochilus and Phyturus; the elegantly-cut, large-leaved Philodendron pertusum; Tillandsia acutis; the handsome deep crimson, or scarlet-flowered Protead, Telopea speciosissima, from New Holland; two species of Jacaranda; the beautifully variegated-leaved Cissus discolor, whose elegant markings come more distinctly out under a bell-glass than without one; the orange-blossomed Rhododendron javanicum, with eight flowers in one head; the silver-veined Goodyera procera; Ananassa sativa, with finely striped foliage; the noble looking Rhopala corcovadensis; and Stenorhynchus pictus, a plant remarkable for its fine leaves.—Mr. Appleby produced specimens of the graceful little Deutzia gracilis, spoiled by being trimmed into standards.

Among miscellaneous SINGLE PLANTS the most remarkable were Cattleya Mossie, from Messrs. Veitch, alluded to under the head of Orchids. A plant called Coleus Blumei, from Messrs. Rolisson (this is what Messrs. Lee and Low have under the name of Plectranthus concolor picta); a Rhododendron called Victoria Regia, from Mr. Edmonds, gr. to the Duke of Devonshire, at Chiswick House; another pretty variety named Empress, from Mr. Gaines; the handsome Streptocarpus biflorus, from Messrs. Veitch; a fine plant of Cissus discolor, from Messrs. Lee; and an Aphelandra, with handsome white-veined leaves, from M. Van Houtte, of Ghent.

**PELARGONIUMS** on the whole were hardly sufficiently forward. The collection to which the first prize was awarded however, was an exception, for it was loaded with large and fine blooms, possessing the highest colour, showing that with skill the difficulties of an adverse spring may be surmounted. The Gold Medal for the best twelve was awarded to Mr. Turner, of Slough, for Colonel of the Buffs, Magnet, Mochanna, Chieftain, Constance, Alonzo, Rosamond, Gulielma, Rowena, Virgin Queen, and Pride of the Isles; 2d, Mr. Dobson, of Isleworth, with Arethusa, Purpureum Rosa, Rosamond, Virgin Queen, Leader, Ambassador, Chloe, Vanguard, Harriet, Leah, and Governor; 3d, Mr. Westwood; 4th, Mr. Gaines. In these two groups we remarked Flying Dutchman, First of May, Rubens Celia, Star, and Salamander. There was but one collection from private growers, and that only received a third prize, the varieties not being sufficiently in bloom. It came from Mr. Roser, of Streatham. Fancy Pelargoniums were shown in great beauty, and commanded their usual share of attention; the best six plants were contributed by Mr. Turner, and consisted of Hero of Surrey in fine condition, Princess Marie Galitzin, Reine des Français, Minerva, Annie, and Empress; 2d, Mr. Ayres, Blackheath, with Formosissimum, Corsetti, Mirandum, Magnificum, Gipsy Queen, and Duchess d'Aumale; 3d, Mr. Gaines; 4th, Mr.

Westwood. Of these the sorts not in the first lot were Defiance, Queen Superb, Louis Van Houtte, Signora, Gasoloni, and Fairy Queen. Two collections were staged by private growers, one from Mr. Roser, and the other from Mr. Robinson, of Plumico; these took first and second prizes in the order in which they stand. The varieties were Ambrose's Triumphant, John Bull, Fairy Queen, Picturata, Statiaski, Queen Victoria, Advancer, Erubescens, Princess Marie, and Galitzin.

**CALCEOLARIAS** were scarcely in full bloom. The first prize was awarded to Mr. Constantine, gr. to C. Mills, Esq., Hillingdon, for healthy plants, which required a little more time to be in perfection; 2d, to Mr. Pestridge, gr. to W. Nuneham, Esq., Englefield Green.

**CINERARIAS**, of which there were six collections, were in excellent order, showing a great improvement on former exhibitions of this flower in point of growth and general management. The first collection consisted of particularly dwarf neat plants. It came from Mr. Turner, and contained the following sorts, viz.:—Amy Robsart, Rosalind, Queen of Beauties, Mrs. Beecher Stowe, Mrs. Sidney Herbert, and Formosa; 2d, Mr. Constantine; 3d, Mr. Beck, of Isleworth; 4th, Mr. Dobson. Of varieties that were good in these groups, and not in the first collection, we noticed Lady H. Campbell, Bessy, Exquisite, Forget-me-not, Bertha, Wellington, Governor, and Aurora.

**PANSIES.**—Three collections of this really showy spring flower were exhibited in pots, forming a striking contrast in point of beauty with some that were shown in pans. Mr. Turner, to whom the first prize was awarded, had an admirable collection, comprising Monarch, a rich yellow ground variety, an improvement on Duke of Norfolk, Ophir, Flower of the Day, Lady Emily, Sir J. Cathcart, Euphemia, National, Great Western, British Queen, Sir J. Paxton, Marchioness of Bath, and Royal Standard; 2d, Mr. Bragg, Slough; 3d, Mr. Dobson. The sorts shown in the second and third collections, that were not in the first, were Blanche, Sir P. Sydney, Mr. Beck, Supreme, Duke of Perth, Pandora, and Lady Carrington.

**ARICULAS** were seldom seen in better condition so late in the season. A Medal was awarded to Mr. Turner, for 36 plants in the most luxuriant health. The most conspicuous amongst them were Chatham's Lancashire Hero, with 13 expanded pips on one spike, Ne Plus Ultra, Matilda, Complete, Ringleader, Stapleford Hero, Apollo, Lovely Ann, Gen. Boliva, True Briton, Prince of Wales, Smiling Beauty, Britannia, Violet, King James, and Regular. Mr. Willmer also exhibited 20 plants, to which a prize was awarded.

**SEEDLINGS.**—Several promising Cinerarias were shown, the best of which were Optima and Lady Mary Labouchere, raised by Mr. Bousie, at Stoke Park; both are white ground sorts, tipped with blue; the former heavily, the latter but slightly tipped. South London, by the same raiser, is also good. We also noticed Mr. Foster, Lady Camoys, Sivewright's No. 1, and Sambo. The above were sent by Mr. Turner. Messrs. E. G. Henderson also produced several seedling Cinerarias, and their new white bedding Geranium Boule de Nieve, which promises to be a good plant for the purpose. Of seedling Pelargoniums there were several, but it is too early to describe them, more especially as we expect to see them again. Mr. Beck sent Dido, Empress, Leah; Mr. Hoyle, Governor-General, Emperor, Indian Chief, and Eugenia.

There was an excellent show of fruit on this occasion, considering the very cold and sunless weather we have had for bringing it forward. True, it may be said that there was want of variety, as, for example, there were few Pine-apples, no Peaches, and a scarcity in some other classes; but then the abundance and general excellence of the Grapes, &c., fully bear out the statement made at the commencement of this paragraph. Mr. Hoare, gr. to Sir J. Bailey, Bart., M.P., Glanusk Park, Brecknockshire, sent a Queen Pine-apple, weighing 5 lbs. 4 oz. It was a Lemon Queen, with rather a cockscomb crown, but well ripened and formed.—A finely ripened Prickly Cayenne, weighing 4 lbs. 1 oz., came from Mr. Bray, gr. to E. Lousada, Esq., of Peak House, Sidmouth, Devon.—Mr. Davis, of Oak Hill, sent a Black Jamaica, of good shape and quite ripe, weighing 3 lbs. 2 oz.; and a smooth-leaved Cayenne, weighing 3 lbs. 5 oz., was furnished by Mr. Turnbull, gr. to the Duke of Marlborough, at Blenheim. Other sorts consisted of a Black Antigua, from Mr. Davis; and a Prickly Cayenne from Mr. Busby, gr. to S. Crawley, Esq., of Stockwood Park, Luton, Beds.

**GRAPES.**—Black Hamburgs were plentiful, and for the most part well-coloured. The Judges placed first Mr. Bradley, gr. to S. M. Peto, Esq., of Somerleyton Hall, near Lowestoffe, Suffolk; his were large both in bunch and berry, quite black, and well covered with bloom. Mr. Davis, of Oak Hill, was placed second; some of his bunches were quite as good as Mr. Bradley's, but the others the Judges thought were not. The third best lot came from Mr. Jennings, gr. to the Earl of Derby, at Knowsley. These were good bunches, and very well coloured; but having been packed in tissue-paper, it entirely robbed them of their bloom. Other Black Hamburgs were furnished by Mr. Fleming, gr. to the Duke of Sutherland, at Trentham; Mr. Allport, gr. to H. Ackroyd, Esq.; Mr. Robertson, gr. to Lady Emily Foley; Mr. Turnbull, of Blenheim; Mr. Tracey, gr. to the Rev. R. Tritton; Mr. Pestridge, gr. to W. Newham, Esq.; Mr. Munro, gr. to Mrs. Oddie; Mr. Spary, of the Queen's Graperies, Brighton; Mr. Mitchell, of Kemp-ton; Mr. Martin, gr. to Sir H. Fleetwood, Bart.; Mr. Perkins, gr. to Viscount Combermere; Mr.

Jackson, gr. to G. Beaufoy, Esq.; Mr. Whoming, gr. to Captain Kennett; and Mr. Macquhar, gr. to Colonel Challenor. Of these, the last were the worst coloured; the bunches were good, but the berries were red. Mr. Tracey's were also not so well coloured as they should have been, and Mr. Robertson's were scarcely "up to the mark" in any respect. Messrs. Spary and Mitchell had finely ripened bunches, and so had Mr. Fleming and Mr. Turnbull. Those from Mr. Perkins had unfortunately lost a little of their bloom, but they were otherwise good. The same remark also applies to an exhibition from Mr. Allport. Mr. Jackson's were well coloured, but the bunches and berries were both small. The first prize for Sweetwaters was awarded to Mr. Jennings, for fruit extremely well coloured for this early period of the season; and Mr. Davis, of Oak Hill, had the second, for fruit of the same variety. Some Sweetwaters also came from Mr. Jackson, gr. to G. Beaufoy, Esq. Mr. Fleming sent three good bunches of Muscadine. Black Frontignans, large berried, fine bunches, beautifully ripened, and regularly set, were shown by Mr. Martin, gr. to Sir H. Fleetwood, Bart.; indeed, such a combination of excellence as was shown in these Grapes is rarely met with. Mr. Allport sent examples of the same variety, but his were over ripe, and had begun to shrivel. Mr. Bradley had some Grizzly Frontignans, of very fine quality.

**NECTARINES.**—The only dish exhibited was furnished by Mr. Fleming, of Trentham. It consisted of the murrey variety, full sized specimens, and beautifully coloured—an extraordinary circumstance, considering how little sunshine we have had.

**FIGS** were produced by Mr. Busby, Mr. Fleming, and Mr. Judd, the latter gr. to Earl Spencer, at Althorpe. Mr. Busby and Mr. Judd had Brown Turkey, Mr. Fleming, Brown Ischia.

**CHERRIES.**—Two dishes were contributed, one by Mr. Jennings, the other by Mr. Fleming. The variety was the May Duke, which in both cases was very good for the season.

**STRAWBERRIES.**—These were confined to Keens' Seedling; the best by far being shown by Mr. Turnbull. These were as fine as they could well be at any season. Mr. Perkins and Mr. Dew, of Ham, also showed good fruit of this sort. Other dishes of it were furnished by Mr. Forsyth, gr. to Baron Rothschild; Mr. Munro, gr. to Mrs. Oddie; and Mr. Phipps, of Isleworth.

**MELONS.**—The best was a sort called Green Gage, from Mr. Munro, gr. to Mrs. Oddie; and another kind, called the Ponty Pool, came from Mr. Tindall, gr. to C. H. Leigh, Esq., of Ponty Pool Park. Other sorts were—Victory of Bath, from Mr. Constantine, gr. to C. Mills, Esq., and a Trentham Hybrid, from Mr. Munro.

Of more remarkable kinds of fruit, Mr. Ivison sent examples of two varieties of Carica Papaya, the one more ribbed than the other; and Mr. Fleming furnished fruit of Musa Cavendishi.

## Reviews.

*The Encyclopædia Britannica*; eighth edition. 4to. Vol. I. Black. Edinburgh.

It is rather more than 10 years since the seventh edition of this important work issued from the press. From three volumes in 1771 it had expanded into 26; and the present edition is announced as about to form 21. Under the able direction of Dr. Traill we confidently anticipate that this will retain all that is most valuable in the former issues, with as much as may be necessary to complete the history of the progressive sciences up to the present day. Should this anticipation be realised, and the names of the gentlemen announced as new contributors justify the expectation, the *Encyclopædia Britannica* will continue, what it has long been, the greatest of its race.

The first volume, now before us, contains an admirable dissertation on the rise, progress, and corruptions of Christianity, by Archbishop Whately. We need scarcely say that it is worthy the celebrated author's high reputation for logical acumen; and we venture to express a hope that at no distant period it may be published separately in a form which will render it accessible to the poorest reader. In these days of fanaticism and imposture it is of great importance that people should have the means of judging soberly and rationally concerning the many points in dispute among jarring sectaries; and we can conceive nothing better as a guide than the capital treatise in question.

## FLORICULTURE.

**ROSES.**—Permit me to revert to the subject of cultivating standard Roses with Dahlias; for I know that my recommendation to try the plan has not only been approved of, but put in practice by more than one well-known Dahlia grower. The following instructions may therefore be acceptable to beginners in this kind of culture. The Dahlia quarter should now be prepared for the reception of the plants by careful digging, &c., and where old manure is at command, a dressing may be applied, but it must be well buried, as the operation of digging proceeds. This may be given, even although manure may have been applied when the ground was trenched in autumn. In digging, some care will be required not to injure the Rose roots, and if while in the vicinity of each tree a fork be used instead of a spade, less damage will be done. Examine each standard, and break out all shoots which may



be observed up the stem, and if suckers from the roots make their appearance, trace them to their very source and pull them clean out from whence they spring, for by chopping them off with the spade the evil is rather augmented than diminished. The manure should be "pointed in" around the trees with some care, for it will not only render good service in the way of a dressing, but the stirring of the soil will benefit the tree; see at the same time that the stakes are firm and the ties secure. As regards the head of the tree, from this time forward until near the blooming season, rapid growths may be expected, and to train and tie out these as they grow is necessary, both for security against injury by wind, and for the regularity of a well formed head. A Dahlia grower knows full well what is needed to a Dahlia plant as it progresses in growth, and he will soon learn that similar attention must be bestowed from time to time on the Rose. The shoots must be led outwards and regulated by means of small twigs which may readily be fastened by a tie of bast to the stem or branch of the tree itself; or if not objected to, a small collar of zinc, with a flat rim, might be made to fasten round the stem, holes might be punctured in this, and the ends of small twigs or wires inserted, to which from time to time the shoots might be fastened, thus forming, as it were, a temporary trellis; a contrivance of this sort would obviate much of the difficulty that often arises at pruning time, for the growth would be all made to take its proper course; even shoots which might be in the centre, and which otherwise should be rubbed off, might be drawn into a position where they might be found useful. Large Rose growers may smile at these minute directions, but have they never found sorry havoc made with a two or three year old choice standard, at the time when the plant was somewhat top-heavy with it, might be, specimen blooms? Such a catastrophe is surely better avoided, and those whom I more especially advise, I know will not consider the operation of adding a few small supports a trouble. I have formerly stated that Dahlia growers possess greater means for Rose growing and showing than any other class of floral devotees, and I have enumerated such favourable items as space, soil, shades, stakes, manures, mulching water, travelling apparatus, and show boards which they have, and to which may be added energy, perseverance, and a thorough love for flowers. I repeat that, if the Rose is cultivated with the same attention that is paid to the Dahlia, a triumph will be achieved which will amply repay the cultivator for all his extra labour. Our Rose dealers appear to me to be somewhat lukewarm in support of their favourite; at least they certainly do not push forward the Rose with the same energy as the Dahlia grower does the Dahlia. It may be asserted that no extraneous efforts are needed to maintain the supremacy of the "Queen of flowers;" nevertheless I think it will be admitted that an occasional inducement to renew, or an effort to engender, increased interest in the flower, would not be out of place. The trade in new Roses is limited to a few. We have no seedlings to "delightfully perplex and bewilder." The well-known collection at our metropolitan fêtes remain stationary. We seek in vain for novelties, and even under this head how often do we not find subjects that have been known to the few for years. I want to see improvement in all things relating to floriculture, and more especially in regard to our universal favourite—the Rose. J. E.

**TULIPS AND RHODODENDRONS.**—I have in my garden a Tulip with three flowers on one stalk, which I think is not very common. Last year I had two on one stalk, but I am not sure it was the same bulb. Is it likely that this *lusus nature* is hereditary? [No.] I may also mention that I have on my lawn a Rhododendron, 43 yards in circumference. It was planted above 50 years ago, and it is not probable that more peat earth supports it than was contained in the flower pot the plant originally occupied. It flourishes in a soil of damp stiff clay, which has not been supposed generally favourable, but it flowers abundantly. T. Astine Ward, Park House, near Sheffield.

#### SEEDLING FLOWERS.

**AZALEAS:** *Indica*. The white sort is of little value; the colour and marking of the others are new, but they want form; of the two, No. 1 is the best.

**CINERARIAS:** *D. C.* Small, thin, and altogether worthless.—*G. N.* 6-53, which you say has an excellent habit, and is quite a dwarf grower, is certainly a beautiful variety, and worth taking care of. It is tolerably well formed, and the colours are clear and striking. 7-53, though less bold, is also a good flower. 8-53 is not so valuable as either of the above.—*Charlie*. So shrivelled from being pressed and folded in dry blotting paper, that we could scarcely distinguish them from the *Calceolarias*; 4 seems to possess good form, and that is really all that we can say of them.

**PANSY:** *J. H. Middleton*. Your seedling is all that you say of it; it is a first class flower, and an improvement on Duke of Norfolk. We had no idea your flowers are so late.

**PELAGONIUM:** *J. & J. H.* Large and showy for a fancy sort. At present it is scarcely smooth enough to please some; but that may improve.

**POLYANTHUS:** *J. W. Whitley*. Three excellent blooms of a very good flower. The truss has, however, all to do with its merit as a variety for exhibition.

#### Miscellaneous.

**Sale of Orchids.**—Mr. Warczewicz's importation, alluded to at p. 292, was sold the other day at Steven's, when some of the principal lots fetched the following prices:—*Epidendrum Friderici-Guilelmi* (one plant), 16l. 16s.; other lots of the same from 5l. 15s. to 7l. 5s.; *E. giganteum*, from 1l. 1s. to 8l.; *E. sclerocladum*, from 1l. to 1l. 2s.; *Anachaste sanguinea*, from 1l. to 4l.; *Gongora cymbiformis*, from 1l. 1s. to 2l. 10s.; *Maxillaria*

*conica*, from 2l. 2s. to 3l. 7s. 6d.; *M. cinnabarina*, from 2l. 2s. to 4l.; *Masdevallia rufolutes*, from 1l. to 5l. 10s.; *Eriopsis altissima*, from 2l. 6s. to 2l. 10s.; *Chysis plana*, 1l. 11s. 6d.; *Brassia villosa*, from 1l. 4s. to 2l. 17s. 6d.; *Odontoglossum Hallii*, from 1l. to 3l.; *Catasetum secundum*, from 1l. 14s. to 2l. 2s.; *Peristeria fuscata*, from 1l. 4s. to 2l. 15s.; *Bletia sanguinea*, from 1l. 1s. to 2l. 8s.; a *Lycaste*, from 2l. 2s. to 3l.; and an *Anguloa*, from 1l. 14s. to 3l. 5s. Others fetched from 1l. to 2l. per lot, of which there were in all 176. A quantity of *Guatemala Orchids* were also sold on this occasion, at from 1l. to 2l. per lot, with the exception of a fine plant of *Barkeria spectabilis*, which fetched 7l. 15s.

#### Calendar of Operations.

(For the ensuing week.)

##### PLANT DEPARTMENT.

As the time during which plants are in bloom is the only interesting period of their growth to the majority of their admirers, it is always desirable to prolong this time to which this period attaches, and to allow them to be examined without subjecting visitors either to an over-heated or over moist atmosphere. For this purpose, where there is no conservatory, a suitable house should be appropriated for the more showy specimens when in flower, when the necessary shading to preserve them in perfection for as long a time as possible can be given without interfering with anything else. The want of such a structure is more generally felt in the gardens of the country gentry, when a variety of plants are scattered through the Pineries, Vineries, and other houses, where their beauty is lost when in bloom, for the want of some separate house in which they can be seen to advantage. Of course these remarks do not refer to regular plant houses; but even with these it will, at some seasons, be preferable to remove very showy plants to a house such as we have pointed out, than suffer them to remain subjected to treatment not always favourable for the preservation of their bloom. The plan is now beginning to be adopted in some leading nurseries, and we doubt not will soon become common, from the many advantages it presents; and the smallest gardens will possess their "show house," for displaying the stock of plants in flower. The construction of such houses may be more architectural, and less dependent on aspect, than houses constructed for the growth of plants only. In addition to the hardy plants named in a former Calendar to be potted and prepared for next season, we strongly recommend the common Mandarin and Otaheitan Oranges, as valuable plants for forcing into bloom in the winter months; for the above purpose, keep them rather under potted, and pinch the young wood back, to form bushy, compact specimens. The *Daphne indica* and *I. rubra*, are valuable as winter flowering plants, as well as for their fragrance—ample instructions for cultivating them have lately appeared in other parts of the *Chronicle*. The Chinese Azaleas which have been some time growing, should be kept in heat, until they have set their buds, when they may be removed to the open air, as may the Oranges, when the shoots get firm; exposure afterwards, if protected from heavy rains, will assist them to ripen their wood. A stock of common and Anna Boleyn Pinks for forcing, and the perpetual flowering tree Carnations, should likewise be brought forward; the latter are valuable acquisitions.

##### FORCING DEPARTMENT.

**PINERY.**—Still continue the requisite attention to the advancing crop. The plants intended for autumn fruiting should now be shifted into their fruiting-pots. The best kinds for swelling their fruits well in the winter are the smooth-leaved Cayenne and the Black Jamaica, adding a few Queens. To insure these showing fruit within the next two months, it will only be necessary either to remove them into a house with a drier atmosphere, or apply it to them where they are growing. As they have made their first growth, there is generally no difficulty in getting them to show. If the conditions of good cultivation have been given the successions, they will by this time have filled their pots with roots, and should have larger pots without delay. Let the pots be large enough to allow for a good portion of turfy loam round the ball, pot them firm, and rather deeper than at the previous potting. In plunging them afresh, allow them considerably more room, and bring them near the glass. They will now grow freely, and should have abundant room to throw out their leaves in an horizontal position; and it is likewise important that both light and air should be able to act on every part of the plant's surface. Pines planted out in open beds must have the same conditions applied to them, and the roots kept in a moist state by waterings, which at this period may be given them over-head, provided the pits are closed up warm; keep the bottom-heat to the whole of the stock at a steady point. **PEACH-HOUSE.**—That the ripening fruit may enjoy all the advantages of light and air, tie close in the shoots intervening between the trellis and the glass, and take off any leaves shading the fruit too much. Liberal quantities of air must be given to Peaches during the last stage, to improve the colour and flavour; and unless urgent reasons exist to the contrary, allow them plenty of time to ripen, which will much improve both the size and appearance of the fruit. A net should be suspended loosely underneath the trees before the crop gets ripe, to catch any fruit which may get overlooked in gathering them. Figs are now ripening their first crop, and, as the fruit soon gets

injured from damp, considerable care should be taken, not to wet such as are approaching that state. The house should, however, have frequent sprinklings, and every means taken to keep down the red spider. Figs in pots must be plentifully supplied with weak manure-water. Strawberries, unless houses or pits are devoted to the culture of this useful fruit, should now be discarded from the ordinary Vineries and Peach-houses, on account of introducing the red spider, which they are almost sure in warm weather to do; the remaining stock may be transferred to pits or frames, where, if a bed could be prepared for them, in which to turn out the plants, they would suffer less from effects of hot weather, and bring to maturity a larger crop of fruit.

##### FLOWER GARDEN AND SHRUBBERY.

Use all diligence in filling the beds of the flower garden; the present growing weather will assist the plants in getting hold of the soil, without much attention. Stake or peg down such plants as require it, as the planting proceeds, or the boisterous winds will break many things off. Plant out in rich soil a good supply of Stocks and Asters for the autumn; and sow a succession of annuals for making up any vacancies which may occur; and likewise another sowing of Mignonette, in pots, for the rooms or for filling window boxes.

##### KITCHEN GARDEN.

The work in this department will consist chiefly in giving the various crops the requisite culture. Anything left on hand should now be brought up, as the late rains have been favourable for transplanting, &c. Make good failures in the early planted crops. Sow more dwarf and Scarlet-runner Beans. Make ridges for hand-glass Cucumbers, and plant those already made when the soil becomes warm. A crop should likewise be sown under hand-glasses for picking purposes.

STATE OF THE WEATHER NEAR LONDON,  
For the week ending May 19, 1853, as observed at the Horticultural Gardens, Chiswick.

May.	Moon's Age.	TEMPERATURE.								Wind.	Rain.
		BAROMETER.									
		Max.	Min.	Of the Air.			Of the Earth				
				Max.	Min.	Mean	1 foot.	2 feet deep.			
Friday.. 13	6	30.012	30.910	56	37	46.5	47½	46	S.E.	.13	
Saturday 14	6	30.007	29.876	61	40	50.5	48	46½	E.	.01	
Sunday 15	12	29.987	29.672	67	49	58.0	49	47	S.E.	.00	
Monday 16	19	29.969	29.598	69	47	58.0	50	44½	E.	.00	
Tuesday 17	9	29.712	29.659	71	40	55.5	52	49	S.E.	.00	
Wednesday 18	11	29.901	29.854	73	39	55.5	53	50	S.E.	.00	
Thursday 19	11	29.954	29.896	72	40	56.0	54	51½	S.E.	.00	
Average ..		29.874	29.796	66.8	41.7	54.3	50.5	48.3		.14	

May 13—Rain; cloudy; clear at night.  
14—Very slight shower; overcast; fine; clear at night.  
15—Fine; slightly overcast, sunshine at intervals; overcast.  
16—Fine; very fine throughout.  
17—Dry haze; very fine; clear at night.  
18—Fine; very fine; clear.  
19—Fine throughout, with bright sun; partially clouded at night.  
Mean temperature of the week 1 deg. above the average.

STATE OF THE WEATHER AT CHISWICK,  
During the last 27 years, for the ensuing week, ending May 28, 1853.

May.	Average highest Temp.	Average lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 22	65.7	42.7	54.2	12	0.29 in.	5	5	3	3	3	5	3	3
Mon. 23	61.4	44.5	52.9	7	0.54	1	3	1	3	1	5	3	3
Tues. 24	65.1	44.1	54.6	9	0.54	2	6	6	1	4	4	3	3
Wed. 25	66.2	43.8	55.0	10	0.64	1	1	1	1	6	5	3	1
Thurs. 26	67.9	41.3	54.6	12	0.35	1	11	1	1	2	5	3	3
Friday 27	65.5	43.8	55.1	14	0.44	1	9	1	1	2	5	3	3
Satur. 28	66.6	43.8	55.2	10	0.97	1	8	7	1	4	5	3	3

The highest temperature during the above period occurred on the 28th, 1847—therm. 91 deg.; and the lowest on the 25th, 1839—therm. 29 deg.

#### Notices to Correspondents.

**ACANTHODIUM:** *J. Weeks*. It is a prickly Thistle-like plant, with the flowers of an *Acanthus*; of little interest in gardens.

**BACK NUMBERS:** One shilling each will be given for clean copies of Nos. 50 and 51 for 1852.

**BOOKS:** *Miles*, *Douglas's Catalogue*, or *Loudon's "Hortus Suburbanus Londinensis"* are both good. But no catalogue can give a man "a good knowledge of plants."

**BOTTLED FRUITS:** *Cleugh Bay*. We are really unable to add anything to what has already been said respecting Mr. Lovejoy's mode of preserving fruits. Of course the water is not strained off. The process is applicable to fruits of any kind. It is obvious that the bottles must be wide-mouthed, else how is the fruit to be put in or taken out?

**DEODARS:** *Alpha*. They will not thrive in a chalky soil.

**GLASS:** *Alpha*. Hartley's rough plate is green enough. If plants will burn beneath it they will burn beneath all other glass, without shades. Suppose you painted your glass! We do not like 2-inch hot-water pipes; they never should be less than 3 inches. If the glass in the trade is not what you want, it must be made for you; and upon that subject you must apply to the glass manufacturers.

**INSECTS:** *A. M.* The process employed by the *Trichosoma*, and is to be met with in all the common works, as "Insect Architecture," &c. Thanks for the specimen sent. Mr. C. is, or was lately, at Pau.—*T.R.* The Rose *Astryges* Caterpillar arrived safely. Thanks for it. You shall hear further if we succeed in rearing them.—*H.S.T.* Your grub, "like a dragon-fly," is the caterpillar of the swallow-tailed moth, of which an account and figures will be given in an early number. *W.H. Halfpaz*. The red caterpillar which eats into the heart of the Raspberry buds is quite distinct from that of the leaf-miner. It is that of a small moth. We know no remedy at this period more effectual than hand-picking. *W.*

**LEMONS:** *Southfield*. All plants that are propagated by budding require the same method as the Rose itself. Any Citrus will do for a stock; you must obtain cuttings from those who possess a Lemon tree.

**NAMES OF PLANTS:** *A.E.F.* Some species of *Leptospermum*, apparently *L. Bayesianum*.—*J.T.A.* *Hibbertia volubilis*.—*H.E.* *Amelanchier Botrypium*.

**RAMPION:** *A.B.* The root is the part which is used; it is eaten raw like a Radish; it is also sometimes cut into winter salads, and then the leaves as well as the roots are used. The seed should be sown now, on a shady border of rich earth, and the seed being very fine, if covered at all should be very slightly, or it may be buried too deep. When the plants come up they must be thinned to 3 or 4 inches apart, and they should be watered now and then during hot weather. They will be fit for use in November, and should continue so till April.



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**CAUTION TO AGRICULTURISTS.**—  
It being notorious that extensive adulterations of this MANURE are still carried on,  
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AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.  
The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—  
The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.  
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**SUPERPHOSPHATE OF LIME,** warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.  
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Ditto, dust.  
Ditto, fine, for dissolving.  
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**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrate of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

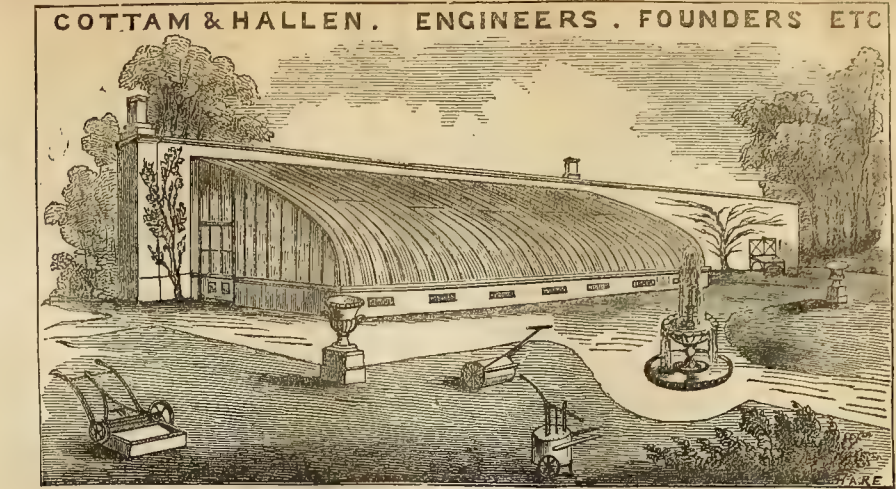
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Thomas Cartwright, Esq., of Aynhoe Park, having had 2 tons in the spring, which he tried on Turnips, ordered 30 tons, and writes as follows:—"Nov. 7, 1852. I have used the Sewage Charcoal Manure largely this autumn on Wheat and Beans;" and he then adds: "On the whole, I like the Sewage Charcoal very much, and think it a very useful manure, and intend always to have some for my Turnips."

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N.B.—The copyright of Mr. Spooner's Prize Essay on Root Crops belongs to the Bath and West of England Agricultural Society, and will be published in its Journal.

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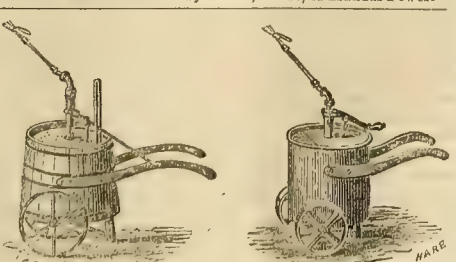
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**EXHIBITION OF POULTRY.**  
**THE ANNUAL EXHIBITION OF THE GREAT YARMOUTH AND EASTERN COUNTIES ASSOCIATION,** will be held at Great Yarmouth, August 16th, 17th, and 18th, 1853.  
Prize Lists, &c., may be had by enclosing two postage stamps to Mr. J. S. BRAND, Hon. Sec., Great Yarmouth.

**POULTRY SHOW.**—The FIRST ANNUAL LONDON GREAT SUMMER POULTRY SHOW will be held at the BAKER STREET BAZAAR on WEDNESDAY, 27th, THURSDAY, 28th, and FRIDAY, 29th JULY. The Prize Lists and Rules will be ready for delivery after May 20, upon application to **JAMES HENRY CATLING, Secretary.** Offices at the Bazaar.

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**IRELAND.**  
**AN OFFICER,** lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

**The Agricultural Gazette.**  
**SATURDAY, MAY 21, 1853.**  
MEETINGS FOR THE TWO FOLLOWING WEEKS.  
MONDAY, May 23—Agricultural Society of England.  
THURSDAY, 26—Agricultural Imp. Society of Ireland.  
WEDNESDAY, June 1—Agricultural Society of England.  
THURSDAY, 3—Agricultural Imp. Society of Ireland.

On the 26th of February our correspondent at Clitheroe, in an article on LAND DRAINAGE, which will be found at p. 138, took occasion to explain the depth to which his drains were dug by saying that if they were shallower "the capillary attraction would not be overcome." Another correspondent writing from Winchester, inquired, a few days afterwards, what the exact meaning of this phrase—"overcoming capillary attraction"—was, for he had studied the subject of capillary attraction rather closely, and as far as his experiments and observation had gone, he believed that "Clitheroe" might as well try to "overcome" the rotation of the earth.

It seems to us that this criticism was founded upon a wrong impression of what was meant by the phrase in question. No doubt we might as well try to overcome the rotation of the earth as to annihilate the capillary attraction; but it can be overcome though not annihilated. We can overcome the gravity of the earth, and do so in every instance of an object lifted from its surface, but the weight of the object lifted remains the same, and proves that the attraction of gravitation is as strong as ever. Just so, capillary attraction may be overcome, without being in the least degree destroyed. Our correspondent himself admits the possibility of this, when he speaks, in a second paragraph, of the soil which has been charged with moisture by



capillary attraction losing it by evaporation. What the force is by which the tendency to evaporation "overcomes" that retentive power which capillary attraction gives the soil over the water which it holds, we do not know; but these forces are, at all events, in such a case antagonistic; and when the air above the soil contains, as vapour, less water in a given space than at the existing temperature can so exist in such a space, then the former of these forces "overcomes" the latter. But "J. C. C.," of Winchester, says that he has yet to learn that soil ever loses the water raised within it by capillary attraction, except by evaporation. Why, this involves the very essence, and indeed the whole of the theory of land drainage! It is just because the soil can thus part with water, raised within it by capillary attraction, that land is drainable.

To talk of the existence of a level below the surface of the soil, below which water exists, as it does in a tubful of gravel, into which it has been poured, may not seem consistent with practice; but we believe that the true theory of land-drainage depends upon some such consideration nevertheless. And, after a heavy rain, there is in practice such a level, below which water exists freely, and above which it is sustained by capillary attraction. That level is on the surface of the soil in undrained land; and then, indeed, evaporation is the only way in which the soil will part with it: in drained land that level is about the level of the drains. But there is another level to which water may be raised in soils above this lower level, in consequence of the capillary attraction of which we speak. And perhaps it may illustrate our meaning better if we refer to the adjoining wood-cuts, which were employed many years ago by Dr. MADDEN, now of Brighton, in a lecture before the Highland Society, to explain the condition of soil best fitted for the germination of seed. We believe, then, that at and below the level of free water in a soil—that is the level of the drains—the condition of the land is as in fig. 2—both the

Fig. 1.

Fig. 2.

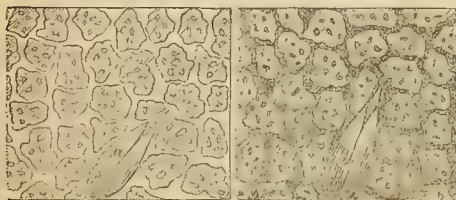


Fig. 3.



particles of soil and the channels between them being charged with water. Rising from this level 1, 2, 3, or more feet, if the drains are so deep as that we shall not before that have emerged upon the surface of the land, we by-and-bye

come to that level beyond which the capillary attraction of the soil fails to draw up this water in these channels, or fails to retain this water, whether supplied from above or attracted from below; and we then come upon the condition indicated in figure 3, where the particles are still charged with water, though the interstitial channels may be free. And, lastly, we come to very near the surface, where the soil may be as in fig. 1; evaporation having completed the process of desiccation, neither particles nor channels containing any water. In the last case capillary attraction has been "overcome" by the tendency upwards—the force of evaporation. In the second we must contend that it was overcome by the tendency downwards—the force of gravitation.

There is still a remark or two to make, which, however, we must postpone.

A REGULAR supply of FAT STOCK according to the demand or consumption, is of the greatest importance to both seller and buyer in every market, but especially in such places as the metropolis; for when it falls below the demand, the activity of sales and advance of price may be more easily imagined than expressed, from the competition among butchers, the wealth, business habits, and general character of their customers, whose orders require the most assiduous attention. In Newgate Market, for instance, carcase salesmen pay particular attention to the hands and boots of butchers, and to their clothes generally, when they first visit them on a Monday morning. If they are thoroughly besmeared with dirt, of which there is always an abundant supply, the inference is obvious—a scramble has taken place in Smithfield for the bullocks and sheep, and they just lay on the price

accordingly. On the other hand, from the expense of keep and attendance, and the want of proper accommodation, the counter depression is equally great when the supply exceeds the demand, for on such occasions the sauciness of the buyers is well known to cattle salesmen, whose highest commercial abilities are now called into operation before sales can be effected. Less business is done in such cases at 12 o'clock than was on the previous day at 8, and to fix the proper figure requires a thorough knowledge of the trade. Farmers are equally familiar with the fluctuation of prices in the capital, and with the proverbial expression of "Lucky days in Smithfield and Newgate."

Prior to the influence of railway and steam-boat conveyance, the supply of the market was controlled by drovers and English jobbers and farmers in the adjoining provinces, through whose hands almost the whole of the northern droves passed. Few farmers north of York conveyed their cattle in those days to London salesmen, a large proportion of their stock arriving in the midland and southern provinces only half fat, where they were fed out for Smithfield. Those provinces fed more than they do now, but reared fewer in proportion to their keep. Many had always fat stock on hand which they could turn out to join the droves if they saw that the supply was under an average; or if above it, they had a stall to relieve the anxiety of the drover, whose interest was always to sell at a sure profit rather than incur the expense and risk of the last market. Many of the beasts in Smithfield in those days (perhaps three-fourths of the whole), had stood four or five markets on their way to their final destination. Sometimes they may not have entered the market ground, but were always at command if occasion required. The drover himself was always sure to be there either buying or selling, sometimes both, and so were the farmers of the district—hence the familiar complaints so frequently heard among old men, especially farmers and innkeepers, about bad times and the want of trade in all the market towns of the provinces in question. In the rearing districts it was somewhat different, for although there was no want of markets to meet the local demand, yet the great body of stock destined for the south was sold periodically, especially in the winter season; and even in summer, although drovers kept up a retail trade as it were with the south, yet the great droves went off at Midsummer and Michaelmas. But the exclusive rearing of stock is now nearly done away with in those provinces, there being few farmers who do not fatten for the metropolitan markets, and although drovers and butchers still buy largely of the farmer in all the provinces south and north, they have lost all control of the supply compared with what they exercised in former times. This arises from their own numbers; from the number of farmers who consign with them; from their isolated position, and the supply of foreign stock, and the general want of any organised system. Formerly the demand of the capital spread from Smithfield like the waves of the ocean from the prow of a vessel. Now there is but one impulse between it and the most remote province; and although that impulse may now be felt as soon at Edinburgh as it formerly was at St. Ives, the result is rather to increase the fluctuations than to regulate the supply.

To control the supply properly, farmers should distribute their consignments equally over the season, according to the weekly demand, and although the consumption of the different kinds of meat is different at different seasons, yet changes of this kind are not fluctuating, but settled and easily understood. The supplies from foreign countries may be more difficult to control, owing to their want of winter keep and the superabundance of Grass during summer; and the same may be said of the exclusively Grass feeding districts of England, but however difficult it may be to turn the farmer, English or foreign, from his old habits, these must eventually give way before the extension of railways on the continent, and the progress of science both at home and abroad. Indeed, foreign supplies are already better distributed than they were—a proof that housefeeding during winter is fast being established; and the establishment of a regular supply from abroad will necessitate the grazing districts of England, and indeed the whole periodical system, to undergo a similar reformation in this country from the heavy losses to which it is subject from more causes than extreme fluctuations during summer and winter, and metropolitan expenses with want of accommodation.

On arriving in the capital, beasts require to be fed and sorted for market, and those which have come any distance should be allowed time to recover from the fatigue of the journey; but cattle from Aberdeenshire have first to travel over icy roads

some 50 miles to the railway station, invariably becoming more or less febrile from purging; next they are confined in the trucks, exposed to the inclemency of the weather, often only arriving in the metropolis in time to be driven hurriedly over its macadamised streets, for several miles, to Smithfield, where they have again to stand, it may be 12 hours, on an irregular and sloping pavement, subject to the tender mercies of its drovers and their dogs! Whatever our forefathers would have thought of such treatment, it may not be far from the truth to infer that our offspring will place it under the vigilance of the Society for the Suppression of Cruelty to Animals, and that experience will teach Aberdeenshire farmers not thus "to sell their hen on a rainy day." Some of the most successful graziers of Lincolnshire, in their evidence before a committee of the House of Commons, estimated the loss, when beasts were kept over from Monday to Friday's market, at 3*l.* per head, not so much from the expense of keep as the loss of weight. Now the loss which Lincoln beasts sustain in such cases is probably not greater than that of Aberdeen sent to a Monday market.

Aberdeenshire, however, is not the only place which suffers from the above practice. The complaints against railway companies are too numerous to be all groundless, while the progress of science among farmers is slowly but surely overturning antiquated systems—changes which demand timely consideration on their part, as to the regulation of the supply of butcher-meat for the capital. B.

#### UNIVERSAL EXHIBITION OF AGRICULTURAL AND INDUSTRIAL PRODUCTS AT PARIS IN 1855.

THE Lords of the Committee of Privy Council for Trade have received a communication from the Secretary of State for Foreign Affairs, transmitting a copy of a letter from Count Walewski, the French Ambassador at the Court of London, in which it is announced that by a decree of the 8th of March last, his Majesty the Emperor has ordered that a Universal Exhibition of agricultural and industrial products shall take place in Paris on the 1st of May, 1855.

The French Ambassador states that exhibitors of those countries who answer to this appeal will meet with every requisite facility both as regards the Customs regulations and the reception, arrangement, and security of their products, in the Palace of Industry. A later decree, which will be communicated without delay, will determine and specify the conditions of the Universal Exhibition, the rules under which goods will be exhibited, and the different kinds of products which will be admitted. Count Walewski expresses a hope on behalf of the Government of his Imperial Majesty, that the British Government will do all in their power to direct the attention of British manufacturers to the intended Exhibition of 1855, and that they will answer to the invitation which is now addressed to them with the same ardour as the French manufacturers responded to the invitation of England in 1851.

In accordance with the request of the Earl of Clarendon, my lords desire to give the widest publicity to this measure, in order that no effort may be spared in furtherance of the intentions of the Emperor of the French as regards the Exhibition of British agriculture and industry. Henry Cole, Lynn Playfair, joint secretaries; Marlborough House, 10th May, 1853.

#### LOIS-WEEDON WHEAT-GROWING.

AT page 45, 10th edition, of "The Word in Season," it is true Mr. Smith says, "So that beginning, as I do, the last week in September, I complete my labours the first week in December," but "Economist" (see p. 186) forgets to add a sequel which gives a very different turn to the paragraph than that which a "Economist" would infer, and which Mr. Smith puts very markedly in italics, "with nearly five months in hand for casualties of frost, snow, and sickness;" mind the word sickness can have no reference to any action on the land or the season, but must be held solely as interfering with the progress of the work, and therefore delaying its completion by the ill-health of the labourers employed, and so must be taken the words frost and snow. It is very evident then that the true reading of the paragraph is not that the work must be completed the first week in December, to expose the "turned-up soil to the rain, wind, frost, and snow of the whole winter," but that Mr. Smith does complete it by that time, having the remainder of the five months to complete it in, should those adverse casualties turn up; now, whether his labours are delayed by these casualties, or by that of a want of labourers, can make very little difference in Mr. Smith's principle or practice.

"Economist" attaches much value to winter exposure, so does Mr. Smith; every one admits the powerful effects of alternate frost and thaw in breaking down clays. Old writers tell us that without this winter exposure the strong clays of England cannot be broken down. There can be no doubt that a lengthened exposure to the vicissitudes of weather and to atmospheric influence is desirable, and therefore is the early completion of the double digging. But the actions of frost and thaw are purely mechanical, and the same actions take place and are continually going on, effecting the disintegration of



Mr. Smith's principles are virtually those of Jethro Tull, a deep-worked fallow grain crop alike the object of both; but the science of the present age has enabled the former to go beyond the latter, in displaying to him treasures in the under-soil that were hidden from Tull. Avail ourselves, however, as we may of these principles, under certain conditions, which are essential, we must succeed. These conditions we may gather from Mr. Smith's remarks in page 9: "It (the scheme) is essentially practical. . . . I submit to certain rules, and so gain certain ends. It is wholly by my obedience to the one that I accomplish the other." And, page 10, "No one can evade the conditions with impunity." So far cites "Economist," and there he stops; he must permit me to continue in Mr. Smith's paragraph, "I have known the scheme tried upon Wheat; and in one case, it was thick sown in September; in another, thin in November. I have known the great principle, pulverisation, wholly disregarded, and the seed plastered in raw, unmitigated clay; or committed to the untried mercy of the fresh uplifted, unneutralised subsoil. I have heard of fat fed thistles in the intervals overtopping the Wheat at harvest. Yet more wonderful, I have seen a season of blight, and premature ripening, and almost universal mildew, amounting to a visitation; and, while wailings were heard on every side, that field of miraculous triple rows and yard-wide intervals was expected to be Goshen."—"In these and such like cases there is a self-evident need of the exercise of the common gift of reason." Yes, we must use this common gift of reason in the working out of this scheme; we have here the principles and the conditions expounded. Surely, we may make our intervals 3 feet 2 inches, nay 6 inches; we may have two or three rows at 10 or 18 inches apart; we may find it necessary to hoe more or less often than Mr. Smith does, and at the same time keep to his principles and to his conditions. Mr. Smith has found his *modus operandi* effectual to the production of a certain amount of crop, and convenient to execution. Possibly some changes in it may make it more productive: possibly some changes in it may become imperative. It may be found that the distances in the rows at which the seed is dropped are too great, or not great enough, to produce the higher amount of crop. May we not be still Smith-Tullites, though we drop the seed, as the Hardy's and the Stev. Mr. Wilkins do, at some 10 or 12 inches apart, instead of 2 or 3 inches? Or, do I not maintain all the principles and conditions of Mr. Smith when I sow my seed in rows 2 feet asunder? The half of my ground is annually deeply dug and fallowed, and it bears Wheat every year. Maintain the great principle of keeping the land to a

In their destitution recourse was had to every



sible expedient for carrying the stock through the winter. Ivy is spoken of as a valuable plant to the sheepmaster; and even the Mistletoe, Tusser tells us, was to be carefully gathered and preserved. He gives directions in falling coppice, lopping trees, and cutting hedges, that the smaller twigs and branches be bound in separate faggots, to furnish what he terms "browse" for the winter season; and prescribes a remedy for a disease consequent on this rough pasturage, which might excite the smile of the modern veterinarian.

Hops had been introduced from the Netherlands in 1524, and he gives full directions for their culture and harvesting. It seems that every farmer grew enough for his own use; and as excisemen were not yet invented, he also malted his own Barley, a process that seems wholly to have fallen to the wife's share; and thus he brewed his beer at a small outlay of money. A rather notable instance of prejudice signalled the introduction of this plant, against which the citizens of London petitioned the Parliament, alleging that "it would spoye the taste of drinke and endanger the people."

(To be Continued.)

## Home Correspondence.

*Our Labour Book.*—I was much pleased in reading the paragraph in your Paper of April 30, on "Our Labour Book, College Farm, Cirencester," and I think it is of great importance that every young farmer in particular should separate his labour as there described. It is half the battle to know where the loss is, and it is the absence of this knowledge that has ruined half the farmers already. There is one deficiency, however, in the paper in question, to which I desire to draw attention, and think I should like to see cleared up, for the benefit of others as well as myself—it is that part which relates to the purchase and sale of sheep, and the way in which we are to ascertain the profit or loss; but no mention is made of the manner or price at which the sheep are to be debited for what they consume—such as Turnips, Mangold Wurzel, seeds, Rye-grass, &c. &c. Nor are we told how we are to credit them for the dressing they leave upon the land; for it appears to me, before we can satisfy ourselves of the real gain or loss of a flock of sheep, they must be debited in one way or another for all they eat, as well as credited for the dressing and treading of the land. I am aware this is of an easy matter to deal with, but it requires to be properly understood. I should also be obliged to any of your intelligent and scientific correspondents to inform me the price he would charge the sheep for an average top of roots; and also how he would deal with the keep dressing, of whatever quality it may be, with reference to the succeeding crops of corn, &c. *George ranks, Norbury Farm, Mickleham.*

*Sparrows.*—It is not a very easy thing to convince an man that what he sees habitually destructive of his ops is good for his own or the general welfare. "Anti-passer" (with much reason it seems to me) is grey with the cock-sparrows. "An Enquirer," however, asserts that they are most beneficial. "Who'll decide when doctors disagree?" I am not presumptuous enough to attempt anything in the shape of a decision, but you will kindly permit me to make a few observations. What a tale the nets spread in our garden crops every spring, tell of those little sparrows! Scratching at every bursting seed; ling holes into every budding leaf; who shall describe mischief which these voracious birds perpetrate? I set-off it appears to me in the picking out of an et from the bed of some tiny blossom, as much aged, it may be, by the one creature as the other. po, am "An Enquirer;" and the result of my ives and observations is that there are plenty of is in nature of which it is impossible to set up an et defence. If mischievous men and women id (and who shall say they do not!) it would, id, be an anomaly to meet with no mischievous , beasts, fishes, and insects. Admit, my friend, the world is full of mischief. Ten to one but your door neighbour is ripe for any amount of it. So it th the winged tribe, of which great family the ws and chaffinches make up, perhaps, the most jevous section. If the world thought, with uirer," that a sparrow does as much daily good as es daily evil, would every man be trying to trap nibilize him? Surely not. But sparrows are ws, and (loving the good things of this life) will urrows through "all time." *E. S., Enfield.*

*Contents of a Soil Vault* which has not been l for a quarter of a century, were emptied last and during the operation I caused the proper ty of peat charcoal to be mixed with the soil, had the desired effect of deodorising it; there to incorporated with it, before it was carted to d, about twice its bulk of common coal-ashes. I e using this mixture for my Swede Turnips, ing it in furrows, over which the ridges will rds be split on each side, so that the manure utually form the bottom of the ridge on which es will be drilled, and will not be in immediate with the seed. You will oblige me by informing ether you think I might follow this plan with out danger of the manure proving too strong plants. *An Eight Years' Subscriber.* [You may arry out your intentions in this matter, and no he Swedes will flourish on the food you give

of Keep, &c.—What I wished to know was this: ner has, as is sometimes the case, more Grass

than he can find the stock for, at what per head would he take in horses, cattle, and sheep? as I conclude he would scarcely follow the practice of ordinary inclosure and marsh owners, who advertise their land this manner annually. The keep of sheep per score on Swedes, varies I believe, much in different localities, as does that of ewes with their lambs in spring. With respect to your article on Mangold Wurzel, I think that the use of a common dibbling or rather hole-making wheel, such as I have roughly sketched, would be a general favourite with Mangold Wurzel growers if more used; it is simply the tire of a light wheel drilled at certain intervals and plugged. I think the full cost of accommodating the old tire thus was 5s. E. W. S. [Mr. Miles, M.P., referred to such a wheel, with short dibbles on the rim, in one of the earlier volumes of the English Agricultural Society's Journal. Sheep keep costs generally 6d. per head per week; cows, 3s. do.; horses, 3s. to 5s. do.]

*The Lateness of the Season.*—In the *Times* of the 17th is a letter from Mr. Belville, calling attention to the backwardness of vegetation, and acquainting us that "the mean temperature of March and April last year was 41° 9', and of March and April 1853, 42° 1', the former season being as remarkable for its dryness as the present is for its excess of wet; and yet that vegetation this spring is a fortnight or three weeks later than last spring." It is to the cause of this difference in the progress of vegetation, in contradiction to the temperature, that I would call attention. The effect of evaporation in withdrawing heat from bodies is exhibited by the lesser growth of this year. Owing to the greater quantity of rain and the want of draining, a larger amount of moisture has had to be carried off by evaporation. One of the good effects of draining has been shown by Mr. Parkes to be "an earlier vegetation." He proves that where rain passes off by percolation, so as to leave little or none for evaporation, the earth is warmed by its descent; whereas, when left on the surface, to be carried off by evaporation, it abstracts heat; and how extraordinarily does the comparison of Mr. Belville prove this! If your draining readers will refer to Mr. Parkes' admirable work, "Essays on the Philosophy and Art of Land Drainage," they will see how clearly he has shown these opposite effects of rain, and the benefit from sound draining. His work, after such a season as the past, will be read with pleasure by all who are interested in promoting earlier and better vegetation and in ameliorating climate. Most of us have yet to learn how much our personal comfort, as well as vegetable growth, may be advanced by thorough draining the district around us. *Hewitt Davis, 3, Frederick Place, Old Jewry, London.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY MEETING was held at the Society's House, in Hanover Square, on Wednesday, the 18th of May: Present, Mr. RAYMOND BARKER, V.P., in the chair, Lord Bridport, Mr. H. Allen, Mr. Caldecott, Mr. Cavendish, Mr. Chadwick, C.B., Colonel Challoner, Mr. T. T. Clarke, Mr. Dyer, Mr. Gadesden, Mr. Glegg, Mr. Greenwood, Mr. Fisher Hobbs, Mr. W. Jones, Mr. A. Murray, Mr. Paine, Mr. Pocock, Mr. Serjeantson, Professor Simonds, Mr. Spencer Stanhope, Mr. C. Hampden Turner, Capt. H. Veyner, Professor Way, and Mr. Wrench.

PEAT-CHARCOAL FOR SANITARY PURPOSES.—Mr. Towers, of Croydon, communicated to the Society his details of a chemical examination he had made of the alleged powers of peat-charcoal as a deodoriser, and his conviction of its inefficacy to arrest the ammonia or ammoniacal salts existing in water passed through it. He was led to this examination by the "pestilence" with which Croydon had been visited, and which had been attributed to mismanagement in the accumulation and removal of the sewerage matter of that place under new regulations.

Mr. Chadwick said that happening to make a call at the Society's offices, he had heard by chance of the paper to be read on the so-called "Croydon Pestilence;" without going into the merits of peat charcoal, and its uses for deodorising town manures, he begged leave to correct the fallacious assumptions that Croydon had been a peculiarly healthy place, and that the epidemic referred to had been peculiar to Croydon, or that within the town it had been carried on. The disease was as little peculiar to Croydon as the pleuro-pneumonia, which the Society was so well aware had ravaged their stock, was peculiar to any one farm steading. The dysenteric fever, or epidemic, had arisen soon after the unusually heavy falls of rain, and most severely in districts where the surrounding land drainage as well as the house drainage was bad. It had visited elevated positions which could not be protected from the influence of the bad land-drainage beneath them. The dysenteric and unusual choleraic types of country had appeared after the unusual wet in different parts of the country; in several distant places nearly simultaneously. A more severe visitation of the like type of fever to that of Croydon, in the Malton Union, had been reported upon by Dr. Laycock, of York, particularly severe visitations of the same type had occurred in Leicestershire. In Surrey attacks occurred nearly simultaneously in different parts of the county; in Croydon it occurred in places of widely different conditions,—in houses occupied by persons of the best condition, even before those in the worst; in parts of the town which were undrained as well as in those where new works were going on. Instead of Croydon being peculiarly healthy, the fact was, it had been the least healthy in the county of Surrey, and whilst in the metropolis the deaths from zymotic or fermentative diseases were 23 per cent. of the total deaths, in Croydon they had, on an average of seven years, been more than 26 per cent.; and though a suburban town, its general average mortality had little advantage over pools—which state was well accounted for by its extra amount of peat and cesspool manure; but instead of suffering more than others, as alleged, it had suffered much less than other places. At Oxted, for example, which was a rural village nine miles distant, where there had been a much lower average proportion of zymotic diseases, and therefore a proportionately less predispo-

sition, 16 per cent. of the population had been attacked, whilst at Croydon 10 per cent. of the population had been attacked. Had the attacks at Croydon been in proportion to the attacks in the more healthy villages, there would have been a thousand persons attacked; had the attacks been in proportion to its demic disposition, as shown by the test—the previous rate of epidemic disease—the numbers of persons attacked would probably have been double what they were. The local board had removed which were no better than cesspools. Upwards of 18,000 superficial feet of evaporating cesspool matter had been removed from within the town, and hence the houses, to a place of deposit containing 1000 feet of surface, one-eighth of a mile from the town. That distant and reduced point of evaporating surface had been charged as the cause of the epidemic, but it so happened that at its commencement the wind was blowing in another direction. Moreover, lime—not peat charcoal, he understood—was strewn upon the surface, and so little warning did it give by smell that it was stated a medical gentleman, mistaking the surface, which was under a shed, for a whitened floor, had walked into the pool. When, then, the rate of attacks in other places was ascertained, which had never been looked to, and the evident reduction of the amount of cesspool matter in the town lessened the previous predisposition, and had greatly reduced the attacks from the wide-spread epidemic causes. Had the works there been better done, and the removal of these predisposing causes been made in a more satisfactory and complete manner, the attacks would, in all probability, have been proportionately still less. When the main public works at Croydon were opened, the members of the general Board emphatically exhorted the local Board that that was only the first step, and the least important one; and that everything depended on the manner in which the house-drainage and private improvement works were performed. Unfortunately, the local Board had neglected this most important work to private bricklayers, and that, too, without the proper superintendence: the consequence of which had been, that there had been a larger proportion of inefficient and bad, as well as excessively expensive work, than there ought to have been, and that much of the proper benefit had been frustrated. On a close house to house examination of all the cases where death had occurred—100—it appeared that in only three were the works ascribed by the inmates as having influenced the disease; and there could be no doubt that they had done so, for, from the ignorant and clumsy manner in which they had been performed, the cesspool matter and evaporation, instead of being removed had been increased. A consultation of the experience in other places would show that the complete removal of cesspool matter, by combined works and water-closets connected with tubular drains, had been attended with all the effects anticipated. But, to advert to an agricultural point, he might state that although the refuse had been removed from near and beneath the habitations at Croydon, it had been spread out upon land, in some instances, as a top-dressing, and in others by the method of the water-meadows. The Council were aware of his objections on purely agricultural grounds to these methods of applying manures, as being less efficient and wasteful, as well as offensive. The general Board of Health found again in men, as farmers found rot in sheep, attendant upon the common water meadow, with only plain water. In several of the Italian states the use of water meadows within six miles of cities was prohibited. But the general Board of Health had no power to extend similar protection. The works, when completed within Croydon itself, would nevertheless be found to be well worth the money they had cost, notwithstanding their defects; but however well the immediate site of the town might be drained, the susceptible, the very young, and the aged, would be still affected by the ill-drained and ill-conditioned land surrounding the town and out of their jurisdiction. The general Board had shown that however well the site of London itself might be drained, the health of the population would still be affected by the condition of the Essex marshes and the Plumstead marshes contiguous to the N.E. and S.E. portion of the houses, and that after the prevalence of easterly winds, diseases, with the type of the marsh disease, cases of ague, were scattered amidst the population to the farthest portions of the inhabited site. Yet it had been proved that all those marshes might, by general measures, which had been prepared—but opposed and frustrated, have been drained—as the fen districts in Lincolnshire had been drained—by pumping, at an expense of from 3s. to 5s. only, per annum, as the Council were well aware, with great advantage to the land; but to obtain that benefit there was no power. It might be topically to be submitted to the Society, the importance of extending the jurisdiction of local Boards, so as to bring as much of suburban lands as practicable within general arrangements, affecting land drainage, as by the substitution of tubular and covered road drains, for open drains, common ditch drains, which he had shown were dearer as well as inefficient. A member of the Council asked Mr. Chadwick whether it had been found that the poor really used water-closets properly? Mr. Chadwick was glad to have the opportunity of stating that the experience of their use had been complete and satisfactory. There were many who at first would use them as small dust-bins, and occasion stoppages, but there were now whole towns and villages, as well as blocks of houses, where water-closets had been removed, and where the water-closets substituted, had been used as well as they were in the houses of the higher classes. In places where the water-closets had been constructed, as in some poorer districts in London, without water properly applied, the poor fetched water and kept them clean. He would take the opportunity of stating a fact, which the Society would be glad to hear, that in the model dwellings for the labouring classes, the most beneficial improvements which consisted in the removal of the cesspools, the introduction of better water supplies, more ventilation, and less crowding, the health of the people had been strikingly improved. They had been freed from epidemics, and the deaths hitherto had been reduced to fourteen in a thousand—the general average being twenty-three in a thousand, which was a far greater improvement than expected. If the general rate of the mortality in the metropolis under the new works brought up to the present rate of mortality in all the model dwellings, there would be 25,000 deaths annually less than there now were; and if the general rate of the mortality in England and Wales were brought to a level, with the rate which prevailed, amidst those improvements there would be 179,000 lives saved, to supply the emigration drain of population.

Prof. Way remarked that he had a good deal to say on this subject, which he would, however, reserve till next month, when he should have to bring the question generally of town sewerage, and its connection with agriculture, before the consideration of the members; he would only remark on the present occasion that he fully concurred with Mr. Towers' remarks on the inefficacy of charcoal to retain ammoniacal matter; he had in fact communicated to Mr. Towers his result of experiment, long previously obtained by him in his laboratory during his researches on the absorptive power of soils for manure: charcoal would act like any other filter in arresting solid matter; but a very slight amount of putrid organic matter tainted water, and this taint might easily be removed, while the inodorous and colourless liquid might contain much manuring matter. He alluded to the periodical outbreaks of enormous torrents of water, and the emission of pent-up gas (probably carbonic acid gas), at different intervals of



time, from cavities under the chalk hills.—Mr. Raymond Barker inquired the quality of this water, and explained the peculiarities of outbreaks down Henley Hill.—Prof. Way replied that the water contained much chalk held in solution by excess of carbonic acid.—Mr. Paine alluded to the "swallow-holes" under the chalk rocks in Surrey, which after thunder-storms gave vent to immense quantities of water eight or ten times during the year.—Mr. Gadesden referred to a similar occurrence at Mardon Park.

The remainder of the report, relating to Dr. Angus Smith's process for coating iron pipes for the conveyance of water, will be given next week, it having reached us too late for publication.

The Council ordered their usual acknowledgments for the communications then made to them, and adjourned to their Weekly Meeting on the 25th of May.

**AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.**—That the progress and prospects of this Society are both very promising is fully borne out by the report of the Council adopted at the half-yearly meeting of subscribers on Friday last.

"That meeting was numerously and influentially attended by subscribers, and the fact that members came up from the far west of Connaught, from Limerick, and Kerry, to attend it, shows what increased anxiety is felt by the public in the Society's proceedings and welfare, while the unanimous approval of the report, and the various resolutions of the council, by such a meeting, must satisfy any reasonable person, that the council, its committee, and officers, possess the confidence of the public. The increase of members since January 1852, will this year add 450l. to the income of the Society, thus enabling the council not only to defray any extra outlay for the Society's Journal, but also to furnish the committee for the trial of implements in the Great Exhibition with the 200l. voted by the council and the half-yearly meeting. This trial, conducted, as we are satisfied it will be, in a fair and efficient manner, during the progress of the Exhibition, will confer a great boon upon the agricultural public, and redound to the honour and advantage of this Society, which originated the scheme, and who will mature and work it out, at a vast amount of trouble, and no small expense. These trials, in connection with the Great Exhibition, and the vast concourse of visitors who will be in Dublin this summer from all parts of Ireland, will, we expect, afford the active friends of the Society a most favourable opportunity of adding a great many new members to their list, while the cattle show at Killarney may also be converted into a powerful auxiliary for working out this object, so desirable and useful in itself. The comfortable accommodation of 'The Irish Farmers' Club' and reading rooms, and the interest attached to the monthly evening discussions of the council, combined with the preceding considerations, give good reason for hoping that the Society will in summer and autumn, 1853, obtain greatly increased confidence and pecuniary support. Mr. Townley's handsome offer of a 50l. Challenge Cup to be competed for by tenant farmers, is warmly noticed in the published minutes of the Society. This gentleman's liberal conduct cannot fail to excite a keen and improving rivalry, creditable to him and useful to the Irish breeders of stock; and when we take that in addition to the gift of this Cup, we have good reason to believe that whenever Mr. Townley may be so fortunate as to carry off permanently the good old Purcell pledge, he is likely to replace it with one of not less value—surely such conduct calls for the most grateful acknowledgments of the Irish Society and of the Irish people."

We extract the above statement from the leading article of the May number of the Journal of the Society. The following we further extract from the report of the Council published in the same number:—

"The council have arranged that their Great Annual Show shall be held at Killarney, on the 10th and 11th August next, in anticipation of which all arrangements, as yet practicable, have been made by them, in conjunction with the local committee. A variety of circumstances encourage the council in hoping that the meeting will be alike creditable to the Society and beneficial to the south-west districts of Ireland. The Highland Society of Scotland having no show this year will probably induce many Scotch breeders to exhibit their stocks, particularly as the directors of the Great Southern and Western, and of the Killarney Junction Railway, have liberally undertaken to carry along their respective lines, free of charge, to and from the show, all stock, implements, &c., duly entered for exhibition. Similar applications are pending with the other Irish railways and steamboat companies in connection with England and Scotland, the particulars of which, when completed, will be publicly announced. The extension of the premiums, and generally improved spirit and condition of the farming interest, induce the council to look forward to the Killarney Show with sanguine anticipations of success."

**FLAX SOCIETY.**—At a late meeting at Belfast a letter was read from the Under-Secretary of the Lord Lieutenant, notifying that the Paymaster of Civil Services had been authorised to issue 1000l. to the Society, to defray the expenses of instructors in the growth and preparation of Flax in the nine counties of Munster and Connaught to which the Irish Reproductive Fund applies. Fifteen of the Society's instructors were reported to be engaged in superintending sowing operations, and their correspondence noted a considerable increase over last year's breadth, in most districts, although the backwardness of the season would throw much of the sowing far on into May. Mr. W. Dawson, Besbrook Mill, Newry, submitted for the committee's inspection the model of a rolling-machine, which he conceived to be constructed on a principle likely to be an improvement on the existing rollers. The chief novelty consists in the rollers traversing upon a grooved table, in place of working on each other. The committee directed that the attention of machine-makers should be drawn to this plan, with a view to testing its advantages. It was reported that several trials had been made in the pressing of Flax-straw after steeping on Schenck's system, between heavy metal rollers, and the results were in all cases very satisfactory; the fibre of straw so treated appearing to be quite freed from the foreign matters deposited upon it in the course of the steeping process, as the products of the decomposition of the gum or gluten. This process further seemed to impart a softness to the fibre, and to divide it into fine filaments, without apparently injuring its strength. The straw after wet rolling was also much more easily dried than where that process had not been applied. The secretary laid before the meeting certain details of a mode of retting just brought out by Mr. Buchanan, and exhibited a drawing of the apparatus employed. This system is a modification of the hot-

water steep, and may be shortly described as follows:—From a boiler to generate the steam, the latter passes through a pipe into a cistern containing cold water, which is thus heated to 212° Fahr.; the water is then driven by pressure into a second cistern or closed chamber containing the Flax-straw, immersed in cold water, which thus becomes heated to 140°; from the top of this chamber a pipe leads into a third, hitherto empty, and as the water rises in the second chamber, it flows over into the third, which, when filled, descends, and, in so doing, turns two cocks—one shutting off from the first cistern the steam from the boiler, and the other admitting a jet of cold water from a fourth cistern placed over the first; consequently, the water of that in which the Flax-straw is contained rushes back into the first chamber. These operations are repeated four or five times. By this system of Buchanan it is stated that Flax fibre may be obtained from the straw in 24 hours, but as yet nothing is known of the quality produced. A communication had been received relative to another system of retting, invented by M. Terwagne, of Lille, which had attracted considerable attention in France, and was under investigation by the Central Society of Agriculture in Paris. The inventor declares that, in order to produce a fibre completely freed from the gum, fermentation is absolutely necessary. He declines to publish the details of his process, but gives the following information respecting it:—"In wooden vats, or in tanks built of bricks, he places 6 cwt. of Flax-straw, tied up with cord, in sheaves of not more than 5 lbs. each; the water is cold when first put in, and is raised by steam to the temperature of 20° or 25° (centigrade); chalk and wood charcoal are employed to correct the gaseous evolutions produced by the fermentation. After the retting is completed, the Flax-straw is washed with a fresh supply of water, that which has become saturated with the products of decomposition being left off; the straw is dried in the open air and then scutched; the process requires 70 to 90 hours. The entire cost of the operation, including interest on fixed and floating capital, rent, fuel, &c., is put at 30l. per ton of fibre; the yield of fibre is stated at 15 to 18 per cent. of straw before steeping. No disagreeable smell is evolved, owing to the employment of the chalk and charcoal; and these, from being impregnated with the decomposed gum, are stated to form an excellent manure. It was ordered that M. Terwagne be thanked for his communication, and that steps be taken to examine into his process.—The Secretary called the attention of the meeting to some facts relative to a variety of Flax with white flowers. This appeared to be unknown out of Belgium, and its culture to be confined to certain districts. In a report lately made to the French Government, special reference was made to this sort of Flax. Its advantages were stated to be:—1st, its hardness, and ascertained success on soils of such inferior quality as to be totally unsuited to the growth of the ordinary blue-flowered Flax; 2d, its yield of fibre being greater by 8 per cent. than the latter; 3d, its produce of seed being more than double that of the other. The committee directed that this subject should be carefully investigated, as one of great novelty and interest; and that, if possible, some seed of the white-flowered Flax should be at once obtained from Flanders, for trial in Ireland this season.

#### POULTRY.

**POULTRY: D.C.** If you have read the answers to correspondents in the *Agricultural Gazette* of late, you cannot be ignorant of my opinion as to feeding fowls on raw meat. I consider it injurious in the extreme, and have lately had much to do with diseases brought on, I believe, entirely by it. I will, however, repeat the opinion of a clever medical friend, "If you wish a fowl to feed like a cat and thrive, you must first provide the bird with that animal's power of digestion."—A.H.J. It is always a relief to discover a natural cause even for disappointment, as it is generally easy to cure, and relieves from a state of uncertainty. Such is the case with your Bantams. Raising the nests will not prevent the cock from eating the eggs. I should advise you to take him from the hens for a time, to watch them narrowly, and remove the eggs directly they are laid. Old poultry wives have what they consider a panacea for curing egg-eating fowls. They blow an egg, and fill the shell with mustard and Cayenne pepper, and put it in the nest. It is sometimes effectual, but not always. When the cock is removed, and the hens are watched for a day or two, they will lose the habit. If you look to eggs as a source of profit, you will have to provide them when they are scarce, in the winter, as they are then valuable, and find a ready sale. To do this you must have young fowls, as old ones only lay at their natural time. Almost everything in the way of poultry to be valuable must be produced out of season, and care and much attention must overcome all difficulties, such as unfavourable weather. You should therefore always save early chickens in the spring, say the beginning of May, and keep them for eggs in the winter. If you look to the sale of early chickens you must still do the same, as you will require to hatch in December and January, in order to provide chickens in April and May. If you succeed in sending eggs, as they make large prices, often from 2l. 10s. to 3l. per dozen. The poultry mania has certainly one advantage, viz., that with good management it is self-supporting.—G. I am no believer in Minorca fowls as a breed. I have always heard them called Spanish or Minorcas. Some time since a clergyman in Devonshire told me he could send me plenty of Spanish fowls. I asked him to do so, and I received them; but they had lost the characteristic white face. Your fowls appear the same. They are undoubtedly Spanish, but degenerate, and if you exhibit them you will certainly be beaten. It will be a great evil if prizes are given for inferior fowls of any breeds. There are always plenty of amateurs who, failing to possess pure birds, and conceiving they will be beaten, will shirk them off, and, under a new name, seek to gain honours that in full competition they could not hope for. I hope this will not be unpalatable to you; you ask for a straightforward opinion, and I give it. I assure you it is not a "dealer's" interest to promote a high standard. *J. Bailey, 113, Mount Street.*

#### Notices to Correspondents.

**LAND MEASUREMENT.** *Jack O'Sent.* Gibson's book is as good as any, but it is somewhat expensive.

**SHEEP: T.E.B.** will be obliged to any of our correspondents to inform him where he can get caps to protect sheep's heads from the fly.

**SUPERPHOSPHATE OF LIME: A.J.** Lay 80 bushels of bone-dust in a conical heap; pour on water till it begins to run off at the base; leave it for a couple of days; then spread it abroad somewhat, leaving a raised rim (which should be trampled firm) and a basin-shaped cavity; pour on more water till it will no longer remain in the heap; and then slowly pour about 9 cwt. of acid over the heap. Turf-ashes (about 300 bushels) may with advantage have been previously laid around the edge of the heap. When the heat has somewhat subsided, mix the bones together again into a conical heap, cover it with the ashes, and leave it for a few weeks; the whole may then be mixed with the dry ashes, and will be ready for drilling. It will suffice for from 10 to 20 acres. Where a less quantity is required, the following method, recommended by Mr. Spooner, will be found perfectly satisfactory. He advises that the acid added should be one-third the weight of the bones, and that four times its weight of water should first be poured over the heap. "A very convenient and cheap vessel for manufacturing the mixture is a sugar hogshead, having its holes stopped with plaster of Paris. It is very desirable to avoid, if possible, any measuring or weighing of the acid, as it is so very dangerous a substance to handle. Many serious accidents occurred to my knowledge during the last year, and it is very difficult to impress farm servants with the sufficient degree of caution, or even to convince them that a liquid which appears so colourless will burn their skin and clothes. In emptying a carboy of acid even into a tub it is difficult to prevent a little slopping about and damaging the clothes of the attendants, as well as the basket, &c., which contains the carboy. To prevent these unpleasant consequences I have adopted the following plan:—The carboy is placed on a stage or cask the same height as the sugar hogshead, into which is put the precise quantity of bone-dust we intend mixing with the carboy of acid. The water is now added with a watering-pot having a rose at the end, so as to disperse it thoroughly, and the carboy of acid is then emptied by means of a syphon. This syphon is formed of a piece of black lead pipe, which is bent into any form, about three-quarters of an inch in caliber and 4 feet in length. A brass coil is soldered to the long end of the syphon, on which the rose of a watering-pot may be placed. The syphon is now filled with water, and its long end closed with the cock, and the small end with the hand or finger. The latter is then quickly inserted into the mouth of the carboy, the cock turned on, and the acid will continue to flow till the vessel is nearly empty, without any assistance, so that the attendant has no occasion to expose himself to the injurious and offensive fumes which almost immediately begin to escape. He may, however, approach the windward side of the tub, and give the mixture a little stirring, which should be continued for some little time afterwards, so that the mixture may be complete. A convenient vessel for this purpose is a fork with two grains, long in the grain, bent at some distance from the grains nearly at right angles, and fixed in a wooden handle. On the same day a fresh lot of bones may be added, and the process repeated until the hogshead is nearly full. In two days afterwards the mixture may be shovelled into a heap, and either remain till wanted or mixed at once with a certain portion of ashes. It should be shovelled over several times, and ashes added at each time of turning, which will thus render the mixture fine and dry enough to pass through an ordinary drill."

**VINGOE'S SEED PLANTER: Anon.** We do not know what has become of it. We remember it perfectly. The principle is adopted still in many of our hand-dibbling machines. Dr. Newington's dibbles are advertised at page 297.

#### Markets.

##### COVENT GARDEN, MAY 21.

The weather having become favourable. Vegetables are improving both in quality and quantity. Forced Peaches make their appearance, and there have also been a few Nectarines. Forced Strawberries fetch from 6d. to 1s. an ounce. The supply from the Continent of Peas, Potatoes, Carrots, Asparagus, Radishes, Artichokes, Endive, and Lettices, is still well kept up. Both Seakale and Rhubarb are abundant. Young Carrots and Turnips fetch from 1s. to 2s. per bunch. Old Potatoes are now chiefly confined to Regents. Frame Potatoes fetch from 1s. to 2s. per lb. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Primulas, Fuchsias, Roses, Cyclamens, Mignonette, Cinerarias, Azaleas, and Camellias.

##### FRUIT.

Pine-apples, per lb., 8s to 12s  
Grapes, hothouse, per lb., 6s to 12s  
Peaches, per doz., 18s to 24s  
Nectarines, per doz., 18s to 24s  
Strawberries, per doz., 6d to 1s 0d  
Apples, dessert, per bush, 10s to 15s  
— kitchen, do., 6s to 12s

##### VEGETABLES.

Cabbages, per doz., 1s to 2s  
Broccoli, per doz., 2s to 4s  
Greens, per doz., 2s 6d to 4s  
French Beans, per 100, 1s to 2s  
Asparagus, per bundle, 2s to 6s  
Seakale, per basket, 2s to 6s  
Rhubarb, per bundle, 3d to 6d  
Potatoes, per ton, 55s to 200s  
— per cwt., 6s to 12s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 4d to 1s 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 6s to 10s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

Lemons, per doz., 1s to 2s  
Oranges, per doz., 1s to 2s  
Seville, per 100, 7s to 14s  
Almonds, per peck, 5s  
— sweet, per lb., 2s to 3s  
Nuts, Barcelona, per bush, 20s

Tomatoes (foreign), per doz., 6s to 8s  
Garlic, per lb., 6d to 8d  
Lettuce, Cab., per doz., 6d to 1s 6d  
— Cos, per score, 1s to 2s  
Radishes, per doz., 1s to 2s  
Endive, per score, 2s 6d to 3s  
Small Salads, per pun., 2d to 3d  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, per doz. bunches, 3s to 5s  
Mint, green, per bunch, 3d to 6d  
Basil, do., per bunch, 9d  
Marjoram, do., do., 9d  
Watercresses, per 12 bun, 8d to 10d

##### LIANY.—Per Load of 36 Trusses.

**SMITHFIELD, May 19.**  
Prime Meadow Hay 84s to 90s  
Inferior do. ... 70 75  
Rowen ... 45 55  
New Hay ... ..  
Clover ... 90s to 100s  
Second cut ... 70 90  
Straw ... 28 33  
E. J. DAVIS.  
Prime Meadow Hay 90s to 95s  
Inferior do. ... 70 84  
New Hay ... ..  
Old Clover ... 100 110  
JOSHUA BAKER.

##### COAL MARKET.—FRIDAY, MAY 20.

Wallend Tues, 18s.; Wallend Belmont, 18s. 9d.—Ships at market, 17.

##### WOOL.

**BRADFORD, THURSDAY, MAY 19.**—Wool is held for prices that cannot be afforded by the consumers, and the sales continue limited.

**YARNS.**—There is nothing new in this department, either as regards demand or prices.

**PREPARED.**—The general observance of holiday on Monday and Tuesday has caused a very limited supply of goods to be made. The high prices of all kinds of material to make cloth is perplexing to the manufacturers, who find it difficult to cover cost.

##### SMITHFIELD.—MONDAY, MAY 16.

The supply of Beasts is considerably smaller, consequently, trade is brisk, and prices are rather better. The supply of sheep is not quite so large as of late; however, being holiday week, the



demand is not so large. Some choicest qualities are rather dearer. Lamb is more in request. Good Calves are readily sold at late quotations. From Germany and Holland there are 633 Beasts, 930 Sheep, and 198 Calves; from Scotland, 400 Beasts; and from Norfolk and Suffolk, 2200.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. .... 4 6 to 4 8	Best Long-wools. .... 0 0 to 0 0
Best Short-horns 4 4 to 4 6	Do. Shorn .... 4 4 to 4 6
2d quality Beasts 3 4 to 3 10	Ewes & 2d quality 0 0 to 0 0
Best Downs and Half-breeds .... 0 0 to 0 0	Do. Shorn .... 3 8 to 4 0
Do. Shorn .... 4 6 to 4 8	Lambs .... 5 6 to 5 6
Beasts, 4084; Sheep and Lambs, 20,460; Calves, 217; Pigs, 335.	Calves .... 3 8 to 4 8

FRIDAY, MAY 20.

The number of Beasts is not quite so large as on Friday last; trade is not brisk, but late quotations are maintained. We have about an average supply of Sheep and Lambs; trade is rather worse for the former, but for the latter rather improved. Calves fully maintain late prices. From Germany and Holland there are 79 Beasts, 630 Sheep, and 178 Calves; from Norfolk and Suffolk, 860 Beasts; and 113 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. .... 4 6 to 4 8	Best Long-wools. .... 0 0 to 0 0
Best Short-horns 4 4 to 4 6	Do. Shorn .... 4 4 to 4 6
2d quality Beasts 3 2 to 3 8	Ewes & 2d quality 0 0 to 0 0
Best Downs and Half-breeds .... 0 0 to 0 0	Do. Shorn .... 3 6 to 3 10
Do. Shorn .... 4 4 to 4 8	Lambs .... 5 8 to 6 0
Beasts, 800; Sheep and Lambs, 7250; Calves, 327; Pigs, 225.	Calves .... 3 8 to 5 0

HOPS.—BOROUGH MARKET, May 20.

Messrs. Pattenden and Smith report that the demand for fine Sussex and Weald of Kent is active at full prices. The last few days of warm weather has improved the appearance of the bine.

MARK LANE.

MONDAY, May 16.—The supply of Wheat from Essex and Kent this morning was large, and the weather since Friday having been fine, combined with the large foreign arrivals, including about 5000 sacks of French Flour, caused the market to rule extremely heavy, and only a portion could be disposed of at a decline of 2s. per qr. upon the Essex, and 2s. to 3s. per qr. on the Kent. With the exception of secondary Hampshire Wheat, for which there was some inquiry from the country at about last week's prices, foreign was almost entirely neglected, and must be written fully 1s. per qr. cheaper. Barley has declined 1s. per qr. Beans and Peas being scarce, bring rather more money. A great portion of the supply of foreign Oats is in inferior condition, and to effect any sales it is necessary to submit to a decline of 6d. to 1s. per qr. on all but the finest qualities. Flour is neglected. Most of the cargoes of Black Sea Wheat which have arrived on the coast have been disposed of at fully late rates.

Wheat, Essex, Kent, & Suffolk. ....	8s. 6d.	Red ..... 37-45
— fine selected runs ..... ditto	41-58	Red ..... 43-50
— Talavera ..... ditto	53-69	
— Norfolk ..... ditto	—	Red ..... —
— Foreign ..... ditto	33-57	
Barley, grind. & distil., 23s to 26s. ....	24-30	Malting ..... 25-29
— Foreign, grinding and distilling ..... ditto	22-30	Malting ..... 29-32
Oats, Essex, and Suffolk ..... ditto	17-20	
— Scotch and Lincolnshire ..... Potato	22-24	Feed ..... 17-22
— Irish ..... ditto	21-23	Feed ..... 19-20
— Foreign ..... Poland and Brev	18-22	Feed ..... 14-20
Rye ..... ditto	29-32	Foreign ..... —
Rye-meal, foreign ..... ditto	32-35	Harrow ..... 32-35
Beans, Mazagan ..... 30s to 32s. ....	27-30	Longpod ..... 28-30
— Pigeon ..... 34s to 37s. ....	27-30	Egyptian ..... 28-30
— Foreign ..... Small	30-31	Suffolk ..... 40-42
Peas, white, Essex and Kent ..... Boilers	30-31	Foreign ..... 32-42
— Maple ..... 32s to 35s. ....	30-31	Yellow ..... —
Maize ..... ditto	37-44	
Flour, best marks delivered ..... per sack	21-27	Country ..... 21-27
— 2d ditto ..... ditto	21-27	Per sack ..... 35-38
— Foreign ..... per barrel	21-24	

FRIDAY, May 20.—The arrivals of foreign grain continue large. To-day's market was better attended than of late; nevertheless, English Wheat, some of which remained over from Monday, could not be disposed of at that day's prices. Foreign, although more inquired after, was generally held above the buyers' views, and but little business resulted. Former rates may be considered unaltered. The inquiry for floating cargoes is less active, and with the exception of two cargoes of Galatz, closed at 35s. 6d., we did not hear of any transactions. In the value of Barley, Beans, and Peas there is no alteration. Oats are a slow sale at Monday's prices. Flour is but little inquired for.

IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
April 9	44 9	31 11	18 9	31 10	34 5	32 10
— 16	44 10	31 11	19 0	29 10	34 3	33 7
— 23	44 7	31 5	19 0	27 3	34 9	31 11
— 30	44 4	31 6	18 8	30 0	35 3	33 3
May 7	44 6	31 4	19 0	30 7	35 2	33 3
— 14	44 7	31 5	18 8	29 8	35 5	33 3
Aggreg. Aver.	44 7	31 6	18 10	29 10	34 10	33 0

Duties on Foreign Grain 1s. per qr.

FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	April 9.	April 16.	April 23.	April 30.	May 7.	May 14.
44s 10d	...	...	...	...	...	...
44 9	...	...	...	...	...	...
44 7	...	...	...	...	...	...
44 6	...	...	...	...	...	...
44 4	...	...	...	...	...	...

LIVERPOOL, TUESDAY, May 17.—The arrivals from Ireland and coastwise during the past week have been insignificant, and from foreign ports we have been supplied to a fair extent. At this morning's market there was a fair attendance of the town and country trade, and some buyers from Ireland; but owing to the discouraging advices from the London market yesterday, the late upward movement in prices received a check, and the business done in Wheat and Flour was quite in retail, at the prices of this day week, the slight improvement noted on Friday being generally lost. Oats and Oatmeal were held for an advance of 1d. per 45 lbs. and 6d. per load, which checked business. Barley, Beans, and Peas were without change in value or demand. Indian Corn was in moderate request, at 31s. for white, and 31s. 6d. per qr. for yellow. Floating cargoes of both Wheat and Indian Corn were still to be met with at late rates, and in some instances at rather less money.—FRIDAY, May 13.—During the last three days our supplies received coastwise and from Ireland have been extremely small, and prevented by adverse winds, those of foreign very moderate. At our Corn Exchange to-day the extreme rates of Tuesday were paid for Wheat of all descriptions, and a fair extent of business was effected, the trade closing firm. American Flour met an improved demand, and anything good and fresh was rather dearer, but French, being in slow request, was without a movement in value. Oats and Oatmeal were again rather higher, the latter continuing to move rather freely. Beans somewhat dearer; the market being almost cleared of Egyptian. Indian Corn saleable in moderate quantities for shipment to Ireland, at full prices.

CUTLERY WARRANTED.—The most varied assortment of Table Cutlery in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales.

Three and a half inch Ivory-handled Table Knives, with high sholders, 10s. per dozen; Desserts, to match, 9s.; if to balance, 1s. per dozen extra; Carvers, 3s. 6d. per pair; larger sizes, in exact proportion, to 25s. per dozen; if extra fine, with silver ferrules, from 36s.; White bone Table Knives, 6s. per dozen; Desserts, 4s.; Carvers, 2s. per pair; Black horn Table Knives, 7s. 4d. per dozen; Desserts, 6s.; Carvers, 2s. 6d.; Black wood-handled Table Knives and Forks, 6s. per dozen; Table Steels, from 1s. each.

The largest stock of Plated Dessert Knives and Forks, in cases and otherwise, and of the new Plated Fish Carvers in existence. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

THE PERFECT SUBSTITUTE FOR SILVER.—

The REAL NICKEL SILVER introduced 20 years ago by WILLIAM S. BURTON, when plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle	Brunswick	King's
	Pattern.	Pattern.	Pattern.
Tea Spoons, per dozen.....	16s. ....	32s. ....	36s. ....
Dessert Forks " .....	30s. ....	54s. ....	58s. ....
Dessert Spoons " .....	30s. ....	56s. ....	62s. ....
Table Forks " .....	40s. ....	65s. ....	70s. ....
Table Spoons " .....	40s. ....	70s. ....	75s. ....

Tea and coffee sets, waiters, candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle	Thread.	King's.
Table Spoons and Forks, full size, per dozen .....	12s. ....	28s. ....	30s. ....
Dessert ditto and ditto .....	10s. ....	21s. ....	25s. ....
Tea ditto .....	5s. ....	11s. ....	12s. ....

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares, Iron and Brass Bedsteads), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned on every article not approved of.

No. 39, Oxford Street, corner of Newman Street; Nos. 1 and 2, Newman Street; and Nos. 4 and 6, Perry's Place.

IT MAY WITH TRUTH BE AVERRED, THAT

ROWLANDS' MACASSAR OIL has, from its intrinsic worth, enjoyed an unexampled extent of celebrity and patronage, and the successful results of the last half century have proved beyond question that it is endowed with singularly nourishing powers in the growth and restoration of the human Hair, and when every other known specific has failed. It insinuates its balsamic properties into the pores of the head, nourishes the Hair in its embryonic state, accelerates its growth, cleanses it from Scurf and Dandruff, sustains it in maturity, and continues its possession of healthy vigour, silky softness, and luxurious redundancy to the latest period of human life. Its operation in cases of baldness is peculiarly active, and in the growth of WHISKERS, EYEBROWS, and MUSTACHIOS, it is also unfailing in its stimulative operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s.; or family bottles (equal to four small), 10s. 6d.; double that size, 21s.

CAUTION.—On the wrapper of each bottle are the words "ROWLANDS' MACASSAR OIL," in two lines. The same are engraved on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London; and by all Chemists and Perfumers.

ANOTHER CURE OF COUGH, BY DR.

LOCOCK'S PULMONIC WAFERS.—"Epsom, Feb. 6, 1853. Gentlemen.—For some time past I was afflicted with a most distressing Cough and Hoarseness, and which I thought, from various symptoms I observed, would conduce to Consumption. After having tried several remedies, and finding little or no relief, I determined to try a small box of your Dr. LOCOCK'S PULMONIC WAFERS, and to my surprise in less than two days I found myself perfectly restored; and it is with deep-felt gratitude I return my sincere thanks to you and Providence that I am by means of your invaluable medicine thus perfectly restored. I am, Gentlemen, yours thankfully, G. WYATT."—To Singers and Public Speakers they are invaluable for strengthening the Voice. Price 1s. 12d., 2s. 9d., and 11s. per box. Sold by all Medicine Vendors.

PARKER'S LIFE PILLS.

ARE ACKNOWLEDGED TO BE THE

BEST MEDICINE IN THE WORLD.

The following facts have been mentioned to Mr. J. F. WINKS, Leicester, who has preserved the names and residence of each of the parties, which he is ready to produce:—

A person in Oxford Street, Leicester, aged 44, had been ill two years, of influenza. The club surgeon said he was in a consumption, and would never recover. He began to take Parr's Life Pills three months ago, previous to which he had been confined to his bed six months. The Pills first brought away a great deal of offensive matter, and they gradually recovered; can now walk about without a stick, and thought it his duty to make it known. He called again afterwards, and begged his name might not be published, as it might offend the club doctor.

The wife of Mr. BROWN, in Fleet Street, has been in a low way for some time; she took Parr's Pills regularly, and soon found her spirits more cheerful; and her sight and hearing, which had been affected, were improved. She said they were pleasant to take, not causing a sickly feeling, nor giving the least pain.

Miss EVANS, Chatham Street, is a mender in a warehouse; has been much afflicted for several years, and not able to do more than two hours' work in a day; she took Parr's Pills, and soon was improved in health, and could see much better. She now works her regular hours.

Mr. HENSHAW, of Bagworth, has been long subject to palpitation of the heart, and could not walk up hill. Had the advice of an eminent physician in Leicester, but was no better till he took Parr's Pills; but now he is quite recovered.

The wife of Mr. J. FROST, at the same place, was so tormented with a cough that she could not sleep. She had taken Parr's Pills, which had done her, her husband said, "a world of good."

Mr. R. VANE, of Belgrave, had been ill five years of palpitation of the heart. Had been in the infirmary, and under several physicians and surgeons. Has been gradually improving since he took Parr's Pills, and is now able to work.

Mrs. TURNER, of Whetstone, found Parr's Pills very beneficial for the scrofula.

Many other cases have been mentioned by persons who have purchased the Pills. Indeed, the very extensive and increasing sale of this useful Medicine is the best proof that can be desired how highly it is appreciated.

I shall be happy to answer any inquiries.

J. F. WINKS, Bookseller, Leicester.

T. ROBERTS & Co., Sole Proprietors, Crane Court, Fleet Street, London.

Sold, by appointment, by E. EDWARDS, 67, St. Paul's Churchyard; BARCLAY & SONS, Farringdon Street; SUTTON & Co., Bow Churchyard, London; and by most respectable dealers in Medicine. Price 1s. 12d., 2s. 9d., and in family packets, 11s. each. Directions given with each box.

DEANE'S WARRANTED GARDEN TOOLS.—

Horticulturists, and all interested in Gardening pursuits, are invited to examine DEANE, DRAY, & Co.'s extensive stock of GARDENING AND PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

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Axes	Hoe	[Scissors]	Pruning Bills
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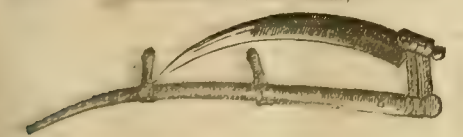
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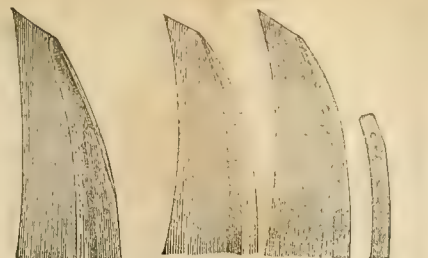
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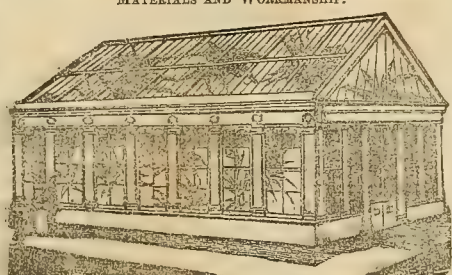
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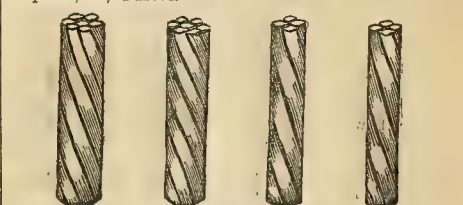
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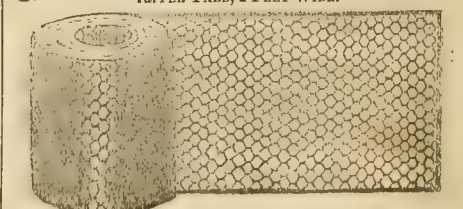
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Any one having such to dispose of, cheap, may address H. W., at Pottle and Son's, 14, Royal Exchange, London.

## TO GARDENERS, FLORISTS, SALESMEN &amp; OTHERS.

**TO BE LET, adjoining Gravesend, a large GREENHOUSE, PROPAGATING HOUSE, and a Range of BRICK PITS, all heated by hot water or air fires. The stock of Plants, of first-rate order for sale during spring and summer, to be taken at a valuation.**—Apply to Mr. J. GOLDB, 38, Windmill Street, Gravesend.

**EGGS.**—An Amateur has a few Eggs of the following sorts to dispose of, at 10s. per dozen, packages included:—Cochin China (very large), White Dorking, and Spangled Hamburg. All applications to be accompanied by a post-office order.—Address A. B., care of Mr. Whittaker, 46, John Dalton Street, Manchester.

## POULTRY.

**TO BE SOLD, a few sittings of EGGS from first-rate Light Buff-coloured Cochin China Fowls; no dark feathers in the neck, and highly feathered to the toes, 11 a sitting of 13, packed. The Silver-Pencilled Hamburg, 7s. the sitting.**—Address, Mr. WATSON, Hall Farm, Lamport, Northampton.

## Sales by Auction.

## COCHIN CHINA FOWLS.

EXTRA SALE BY AUCTION ON TUESDAY, MAY 31.

**MR. J. C. STEVENS** begs to notify that he will hold an Extra Sale of FANCY POULTRY at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 31st May, at 12 o'clock precisely, in which will be included choice specimens of COCHIN CHINA FOWLS, from the renowned Stocks of John Fletcher, Esq., of Kensington; G. W. Johnson, Esq., of Winchester; and several other well-known Amateurs and successful exhibitors; also a few good Spanish, Poles, &c. Catalogues of which will be forwarded on receipt of a stamped directed envelope enclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

\* These Sales will be continued on the 1st and 3d Tuesdays in every month; persons having surplus stock to part with may obtain Form of Entry and full particulars on application to Mr. J. C. STEVENS, as above. The next Sale will take place on Tuesday, 7th June.

## IMPORTANT SALE

OF SHORT-HORNED CATTLE, AT THE BAZAAR, BAKER STREET, PORTMAN SQUARE.

**MR. STRAFFORD** has received instructions from Harvey Combe, Esq., of Cobham Park, Surrey, to announce for sale by Auction, at the Bazaar, on WEDNESDAY, the 1st of June next, 20 Pure-bred SHORT-HORNED COWS and HEIFERS, also 2 BULLS from his celebrated Herd; after which will be sold a few very superior young SHORT-HORNED BULLS, from the well-known Herd of J. S. Tanqueray, Esq., of Herdon, Middlesex.

Catalogues may be had of Mr. Giles, Downside Farm, Cobham, Surrey; or Mr. Bland, Decoy Farm, Hendon; and upon application to Mr. Strafford, 39, Guildford Street, Russell Square, London.

## TO MARKET GARDENERS OR NURSERYMEN.

**MR. W. T. ATWOOD** has received instructions, by direction of the Executors of the late Mr. G. ROUGH, to sell by Auction, on the Premises, the unexpired term of 12 years' lease of the valuable piece of Fruit Garden and Premises, containing about 10 acres; also the Live and Dead Stock and Implements of Trade. The land is on Wandsworth Common, adjoining the high road from Footing to Wandsworth, and is most advantageously situated for the business of a Nurseryman or Market Gardener. Further particulars may be obtained of Mr. W. T. ATWOOD, Mortlake, Surrey.

## NOTICE.

**MESSRS. PROTHEROE AND MORRIS** beg most respectfully to inform their Friends and the Public, that the Sale announced for MONDAY, the 23d inst., at WARWICK HOUSE, FADDINGTON, will not take place.

American Nursery, Leytonstone, May 21.

**BROOKLANDS NURSERY, BLACKHEATH PARK, KENT.**

**TO GENTLEMEN, EXHIBITORS, AND OTHERS.**  
**MESSRS. PROTHEROE AND MORRIS** have received instructions from the assignee to submit to unreserved sale, on the premises, on FRIDAY, 3rd, and SATURDAY, 4th June, the whole of the well-known and celebrated Stock in Trade of Mr. W. P. Ayres, a bankrupt, comprising the finest collection of specimen and young Fancy Pelargoniums in the country, including all the newest kinds and some seedling varieties not yet sent out; also a select collection of Show Pelargoniums, Stove and Greenhouse Plants, Cinerarias, Fuchsias, Liliums, Azaleas, and many thousands of Bedding Plants, comprising all the best kinds of Verbenas, Fetunias, Calceolarias, Pompon Chrysanthemums, Lobelias, &c.; also a quantity of Shrubs and Trees, Araucarias, Cedrus Deodara, and other Finishes; together with sundry Household Furniture and effects. Catalogues will be ready in a few days, and may be had on the premises; at the principal Seedshops in London; from the Auctioneers, American Nursery, Leytonstone, Essex; and of Messrs. BRISTOW & TABERNAT, 2, Bond Court, Walbrook, and Greenwich, Kent, Solicitors to the Assignee.

## TO GENTLEMEN, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will Sell by Auction, at the Mart, Bartholomew Lane, on WEDNESDAY, May 25th, and FRIDAY 27th, at 12 o'clock, a first-rate Collection of Dahlias, Verbenas, Fuchsias, Climbing and other Roses, fine Calceolarias, Geraniums, and other Plants in bloom, with a large assortment of Plants for bedding. May be viewed the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO GENTLEMEN, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by the executrix of the late Mr. SMITH to sell by Auction, on the premises, No. 365, Albany Road, Camberwell, on TUESDAY, May 31, at 2 o'clock, the whole of the well-known and justly celebrated Collection of TULIPS and OFFSETS; also, a capital Tulip Stage, with Canvas Rollers, &c.; Carnation Stand; five 2 and 3-Light Boxes, Hand Lights, an Iron Roller, Carnation Shades, Garden Pots, Mould, Books, and sundry Effects. May be viewed prior to the sale. Catalogues may be had on the premises; of the principal seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO GENTLEMEN AMATEURS, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are directed by Mr. PERIAM (who has gone abroad), to sell by Auction, on the premises, Dartmouth Row, near the Forest Hill Station, Kent, on WEDNESDAY, June 1, at 2 o'clock, the whole of the choice and costly collection of TULIPS, comprising all the favourite flowers in cultivation, as well as many new, not yet let out; Seedlings; a capital Tulip Stage, Irons, Cloths, Cabinet, &c. May be viewed any day prior to the sale; Catalogues may be had on the premises; of the principal Seedsmen in London and of the Auctioneers, Leytonstone, Essex.

## TULIPS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by James Davidson, Esq., of Camden Grove, Peckham, to Sell a portion of his STOCK by Auction, on the premises, on TUESDAY, May 24th, at two o'clock. Catalogues may be had on the premises; of the principal seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TULIPS.

**TO BE SOLD** by Auction, the beginning of June, at the HANDSWORTH NURSERIES, near Birmingham, one of the oldest and most select collections in England, in consequence of a dissolution of partnership. Particulars will appear in future advertisements.—May 21.

## TULIPS.

**MR. ALEXANDER** will sell by Auction on the premises, 63, Green Street, Twigg Folly, Bethnal Green, and Wisker's Gardens (late Pocock's), on THURSDAY, June 2d, and following day, at 12 o'clock each day, by order of Mr. Boynett, an extensive collection of TULIPS, comprising many esteemed varieties; also upwards of 12,000 choice seedling breeders, including a quantity of finely broken flowers never before sent out.—May be viewed two days prior to Sale. Catalogues had one week prior of Messrs. DAWES, CORTELL, and BENHAM, Seedsmen, Moorgate Street; Auction Mart; City of Canton, Poplar; on the premises; and of Mr. ALEXANDER, Shackwell, and Church Lane, Leyton.

## TULIPS.

**MR. ALEXANDER** will sell by Auction, at No. 8, Amherst Terrace, near the Amherst Arms, Shackwell, on MONDAY, June 1st, at 12 o'clock, without the least reserve, a choice collection of TULIPS, comprising Pompe Funebre, Marcellus, Everard, Strong's King, Headley's King Richard, Alexander's Monarch, Emperor, Steir's Napier, Hampden, Midas, Earl of Eglington, Truth, Norman's Sir E. Knatchbull, Royal Albert, Captain Dacre, Dixon's Lion, Rose Lac, Camuse de Cray, Jeffrey's Elizabeth, Headley's Annina, Cramoiee Delicate, Kate Courtenay, Brunsate Eclatante, Miss O'Neil, Lady Boyle, Lady Peel, Mrs. Zull, Mary Lamb, Louis XVI., Democrit, Nora Creina, Pandora, Salvador Rosa, Thalia, Rutley's Queen, George Glenny, Brown's Magnificent, Sir Harry Smith, Robert Burns, Robert Wylie, &c. &c.; together with all the finest of the Chelston and Scotch varieties.—May be viewed on morning of Sale. Catalogues had at Mart; Messrs. DAWES, CORTELL, and BENHAM, Seedsmen, Moorgate Street; City of Canton, Poplar; White Swan, West Ham; and of Mr. ALEXANDER, Shackwell, and Church Lane, Leyton.

## TULIPS.

**TO GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.**  
**MR. J. RAWLINGS** has received instructions from the Proprietor, who is relinquishing the business, to sell by Auction, without reserve (on the premises, Coopersale Nurseries, just through Epping Town), on THURSDAY, May 28th, 1853, at 10 o'clock, the whole of the valuable STOCK, consisting of many thousands of Greenhouse Plants, also the unrivalled collection of Herbaceous and other Plants (the variety of which is too numerous for insertion in an advertisement), together with the newly-erected Pits and Frames, Hand Lights, &c. &c.—May be viewed one day prior to the Sale, and Catalogues had on the premises; of the principal Seedsmen in London; at the principal Inns on the Road from London to Epping; and of the Auctioneer (free on application), 89, Bridport Place, New North Road, and Ebenezer Nursery, Shackwell.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Communications and Communications are to be addressed to THE EDITOR.—SATURDAY, MAY 21, 1853.



THE GARDENERS' CHRONICLE. AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 22.—1853.]

SATURDAY, MAY 28.

[PRICE 6d.

INDEX.

Table with 2 columns: Topic and Page Number. Topics include Agricultural history, Agricultural machinery, Statistics, etc.

NEW AND RARE PLANTS.

JOHN AND CHARLES LEE beg to offer the following select and beautiful PLANTS, which they can recommend for general cultivation:— Hexacentris myosorensis (Veitch) 21s. fine stove creeper. Begonia Prestonensis (Pince), 10s. 6d., splendid. Lapageria rosea, strong, 10s. 6d. to 21s. Cissus discolor (Rollisson), 5s., exquisitely beautiful leaf. Plectranthus concolor picta (Low), 2s. 6d. each, 18s. per doz. Conacium aurantiacum, 18s. per dozen, for bedding. Kinghorn's new Epacris, 15s. for 3 varieties. Genethyllis triplicifera, 10s. 6d. Pulnena ericoides, 5s., very rich colours and free flowering. Dillwynia cinnabarina, 10s. 6d. Drummondii, 10s. 6d. scabra, 10s. 6d. And every other Novelty.—Nursery, Hammersmith.

NEW TURNIP SEED FOR 1853. ON SALE, BY THE SUBSCRIBER, viz.—

Table with 2 columns: Seed Name and Price. Includes Large Aberdeenshire Yellow Bullock Turnip Seed, Thallon's Golden Yellow Bullock, etc.

The Subscriber is authorised to refer to the following gentlemen (extensive Agriculturists), as having experience of the superior quality of his Seeds, which are all warranted of pure and genuine sorts, sited and free from weak seeds, and will be sold cheap in bushels and large quantities:—THOMAS CUNNINGHAM, Esq., Dalachy, Fifie; ALEXANDER WYLLIE, Esq., Bolton, East Lothian; JAS. ALLAN, Esq., Clifton, West Lothian, &c. ANDREW THALLON, Seed and Oil Merchant, No. 2 Shore, Leith.—May 28.

NEW AND SELECT PLANTS offered by BASS AND BROWN. The usual allowance to the trade, except the five English Fuchsias.

Table with 2 columns: Plant Name and Price. Includes Aphelandra variegata, Zehemia fulgens, Begonia Prestonensis, etc.

Mrs. A. Adamson, a fine Continental variety Geraniums, new varieties, sent out in October. See reduced prices in our Advertisement in Gardeners' Chronicle of May 7, 14, and 21.

Table with 2 columns: Plant Name and Price. Includes Gloriosa Planti, Hoya campanulata, etc.

1853.

NEW SEEDLING VERBENAS "LADY WILLIAM POWLETT," "MRS. BEECHER STOWE," and "EVA ST. CLARE."

The character of the first-named variety is large petal, with fine compact truss, abundant bloomer, good habit; colour white, very heavy crimson centre; every bloom perfect, and warranted the best of this class yet sent out. The second variety mentioned is a splendid cerise colour; large flat petal, fine and distinct eye; this is the largest truss yet grown, and a first-rate show variety. The third and last named is very superb, and great improvement on Jenny Lind, being much larger, brighter in colour, distinct eye; altogether a fine and free blooming variety. The above three new Verbenas are warranted to give as great satisfaction as any others yet grown, being fine in form, decided colours, trusses all large and compact, and will prove extra fine show varieties. Plants are now ready, at 5s. each. The usual allowance to the Trade. They will be sent postage and package free, on receipt of the amount, which must accompany every order from unknown correspondents, by penny postage stamps, Post-office orders, or otherwise. EDWARD TILLY, Nurseryman, Seedman, and Florist, 14, Abbey Churchyard, Bath, Somerset.

NEW FUCHSIAS AND VERBENAS OF THIS SEASON.

HENRY WALTON, Florist, Edge End, Marsden, near Burnley, Lancashire, is now sending out nice young plants of the following:—FUCHSIAS, Glory (Banks), and Glory of England (Harrison's), 5s. each, post free; the other new varieties by the end of June at reduced prices.—VERBENAS, Arestes (Smith), Elizabeth, Mrs. Kirkpatrick, Glory, and Vesta (Young's), Garland, Lady Franklin, Middlesex Rival, and Discourt (Smith), Purple Prince (Mockett's), Purity, and Beauty of Danecroft (Barnes), at 1s. 6d. each, post free.—Dahlias, choice show kinds, 4s. 6d., 6s., 9s., and 12s. per dozen.—Chrysanthemums, 4s. 6d. and 6s. per dozen.—Bedding Plants, &c., equally cheap. Catalogues may be had for One Penny Postage Stamp.—All orders accompanied with a Post Office Order, payable at Marsden, Lancashire, will command prompt attention.

EDWARD GEORGE HENDERSON and SON, Wellington Road, St. John's Wood, London, having just flowered two new Continental VERBENAS, Madame Lemoine and Princess Marianne, both beautiful variegated flowers, the greatest novelties of the season, and from their surpassing beauty they are induced to hasten the introduction of them, as the most limited collection must include these for another season. The habit and truss are excellent, and fine form, 5s. each. Verbena Camille and others of last year's varieties, can be supplied in fine plants.

CHOICE CINERARIA, CALCEOLARIA, AND HOLLYHOCK SEEDS.

LUCOMBE, PINCE, and Co., have now ready for sending out SEEDS of their very fine CINERARIAS, CALCEOLARIAS, and HOLLYHOCKS, which have been selected with great care from the best and most distinct varieties. The great satisfaction which their Cinerarias and Calceolarias have given for several successive years enables them to recommend their Seed of the present season with much confidence. The Hollyhock Seeds were all saved from the finest and most approved varieties, which, it is well known, have been cultivated very successfully in the Exeter Nursery. Sealed packets of Cineraria, at 2s. 6d. each; Calceolaria, at 2s. 6d. each; Hollyhock, at 2s. 6d. each. Free by post, and warranted by them. N.B. It is now a good time to sow these Seeds, thereby securing a stock of strong early blooming plants. Exeter Nursery, Exeter.—May 28, 1853.

SHORT GRASSES.

FINE GRASS LAWNS IN FLOWER GARDENS, &c.—The great expense of cutting and carting turves from a distance may be avoided, and a superior Turf produced in a few weeks, by sowing SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds. Great improvements may be effected in old Lawns by sowing about 20 lbs. to the Acre of these Seeds; for the formation of new Lawns twice that quantity will be necessary. Price 1s. 3d. per pound; 3s. per gallon; or 21s. per bushel. Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

TURNIP SEEDS DIRECT FROM THE GROWERS.

THE MOST CERTAIN MEANS TO PREVENT DISAPPOINTMENT.—Persons desirous of obtaining really new and genuine Turnip Seeds are respectfully recommended to apply to JOHN SUTTON & SONS, Seed Growers, Reading, Berks, who will forward particulars of Sorts, Prices, &c., on receipt of one penny stamp for postage.

ARTHUR HENDERSON and CO. beg to draw

the attention of their customers and friends to their new Bedding Plant, namely, PHLOX DRUMMONDI MAYI VARIEGATA, which is now being sent out by them, at 18s., 24s., and 30s. per dozen, according to size of Plants. It is without exception one of the most unique and beautiful plants of recent introduction; it is also admirably adapted for cultivation in large pots for the Conservatory. A. HENDERSON & Co. also take this opportunity to recommend PULTENEA ERICOIDES, price 5s. and 7s. 6d.; also TETRA- THECA ERICIFOLIA, 10s. 6d. These two plants have carried off prizes at the recent flower shows, and are deservedly the admiration of the floral world. N.B. For a further list of new and rare plants, A. HENDERSON & Co. beg most respectfully to solicit an inspection of their New Sheet Catalogue for the present season; and amongst other novelties, they would especially recommend the splendid new GASTROLORIUM SPECTABILE, price 21s. Pine Apple Place, Edgeware Road London.

HORTICULTURAL SOCIETY OF LONDON.—NOTICE is hereby given that the second EXHIBITION OF FLOWERS and FRUIT, in the SOCIETY'S GARDEN, will take place on SATURDAY, June 11. Tickets can be procured at this Office upon presenting the order of a Fellow, price 5s. each; or, on the day of the meeting, at Turnham Green, price 7s. 6d. each. 21, Regent Street, London.

EXHIBITION OF PELARGONIUMS, ETC.

JOHN DOBSON begs to announce that his Second Annual Exhibition of PELARGONIUMS, TULIPS, PANSIES, FUCHSIAS, &c., will take place on WEDNESDAY and THURSDAY next, June 1st and 2d, from 12 o'clock till dusk, to which all lovers of Floriculture are respectfully invited. An Efficient Band is engaged for the occasion. Admission Free. Trains leave Waterloo Station every hour. Woodlands Nursery, Isleworth, Middlesex.

EXHIBITION OF AMERICAN PLANTS.

Knap Hill Nursery, Woking, Surrey.

THE AMERICAN PLANTS at this Nursery will be in bloom on and after the 1st of June next, and may be seen daily. The Nursery is within an hour's ride of London, being near the Woking Station of the South-Western Railway, where all trains stop, and from whence capital conveyances may be obtained.

\* The Military Encampment on Chobham Common is within a short distance of the Nursery. HOSIA WATERMAN, Knap Hill Nursery.—May 28, 1853.

EXHIBITION OF AMERICAN PLANTS,

AT THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce his Collection of RHODODENDRONS, AZALEAS, &c., is now coming finely into Bloom, and will continue in good perfection throughout the month of June. The Nursery is near the Farnborough station, South-Western Railway.

CRIMSON-FLOWERED IVY-LEAVED GERANIUM.

STANDISH and NOBLE have now to offer the above, which they can recommend as a BEDDING PLANT of the first class. It has the habit and foliage of the well known old variety, but the flowers are of the brightest crimson. They are produced in the greatest profusion, and are raised well above the leaves upon stout foot-stalks. Plants, in June, 10s. 6d. each. The usual discount to the trade when three or more are taken.—Bagshot, Surrey, May 28.

RHODODENDRON EDGORTHII.

W. J. EPPS begs to offer strong plants of this splendid Sikkim Rhododendron, at 10s. 6d. to 21s. each, which was shown at Chiswick on Saturday, the 14th, and described by Dr. Lindley in his leading article of last week, viz., "Its blossoms were of the largest size known in the genus; cream colour, a little dashed with pink, and more fragrant than words can describe."—Lower Nurseries, Maidstone.

NEW SHRUBBY CALCEOLARIAS.

CONSISTING OF ABOUT FIFTY VARIETIES NEVER BEFORE OFFERED TO THE PUBLIC.

J. WEEKS and Co., CHELSEA, have now to offer a most splendid and superb Collection of SEEDLING SHRUBBY CALCEOLARIAS, which they can confidently warrant and recommend, they having been carefully saved and varied from the most unique selection in the kingdom. The roots being all Shrubby they are perpetual in flower; and from the great variety and brilliancy of their colours, they are invaluable for the Conservatory or bedding-out.

J. WEEKS & Co., King's Road, Chelsea, London.

THE ASHCROFT SWEDE.—This excellent Swede,

which is unsurpassed (if equalled) in size by any other, has proved to be exceedingly hardy, and has stood the late rainy winter and sharp spring frosts better than most others. It is also one of the best Swedes to sow early for pulling early, not being subject to mildew. Price 1s. per pound.

Mr. K. Hickman, of Brimpton House, near Newbury, alluding to the Ashcroft Swede, in a letter dated February 1st, 1853, says:—"Being fond of experiments, I have grown all sorts, and did not confine myself to the Ashcroft alone, till I was fully convinced that it was by far the best, which it certainly is, not only in weight per acre, but also in hardness and in shape, having less neck than the Turnip, and only one tap root; they also store remarkably well." We have had a fine stock of superior sorts of Turnip Seeds, including Skirving's and Rivers' Swede Swede grown from seed, procured of Messrs. Skirving and Rivers. Address, JOHN SUTTON and SONS, Seed Growers, Reading, Berkshire.



## GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

**JAMES PHILLIPS AND Co.** have the pleasure to hand their present prices of Glass for Cash:—

SHEET SQUARES.		CROWN SQUARES.	
In Boxes of 100 feet.		In Boxes of 100 feet.	
Under 6 by 4	£ s. d.	Under 6 by 4	s. d.
6 by 4, and 6 by 4 1/2	0 12 6	6 by 4, and 6 by 4 1/2	8 6
7 " 5, — 7 1/2 " 5 1/2	0 13 0	7 " 5, — 7 1/2 " 5 1/2	12 6
8 " 6, — 8 1/2 " 6 1/2	0 15 0	8 " 6, — 8 1/2 " 6 1/2	14 0
9 " 7, — 9 1/2 " 7 1/2	1 0 0	9 " 7, — 9 1/2 " 7 1/2	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3 d. per square foot, according to size.

21 oz. " 3 1/2 d. to 5d. " "

26 oz. " 3 d. to 7 1/2 d. " "

Squares for Orchard Houses, on Mr. Rivers' plan, 20 by 15, 20 by 14, 20 by 13, and 20 by 12 always on hand. Cases of Sheet-Glass, size about 40 by 30, 16 oz. to the foot, 21. 2s. per Case of 200 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Canoes' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

## ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.**

WAREHOUSE, 87, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long.

16 ounces ... 3d. per foot.	Under 6 by 4	... 12s.
21 ounces ... 4d. "	6 by 4, 6 1/2 by 4 1/2	... 13s.
26 ounces ... 5 1/2 d. "	7 by 5, 7 1/2 by 5 1/2	under 9 by 7 15s.
32 ounces ... 7 1/2 d. "	8 by 6, 8 1/2 by 6 1/2	under 9 by 7 15s.
	9 by 7, 8 by 8, 12 by 9, 12 by 10	20s.
	13 by 10, 14 by 10, 15 by 10	

Large Sheet of No. 16, very superior, packed in cases of 100, 200, and 300 feet, at 2 1/2 d. to 2 3/4 d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Fern Shades, round, oval, and square, for Clocks and Ornaments; Fern Shades and Dishes.

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**HETLEY AND CO.** supply 16-oz. SHEET GLASS of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

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Iron works are now established for the manufacture of these, and the covering of existing Walls with Glass, and orders will be promptly executed in any part of Great Britain or Ireland. Commissions will be received through most of the respectable Nurserymen in the kingdom, and communications may be addressed to Mr. DUNN, Agent, St. Helen's Iron Works, Lancashire, or to the Patentee, Bodorgan, Holyhead.

N.B. These Walls can be seen in the Garden of the London Horticultural Society, at Eccleston Hall, Lancashire, or Bodorgan, Anglesea.

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**PATENT GLASS TUBES, Iron** Coated with Glass, Gutta Percha, Combined ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE,

HYDRAULIC ENGINEER,

70, Strand, and Bridgefield, Wandsworth.

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Road, Chelsea, by special appointment to her MAJESTY and H.R.H. PRINCE ALBERT.—ORNAMENTAL WATER FOWLS, consisting of Black and White Swans, Egyptian, Canada, China, Bamaele, Brent, and Laughing Geese, Shieldrakes, Pintail, Widgeon, Summer and Winter Teal, Gadwall, Labrador, Shovelers, Gold-eyed and Dun Divers, Carolina Ducks, &c., domesticated and pinioned; also Spanish, Cochinchina, Malay, Poland, Surrey, and Dorking Fowls; White, Japan, Pied, and Common Pea-fowl, and Pure China Pigs; and at 3, Half-moon Passage, Gracechurch Street, London.

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their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

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of Blight upon Roses, Wall Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra strong, in jars, 1s. 3d., 2s. 6d., 5s., and 10s. (jars included); fit for use, per gallon, 1s. 6d. (jars extra). For Thrip, Scale, Green-fly, and Red Spider, add 3 parts water to 1 part Composition. Destruction will be greatly accelerated upon infested Cucumbers, Melons, and Plants in pits and frames by Syringing and shutting up early. Specimens might be dipped into the liquid without the least injury to flowers or foliage. Wall Fruit Trees and Roses have been Syringed while in full blossom with the most beneficial effects, and the former even up to the ripening of the crop. For Mealy Bug the Composition may safely be used in its full strength, as any portion of the liquid reaching the roots will act as a manure. For Testimonials, see last page of *Gardeners' Chronicle* of March 12.—37 and 38, Oxford Street, Southampton.

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EFFICIENCY GUARANTEED.

**HOT-WATER HEATING APPARATUSSES**, upon approved principles, supplied and fixed in Horticultural and other Buildings, by WILLIAM DODDS & CO., Heating Engineers, 102, Leadenhall-street, London. First-rate references if required.

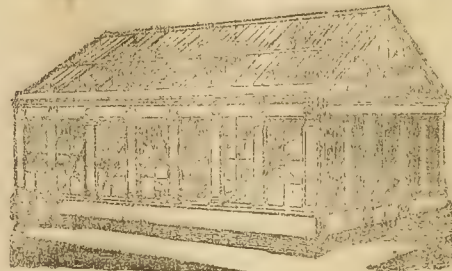
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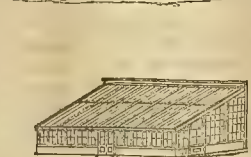
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RICK CLOTHS, MARQUEES, TENTS, &c.,

NEW OR SECOND-HAND, FOR SALE OR HIRE.

**BENJAMIN EDGINGTON** has prepared for the ensuing season an extensive assortment of Marquees, &c., for Horticultural Societies, Fêtes, Cricket Clubs, &c. Rick Cloths, with Poles, Pulleys, and Lines complete. A great variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. A Warehouse, 208, Piccadilly, London.

Address, by post, No. 2, Duke Street, Southwark, London.

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Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 60s. Scrim Canvas, for Wall Fruit.

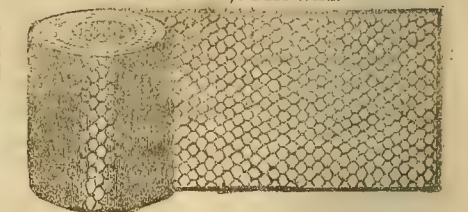
At EDGINGTON & Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark; and at Brunswick Street, near the East India Export Dock, Poplar, where may also be seen erected Emigrant Tents in great varieties on their latest improved principles.

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from Frost, Blight, and Birds, and as a Fence for Fowls, Pigeons, Tulip and Seed Beds, at 1 1/2d. one yard wide; 3d. two yards wide; or 6d. four yards wide. From JOHN KING FARLOW'S Fishing Tackle and Net Manufactory, 3 and 4, Crooked Lane, London Bridge. Orders, with remittances over 20s., carriage free.

## GALVANISED WIRE GAME NETTING.—

7d. PER YARD, 2 FEET WIDE.



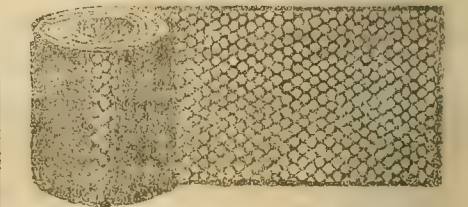
	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 "	6 1/2 "
2-inch " extra strong "	12 "	9 "
1 1/2-inch " light "	8 "	6 "
1 1/2-inch " strong "	10 "	8 "
1 1/2-inch " extra strong "	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## CHEAP WIRE GAME &amp; POULTRY NETTING,

5d. per running yard, GALVANISED DITTO, 7d. per running yard, 2 feet wide.



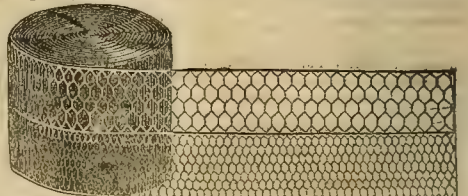
	Galvanised.	Not Galvanised.
24 in. wide, 2 in. mesh, 7d. per yard.	...	5d. per yard.
30 in. " 2 in. " 9d. "	...	6 1/2 d. "
36 in. " 2 in. " 10 1/2 d. "	...	7 1/2 d. "
48 in. " 2 in. " 1s. 2d. "	...	10d. "

Sparrow Proof Netting, Galvanised, 8d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. FOX, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

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ROOFING WORKS, 94, Albion Street, Leeds, Agent for PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES.

The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING and cannot rust or corrode, made any width and length.

24 inches wide, 3-inch mesh, 4 1/2 d., 6d., and 8 1/2 d. per yard.

24 inches wide, 2-inch mesh, 7d., 9 1/2 d., and 1s. 0 1/2 d. per yard.

GALVANISED IRON SPOUTING, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphaltic Roofing Felt, &c. Apply at 94, ALBION STREET, LEEDS.







And why should they not be? It rests entirely with ourselves. There is always spirit enough to be found in England, at least we say so; and we trust, for the honour of vegetable gardeners, that they are not the only class who are to be charged with want of energy and skill.

THROUGH the kindness of Dr. KLOTZSCH we have lately received the two numbers of the *Allgemeine Gartenzeitung* for the 19th and 26th of March, 1853, containing a translation of certain papers in the Transactions of the Caledonian Horticultural Society, from 1809 to 1814, with some original observations from his own pen. The subject of these memoirs is the disease which for so many years occupied the attention of the cultivators of Potatoes, especially in the northern districts, and which was known by the name of the curl. The translator, Dr. JESSEN, seems convinced of the absolute identity of that disease with the dry and wet rot of later years, and Dr. KLOTZSCH leans to the same opinion, but with a fainter degree of conviction. In our own apprehension the diseases are perfectly distinct, inasmuch as the principal feature of the curl was the very imperfect development of the haulm, while in the Potato murrain it is well known that the diseased tubers have a peculiar propensity to germinate, and the shoots which ultimately fall victims to the malady too surely exhibit their infection by their extreme luxuriance. The main point, however, of Dr. KLOTZSCH's observations is by no means directed to the identification of the two diseases, but to certain general laws to which he supposes the vegetable world to be subjected. He considers that there is evidence to show that the curl gradually disappeared in consequence of a new stock being raised from seed, a position we fear scarcely tenable, and that the attention of cultivators should therefore be turned in the same direction now. He believes that all varieties are liable to wear out—a doctrine against which we have often protested; and that as they approach the period destined by their peculiar constitution for their total decadence, they are especially subject to disease. The infancy of varieties is, however, he asserts, equally susceptible of malady, and therefore experiments are not to be abandoned because of early indications of weakly constitution, but more persevering efforts will probably be crowned with success.

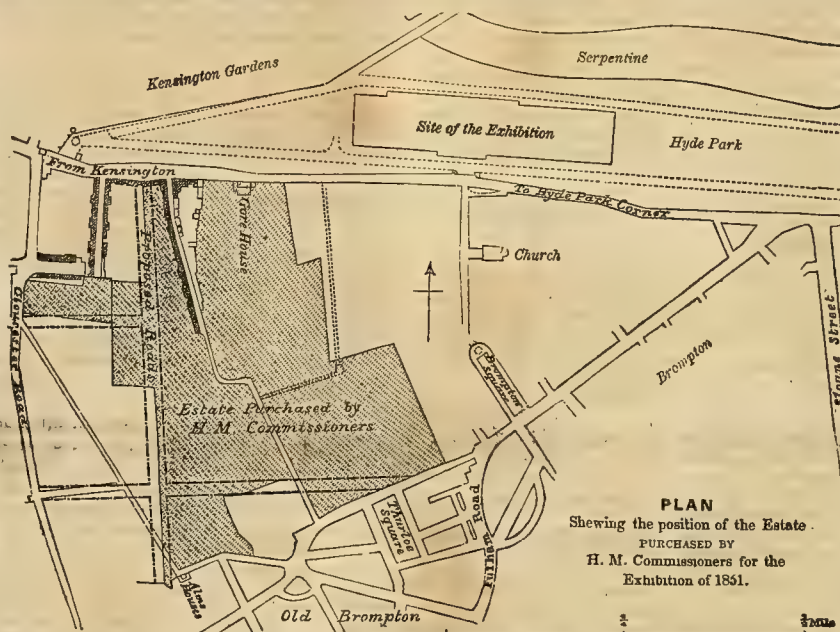
It is very true that the disease in question is now comparatively unknown, but we hear of it occasionally, even in the present day, and we believe that the frequent instances which occur, especially among earlier varieties, of tubers forming merely imperfect shoots, which often produce minute Potatoes without ever breaking into leaf, are one form of the disease. But even granting that it has disappeared, we are quite sure that the main stock of Potatoes cultivated in this country does not consist of new varieties raised from seed since the supposed disappearance of their curl. Indeed, we have evidence to show that seed originating from plants affected by a particular disease will hand that disease down to its produce, and we think that other considerations should be taken into the question. We have great faith, apart from all questions of degeneration, in the benefit to be derived from a new healthy stock, and gratefully allow the wisdom of the suggestion, that we are not to expect satisfactory results before the lapse of a certain period; but we believe also that the natural requirements of such productions in regard of chemical conditions should be more especially kept in view, so as to supply a stock not merely free from any tendency to disease from mere degeneration—a point, as we believe, more than problematical—but from the unnatural treatment to which the variety has been so long exposed. And if it were once matter of experience that seed so derived was free from disease, while ordinary settings were either virtually unproductive or barely remunerative, there is no doubt that cultivators would be glad, even at some considerable expense, to procure settings from quarters whence they had already derived benefit. What we especially desire, therefore, is some system which might supply us with new varieties after a sufficient period to prove the value, or the old varieties

purified of every stain of disease by judicious treatment, and which would at the same time supply settings of them without any predisposition to disease from the use of forcing manures, which produce rapid and luxuriant growth, but infallibly vitiate the produce. It is evident that under such circumstances the return would in all probability be highly remunerative, while prudence would suggest, especially where high manuring is practised, that recourse should always be had to the uncontaminated fountain of the new crop. *M. J. B.*

THE accompanying map shows the extent of the purchases of ground at Kensington, already made by the Royal Commissioners of 1851, and which, with some trifling exceptions of property to be hereafter obtained, in order to secure symmetry of shape, constitute the complete area of the site proposed for various national buildings.

The extent is about 86 acres, and the cost of the property has been 280,000*l.*, or an average of 3250*l.* per acre. This timely and judicious purchase has secured space for national buildings in the best part of London, and at a price so moderate, that even thus early it might be resold at a large profit.

The effect of the purchase, it is said, has already increased the value of property in the neighbourhood upwards of 40 per cent. The public will shortly have an opportunity of judging for themselves of the beauty of the site, as the grounds of Gore House will be open to all visitors to the Exhibitions there, which commence this day.



No gardening of any consequence has as yet been attempted. All that has been done in the way of ornamenting the grounds has been confined to the removal of the frightful flower-beds and other excrescences which M. SOYER had introduced at the south front of the house, and levelling and relaying that portion with turf, thus forming an open lawn of considerable extent. New walks, partially shaded with trees, have also been made round this lawn, by means of which visitors, after inspecting the works of art inside, will have an opportunity of enjoying an agreeable walk amid such beauties of nature as the immediate neighbourhood of our great metropolis can furnish.

We must rank ourselves with those who perceive in the buildings contemplated by the Royal Commissioners a great public benefit, not the least of which will be the collecting, in one point, all the scientific corporations of the metropolis. Not that we are insensible to the objections that have been taken to the distance of the ground from the central parts of London, objections which would be fatal if the proposed buildings were to be erected forthwith. But these buildings cannot be executed for several years, and we believe that the tendency of the metropolis to extend westward is so irresistible and rapid that some years hence Somerset House will have become as inconvenient a locality as Gore House now is.

#### SIPHOCAMPYLUS BETULIFOLIUS.

THIS is an extremely useful plant, producing a profusion of scarlet and bright yellow blossoms from early spring till late in autumn. The genus comprises several other showy and fine species, which have the recommendation of being more recently introduced than this, but in my estimation none are more useful or beautiful. Young plants of it may be procured for a trifle, and if obtained at once, with skilful management they will make

good-sized flowering specimens next season. A moist but not too warm a pit, where the plants can be screened from the forenoon sun, is the most suitable situation for them during the summer months. If the pots are full of roots when received, they should be shifted into others about two sizes larger, and kept rather close and warm, to encourage the roots to strike into the fresh soil, and they should not be over-watered at the root for a fortnight or so. This plant is somewhat subject to red spider, and therefore it should occupy a place where it can be conveniently reached with the syringe, which should be used against the under sides of the leaves morning and evening during bright weather, and with sufficient force to dislodge this pest, should it make its appearance; but with a moist atmosphere, and a moderate use of the syringe, there will be little danger of its gaining a settlement. This species has a neat branching habit, and stopping will hardly be required to secure bushy specimens, but the shoots should be kept properly tied out, so as to admit light and air to encourage compact, vigorous growth. When well established in their pots, after shifting, manure water in a clear, rather weak state will greatly assist in promoting rapid growth. Unless the plants are in very vigorous health they will probably exhibit as much tendency to produce flowers as wood, and unless these are removed as they appear they will somewhat interfere with rapid growth.

During winter the specimens should occupy a situation near the glass, in a house where the temperature may range from 45° to 55°. Care must be taken not to over-water the soil at this season, and an occasional wipe with the syringe on the mornings of bright days will be beneficial, especially if the plants exhibit any signs of the approach of their enemy, the spider. As

early in spring as is convenient place them in a moist growing temperature of from 60° to 75°. Examine the state of the roots and shift into the flowering-pots, if the balls are full of active healthy fibres; but if otherwise, repair the drainage, clearing away any unkind soil, and defer shifting until space is wanted for the roots. After shifting, the plants should be neatly staked, keeping the branches rather thin, and any over-gross shoot should have its point pinched off, with a view to equalise the growth, and secure well-formed compact specimens, which this will tend to effect.

The spring treatment may be moist and warm, if growth is desired, but if the object is to have the plants in full flower early in the season, they should be placed where they will receive all the light which can be afforded them, with a free circulation of air on every favourable occasion, and a rather dry warm temperature may be maintained, but in this case it will be necessary to use the syringe freely, for if spider obtain a footing at this season it will be a lasting pest, and also disfigure the handsome foliage.

During the summer months flowering specimens may occupy a situation in the warm end of the greenhouse, or elsewhere, where they can be screened from the mid-day sun, and where they will not be exposed to drying currents of air. If it is wished that the plants should continue producing flowers during the autumn, they must be removed to a situation where the night temperature may range as high as 50°; and if this is maintained, they will flower throughout the autumn and winter. But if not wanted for autumn blooming, they should be removed to a situation where the temperature may range about 45° at night, and they should not be over-watered. With a small shift annually, they will last several seasons; and if they bare and unsightly, they may be cut back, and after they start into growth the balls may be greatly reduced, which will render them as good as young plants.

Firm pieces of the young wood planted in sandy peaty soil, covered with a bell-glass, and plunged in a gentle bottom heat, root freely; or strong plants are speedily obtained by layering a shoot on the surface of the pot. Good turfy peat and loam in about equal proportions, with a liberal admixture of sharp silver sand and lumpy bits of charcoal or potsherds, will form a suitable compost for the growth of this plant. *Alpha.*

#### FRENCH LAW OF FIXTURES.

It is frequently asked, what, at the expiration of a lease, are the mutual rights of landlord and tenant with reference to plants and shrubs, planted by the latter for ornamental or other purposes?

This question depends upon §§ 1730 and 1731 of the "Code Napoléon," which are as follows:—

§ 1730. If at the commencement of a lease, the state of the property let is ascertained and agreed upon by the landlord and tenant, the latter must restore it in the condition in which he received it, as so ascertained, with the exception of such things as may have been destroyed or deteriorated by age or irresistible violence.

§ 1731. If the state of the property is not so ascer-



tained and agreed upon, the tenant is presumed to have received it in good repair, and must so deliver it up, unless he can show some reason to the contrary.

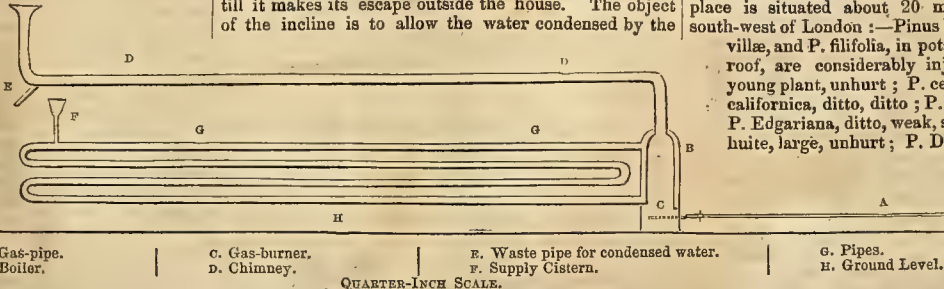
From these two passages it seems that the tenant must restore the property in *as good a plight* as he received it. The state of the property when delivered to him will be more or less easy to prove, according as he and his landlord have or have not agreed to a precise description of it; but the state at that time being once ascertained, the landlord cannot demand from the tenant *more than was let to him*, and has therefore no right to the shrubs, &c., planted by the tenant for ornament.

It is clear the landlord cannot claim such things without paying for them; for § 555 of the same code obliges every owner to pay the value of plantations made on his land by another who has no right of occupation, or to allow him to remove them.

A landlord, however, has no right to claim his tenant's plants, even on payment, at a valuation. Flowers and shrubs planted by the tenant, for his own pleasure, in land which he has a right to possess, remain his, and can be removed by him at the expiration of his lease. This right depends not only on the passage (§ 1730) just cited from the code, but upon an argument drawn by analogy from § 599, by which a person, having the temporary enjoyment of property, is expressly empowered to remove looking-glasses, pictures, and other ornaments, which he may have brought upon the premises held by him; and no reason can be shown why a tenant, any more than such a person, should be compelled to abandon to another, either with or without compensation, things which belong to himself.

The following passages, extracted from M. Troplong's commentary on "Louage" (§ 351 *et seq.*), place this in as satisfactory a light as possible:—

"A tenant has planted trees, built houses, formed nursery grounds, &c.; and it is asked whether, at the expiration of his tenancy, he has the right to remove such additions as are removable, and to demand compensation for such as are not? It is necessary first to ascertain if the additions can or not be carried away. If they can, the tenant may remove them, provided he leaves the place as he found it. Article 555 of the code affords a conclusive argument for this statement; for, although the passage does not relate to the very point now under consideration, the analogy between the case there provided for and that now supposed is very close. The article 599, by which im-



provements made by a temporary possessor are (with the exception of articles of luxury, such as looking-glasses, pictures, &c.) declared to be for the benefit of the owner, is not opposed to the above opinion; it is to no purpose to urge that a tenant, like such a possessor, knew the thing not to be his, and that by improving it he has done that which nobody asked him to do, and which was not necessary; it is useless to add that the article 599 is founded on the rule, *Donare videtur qui in alieno solo sciens edificat*, and that the tenant has consequently no foundation for his claim, either to be compensated for or to be allowed to remove what he has affixed. The article 599 lays down a rule of a very harsh nature, and ought not to receive an extensive interpretation. The tenant is not actuated by any spirit of liberality towards his landlord, and has no reason to behave more favourably to him than he behaves to the tenant. A landlord gives nothing for nothing; he exacts his rent with rigour, and requires to be compensated for dilapidations. Why, then, make any absurd presumptions against the tenant? Why not hold to the truth? The tenant has only one object, namely, to enjoy what he hires, and make such use of it as may be agreeable or beneficial to himself. Common fairness requires, then, that he should be allowed to remove his improvements, provided he does no damage to his landlord's property; and this is precisely what Ulpian states in l. 19, § 4, D. *local. conducti*. This text, taken with article 555, is decisive. Ancient ordinances may also be appealed to; for there is one mentioned by Brillou, and made by the parliament of Rennes on the 17th of October, 1575, which authorises a farmer to remove trees planted by him during his tenancy. But can the landlord prevent removal on offering to pay for his tenant's improvements? If these improvements are of a lasting nature (such, for example, as plantations), the landlord may keep them on paying for them. The ordinance of Rennes, just cited, is express on this point. The tenant would behave extremely ill if he insisted upon removing them; for, by removal, such things would be diverted from their destination. Besides, they are incorporated with, and, by a sort of right of accession, belong to the property; and the landlord who pays for and retains them does his tenant no wrong. But if the improvements are capable of removal (such as shrubs in a nursery), the accession is not strong enough to retain them, and the right of the tenant predominates over that of the landlord. It is clear that the tenant never meant to incorporate such things with the soil; he only plants them for a temporary purpose, and with the hope of taking them away at his pleasure." *Revue Horticole*.

### Home Correspondence.

*Musa Cavendishii*.—The following experiment may be interesting to those who like to grow the Cavendish Banana. One of these plants having produced me a magnificent head of fruit last season, I wished to perpetuate it. On examining it in the spring, and looking at the usual crop of suckers, it struck me that I might save several months by applying the sucker system now so much employed in growing the Pine-apple; accordingly, the old plant was deprived of all suckers but one, and repotted, after cleaning away the old soil from the root. Another sucker of exactly the same size was potted off at the same time. The latter now measures 10 inches round the thickest part, whereas the girth of the other is already 21. The old stem, although the leaves have been dead some weeks, is still full of vitality; and the young suckling bids fair to rival the old plant in size, in the course of a few weeks. I may remark that the head of fruit (which was grown under Hartley's rough glass, in a full south aspect, without a shade the whole summer), weighed about 40 lbs., was of a bright and spotless yellow colour, and was pronounced by competent judges to be fully equal in flavour to the better sorts grown in the tropics. We breakfasted, lunched, and dined upon it for several weeks. *Micklewell*.

*Gas Heating*.—I would advise your correspondent (see p. 261) to warm his greenhouse with hot water, from a boiler heated by gas. I have seen houses warmed in this manner, and I can speak confidently of its success. In fact, within ten minutes' walk of where I am now writing, there is one so heated, and being entirely devoted to the cultivation of exotic Ferns, Orchids, &c., the apparatus is constantly at work, and answers perfectly. Indeed, a more complete and convenient system of heating there cannot be. The accompanying is a sketch of the boiler and pipes complete. The former is about 8 inches in diameter and 24 inches in height; it stands on the floor of the house beneath the stage, with four rows of 1½-inch pipes along the front, and supply cistern as represented. The funnel or chimney, after rising a few inches above the boiler, is carried along the front of the house, inclining slightly downwards, and then rising perpendicularly till it makes its escape outside the house. The object of the incline is to allow the water condensed by the

prefer the wine to be clear. It is then put into the casks, and there it ferments for a fortnight or so. It can then be either left in the cask for a time or bottled off at once, and can be used the next summer; a finer or more wholesome wine cannot possibly be than this. Before bottling off, a small quantity of white or brown brandy may be added to it. I have drank this champagne, and no one can tell it from real Grape champagne of the South of Europe, in comparison with which Rhubarb wine costs nothing. In pulling out the cork it effervesces and sparkles most beautifully. What will Rhubarb not make? In times gone by it was despised, but now I am glad to say it is one of our greatest favourites. *James Cuthill, Camberwell*.

*Management of Woods*.—I would take it kind of "Ornithophiles" to inform me what age his Larch plantation is, the size of the Larches and Oaks, and how he intends to manage them? I have some plantations abounding with small Ashes, Oaks, &c., which never were planted. And I should be glad to be informed how I should manage them, so as to make them return the greatest amount of profit. *A.P.*

*Potato Disease*.—We have had a full supply of new Potatoes here ever since Christmas, first by planting old tubers in leaf-mould, then from pots and frames, and I am happy to say that I have not yet found any diseased. I may add that I have seen Potatoes forced successfully through all the years of the disease, and I have never seen a bad one. *R. G., Sewerby House, Yorkshire*.

*Effects of the Winter*.—The past winter has severely tested the hardihood of some of the newer trees and shrubs, and the accounts from different parts of the kingdom relating the effects of the weather upon them will be of much service to intending planters; but those details would have been still more useful if the writers had in every case stated the nature of the soil, the peculiarity of situation, the geographical position of the place, or any other circumstances likely to influence the constitution of the plants. Those mentioned in the subjoined list grow in a poor sandy soil, for the most part on the sides of wooded ridges, where they are particularly sheltered by large trees and evergreens, and the place is situated about 20 miles (in a straight line) south-west of London:—*Pinus Winchesteriana*, P. Grenvillea, and P. filifolia, in pots, protected by a thatched roof, are considerably injured; P. Benthamiana, young plant, unhurt; P. cembroides, ditto, ditto; P. californica, ditto, ditto; P. Montezumæ, ditto, ditto; P. Edgariana, ditto, weak, slightly injured; P. Ayacahuite, large, unhurt; P. Devoniana, ditto, ditto; R.

Russelliana, ditto, ditto; P. Hartwegi, ditto, ditto; P. apulensis, ditto, slightly browned; Abies Bruniana, unhurt; Biota pendula, ditto; Cunninghamia sinensis, large, ends of branches on north side killed; Cupressus Goveniana, young plant, unhurt; C. funebris, ditto, ditto; C. macrocarpa, ditto, ditto; C. thurifera, young plant, in a sheltered place, browned, but not materially injured; C. Uhdiana, large plant, some branches hurt on north side; Juniperus flaccida, young shoots considerably browned, but not killed; Taxodium sempervirens, a large free-growing plant, has all its upper part quite killed—smaller plants are less damaged; Cryptomeria japonica, plants of different ages, and growing in various exposures, are all perfectly hardy; Benthamia fragifera, large flowering plants, have their youngest leaves killed, but the wood appears to be uninjured; Ceanothus thyrsiflorus, very large plants, on the end of the house, exposed to the north, are greatly injured; C. dentatus, wall facing the north, but sheltered, much hurt; C. papillosus, wall, south aspect, leaves a little browned; C. rigidus, ditto, unhurt, in full bloom; Arbutus procera, large plant, all the leaves killed, but wood uninjured. *J. B. Whiting, the Deepdene, near Dorking*.

*Provincial Names of Birds*.—A full and explanatory system of nomenclature is necessary to the dissemination of knowledge in all branches of science; in none, perhaps, is it more essential than in natural history, where the popular names of plants or animals may be different in various parts of the same country. Mr. Yarrell, in his book on British birds, has shown a due appreciation of this by adding, in many instances, the popular names of the birds described. In one instance, however, he does not seem to be aware of the popular names given, in several parts of this country, to two well-known birds; these are the redwing and the fieldfare. The former is called the fieldfare by the peasantry, and even some of the farmers and sporting gentry, although, when reminded of the mistake, they acknowledge the distinction; the other bird is, in the same manner, misnamed the pigeon felt or pigeon fieldfare. I have ascertained this fact beyond question, and have found that the error prevails in Kent, Cambridgeshire, and the lake counties. It appears also that the fieldfare is known in Wiltshire as the bluetail, and the redwing is called swinepipe in some parts of the north. It would therefore, perhaps, be as well, in so widely prevalent an error, that the above popular names should be added in scientific books on the subject. The learned naturalist cannot prosecute his researches successfully without aid from the unlearned



*Colouring Grapes.*—Permit me to inform "A Near Neighbour," who asks why our Grapes have not coloured well in previous years, that the Ruby Castle Grapes have been second to none (in this locality), as regards colour, for this now the fifth year in succession. I think our "Near Neighbour," notwithstanding his denomination, must be distant, or he would have had ocular proof of what I here state. *G. B., an Under Gardener, Ruby Castle.*



rently sufficiently shrubby to be suitable for pot culture ; *Viburnum plicatum*, a very fine Gueldeers Rose, sent out some time ago by the Horticultural Society, and a *Calceolaria* called *Ajax* (yellow with brown blotch which, having a stiff good habit and multitudes of showy blossoms, will doubtless make a good bedding plant.—Messrs. Henderson sent a little shrub (called a *Pultenæa*), from Swan River ; and Mr. Glendinning had a New Holland plant called *Dianella cærulea*, for which a Certificate was awarded. It produces a great tuft of Grass-like leaves, from among which issue tall flower-stems, terminating in fine panicles of blue blossoms. Owing to the absence of sunlight, however, they did not open, and therefore the whole of the beauty of the plant was lost.—Mr. Burns, of Chevening, sent half-a-dozen *White Ischia* Figs.—The plants from the Society's Garden consisted of three *Cape Heaths* ; *Coleonema pulcherrimum*, two *Azaleas*, *Boronia microphylla*, *Eutaxia myrtifolia*, an *Everlasting*, *Medinilla magnifica*, two species of *Begonia*, and the handsome *Æchynanthus speciosus*.

**DROPMORE, THE SEAT OF LADY GRENVILLE.**—In about ten or fourteen days' time this celebrated place will be literally one mass of floral beauty, for by that period the thousands of Rhododendrons and hardy Azaleas which it contains will be in full blossom, and, judging from the size and prominence of the buds, they promise to be even finer this year than usual, owing probably to the long wet weather which we had in winter and spring having thoroughly moistened the ground about their roots, a thing which rarely happens under trees in the woods of Droppore, where the soil is light and gravelly, and, as a matter of course, the drainage good. The plantations in the neighbourhood of the dress-ground and elsewhere have, however, been thinned and opened up to a considerable extent this winter, and therefore it is but fair to expect that not only the Rhododendrons and Azaleas, but all other plants of similar character, will even be better in future years than ever they have hitherto been, inasmuch as they will be enabled to ripen their wood perfectly, and set their flower-buds; and the general appearance of the place is also very much improved by the alteration. What is called the "Stubb Mount," too (a point from which it is well known a magnificent view of the surrounding country can be obtained), has been renewed and heightened some 4 feet, and plantations of the better kinds of Rhododendrons, Azaleas, Andromedas, and other flowering shrubs made, not only in the meadow in front of this "mount of tree stumps," but also all through the woods, wherever it was considered they would prove attractive. They have just been planted in the natural soil of the place, which, as we have stated, is gravel to within an inch or two of the surface, where there is a thin layer of a poor kind of peat. In this, with what tree leaves could be scraped together and mixed in with it, the Rhododendron not only thrives but blooms. It will, therefore, grow in gravel; but Mr. Frost, along with others, has found that it will not succeed in chalk. We need not say, however, that where it can be had nothing suits it so well as good bog mould. The "Beech mount," a gentle eminence, just sufficiently overspread with trees to afford an agreeable canopy of delightful foliage, and carpeted with closely-shaven soft mossy turf, is certainly, during the warm bright sunny days of summer, one of the most charming spots about Droppore. This of itself forms



a garden, in which the various flowers with which the clumps are filled can be inspected with comfort even in the warmest weather. The beauty of this mount is also greatly heightened by Mr. Frost introducing here and there noble standard Fuchsias, with clean stems, 5 and 6 feet high, and heads thickly studded with blossoms 4 and 5 feet through. These have just been planted; they will remain out all summer, and will be "potted up" in autumn, pruned in like standard Rose trees, and wintered in a cool greenhouse, in which they are prepared for planting out again the following spring. Large scarlet Geraniums are also managed in the same way, and their effect, when judiciously placed in the kind of sylvan scenery we have just been describing, is certainly grand in the extreme. Few plants, except white Narcissi, a few early Tulips, and crimson Rhododendrons, are at present in blossom in the flower-garden. This is in the height of its beauty about the middle of June, when the multitudes of standard Roses which it contains are in flower. Then it is indeed a sight worth going miles to see. After the Roses are done, the tall kinds of Phloxes in some measure take their place; and these again are succeeded by Dahlias, Salvias, and Hollyhocks, so that the display is long and well kept up. On the lawn and other places, those charming plants, the spring flowering Scillas, early Tulips, Narcissi, and double Jonquils are one by one giving place to bedding plants, with which Mr. Frost is fast filling the clumps. Some beds of the double copper-coloured Claremont and single yellow Tulips are certainly yet in perfection, but as soon as their beauty is past they will be lifted, to make room for the summer bedding plants; but in the case of the Jonquils and Narcissus poeticus, which, when at its best, scents the whole garden with its sweetness, and things of that sort, the foliage is tied up and the bedding plants are introduced between them. As we have just stated, this kind of work is now proceeding rapidly here, even although the weather is very unfavourable for the purpose. The ill effects of the latter are, however, somewhat counteracted by sticking boughs of the common Laurel all over the bed among the plants. These break the force of both sun and wind; the leaves gradually shrivel up, and expose the plants by degrees, and by the time the foliage is all withered and the boughs removed, the plants, even if they came out of a close pit, have become sufficiently established to withstand the vicissitudes of the weather with impunity. Mr. Frost's plants, however, which number many thousands, are wintered in cool frames, to which air is given on all favourable occasions, and when spring arrives, they are placed in a turf pit, behind a Rhododendron hedge, and covered with a mat, so that, treated on this cool system, they are well hardened before they are entirely put out of doors. Some large beds of Scarlet Geraniums have already been planted: they are edged with Mangles' Variegated, whose silvery leaves and pink blossoms contrast well with the more brilliant occupants of the bed. Scarlet Geraniums which have been wintered in a greenhouse are also set out of doors preparatory to their being placed in vases in the flower garden.

The glass houses are gay with flowering plants, and altogether in good condition. The orangery which had fallen into a dilapidated state has been new roofed, and otherwise put in good repair, and the plants which had been much exposed to drip and had become sickly are beginning to recover their former healthy green colour. The earliest house of Grapes is just ripe, and although the same Vines have been forced here for these 31 years, they are still producing excellent bunches well filled with large black berries. The second house has just been thinned; it, too, contains a regularly diffused good crop. Pines, Melons, and Cucumbers are also very satisfactory. The different examples of *Wistaria sinensis*, trained along verandahs and walls, are flowering most profusely this year, not only at Dropmore, but also at other places. A singular circumstance connected with one plant here is that a large branch of it, which had got broken off from the parent stem some eight years ago, continues to bloom and produce leaves in as great profusion as any other portion of the tree, although it has no connection with soil or anything else, except it be one twist round another branch of the same tree, which, together with the trellis work it is on, is certainly all the support it receives. In what is called the arcade, which is a sort of narrow greenhouse attached to the front of the mansion, a plant of the white Banksian Rose is now in great beauty, quite filling the whole roof with long festoons of flowers. We may mention that Mr. Frost prunes this Rose as soon as ever it goes out of bloom, removing all the wood that has just flowered, but retaining and tying in any well placed healthy young shoots that it may have produced. Pink and scarlet nosegay Geraniums, &c., covered the walls, and on the floor were groups of Azaleas, mostly Mr. Frost's own seedlings, by the raising of which he has been fortunate enough to secure many fine kinds.

As regards the effects of the winter on Pinuses, for which we need not say that Dropmore is famous, we are glad to report that *P. patula*, *P. pinea*, or *Stono Pine*, and *Cupressus thurifera*, are all that have been injured. The greater portions of the two latter kinds are dead, and *P. patula* has been a good deal browned. It is but right to say, however, that none of the new sorts are here, such as *Saxe-Gothien conspicua* or *Fitz-Roya patagonica*, &c. Mr. Frost has, we believe, *Pinus Orizaba*, but it has not been planted out. Young trees of *Araucaria excelsa* and *Cunninghami*, about 8 feet high, have win-

tered safely out of doors, housed in with mats and Fern, with a door on the south side for giving them air. These have lived out these 10 years, so that those who do not mind the unsightliness of their winter houses, which look not unlike huge Bees'-caps, may have these tender sorts on the open lawn in summer, when, of course, they are exceedingly handsome. The large *Araucaria imbricata*, the largest in Europe, we believe, is now a most magnificent tree, being regularly furnished with branches from the very ground to the top. It measures about 37 feet in height; when planted 23 years ago it was only 2½ feet in height. *Taxodium sempervirens*, a tree 18 feet high, has stood quite uninjured. A Douglas Fir, the seed of which was sown by Mr. Frost in March, 1828, is now a splendid tree in the shape of a regular cone, 65 feet high, and its branches at the base are nearly as much in diameter. This tree was stated to have lost its leader twice, or it would have been still higher; but as it is, it is a noble Conifer.

Lady Grenville kindly allows the grounds to be shown to respectable visitors at all times, except Sundays, when the place is closed to all parties.

## FLORICULTURE.

MR. GROOM'S TULIPS.—These are just now in perfection, and we can promise our readers that a sight of them will amply repay a visit. The best bed, 120 feet long, and containing not less than 2000 flowers, is, perhaps, finer this year than ever we have seen it. Next week we hope to be able to offer a few remarks on some of the varieties in this, as well as in some other beds in the neighbourhood of London.

THE DAHLIA.—Your correspondent "J. E.," who has been pleased to criticise an article of mine in "The Scottish Florist," has not quoted the sentences which he has attempted to correct fully, and therefore I venture to give them in their original state, in order that your readers may have an opportunity of judging for themselves whether I am right or wrong in what I have advanced. "The great objection (I said) to the more general cultivation of the Dahlia, is the difficulty of keeping its roots in a fresh state through the winter, and this season the loss appears to be more general than usual, and not to be confined to cultivators on a small scale, but to be severely felt by some of the largest growers both in England and Scotland; so much so, that it is said there exist only a few roots of the finest Dahlia sent out last season, Annie Salter (Salter's). It is very disheartening, after the expense and care that have been bestowed on them, to find root after root prove to be useless." But, says "J. E.," "I think it is pretty well known in the south that Annie Salter was not generally cultivated last season; that, in fact, it was only grown by a few, and, proving to be very fine, the roots were eagerly bought up by the trade, in order to enable a sufficient supply to be propagated to meet the expected demand for this variety this season. This is, I apprehend, more the cause of the sort disappearing than the loss of the roots." My authority for instancing Annie Salter as having been all lost, except a few roots, was one of the best Dahlia growers of the present day, and one in whom I can place perfect confidence. Mr. Turner also states that "it is a bad keeper, and there being originally but few roots, the supply will not meet the demand." The truth of the sentence complained of, therefore, remains unaltered. As regards new varieties, I said that "private growers are generally confined to one plant of each of the best sorts, and they are commonly grown in too rich soil to produce sound keeping stock roots; therefore, as soon as cuttings can be got from them, they should be planted singly in 2-inch pots, and rooted as soon as possible. Those cuttings got from the main stem will emit roots much sooner than those taken from the branches." Now, how this sentence could be construed as follows I am at a loss to guess, but "J. E." writes—"I would caution private growers, whose purchases are generally confined to one plant each of the best sorts, not 'to take a cutting from the main stem as soon as it can be got,' as Mr. McDonald directs; and my reasons for advising a contrary practice are so well explained by a writer in Turner's 'Florist,' for May, that I imagine I cannot do better than reproduce his statement here. This writer says, 'I am desirous of warning the uninitiated against an error I once committed, and of which I repented, as usual, when too late. Thus it happened: I was over-covetous, and wanted to obtain two plants at the price of one; no sooner, therefore, had I obtained my supply from the nursery, than I set to work, deliberately cut off the head of each individual, and proceeded to strike the severed tops in heat. By this process I certainly doubled the number of my new plants, but at the same time I so weakened them in constitution, that they became incapable of producing either early or perfect blooms.' This, then (says 'J. E.'), is surely well calculated to operate as a caution to beginners, not to make too free with the main stem of their young plants;" but it is, nevertheless, a well-known fact to all conversant with the growth of the Dahlia, that after it has become well established in the ground, some of the latent buds on the main stem near the ground often start into growth, and that when about 3 inches long these make the best of summer cuttings, rooting in half the time that those taken from the branches require. That is all the mutilation I recommended. John McDonald, *Diamond Castle*. [In reference to the above "J. E." has sent us the following]:—My

remarks were not intended to contravert Mr. McDonald's statement that Annie Salter is difficult to keep in a sound state through the winter; for I know that, like Fearless and some others, it is apt to perish prematurely. Nevertheless, I repeat that the true cause of the scarcity of this sort is its having been so eagerly bought up by the trade. In the paragraph respecting new varieties, it would appear that the recommendation of Mr. McDonald is to take side shoots from the main stem, after the plant has been turned out and has become established in the ground, and not to take the top off as soon as received from the nursery; the latter practice was what I was anxious to discourage. I trust, therefore, that Mr. McDonald will be satisfied with this explanation. J. E.

NATIONAL FLORICULTURAL SOCIETY, May 26.—Some good flowers were produced on this occasion. Certificates of Merit were awarded to Auricula Lord J. Russell, a grey-edged sort, with a bold truss of good pipes, whose colour and paste are very solid; this came from Mr. Crane, of Southgate. To Azalea Duchess of Wellington, from Messrs. E. G. Henderson; this is a rose-coloured sort, slightly spotted with deeper rose near the base of the upper petals; the flowers are well formed, bold, and of good substance. To an Oak-leaved bedding Pelargonium named Polly, from Mr. Keynes; the flowers are bright rosy pink, blotched on the upper petals, good in form and substance, and generally with five pipes in the truss. To Pelargonium Neatness, from Mr. Beck, a medium-sized compact kind, with from four to five pipes in a truss; the colour is deep rosy pink, the lower petals being veined, throat bluish, blotch dark and veiny, margined with crimson; altogether an attractive kind. To Tulip No. 1, a byblomen, from Mr. Bail, of Salisbury; it is a medium-sized flower, of excellent shape. To Cineraria Eva, from Mr. Lochner; a pure white kind, narrowly tipped with purple; disk dark, form and substance good. To Cineraria No. 1, from Mr. Sivewright, of Edinburgh, flowers white, heavily tipped with deep purple, and disk the same colour. A bold and attractive variety. Label of Commendation to Calceolaria Prince Arthur, a deep crimson sort mottled with orange. This will make a useful flower, though it is not remarkable for good shape. It came from Messrs. E. G. Henderson, of Wellington Road. Mr. Parsons sent a Cineraria called One in the Ring, a pleasing kind, but too small.

### SEEDLING FLOWERS.

CALCEOLARIAS: *G. T.* All detached from their numbers, and so much shrivelled that it would be unfair to offer any opinion on them.—*W. J.* Cream coloured, spotted with dark purple. An attractive flower with a small mouth, but a little deficient in shape.—*B. B.* Handsome enough, as far as colours are concerned, but all too small by nearly one-half. They are also all more or less faulty in point of shape.

CAMELIAS: *A. S.* Salmon pink, and apparently a very desirable variety; but notwithstanding all the care taken, both blooms unfortunately arrived in bad condition.

CINERARIAS: *E. A.* Flower not in good condition, but apparently not so fine as when we saw it before.—*G. A.* Pretty, but scarcely equal to kinds possessing the same colours now in cultivation.

## Calendar of Operations.

(For the ensuing week.)

### PLANT DEPARTMENT.

LARGE Orange trees grown for placing in the flower garden or grounds during the summer months may now be removed from their winter quarters to the places they are to occupy for the season. If they have been kept cool and airy, they will not have commenced their new growth, which it is desirable should not take place until they are out of doors, as the newly-formed leaves, if formed in a dark house, would probably be injured by sudden exposure to bright weather. Examine the balls to see that the drainage is perfect, and that in watering the water passes freely through the ball. They should have a free sunny exposure if possible, but protected from high winds. Keep a damp growing heat to Camellias and Azaleas making wood; the latter are very liable to become infested with thrips, which can only be kept down by fumigating with tobacco, followed up each alternate night for a week, and syringing them at the same time with diluted tobacco-water until all appearance of the pest is gone. The utmost vigilance will now be required in keeping the more choice plants in a healthy growing state, and at the same time preserving that proper uniformity of growth to insure perfect and well-bloomed specimens. The precise time when the active growth of the plant should cease, and its energies be directed to maturing the current year's wood, can scarcely be laid down as a rule; the habit of the plant must be taken into consideration by the cultivator, and the particular period at which he wishes the plant to be in bloom must be taken as a guide for determining the point; it will, however, be safer in general to get the wood (of delicate plants especially) ripened early rather than late, for though they may not get into such large plants, they will be better able to resist the attacks of mildew in the ensuing winter; and the disposition to form bloom buds is always greater in plants ripening their wood early. On the contrary, young plants growing into specimens—and where for a year or two bloom is no object—may, after their first growth is over, and being allowed a month's rest (during which keep them rather dry) be started into growth again, giving them a larger pot, if such is necessary, and paying the same attention to the second growth, by stopping, training, &c., as directed for plants in general. Orchids will now be making free growth; and as solar light and heat are approaching the maximum point, an atmosphere humid in proportion must be maintained. The paths, walls, &c., should be frequently damped on bright days, and the plants gently dewed over once or twice daily. Air may now be given more liberally, moderating, however, its admission so as to prevent strong currents of air coming in contact with the plants. Shade regularly in bright weather, placing such plants as bear a pretty free exposure to the sun's rays in the lightest part of the house. Make it a



rule to examine plants suspended in baskets, &c., daily, that the necessary dampness of the growing material may be uniform, for nothing tends to check the growth of Orchids more than want of attention to this in the growing season. Phaius, Zygopetalums, Cyrtopodiums, and other terrestrial genera, will be benefited by being plunged in bottom-heat during the period of active growth.

#### FORCING DEPARTMENT.

**VINERY.**—If the Vines intended for the latest crop of Grapes have been turned out for retarding, they should now be introduced to the house, and after being properly secured, they must be kept damp by frequent syringing, to encourage the growth of young wood. Although the nights are become warmer, it will be necessary to apply a little fire-heat to late Vineries now in bloom, more especially to where Muscats and West St. Peter's are grown, as these latter rarely form perfectly shaped bunches, without a warm and dry atmosphere. Stop the lateral shoots made on the Vines in the succession houses, after the thinning of the crop, that nothing may interfere with the swelling of the fruit. As the season advances, air in larger quantities must be given, and a small portion left on by night; while to prevent the atmosphere from being too dry during hot days, keep the floors damp, and the interior walls, paths, &c., sprinkled several times during the day; this will assist to keep in check the ravages of red spider, which increases rapidly in dry, hot weather. Where these means fail in keeping them under, wash the walls, &c., &c., with a wash of lime and sulphur, as formerly directed. Where new Vine borders have been made this present spring, the present is a favourable time for planting, if the Vines have been started sufficiently long to have made a shoot of moderate length; in planting, liberate the roots freely, and spread them in the required direction of the border, give a slight watering, and mulch the surface. The house should be kept rather closer for a few days, shading the Vines if disposed to flag, until they show indications of starting, when the usual routine must be given them, taking care to preserve the young Vines from injury, and training the leader up the roof. In planting a house of Vines, a great mistake is often made in planting too many kinds in one house, which is often done for the sake of variety, or for prolonging the supply; but the different kinds, thus brought together, are in the end found not all to answer equally well, through the difference of treatment necessary to bring each kind to perfection; and on these grounds we advise a classification of Vines requiring nearly the same treatment, and the planting of such together. This would require, perhaps, a larger number of houses—or rather of separate divisions—than the result would be more satisfactory.

**PINERY.**—The principal crop of summer Pines now swelling their fruit must be encouraged by liberal waterings, using liquid manure each alternate time. Support each fruit in an upright position, and remove useless gills and suckers, reserving only sufficient of the latter for stock. Shading with some very slight material for a few hours during the middle of each sunny day must be had recourse to, unless Vines are grown over them; bearing in mind, however, that the more light Pines get the better colour and flavour the fruit will have. Give air early, increasing it as the day advances, and closing early in the afternoon, at which time the plants, bed, and interior walls should be damped over; when the nights become warmer a little air may again be put on, which will assist the colouring of the fruit. The above treatment should be applied to succession plants. To insure strong sturdy plants, maintain a uniform bottom-heat of 90° during the season of active growth. Much of the success of Pine growing depends on this important point.

#### FLOWER GARDEN AND SHRUBBERY.

As soon as the beds, borders, &c., of the flower-garden are furnished, the baskets and vases filled, and the general spring planting out brought to a finish, the remaining stock of bedding stuff should have a look over. A portion will be required for stock, and as a considerable number of plants will, in all probability, be yet required to make good failures, or to replace beds now occupied with plants continuing only a short time in bloom, a corresponding reserve must be kept on hand, to meet the additional demands through the season. This extra stock, with few exceptions, had better be kept in pots; and therefore, if any unpotted cuttings yet remain, let them be potted off, and repot others requiring a shift. They should afterwards be plunged in ashes, in a cool shady situation, and the early blooms picked off; they will thus be ready for immediate turning out, whenever required. A few kinds of annuals for the same purpose should likewise be sown on a light soil and shady border; these, when up, should be frequently transplanted and stopped; this will stop their tendency to bloom, encourage the formation of roots, and they will be found to bear removing to the permanent beds at any time without injury. It will add much to the effect of vases, &c., if, after they are filled, a few trailing plants are put in to peg over the surface of the mould, and ultimately to hang over the sides. For this the different kinds of Maurandias, Lophospermums, &c., are well adapted for the larger ones; while for the lesser vases, baskets, &c., dwarf Lobelias, Ivy-leaved Geraniums, Saponarias, the trailing Loose-strife, and plants of similar habit, will add much to the beauty of the group, and have a better appearance than moss, which we so frequently see used for the purpose. A little skill judiciously applied in this way will, we are sure, not be put forth in vain.

#### FLORISTS' FLOWERS.

TULIPS have now the amateur's chief attention, and by proper care and protection their season of bloom may be considerably prolonged. The beds should be gone over carefully, and memorandums made of the style or character of the flowers individually. For instance, tall flowers should be marked to go in the fourth or middle row, whilst the heights of the others should be noted, in order that a proper degree of uniformity may be attained; all flowers stained at the base should be excluded, as, though they may mark prettily, still this defect is fatal for the competition stage; those having long cups or pointed petals are also considered defective; and here we would give the amateur a little advice—whatever addition is made to the bed, let the selection be from fine collections, and made when in bloom; take the bulb up carefully, and pay for it "then and there," by this mode you are certain of the strain, even though it may flower in a different style afterwards, and will not be annoyed by the supposition that though you may have the right flower by name, still that, from being a bad or inferior "break," you may never see a good bloom while you live. If seed is required, let the hybridising or crossing be done now, selecting finely formed and pure flowers on both sides; do not, however, cross a rose or byblomen with a bizarre, or *vice versa*. Plant out Dahlias; give great care during this hot weather, mulch the surface of the soil with short and rotten dung. Remove Auriculas into a northern aspect, and pull away any decayed petals from the seed-pods.

#### HARDY FRUIT GARDEN.

The present is a busy period in this department, and much vigilance and perseverance will be requisite to keep pace with the advancing growth in preventing and keeping down the different pests which, this season, appear more than usually numerous, assisted, no doubt, by the prevalence of cold easterly winds. As we have before directed, tobacco-water must be instantly applied whenever the black or green-fly makes its appearance, endeavouring to make it act on the under side of the leaves. When the foliage becomes much curled from blight, a good sulphurated, charged with snuff and a small portion of sulphur, will be found the most effectual implement; before using this, damp the trees with the syringe, and apply the snuff before the trees become dry, that it may more effectually adhere to the leaves. Pay close attention to Apricots, Pears, &c., to dislodge the maggot which coils itself up in the foliage, and not unfrequently spoils some of the finest fruit. In disbud-ding Pears, Plums, and Cherries, the fore-right shoots, and those not wanted for laying in, should remain for the present, as stopping them at this time would only cause a fresh breaking into wood, either of the eyes at the base of the stopped shoot or of some portion of the spurs, and would destroy the end aimed at, viz., the converting the eyes at the base of each shoot into fruit spurs; as they, however, look unsightly on well-regulated trees, it will be better to tie them slightly to the main branches for the present—this will give a better appearance to the trees, and bending the shoots will in some measure stop the free action of the sap, and help the object in view. The precise time at which the shoots should be shortened must be regulated by the vigour of the tree, and should be deferred till all danger of the remaining eyes again breaking into wood is over. Where a large number of Strawberries is yearly forced, the plants, after the fruit is gathered, will be found valuable for planting out, producing a most abundant crop the following year: the later forced ones will answer best for this, as they are not so liable to bloom again in the autumn; turn the plants into rich soil, and if they are only to remain one year (which is our own practice), they may be planted pretty thick; water them till they get established. Place straw or some similar material between Strawberries now in bloom, to preserve the fruit clean in heavy rains and to keep the ground moist.

#### KITCHEN GARDEN.

Stick advancing crops of Peas and Scarlet Runners and sow a fresh supply of the above and the dwarf French Bean. Peas, if the land is dry or sandy, should be sown in a shallow trench, that the waterings they will require during hot weather may well soak their roots. Carry on the different successional sowings of vegetables, and stir the soil between those advancing; frequently water Cauliflowers, Spinach, Turnips, and other vegetables depending for their excellence on the rapidity of their growth. Plant out Tomatoes, either against vacant places on the walls or warm slopes; a portion should be kept under glass for any early supply. Chillies are best planted out under glass; see the newly planted Celery gets no check, and prick out in beds of rich soil that sown in the open ground for later crops. Transplant Leeks into similar trenches, as directed for Celery, only plant two rows of plants in each trench, which need not be more than 2 feet apart. They will require an abundance of water, and should be earthed up when sufficiently advanced. Cut the flowering stalks off from Rhubarb, Seakale, and other roots, when the ripening of the seed would be injurious to the vigorous growth of foliage. In cutting Asparagus for the table, take all the shoots as they spring from the ground; to leave any, however small, would only prevent the growth of the dormant buds below. On young beds, not yet at their best, cutting should be discontinued early; the remainder should not be cut later than the middle of June, unless there are beds going to be broken up, which may be cut

while any shoots come up. It is a waste of time to save old beds for forcing, as they rarely pay for the trouble, and the finest forced "grass" is always obtained from roots not older than four or five years.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending May 26, 1853, as observed at the Horticultural Gardens, Chiswick.

May.	Month's Age.	BAROMETER.		TEMPERATURE.					Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	Of the Air.	Of the Earth.		
Friday..	20	30.053	30.012	68	39	49.0	54	52	E.	.00
Saturday	21	30.075	29.989	65	40	52.5	54	52	E.	.00
Sunday	22	30.083	30.060	66	39	52.5	53	51	N.E.	.00
Monday	23	30.070	29.979	69	45	57.0	53	52	E.	.00
Tuesday	24	29.968	29.903	71	48	59.5	54	52	E.	.00
Wednesday	25	29.975	29.965	72	40	60.5	54	54	E.	.00
Thursday	26	29.976	29.926	76	48	62.0	56	54	N.	.00
Average ..		29.997	29.949	69.5	41.4	55.5	54.4	52.5		.00

- May 20—Fine; clear; slight frost.
- 21—Clear early A.M.; hazy; fine.
- 22—Clear and dry, with strong N.E. wind.
- 23—Fine; dry easterly wind; fine; partially overcast at night.
- 24—Cloudless and very fine; clear and windy; slightly overcast.
- 25—Dry haze; very fine, with hot sun; clear at night.
- 26—Very fine throughout; clear at night.

#### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending June 4, 1853.

May and June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 29	56.4	45.3	55.8	10	0.97 in.	2	2	2	1	2	4	6	4
Mon. 30	68.2	45.4	56.8	8	0.22	1	4	5	1	2	3	6	4
Tues. 31	70.0	45.4	57.8	8	0.38	1	6	5	1	3	7	7	4
Wed. 1	70.9	46.5	58.7	0	0.07	0	0	0	0	0	0	0	0
Thurs. 2	70.1	46.5	58.3	12	0.33	1	4	2	1	3	5	9	3
Friday 3	71.1	45.7	58.4	10	0.91	1	4	1	1	5	9	3	4
Satur. 4	71.3	46.5	58.9	11	0.76	1	3	2	2	3	7	3	4

The highest temperature during the above period occurred on the 2d, 1831, and 3d, 1846—therm. 55 deg.; and the lowest on the 26th, 1843, and 31st, 1852—therm. 34 deg.

#### Notices to Correspondents.

**DAISY:** *L.* The specimen is in what is termed a fasciated state. Such appearances are understood to be the result of excessive luxuriance, and may be found in Kail, Ash tree, Fine-apples, and many other plants. Occasionally, as in the Cockscomb (*Colostis cristata*), they become constitutional, and may then be propagated by seed.

**GRAFTING:** *Q. Q.* It is now too late for cutting back a Pear tree, 30 years old, for grafting. The sap would flow towards the wound, and there partly overflow; but this is not the worst consequence: when deprived of its proper channels, and exposed to the air, it becomes sour, and is then a dead substance interspersed between the inner bark and wood for some distance below the section of the limb. The bark, of course, dies at the place, and cankers downwards; so that if the graft should take and preserve life where it joins, yet it would be backed by only dead and cankered wood. Therefore you must wait and head back the tree next autumn or winter, before the sap begins to flow, which it will afterwards do, at first slowly, but surely, and ultimately abundantly into the graft. With regard to your other tree which has been grafted three years and yet does not show for fruit, patience is only necessary.]

**GRAPE COLOURING:** *Foreman.* We do not understand the meaning of the anonymous letters sent us upon this subject, and must decline further notice of them. They appear as if they were dictated by feelings which we are not inclined to encourage.

**INSECTS:** *H. W. F.* The insect which destroys the young leaders of your Pinus insignis is the caterpillar of the Tortrix Turionana; see *Gardeners' Chronicle*, 1850, p. 632. The chief remedy against it is to pick off the diseased buds and young shoots (especially next month), when the insect is in the chrysalis state. Kollar's "Treatise on Injurious Insects," translated by Miss Loudon, contains a long chapter on Pine insects.—*Skeity.* Pour boiling water or stout turpentine rags into the burrows of the ants; or lay flat, wide-necked bottles in their tracks, in each of which a bit of liver or meat is placed. This will attract them in vast numbers, and boiling water will kill them. Especially destroy the winged individuals at swarming time.—*Joek o' Scot.* Pray send specimens of the insects of which you complain. If they are the grubs of daddy-long legs, water well with gas-tar water, and catch all the flies when they appear in the winged state. *W.*

**KALMIA:** *Kattering.* The circular holes cut in your leaves are no doubt the work of the leaf-cutting bee, whose nest you will probably find in your neighbourhood. Toads will soon clear off your woodlice.

**MILDEW:** *W. W.* We can only repeat what we have often stated already, that sulphur will kill it, provided it is applied the moment the mischief first makes its appearance.]

**MUSHROOMS:** *A Tyro.* There is nothing in your letter to explain the cause of your failure. Perhaps your house is too warm and too dry.

**NAMES OF PLANTS:** *T. B. M.* 1, *Oncidium luridum*; 2, *Lycopodium uncinatum*, Spring; 3, *L. levigatum*, Lam.; 4, *L. plumosum*, L.; 5, *L. apus*, Spring; 6, like *L. denticulatum*; 7, *L. viticulosum*, Klotzsch; 8, *L. stoloniferum*, Rad.; 9, *L. denticulatum*, L.; 10, *Phlebodium squamatum*; 11, *Asplenium*; 12, *Darea cicutarium*, Sm. S.—*I. D. I.* *Erica hybrida*.—*S. E.* The Grasses are correctly named. The other plant looks like *Antanthus glandulosus*, but is too young for determination.—*A. S.* Some *Mussenda*, perhaps *pubescens*.

**PARROTS:** *George.* The picking of the feathers is said to be caused by keeping them on over-heating food. Give sopped bread, a plentiful supply of boiled milk daily, with occasionally a chicken or mutton bone; but no meat or delicacies. Salt or Parsley is said to be particularly injurious to them.]

**POLYANTHUS:** *H. R. J.* Thanks. It is a curious demonstration of the soundness of morphological views, but is by no means uncommon.

**RHODODENDRONS:** Messrs. Dickson & Co., of Chester, have sent us a specimen of a variety of *Rhododendron campanulatum*, which they call *maculosum*, the markings of which are, we think, darker and better defined than we have before seen them in that species. The leaves, too, are longer, narrower, sharper, and less brown beneath than is usual, as if the plant had been partially influenced by some hybrid action.

**Misc.** *H. Z.* The treatment of the *Gardenia* formed the subject of an article by "Alpha," at p. 4, 1853. For remarks on forcing Roses see pp. 507 and 523, 1852. Excellent directions for growing Tuberoses will be found at p. 392, 1851. As to Passion-flowers, we cannot possibly say why "they leaf beautifully, but do not flower" in the absence of all information as to the kind of treatment they have received. In all probability they are too rank; cram or cut their roots.]

\* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.







Such is an outline of the proposed measure, which we leave to the consideration of our readers, and the ultimate fate of which in Parliament it will be curious to observe. The object of the bill is good, and it is some satisfaction to see that the conviction that the present modes of dealing with land are unsuited to the wants of the age and the demands of the great mercantile community, is widely spreading, and is likely before very long to result in a totally different system of conveyancing.

#### HISTORY OF BRITISH AGRICULTURE.—No. V. (Continued from page 332.)

A host of agricultural writers followed in the wake of Tusser, but their works are but repetitions or translations from foreign authors, and it was not till near a century afterwards, during the commonwealth, that the first great step was made in agricultural improvement, by the introduction and cultivation of Clover. In the "Surveyor's Dialogue," by Sir John Norden, printed in 1604, it is recommended to sow Clover Grass, or the "Grass Honeysuckle," as white Clover was then called, with other Grass seeds. He also mentions Carrot roots, as then grown in England, and sometimes by farmers. The introduction of red, or as it was then called the Great Clover, was chiefly due to Sir Richard Weston, who had lived for some time abroad as Cromwell's ambassador to the King of Bohemia. Weston on his return to England published a description of the husbandry of Brabant and Flanders, the Protector, who had been a farmer himself in early life, being a steady and munificent patron of agriculture. It was about this period that the cultivation of green crops on the alternate system had its origin.

The cultivation of Clover spread rapidly among the gentry and more intelligent farmers, and in 10 years had even extended to Ireland, yet it took nearly 60 years to bring it into a regular rotation with those of the old school. We are told by Tull that so late as his time it was common for a landlord, when urging the cultivation of Clover upon a slow-going tenant, to be met by such a remark as that it was all very well for a gentleman, but a farmer must take care to pay his rent.

Saintfoin and Lucerne shortly followed upon Clover, and the field cultivation of Turnips as food for cattle is first mentioned in 1684, but there is ground for believing that they were so cultivated at an earlier date, for in the third edition of "Blythe's Improver Improved," printed in 1662, Clover is treated of at some length, and Turnips are recommended as an excellent cattle crop, the culture of which should be extended from the kitchen garden to the field. Blythe's book is the earliest systematic work in which may be found traces of the convertible husbandry, so beneficially established since, by interposing Clover and Turnip between the culmiferous crops.

The winnowing machine was first introduced from Holland in 1710 into Scotland, where its use was publicly denounced from the pulpit as impious, thwarting the will of Divine Providence, by raising wind for particular use by human art, instead of soliciting it by prayer, or waiting patiently the dispensation of Providence.

About the year 1740 Jethro Tull introduced a novelty into tillage, by adopting the plan of sowing in rows, so as to enable him to cultivate the intervals by a horse-hoe which he had invented. Thwarted in his plans by the stupidity or perverseness of his labourers, who could not be brought to form these rows in a perfectly direct line, so as to use his hoe effectually, he set to work, being an ingenious man, to overcome the difficulty by mechanical means, and invented the implement now familiarly known as a drill. Tull's theory of vegetable nutrition was, that plants were fed on minute particles of soil; and following up this theory, concluded that the fertility of the soil might be sustained and even improved, under an unbroken course of cropping, by tillage alone, and without the use of any manure whatever. In this way he grew 13 crops of Wheat in annual succession; but, like many enthusiasts, rode his hobby to death, and ended his days a prisoner for debt in the Fleet. Tull was much misrepresented by his contemporaries, and his theory of tillage was derided, although in effect based on truth, as has been since abundantly proved. His notion that the beneficial action of manure was merely mechanical, would have been corrected by the light which chemistry has since thrown upon the subject. Had he been acquainted with drainage, even as then practised in Essex, and possessed but a limited portion of scientific knowledge, his fear of disturbing the subsoil would have been dissipated; and by deeper tillage he might possibly have gone far to establish his system, which, as it was, soon fell into temporary disuse. After a lapse of about 40 years, Tull's method of growing root crops in rows was revived in Scotland, whence it travelled back to Durham, and ultimately reached to Norfolk; the plan is now adopted almost universally throughout the kingdom.

It cannot be established with certainty at what time or in what place the practice known provincially by the name of "land-ditching" was first established, but there is good reason for believing that the honour of the invention and of a general adoption of the practice, which laid the foundation of all permanent improvement, of right belongs to Essex. The origin of the method of draining probably dates back some 130 years, but it is not much above 50 years ago that it began to be practised in other parts of the kingdom, where it was univer-

sally known as the "Essex" system of draining. The drains at first rarely exceeded 18 inches in depth, and were filled to a certain depth with brushwood, stones, weeds, and sometimes even with straw, materials which in a retentive soil served to support the roof until a junction with the sides was effected. These perishable materials have in many districts been superseded by tiles and pipes of various forms and sizes, formed of burnt clay, thus offering, as it is thought, a prospect of more permanent benefit than can be hoped for from the perishable materials previously named.

About 20 years after Tull, the agricultural writings of the celebrated Arthur Young began to appear. The practice of Young, like that of many other teachers, is said to have fallen sadly short of his precepts, and tradition describes him as the worst farmer of his date. I fear, however, that the character of any and every agricultural reformer, as given by his contemporaries, is to be received with much caution; at any rate, his writings describing the then state of farming in almost every part of England, from actual, diligent, and careful observation, prove him to have been a careful and intelligent observer, and well qualified for the task of an agricultural censor. His writings are voluminous, full of much useful statistical information bearing on his favourite study, and contain reports of numerous experiments, both in tillage and grazing, which had been carried on by various men eminent in their day as practical farmers, and cultivating lands in nearly all the counties of England. These letters amply prove that then as now, as it has been from the first, and probably will remain to the end of the chapter, that, while some by intelligence, energy, and perseverance outstrip the mass who are progressing more or less rapidly, there will still be found occasionally a farmer Slowman, whom nothing can urge onward; and, strange to say, it not unfrequently occurs in cases where the lag-behind is farming his own freehold. An amusing specimen of this kind of farming is the hero of an anecdote told of Francis, the farming Duke of Bedford, who had made strenuous efforts to introduce the Norfolk practice of ploughing, with two horses abreast instead of four or five in a string, among the tenantry on the Woburn estate. Finding on one occasion, spite of his teaching, the old team still at the old work, he dismounted, arranged the gear, and with his own hand drove a furrow with the pair of horses yoked abreast, leaving the other two standing idle. Having finished, the man could not contest the fact, but, obstinate as ever, and determined not to yield his point, he could find no better objection to the new system than "that farmers could not afford it."

A careful study of Arthur Young's works will afford the patient inquirer a marvellously accurate picture of the agricultural state of England towards the close of the last century. It may be clearly gathered from the experiments recorded, that a great desideratum at that time was a substitute for Turnips during the rigours of winter, when they could not be drawn from the ground, owing to snow or frost; and the Carrot seems to have been the favourite root experimented on with this object. The letters contain accounts of such essays, with minute details of the cost and resulting crops, but the introduction of the Swedish Turnip in 1790 effectually accomplished the object in view. The introduction of the Field Beet, the Mangold Wurzel, by Dr. Lettsom about 20 years afterwards, ministering as it does to the grazier's necessities in the pinching months of spring, after Turnips have either decayed or run to seed, and even the earliest Rye or Grass affords as yet no bite, completed the resources of the grazier's victualling department for the whole year, and put him in a position, with ordinary forecast, to calculate to a certainty the amount of stock that his occupation will at all times carry.

Little more need be added, for a description of existing practices can scarcely be considered as a portion of history. Mechanics have lent a powerful aid to the operations of husbandry; ploughs of all kinds have been perfected; the threshing machine, first invented in 1793, has been vastly simplified and improved; steam has lent his giant force; guano and other compendious manures of easy distribution offer novel appliances to the improving farmer; while the establishment of the Royal Agricultural Society, which was formed in 1838, and constitutes in itself an important epoch in the history of British husbandry, will exercise a not less beneficial influence on the culture of his mind than on the tillage of his land. Farmers seem to be rapidly acquiring a taste for more intellectual pursuits than those which formed the while-time of their fathers. Journals devoted to agriculture spring up almost daily, conducted by men of learning; and not only largely supported by agricultural readers, but filled to a great extent by contributions from farmers themselves, a class who looked but a few years back upon book-farming as something almost funny. As the diamond receives its brilliance from attrition, so this commingling and chafing of the agricultural mind must work for good. There is reason to hope that the farmer, who follows perhaps the most delightful of all secular occupations (in constant communion with Nature, who opens for his contemplation and study the volume of her marvellous works), may ere long take that station to which, from his pursuits, he ought to aspire—a place in the foremost ranks of the votaries of science.

#### ON THE ADVANTAGES OF DRILL SEEDING.

THE importance of the subject, and believing that a more extended knowledge of the advantages in the use of the drill, over the old method of seeding broadcast,

would prove beneficial to the agricultural community, I am induced to give my own experience, and also the result of considerable observation on its use by others. In theory at least, this subject has long been familiar to me; but from the high price of the implement, generally about 25*l.*, doubts were entertained whether small farmers—those who grow from 10 to 25 acres in Wheat—were justified in incurring so much expense. Previous, however, to changing my plan of seeding Wheat, and covering with either the harrow, cultivator, or small plough, I carefully examined many fields with the Wheat drilled in, in adjoining counties, in my own and other States; and with the opportunity, in many cases, of comparing the growth and actual results in the same fields.

Within the past three years these observations have extended over drilled fields, in the aggregate to fully 800 or 1000 acres; exclusive of drilling last year about 100 acres in my own crop and for several of my neighbours. This year we shall use it to a greater extent, should the season permit late seeding.

In no instance, either in my own or the experience of others, where the results have been carefully ascertained and compared, has the drilled Wheat failed to prove the most profitable; first in the saving of seed, and secondly in the increased product of grain, varying from one to six or seven bushels to the acre.

The most common mode of covering Wheat in broadcast sowing is with the harrow; and if the land is well prepared previously, *i. e.*, in fine tilth and level surface, the harrow will so imperfectly perform the operation as to leave much of the seed uncovered; or so near the surface that the first settling rain thereafter will expose no inconsiderable portion of the grain. True, some of this will sprout and take feeble root; but it is generally thrown out and killed by the winter's frosts; together with another portion, covered, though too shallow; hence the necessity of adding an increased quantity of seed to guard against this contingency. To provide against this loss of seed, my broadcast seeding has usually been from 2½ to 3 bushels to the acre; and if harrowed in, rarely stands too thick at harvest. If the shovel plough or small bar-share is used instead of the harrow, a considerable portion of the seed will be covered too deep, and is necessarily irregular in vegetating, even if some does not fail entirely to force through the ground; and this irregularity continues, both in length of head and maturity until harvest. When cut, the crop is interspersed throughout with green heads, unless the best Wheat is permitted to stand too long, and to shatter off in the harvesting.

There is also another objection to broadcast sowing; it is not possible either to distribute on the ground (particularly even in moderately windy weather) or cover the seed with regularity; in places it is quite too thick, and in others, again, as much too thin. This disadvantage I have, with others, long been aware of; though without practical knowledge, could not fully compare and appreciate the advantages of drill husbandry, over the old system of broadcast seeding.

We will now compare the two methods, by stating what are, in my opinion, the advantages of using the drill. If the seeding is performed early, so as to admit of the branching or "tillering" of the grain in the fall, five pecks properly drilled on land of medium quality, will generally prove sufficient; but as it is unsafe, on account of the depredations of the Hessian fly, to seed most varieties of Wheat early, I drill 1½ bushel, and sow broadcast 2½ bushels to the acre; of course there is a saving of one bushel of seed; but as most persons, perhaps, would only sow 2 bushels broadcast, and drill 5 pecks, we will assume a clear saving of seed of three pecks to the acre. This would more than pay for the hire of a drill, at the usual charge 50 cents. per acre; and the same team will drill nearly or quite two acres to one over the harrow, and probably four or five to one over the shovel or small seeding ploughs. Assuming the cost of the team, hand and harrow, at 1 dollar 75 cents. per day, the account will stand nearly as follows for 50 acres of Wheat:

	BROADCAST.	Dollars.
100 bushels of seed, at 1 dollar	...	100.00
10 days' team, &c., at 1.75	...	17.50
		117.50
	DRILL.	
61½ drilled 5 pecks	...	62.50
5 days' team and drill, at 1.75	...	8.50
Difference in favour of drill	...	46.25
		117.50

If to the above we add only one bushel to the acre increase by drilling, here is a saving in a single season of nearly or quite the cost of the best drill in the country, in seeding and growing a crop on 50 acres.

It may be urged that 5 acres is rather too small an allowance for a day's work with the harrow, in a large field with comparatively little turning of the team—granted; but in a large field the drill will seed 14 to 16 acres a-day with the same team that would properly harrow in—by lapping over the previous course—7 to 8 acres of Wheat. I assume the increase at 1 bushel only; when my own experience, and also that of those on whom I can rely for correct details, go to prove that from 3 to 4 bushels is much nearer an average increase.

I am aware that some advocate the drilling of 2 and even 2½ bushels to the acre; and with their unusually productive lands, it may be, and doubtless is justified by experience; but where there is one acre that produces 35 to 40 bushels of Wheat, there are probably thousands seeded that do not yield the half, if the third of it; but whether drilled or broadcast, it is believed



less seed will suffice, in the one than in the other mode, to product at least an equal crop; with the best conducted broadcast operations, there is usually, if not always more or less loss, if not an actual waste of seed. Those who consider 1½ bushel sufficient broadcast, will probably have as good, or a better yield with 1 bushel properly drilled.

It may be asked by those not familiar with the drill, why there should be a saving in seed and an increased produce by its use? In the first place the seed is all regularly distributed, and to a given depth, 1, 2, or 3 inches, by an arrangement for the purpose, and at the pleasure of the farmer; and it is all uniformly covered, consequently, having an equal start in vegetating, and all liable alike to the changes of moisture and temperature, it all arrives at maturity more equally. The same causes also operate to produce more similarity and larger heads; for from large and heavy heads only, can we expect to reap heavy crops. When the grain is sown irregularly, and covered at different depths, with portions of it crowded together, all our experience proves that many of the heads are short and small; poorly filled, and late in maturing.

Again, this plan of seeding leaves the earth ridged up between the drills, which is gradually crumbled down by the frosts, and as the alternate freezing and thawing have a necessary tendency to throw out the young plants, this process of feeding them, as it may be termed, rarely fails in this way to protect the tender growth, and to prevent serious loss from seeding in low, wet lands; and which would otherwise be half lost in some cases.

There is however another advantage, and an important one; the open spaces between the drills afford a greatly increased chance to get a good stand of Grass seed—Clover, Timothy, or other varieties, which should always be liberally sown on the Wheat that finishes the rotation of grain crops. In the course of my investigations, many cases might be referred to, in which the results, carefully ascertained, and comparing the yield by both methods, have shown the increase by drilling to average several bushels to the acre; and if to this be added the saving in seed and the greater facility and economy in labour, the saving is still more.

Reference could be made to well authenticated experiments where the increase by drilling, carefully compared side by side with broadcast sowing, was 7 and 8 bushels; and in one case well attested, it was equal to 9 bushels to the acre; these, however, are considerably above the average increase. An incident came to my knowledge, so germane to the subject, and so well vouched for, that I gave it full credence. A vendor offered a drill for the increase in a crop of 50 acres of Wheat; the grower to determine this to his own satisfaction, by seeding broadcast portions through the field. Before harvest, however, he agreed to pay 100 dollars, the price of the drill, with interest, having that privilege. On carefully ascertaining the increase, it was found to be 153 bushels.

The best implement for any purpose, is generally the cheapest in the end; and of all agricultural implements, the best drill is unquestionably the cheapest. It is a "penny wise and pound foolish" policy to purchase a drill merely because it can be had at a low price. If it performs imperfectly, it may prove dear at any price, and is not worth having; as it is sure to lead to disappointment, and may occasion more loss in a single crop than would pay the difference, if not the full price, of an efficient and first-rate article. I gave 100 dollars for a drill last season, in preference to others offered at about half the price; and the saving in my own crop in the seed and increased product, and also by drilling for several of my neighbours, nearly or quite repaid the cost; to say nothing of the economy of time and labour in seeding, and the satisfaction of having the work done in a complete and workmanlike manner; having indeed, rarely expended the same amount of money with the same satisfaction. I would not, however, be understood as intending to convey the opinion that an efficient drill cannot be made at much less price. Increased demand will cheapen production; as well by competition, as by enlisting more inventive genius and skill in the manufacture. If not now attained, as I believe it is, a good drill and sufficient for all practical purposes, will be furnished at about half the sum.

No good practical farmer will attempt to seed his land until it is properly prepared to receive and nourish the grain that is destined to furnish him with his daily bread, and reward him for his toil. If seeded in a slovenly manner, on land only half prepared,—and immaterial which way seeded, he should not be surprised if at harvest, he can only reap a meagre and sorry crop. If he waits for nature to do his share of the work, the clods to be broken and pulverised by frost he will be very likely to find much of his seed destroyed in the interim, by the same active and powerful agent; and all for want of a little extra care, and protection to the tender plants. *Edward Stabler, in the Ohio Cultivator.*

### Home Correspondence.

*Mangold Wurzel.*—In reference to your remarks on Mangold Wurzel sowing, in Saturday's Gazette, I beg to mention that I sow my Mangold Wurzel with my Turnip drill. It is provided with seed-boxes, having three sets of holes in them, the first set for sowing common Turnip seed; the second set a little larger, for Swede seed; and the third set still larger, for Mangold Wurzel seed, any set of which holes can be opened or shut at pleasure, by means of a slide passing round the seed-boxes having holes in it corresponding to those in

the boxes. My simple machine is furnished with two rollers, one before the seed-boxes and coulters, the other behind, which last perfectly closes the shallow furrows made on the top of the drills by the coulters, and covers the seed. If you think it of any importance, I will furnish you with a drawing of my machine, which any wheelwright can make. I prefer 27 or 28 inch wide drills. I have never found transplanting so satisfactory as I could have wished. My Mangold Wurzel is as good and fresh to-day as when taken up. *A. Watson, Hodnet Hall, Market Drayton.*

*Mr. Morton's Lease,* in your paper of the 7th inst., is carefully drawn up; and, if the law could be persuaded to let matters be settled equitably, would answer well both for landlord and tenant. But the difficulty lies in the law objecting to allow any clause to be so plain and binding that, should the landlord endeavour to enforce it, this can be done without a regular lawsuit, that may possibly end in the House of Lords. Having had a great many years' experience in drawing up leases, and enforcing their conditions on tenants, who could not remember what they were bound to do or not to do, I have been compelled to see that law and equity are indeed but cold friends to each other, and that the landlord who gets his rent had better allow his tenants to ride over almost all the usual terms of lease, rather than attempt to compel observance of them. As to "liquidate penalties," any lawyer will laugh at the idea of this being more than a rigmarole; they cannot be enforced unless the tenant agrees to it. Now, this may be law, but assuredly it is what we call in the north "bad justice." Justice would direct that when, for instance, a tenant who had bound himself to give up his farm in the event of bankruptcy, became bankrupt, the landlord should not require to go to any expense or form of legal process whatever, but directly resume possession, and let the farm to another party. Law, on the contrary, would assuredly say, "If you attempt any such summary justice, without hiring me to manage matters for you, you shall soon be made wiser." And in truth, as matters now stand, the law will make any one repent who acts on a plain breach of agreement as above, without paying the lawyer as go-between. We were in hopes in Scotland that the proposed new Sheriff Court Bill would remove this difficulty, and allow a landlord to enforce his agreement with a dishonest tenant, by steps as free from cost as a small debt action. The sheriff or justice of peace could in a few minutes hear both landlord and tenant state the case, and reply to the accusation; and, being merely a matter of fact, could at once give the landlord power to resume possession, or refuse it, with no more expense than the fees requisite to record the proceedings, so that things might be done in order, and kept on record. And so with any other stipulation in a lease. But such speedy and cheap justice would infer the necessity of three-fourths of our attorneys emigrating to the diggings; so I presume landlords must jog along, with the conviction that they are "born to be shorn," and the blessed privilege of enjoying a perpetual source of grumbling. I have seen such endless lawsuits, from informal leases, scraps of paper, or letters missive, written by young landlords, or factors, without an idea of the net thus set for their future repentance, that I think all but lawyers should petition the Legislature that nothing be held as a lease unless it be written on stamp. This would benefit the Chancellor of the Exchequer, remove endless fencing and sparring between knowing tenants and landlords, for fear of committing themselves, vexation and anger on the part of landlords, thus often "taken in," and equally benefit landlords and honest tenants; nor can I imagine any objection to it. *J. Mackenzie, M.D., Eileanach, Inverness, May 14.*

*Chemical Nuisance, near St. Helen's, Lancashire.*—As a suffering farmer, I am obliged to ask permission for your insertion of the following complaint, viz.,—This being one of the most important seasons of the year, and one wherein great and serious damage is too frequently done to my crops, as well as several neighbouring ones, by the obnoxious, poisonous, and deadening vapours daily and hourly (and even worse, during the night) pouring forth from upwards of 15 or 16 copper, chemical, and other works (fast increasing), in and near St. Helen's; and in seeking through your columns this mode of making known our complaints, whereby these chemical proprietors may be taught, and, if necessary, be made to feel the unaccountable mischief and incalculable loss the industrious husbandman is thus so unceremoniously suffering by these never-ceasing pestilential gases, volumes of which are regularly vomiting forth with such vanquishing influence as to kill nearly all our once strong and healthy trees and hedges, and to seriously damage our Turnip and Mangold Wurzel crops and fruit trees (now in bloom, some of which have already been damaged, consequently they will not bear this year); some Wheat and young Clover have also been blighted. What does it do for our flower and other gardens? Can you, gentlemen of horticultural pursuits, speak of its good qualities and beneficial results? Alas! no; your gardens tell their own true tales. Indeed, the fearful consequences can scarcely be told; and if compensation is even dared to be named to the alkali proprietors (who are amassing princely fortunes), we farmers and others are met with, "Oh, we beg to refer you to your solicitor;" or, "It must be our neighbour—it cannot be us, for we condense;" whilst "our neighbour" indignantly denies it, and inquires, "How can you prove it?" If we ask those who do not profess to condense, they say, "If you can trace our vapour, send for us; and if we are satisfied,

we will pay!" No sooner have they been sent for, but (if report speaks truly) the entire vapour and smoke are instantly stopped, and then they immediately "deny their liability." Another says, "Why, really it cannot be us, for not one particle of gas escapes up our chimney;" and granting such to be the case in one, two, or even three instances, then may we with confidence appeal to our once crystal brooks, which formerly swarmed with abundance of fish, but are now streams of poison, and our cattle endangered by them; the colour being sometimes blue, green, black, mustard, and nearly every other obnoxious and unnatural hue, "containing 41.14 grains of sulphuric acid, 121.91 grains of muriatic acid, and 1.5 grains of arsenic, besides lime, iron, soda, and magnesia, per gallon." And let me ask, if these are not sufferings, what are? Will any one venture to assert this to be good or healthy for man or beast? They will not; and, were I permitted, I could reveal some frightful results, caused to my own and others' cattle, through this same poisonous water. Look at the hundreds of tons of stinking, blue, burning waste laid on and adjacent to our lands and roads; the liquid washing from this alone is, indeed, an intolerable nuisance, and it is shameful for those high in sanatory offices to encourage such an ever-to-be-got-rid-of nuisance. They ought to stop these numerous pestilential mountains accumulating. Is it not high time for our local commissioners and the Board of Health in London (where petitions ought to be sent at once) to take some notice of it, and prevent as far as possible such frightful havoc both to man and beast? Are we not perpetrating gross wrongs on those who follow us, by permitting such nuisances; and after fortunes being made, and extensive funds lying dormant, said to be subscribed by those gentlemen, in readiness to vindicate themselves against any actions, now or hereafter, either by landlord or tenant? *A Suffering Clod-hopper, near St. Helen's.*

*Agricultural Machinery.*—In a former paper I alluded to the great necessity for having all machines, driven by steam power, fixed firmly—free from vibration or oscillation. The advantages of this have proved to me a great source of comfort and economy. Take, for instance, the chaff-cutter cutting strong Wheat straw  $\frac{1}{2}$  to 3-16ths of an inch long, and driven with great rapidity, with four knives; although firmly screwed to the floor, and apparently strong, there was great movement in it, and in fact in the whole flooring—things were often getting out of order. The pull being upwards, I placed two strong upright posts, throwing the resistance on an upward story. Then it tried to escape sideways; but when resisted in this way also, by two lateral or rather diagonal posts, the whole concern has worked true, easy, and efficiently, at a much less cost of power. There is no slipping of driving-straps, no breaking of thongs, no destruction of eggs, and, above all, no scarcity or delay of the necessary provision. I am induced to enlarge upon this, because I am convinced that nine-tenths of the machines turned out of hand would be more economical and satisfactory if made with much heavier castings and frames, and with extra stays. The object of an extra 4 or 6 cwt. of cast metal, at 7s. or 8s. per cwt., is as nothing compared with the constant advantage. With steam at 60 lbs. to the inch, and 80 to 90 revolutions per minute, everything must be strong and firm. By placing a resisting pillar on the frame of my horizontal engine, close to the crank end (thus throwing the strain or blow against an upper floor), we have saved much loss of time and many breakages. The fact is, that a sixteenth of an inch variation, in so accurate a machine as a steam engine, is an important defect. It is this consideration that should induce us to prefer fixed engines to moveable ones. *J. J. Mechi, Tiptree, May 21.*

*Agricultural Statistics.*—Were the landed proprietors of England to co-operate in the scheme for correct agricultural statistics, would not their army of bailiffs, &c., be the most effective and least expensive machinery that could be employed as enumerators? They have the means of knowing the extent of meadow, pasture, and plough land on the estates, and it would put them to no very great trouble to ascertain the number of acres of Wheat, Barley, Beans, &c., on the property, and make an estimate of the probable produce. That done, let half a dozen of them (they may all meet if they like) be formed into a committee for the county or district of like agricultural characteristics, and tabulate their findings into one;—the statistics for such county or district might thus be returned to headquarters on one sheet of paper, and every acre in England with little more trouble than one estate; the schedules furnished to the bailiffs to remain in their possession, the statistics of individual farms or estates being thereby known only to them. The expenses by this means ought, at most, to be nothing more than the enumerator's unavoidable travelling expenses, which would be comparatively nothing, and, if the thing were general, I for one should give my trouble gratis. Of course, I found this suggestion entirely on the presumption of the landlords' hearty co-operation, who are the first parties to be consulted and their feelings ascertained. *A. Watson, Hodnet Hall.*

### Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.  
MAY 13: COATING IRON-PIPES.—Dr. Angus Smith, of Cavendish St., Manchester, favoured the Council with the following statement of his process for coating iron-pipes intended to convey water, with a substance, which pro-



tected them from rusting; and had been recommended by the Inspectors of the General Board of Health, and adopted by the Committee of the Manchester Corporation Water-works, the Directors of the Water-works at Stockport, Macclesfield, Rugby, Ormskirk, Penrith, and other towns:—

"As you ask me in what way I coat the iron-pipes for water, I send a brief account of the process. There was and there is still a strong feeling of the value of soft-water, and as such water cannot cover over the pipes with a coating of time, which forms a protection from rust, a covering of some other kind for the iron was very much desired. I patented a plan which, if not perfect, has at least some advantages, and has been already used to a considerable extent. The plan consists simply in the use of certain products of the distillation of tar and pitch, of a certain tenacity. The materials must be chosen by experienced persons, or some time will be lost in finding the best. The pipes are cleaned, and are then heated in an oven to the heat of boiling pitch. They are then immersed in a vessel full of the melted pitch, into which they are hoisted by a crane. They are put in perpendicularly so as to allow the pitch to run off smoothly, and are kept in about 15 minutes. When they are taken out they have a very smooth surface, and may be severely hammered, so as to test their strength, without in the least altering the coating. We prefer before using this pitch to coat them over with some of the later products of the distillation of tar, or to mix these products with the pitch, increasing thereby its tenacity. The pipes need not be first heated in the oven, but may be cleaned, and at once immersed in the heated mixture. This heat must be at least 300° of Fahr. I cannot well give my own opinion of this process, as it will be supposed that I am prejudiced in its favour, I will give therefore the opinion of those who have used it most, and refer to the engineer of the Manchester Waterworks, Mr. Bateman, and his assistants. Whenever I have asked the opinion of the engineers who have used it, I have received a favourable answer; and although constantly urging objections against it, I am answered with the assurance of success. Some which have been down for four years are now in excellent condition, I am told as good as at first. I believe this is all I can say on the subject. I am really unwilling to sound its praises, and the operation is too short to admit of many words."

Mr. Chadwick expressed a high opinion of Dr. Angus Smith's process, especially when applied to large pipes; for small pipes he was acquainted with another plan, that of Mr. Brocklesby, M.P., which had stood the test of 20 years' experience; the following account had been given of it:—

*Mode of preparing Cast Iron Pipes to resist the Action of Hard Water containing Mineral Acids of any description.*—When the iron-founder knocks the case out, it should be done at the time the pipe has cooled down to what is a little below red heat—called black heat; then with a long staff, and mop of rags dipped into coal-tar, sponge the pipe through; or, what is better, first pour some tar into the pipes, also first raking it round, and pass the sponge through, so as to ensure the whole interior being well smeared and coated with the tar; in the course of an hour or two the tar will have become hard as Japan on a tea-tray. If the pipes are cold before being so sponged, the founder may have a steam boiler, and he has only to turn a jet of steam through the pipe till heated up to 212° or 230° Fahrenheit, and then proceed to sponge the inside as above proposed, as he would sponge out a cannon or a gun-barrel; when the inside is so done, sponge also the outside, as pipes laid down in some soils or clays perish as rapidly by outside corrosion as by the action of hard-water inside. The writer of this did many pipes 30 years ago, which are still as black and smooth as the day they were laid down.

Mr. Goddard, of 8, Somerset House, London, communicated an account of improvements made in the reaping-machine by a Cornish millwright.—Mr. Schottlander, of 3, St. George's Terrace, Dover Road, transmitted an account of M. Schott's boring apparatus.—Mr. Reeve sent specimens of sugar from his White Silesian Beet-root.

The Council ordered their usual acknowledgments for the communications then made to them, and adjourned to their Weekly Meeting on the 25th of May.

THE AUDIT OF ACCOUNTS was held on Friday, the 20th of May: present, Mr. Raymond Barker, V.P., and Colonel Challoner, on the part of the Finance Committee; and Mr. Knight of Edmonton, Mr. Dyer of Islington, and Mr. Geo. I. Raymond Barker of Fairfield, in Gloucestershire, as Auditors on the part of the Society. The accounts were audited, examined, and certified as correct.

A SPECIAL COUNCIL was held on the same day, for the purpose of considering the half-yearly report to be made by the Council to the ensuing general meeting of the Society; Mr. RAYMOND BARKER, V. P., in the chair; when, on the motion of Sir Charles Lemon, Bart., M.P., seconded by Mr. Milward and Colonel Challoner, such report was agreed to accordingly.

THE MAY GENERAL MEETING of the Society was held at the Society's House in Hanover Square, on Monday, the 23d inst., Colonel CHALLONER, Trustee, in the chair.

On the motion of Mr. Raymond Barker, seconded by Mr. Fisher Hobbs, Mr. Pusey, of Pusey, in Berkshire, and of Grosvenor Square, London, was unanimously elected President of the Society for the year ensuing the Gloucester Meeting, and to preside over the country meeting to be held next year at the city of Lincoln.

On the motion of the Earl of Romney, seconded by Mr. Dyer, the Trustees, and, on the motion of Mr. Milward, the Vice-Presidents of the Society were respectively re-elected.

The House-list recommended by the Council to the general meeting, agreeably with the bye-laws of the Society, for the election or re-election of 25 members of the Council, was unanimously adopted by the meeting; the Earl of Lucan and Mr. Hodgson Barrow, M.P., being the new members of Council included.

The Secretary read the following report from the Council:—

#### REPORT.

The Council have to report that, since the last general meeting in December, 47 members have been lost to the Society by death, and the names of 134 other members have been removed, on retirement or otherwise, from the list; while 170 new members have during the

same period been elected into the Society, which now consists of 90 life governors, 147 annual governors, 739 life members, 3928 annual members, and 19 honorary members; making a total of 4923 members. The current cash balance in the hands of the bankers, at the commencement of the present month, was 3300*l.*; of which sum the Council ordered 800*l.*, on account of life compositions, to be invested in the public funds; the capital of the Society now being 10,764*l.* The Council have the satisfaction of reporting that the great practical objects for the development of which the Society was originally founded, continue to receive a powerful impulse through the communications in its Journal; the trial and exhibition of implements, show of live stock, and assemblage of farmers, at its country meetings; the practical discussions at its weekly Councils; and the personal co-operation of its members distributed throughout the kingdom. The two classes of direct investigations instituted by the Society: 1, for the purpose of discovering new modes and conditions of chemical action in reference to animal, vegetable, and mineral matter; and 2, for obtaining a more exact acquaintance with the origin, nature, and treatment of diseases prevalent from time to time among the live stock of farmers; have been pursued with vigour by the professors of the Society, and have already led to important results in the one case, and to much valuable experience in the other. Progressive knowledge in agriculture is like that in every other art dependent on science for its advancement; as its sphere of operation becomes more extended, and its indications more accurately defined, it opens wider views of the application of those new principles, which are founded on incontrovertible facts, and have been deduced by the aid of science. As instances, however, are constantly occurring of hasty generalisations and illogical deductions, made in the application of science to agricultural data, and of the very different laws assigned, even by distinguished writers, to explain the production of the same phenomena, the Council recommend to the members of the Society a strict adherence to that inductive process attendant on the comparison and discussion of actual facts, which regards abstract science as only the referee to be consulted, or the prime mover, whose subtle agency, like that of steam or electricity, is only available for practical objects, when its power is coerced, and its action restrained within required limits. The invaluable results which have already been obtained by such union of practice with science, lead the Council to the well-grounded expectation that still greater success will attend the future operation of that combined influence in promoting the cause of a sound and rational agricultural economy. The ensuing number of the Society's Journal, now in the press, will contain the following, among other communications:—1. Prof. Way's Lectures before the Society, on his discovery of a natural source, in great abundance, of soluble silica, adapted for the preparation of the double silicates, on which he believes the absorptive power of certain soils for manure to depend; and on his analytical results of investigations into the comparative nutritive value of natural and artificial Grasses and weeds. 2. Prof. Simonds' report of experiments made in this country, by direction of the Society, on animals affected with pleuro-pneumonia; and in which, by inoculation, according to foreign practice, with a morbid fluid taken from diseased lungs, the powerful counter-irritation of gangrenous inflammation to a certain extent in the system, rather than the production of pleuro-pneumonia itself, appears under certain conditions either to have subdued the ordinary symptoms of that fatal malady, or to have been in many cases the immediate cause of death. 3. Mr. Lawes's continuation of his valuable experiments on the feeding of animals. And 4. Prof. Wilson's Lecture before the Society, on the agricultural and technical treatment of Flax.

The Gloucester meeting will be held in the middle of July next. The entries of implements, as will be seen by the following tabular statement, are more numerous than in former years, the area engaged for their exhibition amounting to 105,000 square feet, and the shedding required being nearly a mile in length:—

YEAR OF MEETING.	LOCALITY.	ENTRIES OF IMPLEMENTS.
1839	Oxford	23
1840	Cambridge	36
1841	Liverpool	312
1842	Bristol	455
1843	Derby	508
1844	Southampton	948
1845	Shrewsbury	942
1846	Newcastle	735
1847	Northampton	1321
1848	York	1608
1849	Norwich	1882
1850	Exeter	1223
1851	Windsor	No exhibition of implements.
1852	Lewes	1897
1853	Gloucester	2032

The entries for live stock will not close until June 1, but those already made indicate the probability of a very large show in that department; including, from the peculiar situation of the place of meeting, an interesting exhibition in the classes of Hereford, Devon, and Welsh cattle, Welsh ponies, sheep, pigs, and farm-poultry. The termination of several lines of railway at the Gloucester station will prove highly favourable to the convenient transit of goods and passengers from every part of the country. The Council have made increased preparations for the due trial of the implements competing for the prizes of the Society, and for the exhibition of threshing machines to be kept in

motion during the show, for the public display of their construction and powers.

The Council have decided that the city of Lincoln shall be the place for the country meeting of the Society next year; and that the district for the country meeting to be held four years in advance of the present year, namely, in 1857, shall comprise the counties of Dorset, Wilts, Somerset, and Hants.

The Council have the pleasure of remarking, in conclusion, that there never was an epoch in the history of the Society, since the date of its formation, when its practical objects were more fully recognised, than they are at the present moment, by the spontaneous desire of so many promoters of agricultural improvement of every class in different parts of the kingdom to become enrolled as members on its list; the number of new members elected into the Society during the last five months being nearly equal to the total number of those elected during the whole of the previous year.—By order of the Council.

JAMES HUDSON, Sec.

On the motion of the Earl of Romney, seconded by Sir Robert Throckmorton, Bart., this report was unanimously adopted.

In the absence (through severe illness) of Colonel Austen, Chairman of the Finance Committee, Mr. Raymond Barker laid before the meeting the balance-sheet reported by the auditors. On the motion of Mr. Druce, of Eynsham, seconded by Mr. Fisher Hobbs, the thanks of the meeting were voted to the auditors, for their great care in examining the Society's accounts. Mr. Dyer, on the part of himself and his colleagues, acknowledged the compliment paid them.

On the motion of Sir John V. B. Johnstone, Bart., M.P., Vice-President, the thanks of the meeting were voted to Professor Way and Professor Wilson, for the lectures delivered before the Society since its previous general meeting.

The chairman then put the usual question to the meeting—whether any member had any remark to make, or any suggestion to offer, that might be referred to the consideration of the Council? To which appeal, however, no response was made.

On the motion of the Earl of Romney, seconded by Mr. Druce, the best thanks of the meeting were voted to Colonel Challoner for his kindness in presiding on that occasion, and for the services he had so constantly rendered to the Society.

A WEEKLY COUNCIL was held on Wednesday, the 25th of May: present, Mr. RAYMOND BARKER, V.P., in the chair, Lord Berners, Mr. E. Collingwood, Mr. Evan David, Mr. Dyer, Mr. Orlebar, Mr. Parkins, Mr. Spencer Stanhope, and Mr. R. Trench.

The names of 53 candidates were announced for election at the next meeting.

SWAMP DRAINING.—Mr. Adderley, M.P., communicated to the Council the following statement of suggestions in reference to swamp draining made to him by Mr. John Dumolo, of Dunton House, near Colleshill, Warwickshire:—

The state and condition of many hundred acres of land lying adjoining and near to rivers, brooks, and small watercourses, or on low levels, must have been a subject of notice to many who have interested themselves in the improvement of land. Such lands are frequently appropriated to the growth of Grass and hay, and when sound and capable of irrigation, probably rank amongst the most beneficial, yielding a greater profit at a less cost than those of any other character. The object of this paper is to solicit the attention of the Council of the Royal Agricultural Society to the subject and to the drainage thereof. I, the writer, have no other object in view than to elicit a consideration of my suggestion; nevertheless, I may be allowed to observe that I have carried out the method of drainage hereinafter mentioned to some extent with the best possible results. In the first place, the water is to be removed from the surface of the land in many places where there is scarcely any fall or outlet, excepting in the adjoining stream, that is to say, when the surface of the water in the adjoining river or brook is nearly even with the surface of the land. Now, according to the notions of the writer, the drainage of land under these conditions in most cases may be made as effectual as is desirable, and in many cases the land made sufficiently sound for the heaviest of cattle; in such cases what now is of little or no value is made the most valuable, and in all cases the land rendered much more productive, and the quality of the produce improved. The method is simple but may require a little engineering tact to accomplish the object. The drains must be laid even with the bottom of the adjoining river or brook, or at least two or three feet deep in the stream. There is no fear but the water will issue from such drains and always pass off at as great or greater velocity than those of the stream into which the drainage water will have to enter, by reason that the specific gravity of the drainage water out of such lands will, I may say always, be less than the river or brook water is. The only conditions I would observe necessary to be stipulated for are,—1st, that a shaft or pipe be fixed at the upper end of the drain, so that the atmospheric pressure may bear thereon, but not allowed to pass through; 2d, that the drains be laid in a proper and judicious manner, with pipes of not less than 2 inches bore, and that the trenches be well filled up; 3d, that the least number of outlets into the discharging stream as practically necessary be made, and that such outlets be at the lowest part of the stream as regards the land to be drained. I may remark there will be no detriment to the drainage should the bed of the drain undulate, or be laid lower than the discharging orifice, but frequently it will be found advantageous to submerge the drains purposely, in order to exclude the atmospheric air, and thus prevent or lessen the danger of stoppages from the sedimentary accumulations of the peroxide of iron, which often abounds in low lands and in bog earths.

Mr. David feared that the plan proposed would not sufficiently lead to the clearance of sedimentary matter; it appeared to be intended for very low meadows, which were often flooded but had very little fall to outlet; he remarked, however, that the late Sir Robert Peel had lands of a similar character, very successfully drained by Mr. Parkes, although the drains in that case could not be carried, he believed, as deep as desired. Mr. David referred to the exceptional character of the past winter season: he had observed the fall of rain for the last 30 years, but he had never during that long period found so great an amount fall in any one month as he had



observed in December last. On his return home he would furnish an accurate statement of the details, as indicated by his rain-gauge.—Mr. Raymond Barker, as chairman of the Thames Commission, had frequent opportunities of becoming acquainted with the effects of flooding and drainage on the meadows alongside the Thames, and of lower level than its bed. If these meadows could be freed from one foot of their flood surface-water, great benefit would result; but, when thoroughly drained, great injury was found to be inflicted on their owners, from the loss of their Grass, hay, and after-feed, which took place in dry summers.

**EXPENSES OF MAPPING.**—Mr. Trimmer, of Wilming-ton, near Dartford, communicated the following statement in reference to the charges incurred in the construction of his proposed maps of estates, of which he had at a recent meeting submitted specimens, illustrating the agricultural and mineral resources of a portion of the estate of Sir Charles Elton, Bart., in Somersetshire:—

At the meeting of the Council on the 20th of April inquiries were made as to the cost of obtaining a trace of an estate from the Tithe Maps, when I said I believed it to be 1d. per acre. I find, however, that the above charge is for a copy on mounted paper, and that the charge for a trace is much less, viz., a plain tracing, on a scale of three or four chains to an inch, 2s. per 100 acres; do. six chains, 1s. 6d.; do. eight to ten chains, 1s. and 1s. 3d. A tracing of small quantities, say a single field, 2s. 6d.; 100 acres ordinarily about 4s. But if of scattered fields, or embracing many buildings and ornamental grounds, or the inclosures are bounded by drains with double lines, the cost may be increased from 2s. to 100 per cent. In the event of any landowner determining to have a map of the soils, subsoils, and substrata of his estate, and possessing no modern map, his plan would be to get such a trace, and after having it examined on the ground, for the insertion of any alterations in it since the map was made, he can have it lithographed at the cost on the average (more in some cases, less in others) of 2d. an acre for six copies. If more are required they may be had for little more than the cost of the paper. Sir Charles Elton had ten, of which I used three; 2d. an acre will cover the expenses of opening holes, and I should be satisfied with 6d. an acre for my time and trouble.

**ANALYSIS OF MANURES.**—Prof. Way transmitted the following note from Mr. R. H. Watson, of Dorsley, near Totnes, Devon, who had availed himself of the privilege enjoyed by members of the Society, of having analyses of guano and other manures made for them, by its consulting-chemist, at a reduced and very cheap rate:—

I beg to thank you for the analyses of guano and superphosphate received this morning, and shall, on their strength buy 1000. worth. The cost I think well bestowed, looking at it as a sort of insurance of 2½ per cent., a bagatelle in comparison with the loss that would accrue from buying a spurious article when the money expense is not of so much importance as the loss of crops and its effects on the whole system for one year.

Mr. Hudson, of Castleacre, has also recently informed the Council of the great advantage he had derived from the test of chemical analysis, in the selection and purchase of manures; and of the money-loss (amounting to several hundred pounds), as well as of the disappointment he would have incurred, had he proceeded, without the aid of such unerring means for the detection of fraud, or the confirmation of genuine quality.

**LECTURE.**—It was announced that Professor Way's absence for a few weeks on the continent, in reference to a professional inquiry involving many interests and much capital, would oblige him to postpone his communication to the members at a Weekly Council, on the subject of Town-Sewerage, from the 15th of June, as originally fixed, until Wednesday, the 29th June, at 12 o'clock.

The Council having ordered their usual acknowledgments for the communications then made to them, adjourned to their monthly meeting, on the 1st of June.

### Farmers' Clubs.

**SPARKENHOE, May 9:** *Cultivation of Roots on Clay Land.*—Mr. Wortley read a paper on the cultivation of roots, from which we make the following extracts on the management of clay land for roots:—There appear to be two indispensable primary qualifications for the successful growth of root crops. The subsoil should be rendered free, sound, and healthy, and the surface soil reduced, previous to sowing, to a finely pulverised state. We must have deep cultivation wherever practicable, for the atmosphere is the cheapest and the most boundless storehouse of manure; and it cannot have a free access to the soil without efficient drainage, which is an essential and fundamental principle in the growth of vegetables. Deep draining and deep cultivation must go hand in hand. First and principally, I will allude to the growth of roots on heavy land, including all those soils which are not classed under the common denomination of Turnip soils, because their more general culture on poor clay land is every day becoming a more important and desirable attainment; but though we may apply the best possible manure, and bestow every care and attention in the preparation of the land, yet if it rest on a cold impervious water-logged subsoil, we shall look in vain to see the crop flourishing; but, checked and stunted by an unhealthy subsoil, we shall find our hopes disappointed, and our labour greatly robbed of its reward. The earliest possible opportunity, either during or after harvest, must be seized by the heavy land farmer for commencing operations on his fallows, if he would be successful in growing the nobler description of roots, such as Mangold Wurzel, Carrots, Swedes, Cabbage. White Turnips, it is true, may be sown much later, and therefore they allow much more time for summer fallowing than Swedes; but, in my opinion, they are not a crop to be much encouraged at the expense of far more valuable roots. It is idle to lay down any rule for the guidance of a farmer in the preparation of a field for any particular purpose. For instance, on a clean Wheat stubble intended for Turnips,

I have been sometimes in the habit of laying on my manure at once before ploughing. In every instance the stubble should be looked carefully over before ploughing, and Nettle roots and Couch Grass diligently forked out and removed. I do not think it by any means advisable to defer the application of the manure on heavy land until just previous to the time of sowing the crop, because the intermixture of the manure with the soil is more advisable on heavy land. There is little fear of its being wasted by rains, and in many seasons it would be fatal, in all seasons injurious to the crop, to cart on the land in the spring. Prof. Way's discoveries of the very extraordinary absorbent powers of soil, especially of clay, must strengthen our confidence in the system. The following is the plan I intend adopting in future, until I find out a better:—First remove all patches of Couch Grass and other roots by forking, throw the field up in 27-inch ridges as soon as convenient after harvest, subsoil 10 or 12 inches deep between every ridge, cart out the manure from the yard and spread it between the ridges, split them back, and again subsoil same depth as before, and leave them until the time of sowing. By no other means can a great portion of the soil and subsoil be exposed to the purifying and fertilising influence of the changing weather. I am not aware of any important difference required in the preparation of land for Carrots, Potatoes, Cabbage, Mangold Wurzel, or other roots; the ridge system is suitable for any of them, but the 27-inch distance is too great for Carrots. This can be remedied either by growing Cabbages alternately with Carrots, which will fill up the spaces between the drills, or by autumn manuring and flat ploughing, and scarifying to incorporate the manure, and then forming the ridges at 18 inches wide instead of 27. But the great secret of success is autumnal manuring and cultivation, in order that in a fine and suitable seed bed we may secure a plant early in the spring, and get the crop removed and preserved early in the autumn, to be succeeded by Wheat or other grain. Subject as we are to such rapid changes of the weather in the winter season, it must be wrong, or very hazardous, to attempt to consume the roots on the ploughed land, for the injury to the stock and the land will often destroy the benefits which should result from the judicious consumption of a heavy crop of roots. I therefore prefer grazing the seeds with sheep on heavy land during the summer months, supplying them with a small portion of oil-cake, and taking Oats and Wheat as the two subsequent and last crops in the five-field rotation. Thus the land is in no danger from injury by treading with sheep in wet weather, and we get the benefit of their manure for a much longer period by feeding them on the seeds during the summer and autumnal months. Drilling on the flat seldom exceeds the 18-inch width, and is generally less, and this entails great expenses in hand-hoeing—frequently, to my knowledge and cost, where land is very subject to annual weeds, exceeding 20s. an acre. Now, we are told that we are not likely to be overwhelmed with labour. But, independently of this consideration, the system which will bring as much or more weight of keeping at a less cost must be preferable, and certainly the application of the horse-hoe to the Turnip fallows is an expeditious and economical mode of destroying weeds. Mangold Wurzel seed is difficult to distribute with the common drill with sufficient regularity; I therefore prefer dibbling, and make use of a dibbler consisting of two iron wheels about 3 feet in diameter, which can be set to any required distance between the ridges. In the wheels iron knobs are screwed, which can also be arranged so as to make the holes at almost any required distance apart. The knobs are broad at the base, and tapering, so that the holes do not fill up after the dibbler has passed over the ridges. By having a light pair of shafts attached, one horse will dibble 10 acres a day, and then, if artificial manure is used, a boy follows with the requisite quantity, and another with the seed, dropping three or four in each hole; a light rake then finishes the work in a perfect manner. The plants come up at such regular distances from each other that very young boys may be trusted to hoe, and even if they require the hoe before they are all up, by the position of one plant you may tell the exact spot where the next will appear. It needs no remark to point out the advantage of using the hoe soon. The war against weeds in root crops cannot be waged too soon. The hoe, which is death to them, gives life and vigour to the crop. It is always most important that the first hoeing should be well done; if the weeds get to be strong at the second hoeing, the young plants are certain to be injured—a young plant being frequently removed, and a blank left in the drill by the weed and plant being drawn away carelessly together. I may here state that I prefer and practise carting the manure directly from the farmyard to the land, covering it by the plough with soil as quickly as possible, and this practice I adopt whether for roots or heavy land, or for application in the ridges on light land just previous to drilling. I object not only to the unnecessary expense of having the manure twice in hand, but to allowing fermentation to take place by carting it into heaps. We have before alluded to the absorbent powers of the soil, and we need not be timid at entrusting our manure to the keeping of so excellent a guardian as our "mother earth." Of course, during the winter months, constant mixing of the differently composed manures from the different houses round the yards is required, and constant levelling and well treading with beasts, and as much liquid manure as the tanks will afford frequently emptying over in the yard. But on light land, with a sharp or porous subsoil, it would not

be advisable to manure the land long previous to sowing the crop. The very reverse treatment is required to that before described; but I still object on such soils to forming manure heaps, and when towards the spring the yards get inconveniently full, the land intended for Cabbage and Mangold Wurzel may relieve them of their superfluous quantity, or it may be carted on the land intended for Swedes, and flat ploughed in at once. After subsequent stirrings, to thoroughly incorporate it with the soil, and sowing, directly after ridging the land, 2 cwt. of guano and 2 cwt. of superphosphate of lime per acre, the seed should be drilled.

### Reviews.

*Journal of the Manchester and Liverpool Agricultural Society.* Haddock and Co., Warrington.

We have more than once called attention to this pamphlet, as it annually appears with the awards of the Society's judges during the past year, and the programme and prize list of the present year. It is to the reports of farms, which seem the most interesting part of the journal, that we shall again direct the notice of our readers. But we may just refer to the prize list, and the actual sums offered in the different classes under which the Society classes the several objects at which it aims.

Class I. Best cultivated farm, two silver medals and ...	£57
" Draining, three silver medals and ...	21
" Subsoiling, one silver medal and ...	3
" Irrigating, one silver medal and ...	4
" Laying down to Grass, one silver medal and ...	12
" Marling, one silver medal and ...	5
" Tanks, two silver medals and ...	3
" Brackening of hedges ...	11
" Planting of hedges ...	8
Total, eleven silver medals and ...	£124

Class II. Crops—Turnips, Mangold Wurzel, Carrots, and Cabbage, one silver medal and ...	£27
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Class III. Labourers, one silver medal and ...	22
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Class IV. Live stock, four silver medals and ...	205
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Besides poultry and extra stock.

We think this represents a more reasonable distribution of means and effort among the different objects which come under the patronage of an agricultural society, than the expenditure of some of our agricultural societies will illustrate.

We make the following extracts from reports of committees and judges.

**Adulteration of Manure.**—"In a rural township, about 10 miles from Liverpool, burnt clay is manufactured into a powder bearing a strong resemblance to guano, and is sent to a firm in Liverpool, and probably to other places, under the very imposing title of 'gypsum.'"

**Labour of Harvest-work.**—"The extra cost of manual labour last harvest, in consequence of the diminished supply, was found to be 15 per cent. and upwards above the average of former years; and, until the tide of emigration, which has been flowing so freely for the last two or three years experiences a re-action, the British farmer will no doubt be compelled to substitute for manual labour both machinery and horse and steam power, to a greater extent than he has hitherto done."

**Prize Farms.**—"Upon 13 farms inspected this year (for premiums No. 1 to No. 10), containing altogether 1973 acres, there have been drained within the last few years 1100 acres; marled, 75 acres; boned, 190 acres. 13,120 yards of old fences have been eradicated; 4084 yards of new ones have been planted; 14,257 yards of ditches filled up and soughed, and 67 pits filled up. The estimated quantity of manure made upon these farms within the last 12 months is 3700 tons. In addition to this, 1088 tons of cow and horse dung, 2760 tons of nightsoil, 24 tons of guano, 15 tons of bones, and 1 ton of superphosphate of lime have been purchased."

"Upon one estate, inspected for draining (premium No. 11), containing 900 acres, there have been within the last 12 months 310 acres drained, with 112,273 yards of drains, equal to nearly 64 miles. Upon five farms, inspected for draining (premiums No. 12 to No. 17), containing 970 acres, there have been 270 acres drained, with 216,217 yards of drains, equal to upwards of 122 miles. Upon one farm, inspected for subsoiling, (premium No. 19), containing 242 acres, there have been subsoiled 42 acres. Upon 11 farms, containing 1600 acres, there have been 218 acres laid down to Grass (premiums No. 22 to No. 25). Upon three farms, containing 520 acres, there have been 96 acres marled (premiums No. 26 to No. 28). And upon nine farms, containing 1068 acres, there have been 15,460 yards of old fences eradicated within the last 12 months (premiums No. 32 to No. 34)."

"The above facts are gratifying proofs that the efforts of the farmers in South Lancashire and Cheshire are not flagging, notwithstanding the dispiriting circumstances of the disease in Potatoes and cattle, and the low prices of produce; but, on the contrary, they are showing themselves alive to the importance of good husbandry. There is also evidently an increase of agricultural knowledge amongst the farmers, and a willingness to adopt every improvement which can be proved by experience to be really such."

### Calendar of Operations.

MAY.

**DORSET FARM, May 23.**—We have now got fairly into summer, as regards time; but although the weather be occasionally warm, yet it is far from steady. But we must not complain upon the whole, for Grass is doing pretty well, and the cattle thrive upon it. We have not got too much, neither do we at present suffer



want. Wheat, though it was thin, and will be so to the end, is for all this looking well. We do not expect that it will be an average crop, but if half what thin seeders say is true (and who dares to disbelieve it?), we will have a good crop. Barley is coming up very well; the land was very much trodden and broken by the sheep in the heavy rains we had during the autumn and winter, but it has sustained no harm from that; but on the contrary, the manure seems to have been better secured in it, as it looks well everywhere that I have seen. Our Mangold Wurzel is all in, and coming up very well; and now we shall be putting in Turnips and Swedes as fast as possible, and the present very dry weather is extremely favourable for getting the land cleaned. The hay crop will be much better than usual, but there will not be the same quantity, as much of what should have been left for hay was lost, owing to the cold and backward spring; and there is little doubt hay will be in great demand next year, for there is little of the past year's crop remaining. Cattle and sheep still maintain a good price, and are likely to do so, for it does not appear that there are more than enough to supply the market. Everything in the shape of beef goes off at a good price, and in our country markets it matters little whether it be of fine quality or not, if it be thick it brings a fair price as fat stock. G. S. [Your last did not reach us.]

### Notices to Correspondents.

**ALDERNEY BULL: S Tiffin.** We have known 60L paid for one; the half of that sum should procure you a good one.

**BREWING: A. B.** "Black on Brewing," or see p. 157 of our volume for 1850.

**DRAIN WATER: Original Sub.** We believe the best experiments on drain water, as compared per acre with rain water, have been made by D. Milne, Esq., of Berwickshire; but we have failed to lay our hand on the account. Perhaps through the East Berwickshire Farmers' Club it could be obtained. Mr. Parkes' publications on the "Philosophy of Draining" contain information on the subject.

**FORM OF LEASE: Mr L. Morton, of Edinburgh,** has written to ask for the comments of our correspondents on the form of farm lease which was inserted in the *Agricultural Gazette* two weeks ago. If there is anything really objectionable in the form, or which might be improved, he would like to have it pointed out before it is put into practical use.

**MANGOLD WURZEL: Norfolk.** For description of varieties, see Lawson's "Agriculturist's Manual," p. 257, &c. Its history is given very fully in Wilson's "Rural Cyclopaedia." Beet was first cultivated in England in 1548. The Mangold Wurzel kind was introduced from Germany in 1786, through the Society of Arts.

**PIGS: One who means Business.** The largest breed of pigs means one thing; the breed which kills with the least offal means another thing. To say which is the largest breed that kills with the least offal is a very difficult, perhaps impossible, thing. We have made inquiries, and shall give you what information reaches us.

**POTATOES: W. Seddon.** We do not know where you can procure the old short-topped red Potato. Perhaps this notice may assist you.

**ERRATUM.**—At page 218, 5th line from the bottom, for "he" read "I."

### Markets.

#### COVENT GARDEN, MAY 28.

Vegetables have improved much both in quality and quantity during the past week. Forced Peaches and Nectarines are becoming more plentiful. Strawberries fetch from 6d. to 1s. an ounce. The supply from the Continent of Peas, Potatoes, Carrots, Asparagus, Radishes, Artichokes, Endive, and Lettuces, is still well kept up. Seakale is over; but Rhubarb is abundant. Young Carrots and Turnips fetch from 9d. to 1s. 6d. per bunch. Old Potatoes are now chiefly confined to Regents. Frame Potatoes fetch from 9d. to 1s. 6d. per lb. Mushrooms are scarce. Cut flowers consist of Paeonias, Fuchsias, Roses, Cyclamens, Mignonette, Cinerarias, Tulips, Azaleas, and Camellias.

#### FRUIT.

Pine-apples, per lb, 8s to 12s  
Grapes, hothouse, p. lb, 4s to 10s  
Peaches, per doz., 18s to 24s  
Nectarines, per doz., 18s to 24s  
Strawberries, per doz., 6d to 1s  
Apples, dessert, p. bush, 10s to 15s  
— kitchen, do., 6s to 12s

#### VEGETABLES.

Cabbages, per doz., 1s to 2s  
Broccoli, per doz., 3s to 6s  
Greens, per doz., 2s 6d to 4s  
French Beans, per 100, 1s to 2s  
Asparagus, per bundle, 1s to 4s  
Rhubarb, p. bundle, 3d to 8d  
Potatoes, per ton, 35s to 200s  
— per cwt., 5s to 11s  
— per bush, 2s 6d to 6s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 4d to 1s 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 6s to 10s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb, 6d to 8d  
Tomatoes (foreign), p. doz, 6s to 8s

#### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, MAY 26.**  
Prime Meadow Hay 84s to 90s  
Inferior do. ... 70 75  
Rowen ... 45 55  
New Hay ... 28 32

#### WHITECHAPEL, MAY 26.

Fine old Hay ... 80s to 86s  
Inferior do. ... 72 75  
New Hay ... 45 55  
Straw ... 28 32

#### POTATOES.—SOUTHWARK, MAY 28.

During the past week the supply has been small, but the great change in the weather has caused the consumption to fall off considerably. The following are this day's quotations—Yorkshire Regents, 130s. to 170s.; Lincolnshire do., 110s. to 130s.; Scotch do., 100s. to 130s.; do. reds, 90s. to 100s.; French whites, 70s. to 80s.; Rheinish, 8s. to 90s.

#### WOOL.

**BRADFORD, THURSDAY, MAY 26.** Wool is held for prices that cannot be afforded by the consumers, and the sales continue limited.

#### London, Tuesday Evening.

**COLONIAL WOOL SALES.**—The first series of sales comprised of wool of the recent colonial clip, commenced in London a week ago. The attendance of buyers is about an average, and a fair proportion of wool has been taken for foreign account. Prices equal those realised in February, combing wools, in particular, being fully as dear. It is usual for the early sales of the season to contain a considerable quantity of imperfectly washed and heavy fat sheep's wool. On the present occasion, however, the inferior condition of the flocks is more apparent than at any previous time, much having arrived in the grease, and a still larger portion having been got up in an unusually filthy state. Taking the wools of the present sale as a criterion, there is indeed immense reason to fear that the gold discoveries will lead to great irregularity and slovenliness in the management of

wool in Australia, and will destroy all the tendency to improvement which distinguished the colonists a few years ago.

#### SMITHFIELD.—MONDAY, MAY 23.

We have a considerable increase in the supply of Beasts to-day, owing chiefly to the improved trade of Monday last. A slight reaction is the consequence, and as owners were not willing to submit to lower rates, several remain unsold. There are a few more Sheep and Lambs; the demand being extensive, it is only in a few cases that prices are lower. Choice Calves are scarce and dearer. From Germany and Holland there are 806 Beasts, 1000 Sheep, and 174 Calves; from Scotland, 480 Beasts; from Norfolk and Suffolk, 3000; and 200 from the northern and midland counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Here-  
fords, &c. ... 4 4 to 4 6  
Best Short-horns 4 2 to 4 4  
2d quality Beasts 3 0 to 3 6  
Best Downs and  
Half-breds ... 0 0 to 0 0  
Do. Shorn ... 4 4 to 4 8  
Beasts, 4589; Sheep and Lambs, 22,740; Calves, 237; Pigs, 330.

#### FRIDAY, MAY 27.

We have not a large supply of Beasts, taking into consideration the number that was left over from last Monday. Trade is, however, very dull, chiefly owing to the hot weather; prices are about the same as on Monday last. We are but moderately supplied with Sheep; the demand is very limited, and it is difficult to maintain late quotations. Lambs are much more plentiful; the demand has also increased, but prices are rather lower. Good Calves are fully as dear as of late. From Germany and Holland there are 167 Beasts, 960 Sheep, and 314 Calves; from Norfolk and Suffolk, 450 Beasts; and 120 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Here-  
fords, &c. ... 4 4 to 4 6  
Best Short-horns 4 2 to 4 4  
2d quality Beasts 3 0 to 3 6  
Best Downs and  
Half-breds ... 0 0 to 0 0  
Do. Shorn ... 4 4 to 4 8  
Beasts, 952; Sheep and Lambs, 9320; Calves, 562; Pigs, 200.

#### HOPS.—BOROUGH MARKET, MAY 27.

Messrs. Pattenden and Smith report that the accounts received from the plantations state that the Hop bins is making good progress on all dry and well cultivated soils; but on others, and low brook lands, the bine comes very weak and unkind. Market firm at late prices.

#### MARK LANE.

**MONDAY, MAY 23.**—The arrivals of foreign grain and Flour still continue large. To-day's market was only sparingly supplied with English Wheat; consequently factors were enabled to realise the prices of this day's night. The attendance, particularly of country buyers, was good, and they took freely of the low qualities of new Danish, Hamburg, and Emden Wheat at 42s. to 46s. per qr., but the better descriptions of red and white Baltic made a slow sale at last week's prices. The Flour trade is very heavy. For Barley there is a good demand at late rates. Beans and Peas rather improve in value. There is a fair inquiry for fine Oats at all prices, but inferior parcels are 6d. per qr. cheaper.

PER IMPERIAL QUARTER. s. s.  
Wheat, Essex, Kent, & Suffolk ... White 39-52 Red 37-45  
— fine selected sorts ... ditto 41-58 Red 43-50  
— Talavera ... 53-59  
— Norfolk ... Red 43-50  
— Foreign ... 33-57  
Barley, grind. & distil., 28s to 26s ... Chev. 24-30 Malting 25-29  
— Foreign, grinding and distilling 22-30 Malting 29-32  
Oats, Essex, and Suffolk ... 17-20  
— Scotch and Lincolnshire ... Potato 22-24 Feed 17-22  
— Irish ... 21-22 Feed 19-20  
— Foreign ... Poland and Brew 14-20 Feed 14-20  
Rye-meal, foreign ... 29-32 Foreign 14-20  
Beans, Mazagan ... 30s to 32s ... Tick 32-35 Harrow 32-35  
— Pigeon ... 34s to 37s ... Winds 27-30 Longpod 25-30  
— Foreign ... Small 32-37 Egyptian 29-30  
Peas, white, Essex and Kent ... Boilers 38-41 Suffolk 40-42  
— Maple ... 32s to 35s ... Grey 30-33 Foreign 32-42  
Maize ... White 37-44 Yellow 37-44  
Flour, best marks delivered ... per sack 37-44  
— 2d ditto ... ditto 21-37 Country 21-37  
— Foreign ... per barrel 21-24 Per sack 135-33

**FRIDAY, MAY 27.**—The arrivals of foreign Wheat and Barley are again large. To-day's market being attended by several country buyers, enabled factors to realise some of the secondary qualities of new Baltic on terms slightly exceeding those of Monday, but the general firmness of holders and the improvement insisted on checked business. Southern cargoes are sparingly offered, and an advance of 1s. to 2s. per qr. has been realised. In Barley there is little doing. Beans and Peas fully support Monday's prices. For Oats there is a fair trade at late rates. Flour meets with little more inquiry.

#### IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
April 16	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
— 23	44 7	31 15	18 9	29 10	34 3	33 7
— 30	44 7	31 5	19 0	27 3	34 9	31 11
May 7	44 6	31 6	18 8	30 0	35 3	33 3
— 14	44 7	31 5	18 8	29 8	35 5	33 3
— 21	43 11	30 11	19 1	35 8	36 0	32 1
Aggreg. Aver.	44 5	31 5	18 11	30 6	35 2	32 11

#### Duties on Foreign Grain 1s. per qr.

#### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	April 16.	Apr. 23.	Apr. 30.	May 7.	May 14.	May 21.
44s 10d	...	...	...	...	...	...
44 7	...	...	...	...	...	...
44 6	...	...	...	...	...	...
44 4	...	...	...	...	...	...
43 11	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, MAY 24.**—We have this week a large supply of foreign Wheat, Flour, and Indian Corn. At our Corn Exchange this morning, the trade was scarcely affected by the extent of the arrivals from abroad last week. We had a fair attendance of buyers, and a moderate consumptive demand was experienced for Wheat, and similar prices were paid as those current on Tuesday last. Prime brands of American Flour were not plentiful, and extreme prices required and submitted to. Oats brought an advance of 4d. to 1d. per bushel. Oatmeal unchanged in value. Barley, Beans, and Peas brought very full prices. There was a fair demand for Indian Corn, and late prices pretty readily realised.—**FRIDAY, MAY 20.**—The arrivals from Ireland and coastwise since Tuesday have been insignificant, and from foreign ports we have only received 5926 qrs. of Wheat and 552 sacks and 1406 barrels of Flour. At this morning's market there was only a thin attendance of the town and country trade; however, a good consumptive demand was experienced for Wheat and Flour, at the full prices of Tuesday. Oats and Oatmeal met with a somewhat good sale, at late rates. Barley, Beans, and Peas were without any alteration in value or demand. The same remark applies to Indian Corn. In floating cargoes no transactions transpired.

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TO GENTLEMEN, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, June 2d, at 12 o'clock, a first-rate collection of Dahlia, Verbenas, Fuchsias, Climbing, and other Roses, fine Calceolarias, Geraniums, and other plants in bloom; with a large assortment of plants for bedding.—May be viewed the morning of Sale. Catalogues at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by the executrix of the late Mr. SMITH to sell by Auction, on the premises, No. 356, Albany Road, Camberwell, on THURSDAY, May 31, at 2 o'clock, the whole of the well-known and justly celebrated Collection of TULIPS and ORCHIDS; also, a capital Tulip Stand, with Canvas Rollers, &c.; Carnation Stand; five and 3-Light Boxes, Hand Lights, an Iron Roller, Carnation Shades, Garden Pots, Mould, Books, and sundry Effects.—May be viewed prior to the sale. Catalogues may be had on the premises; of the principal seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN AMATEURS, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are directed by Mr. PERIAM (who has gone abroad), to sell by Auction, on the premises, Dartmouth Road, near the Forest Hill Station, Kent, on WEDNESDAY, June 1, at 2 o'clock, the whole of the choice and costly collection of TULIPS, comprising all the favourite flowers in cultivation, as well as many new, not yet let out; Seedlings; a capital Tulip Stage, Irons, Cloths, Cabinet, &c.—May be viewed any day prior to the sale; Catalogues may be had on the premises; of the principal Seedsmen in London, and of the Auctioneers, Leytonstone, Essex.

## TULIPS.

**MESSRS. PROTHEROE AND MORRIS** beg to announce that the Sale of W. Davidson, Esq.'s TULIPS, of Camden Grove, Peckham, will take place on TUESDAY, June 7th, at 4 o'clock precisely.—May be viewed prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TULIPS.

**MR. ALEXANDER** will sell by Auction on the premises, 53, Green Street, Twigg Folly, Bethnal Green, and Wisker's Gardens (late Pocock's), on THURSDAY, June 2d, and following day, at 12 o'clock each day, by order of Mr. Joynt, an extensive collection of TULIPS, comprising many esteemed varieties; also upwards of 12,000 choice seedling breeders, including a quantity of finely broken flowers never before sent out.—May be viewed two days prior to Sale. Catalogues had one week prior to Messrs. DAVE, CORRIELL, and BENHAM, Seedsmen, Moorgate Street; Auction Mart; City of Cannon Poplar; on the premises; and of Mr. ALEXANDER, Shacklewell, and Church Lane, Leyton.

## COCHIN CHINA FOWLS.

EXTRA SALE BY AUCTION ON TUESDAY, MAY 31.

**MR. J. C. STEVENS** begs to notify that he will hold an Extra Sale of FANCY POULTRY at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 31st May, at 12 o'clock precisely, in which will be included choice specimens of COCHIN CHINA FOWLS, from the renowned Stocks of John Fletcher, Esq., of Kensington; G. W. Johnson, Esq., of Winchester; and several other well known Amateurs and successful exhibitors; also a few good Spanish, Poland, &c. Catalogues of which will be forwarded on receipt of a stamped directed envelope enclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

\* \* These Sales will be continued on the 1st and 3d Tuesdays in every month; persons having surplus stock to part with may obtain Form of Entry and full particulars on application to Mr. J. C. STEVENS, as above. The next Sale will take place on Tuesday, 7th June.

## IMPORTANT SALE

OF SHORT-HORNED CATTLE, AT THE BAZAAR, BAKER STREET, PORTMAN SQUARE.

**MR. STRAFFORD** has received instructions from Mr. Harvey Combe, Esq., of Chobham Park, Surrey, to announce for sale by Auction, at the Bazaar, on WEDNESDAY, the 1st of June next, 20 Pure-bred SHORT-HORNED COWS and HEIFERS, also 2 BULLS from his celebrated Herd; after which will be sold a few very superior young SHORT-HORNED BULLS, from the well-known Herd of J. S. Taqueray, Esq., of Hecton, Middlesex.

Catalogues may be had of Mr. Giles, Downside Farm, Chobham, Surrey; or Mr. Bland, Decoy Farm, Hendon; and upon application to Mr. Strafford, 53, Guildford Street, Russell Square, London.

## TO MARKET GARDENERS, OR NURSERYMEN.

**MR. W. T. ATWOOD** has received instructions, by direction of the Executors of the late Mr. G. Rough, to sell by Auction, on the Premises, on TUESDAY, May 31, 1853, at 1 o'clock, the unexpired term of 12 years' LEASE of the valuable piece of Fruit Garden, containing about 10 acres, with convenient premises. Also the live and dead stock and implements of trade. The Land is situate on Wandsworth Common, adjoining the high road from Tooting to Wandsworth, and is most advantageously situated for the business of a Nurseryman or Market Gardener.

Particulars and Catalogues may be had of Mr. Atwood, Auctioneer and Land Agent, Mortlake, Surrey.

Printed by WILLIAM BRADBURY, of No. 15, Upper Woburn Place, in the Parish of St. Martin-in-the-Fields; and by MURRAY LEVANS, at No. 11, Gutter Lane, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 3, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to THE EDITOR.—SATURDAY, MAY 28, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 23.—1853.]

SATURDAY, JUNE 4.

[PRICE 6d.]

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## NOW IN FULL BLOOM.

**MESSRS LANE AND SON, The Nurseries, Great Berkhamstead,** have the honour of informing their Patrons in general that their extensive Collection of Greenhouse and Hardy RHODODENDRONS, also of GHEENT and INDIAN AZALEAS, are now in full bloom, for which they received the Gold Medals, on the 25th ult., at Regent's Park, London.

**SCARLET GERANIUMS.FOR BEDDING.**  
**W. HILLS BLAND** has Strong Plants to offer at 3s. per dozen.  
Nursery, Fordham, Cambridgeshire.

**SCARLET GERANIUMS.**—Strong plants of the above, for bedding out, well established in small pots, principally Tom Thumbs and Collins's Superb, at 47 10 per thousand.  
0 18 0 per hundred.  
0 2 6 per dozen.  
For Cash.—Application to be made to JOHN HARTNELL, Nurseryman, Yeovil, Somerset.—June 4, 1853.

## RHODODENDRON EDGWORTH.

**W. J. EPPS** begs to offer strong plants of this splendid Sikkim Rhododendron, at 10s. 6d. to 21s. each, which was shown at Chiswick on Saturday, the 14th, and described by Dr. Lindley in his leading article of last week, viz., "Its blossoms were of the largest size known in the genus: cream colour, a little dashed with pink, and more fragrant than words can describe."—Bower Nurseries, Maidstone.

**BENJAMIN R. CANT, St. John's Street Nursery, Colchester,** offers the following:—

**NEW VERBENAS, 6s. per dozen.**  
Camille, Conquerant, Duchess of Kent, Edward Milson, Favourite, General Bampiere, Gentile Adèle, Juliette, Louis Mieliez, Mazeppe, Madame Malet, Madame Lacharme, Monsieur Bouchage, Ormsby Beauty, Olga, Princesse Navarre, Racine Romulus.

**NEW FUCHSIAS, 1s. 6d. each, or 15s. per dozen.**  
Ariel, Exquisite, Gem of the Season, Joan of Arc, Leader, Model, Nil Desperandum, Novelty, Pendula, Resplendent, Standard of Perfection, Splendissima.

**MISCELLANEOUS.**  
Scarlet Geraniums Gem, Flower of the Day, Shrubland Pet, and the Amazon, 1s. each.  
Princess Alice, 6s. per dozen.

**Heliotrope Voltairianum nanum, 1s. each.**  
**Phlox Drummondii Mayi variegata, and Thompsoni, 6s. per doz.**

**NEW HARDY SHRUBS.**  
Berberis Darwini, 2s. 6d. each.  
Deutzia gracilis, 1s. 6d. each.  
E. scallonia macrantha, 1s. 6d. ea.  
Lonicera, new species, from China, 2s. 6d. each.  
Mitraria cocinea, 1s. 6d. each.

## NEW FUCHSIAS AND VERBENAS OF THIS SEASON.

**HENRY WALTON, Florist, Edge End, Marsden,** near Burnley, Lancashire, is now sending out nice young plants of the following:—FUCHSIAS, Glory (Banks), and Glory of England (Harrison's), 5s. each, post free; the other new varieties by the end of June at reduced prices.—VERBENAS, Arestes (Smith), Elizabeth, Mrs. Kirkpatrick, Glory, and Vesta (Young's), Garland, Lady Franklin, Middlesex Rival, and Diadem (Smith), Purple Prince (Mockett's), Purity, and Beauty of Danecroft (Barnes), at 1s. 6d. each, post free.—Dahlias, choice show kinds, 4s. 6d., 6s., 9s., and 12s. per dozen.—Chrysanthemums, 4s. 6d. and 6s. per dozen.—Bedding Plants, &c., equally cheap.

Catalogues may be had for One Penny Postage Stamp.—All orders accompanied with a Post Office Order, payable at Marsden, Lancashire, will command prompt attention.

## SHOW CHRYSANTHEMUMS AND VERBENAS.

**W. IVERY** begs to offer strong Plants of his new selected from his splendid Collection that was Exhibited at the Horticultural Society's Rooms, Regent Street, and which gained the First Prize, and also so much admired at the other Metropolitan Shows. Plants from 9s. to 12s. and 18s. per dozen.

**W. I.** can also supply the new Continental VERBENAS, including Madame Lemonier, Princesse Marianne, at 30s. per dozen; and other fine show varieties strong plants, from 6s. to 12s. and 18s.; new Scarlet Geranium Tournament (Stein's), habit of Tom Thumb, very bright, 5s.

**W. I.** has purchased the stock of Bennett's Geranium "Fanny," a very distinct and early forcing variety; this can be particularly recommended. 5s. Catalogues can be had, on application, of all the best selected Show, Fancy, and Scarlet Geraniums, Fuchsiads, Verbenas, Cinerarias, Phloxes, Pompones, and large flowering Chrysanthemums; hardy, herbaceous, and other choice Plants.—Hanover Nursery, Peckham, near London.

## TURNIP SEEDS DIRECT FROM THE GROWERS.

THE MOST CERTAIN MEANS TO PREVENT DISAPPOINTMENT. Persons desirous of obtaining really new and genuine Turnip Seeds are respectfully recommended to apply to JOHN SUTTON & SONS, Seed Growers, Reading, Berks, who will forward particulars of Sorts, Prices, &c., on receipt of one penny stamp for postage.

## PRIZE TURNIP SEED.

**MR. MILNE, of Kinaldie's, PURPLE-TOPPED YELLOW TURNIP,** which obtained the Highland and Agricultural Society's Gold Medal in 1852, is now offered by the Subscribers at 1s. per lb. The Turnips from which the Seed was taken were inspected by two practical gentlemen, members of the Society, and tested by the following rules, viz.: 1st, by the purity of the stock; 2d, by the symmetry of the form; 3d, by the apparent hardness of the variety; 4th, by its apparent capability of yielding a bulky or heavy crop. Remittance or reference required from unknown correspondents.  
BENJAMIN RIDG & Co., Seedsmen.  
Aberdeen, N.B.—June 4, 1853.

## GRASS SEEDS.

**SUTTON'S PERMANENT GRASS SEEDS FOR MEADOWS AND UPLAND PASTURES.**

The superior quality of our Grass Seeds is strongly indicated by the numerous orders received through the recommendation of former customers.

Prices and other particulars may be had on application (enclosing one penny stamp for postage), to JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**DUTCH BULBS.**—As the period is approaching for sending out the orders for Dutch Bulbs for the ensuing season, we respectfully suggest to our friends and the trade generally, that they instruct their correspondents in Holland to consign the cases to our care HERE, for immediate transmission to their respective destinations, by which greater expedition will be obtained in their delivery.—BETHAM & BLACKTH, Custom House and General Forwarding Agents, Cox's Quay, Lower Thames Street, London.—June 4.

## REMOVAL.

**WILLIAM HAMILTON, SEEDSMAN AND FLORIST,** 156, Cheapside, begs to announce that the Lease of his present premises expires on the 24th inst., and that he will REMOVE to 41, MARGARET STREET, Cavendish Square (one door from Regent Street), where all Orders are respectfully requested to be addressed, on and after that date.

**W. H.** in thanking his friends for their hitherto liberal patronage, respectfully solicits a continuance of their kind support, and in so doing, assures them and the public generally, that nothing shall be wanting on his part to merit their approbation.  
June 4.

**DEANE'S WARRANTED GARDEN TOOLS.**—Horticulturists, and all interested in Gardening pursuits, are invited to examine DEANE, DRAY, & Co.'s extensive stock of GARDENING and PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Gidney's	Prussian	Potato Forks
Axes	Hoe	[Scissors]	Pruning Hooks
Dagging Hooks	Grass Gatherers and	"	Knives, various
Bills	Gravel Rakes and	"	" Saws
Borders, various pat-	Sieves	"	" Scissors
Botanical Boxes	Greenhouse Doors &	"	" Shears
Brown's Patent Furni-	Hammers	"	" Rakes in great
gator, Instruments of	Iron	"	" variety
Cases of Pruning In-	Knives	"	" Reaping Hooks
Daisy Rakes	Iron	"	" Scythes
Dibbles	Iron and Hatches	"	" Styling Stones
Dock Spuds	Iron of every pattern	"	" Shears, various
Draining Tools	Hotbed Handles	"	" Sickles
Edging Irons and	Ladies' Set of Tools	"	" Sickle Saws
Shears	Labels, various pat-	"	" Spades and Shovels
Flower Scissors	terns, in Zinc, Por-	"	" Spuds
" Stands in Wires	celain, &c.	"	" Switch Hooks
and Iron	Lines and Reels	"	" Thistle Hooks
Fumigators	Marking Ink	"	" Transplanting Tools
Galvanic Borders and	Mattocks	"	" Trowels
Plant Protectors	Menophras	"	" Turning Irons
Garden Chairs and	Metallic Wire	"	" Wall Nails
Seats	Milton Hatches	"	" Watering Pots
" Mole Traps	"	"	" Wheel Hooks
" Rollers	Mowing Machines	"	" Wheelbarrows
" Scrapers	Pick Axes	"	" Youth's Set of Tools

DEANE, DRAY, & Co., are Sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with their Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom. Also, Wholesale and Retail Agents for SAYNOR'S celebrated PRUNING KNIVES, used exclusively by the first Gardeners in the United Kingdom.  
DEANE, DRAY, & Co. (Opening to the Monument), London Bridge.

**PAGE AND CO.'S COMPOSITION** for the Destruction of Blight upon Roses, Wall Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra strong, in jars, 1s. 3d., 2s. 6d., 5s., and 10s. (jars included); fit for use, per gallon, 1s. 6d. (jars extra). For Thrip, Scale, Green-fly, and Red Spider, add 3 parts water to 1 part Composition. Destruction will be greatly accelerated upon infested Cucumbers, Melons, and Plants in pits and frames by Syringing and shutting up early. Specimens might be dipped into the liquid without the least injury to flowers or foliage. Wall Fruit Trees and Roses have been Syringed while in full blossom with the most beneficial effects, and the former even up to the ripening of the crop. For Mealy Bug the Composition may safely be used in its full strength, as any portion of the liquid reaching the roots will act as a manure. For Testimonials, see last page of *Gardeners' Chronicle* of March 12.—37 and 38, Oxford Street, Southampton.

## RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.—NEW TWINE NETTING (Tanned if required).

—1 yard wide, 14d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard; half-inch mesh ditto, 2 yards wide, 6d. per yard. THE ELASTIC HEXAGON GARDEN NETTING, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 44d. per yard. Tanned Netting, 2 or 3 yards wide, 14d. per yard; 4 or 6 yards wide, 3d. per yard—exactly the same as advertised by others at double the above prices. FISHING NETS, POULTRY FENCING.—A 20-yard Drag Net, with purse complete, 2l. 10s. A single walked Drag Net, any length and depth, 1s. per square yard. Casting Nets complete, 1s. 6d. per yard, measured round the lead line. Flue Nets, any size 1s. per square yard, complete. Minnow Nets, Eel Nets, Landing Nets, equally cheap, warranted first-rate quality and workmanship. Rabbit Net, 4 feet wide, 14d.; 6 feet wide, 24d.; 8 feet wide, 3d. per yard. Each edge corded, 1d. per yard extra, suitable for poultry fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c., at Wm. COLLINGSWOOD'S, No. 1, Stratmore Terrace, Shadwell, London.—Orders by post, with Post Office Order or own reference, punctually attended to.

**HORTICULTURAL SOCIETY OF LONDON.**—NOTICE is hereby given that the second EXHIBITION OF FLOWERS AND FRUIT, in the SOCIETY'S GARDEN, will take place on SATURDAY, June 11.

Tickets can be procured at this Office upon presenting the order of a Fellow, price 5s. each; or, on the day of the meeting, at Turham Green, price 7s. 6d. each.

21, Regent Street, London.

**ROYAL BOTANIC SOCIETY, REGENT'S PARK.**—THE SECOND EXHIBITION this season of PLANTS, FLOWERS, AND FRUIT, will be held on WEDNESDAY, JUNE 5. Tickets of admission to be obtained at the Gardens only by orders from Fellows of the Society, price 6s., or on the day of the Exhibition, 7s. 6d. each.

N.B. The Gates open at Two o'clock.

**NURSERYMEN, GARDENERS, and Others,** Exhibitors at the ROYAL BOTANIC HORTICULTURAL SHOWS, are respectfully invited to attend a Meeting, at the Chester Arms, Regent's Park, at half-past 10 o'clock, on WEDNESDAY morning, the 8th of June, to receive and make suggestions relating to the Exhibitions of 1854.

J. FAIRBAIRS, Clapham.

**TWO GRAND FLORICULTURAL AND HORTICULTURAL EXHIBITIONS,** open to all England, under distinguished patronage, will take place at the ROYAL PAVILION, BRIGHTON. The first will take place early in July, and the second in September. Further particulars will be duly announced. All communications to be addressed to E. SPARY, Queen's Graperies, Brighton.—June 4th, 1853.

**PRIZES OPEN TO ALL ENGLAND** for Collections of EIGHT STOVE OR GREENHOUSE PLANTS, exclusive of Calceolarias, Geraniums, and Fuchsiads. First Prize, 5l. 5s.; 2d. Prize, 3l. 3s.; 3d. Prize, 1l. 1s. Entrance to non-Subscribers, 7s. 6d. These Prizes will be given at the Exhibition of the MAIDSTONE HORTICULTURAL SOCIETY, to be held on 23d June next. Notice of intention to compete must be given before the 15th inst., to J. G. SMITH, Hon. Sec. Maidstone, June 4th.

**EXHIBITION OF AMERICAN PLANTS,** AT THE AMERICAN NURSERY, BAGSHOT, SURREY.

**JOHN WATERER** begs to announce his Collection of RHODODENDRONS, AZALEAS, &c., is now coming finely into Bloom, and will continue in good perfection throughout the month of June.

\* The Nursery is near the Farnborough station, South-Western Railway.

**EXHIBITION OF AMERICAN PLANTS.**

KNAF HILL NURSERY, WOKING, SURREY.

**THE AMERICAN PLANTS** at this Nursery are just now in great beauty, and may be seen daily. The Nursery is within an hour's ride of London, being near the Woking Station of the South-Western Railway, where all trains stop, and from whence capital conveyances may be obtained.

\* The Military Encampment on Chobham Common is within a short distance of the Nursery.

HORSE WATERER, Knap Hill Nursery.—June 4, 1853.

**EXHIBITION OF AMERICAN PLANTS.**

WINDHAM NURSERY, BAGSHOT, SURREY, NEAR THE MILITARY CAMP, VIRGINIA WATER, and STAINES STATION.

**GEORGE BAKER** begs to announce his extensive collection of AMERICAN PLANTS is now in flower and may be seen gratis.

G. B. is a large contributor to the American Exhibition in the Royal Botanic Gardens, Regent's Park; they are now in perfection, and will continue during the month of June.

**EXHIBITION OF TULIPS.**

**HENRY GROOM, Clapham Rise, near London,** by Appointment Florist to Her Majesty the Queen, and to His Majesty the King of Saxony, respectfully announces that his EXTENSIVE COLLECTION OF TULIPS is now in flower, and may be viewed every day from 9 o'clock until 6 (Sundays excepted).—Admission 1s.; Children half price.

## BEDDING PLANTS, ETC.

**SCARLET GERANIUMS, VERBENAS, CALCEOLARIAS, &c.,** established in Single Pots, selection left to customers, 2s. per dozen. See Spring Catalogue, which may be had by enclosing two postage stamps.

**VERBENA TRIFFIDA OROBATA.**—White, very sweet-scented, half shrubby, growing from one to two feet high. When grown in greenhouse, is in bloom throughout the winter. 12s. per dozen.

**AZALEA INDICA.**—Specimen plants now in bloom.

H. LANE & SON, the Nurseries, Great Berkhamstead, Herts.



# ROYAL BOTANIC GARDENS, REGENT'S PARK.

## LIST OF PRIZES AWARDED AT THE EXHIBITION, HELD ON WEDNESDAY, MAY 25:—

### EXTRA GOLD MEDAL.

To Mr. May, Gardener to Mrs. Lawrence, Ealing Park, for 20 Stove and Greenhouse Plants.  
To Mr. Franklin, Gardener to Mrs. Lawrence, Ealing Park, for 25 Exotic Orchids.

### LARGE GOLD MEDAL.

To Mr. Cole, Gardener to H. Colyer, Esq., Dartford, Kent, for 20 Stove and Greenhouse Plants.

### MEDIUM GOLD MEDAL.

To Mr. J. Speed, Gardener, Edmonton, for 20 Stove and Greenhouse Plants.  
To Messrs. Fraser, Nurserymen, Lea Bridge Road, Leyton, Essex, for 16 Stove and Greenhouse Plants.  
To Mr. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 12 Stove and Greenhouse Plants.  
To Messrs. Lane & Son, Nurserymen, Great Berkhamstead, for 10 Greenhouse Azaleas.  
To Mr. Blake, Gardener to J. W. Schroder, Esq., Stratford Green, Essex, for 25 Exotic Orchids.  
To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, Herts, for 16 Exotic Orchids.  
To Messrs. Rolleston, Nurserymen, Tooting, Surrey, for 18 Exotic Orchids.  
To Mr. Francis, Nurseryman, Hertford, for 12 Roses in 13-inch pots.

### GOLD MEDAL.

To Mr. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Cheam, for 12 Stove and Greenhouse Plants.  
To Messrs. Rolleston, Nurserymen, Tooting, Surrey, for 16 Stove and Greenhouse Plants.  
To Messrs. Rolleston, for 10 Cape Heaths.  
To Mr. Smith, Gardener to — Quilter, Esq., Crown Hill, Norwood, for 10 Cape Heaths.  
To Messrs. Fraser, for 10 Greenhouse Azaleas.  
To Mr. Turner, Nurseryman, Slough, for 12 Pelargoniums in 8-inch pots.  
To Mr. Wiggins, Gardener to E. Beck, Esq., Isleworth, for 12 Pelargoniums in 8-inch pots.  
To Messrs. Lane & Son, for 12 Roses in 12-inch pots.

### LARGE SILVER GILT MEDAL.

To Mr. Over, Gardener to W. M'ullen, Esq., Clapham, for 20 Stove and Greenhouse Plants.  
To Mr. Clark, Nurseryman, Streatham Place, for 16 Stove and Greenhouse Plants.  
To Mr. Dadds, Gardener to Sir J. Cathcart, Cooper's Hill, Englefield Green, for 12 Stove and Greenhouse Plants.  
To Mr. May, Gardener to Mrs. Lawrence, for 10 Greenhouse Azaleas.  
To Mr. Green, Gardener to Sir E. Antrobus, Bart., for 8 Exotic Orchids.  
To Messrs. Paul, for 12 Roses, in 13-inch pots.  
To Mr. Terry, Gardener to Lady Pullen, Youngsbury, for 8 Roses in pots.  
To Mr. Williams, Gardener to C. B. Warner, Esq., for 25 Orchids.

### LARGE SILVER MEDAL.

To Mr. Williams, Gardener to Miss Traill, Hayes Place, Bromley, Kent, for 6 Stove and Greenhouse Plants.  
To Mr. Green, for 6 fall Cacti.  
To Messrs. Fairbairn, Nurserymen, Clapham, for 10 Cape Heaths.  
To Mr. Cole, for 10 Cape Heaths.  
To Mr. Smith, Gardener to — Quilter, Esq., Crown Hill, Norwood, for 9 Cape Heaths.  
To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, Surrey, for 6 new Azaleas.  
To Mr. Dobson, Nurseryman, Isleworth, for 12 Pelargoniums in 8-inch pots.  
To Mr. Constantine, Gardener to C. Mills, Esq., Hillingdon, for 6 Calceolarias in 11-inch pots.  
To Mr. Carrigan, Gardener to E. Laurence, Esq., Kentish Town, for 12 Pelargoniums in 8-inch pots.  
To Mr. Robinson, Gardener to J. Simpson, Esq., Thames Bank, Pimlico, for 6 Fancy Pelargoniums.  
To Mr. Turner, Nurseryman, Slough, for 6 Fancy Pelargoniums, in 8-inch pots.

### SILVER GILT MEDAL.

To Mr. Taylor, Gardener to J. Coster, Esq., for 12 Stove and Greenhouse Plants.  
To Mr. Kinghorn, Gardener to Earl Kilmorey, Twickenham, for 6 Stove and Greenhouse Plants.  
To Mr. Cole, for 6 Ixoras.  
To Messrs. Fraser, for 10 Cape Heaths.  
To Mr. May, for 10 Cape Heaths.  
To Mr. Roser, Gardener to G. Bradbury, Esq., Streatham, Surrey, for 9 Cape Heaths.  
To Messrs. Fraser, for 6 new Azaleas.  
To Mr. Kinghorn, for 8 Exotic Orchids.  
To Mr. Turner, Slough, for 6 Cinerarias, in 11-inch pots.

## NETTING AND BUNTING FOR FRUIT TREES. RICK CLOTHS, MARQUEES, TENTS, &c.,

NEW OR SECOND-HAND, FOR SALE OR HIRE.

**BENJAMIN EDGINGTON** has prepared for the ensuing season an extensive assortment of Marquees, &c., for Horticultural Societies, Fêtes, Cricket Clubs, &c. Rick Cloths, with Poles, Pulleys, and Lines complete. A great variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. A Warehouse, 208, Piccadilly, London.  
Address, by post, No. 2, Duke Street, Southwark, London.

## TANNED NETTING, for the protection of Fruit

Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 20s.; 1000 yards, 50s. Scrim Canvas, for Wall Fruit.

At EDGINGTON & CO.'S, 17, Smithfield Bars, City, and Old Kent Road, Southwark; and at Edmund Street, near the East India Export Dock, Poplar, where may also be seen erected Emigrant Tents in great varieties on their latest improved principles.

## GUTTA PERCHA HORTICULTURAL LABELS

FOR ROSES, SHRUBS, TREES, &c., are easily read, very elegant, and extremely durable. Price 8d. per dozen, including every name, printed on the Gutta Percha in bold letters.

Sample dozens sent post free on receipt of 12 postage stamps. Sold by E. TAYLOR, Gutta Percha Warehouse, Colchester.

To Mr. Ayres, Nurseryman, Blackheath, for 6 Fancy Pelargoniums in 8-inch pots.  
To Mr. Miller, Gardener to R. Mosley, Esq., Maida Hill, Edgeware Road, for 6 Fancy Pelargoniums in 8-inch pots.  
To Mr. Turner, Slough, for 12 Pansies in 8-inch pots.  
To Mr. Busby, Gardener to J. Crawley, Esq., Stockwood Park, near Luton, Herts, for 8 Roses in 13-inch pots.  
To Messrs. Lane & Son, for 6 Rhododendrons.

### SILVER MEDAL.

To Mr. Gilham, Gardener to J. R. Scott, Esq., Leyton, Essex, for 12 Stove and Greenhouse Plants.  
To Mr. Meredith, Gardener to the Duke of Sutherland, Clevedon, Maidenhead, Berks, for 6 Stove and Greenhouse Plants.  
To Mr. Watson, Gardener to Mrs. Tredwell, Norwood, for 9 Cape Heaths.  
To Mr. Kinghorn, for 6 new Azaleas.  
To Mr. Ivson, for 6 Plants of Rhododendrons.  
To Messrs. Rolleston, for Wax Insect Tree.  
To Mr. Westwood, Nurseryman, Turnham Green, for 12 Pelargoniums, in 8-inch pots.  
To Mr. Westwood, for 6 Fancy Pelargoniums, in 8-inch pots.  
To Mr. Robinson, Gardener to J. Simpson, Esq., for 12 Pelargoniums, in 8-inch pots.  
To Mr. Roser, for 6 Fancy Pelargoniums, in 8-inch pots.  
To A. Rowland, Esq., Lewisham, for 8 Roses, in 13-inch pots.  
To Messrs. Veitch, of Exeter, and Chelsea Exotic Nurseries, for a plant of Vanda suavis.  
To Mr. Williams, Gardener to Miss Traill, for 10 Cape Heaths.

### SMALL SILVER MEDAL.

To Mr. Hamp, Gardener to J. Thorne, Esq., South Lambeth, for 12 Stove and Greenhouse Plants.  
To Mr. Over, for 9 Cape Heaths.  
To Mr. Clark, for 6 Cinerarias, in 11-inch pots.  
To Mr. Roser, for 12 Pelargoniums, in 8-inch pots.  
To Mr. Dobson, Isleworth, for 12 Pansies, in 8-inch pots.  
To Mr. Turner, Slough, for 36 Pansies.  
To Mr. Holder, Gardener to the Rev. E. Coleridge, for 24 Pansies.  
To Mr. Hume, Gardener to R. Hanbury, Esq., Poles Gardens, near Ware, for 25 Exotic Orchids.  
To Mr. Carson, Gardener to F. G. Farmer, Esq., Nonsuch Park, Cheam, Surrey, for 8 Exotic Orchids.  
To Mr. Chitty, Gardener to J. S. Bassett, Esq., Stamford Hill, for 8 Roses, in 13-inch pots.  
To Mr. Collinson, Eaton Hall, Cheshire, for a Trentham Hybrid Melon.  
To Mr. Williams, Gardener to C. B. Warner, Esq., for 13 variegated Orchids.  
To Mr. Bray, for 6 Pelargoniums, in 11-inch pots.  
To Mr. May, Gardener to Mrs. Lawrence, for Pimelea spectabilis.  
To Messrs. Rolleston, for Miltoia pulchella.  
To Mr. Green, for Tetraodon ericifolia.  
To Mr. Turner, Son, of Southgate, for 6 Hardy Alpine Plants.  
To Mr. Williams, Gardener to C. B. Warner, Esq., for 12 Exotic Ferns.  
To Mr. Smith, Gardener to J. Anderson, Esq., The Home Villa, Regent's Park, for 30 British Ferns.

### BRONZE MEDAL.

To Messrs. Henderson, Pine Apple Place, for Metrodorea atropurpurea.  
To Messrs. Henderson, Pine Apple Place, for Coleus Blumei.  
To Messrs. Henderson, Wellington Road, St. John's Wood, for Metrodorea atropurpurea.  
To Messrs. Henderson, Wellington Road, for Dietyanthus Pavoni.  
To L. Van Houtte, Nurseryman, Ghent, for Calceolaria violacea.  
To Mr. Turner, jun., Southgate, 6 Hardy Alpine Plants.  
To Messrs. Rolleston, for Nepenthes Hookeri.  
To Mr. Van Houtte, for Aphelandra Van Houttei.  
To Mr. Collinson, for an Egyptian green-fleshed Melon.  
To Mr. Woolley, for a collection of Lycopods.  
To Mr. Turner, Slough, for a collection of Tulips.  
To Mr. Constance, Gardener to C. Mills, Esq., Hillingdon, for 3 Vines in pots.  
To Mr. Bradley, Gardener to S. W. Peto, Esq., Sumerleyton Hall, for one dish of Grapes.  
To Mr. Francis, for a collection of Manetti Roses.  
To Mr. May, for Bossiaea disticha plumosa.  
To Messrs. J. & C. Lee, Nurserymen, Hammersmith, for Coleus Blumei.  
To Mr. Spary, Nurseryman, Brighton, for Black Hambro' Grapes.  
To Mr. Martin, Gardener to Sir Hosketh Fleetwood, for nine bunches of Grapes, one dish of Strawberries.  
To Mr. Turner, Slough, for 36 Pansies.

### CERTIFICATE OF MERIT.

To Mr. Bousie, Gardener to the Hon. H. Labouchere, for 3 Vines in pots.  
To Messrs. Lee, for Azalea Symmetry Indica.  
To Messrs. Lee, for Cissus discolor.  
To Mr. Westwood, for 6 Pelargoniums.  
To Messrs. Henderson, Wellington Road, for a straw-coloured variety of Diplacus glutinosus.

## GREENHOUSE & CONSERVATORY BUILDING ESTABLISHMENT.

HOT-WATER APPARATUS MANUFACTORY,  
KENSALL GREEN, HARROW ROAD, LONDON.

**JOHN TAYLOR** begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he is extensively engaged.

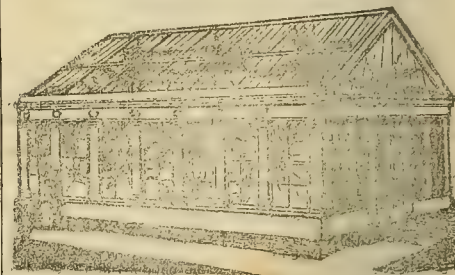
## HEATING BY HOT WATER. EFFICIENCY GUARANTEED.

**HOT-WATER HEATING APPARATUS**, upon approved principles, supplied and fixed in Horticultural and other Buildings, by **WILLIAM DODDS & CO.**, Heating Engineers, 102, Leadenhall-street, London. First-rate references if required.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

**EDWARD AND A. WEEKS** (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.  
\* \* \* Shades for Greenhouses, &c. One, two, and three-light Boxes always on hand.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON**, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

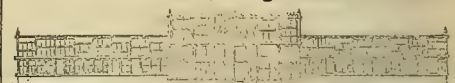
G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

## HORTICULTURE IN ALL ITS BRANCHES.



**J. WEEKS & Co., King's Road, Chelsea,**



## HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



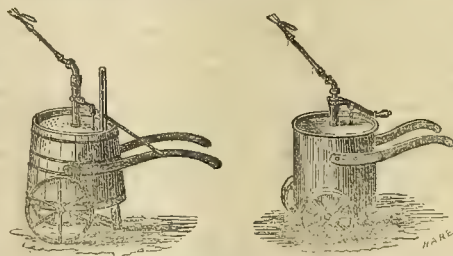
The **HOT-WATER APPARATUS** (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation. The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. **J. WEEKS & Co., King's Road, Chelsea, London.**

**THE RHEOCLINE, OR SPRING COUCH**, portable without detaching any of its parts, softer than a Feather Bed, and which can be changed in One Moment from a Couch to either a Bed or Sofa, may be seen at

**COTTAM & HALLEN'S, 76, OXFORD STREET,**

where also is on view a great variety of METALLIC BED-STEADS, fitted with and without the patent RHEOCLINE, &c. &c., together with a large assortment of the patent Radiating and other STOVES, and every other description of IRONMONGERY.



## J. TYLOR AND SONS' IMPROVED GARDEN

**ENGINES.**—These Garden Engines are of a very superior manufacture, and of the best quality and material. The Pumps are so arranged that they do not get out of order. In best Oak Tubs, well painted, No. 1, 10 gals.; No. 2, 15 gals.; No. 3, 28 gals. In strong turned Iron Tubs, well japanned, No. 10, 8 gals.; No. 13, 12 gals.; No. 12, 24 gals.; No. 14, 30 gals. Prices and engravings to be obtained of any Ironmonger in Town or Country.

Manufacturers and Patentees, **J. Tylor & Sons**, Warwick Lane, Newgate Street, London.



## CRIMSON-FLOWERED IVY-LEAVED GERANIUM.

**STANDISH AND NOBLE** have now to offer the above, which they can recommend as a **BEDDING PLANT** of the first class. It has the habit and foliage of the well known old variety, but the flowers are of the brightest crimson. They are produced in the greatest profusion, and are raised well above the leaves upon stout foot-stalks. Plants, in June, 10s. 6d. each.

\* \* The usual discount to the trade when three or more are taken.—Bagshot, Surrey, June 4.

## NEW AND SELECT PLANTS offered by BASS

AND BROWN. The usual allowance to the trade, except the five English Fuchsias.

Aphelandra variegata	7 6
Æchmea fulgens, 5s. to	7 6
Begonia Prestoniensis	10 6
"  miniata, 7s. 6d. to	10 6
Barberis Darwini	2 6
Balsamina latifolia alba, 2s. 6d. to	3 6
Cissus discolor, climber, superb variegated foliage	7 6
Cyrtocarpus reflexa	2 6
Canna Warszewiczæ, or sanguinea, splendid	7 6
Deutzia gracilis, in flower, 1s. 6d. to	2 6
Dillwynia cinnabarina	7 6
"  scabra	7 6
Echites Harrisii, fragrant yellow flowers, carmine striped, red throat	21 0
Æschynanthus splendidus, 2s. 6d. to	3 6
Fuchsia miniata, a superb Continental variety, an abundant bloomer	7 6
"  King Charming (Mayle's)	10 6
"  Incomparable (Mayle's)	10 6
"  Dr. Lindley (Banks)	10 6
"  England's Glory (Harrison's)	10 6
"  Perfection (Banks)	10 6
Fitz-Roya Patagonica	7 6
Gesnera zebрина compacta	5 0
Gloxinia imperialis	5 0
"  Mrs. A. Adanson, a fine Continental variety	5 0

Geraniums, new varieties, sent out in October. See reduced prices in our Advertisement in *Gardeners' Chronicle* of May 7, 14, and 21.

Gloriosa Plant	5 0
Hoya campanulata, 2s. 6d. to	3 6
"  coriacea, 3s. 6d. to	3 6
"  imperialis, 2s. 6d. to	5 0
Hexacentris mysorensis	21 0
Ipomoea palmata	3 6
Lobelia St. Clare	3 6
Mimulus variegata, a beautiful Continental variety, cream colour, with rich dark blotches	2 6
Petunia Prince de Robn	2 0
Passiflora Comte Nesselrode	3 6
"  alata superba	3 6
"  Comte Kieseloff	3 6
"  coriacea grandiflora	3 6
Phlox Drummondii Roi Leopold	2 0
"  Mayi variegata, 12s. per dozen	1 0
"  Thompson, 9s. per dozen	1 6
Plectranthus comolus picta, beautiful variegated foliage, fine strong plants, 2s. 6d. to	3 6
Salvia amabilis, beautiful blue and white, per dozen, 12s.	1 6
Saxa Gothica conspicua	7 6
Streptocarpus biflorus	7 6
Tacsonia manicata, 1s. 6d. to	3 6
"  Helleri	3 6
Tritoma aurea, 24s. per dozen	2 6
Triopseum Triomphe de Gand	2 6
Weigela amabilis	7 6
"  lutea	1 6

Fine Bedding Plants and Hardy Herbaceous Plants, in pots. See *Gardeners' Chronicle* of May 7, 14, and 21.

SEED AND HORTICULTURAL ESTABLISHMENT, Sudbury, Suffolk.

## EDWARD GEORGE HENDERSON AND SON,

Wellington Road, St. John's Wood, London, beg to offer the following **PLANTS**, which they can with confidence recommend. Catalogues, containing the general collection of Plants, priced and described, will be sent, post free, on application:—

Heliotropium Roumella	3 6
"  paniculatum	1 6
"  Voltaireanum nanum	2 6
"  sub molle	3 0
Lantana grandiflora	3 6
"  ocellata	3 6
"  purpurea	2 0
"  hispanica	2 0
Hesperis matronalis rubra-plena	1 6
Delphinium Hendersoni	7 6
Diplazium californicum	2 6
Antirrhinum Hendersoni	2 6
Petunia Prince Camille de Roho	3 6
Lobelia Roi Leopold	7 6
"  Belle Pyramide	3 6
"  Ajax	3 6
"  insignis	2 0
"  compacta	2 6
"  St. Clair	3 6
Swainsonia Osborni, 2s. 6d. to 3s. 6d.	

Verbenas selected when in flower from 150 varieties, introduced from the Continental and other Nurseries last season, at 21s. per dozen.

The following Plants can be highly recommended for cultivation:—

Begonia miniata	10 6
"  Prestoniensis	10 6
Calceolaria violacea	7 6
Gloxinia White Perfection	7 6
Hexacentris mysorensis	21 0
Rhododendron jasminifolium	42 0
Streptocarpus biflorus	7 6
Weigela amabilis	10 6
Fuchsia Premier	10 6
"  Purple Perfection	10 6
"  Duchess of Lancaster	10 6
"  Hendersoni	3 6
"  Gem of the Season	2 6
"  Cambridge	2 6
"  Nil Desperandum	2 6
"  Roi des Fuchsias	2 6
"  Docteur	2 6

Geraniums, show and fancy varieties, select and choice fine

    "  1s. to 10s. per dozen.

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## SHORT GRASSES.

**FINE GRASS LAWNS IN FLOWER GARDENS,** &c.—The great expense of cutting and carting turves from a distance may be avoided, and a superior Turf produced in a few weeks, by sowing **SUTTON'S LAWN GRASS SEEDS**, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds.

Great improvements may be effected in old Lawns by sowing about 20 lbs. to the Acre of these Seeds; for the formation of new Lawns twice that quantity will be necessary.

Price 1s. 3d. per pound; 3s. per gallon; or 21s. per bushel. Address JOHN SUTTON & SONS, Seed Growers, Charlton, Berks.

## EXOTIC NURSERY, CHELSEA.

**JAMES VEITCH, jun.**, begs respectfully to state, that he has now in fine Bloom, in this Nursery, the magnificent "Lilium Gigantum," and the lovely "Rhododendron jasminiflorum," to an inspection of which he invites all lovers of flowers.—June 4.

## 1853.

**NEW SEEDLING VERBENAS "LADY WILLIAM POWLETT," "MRS. BEECHER STOWE," and "EVA ST. CLARE."**

The character of the first-named variety is large petal, with fine compact truss; abundant bloomer, good habit; colour white, very heavy crimson centre; every bloom perfect, and warranted the best of this class yet sent out.

The second variety mentioned is a splendid cerise colour; large flat petal, fine and distinct eye; this is the largest truss yet grown, and a first-rate show variety.

The third and last named is very superb, and great improvement on Jenny Lind, being much larger, brighter in colour, distinct eye; altogether a fine and free blooming variety.

The above three new Verbenas are warranted to give as great satisfaction as any others yet grown, being fine in form, decided colours, trusses all large and compact, and will prove extra fine show varieties.

Plants are now ready, at 5s. each. The usual allowance to the Trade.

They will be sent postage and package free, on receipt of the amount, which must accompany every order from unknown correspondents, by penny postage stamps, Post-office orders, or otherwise.

EDWARD TILLEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somerset.

## The Gardeners' Chronicle.

SATURDAY, JUNE 4, 1853.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, June 6	Entomological	3 P.M.
TUESDAY, — 7	Chemical	3 P.M.
— 7	Latin	3 P.M.
— 7	Literary Fund	3 P.M.
— 8	Royal Soc. of Literature	4 P.M.
— 8	Society of Arts (Anniversary)	5 P.M.
— 8	Edinburgh	5 P.M.
— 8	Pharmaceutical	5 P.M.
— 9	Antiquarian	5 P.M.
— 9	Royal	5 P.M.
— 10	Astronomical	5 P.M.
— 10	Pathological	5 P.M.
— 11	Royal Institution	5 P.M.
— 11	Horticultural Gardens	2 P.M.

CORRESPONDENTS FOR THE CHRONICLE:—7th: Oxfordshire—8th: 9th, and 10th: Devon and Cornwall (Plymouth)—11th: Cheltenham and West Kent (Farnham)—15th: Isle of Wight, and Wycombe—21st: Scottish Fairs (Dunfermline), Thornbury, and Great Marlow—22nd: Colchester—23rd: Chichester, Aylesbury, Salisbury, and Bath—24th: Newcastle—25th: Staines—26th: Meath, and Handsworth—30th: Isleworth, Liverpool, Thame, and Ireland Royal Horticultural.

**THOROUGHLY DRIED POTATOES WILL ALWAYS PRODUCE A CROP FREE FROM DISEASE.** Such is the positive assertion of Mr. BOLLMAN, one of the professors in the Russian Agricultural Institution at Gorigoretsky. In a very interesting pamphlet\* by this gentleman, which has just reached us, it is asserted, as an unquestionable fact, that mere drying, if conducted at a sufficiently high temperature, and continued long enough, is a complete antidote to the disease.

The account given by Professor BOLLMAN of the accident which led to this discovery is as follows: He had contrived a Potato-setter, which had the bad quality of destroying any sprouts that might be on the sets, and even of tearing away the rind. To harden the Potatoes, so as to protect them against this accident, he resolved to dry them. In the spring of 1850, he placed a lot in a very hot room, and at the end of three weeks they were dry enough to plant. The Potatoes came up well, and produced as good a crop as that of the neighbouring farmers, with this difference only, that they had no disease, and the crop was therefore, upon the whole, more abundant. Professor BOLLMAN tells us that he regarded this as a mere accident; he, however, again dried his seed Potatoes in 1851, and again his crop was abundant and free from disease, while everywhere on the surrounding land they were much affected. This was too remarkable a circumstance not to excite attention, and in 1852 a third trial took place. All Mr. BOLLMAN's own stock of Potatoes being exhausted, he was obliged to purchase his seed, which bore unmistakable marks of having formed part of a crop that had been severely diseased; some, in fact, were quite rotten. After keeping them for about a month in a hot room, as before, he cut the largest Potatoes into quarters, and the smaller into halves, and left them to dry for another week. Accidentally the drying was carried so far that apprehensions were entertained of a very bad crop, if any. Contrary to expectation, however, the sets pushed promptly, and grew so fast that excellent young Potatoes were dug three weeks earlier than usual. Eventually

nine times the quantity planted was produced, and, although the neighbouring fields were attacked, no trace of disease could be found on either the herbage or the Potatoes themselves.

This singular result, obtained in three successive years, led to inquiry as to whether any similar cases were on record. In the course of the investigation two other facts were elicited. It was discovered that Mr. LOSOVSKY (living in the government of Witebsk, in the district of Sebege), had for four years adopted the plan of drying his seed Potatoes, and that during that time there had been no disease on his estate. It was again an accident which led to the practice of this gentleman. Five years ago, while his Potatoes were digging, he put one in his pocket, and on returning home threw it on his stove (*poêle*), where it remained forgotten till the spring. Having then chanced to observe it, he had the curiosity to plant it, all dried up as it was, and obtained an abundant healthy crop; since that time the practice of drying has been continued, and always with great success. Professor BOLLMAN remarks that it is usual in Russia, in many places, to smoke-dry Flax, Wheat, and Rye; and in the west of Russia, experienced proprietors prefer for seed Onions that have been kept over the winter in cottages without a chimney; such Onions are called *dymka*, which may be interpreted smoke-dried.

The second fact is this:—Mr. WASILEFFSKY, a gentleman residing in the government of Mohileff, is in the habit of keeping Potatoes all the year round by storing them in the place where his hams are smoked. It happened, that in the spring of 1852, his seed Potatoes, kept in the usual manner, were insufficient; and he made up the requisite quantity with some of those which had been for a month in the smoking place. These Potatoes produced a capital crop, very little diseased, while at the same time the crop from the sets which were not smoke-dried was extensively attacked by disease. Professor BOLLMAN is of opinion that there would have been no disease at all, if the sets had been better dried.

The temperature required to produce the desired result is not very clearly made out. Mr. BOLLMAN's room in which his first Potatoes were dried was heated to about 72°, and much higher. By way of experiment he placed others in the chamber of the stove itself, where the thermometer stood at 136°, and more. He also ascertained that the vitality of the Potato is not affected, even if the rind is charred. To this, however, and some other points, we shall return next week. In the meanwhile those who have the use of a malt kiln, or even a lime kiln, might even now try the effect of excessive drying, for a month seems to be long enough for the process; and if Potatoes planted in the beginning of July will not yield much of a crop, it will at least be seen whether they are attacked by disease.

ONE of the great difficulties which impede the colonist in a new country is the multitude of ancient trees, which he must clear away before he can turn his land to a profitable account. Many a colonist has, we suspect, abandoned his holding from sheer despair of ever accomplishing the task, by felling or burning, or any other possible process. It would appear, however, from some information given in the *Cork Southern Reporter*, that this difficulty is, if not removed, at least greatly diminished.

Captain NORRIS, the inventor, we believe, of a rifle percussion shell and of some other weapons of the same kind, has contrived a "blasting cartridge" fired by percussion, expressly for the purpose of blowing to pieces large trees. Of the powerful effects of this invention, we collect the following particulars from an Irish contemporary. The first experiment was tried upon the root end of large trees, which it was found impossible to blast by a fuse and tamping. The method of applying the cartridge was as follows: A triangle was made of three tall Larch spars placed over the root to be blasted, a hole being bored by an auger, an inch and a quarter in diameter, into the most unweadable part of the root; a "gouge rimer" is good to use after the auger, as it clears away the rough interior, and admits the cartridge freely. About three inches deeper than the centre, a plug of iron of the same diameter of the auger, and an inch and a half long, or a small round stone, is forced into the bottom of the hole, so as to form a solid foundation. The cartridge, with a percussion cap on each end of its steel pillar, is then dropped in and rests on the iron foundation; a rammer of iron of nearly the same diameter as the auger, and about 4 inches longer than the depth of the hole, so as to project about 4 inches, is then inserted, and may, or may not, rest on the head of the cartridge. A block of wood about 60 lbs. weight suspended vertically by a strong cord over the projecting head of the rammer is then allowed to fall on it, when, by the momentum or blow, the explosion takes place,

\* L' Moyens de prévenir la Maladie du Pomme de Terre, l'expérience, et Conclusion de A. N. C. BOLLMAN, Conseiller d'Etat, Professeur, &c. &c. St. Petersburg, 1853.



and in no one instance out of more than a hundred trials has the rammer been blown out, or, as military engineers term it, has "gunning" occurred. In one instance the cartridge was made of tin, so as to be water-proof, and when it was inserted and the rammer placed over it, water having been poured in, the explosion was perfect. This was to show how to blast rocks under water when lying in the way of navigation. But the water has in trees the advantage of causing the wood to swell and bind the iron closely, thus preventing loss of power by windage. The charge of powder in these cartridges is about an ounce of HALL'S powder; it is probable that a fourth part of the powder used in the common manner of blasting will be found by this method to be sufficient. In addition to the obvious convenience of the operation for clearing land, Capt. Norton thinks it will be of considerable value in removing large blocks of wood found in bogs, where, on account of their great weight, and the soft nature of the bog, neither cart nor car can remove them, but which, when shattered by the cartridge, can be taken away by men, or boys, in small pieces.

But it is not alone in this manner that the percussion cartridge may be used. We are informed that at a later period large standing timber was shattered with perfect facility. Instead of firing the cartridge by the perpendicular fall of a heavy block, the effect was produced by a lateral blow. "Mr. O'BRIEN, of Castle White, near the Queen's College, having kindly given Captain NORTON permission to operate on a large old Poplar tree, three feet in diameter near the root, a hole was bored horizontally within two feet of the ground, and the cartridge and iron bolt (which bolt does the duty of the most perfect tamping) being inserted, a heavy block of wood suspended from a large iron nail, struck into the trunk of the tree, was drawn by a long cord attached to it, about a foot from the projecting head of the bolt, and then let go, so as to strike it like a pendulum or the knocker of a hall door, when the instant explosion rent the trunk of the tree, and caused it to fall by the pull in the direction chalked out for it by a rope attached to an upper branch of the tree. The effect of this percussion cartridge is like that of the rifle percussion shell, the iron bolt acting like the breeching of the shell.—Landed proprietors and others interested would do well to walk into Mr. O'BRIEN'S field at Castle White, and read in unmistakable characters the powerful effects of this percussion cartridge in shattering the blocks of large trees, particularly that giant one near the wall at the upper part of the field."

The paper of the cartridge, projecting half an inch above its upper end, acts as additional tamping by the blow of the rammer above, and explosion of the powder below. A circular trench should be dug round the butt of the tree, sufficiently wide and deep to allow the shattered parts to separate. Two cartridges can be fired instantaneously, by having the holes bored of equal depth, and any number of inches apart, the suspended block being sufficiently broad to cover both iron rammers.

So many of our readers have friends who would be glad to avail themselves of this ingenious invention that we hope to hear of trials having been made on this side of St. George's Channel. We have no doubt that Captain Norton, who is now staying at the Victoria Hotel, Cork, would willingly furnish any additional information that may be required. We hope too that we may be favoured with the results of any further trials. We shall be particularly glad to know whether there is any serious danger from the iron bolt blowing out under the force of the explosion, when the auger hole is lateral not vertical, or from the splinters of wood which we suppose must be projected when a solid trunk is riven to pieces by the powerful agency employed.

#### ENTOMOLOGY.

##### THE SWALLOW-TAIL MOTH.

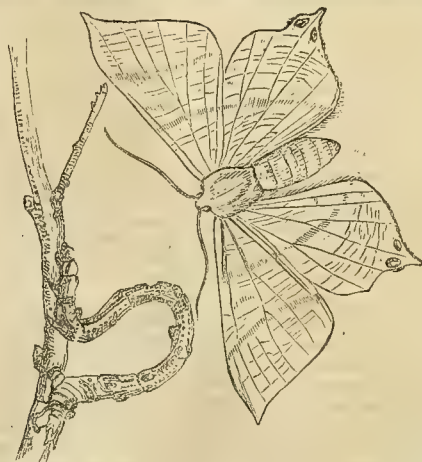
OUR attention has been so often directed by different correspondents to the curious caterpillar represented in the accompanying woodcut, that it has seemed a subject worthy of representation in our entomological series.

Although the chief interest attached to the species arises from the form of the caterpillar and its close resemblance to a leafless, knotted twig, yet the structure of the cocoon and the form and colours of the perfect moth add considerably to its interest, the short tails into which the hind wings are produced not being found in any other British species of the family to which the insect belongs, and giving the moth a certain resemblance to the swallow-tail butterfly (*Papilio Machaon*).

The caterpillar is found on a great variety of trees—the Jasmine, Privet, Sallow, Apricot, Rose, Gooseberry, and especially the common Elder, affording it nourishment. When full grown, about the middle of

May, it is  $2\frac{1}{2}$  inches long, and is of a brown colour, with a chocolate tint, and having a variety of undulating greyish lines; the third segment of the body is gibbous, and the two preceding are more slender than the rest; the sixth segment has on each side a tubercle or prominence, and another similar in form occurs on the hinder extremity of the eighth segment, on its upper side. The head is depressed and square, and the body is terminated by two points, which extend beyond the hind pair of prolegs. Like the caterpillars of the geometridous moths, this possesses three pairs of true jointed legs, attached to the first three segments of the body; and there is only one pair of ventral, besides the anal pair of prolegs; the latter are large and powerful, a peculiarity necessary in consequence of the singular habits of the insect, in this preparatory stage of its existence.

As the caterpillars are hatched in the autumn and pass the winter in that state, attaching themselves to twigs, &c., to which they cling with amazing pertinacity, holding themselves extended in a right line, at a greater or less angle from the stem (as represented in the smaller figure), they are repeatedly mistaken for small dead twigs, the small tubercles on the body adding to the deception; and hence, as soon as they begin to move, on being disturbed, considerable surprise is produced, which is not diminished when the peculiar movements of the animal are noticed. At first, keeping itself fixed by its hind legs, it moves the fore part of the body in different directions, keeping itself, from time to time, in a fixed position. If still disturbed, it extends its body to its greatest length, attaches its fore-legs to the surface on which it is placed, and then detaching its hind legs, it draws them forwards till they are almost in contact with the fore ones, the body being formed into a loop during the process (whence this kind of caterpillars are termed loopers); the hind legs are then fixed in their advanced position, and the fore ones extended as before. In this manner progression is rapidly effected; and, from the motion of the body having somewhat the appearance of that of a pair of compasses when used for measuring a succession of equal spaces, the generic name of *Geometra* (earth measurers) has been given to the insects with



great appropriateness and felicity of expression; and as there are now several hundreds of species known, having similar habits, the generic name has been transformed, as usual, into a family one—*Geometridæ*; and other generic or, perhaps more correctly, sub-generic names have been given for the minor divisions into which the *Geometridæ* are divisible. Compared with the other geometridous larvæ, the one before us is singularly elongated and tuberculated; and this character, together with the peculiarities of the cocoon and of the perfect insect, have caused the swallow-tail moth to be formed (with some other closely-allied exotic species) into a separate genus, named *Ourapteryx*, by Leach, the name being given in allusion to the produced tails of the hind wings.

Lyonnet fed one of these caterpillars in autumn with Sallow-leaves as long as they were to be obtained, after which the insect (then  $1\frac{1}{2}$  inch long) ceased eating till the end of April, when fresh leaves were supplied to it. On the 9th of May it prepared for its final moulting, which was accomplished two days afterwards. It continued to eat till the 12th of June, and became a chrysalis on the 16th, and the moth was produced on the 8th of July; but another specimen which Lyonnet received on the 22d of April, being then more advanced than the former, became a chrysalis on the 18th of May, and the moth appeared on the 17th June, the day after the other had become a chrysalis. This caterpillar was found on an Apricot tree, and it would not eat the leaves of any other plant. When full fed, they spin a cocoon of loose silken threads, to which they attach bits of leaves, &c., thus differing from the great majority of the *Geometridæ*. The chrysalis or pupa is of a more slender form than usual; its length, however, does not exceed one-third of that of the caterpillar; the front part of the body resembles the colour of old parchment, marked with minute black streaks, and the hind part is varied with black, white, and grey. The moth (*Ourapteryx sambucaria*, Linn.), represented of the natural size in the accompanying woodcut, is entirely of a pale yellow colour, the wings with slight olive-

coloured lines and short streaks. The hind wings have the middle of the hinder margin prolonged into short tails, marked with two small chestnut-scarlet coloured spots, edged with black. The antennæ of the males are not feathered, being only a little stouter than in the females, and very pubescent, but not ciliated, on the under side. The spiral tongue is nearly as long as the antennæ. The large size of the wings and smallness of the body cause the moth to fly heavily and slowly. It is widely distributed, not only over England, but also the greater part of Europe. It flies about hedges in the twilight, its pale colour and large size rendering it a more conspicuous object than any other moth. J. O. W.

#### RHODODENDRON DALHOUSIÆ.

OF all the Sikkim-Himalayan *Rhododendrons*, the present is perhaps the one which has excited the greatest interest, partly from the great size and beauty of the fragrant flowers, "almost resembling those of the Bourbon Lily (*Lilium candidum*)" and partly from the peculiar place of growth, generally in its native localities, like tropical *Orchideæ*, among moss, with Ferns and *Aroidæ*, upon the limbs of large trees. Hence doubts have been expressed, as used to be the case with other epiphytes, how far it would be possible to succeed in the cultivation of this shrub. The seeds have germinated in England as freely as any, and our young plants have made rapid progress in a cool moist house. No one, however, expected to see its blossoms (belonging to a straggling shrub which on its native hills attains a height of 6 or 8 feet) produced in cultivation in so short a space of time as three years from the period of the importation of the seed. The earliest arrival of this seed was in the spring of 1850. Mr. John Laing, gardener at Dysart House (the Earl of Rosslyn's), Kirkcaldy, North Britain, has the honour of having been the first to flower this noble plant, and in March, 1853, he communicated a specimen and drawing to me, together with the following interesting particulars of his mode of treating the plant:

"In January, 1852, I selected from our woods a vigorous plant of *Rhododendron ponticum*, with a clean straight stem, about 6 feet high, removing all the lateral branches, and potting in an 8-inch pot. About the end of January it was placed in the stove, where it was soon after inarched with *R. Dalhousiæ*. As the young shoot of the latter began to harden, it was gradually cut through till separated, and the plant was removed to a cool greenhouse to rest. It very soon showed symptoms of making another growth, when it was transferred to the stove, to ripen its wood, preparatory to its being again put into a cool house as the shoot ripened. Here it did not remain long before it made further progress, and again required the heat of the stove to ripen its third growth. About the end of October a flower-bud was formed, when water was gradually withheld until it was moderately dry at the roots, and the plant was removed to a cool greenhouse for the entire winter. About the third week in February, 1853, it was placed in the stove, and began to show colour on the 16th March. When the flowers first appeared they were of a greenish colour, which gradually changed into a yellow, which also died away, until it is of the colour of the flower sent; and I have no doubt but ere the flower drop, it will be nearly white (as represented in our plate). I may also state that the plant has never been exposed out of doors; had it been so, the rusty colour on the upper surface of the leaf would very likely have been removed. The bark on the first shoot or growth is of a brown colour; but the other two growths are yet green, as shown in the sketch."

*R. Dalhousiæ* is a native of East Nepal, Sikkim, and Bhotan (Griffith Herb.), at elevations of from 6000 to 9000 feet, in humid forests. *Botanical Magazine*.

#### BORONIA SERRULATA.

ALL the *Boronias* are handsome, but this one is an especial favourite of mine. In choosing a plant from the nursery, let it be dwarf and bushy, and take care to keep it healthy and vigorous until the time has come round for potting it. Commence that operation in April, by preparing some nice light fibrous peat mould beating it well to pieces. When that is done, sift it through a coarse sieve, to deprive it of the coarser roots; then add about half the quantity of silver-sand and a portion of clean broken potsherds, which will keep the soil open, porous, and healthy. Mix these well together; then prepare a clean dry pot, we draining it with potsherds, upon the top of which put some of the coarse roots that were rejected while sifting. Place your plant upon the top, calculating its depth to put the ball, bearing in mind not to sink the collar of the plant too low, but to have it rather elevate above the level of the surface when potted, press down the soil somewhat closely. When potting finished, place the plant in a greenhouse or pit; prefer the latter, as it affords better means of supplying its wants, and you have a much better command over the temperature in a pit than in a greenhouse.

When placed in a nice dry pit, keep it close for a few days; if the sun should be bright, shade in the heat of the day, but not too long. After two or three days begin to give a little air by lifting the light behind, and increase the quantity as the plant advances in growth bearing in mind never to expose it to draughts cutting winds; for, rest assured, if you do your plant will soon become brown and sickly. Pay great attention, likewise, to watering, which is another important point; never allow it to become dry; when it is p



ceived that it has begun to feel its shift (which its appearance will readily indicate), give a gentle syringing over-head, in fine bright weather, and close your pit in good time in the afternoon. In the course of a month or six weeks, the plant will have made vigorous growth; and now is the time to form a fine specimen. When it is receiving the full benefit of its shift, and throwing out strong and vigorous wood, give it a regular topping, and prune it into what shape you may prefer. Take the points off every shoot; some of the strong ones may be topped as much as three inches, others only two, and some even less, always using your own judgment in this matter, and topping according to the strength of the branch. When this is done, place the plant again in the pit, syringing it frequently, and in a short time it will break forth regularly all over, and form a splendid specimen. When it has made growth from 3 to 4 inches in length, begin gradually to give more air, and follow this up until autumn.

When the time has arrived to place it in its winter quarters, after you have hardened it and retarded its growth, on a very calm, mild day, you may take the lights entirely off, but never allow them to be taken quite off during cold stormy weather. I have seen many growers expose their *Boronia*s out of doors along with other greenhouse plants; but I cannot agree with them in this practice, as I certainly never saw a plant subjected to this treatment which kept long in health; they become brown and rusty in foliage. I am certain that the constitution of this species is too delicate to be kept in health long, if exposed to winds or rain. When you place it in its winter quarters, make choice of a nice light situation in the greenhouse, as near the glass as can be conveniently found, but not exposed to draughts. Be very particular in watering during the winter, and never allow it to become too dry. Here it will soon begin to show its bloom-buds from top to bottom; and by keeping your house moderate in temperature, never allowing the frost to enter, nor, if possible, raising it above 50°, it will push very gradually, and open blooms about the month of April or May of the most beautiful colour.

There are several other lovely species of this genus, and most of them are indispensable to fine collections of plants, but all the others will thrive well under the treatment I have just been describing, until they have made their summer's growth, when they may all be exposed to the open air, which will strengthen and harden them for their winter's rest. By no means, however, allow any of them to remain out during drenching rains, although none of them are so tender as *Serrulata*; and in placing them in the greenhouse for the winter it will not be necessary to be so particular in choosing a place for them as in the former case, as they are not so delicate, provided they have a nice airy light situation, and are watered moderately dry.

Most of the *Boronia*s are very liable to the attacks of mildew, which, if not kept down, will ultimately destroy the plants. This frequently makes its appearance in autumn after, and sometimes before, they are placed in their winter quarters. As soon as it is perceived apply sulphur, which entirely destroys it. I have always found sulphur efficient, and I have made a practice every autumn of dusting the plants all over with it, and allowing it to remain upon them until spring, when a syringe and some clean water will remove it, and they then look green and healthy. *Alpha*.

### Home Correspondence.

*Musa Cavendishi* in New South Wales.—I was rather amused by the account one of your correspondents gave of his fine bunch of this *Banana*, numbering 80 fruit, as I had some time before counted 230 on a bunch ripened here, and I find that the number generally set on a healthy plant in good unmanured soil in my garden is from 140 to 160. The scape is produced in from 13 to 18 months after planting, and if it makes its appearance in the spring, the fruit ripens in about three and a half months; but if in the autumn, it will take seven months to ripen. A single shoot allowed to rise on the old stool will flower in eight months from the time it makes its appearance above-ground. I tried if the fruit were to be improved by thinning, but they were neither larger nor better, even when five-sixths had been cut out; the reason of this is, I suppose, that the plant sets exactly the number which the nourishment collected in its trunk will bring to maturity. Fructification of the *Banana* is altogether a very curious thing, which I do not think has ever been sufficiently studied. It is quite a mistake to suppose that the pollen, which is sometimes produced by the barren flowers, has anything to do with the swelling of the fruit. Many varieties never have any pollen in their anthers; and in none of the cultivated kinds have I ever seen the anther valves open so as to liberate the pollen. Nevertheless, I have two young seedlings from a kind which never, in my observation, produced pollen, and I suppose the seed may have been produced by the pollen of a wild sort (which I suppose to be that found by Cook at Endeavour River), applied on the head of a Honeysucker (*Myzomela*). This wild *Musa* produces great abundance of pollen in all its flowers, and the fruits are a mass of seeds, perfectly uneatable. This is curious, because the wild *Musa* of the South Seas—*M. Fehi*, of *Bertero* (the name is *Fey-ee*) does not seed more frequently than the *Banana*. I recollect once seeing an undoubted hybrid between the *Fehi* and *Banana*, and have been trying to procure seed by artificial fertilisation, with no great

success, I fear. I hoped, perhaps, to get a plant equally dumpy with *M. Cavendishi*, and with better fruit, for I think *M. Cavendishi* anything but the best sort of *Banana* for the table. Its merits are its low stature and enormous productiveness whenever the heat is continuously sufficient for its growth. With me, owing to its extreme susceptibility to cold, it is a very unprofitable sort, for all the leaves die long before any frost appears, while all the other kinds that I have will bear actual hoar frost on their leaves without injury. *J. C. B., Wide Bay.*

*Violets*.—In your Calendar of Operations, for May 12th, you recommend that *Violets* be either potted or planted in pits for forcing; I have tried the Neapolitan both ways, and I prefer growing them in pots, for two reasons: 1st, potting in some measure checks their growth, thereby inducing them to bloom more freely, and at an earlier period. 2d, as they are very subject to red spider when in pots, they can be taken out of the pit at pleasure, and effectually syringed with clean water, which I consider the best and cheapest method of destroying that pest; this cannot be done when the plants are grown in a bed. In short, I have invariably found potting to be the best way of growing *Violets* for forcing. *H. H.*

*Fruit Crops*.—The promise of fruit in the gardens here is very great. A few days ago I thinned an Apricot tree (the Roman), from which I gathered seven quarts and a half; the size of the fruit averaged about that of Gooseberries for bottling. This productive tree is at least 75 years old; there are still too many Apricots left thereon to come to full perfection. *J. K., Bridgewater*. [We hear that large crops of fruit are appearing everywhere.]

*Dielytra*.—Why is this name given by gardeners to the genus of *Fumeworts*? *Borkhausen*, who founded the genus, writes the name *Dielytra*; *Hooker* changes this into *Dielytra*, without giving any reasons. *Bernhardi*, the second botanist who notices the genus, writes *Dicentra* as the name given by *Borkhausen*, and is in this respect followed by *Meisner*, *Endlicher*, *Ledebour*, and *A. Gray*; their opinion being that *Borkhausen* wrote *Dielytra* accidentally for *Dicentra*. One thing seems quite clear, and that is, that *Dielytra* is not the name possessing the claim of priority, which lies between *Dielytra* and *Dicentra*. The general opinion (now) of European (not English, except *Lindley* in "Vegetable Kingdom") and American botanists is in favour of *Dicentra*. *C. C. B.* [We have not the work in which this word first appears. It is, however, generally understood that *Dielytra* was a misprint of some sort, for it has no apparent meaning. If so, it is more likely to have been intended for *Dielytra* (two cases or coverings), which would be an appropriate name, than for *Dicentra* (two spurs), which could hardly have been misread for *Dielytra* by a printer, and which is far from being so appropriate a name as the other. Unless, therefore, *Bernhardi* has some proof that *Dicentra* was the word intended, we shall adhere to *Dielytra*; for if the question is one of mere probability, then the probabilities are all in favour of the latter.]

*Admission of Gardeners to the Regent's Park Shows*.—It is reported that gardeners are not admitted now to see the flower shows at the Royal Botanic Society's Garden early in the morning, as has hitherto been the practice. Is the report correct? *An Old Subscriber*. [The regulation upon this subject is as follows:—"Exhibitors will be allowed to take into the garden only such assistant gardeners as are required to aid in the proper disposition of their plants or fruit. And in order to check the increasing inconvenience to the exhibitors, and injury to their plants in course of being staged, occasioned by the tents being crowded with unauthorised persons representing themselves to be practical gardeners, and thereby gaining admission, no person will in future be admitted on the mornings of the exhibition days without an order. Orders to be obtained by applying to Mr. Marnock, at least one clear week before each of the exhibition days, and no application will be attended to but such as may contain reasonable evidence that the applicant is a practical gardener. No person can be allowed to remain in the garden after 10 o'clock, excepting those who are engaged by the society."]

*Rhubarb Wine*.—In answer to many inquiries, I have to state that I am but too glad to furnish all the information in my power respecting the making of this wine, not only with a view to stop the strong current of letters which, setting in at this time of year, is a serious matter with one who has to live by the profits of one acre of ground, but because I can perceive that this wine may become of immense importance to this country in a commercial point of view. We can grow Grapes no longer; even our Gooseberries are unsafe, and the supply from our cider counties is uncertain. But *Rhubarb* is always at hand, and the enormous quantity from one acre that might be made into wine is almost beyond calculation. Cheap land at 2l. an acre, and in any county, it matters not where, will produce it; and casks may be readily obtained. As to the mode of making it, the only recipe which it is in my power to give, has been handed to me by a Mr. Brooks here. He says, "Bruise 6 pounds of *Rhubarb* stalks, add 1 gallon of cold spring water, let it lay five or six days, stirring it up three or four times a day, strain it off through a sieve, then add 4 lbs of foots sugar, one Lemon sliced; let this be well mixed, care must be taken not to stir it afterwards; let it stand in this state for about 10 days. It is again strained through fine muslin or a fine sieve; then put into the barrel for good. A small quantity of isinglass dissolved in the liquid must be added. An ounce of isinglass would be

sufficient for a 9 gallon cask; but as the wine ferments for several weeks, I think that the isinglass ought not to be put to it until fermentation ceases. The wine then is either bunged down or bottled off, and will be in prime condition for next summer's use. If a clear champagne is wanted, loaf sugar can be used." The above recipe is, no doubt, imperfect. *Rhubarb* juice, however, does not end with wine, for it makes a fine wholesome vinegar. This latter has been made by some party in town, but I cannot as yet find his whereabouts; a gentleman, however, had used it, and very much approved of it; discovering by mere accident that it was made from *Rhubarb*. As I before stated, the uses of *Rhubarb* are but beginning to be found out. In conclusion, I would advise amateur gentlemen to commence growing it for wine on a large scale; if the land is not too rich so much the better, as then wine can be made from every crop of stalks, say at least three times during the growing season. Our London *Rhubarb* is full of water, and that is one reason why I recommended the wine not to be made till autumn; but if the plants are grown upon a poorer soil they will always contain less water and more of the acid principle; and they can be converted at any time not only into wine but also into vinegar. I have likewise been written to, to know where glass preserving bottles can be had. Why do not glass dealers advertise these things, so that people may know where to get them? *James Cuthill, Denmark Hill, Camberwell*.

*Gutta Percha Tubing*.—I have used this tubing for my garden, &c., for two or three years; it is now out of repair. I have made inquiry from Burgess & Key's agents in the country, and I have also written to that firm as to its reparation; the latter have not replied to my letter, and from the others I can get nothing satisfactory. I have, therefore, resolved to ask you if you can inform me where to apply, to obtain the paste for the purpose, as I understand there is such a thing, and information how to apply it. *W. H.* [We regret our inability to answer this inquiry.]

*Rings about the Sun*.—Can any of your philosophical friends explain the cause of a curious appearance which I, with many others, witnessed at Norwood, Surrey, between the hours of 10 and 11 o'clock A. M., on Wednesday, the 25th ult. The sun was partially obscured by a cloud of circular form, from the edges of which the prismatic colours of the rainbow shone; near this again, a very large ring of white fleecy clouds appeared. I had to travel on by railway, but was told that more rings were formed, within which the atmosphere had the appearance of a stormy sea; changes in these continued for some time. What was the cause of these phenomena, and was it in any way connected with the *aurora borealis* reported to have been seen by Mr. Lowe on the same night? *Birkhurst, June 1.*

*Monster Rhubarb*.—Mr. Charles Fry sent me a present of four sticks of *Rhubarb*, the collective weight of which was 10½ lbs. *A Constant Subscriber, Winscomb*.

*Green Peas*.—Owing to a statement in your Paper that considerable quantities of green Peas had been imported, I desired my fishmonger to send me, with a turbot, a dish of them; he did so, they were as "hard as bricks," evidently old ones bottled or soaked, for which they charged me 11s.; they were about a pint and a half, and not eatable. *F. D., Pershore*. [Our statement did not apply to green Peas of this sort; but to green Peas in their pods.]

### Societies.

BOTANICAL OF EDINBURGH, May 12.—The President in the chair. Various donations for the Herbarium and Museum were announced. The following papers were read:—1. On the Soap Beans of China; by Dr. Macgowan, Ningpo. In this paper the author gave a popular description, chiefly from Chinese authorities, of two species of *Cassipouia* which furnish the soap Bean (*tsaukih*), and the Plum Soap Bean (*fitsaukih*), of the Chinese. The Beans have marked saponaceous qualities, and are used as detergents, for cleaning silver vessels, &c. 2. On the Flora of the Island of Arran. By Dr. Balfour. 3. On the Colouring properties of Lichens. Part III. The Manufacture of Lichen-dyes. By W. L. Lindsay, M.D. The author detailed the various processes of manufacture as carried on in different countries, on the large scale (by the manufacturer), and small scale (by the peasant), with the principles on which these are severally founded. The following is the rationale of the usual process, the mode of treatment in the case of different Lichens being the same in principle, though differing slightly in detail:—1. The plant is carefully cleaned, dried, and comminuted or reduced to powder. 2. This powder is ground or made into a pulp with water. 3. The ammoniacal liquor, of whatever kind, is added, in smaller or greater quantity, from time to time. 4. The whole mass is constantly stirred, so as to expose it as freely as possible to the action of the air. 5. In the majority of cases, some thickening agent is subsequently added, to impart consistence. And, during the whole process, a temperature of about 60° is kept up. To analyse these various steps of the process: the preparatory cleaning is rendered necessary by the intimate connection which subsists between Lichens and their bases of support—many species corroding and disintegrating even the hardest quartz; hence many (especially pulverulent and crustaceous species) require a lengthy steeping and washing in water to free them from adherent earthy impurities. The drying is merely to



facilitate the next step or pulverisation, the object of which is to expose, to mechanical and chemical agents, during maceration, the greatest possible extent of surface. The steeping of the powdered plant in water, or its formation therewith into a pulp, assists the subsequent action of the ammoniacal macerant on its particles. Ammonia is the alkali generally employed, in some shape, for causing the development of colour, because experimentally found most uniformly suitable therefore; it is added in small quantity, and from time to time, to supply the loss constantly occurring from its great tendency to volatilise, especially in the state of free exposure to the air, in which the pulpy mass is kept. The mixture is constantly stirred, for the purpose of more fully exposing every part of it to the action of atmospheric oxygen. The thickening agents sometimes added towards the end or after the termination of the process of manufacture, are usually genuine adulterations; but they are also sometimes added merely to impart consistence, thereby facilitating the making up of the mass into balls, cakes, or lumps, for more easy and convenient preservation. The continued application, during the whole process, of a moderate amount of heat, is a point of great importance. Westring found, as the results of a long series of experiments, with a view to determine the effect of heat in the elimination of these colours, that he could, at pleasure, increase or diminish their brilliancy or vary their tint, according as he macerated in hot or cold liquids. Though I have not been able to verify all Westring's special results, still I quite agree with him in the general ones. I have repeatedly had occasion to observe, however, that, while a continued moderate degree of heat was highly conducive to the colour-development, a very slight elevation of temperature caused immediate deterioration, and in such cases cold maceration of the same Lichen was invariably more successful in its results. My own experiments show that, up to a certain point, and *ceteris paribus*, the rapidity of elimination and the richness of colour ultimately produced stand in a direct ratio to the degree of temperature, but that, above this point, the same ratio immediately declines. The most rapid evolution, however, appears to be inconsistent with the production of the richest and most permanent tints, for I generally found that the colours most speedily produced by a pretty high temperature and excess of alkalis, faded most rapidly. I have therefore been more successful in obtaining fine colours by macerating in closed vials, in cool places, with common spring water, and a moderate quantity of alkali, than when I endeavoured (prematurely as it were) to force on development by an opposite combination of circumstances. In former days, the ammonia was wholly supplied in the form of stale or putrid urine, which was gradually added to the powdered Lichen—the mixture, frequently stirred, fully exposed to the air, and set aside to ferment in a moderately warm locality; when a sufficient depth of colour and a proper consistence were attained, the mass was dried, after having been made up in the form of balls, cakes, or lumps, or it was preserved for use in the state of powder. Urine, as a decomposing agent, gradually gave place to different kinds of ammoniacal liquids, obtained by the distillation of decaying animal matters, and, at the present day, the manufacturers of orchil, cudbear, and litmus, generally use either tolerably pure dilute liquor ammoniac or the ammoniacal liquor of gas works. Maceration in stale urine, however, is not only still had recourse to in many remote parts of our Highlands and Islands by the old women, for preparing dye-stuffs from various kinds of "corkin"\* but is largely employed in the manufactories of some of the most extensive orchil and cudbear makers in England. Manufacturers find, what we should *a priori* expect, that its value as a metamorphosing agent is directly in proportion to the amount of urea it contains: when, therefore, it is very deficient in this substance, it is comparatively useless, and is consequently rejected. This is evidently due to the small amount of carbonate of ammonia generated by the decomposition of the diminished proportion of urea. Mr. Reynolds, of London, informs me that a large orchil and cudbear manufactory in Leeds, which is in the constant habit of using large quantities of stale urine, collecting it from the neighbourhood, "find that, when collected from beer-shops, it is utterly worthless, and they refuse it accordingly." As thus employed, urine has generally been looked upon merely as a cheap and easily procurable ammoniacal solution, but that it is something more is rendered extremely probable, by the fact that large English firms, which, besides preparing orchil and cudbear, also manufacture liquid ammonia of every degree of strength and purity, still find it advantageous to employ urine, instead of pure dilute ammoniacal liquors, in the production of these pigments. Perhaps its true value may depend on its putrefactive state, the chemical changes in the nitrogenous or other constituents of the decomposing liquid being communicated catalytically to the colorific (but colourless) principles of the Lichen, thereby inducing an alteration in their physical characters, as well as in their chemical composition. This hypothesis would (at first sight) apparently explain a series of phenomena, of the true nature of which we at present know very little, and it appears to be supported by the fact, that on the Continent (and particularly in Holland and France) stagnant and putrid waters, which contain a large amount of decaying animal and vegetable matters (*c. g.*, the filthy steam of the Bièvre, at Paris), are largely used, in

the manufacture of orchil and litmus, as macerating agents, because experimentally found most efficient in causing the elimination of these colouring matters. But I cannot yet reconcile this hypothesis, nor the supposition that the changes concerned in the production of these pigments depend essentially on some action of ammonia or its elements on the colorific principles of the plant, with the fact that the same colours are capable of being evolved, though in a minor degree, by other alkalies than ammonia, and by liquids certainly not in any state of decomposition (*c. g.* distilled, or pure spring water). To the putrid urine, lime is sometimes added, materially assisting the colour-metamorphosis, by uniting with and thereby removing the carbonic acid of the carbonate of ammonia, generated in the liquid, thus separating the ammonia, which then acts as a free agent. The necessity for free exposure to atmospheric air is well illustrated by the simple fact that many of the Lichen-colours, which are at first dull in tint, are increased in intensity and brightness by free exposure and prolonged maceration. Some time ago, I had occasion to open a small bottle of "red orchil," prepared in Glasgow, which had lain for some time on the shelves of a museum; instead of possessing an intense purple-red colour, and a fine ammoniacal aroma, it was of a very dirty, nondescript brownish-red,—had a pulaceous or semifluid clotty consistence, and a musty, urinous, disagreeable smell. But, immediately on spreading it in thin layers on paper, thereby exposing a large surface to the action of the air, it acquired its characteristic colour. The following are the chief thickening agents (in most cases added as adulterations):—Gypsum, chalk, flour, kelp, lime, and some siliceous and argillaceous matters; and, in some kinds of litmus, according to Pereira, indigo is frequently added to heighten the colour. Mordants are necessary for the fixation of the colour of most if not all of the Lichen dyes, which are characteristically very fugitive; these accessories, however, seldom acting as mere media of connection between the fabric and dye, but usually also brightening or otherwise modifying the natural colour of the latter. Westring deprecated mordants, under the impression that they would destroy the gummy constituents of the Lichens which he supposed to be the source of the fixation of the colouring matters. That mordants are not essential adjuncts to the process of dyeing is rendered probable by the statements of Westring and others, as to their having obtained, without such aid, colours, if not absolutely permanent, still sufficiently so to resist the action, both of acids and alkalis, and long exposure to the solar rays. From the transient character of the colours yielded by the Lichen family, it happens that the part they play in the art of dyeing is but secondary, being used chiefly to contribute a peculiar bloom and richness to other dyes. But this may perhaps be due, in great measure, to the little we, at present, know of the chemistry of these colouring matters, and we may yet discover means of rendering them equal to our cochineals, logwoods, and indigos, while they are (or might at least be) far superior in point of cheapness; and we have yet to acquire a very great amount of information as to the colour-yielding powers of the Lichens (apart altogether from the question of fixity or permanence of tint) which we never shall obtain till this family has been extensively examined with this special object in view, both at home and abroad. Hoffmann mentions that the nature of the water used in making the various baths, through which the fabric is passed in the process of dyeing, is important. In France and Holland, it has been found, what we should scarcely *a priori* expect, that muddy, dirty or stagnant water was most suitable, and this circumstance is abundantly taken advantage of in Haarlem, Paris, and Lyons. To this circumstance, he thinks, is partially due the celebrity of the dirty stream of the Bièvre or Gobelins at Paris. Some think that the peculiar action of such water, as a macerant or bath, depends on its saline and other ingredients. Westring and others attribute it to the oxygen which it holds in solution, this element apparently being essential to the development of these colouring matters. In proof of the latter view, Westring mentions having noticed that water, which had stood a few days in a heated room, was no longer suitable for the process of dyeing, and he throws out a hint that, in the case at least of Lichens, whose colouring matters can be eliminated by cold maceration alone, much brighter and richer tints might be obtained by charging the water with excess of oxygen. The same author also asserts what we should, at first sight, be less inclined to admit, that the very nature of the atmosphere, under which the process is carried on, exercises a most important result on its effects. Whether this depends on the relative amount of oxygen, ammonia, &c., existing in it, or what is the rationale of the phenomenon (assuming it meanwhile to be true), Dr. L. could not at present pretend to say.

### Notices of Books, &c.

*Medieval Science.*—(Histoire des Sciences Naturelles au moyen age, ou Albert le Grand et son époque, considérés comme point de départ de l'école expérimentale.) By F. A. Pouchet. 1 vol. 8vo, pp. 656. Baillière.

We agree with the learned author of this volume, that we are too apt to forget how much we are indebted for what we know to those laborious pioneers who first constructed natural science out of the wreck and chaos of the dark ages. We are proud of our chemical discoveries,

but scarcely think how easy it is to make progress now, compared with what was possible for the alchemists, or what a solid foundation they laid for the modern edifice. We smile at the old herbalists, and can justly boast of the labours of a Linnaeus and a Tournefort, but it must never be forgotten that out of the schools of such men as Leoniceus and Hermolaus Barbarus grew Casalpini and Malpighi, the fathers of vegetable physiology, or that Charlemagne himself had advisers who led that great monarch to provide his empire everywhere with botanic gardens.

M. Pouchet justly observes that the simple nomenclature on which the fame of Linnaeus so greatly rests was anticipated by Agricola, who had generic and specific names, and that the sneers of Sprengel as well as the disdain of Haller, when speaking of ALBERTUS MAGNUS, were those of men who had never even looked into his writings, but had confounded them with productions altogether apocryphal, or by an entirely different hand. E. Meyer declares that, when he turned over the pages of ALBERTUS MAGNUS, after reading the criticisms of Sprengel and Haller, he could scarcely believe his senses; for instead of the ignorance and the superstition attributed to the former, he met with nothing but extensive knowledge, rigorous method, and the most correct judgment.

This is not the place for a further notice of this interesting volume, concerning which we can only add that it is the work of a man of talent and great industry, himself holding no mean position in the world of science, and that the manner in which he has executed his task cannot fail to extend the reputation he already enjoys.

*Melastomacearum Tentamen.* By C. Naudin. 1 vol. 8vo.

Paris: Victor Masson. [Pp. 718, with numerous copper plates.]

A COLLECTION of important papers contributed to the *Annales des Sciences*, between 1849 and 1853. We receive it with double pleasure; firstly because it brings M. Naudin's learned examination of Melastomads within the reach of everybody, and secondly because it greatly facilitates a reference to it on the part of those who already possess the *Annales*. We know that the author has worked up patiently, skilfully, and conscientiously the materials at his disposal; our only regret is, that he should not have been better able to identify the species described by his predecessors; for it will, we fear, turn out that a great many of his supposed new species have been previously described by De Candolle, Bentham, and others, under other names.

*The Patentee's Manual, being a Treatise on the Law and Practice of Letters Patent, especially intended for the Use of Patentees and Inventors.* By James Johnson and J. Henry Johnson. Longman; pp. 173.

The important alterations introduced by the law of last session rendered some explanation of the mode in which patents could be obtained absolutely necessary for the guidance of persons not lawyers by profession. The object of the little work now before us, and which is the joint production of a gentleman at the bar and a patent agent, is to make patentees and inventors so far acquainted with the present patent law as is likely to be of any use to them; and the authors appear to have attained their object, for they have carefully pointed out, in clear intelligible language, those matters which require to be especially attended to by an inventor.

### Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN.—At no period of the year, perhaps, should a garden look better than about the third or fourth week of May; but, owing to the lateness of the present season, the various flowering trees and shrubs which are usually then in full beauty will be little more than in perfection by the second week in June. Although the American garden now begins to look gay with the earlier and better kinds of Rhododendrons and hardy Azaleas, yet the great masses of these showy plants, scattered here and there throughout the arboretum and elsewhere, may only be expected to be in full bloom about the next great show day, on the 11th instant. As we have mentioned the American garden, we may state, however, that the rock-work at its entrance could not possibly be gayier than it is at present with yellow Alyssum, great patches of the white Iberis Gibraltaria, the purple Aubrietia deltoidea, and the sweet Dianthus suavis will also soon be a mass of fragrant flowers. The new orange and scarlet Aquilegia californica was likewise in blossom here, and a charming plant it makes for rock-work, being strikingly showy and distinct, not only from other Columbines, but also from most other plants. Among Rhododendrons was the new Californian one, with handsome pink flowers, and foliage not unlike that of a Magnolia. Pince's Bianca (yellow), Victoria, and Blanche superb, were also conspicuous kinds, the latter being probably one of the best whites at present in cultivation. The excellence and hardness of Mr. Pince's Rhododendrons deserve especial notice. The Peony called Rinzi, which is a grand addition to Moutans, was also in bloom. Its huge flowers are very double, and a good purplish pink. Among Mr. Fortune's Moutans, which were also in blossom, the best are atrosanguinea and atropurpurea; the latter is a bright purple, and the former, though not very double, is invaluable, on account of its deep blood-red colour. As to the hardness of new trees, we may mention, before leaving this department, that Acer villosum has stood the winter, uninjured, on a bank, and so has the East Indian Horse Chestnut (Pavia indica).

\* The vernacular generic term for Lichens capable of yielding colouring matters.



The great *Glycine* (*Wistaria sinensis*) which is trained along the Arboretum wall is now in full beauty, and owing to the immense space which it covers, and profusion of bloom on it this year, it is certainly worth going miles to see; for seldom, indeed, has it been flowered in such perfection. When we say that near 200 feet in length of wall is quite loaded with its great bunches of purplish-lilac blossoms, some idea of the magnificent effect it produces will at once be conceived. It received no protection last winter, and nearly all the care it requires consists in stopping back the young growths in summer. The white *Glycine* was also partially in flower on another wall, and if it should ever blossom as profusely as the species we have just mentioned, it will certainly be a great acquisition. *Arbutus procera*, in the shape of a standard tree, nearly 20 feet high, will soon be a mass of bloom; and *Magnolias*, of which there is here a good collection, are now in blossom, coloured with scarlet and other Horse Chestnuts, various coloured Thorns, Laburnums, Lilacs, Berberies, and Snowdrop trees (*Halesias*); but, as we have already stated, the *Rhododendrons*, *Azaleas*, &c., which are usually so showy in the last week of May, are not yet fully in flower. The white *Clematis montana* is now in full flower on the walls, and it also makes a good covering for pillars. *Ceanothus dentatus* and *papillosus*, which have stood the winter with little injury, are now in bloom; but the beauty of *rigidus*, which is an early kind, is over. The handsome *Weigela rosea* is also in perfection. The delicate white *Azalea californica* was just producing sufficient flowers to show what a fine thing it is. *Cytisus Weldenii*, a Laburnum with short upright spikes of blossoms, was also in full flower, as was likewise *Wistaria sinensis* in the shape of a standard.

Among the few annuals which have stood the winter, and are now gay, are *Pedia graciliflora*, *Collinsia grandiflora*, *Nemophila atomaria*, and the white *Limnanthes*. A collection of new annuals has been formed by the Society; but as a matter of course little can be said about them as yet. They have just been set out of doors to harden, previous to their being planted out in beds.

A new Passion-flower, from seeds presented by Sir Thomas Mitchell, has been raised; it comes from New Holland, and is said to have bright red flowers. The new buff *Diplacus grandiflorus* is in blossom, as was also *Senecio concolor*, a new kind, with tall flower-stems bearing great heads of showy pink, or rather purple flowers. Plants of the *Nepal Cypress*, seeds of which were presented by the East India Company, have also been raised, together with a reported violet-flowered *Schizanthus*. We also remarked some nice young plants of the *Kurdistan Oaks*, and of the *Yucca-like* *Bechorneria*, a plant presented to the Society by the Hon. W. F. Strangways.

Mr. Ewing's glass walls seem to be capital places for Tea Roses, which appear to thrive uncommonly well in them. Among other plants, the Japanese *Viburnum suspensum* looked exceedingly well, and so did the Mexican *Lindleya mespiloides*, which, contrary to expectation, has wintered safely in them. A large Peach tree, which was moved from a wall and placed in them, seems to feel the effects of the shift; it has, however, set its fruit, and though the leaves are threatened by aphides, the latter are easily kept down by means of tobacco dust, put on when the foliage is wet, washing it off again after it has effected its purpose. The Vines, &c., are pushing favourably, but the large *Psidium Cattleianum*, which was planted in them, is dead, and has been removed.

In the Rose-house is now to be found a good sprinkling of flowers, which are large and fine. The blooms of the yellow *Vicomtesse Decazes*, the splendid *Rose Souvenir d'un Ami*, and many others, are well worth inspection; but the plants themselves are suffering from mildew, which has an unsightly appearance on their leaves, and is doing much injury.

The various glass houses are at present gay with flowers, more especially the great conservatory, in which a specimen of *Brugmansia Knightii* was in full beauty, the large white trumpet-shaped flowers quite scenting the air with their fragrance.

M. Ville's mode of giving ammonia to plants, with a view to increase their bulk and vigour, is being tried in the large stove in which one of his apparatuses has been placed. It consists of two clear glass bottles with long necks, furnished with tight-fitting corks, in each of which is inserted a small bent glass tube. These two tubes are joined together by means of an India-rubber connection, or small hose, thus forming a communication between the two bottles. In the cork of one of the bottles is an escape tube (also of glass), which is connected (by means of a small India-rubber hose), with other small glass pipes that are laid all along and across the bed, and through which the ammonia is intended to pass, in order that it may be the better diffused among the plants. When the bottles are put to work, one is charged with chalk, on which is poured sulphuric acid, and the other with unslacked lime, over which is poured a solution of ammonia. The result of this experiment will, of course, be published in due time. Its conduct has been entrusted to Mr. Spriggs, the young man in charge of the house, who is to note down its effects daily, and report the same to the vice-secretary. In another column will be found some further account of furnishing plants with more ammonia than they can get under ordinary circumstances.

In the orchard department we have to report that a fair crop of Peaches has set on the walls. Those under

Cottam and Hallen's frame are as large as the top of the thumb, and the trees under his protection have already made young shoots 2 feet in length. Pears on walls are also a good crop, with the exception of *Duchesse d'Angouleme*, which has failed; and notwithstanding the coldness of the winds and nights till within the last week or so, there are good crops of Apples and Pears on standards. Bush fruit is also abundant, and Strawberries are looking as well as could be expected, considering how much they suffered last winter.

## FLORICULTURE.

**THE CINERARIA.**—I attended our two great metropolitan exhibitions which have lately taken place, and I am pleased to say that, after the *Pansies* in pots, nothing delighted me more than to see the improvement that has been effected in the culture of this useful flower. The collections shown by Mr. Turner at both places contained admirable specimens of good management, and other exhibitions of the kind were certainly some advance on former years. The *Cineraria* is a great favourite of mine; and as my mode of treating it for "home" decoration may be of some service to beginners in the "fancy," I have ventured to furnish you with it. As soon as the plants are out of flower, and seed saved from the best sorts, I cut them down close to their bottoms, turn them out of their pots, and plunge them in leaf-mould, or in any other compost not required for use. I find that they succeed best in the former, under a west wall, where they require only the attention of a few waterings with a fine-rose pot, to prevent them from becoming too dry. About the middle of August the old stools will be growing vigorously. I then separate and select as many of the strongest offsets as I consider will form a nice specimen. I cut their roots close in, and increase such sorts as are good. I then pot them into 6-inch pots, in a compost of turfy loam, peat, and well-decomposed cow-dung, with a portion of silver-sand in it, the whole being used in a rough state. They are afterwards transferred to a close frame, shaded from the rays of the sun, and kept well sprinkled with the watering-pot, or syringe, for the *Cineraria* delights in a moist, cool, shaded atmosphere. When the plants have become established, the lights are drawn off them every night in fine weather—for they are greatly strengthened by receiving the dew of the morning—shading them lightly when the sun is powerful, and tilting the lights 9 or 10 inches at the back, to admit plenty of air. When the pots have become filled with roots, I transfer the plants to a 9-inch pot, in which they are flowered. I then remove them to their former situation, where they remain under the above treatment until the end of October, when they are taken either to the greenhouse or conservatory. When the most early ones have their flower-buds well above the foliage, six of the best are placed in the stove, where they come into full bloom in a fortnight or three weeks. These are replaced by fresh plants, which are succeeded by others, as may be required. In this way I have plants with splendid heads of bloom from Christmas till the end of May, and the majority of them do not require the assistance of a single support. Success much depends upon keeping the plants well watered, and the syringe should oftentimes be applied to their foliage. About four fumigations, at different intervals, will keep them clean and in healthful vigour through the season, which will amply repay any attention bestowed upon their culture. *R. F.*

**ROYAL SOUTH LONDON FLORICULTURAL SOCIETY, May 31.**—There was a good exhibition on this occasion, but owing to the cloudiness and coldness of the day, it was but thinly attended.

**TULIPS**, though not numerous, were shown in great perfection by private growers. The 1st prize was awarded to J. Hunt, Esq., Wycombe, for *Hamlet*, *Goldham's Mary Ann*, *Aglaia*, *Brown's Magnificent*, *Ulysses*, *Lady Stanley*, *Camorine*, *Miss Latham*, *Gold Cup*, *Triumph Royal*, *Ceresse Belle forme*, and *Vivid*; the latter was as perfect a specimen as we have seen; and, indeed, the whole stand was of the purest strains. The 2d prize was awarded to J. Edwards, Esq., among whose blooms we noticed *Heroine*, *Plot*, *Hayward's Magnificent*, *Sable Monarch*, *Captain White*, *Princess Royal*, and *Purple Perfection*; 3d, R. H. Betteridge, Esq., Milton Hill, with a stand of finely grown blooms; we remarked, as particularly good, *Van Amburgh*, *Countess of Harrington*, and *Polyphemus*. 4th, A. Lane, Esq., Wycombe; the finest specimens here were *Brulante*, *Celestane*, *Polyphemus*, *Ulysses*, *Princess Royal*, *Bijou des Amateurs*, and *Lady Catherine Gordon*. 5th, Mr. Treacher, Wycombe, with beautiful blooms of *Strong's King*, *Pandora*, *Etherton*, *Heroine*, &c.—In the Nurserymen's Class there was no competition. Mr. Bragg took 1st prize with a good stand of blooms, the best of which were *Thalia*, *Strong's King*, *Plato*, *Lady Stanley*, and *Princess Royal*.

**PANSIES.**—1st, A. Lane, Esq.; 2d, T. H. Brown, Esq., *Tulse Hill*; 3d, Mr. August, *Paddington*. The varieties in first-rate character were *Royal Visit*, *St. J. Catherine*, *St. Andrew*, *National*, *Marchioness of Bath*, *Pandora*, *Duke of Perth*, *Marion*, *King Sun*, *Thoshe*, *Great Britain* (*Parker*), *Sir J. Paxton*, *Polyphemus*, *Blanche*, *Bertha*, *Diadem*, *Voltigeur*, *Fair Rosamond*, *Frances Clyde*, *Elegant*, and *Heracles*.—The only collection of 99 blooms shown by nurserymen was contributed by Mr. Bragg, who produced a good stand, which was awarded a first prize. *Celestane* was shown by Mr. Gaines, and we remarked some well-flowered *Azaleas* from Messrs. Ivory and Roser.

There was a nice tentful of fancy and other *PELAGONIUM* seed collections of which were shown by Messrs. Robinson, Racer, Gaines, Westwood, and others. *Cape Heulth*, too, were plentiful, though not in the best condition; and a long tent was filled with miscellaneous collections of Stove and Greenhouse Plants. *Gloxinias*, among which *Pyramus* was conspicuous for the multitude of flowers, it had on it, were shown plentifully and in good condition by Mr. Blodet.

**SEEDLING CINERARIAS** were very numerous. *Certificates* were awarded to *Rose "Helen Paul"*, a Hybrid *Perpetua*, obtained from the *Duchesse of Sutherland*. It is well formed, bluish with a pink centre, stout in petal, and very fragrant. To a purplish-lilac *Verbena*, with large flowers and good trusses, from Mr. Jennings. To a fancy *Geranium*, called *Edipus*, a striking sort, in the way of *Mirandum* or *Herb of Surrey*; also to another variety named *Calypso*, a pale ground sort, suffused and veined with rosy pink,

both from Mr. Gaines, who also received a *Certificate* for *Calceolaria* *Finely*, a yellow ground sort, marked and spotted with dark brown; mouth small, and fair. To Messrs. Ivory, of Dorking, for *Azalea Barclayana*, a good white, streaked with purple. Mr. Edwards contributed a pretty white *Androselinum*, with a pale yellow centre. Mr. Pamphill had two handsome seedling *Cactuses* in the way of *C. ruscus* *apricosinus*, and the beautiful hardy white *Rhododendron* *Elanthe* superbly, was shown in perfection by Messrs. Fairbairn.

**SCOTCH SEEDLING FLORIST FLOWERS.**—At a late meeting of the Caledonian Horticultural Society, the Censors made the following awards:—A Letter of Commendation to *Cineraria* No. 1, exhibited by Mr. Gould, Bankhead, *Balmora*—a variety deeply edged with rosy crimson, and of good habit. *Cineraria* "Purity," shown by Mr. Laing, Dysart House, was commended for the brilliancy and purity of its colour. It was stated to be a seedling from *Lady Hume Campbell*, which variety it resembles in habit, but to which it is superior in colour, although not any improvement in form. C. K. Sivewright, Esq., exhibited a well bloomed plant of a seedling *Cineraria*, to which a *Certificate* had been granted on the 8th of May, 1852; it fully justified the previous award. Mr. Laing produced *Primula capitata*; and Mr. Stark plants in flower of *Rhododendron glaucum*, *Primula verticillata*, &c.

**CAMELLIAS:** *F.P.* The disease of which you complain seems to be caused by cold and damp, and want of air acting upon tender leaves.

**DAHLIAS.** *J.M.M.* Apply to the Secretary, Ebenezer House, Peckham.

## SEEDLING FLOWERS.

**LILACS:** *W.H.B.* 1 is very handsome; 2 is a poor thing. **CAULOCARLIAS:** *Z.Z.* Yellow, and pale sulphur coloured grounds mottled, and spotted with bright rose and reddish brown. Two sorts have chocolate-coloured grounds, neatly laced all over with white. Unequal in size, but as the numbers had become detached, we cannot particularly point out one from another; they are all very beautiful, and striking, on account of their clear, bold, and distinct markings; but most of them are not round enough, and, with very few exceptions, they are too large in the mouth.

## Miscellaneous.

**The Fielding Herbarium.**—In an address to the members of the University, by Dr. Daubeny, delivered on the 20th of May, at the commencement of Act Term, and on the completion of the arrangements for receiving the Fielding Herbarium, the Professor states that by the aggregate of the treasures comprised in the Herbarium, consisting, as it does, of one of the most extensive and valuable collections of dried plants that exist in Europe, accompanied by a very valuable library of botanical works, the botanical student at Oxford is offered opportunities of information—being also in the proximity of a botanic garden—such as scarcely any other place can afford. Thanks, too, to the assiduous care of Mr. and Mrs. Fielding, in mounting and arranging the plants, the whole collection is in beautiful preservation and easy of reference. *Times.*

**Action of Ammonia on Plants.** By Mr. Deane, Vice-President of the Pharmaceutical Society.—Effects analogous to those produced by M. Ville (see last year's volume, p. 755), with ammoniated air on the leaves of growing plants, have been observed by me, as the results of applying solutions of ammoniacal salts to the roots. My attention was first effectively turned to the subject about eight or ten years since, when an extensive grower of *Pelargoniums*, *Fuchsias*, and *Roses*, applied to me for some remedy for the sickly condition of his stock; which, if left unchecked, would insure a very severe loss to him. On examining the plants they were found to be in a starving condition, the roots having filled the pots and exhausted the soil; consequently, the leaves had lost their healthy green colour, and become very pale, with a strong tinge of yellow; the lower leaves were quite yellow, spotted, and falling off. The natural remedy was obviously fresh potting, but as the plants were already in the pots best adapted to answer the purposes of the grower, some other remedy had to be devised. I therefore made a very weak solution of sulphate and carbonate of ammonia, and therewith watered the roots of the plants once a-day, in the evening; and to insure any observed results as to the effect of the ammonia, certain rows of the plants on the stage of the greenhouse were selected for the experiment. In a few days the effects of the ammonia were most marked and satisfactory. The leaves began to put on a very remarkable appearance, the course of the veins, or spiral vessels, becoming perfectly green, the colour commencing at the basal portion of the midrib, and thence spreading through all the reticulations, until the tissues were perfectly restored to their normal and healthy condition; and, in fact, the plants thus treated looked more vigorous than they had ever done before, being much darker in colour and firmer in texture. The contrast between these plants and those which had received no ammonia left no doubt about the efficiency of the application. I forget the effects upon the flowering of the *Pelargoniums*, but there was certainly no deficiency of flowers on the *Fuchsias* and *Roses*; they were, moreover, finer and better coloured than usual. On a subsequent occasion a gentleman's gardener applied to me in a similar dilemma; he had a house full of fancy *Pelargoniums* preparing for a flower-show, at which he expected to take the first prize. Just as the trusses of flower buds were emerging, and there was every prospect of a good bloom, the lower leaves of the plants began to turn yellow and spotted, and then to fall off, leaving the plants bare, where the foliage was considered an essential point of beauty. I examined the roots and found them nearly filling the pots; it was therefore evident there was not sufficient nutriment left in the pots to meet the extra demand made by the large number of flower-buds; the latter were, consequently, deriving their nourishment from the leaves—the natural storehouse of the food of plants during the growing season—and of course exhausted the lower leaves first. They were treated precisely as in the former instance,



and with the same results; the lower leaves became healthy, and the flower-buds progressed favourably to maturity, being of good form and colour. The success of these experiments became known to other gardeners in the neighbourhood, some of whom were equally successful, while others did not derive that satisfaction from the use of the ammoniacal solution, either from not understanding the principle of its application, or from a desire to accomplish more than they were capable of, when it frequently happened the plants became too vigorous to flower well. There is no doubt but that M. Ville is correct in stating that the flowering is arrested if the application of ammonia is made at a certain period of the development of the flower-buds. Few plants if grown too vigorously will flower well, if at all. A certain check in their growth is absolutely necessary, and the summer's sun or winter's cold, under ordinary circumstances, effects this perfectly in this climate—the former by perfecting and condensing the elaborated sap, and the latter by arresting vegetation altogether. Too much moisture and shade cause those parts intended for flower-buds to be developed as leaves. In the Aloe tribe when the flower-stem is thrown up, it is at the expense of the outer leaves, the elaborated juices of which it appropriates, the roots at this time not being in action, because it is towards the close of a long period of dryness. If when the flower-stem is beginning to rise, the roots are watered, all further development of the stem is arrested, the leaves only being developed. The same thing takes place with many bulbs whose period of flowering is not the same as that for leafing. Many Cape bulbs follow this law; for example, the *Haemanthus*, the flowering of which is at the expense of some one or more of the outer coats. If these plants are watered at the wrong period, or if they have had not that proper rest which Nature designed they should have under the influence of a roasting sun, such as their native country affords, no flowers will be produced, but in their stead a vigorous development of leaves. It would appear, therefore, that the arrest of development of the flowers and fruits of the plants treated with ammonia, is not so much the result of any specific property possessed by this substance, as by its bringing about artificially those conditions which may occur naturally, or be produced by other means. Also, that the application of ammonia to plants may be attended by results varying according to the conditions under which it is applied, and the object it is desired to attain. The following is the formula for the solution alluded to in the previous note by Mr. Dean:—Sulphate of ammonia, 7000 grains; susquecarbonate ditto, 1000 grains; water, 80 fl. oz. Dissolve. Of this solution one fluid ounce to a gallon of water will make a solution sufficiently strong for all ordinary purposes. *Pharmaceutical Journal*.

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

CONSERVATORY and stove climbers will require attention to keep the current year's shoots within proper limits. Avoid everything if possible like formality in arranging the branches; and provided, at the winter regulation of the plants, the main shoots were trained to occupy the desired position, the young wood may be allowed considerably to follow its natural mode of growth, if this does not create confusion, which is equally as much to be guarded against as a strict formality. *Hardenbergias*, *Kennedys*, &c., may be slightly cut back after blooming, to induce a new growth. Water should now be given liberally to plants in the open borders of the conservatory, excepting perhaps plants very recently planted. Use the engine whenever it can be done without interfering with the visits of the family or company; either early in the morning or late in the evening will at this season be found the most suitable time, that the house may become dry and airy before it is wanted for visitors. The display of bloom must be still kept up, and as there is now a larger number to select from, considerable variety may be effected at each regulation of the inmates; keep all parts of the house in the neatest order. Shade daily when requisite, and give air in proportion to the state of the external air. The stock of Balsams and other Annuals grown for filling the vacant places in the greenhouses, &c., should be encouraged by frequent shifts; keep them in bottom heat and near the glass; pick off the early formed bloom buds, as the plants should attain a considerable size before being allowed to bloom. *Kalosanthis* continue to train neatly, and water with liquid manure occasionally. Specimen *Scarlet Geraniums* should likewise have liberal encouragement to grow them on. Common and fancy *Pelargoniums*, for late blooming, will thrive better in a somewhat shady situation, and (the latter especially) where they can at the same time be protected from heavy rains. Fumigate whenever green-fly appears, as, if suffered to get the upper hand, it soon disfigures the plants. *Fuchsias*, if not in their blooming pots, should be potted forthwith. Train in the desired form, and pinch back weak and straggling shoots. The glass must be taken entirely off Japan Lilies, *Gladioli*, &c., unless very early blooms are desired. Keep a portion in the shade of a north wall, for a succession of bloom. The principal part of the greenhouse plants may now be safely transferred to an out-of-door situation. Select, if possible, shady situations, open to the east, and protected from high winds. Take care that the plants stand on a bottom, carefully prepared,

to exclude worms from getting into the pots. The more tender kinds should be placed under a kind of slight frame-work, with oiled canvas or tarpauling attached, to protect them during heavy rains. When the greenhouses are thus partially covered, a portion of the more hardy stove plants may be introduced. This exposure during the hot months of summer, to a larger portion of air, will benefit the growth of many soft-wooded plants, particularly of such as are being grown on for blooming late in the autumn.

#### FORCING DEPARTMENT.

VINERY.—Carry out the routine treatment of the succession Vineries, as directed in former Calendars; fires will still be required both to Grapes now ripe and to the latest houses, till the Vines are out of bloom; for the former, it will only be necessary to apply sufficient to keep the house dry, and to allow for extra ventilation. When Grapes are required to be kept for some considerable time, shading must be used during bright weather, or the fruit will become shrivelled. If the shoots have been stopped at one or two joints above the fruit, the laterals (which should be taken clean out up to the bunch), should be stopped back to one joint, unless the previously formed leaves are already sufficiently close together, when they should be stopped close back; encouraging after growths, particularly when the foliage already occupies all the space beneath the glass, is productive of more harm than good. PEACH-HOUSE.—

The ripe fruit should be looked over each morning, to gather such as are likely to ripen in a day or two. The fruit will be higher in flavour than when allowed to ripen on the tree, and will save them from getting bruised by falling, to which heavy fruit of the Peach is very liable, with the best contrivances for catching them.

MELONS.—As soon as the fruit is cut (if it is intended they should bear a second crop), prune back the shoots to where the fresh growth proceeds. Two or three inches of fresh loam should be spread over the surface of the bed, which should at the same time have a good soaking of manure-water, to assist the plants to make a fresh growth: an additional stimulus at the same time should be given to the roots, by slightly increasing the bottom-heat; bring forward the succeeding crops, and take every means to keep down red spider, which, when once established on the foliage, is most difficult to destroy; as a preventive, keep the air of the house or pit moist by frequent sprinklings, and wash the walls with the mixture recommended in former Calendars. Cucumbers, at this season, do best with a considerable amount of shade: this should be attended to, and the necessary bottom-heat and moisture kept up. Keep the vines thin and regular by frequent stopping; in planting out at this season use a rather poor, in preference to a rich soil, which in cold wet seasons induces canker.

#### FLOWER GARDEN AND SHRUBBERY.

The newly planted things will require constant watching, as under the best management failures will sometimes occur; these should instantly be made good, and the tying and staking of everything requiring support on no account delayed. Where an immediate display of flowers is not wanted, the buds may be pinched off for a week or two, to encourage the plants to cover the ground. Remove *Pansies*, *Anemones*, double *Wallflowers*, and other spring plants as they go out of bloom, to make room for autumn-flowering ones; the beds will, however, require to be made up with fresh compost. Put in cuttings of double *Wallflowers*, *Pansies*, &c., for next spring's blooming. A shady piece of ground, or reserve garden, should be appropriated for the above. In addition, a stock of the more showy herbaceous plants should always be kept on hand, as well as the spare bedding-out plants, so that, in case of failures or alterations, a supply may always be ready for immediate planting. In large places a ground of this kind is indispensable, and no less so for those of less extent, as a continuous show of bloom cannot be kept up without a reserve stock being kept ready to remove whenever wanted. Creepers against walls or trellises should be constantly gone over to tie or nail them in. Standard and pillar *Roses* should likewise be looked over, to see that they are properly secured to their stakes; take every means to eradicate all the broad-leaved plants and coarse growing Grasses from the lawns, which they much disfigure, and keep them closely cut with the scythe or machine.

#### FLORISTS' FLOWERS.

The awning may now be taken from the Tulip shed, and the foliage of the plants exposed fully to the action of the sun and rain. In late localities many will be in full bloom; care must still be taken to mark those seedling breeders which have good properties, choosing those with good-formed cups, clean both in base and stamens, for perfect purity is now absolutely required, and many faded sorts will have to give way to more modern varieties. Offsets in warm situations will require taking up before those on the main bed; as soon as the foliage turns yellow they may be removed with safety. Seedlings which have grown one year are generally allowed to remain in the ground during the first winter; at two years old they may be lifted, and kept separate as possible. *Ranunculus*es will be making rapid growth; always water in the evenings, and with water which has been exposed to the rays of the sun. Tie up and disbud *Pinks*; and as the buds increase, water with weak liquid manure. *Carnations* and *Picotees* require similar treatment, and when more shoots spindle for bloom than are required, let them all be cut off except one. Water *Auriculas* and *Polyanthuses* as they require it, and keep the pots free from

weeds. Stake and water *Hollyhocks* freely; and attend to previous directions with regard to *Dahlias*.

#### HARDY FRUIT GARDEN.

Still continue active operations against aphides and other pests to fruit trees, or their ravages will spoil your best hopes for a crop. The shoots of *Cherry* trees infested with the black fly should be dipped in tobacco-water immediately they are detected, to prevent the shoot from curling, which would stop its growth; either pick off with the hand or apply a wash of lime or clear soot-water to *Gooseberries* and *Currants* infested with the caterpillar; these increase so rapidly that a constant watch must be kept up for some time, if time permits. Pinch back all shoots off the latter, not wanted for wood; the fruit of *Gooseberries*, &c., like those of more value, will be considerably improved by summer stopping of the young wood—a fact well known to those who have paid attention to this mode of pruning, which is much better understood on the continent than in England.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending June 2, 1853, as observed at the Horticultural Gardens, 1 Chiswick.

May and June.	Moon's Age.	TEMPERATURE.								Wind.	Rain.
		BAROMETER.		Of the Air.			Of the Earth.				
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.			
Friday..	19	29.642	29.583	73	46	59.5	57	54	N.	.13	
Saturday	20	29.705	29.669	63	43	53.0	59	54	S.W.	.02	
Sunday	21	29.861	29.817	66	41	53.5	59	53	N.	.03	
Monday	22	29.574	29.597	65	48	56.5	56	54	N.E.	.00	
Tuesday	23	30.014	29.909	55	50	52.5	56	53	N.	.02	
Wednesday	24	29.567	29.934	57	43	52.5	55	53	N.	.00	
Thursday	25	30.091	30.061	60	46	53.0	54	52	N.	.00	
Average ..		29.750	29.844	62.7	46.0	54.3	56.1	53.2		.30	

May 27—Very fine; hazy; hot sun occasionally; cloudy; lightning.  
 28—Fine; slight shower; cloudy; rain at night.  
 29—Cloudy; thunder showers; overcast.  
 30—Fine; cloudy; overcast at night; rain.  
 31—Cloudy and cold; overcast.  
 June 1—Uniformly overcast; cold North wind; overcast.  
 2—Uniform cold haze; overcast; heavy clouds.  
 Mean temperature of the week 2½ deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending June 11, 1853.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.					
						N.	E.	S.	S.W.	W.	N.W.
Sunday 5	70.7	47.4	59.0	15	0.24 in.	2	3	2	3	6	6
Mon. 6	68.4	47.2	57.8	11	0.25	4	1	1	1	2	3
Tues. 7	64.1	47.8	55.9	11	0.53	3	5	1	1	4	6
Wed. 8	69.8	46.8	58.3	10	0.45	3	5	1	1	4	6
Thurs. 9	70.6	48.2	59.4	12	1.48	2	1	1	1	3	4
Friday 10	70.8	48.8	59.8	12	0.95	1	6	1	3	7	4
Satur. 11	71.5	49.0	60.4	9	0.47	7	1	1	3	6	4

The highest temperature during the above period occurred on the 7th, 1846—therm. 90 deg.; and the lowest on the 8th, 1833—therm. 35 deg.

#### Notices to Correspondents.

AMATEURS: *Bradford*. We conceive the difference between an amateur and a dealer to consist in this: an amateur is a person who grows plants for pleasure, not for profit. If he partially deals in plants he ceases to be an amateur. Nevertheless, a gentleman who grows more fruit or vegetables than he can consume, and who sends a part of his superfluous produce to market, must be held to be an amateur notwithstanding. An amateur's gardener, exclusively employed by one person, is also to be looked upon as an amateur.  
 ASPARAGUS: *Constant Subscriber*. In cutting Asparagus from old beds, the small heads, that are too small to use, should be cut with the others, and not left to go to seed. As soon as you have done cutting allow all the heads to spring up, and encourage them by manure to make all the growth possible in the course of the summer.—*G. B.* Your Asparagus having been cut very little is the cause of the plants not increasing or spreading over the bed. They ought to have been cut more frequently.

BRITISH PLANTS: *W. T.* You do not say whether the plants shown at Coventry were cultivated or gathered wild. We should have placed No. 2 first.

CHAMPAGNE: *F. D.* We do not imagine Mr. C. to be much in the habit of drinking champagne, or to be a great judge of its quality. All that his statement goes to, we presume, is that Rubarb makes good sparkling wine—which we, *par passu*, these, would rather not drink. An enormous quantity of it, however, actually goes into consumption, under some name or other.

INSECTS: *J. P.* Your moths are NOCTUIDE—*S.*, *Xylina* *Lambda*; 14, *Mamestra* *Persicaria*; 3, *Euplexia* *lucipara*; 16, *Agrotis* *exclamationis*; 6, *Gegetia* *xanthographa*; 7, *Orthesia* *pistacina*. GEOMETRIDE—11, *Larentia* *undentaria*; 15, *Steganophila* *Prunata*; 11, *Harpalyce* *derivata*; 10, *Lobophora* *lobulata*. The rest loose and broken, having been unsafely sent in an uncorred box by post.

GAS HEATING: *Sub.* You will see that in our last week's paper we have given a representation of an apparatus for this purpose, which is said to answer. It is, however, allowed to be more expensive than heating by hot-water in the ordinary way; and, if we might venture an opinion, we doubt whether in the end it will be found to be as satisfactory.

JUDGES: *J. H.* We could not possibly recommend persons to act in this capacity. It would be a most disagreeable task.

LEAVES: *Mort.* Both kinds of leaves are affected by what is termed "spot," a disease connected in some way or other with cold and damp, and a want of efficient ventilation.—*J. W.* There are no traces of insects on your Peach leaves. Their crumpling up is doubtless owing to cold easterly winds which have prevailed of late, acting on their tender skin.

NAMES OF PLANTS: *W. K.* *Cotoneaster rotundifolia*.—*Diss.* *Doronicum* *Pardalisanus*.—*F. H.* & Co. Apparently *Magnolia* *Soulangera*.—*T. T.* *Limnæus* *Douglasii*.—*F. P.* Indeterminate, not *Vatresces*.—*T. C.* *Menyanthes trifoliata*.—*Z.* *Platanus* *bifolia*, the Butterfly Orchis. *Glycine sinensis* comes from Chusan. *Abronia umbellata* has been tried in sandy peat; but we have never seen it grown well either in that or anything else. In its wild state it is found in sand on the sea shore.—*Ignoramus*. *Oxalis Acetosella*. The other is indeterminate.—*Questor*: *Blechnum boreale*, a common Fern. *S.*—*Mort.* 1, *Asplenium Trichomanes*; 2, *Doodia caudata*. *S.*—*W. H. B.* *Ribes alpinum*.—*J. F.* It is not possible to say what your *Olemais* is, without flowers. It looks like a bit of *C. virginiana*.

ORANGES: *Isle of Man Sub.* Apply to the nearest nurseryman of any standing. He can procure them, we presume, through the trade.

STRAWBERRIES: *C. J. P.* After what they suffered during the past winter they can scarcely be expected to set well. We hear that they will only be a partial crop in many places.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO.**—The guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.

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**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

**PERUVIAN GUANO**, guaranteed the genuine importation of Messrs. A. GIBBS & SONS. A constant supply of LINSEED and RAPE CAKE. EDWARD PRICER, Secretary. LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0  
Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## MANURES, LINSEED CAKE, &amp;c.

**DIXON AND CARDUS**, Northam, Southampton, have on sale, in any quantity, the following articles, pure and unadulterated and at the lowest prices:—  
Home-made Linseed Cake. Linseed for feeding.  
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## MANURES.

Superphosphate of Lime. Peruvian Guano.  
Calcined Bone. Wheat Manure.  
Fine ditto, for dissolving. Mangold Wurzel Manure.  
Bones, half-finch. Potato Manure.  
Ditto, dust. Sulphuric Acid.  
Ditto, fine, for dissolving. Gypsum.  
Animal Guano, or Dried Flesh Nitrate of Soda.  
Manure, from South America.  
Orders addressed to Dixon & Cardus, Linseed Mills and Artificial Manure Works, Northam, Southampton, will receive prompt attention.

## SEWAGE CHARCOAL MANURE.

**PEAT CHARCOAL**, completely saturated with LONDON SEWAGE, will be found a most efficient Manure for any Crop; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, and will be delivered at the London Terminus of the Railways at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt. for ready money only; it may be also procured in Messrs. G. Gibbs & Co., Agricultural Seedsmen, 26, Doven Street, Piccadilly; or from any other of the Company's Agents.

"Sewage Manure, absorbed in Charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage Plants. We put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. GLENNY.

Thomas Cartwright, Esq. of Aynhoe Park, having had 2 tons in the spring, which he tried on Turnips, ordered 30 tons, and writes as follows:—"Nov. 7, 1852. I have used the Sewage Charcoal Manure largely this autumn on Wheat and Beans;" and he then adds: "On the whole, I like the Sewage Charcoal very much, and think it a very useful manure, and intend always to have some for my Turnips."

**ARTIFICIAL MANURES, &c.**—Manufacturers and all others engaged in making ARTIFICIAL MANURES, may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NEARY, F.R.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

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**A PRIZE MEDAL FOR SUPERIOR LOCKS** WAS AWARDED TO J. H. BOOBYER, AT THE GREAT EXHIBITION OF 1851.

**THE CELEBRATED AGRICULTURAL DIGGING FORK, PATENT SPADES, DAISY RAKES, ECYTILES**, &c., and other Garden Tools. Mole Traps, 6s. per dozen. Conspicuous and Smith's Tool, &c. Best fine cut Clasp and Bone Nails at the lowest reduced prices. Sward-nappers for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.; at J. H. BOOBYER & CO., Gate Street & Bonnyton, Ironmongery, Broadchurch, Nail and Tool Warehouse, 11, Stanhope Street, Close Market, London. Established nearly 200 years for the sale of goods from the best Manufacturers at the lowest prices. Goods forwarded to any part on the receipt of remittance.

## IRON HURDLES.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers and Importers of Iron Fencing, beg to call the attention of Farmers and Gardeners to their present prices of HURDLES:—the strong, 3 feet long, 3 feet 6 inches high, with 6 bars at each end, 6s. 6d. each; the 3 feet 3 inches high, with 6 bars at each end, 5s. 6d. each.

## THE BIRMINGHAM EXHIBITIONS OF CATTLE AND POULTRY.

THE FIRST GREAT EXHIBITION OF BREEDING STOCK AND AGRICULTURAL IMPLEMENTS.

**THE COUNCIL OF THE BIRMINGHAM AND MIDLAND COUNTIES SOCIETY** have determined, in addition to the CHRISTMAS SHOW, to hold a TRIENNIAL EXHIBITION OF STOCK for BREEDING PURPOSES and AGRICULTURAL IMPLEMENTS. The First Show will take place in the second week of June, 1854; and a List of the PRIZES offered for CATTLE, SHEEP, HORSES, and PIGS, may be had on application to the Secretary.

The General REGULATIONS of the Show, and the Special List of PRIZES for AGRICULTURAL IMPLEMENTS, will be issued in January next.

The Council, in establishing a Second Exhibition, are desirous of encouraging the improvement of Agricultural Stock generally; and the Prize List is framed, so as, in their opinion, to be well calculated to promote this object. Young Stock only will be eligible to compete for prizes; and this principle, which forms the main feature of the List, appears to the Council to be absolutely necessary to give to these Meetings a strictly practical and useful character. The mere Exhibition of Stock, which is not intended for Sale, has produced no beneficial result; and the Council have, therefore, determined to invite Breeders to show such animals as they would, in most cases, be prepared to sell; the number of Sales supplying the only proper test of the real value of each Exhibition.

Exhibitors will be requested, in all cases, to state on the Certificates the Price at which they will SELL the stock entered for competition; and the amounts named will be printed in the Catalogue. A prohibitory price may, of course, be fixed, if the breeder or owner is disposed to retain the Stock in his own possession.

It is also intended by the Council to adopt such Regulations and Instructions to the Judges and Stewards as shall lead to the correction of an evil so much complained of, namely, the over-feeding of Stock intended for Breeding purposes.—By order of the Council, JOHN MORGAN, Jun., Secretary.

Offices: No. 2, Insurance Buildings, Union Passage, Birmingham, June 4.

**THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1853.**—THE FIFTH GREAT ANNUAL EXHIBITION OF CATTLE, SHEEP, PIGS, and the various kinds of DOMESTIC POULTRY, will be held in BINGLEY HALL, BIRMINGHAM, on the 13th, 14th, 15th, and 16th of December next.

The PRIZE LISTS and further information may be obtained from JOHN MORGAN, Jun., Secretary. Offices—2, Insurance Buildings, Union Passage, Birmingham.

**POULTRY SHOW.**—The First Annual London Great SUMMER POULTRY SHOW will be held at the Baker Street Bazaar, on WEDNESDAY the 27th, THURSDAY the 28th, and FRIDAY the 29th of July, 1853. The Prize List and Rules can be had upon application to JAMES HENRY CATLING, Secretary. Offices at the Bazaar.

**REDUCTION IN PRICE.**  
**WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.**



The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

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Catalogues, with Illustrations, sent free by post.

## WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0  
Larger sizes if required.

To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest Pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

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Every description of Machinery for Raising Water, Fire Engines, &c.

**HENRY J. MORTON, PATENT GALVANISED IRON ROOFING WORKS**, 91, Albion Street, Leeds, Agent for PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES. The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



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**GALVANISED GAME AND POULTRY NETTING**, very strong and neat, never requires painting and cannot rust or corrode, made any width and length.

24 inches wide, 3-inch mesh, 4yd, 6yd, and 8yd, per yard.  
24 inches wide, 2-inch mesh, 7d, 9d, and 1s. 0d, per yard.

**GALVANISED IRON SPOUTING**, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphaltum Roofing Felt, &c. Apply at 95, ADELPHI STREET, LONDON.

## BAKER'S FOUNTAINS.

THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.

**MESSRS. BAKER** can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

**MR. SAMUELSON'S PATENT DIGGING MACHINE**, capable of digging 4 acres per day, with four to six horses, price 27l. 10s., is now at work daily in the neighbourhood of Banbury. Agriculturists, road and railway contractors, and others interested in its operation, may see it by applying to Mr. B. SAMUELSON, Britannia Works, Banbury.

**BUDDING'S LAWN MOWER**, with SAMUELSON'S REGISTERED IMPROVEMENTS, lightening the draught by one-half, and enabling one unskilled labourer to work it unassisted; reviewed and commended in the "Practical Mechanic's Journal" of February 1. Price 5l. 10s. and 6l. Larger sizes for pony draught, 7l. 5s. and 10l.

Apply as above, or to any Ironmonger or Implement Dealer in town or country.

**THE ASHCROFT SWEDE.**—This excellent Swede, which is unsurpassed (if equalled) in size by any other, has proved to be exceedingly hardy, and has stood the late rainy winter and sharp spring frosts better than most others. It is also one of the best Swedes to sow early for pulling early, not being subject to mildew. Price 1s. per pound.

Mr. K. Hickman, of Brompton House, near Newbury, alluding to the Ashcroft Swede, in a letter dated February 1st, 1853, says:—"Being fond of experiments, I have grown all sorts, and did not confine myself to the Ashcroft alone, till I was fully convinced that it was by far the best, which it certainly is, not only in weight per acre, but also in hardness and in shape, having less neck than the Liverpool, and only one tap root; they also store remarkably well." We have also a fine stock of other sorts of Turnip Seeds, including Skirving's Swede and Rivers' Stubble Swede grown from Seed, procured of Messrs. Skirving and Rivers.—Address, JOHN SUTTON AND SONS, Seed Growers, Reading, Berkshire.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, JUNE 4, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Day	June	Meeting
TUESDAY	7	Meeting of Bath and West of England
WEDNESDAY	8	Agricultural Society at Plymouth.
THURSDAY	9	Agricultural Society of England.
FRIDAY	10	Agricultural Imp. Society of Ireland.
WEDNESDAY	15	Agricultural Society of England.
THURSDAY	16	Agricultural Imp. Society of Ireland.

It is with unfeigned sorrow that we announce the death, on Thursday last, of the Earl of DUCIE, late President of the Royal Agricultural Society of England. No one has done more during the past 20 years for the true interests of British agriculture; and there is no one whose loss will be more severely felt in the agricultural world. Of course it does not fall within our province here to name the many private instances and circles in which the loss of his lordship's example, encouragement, and assistance will be found irreparable. We are necessarily confined to the more public relations which he sustained. And though well aware that we are long ago anticipated by the knowledge of our readers, we cannot let these columns remain without a record of the energy, intelligence, and wisdom which for many years had been displayed by the late Earl of DUCIE, with reference to not merely the political, but the practical and essential wants of agriculture amongst us. No one sooner or more clearly saw the value and importance of a knowledge of the sciences for farmers; the most distinguished scientific men of this and other countries will testify to this. No one has united equal and such well-directed energy in both divisions of practical agriculture; his lordship's well-known model farm and herd of short-horn cattle, both sustained at great private cost and with great public benefit, are witnesses of this; and the establishment of his agricultural machine factory at Uley was one of the earliest steps in the extraordinary and rapid progress which agricultural mechanics have of late years made in England.

Add to the thought of all this useful public influence thus cut off, that of the many more immediate instances in which equal wisdom and energy were shown—of the unsparing efforts in the work, not merely of general but of local education—of a benevolence wise as well as warm-hearted—of a kindness of disposition, to which no one can bear more earnest witness than the writer—and of a character most useful as an example not to landlords merely, or to farmers, but to neighbours; and we are sure that even those who knew him not, will understand the feelings with which we have just learned the death, and shall always honour the memory, of the Earl of DUCIE.

We have been asked how an old Grass field, which has been worn out by pasturing and mowing,



is to be restored? The old people of the neighbourhood remember it as one of the best feeding pastures of the district; but, for a long time, its colour, tardiness of growth, &c., have shown its poverty.

In answer to the question, we would remark, in the first place, although it may seem opposed to experience to say so, that we do not believe the mere age of the pasture has in itself anything to do with its quality. In general, where land has been laid down to Grass, there has been a large produce for the first two or three years, a gradual dwindling and apparent impoverishment for the next eight or ten, and at length a gradual re-attainment of the *status* occupied by old pastures in the neighbourhood on similar soils. Again, on those old pastures, where frequent mowings and grazing with young cattle, or, as on dairy farms, with milk cows, have been practised for a very long time, there has been a gradual impoverishment of the feed—mosses and poorer Grasses have displaced those of better quality, or these have exhibited a less vigorous growth. In the one case, they tell us that, while the abundant growth of the first few years was owing to the store of artificial fertility in the soil, its dwindling was owing to the exhaustion of that fertility, and its subsequent recovery to the creation of what may be called a natural fertility of the soil, by the decay of vegetable matter on its surface, and by the long and undisturbed continuance of the various processes of disintegration, whether by worms or by rain, variations of temperature, or other atmospheric agencies. In the latter case, we are told that the observed decrease of quality is owing simply to the exhaustion of the food for the plants more rapidly than the sources, natural and artificial, of its supply have been made to yield it. In neither case is it asserted, and in neither can it, we think, be asserted, that the mere age of the plants, or, at any rate, of the pasture, has had anything to do with their vigorous growth, or its productiveness; so that a crop of Grass, whether for pasturage or mowing, is no exception to the simple rule which guides the experience of the farmer in every other case, namely, that, if a crop be wanted, the requisite plants must be on the ground, and they must be placed in circumstances adapted to their growth.

There is, however, one material difference between Grass and other crops, which has a considerable influence on their respective modes of cultivation. If a crop of Wheat has failed, the remedy is generally obvious: you did not plant the right seed—or the ground was pre-occupied by Couch—or (supposing the soil to have been otherwise suitable) it did not contain enough of food of the right sort for your plants. It needs, therefore, not only that previous occupiers of the ground be displaced, and that the soil be enriched by manure, but that seed in the right quantity and of the right quality be sown. And no doubt, at the first starting of the new pasture, all this is necessary too; but in the case which our correspondent alluded to, where an old pasture wants invigorating, it is not necessary, as it would be in the case of other crops, not only to get rid of the plants we do not want, but to sow or set the missing plants of the kinds that are required; for these are either natural to the soil, or, what is the same thing, their seeds are already in it—many generations of them having already lived and died upon its surface, and they only want favourable circumstances to start into being. These circumstances, then, are what alone need be supplied, in order to the change in the character of the pasture which is desired. If they be present, the field already contains the germ of a more vigorous growth, and that will very soon be displayed.

Now, there are two instances in which this more vigorous growth proves that its causes have been present. The first is that of an irrigated meadow: turn a stream of water over your exhausted land, maintaining and regulating its motion so as to ensure that it shall be constant and uniform over the whole surface, and it will very soon lose all signs of poverty. The second is that of pasture under ordinary management as to manure and drainage, and under good management as to the mode in which it has been cropped: the mere lapse of time will, where farm management has been of this description, ensure the quality and quantity of the crop; in this way manure accumulates naturally in the soil, and the plants thrive accordingly. Now, if the manure can be supplied artificially to the soil and to the plants—for this second point is the secret cause of the greenness of our water meadows—this result, whether of age or of irrigation, may be obtained at once.

Our correspondent has spread guano over the land, and dressed it with farm dung, and he has drained it 4 feet deep; well, the one supplied the food, and the other facilitates its passage to the plants, and although "the Grass again (though slightly improved in colour) is very dry and scarcely

growing," we believe that only patience is needed in order to ultimate success; for when once the manure is spread about throughout the soil among the roots of the plants, they must begin to flourish. Perhaps, however, there is something still needed in the way of food; lime may be absent, and in that case must be supplied—some 60 or 80 bushels an acre, slaked with soil in a compost heap, and spread about in autumn, will likely benefit next year's crop. Or the texture of the soil may be faulty; folding it with sheep might do it good in this way, as well as by their droppings: or the use of Sir EDWARD STRACEY'S subsoil plough might benefit the growing plants; and in that case it should have been used in March, when the land was still soft, and the spring growth had not yet begun.

But whether for irrigation (the carrying of the manure), or manuring (the furnishing of the manure to be carried), we know of nothing (after the land has been drained) which will be so likely to put a new face upon a poor Grass field, as liquid manuring. We were lately at Tiptree Hall farm, and saw a Grass field opposite Mr. MECH's house, which had been "laid down" when he first undertook its cultivation, and which till this year has been blue, brown, any colour but the right one—poor Grass, and yielding but little of such as there was. This field we saw sending its vigorous shoots through the snow in April, and again, three weeks ago, as green and growing as any one could wish to see it. It had been already drained and manured, and ultimately, we believe, these would have ensured a pasture; but the delay was too much for Mr. MECH, and he has accordingly tried to solve the problem in a shorter way, and has succeeded in his attempt. The present condition of the land, as compared with its appearance in previous years, is due to the liquid manuring which he has been able during the past winter to give it. The adaptability of this system of manuring to other crops will be a proper subject for discussion hereafter; meanwhile, its undoubted applicability to our Grass lands may be usefully pondered over by our correspondent. Mr. MECH's field was a new one, and his is an old one; but that, as we have said, is not a material point. The thing is, they both have wanted food for the plants that grew upon them; and they have wanted that food spread throughout the soil in which the roots of those plants expatiate. In the case at Tiptree, these wants have been supplied, and hence the change visible on the surface of the field in question.

A WANT of a sufficiency of moisture to promote the healthy vegetation of Mangold Wurzels, Swedes, and Turnips is frequently experienced in the southern provinces of the United Kingdom. The moist climate of Ireland renders a large area of her provinces an exception to this rule, and the same may be said of a few localities in England and Scotland; but, in too many instances, the reverse is the case, indifferent crops being grown as the result; for, unless the seed germinate freely, and plants cover the ground equally, the crop does not turn out a heavy one. Hence the maxim so studiously observed by successful growers, of retaining the "natural sap of the soil and manure."

During the present season no lack of moisture has been experienced in getting in Mangold Wurzel, unless where sowing was postponed beyond its usual period. At the same time, exceptional seasons, like the present, are not those in which the calamity at issue is the least likely to be met with; for a long continuance of heavy battering rains has only a tendency to consolidate the soil, closing its pores, and diminishing its capacity for holding water; while the ploughing of such lands late in spring—a practice widely exemplified this year—renders it more difficult to retain a sufficiency of moisture, especially in the absence of efficient drainage.

It is not enough even to get in the seed with a sufficiency of moisture; the soil must also be placed in a state capable of retaining it for the use of the young plants, for if the seed germinate quickly, as it will always do in warm drying weather, under the circumstances in question, then the young plants will be tender—of a hothouse constitution, as it were—so that when the moisture is removed from them, they wither and die, frequently before they get into the "rough leaf," whereas, if the moisture be retained, they soon send their roots below the influence of the droughts of May and June, so that by July their leaves entirely cover the ground, defending it from the scorching rays of the sun, which otherwise never fail in dry years to parch it, injuring the proper development of roots.

Mangold Wurzel, Swedes, Turnips, Carrots, and other root crops, luxuriate in a deep rich soil, striking their radicles deeper in it in search of moisture when they first burst from the seed than is generally imagined; although it is the first lesson

which every young farmer ought to learn who wishes to become thoroughly master of their culture.

The first stage in the life of these plants is a very strong effort to place their roots and leaves in a position successfully to discharge their subsequent functions under the peculiar emergencies to which they are subject. Nature appears sensible of the wants and exigencies of her offspring—the peculiar season of the year in which they are nursed, the large amount of heat required to call them into existence, and of moisture afterwards to bring them to a degree of perfection, to say nothing of the insects which prey upon them. Hence, although the seeds will not germinate properly unless near the surface, yet a few hours afterwards the radicles are found widely ramified to a considerable depth in the soil; and the reason why the former condition must be attended to is, to make provision for the latter result; for when seeds germinate at too great a depth, neither the root nor leaf possesses that healthy and vigorous action which they do when otherwise situated, for before the germ gets to the surface it absorbs a larger amount of nourishment afforded by the seed leaving less for the radicles, while much less benefit is gained from the atmosphere than when the germ immediately expands into a leaf.

Evaporation always carries off heat; so that to retain the greatest amount of sap in the soil is also to prevent a considerable loss of heat, a result frequently of the highest importance—to Mangold Wurzel and Swedes more especially, from the earlier period at which they are sown.

Deep efficient drainage and subsoiling afford the best means for retaining a sufficiency of moisture for the wants of root crops, ensuring at the same time the greatest degree of heat. Lands properly drained never get into that consolidated state that undrained lands do, for the percolation of the water always leaves them in a porous and open state capable of holding water, owing to the great affinity which exists between it and the decomposing vegetable matter always present in them.

Undrained clay lands, in wet seasons like the past, are so consolidated that they plough up and dry, like bricks in a brickyard, while the subsoil is rent into fissures under the plough, so that it is scarcely possible to break them down into a proper Turnip mould, retaining at the same time their natural moisture.

Properly drained lands of the same quality in other respects turn up very differently, even where the grubber has been found insufficient, and where it is found necessary to yoke the plough, for by keeping the harrows, roller, and clod-crusher close up to it, finishing the newly-ploughed land at every yoking, there is seldom much difficulty in getting a proper mould, retaining at the same time a sufficiency of moisture for the vegetation of Mangold Wurzel and Swedes. In cases of this kind, however, it is almost absolutely necessary not to commence ploughing until the soil is in a fit state for harrowing and rolling; for when it is wrought in too wet a state, the working has the same effect upon it as the working of the clay of a brickyard in a pug-mill, preparing it for baking in the sun afterwards. It is necessary not only to attend to this in the ploughing, but also in the putting in of the manure and seed, for the drawing of any machine over the ground when in such a state is sure to crust it.

A fine surface-mould, to defend the soil under it from the influence of the sun in May and June, is of the highest importance, for by this time its power is great, and if accompanied with wind, as now and frequently experienced, will soon deprive it of its moisture, especially if ploughs and harrows are rattling among clods after the old fashion. Even on dry Turnip soils, where clods of any size are seldom experienced, the greatest care should be taken to defend them from parching, which can only be done by a level surface of fine mould.

For this purpose they should be deep-ploughed in autumn or the earlier part of winter, so that they may be loosened with the grubber or scarifier easily in spring, retaining upon the surface the mould which had been finely pulverised by the winter frosts, taking care that they are not wrought in too wet a state, as formerly noticed. Harrows should follow the scarifier; or, if clods are brought to the surface, they may be prudently preceded by the roller.

Such a practice, of course, can only be carried out successfully on lands naturally dry, or efficiently drained. Undrained lands, and even lands improperly drained, may become so consolidated during winters like the past, as to require the plough, and are best adapted for Mangold Wurzel, or Swede, under the practice already noticed.

A considerable diversity of opinion exists as to whether Turnips should be sown on the "flat" or "ridge." The question involved is that under discussion—*moisture*; but our limits will not permit



us at present to enter upon details. There cannot be a doubt that the former retains the moisture the best, and were this the only consideration affecting the question, should be preferred in our southern provinces, wherever artificial manures alone are used.

#### MANURE WITHOUT STRAW.

Mr communications, which have from time to time appeared in your columns, having called forth remarks from some of your correspondents, I claim the privilege usually conceded to one who has started a discussion—of reply. In No. 48, page 763; Mr. B. compares my mode of solidifying my manure with that of the liquefiers, and seems to give the preference to the latter in point of economy. Now, without entering fully into the merits of a system which is engaging so much attention, I may remark that there are numerous holdings, including all very small ones, on which it is scarcely applicable. My own is so circumstanced that, even if I were desirous, I could not apply it; on consideration, however, I am not satisfied that I should be a gainer in expense if I should adopt it. Mr. Kennedy, of Myremills, Mr. Telford, of Ayrshire, and latterly your lively and prominent correspondent, Mr. Mechi, are hitherto the known practisers or advocates of the liquefying system. Without venturing to compete with the animated description of Mr. Mechi, who converts the contents of his tanks into jets and fountains, and almost leads one to infer that the odour of ammonia and putrefaction heightens the ruddiness on his farm-boys' cheeks, I prefer drawing my comparisons with Mr. Telford, whose farm statistics more nearly resemble my own, as each ties up the same number of cattle (48), and is alike dependant on the produce of the dairy or beef (though mine is comparatively more from the latter), for his remuneration, or, may I now venture to say, profit. It appears that Mr. Telford uses a steam engine of three-horse power to convey and distribute his liquid manure only, the cost of which—including the underground pipes, hose, the increased capacity of his tanks, having to add two or three times the quantity of water—will, I think, be not far short of 400*l.*, the interest of which, at five per cent., will be 20*l.*, in addition to which is the wear and tear; the corrosive effect of the liquid on the pipes will, I should think, be of some import; then the fuel and attendance, &c. I think it would be scarcely safe to estimate the additional cost at less than 15*l.* or 20*l.* more, say 55*l.* to 40*l.* for the distribution of his liquid manure alone, leaving his solid, about one-half, to be dealt with by the common mode of cartage. Now, I find my 48 head of cattle in full feed, laying on from 14 to 16 lbs. per week, yield, on an average, nearly nine tons a week of liquid and solid manure, which is dropped into a tank, under the tails of the animals, of such capacity, that it is filled in three weeks, and is then emptied, by the use of two mud carts, which will hold a sufficient burden for a horse—a ton. I am enabled to convey the whole of this, in less than two days, to the average distances of my farm. I employ for this, one filler from the tank; one to carry out to the mud cart; one man with one horse, taking one loaded cart, and leaving the other to be filled during his journey; and one man to assist in emptying and to commix the excrements with loam or soil, in a receptacle in the field adapted to the purpose, and completed at no great expense. The cost attendant on this will be nearly 1*l.*, or 15*l.* for the year, reckoning the whole of this number to be kept throughout the year. Some portion of the manure is carted for immediate application; to remove the remainder from the depot in the field, and distribute it, one-half of the sum, or 7*l.* 10*s.* in addition will, I think, be deemed ample, thus making 22*l.* to 23*l.* a year as the expense of removing the whole of the liquid and solid excrements.

My cattle are chiefly heifers, of from 45 to 60 stones each when ready for the market, and are served with some little hay, Bean-meal, and oil-cake in limited supply, and chopped straw and Turnips to the extent they will eat. I have tried this experiment on different modes of stall-feeding, viz., with dry fodder, together with oily and nitrogenous food, and have found the yield of excrement very similar, say, at the rate of 9 to 9½ tons each animal during the year. This is explained by stating that when on dry fodder, cattle drink 60 to 70 lbs. of water each per day, a quantity equal to what is contained in 30 lbs. of fresh-gathered, or 90 of store Turnips. When soiled or supplied with mown Grass, the quantity is increased by one-third, though it is proportionately somewhat lighter. The like result will follow where a larger quantity of Turnips, containing more water than is requisite for the wants of the animal, is required.

Mr. B. talks about the vast quantity of peat I used to solidify, thereby increasing my burden. My practice is, in this respect, altered. By the use of a mud-cart, I can convey away a load sufficient for a horse, a ton or upwards, of this mixed excrement. It will be observed that my cattle are on boards, without straw or other material for bedding; their manure is free from admixture of rain or other extraneous matter. The use of peat is now limited to a small quantity, which I scatter through the boards during summer for the purpose of desiccation. I here remark, that I know of no stalls less objectionable, on account of their odour.

The liquefiers add large quantities of water, say two or three times the volume of their liquid manure, requiring tanks of enlarged dimensions, thereby increasing the outlay and also the cost of removal and distribu-

tion; their aim is to improve the ammonia and fix the application. Though free from foreign admixture of rain or other water, I find the excrement by analysis to contain more than four parts out of five of moisture, say 83 per cent.; and I should think it a boon if science would teach me some ready, inexpensive mode of desiccating or drying up this moisture, without injury to the fertilising properties, thus relieving me of four loads out of five. I should feel satisfied to cart away this material and commix it with the moist clay loam from my field; and, taking care to time its application in suitable weather, should depend on the cheaply supplied rain, and other influences from the atmosphere, for rendering it soluble, and giving it the needful preparation. In the foregoing observations I do not seek to dissuade any one who has the means or desire to apply the liquid system. To the extensive cultivators, like Mr. Kennedy or Mr. Mechi, a steam-engine may be required and used for threshing and various other purposes. Mr. Telford, whose holding is smaller, may do this likewise, though to a more limited extent. My object is, rather, to afford to others statistical data, drawn from observation and practice, and leave them to draw their own conclusions. I purpose next to notice the remarks of others, particularly those of Mr. Goodiff, on the properties of straw. *Y., May 19.*

#### AGRICULTURAL STEAM ENGINES.

The number of these engines exhibited at Lewes was much greater than at any previous meeting, and the improvement in them very evident; we would, however, suggest that in lieu of expending money on ornamenting or beautifying the engine and boiler by unnecessary labour, it be spent on the essential parts, by using the best material that it is possible to procure, and by perfecting the workmanship.

A moveable steam-engine, having to be exposed to the weather, is the better for the absence of bright work where not really required, as it is rarely kept clean, and the material that has to be employed in getting off the rust frequently finds its way into the bearings, and produces great injury.

We now proceed to notice the engines.

Messrs. Clayton, Shuttleworth, & Co.'s 6-horse moveable engine was, in construction, similar to that exhibited at Exeter, of very good workmanship, and fire-box furnished with copper tube plate and copper bridge, with a view to economise fuel—a result, in this respect, exceeded by two other competitors; but still we consider this engine in every way creditable to the makers, and worthy to be "highly commended." The 4-horse engine, by the same makers, resembled the above for the most part; but some of the appliances for saving fuel being omitted in this case, and the engine being also of smaller power, the result worked out was inferior to the 6-horse.

Mr. Freeman Roe, Strand, London: 4-horse moveable engine; workmanship very inferior, general arrangement ill-designed and clumsy, with cast-iron freely used in the place of wrought. The duty done will be seen, on reference to the tabular statement, to have been 93.9 lbs. of coal per horse-power per hour.\*

Messrs. Hornsby & Son: 6-horse moveable. This engine standing first in its class with respect to economy of fuel, and being very good both in construction and workmanship, we considered it to be deserving of the first prize. The cylinder of this engine being within the steam-chest of the boiler prevents condensation, and retains the pressure throughout the stroke of the piston; to this arrangement we attribute the high duty of the engine and its economy in fuel; the arrangement of the cylinder and force-pump also rendering it impossible that any accident can occur on first putting the engine to work in frosty weather, by preventing ice from being formed in them. Several of the details are very good, and deserving of attention, viz., the mode of compensation for the wear of the guide-brasses of the piston, and the method of lubricating the same, being, in our opinion, very effective. The hinder axle being cranked, and embracing the fire-box at the back, obviates the necessity of removing the axle when any repairs are needed to the fire-box. The ash-pan is well placed, completely enclosing the furnace, and rendering the whole more safe from accident by fire; the governors are very good and sensitive; hence the admirable steadiness with which the engine worked. No. 2: a 4-horse portable, by the same makers; similarly constructed to the above, but of smaller power, and without the water-heating apparatus, which will account for the duty being less than that of the prize engine; but still the result in this instance also was very satisfactory.

Mr. W. C. Cambridge: 5-horse moveable. The workmanship of this engine was inferior, and duty below the average.

Mr. Alfred Sparke: 5-horse moveable. This engine, in its construction, was simple; parts well arranged; workmanship fair; and duty quite up to the average.

Messrs. Garrett & Son: 6-horse moveable. One of the peculiar features in this engine is the substitution

of Mr. Freeman Roe has written to request that the result of the trial of his engine might not be published, as in taking it to pieces he discovered that it had been wrongly put together. This may be quite true; but an exhibitor who does not ascertain that his engine is in working order before it goes to trial has only himself to blame should the result be unsatisfactory; and to allow of the withdrawal of the recorded performance of an implement which had worked badly would be to establish a most inconvenient precedent. The application was consequently refused. —H. THOMPSON.

of wrought iron for cast, wherever practicable; the bearing of crank-shaft is wrought iron, very firmly seated on the end of the boiler, the same plate being beaten out to form the end of the smoke-box; the water-heating tank, also, is well arranged, being composed of an external and internal case, and the water between the two, with the exhaust-steam from cylinder, passing through the inner case, where a certain amount of condensation takes place, and the product in pure water, to the amount of about 25 per cent., returned through the force pump to the boiler, which is of some considerable moment where the water used is subject to produce incrustation; the foot-valve force-pump was on a level with the supply-tank, which is practically of great advantage. We would also notice a clever application of a spring sunk within a groove in the axle of the carriage of this engine, which effectually prevents concussion when passing along a rough road. The duty done, in this case, was very creditable; the quantity of coal used and time occupied in getting up steam very little; and, although the consumption of fuel by this engine was a little more than some of its competitors, we would account for this, in a measure, by the shape and smallness of the fire-box, which these manufacturers have adopted for the purpose of obtaining increased strength, combined with less weight. The workmanship of this engine was very good, and we deemed it, as a whole, quite worthy to be "highly commended." The 5-horse engine, by the same makers, was not fitted to work so economically as regards fuel, but was, nevertheless, a plain, strong engine.

Messrs. Tuxford & Sons: 4-horse moveable. The boiler of this engine is composed of two flues, opening into the fire-box, having return tubes into the smoke-box at the fire end; the cylinder works vertically, and is placed in a wrought iron box at the end of the boiler; a very neat arrangement, and useful as keeping dust from the working parts. This engine was creditably turned out as regards workmanship; did fair duty: we felt pleasure in commending the same. No. 2, by the same maker, also 4-horse; differing from the above in the cylinder being on the oscillating principle, and the boiler a tubular one. This engine was very compact, light, and portable, but consumption of fuel above the average.

Messrs. Hensman & Son: 5-horse moveable. A plain engine of moderate workmanship; small heating surface in boiler, and consumption of fuel more than any of its competitors, with one exception.

Messrs. Holmes & Son: 6-horse moveable. An engine of good design and fair workmanship; commenced working satisfactorily; but, in consequence of the force-pump failing, the trial was stopped, and credit given for the coal remaining unconsumed; but for this accident the duty done would doubtless have been more satisfactory.

Mr. Eaton: 6-horse moveable. This engine had the cylinder placed in the smoke-box, and the boiler containing a fair amount of heating surface, with the workmanship creditable; the result was so far satisfactory that we thought it worthy, "considering also the lowness of price," of a commendation.

Messrs. Barrett, Exall, & Andrews: 6-horse moveable. To this engine was awarded the second prize; and we were very glad to observe that the firm had made considerable improvement in the arrangement and principle of their engine, in consequence of which the economy in the consumption of fuel was apparent, as will be observed on reference to the tabular statement. These makers have adopted a novelty in the construction of their engine, which consists of a casing encircling the lower portion of their boiler, for the purpose of conveying the heated gases from the ends of the small tubes to the smoke-box of the chimney, which is placed at the fire end of the boiler; the products of combustion are passed by this means through nearly twice the length of the boiler instead of once, according to the practice of most of the other makers; and as the cylinder is placed in the smoke-box, condensation of steam is prevented thereby: the boiler is supported on improved trusses, inside and outside. The slide of this engine is economically worked by expansion gear, 9 inches out of 12 inches, and further economy is also obtained by an excellent arrangement for heating the water previous to its being forced into the boiler. No. 2, by the same makers: 4-horse moveable; with plain tubular boiler without water-heating apparatus; of moderate workmanship, and comparatively small heating surface exposed in boiler, which resulted in a small amount of duty done for coal consumed, as shown by reference to the tabular statement.

Messrs. Ransomes & Sims: 6-horse moveable. This engine was well made, and the arrangement of its working parts good; the boiler presented a fair amount of surface; the carriage was well constructed; and we would notice particularly the turn-plate composed of a spherical and concave surface, brought together so as to maintain the perpendicular of the engine when passing over uneven ground. We consider this an important improvement, in a practical point of view, as preventing any cross strain that might otherwise occur from the irregularities of the road affecting each pair of wheels transversely. In this engine steam was taken from the boiler by a slit-pipe passing nearly the whole length inside, within a short space of the top, and opening into a stop-box, of good construction. This arrangement we considered beneficial, as tending to prevent priming: the duty done was creditable, and we felt pleasure in commending the engine. The 4-horse moveable, by the







Gloucester meeting; agreeably with the specifications drawn up by the Implement Committee and the Society's Consulting-Engineer, and Mr. Batley's tender, which the committee had unanimously accepted.

**JUDGES.**—The Council then proceeded to the selection and appointment of judges of live stock and implements at the Gloucester meeting; and having completed the lists, adjourned to that day fortnight, for the purpose of making any final adjustments that might at that time be required in them.

**LINCOLN AGREEMENT.**—The Agreement of the Mayor of Lincoln, on the part of the authorities of that city, with the secretary of the Society, on the part of the Council, that the country meeting of 1854 should be held at Lincoln, on the fulfilment of certain stipulated conditions, having been duly signed by the Mayor, and sealed in the presence of the Corporation with the great seal of that city, was signed at this meeting by the secretary, and sealed in the presence of the Council with the great seal of the Society.

The Council then adjourned to their weekly meeting, on the 8th of June.

**NORTHAMPTON AGRICULTURAL IMPLEMENT COMPANY.**—Colonel Cartwright addressed a number of gentlemen on this subject here lately, and from his address, as given in the *Northampton Herald*, we make the following extracts:—His proposal was to form a company for hiring out improved agricultural implements throughout the county. To effect this, there must be depôts all over the county, depending upon money raised by the company. The capital to be possessed by the company, to be useful, must not be less than 12,000*l.*, which would be best raised, as he had been advised, in 600 shares of 20*l.* each. As to the arrangement, he put 1000*l.* for each depôt. Now, at each depôt they must have two threshing-machines, costing 400*l.* They must also have machines which, from the improvements made and making, he believed would yet be found to act profitably; *i.e.*, reaping-machines. Ten of them would be necessary at each depôt, and he put them at a cost of 200*l.* There would then be 400*l.* left for providing drills and other machinery necessary for the neighbourhood. Now, then, let them see what they would get for the 1000*l.*; in other words, how the company would stand as a commercial speculation. A threshing-machine would cost 200*l.* [We suppose that this means threshing-machine and portable steam-engine.] It ought to be in use 100 days in the year; at 9*d.* per quarter it would bring in, supposing it threshed 40 quarters a day, 30*s.* per day, or 150*l.* in the year. He should take it, however, at only 50 per cent., which he believed might be safely calculated upon for all the machinery. A reaping-machine, including the latest improvements, would cost 25*l.* Supposing it to be used 20 days only, it was calculated to pay more than 50 per cent. It would cut 8 acres a day, which, at 2*s.* an acre, would in 20 days produce 16*l.* for the 25*l.* laid out; and so they would find it with the drills and all the other implements. Well, then, taking 50 per cent. as the maximum, there would be an annual return of 500*l.* at each depôt. Then came the question, what were they to do with it? He had roughly calculated that they must appropriate 50*l.* for their storehouse, 100*l.* for their engineer and two labourers (exclusive of the money paid to them when employed out), a dividend of 5 per cent. to shareholders would be 50*l.* more, making 200*l.*; wear and tear he had put down at another 200*l.*; which would leave them 100*l.* at each depôt to work the company. Another point was, that these things would not only be let out to hire, but that occupiers would have the opportunity of buying implements of the company at a reduced price, after they had seen their efficient working, as the discount allowed by makers would be divided between the company and the retail purchasers. Then came the question of stations. Northampton, he had thought, should be a double station—a kind of central depôt, to which 2000*l.* should be appropriated. The remaining stations, at each of which 1000*l.* should be invested, he proposed to make at Wellingborough, Thrapston, Oundle, Weston-by-Weedon, Kettering, Towcester, Daventry, Guilsborough (or Hazlebeech), Old Stratford, and Brackley; thus they would be enabled to throw over the whole county a large number of implements. He had heard it objected that such a company would fail, because every one would want the same implement on the same day. The answer to that was, that when an applicant desired to have an implement, he could be supplied if the implement were at the time disengaged, or he could have it in his turn. But, even should he not obtain the implement when he wanted it, its employment elsewhere would have the effect of easing the market, so that he might obtain labour to harvest his corn before it was shed. This, then, was the scheme, though imperfectly sketched; and the Colonel proceeded to say that, through having interested himself in this business, he had received various communications from talented and practical people. He was perfectly satisfied that the principle of establishing a company was right, and he wanted to know who else held the same opinion. He would not ask them to decide that day. They had now, however, heard his statement, and he had caused circulars to be prepared, directed to himself, which would be distributed at the close of the meeting; and if a sufficient number of them were returned to him taking a favourable view of the question, he should have the greatest pleasure in calling another meeting to carry out the project. He believed that all the budgets of all the Chancellors put together would not help the farmers

half so much as good machinery. If the gentry would come forward, the company might be formed with but a very small charge upon the large rental of this county. If, however, they did not do so, and if he were obliged to give up the project, he should be very sorry for it; but still he should heartily thank those gentlemen who had come forward to listen to his statement. (Hear, hear.)

Mr. Grant asked whether it was intended to give any preference in the use of the machines to shareholders?

Colonel Cartwright said certainly not.

Mr. Underwood disputed the amount of corn lost by the present mode of threshing as stated by Colonel Cartwright.

Mr. W. Shaw said, he could only say that he and a brother farmer close to him could not agree in the use of the same implement between them. What happened in their case would happen in others. The same sun shone upon all alike, causing them to want the same implement at the same time, and that objection he conceived would be fatal to the successful working of a company. As to scarcity of labour, probably it might be felt at harvest time; but at other times, he believed that a liberal payment of 2*s.* a day would always secure a sufficient amount of labour. As to reaping-machines, if no better were to be had than they got last year, the sooner they were out of the country altogether the better. He lost 20*l.* by them last year, besides all his time and trouble. He had learnt from the Royal Society's Journal that corn could be threshed at 4*d.* or 5*d.* the quarter; that was only half the price at which the Colonel had put it. He stated, too, that there was considerable loss of corn through using travelling engines. Fixed engines were far preferable, and he thought it would be better for farms to be of such size that their holders could find employment for fixed engines.

#### POULTRY.

We have not time or space at present to do more than barely refer to the show of poultry which took place at Cheltenham on Wednesday and Thursday last. The prize list is below. There was not a very large assemblage of birds. The Cochins were best represented both as regards quality, and, for young birds, as regards numbers too. The notices of sales appended to some of the pens were at prices indicating, we think, a fall—we are sure a reasonable and desirable fall in the market value of these birds.

**CHELTEHAM, June 2.**—CLASS I. *Cochin China* (Cinnamon or Buff), 1st, Silver Cup, value 5*l.*, to John Fairlie, Esq., Chevely Park, near Newmarket; 2d, 2*l.*, Mr. James Catelle, Moseley Wake Green, near Birmingham; 3d, 1*l.*, Mr. W. Plummer, Brington, near Bath—Thomas H. Potts, Esq., Kingswood Lodge, Croydon (equal).

CLASS II. *Cochin China* (Partridge or Dark), 1st, Silver Cup, value 5*l.*, Mr. W. B. Mapplebeck, Bull Ring, Birmingham; 2d, 2*l.*, Mr. C. Punched, Blunts Hall, Haverhill, Suffolk; 3d, 1*l.*, Mr. C. Punched.

CLASS III. *Cochin China* (White), 1st, Silver Cup, value 5*l.*, George Hodgkiss, Esq., Moseley Wake Green, near Birmingham; 2d, 2*l.*, Mrs. S. R. Herbert, Powick, near Worcester; 3d, 1*l.*, Mrs. S. R. Herbert.

CLASS IV. *Cochin China* (Black), 1st, Silver Cup, value 5*l.*, Wm. Cust Gwynne, Esq., M.D., Sandbach, Cheshire; 2d, 2*l.*, John Fairlie, Esq., 1*l.*, W. Lort, Esq., Great Heath, near Tenbury.

CLASS V. *Cochin China* (either variety), 1st, Silver Cup, value 5*l.*, Capt. Snell, Shirley Cottage, Norwood, Surrey; 2d, 2*l.*, A. C. Sayers, Esq., Clancyville House, near Andover; 3d, 1*l.*, Mr. W. Plummer, Brington, near Bath.

CLASS VI. *Dorkings*, 1st, Silver Cup, value 5*l.*, Capt. Hornby, R.N., Knowsley Cottage, Prescott; 2d, 1*l.*, Captain Hornby, R.N.; 3d, 1*l.*, Miss A. Wilcox, Nailsea Court, near Bristol.

CLASS VII. *Spanish*, 1st, Silver Cup, value 5*l.*, Capt. Hornby, R.N., Prescott; 2d, 2*l.*, Capt. Hornby, R.N.; 3d, 1*l.*, Mrs. L. C. Stow, Bredon, near Tewkesbury.

CLASS VIII. *Game*, 1st, Silver Cup, value 3*l.*, Capt. Hornby, R.N.; 2d, 1*l.*, Mr. John Pickering, Edgbaston Street, Birmingham; 3d, 10*s.*, Capt. W. H. Durrant, R.N., Rockville, Cheltenham.

CLASS IX. *Malay*, 1st, Silver Cup, value 3*l.*, James Leighton, Esq., Cheltenham; 2d, 1*l.*, Mr. John Pickering, Birmingham; 3d, 10*s.*, Mr. C. Oldham, Moor Street, Birmingham.

CLASS X. *Polands* (Black with White Crest), 1st, 1*l.*, G. C. Adkins, Esq., Edgbaston, Birmingham; 2d, 10*s.*, C. Rawson, Esq., Walton-on-Thames; 3d, 5*s.*, Mr. B. Holmes, New Street, Birmingham.

CLASS XI. *Polands* (Gold Spangled), 1st, 1*l.*, C. Rawson, Esq., Walton-on-Thames; 2d, 10*s.*, T. H. Potts, Esq., Kingswood Lodge, Croydon; 3d, 5*s.*, R. H. Bush, Esq., Littlefield House, Clifton.

CLASS XII. *Polands* (Silver Spangled), 1st, 1*l.*, C. Rawson, Esq., Walton-on-Thames; 2d, 10*s.*, Mr. P. Jones, jun., High Street, Fulham; 3d, 5*s.*, Messrs. S. C. and C. N. Baker, Beaufort Street, Chelsea.

CLASS XIII. *Hamburghs* (Gold Spangled), 1st, 1*l.*, G. C. Adkins, Esq., Birmingham; 2d, 10*s.*, G. C. Adkins; 3d, 5*s.*, Mr. James Blackham, Thornhill Farm, Handsworth.

CLASS XIV. *Hamburghs* (Silver Spangled), 1st, 1*l.*, Mr. Henry Wiggon, Edgbaston, Birmingham; 2d, 10*s.*, C. Rawson, Esq.; 3d, 5*s.*, Mr. H. Herbert, Worcester.

CLASS XV. *Hamburghs* (Gold Pencilled), 1st, 1*l.*, Mrs. Drake, Bucknell, near Bicester; 2d, 10*s.*, Mr. J. B. Chune, Coalbrookdale; 3d, 5*s.*, Mr. D. Burges, jun., Bristol.

CLASS XVI. *Hamburghs* (Silver Pencilled), 1st, 1*l.*, none awarded; 2d, 10*s.*, Mr. D. Burges, jun., Bristol; 3d, 5*s.*, Mr. Edward Simons, Birmingham. Besides the above, there was a large and excellent show of Bantams, for an account of which we have not been able to find room. The judges were: F. Boyd, Esq., Middleton Lodge, Leeds; Mr. James Bissell, Birmingham; T. J. Cottle, Esq., Pulteney Villa, Cheltenham.

**PIGEONS, &c.** *Workshop.* The best treatise on pigeons is that by Mr. J. M. Eaton, of Islington. For your other question, you had better apply to Mr. Ewing, Bodorgan Hall, Anglesey.

**POULTRY.** D. M. I am at a loss to know what can be the matter with the cock in question; as you do not mention them, I suppose the hens are well. As his principal ailment now seems to be a lack of flesh, I would advise you to give him a teaspoonful of cod liver oil daily. I have no doubt that will restore him. I am afraid his sight is defective, the throwing back of the head on the approach of any one would indicate it. I would wash his eyes with alum and water. You state, when you first had him he was shut up for some days. As a rule, never confine a fowl if you can avoid it.—*A. B.* The poop causes all the symptoms you complain of. Wash the heads and eyes of your fowls with vinegar and water, give castor oil every other day, let them be protected from cold winds and draughts, and fed well on bread soaked

in old ale. Whitewash the walls and perches of their houses, and strike plenty of lime on the floors. Be careful they have plenty of clean water always at hand, and avoid feeding on whole corn.—*Edps.* Almost all black fowls throw a few red or brassy feathers at times. The presence of them would disqualify a bird at an exhibition, but it is not in my opinion a mark of degeneracy, nor would I discard one on account of them. He will probably moult them out. I have known Spanish fowls moult quite white. Last year a favourite Spanish cock of mine moulted a brassy stripe down each wing. I did not intend to sell him, but an amateur and excellent judge bought him at full price, spite of the apparent defect.—*Shanghai.* The complaint you speak of is, I think, peculiar to Cochins China fowls. It is scurf, and arises from internal fever. It is very common, and may be successfully treated by administering a tablespoonful of castor oil every other day, for a week, making three doses, and by rubbing the parts affected with compound sulphur ointment. If this be not at hand, any grease will do which has neither salt nor flour mixed with it. While affected the bird should have no whole corn, and must have access to Grass or other cooling food.

#### Miscellaneous.

**Patent.**—To Richard Archibald Brooman, of the firm of J. C. Robertson & Co., 166, Fleet Street, patent agent, for improvement in the manufacture of manure. (A communication.) Dated August 10, 1852.—This invention consists in producing a manure in a state of powder, by the desiccation and pulverisation of fish, or the remains of fish, as rich as, if not richer than, and perfectly analogous to, the best Peruvian guano. The patentee takes fish, or the remains of fish, and disintegrates them, or separates their integral parts either by boiling in common boilers, or by steaming in vessels with double sides. After having been subjected to this preliminary treatment, they are deposited on strainers to drain, and are then submitted to the action of graters, which complete the division of the particles. On leaving the graters they are placed in bags or between cloths, and pressed, in order to extract as much as possible of the liquid contained in them; a certain portion of moisture will still, however, remain in the pressed matter, and this is removed by crushing the cakes as they come from the presses, and subjecting them to currents of hot air, by which their complete desiccation will be effected. When dry, the mass is reduced to powder by any suitable machinery, and is then ready for use as manure. In order to prevent fermentation from the absorption of moisture, the powder should be beaten whilst being stored away; but if, notwithstanding this precaution, fermentation should still take place, the powder should be sprinkled with acid chloride of manganese, when its progress would be immediately checked. For some soils a mixture of the bones and skeletons of fish and marine animals, after being ground, with the fish guano, in proportions varying according to the nature of the soil, will in some cases give a manure preferable to pure guano. When these substances are compact, and offer too great a resistance to the grinding and crushing process, they should be previously disintegrated by subjecting them to the action of steam, which would not only soften them, but remove fat and grease, so prejudicial to vegetation. When their use is adopted they should in all cases be added to the fish, or remains of fish, before the pulverising process, in order that the action of the mills may effect a complete mixture between the two substances. The patentee does not claim the application of fish generally to manuring purposes, but he claims the manufacture of manure from fish and the remains of fish, treated in the manner before described, that is to say—disintegrated, desiccated, and reduced to powder. *From the Mechanics' Magazine of Feb. 19, 1853.*

#### Calendar of Operations.

MAY.

**DORSET FARM.**—Average Wheat now is not worth more than 1*l.* per sack; Barley is about 12*s.* to 15*s.*, and Oats from 10*s.* to 13*s.* per sack, so that taking 8 sacks of Wheat, 12 of Barley, and 16 of Oats as an average proportion, the balance will be rather in favour of spring corn; and, I think, the land being the same in each case, these proportions would not be very far wrong; then we have the straw of both Barley and Oats, more valuable as fodder for the cattle and horses. It is not so good for thatching; but perhaps we may see the time when slate and tile will do this duty, so far as buildings are concerned. I think I have often stated the way in which we store them, which seems to be the simplest and cheapest, and I can vouch for its safety for some years, as we have had a good supply of them for our pigs up to the time of storing the new crop; and there was every appearance of their keeping any length of time if they had not been wanted. I have no doubt but they will come to be more generally adopted, after it is found how they may prove a friend in need when frost or snow prevents the getting at the Turnips; and when the Turnips are done, the Mangold Wurzel comes as the most appropriate food for passing over the dry spring and early summer fields; and one advantage attending them is, that being out of the field, we can get our spring corn sown in proper time, even if the Grass is not fit for feeding. We have not yet threshed much Wheat, as the price has been no inducement to make us neglect other things; and now as there are so many portable steam-engines to be got which thresh at great speed, it can soon be done in a summer day if the straw is not wanted before. Perhaps it may not be out of place to state the expense of this method of threshing. In a day of 10 hours, we had a sack of Barley measuring 280 cubic yards, which produced 74 sacks of Barley, threshed, the expense being as follows:—

Expense of engine and machine, with a man to feed, 2 s. d.	
and one to attend engine, at 10 <i>d.</i> per gr. ....	1 10 0
Three men to supply the feeder, at 1 <i>s.</i> 6 <i>d.</i> ....	0 4 6
Two women to shake the straw, at 10 <i>d.</i> ....	0 1 8
Two men and a boy to clear away the straw and build it in a rick ....	0 3 8
One man and two women to clear away the corn, and carry it to barn ....	0 3 2
Supplying water, &c. ....	0 1 6
Seven cwt. coals, at 1 <i>s.</i> 2 <i>d.</i> ....	0 8 2
Total .....	£2 13 6

Which would amount to about 1*s.* 5*d.* per quarter, which is not much less than if it had been done by the good old flail—1*s.* 6*d.*



to 1s. 8d. being the price by it; but then we saved the expense of taking the risk to the barn, and having to put the straw out again, but this would not be any advantage very often, and so makes nothing either way; but then we can get the work done at this rate by hiring. Surely it would pay many farmers to have a portable engine of their own, which they could use more at their own time, and apply it to cutting chaff and other purposes, and even to grinding their Barley, &c., for pigs' food; for there is no reason why a four or six-horse power portable engine should not do these things as well as a fixed one—at any rate, they might be sufficient for all that is required on most farms in that way; and on large farms it is more desirable to have them portable, even with a little more waste of fuel, &c., attending them; and then the manure can be left nearer to where it is wanted, and the corn in harvesting would not have to be carried so far. No doubt we shall see improvements effected in portable engines and threshing machines that will make them too desirable for the farmer, of even moderate extent, to be without them. C. S. [Extracted from a communication of the 2d, which has only just arrived.]

Notices to Correspondents.

**ALDERNEY BULL:** *Hoyston.* If you will write a note, and S. Tiffin will send his address, we will forward the former to the latter.

**BEES:** *Rus.* We think that the owner of a swarm of bees who has followed them to the empty hive in your garden, where they have lodged themselves, can "compel" you to give them up to him.

**FLAX-SEED:** *M.* We shall soon be able to describe to you trustworthy experience on the subject.

**LARGE PIGS:** *One who means Business.* The largest pigs are to be found in the neighbourhood of Leeds, Bradford, and Keighley. But perhaps the sort of pig wanted by our correspondent is produced by a cross between the large and small Yorkshire, or what is termed the middle breed in the North. Many disappointments attend the crossing of large with small pigs. Where you get one good one, you get half a dozen inferior ones—uneven lots.

**SHEEP:** *W. E.* Mr. Spooner's book on the Sheep is as good as any.

**SWEDES:** *Rus.* The drills should be 24 to 26 inches apart, and the plants about 1 foot apart in the drills.

**TWIN HEIFERS, &c.:** *A. B.* You can breed from them. [Can any one speak as to the value of the forcing pump of Messrs. Burgess and Key, and whether it can be made available for small field culture?]

Markets.

COVENT GARDEN, JUNE 4.

Notwithstanding the coldness of the nights and easterly winds, Vegetables continue to improve. Forced Peaches and Nectarines are becoming more plentiful. Strawberries fetch from 6d. to 1s. an ounce, but more are sold at the latter price than at the former. The supply from the Continent of Peas, Potatoes, Carrots, Asparagus, Endive, and Lettuce, is still well kept up. Rhubarb is abundant. Young Carrots and Turnips fetch from 4d. to 1s. 3d. per bunch. Old Potatoes are now chiefly confined to Regents. Frame Potatoes fetch from 9d. to 1s. 6d. per lb. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonettes, Cinerarias, Tulips, and Azaleas.

FRUIT

Pine-apples, per lb., 8s to 12s  
Grapes, hothouse, p. lb., 4s to 10s  
Peaches, per doz., 12s to 24s  
Nectarines, per doz., 12s to 24s  
Strawberries, per oz., 6d to 1s  
Apples, dessert, p. bush, 10s to 15s  
— kitchen, do., 6s to 12s

VEGETABLES.

Cabbages, per doz., 1s to 2s  
Broccoli, per doz., 3s to 6s  
Cauliflowers, each, 4d to 1s  
Greens, per doz., 2s 6d to 4s  
French Beans, per 100, 1s to 2s  
Asparagus, per bundle, 1s to 2s  
Rhubarb, p. bundle, 3d to 8d  
Potatoes, per ton, 85s to 200s  
— per cwt., 5s to 11s  
— per bush, 2s 6d to 6s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 4d to 1s 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 6s to 10s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

HAY.—Per Load of 36 Trusses.

**SMITHFIELD, June 2.**  
Prime Meadow Hay 80s to 87s  
Inferior do. ... 70 75  
Rowen ... 45 52  
New Hay ... 98 108  
**CUMBERLAND MARKET, June 2.**  
Prime Meadow Hay 86s to 94s  
Inferior do. ... 60 80  
New Hay ... 98 108  
Old Clover ... 75 108  
**WHITEHAPPEL, June 2.**  
Fine old Hay ... 80s to 88s  
Inferior do. ... 72 75  
New Hay ... 98 108  
Straw ... 98 108

**POTATOES.—SOUTHWARK, May 30.**  
Since our last report the arrivals both coastwise and by rail have been large for the season, and the weather warm. Trade very heavy, and prices have declined for all sorts. The following are this day's quotations:—Yorkshire Regents, 100s. to 160s.; Lincolnshire do., 90s. to 120s.; Scotch do., 90s. to 120s.; do. reds, 55s. to 95s.; French whites, 70s. to 80s.; Rhenish, 50s. to 90s.

COAL MARKET.—FRIDAY, June 3.

Hollywell Main, 16s. 6d.; Townley, 15s.; Hasting's Hartley, 15s. 9d.; Tanfield Moor, 15s.; Wallsend Lambton, 16s. 9d.; Wallsend Stewarts, 17s.; Wallsend Tees, 17s.—Ships at market, 22s.

WOOL.

**BRADFORD, THURSDAY, JUNE 2.**—The continued firmness in price for anything clean and good in class in colonials clearly shows a strong desire for this kind of wool, which during the present sales has not been offered in great plenty. The continual opening of the Yorkshire and other weekly markets is completely paralysing all engaged in the trade; for, high as the prices are, all is regularly cleared away, at prices not at all commensurate with what is selling here, and which the spinners positively refuse to give, seeing no prospect but that of an absolute loss when made into yarns. The old practice of not liking to lose any farmers' lots, if continued to be bought at the prices at which the new clip has opened, we fear will tell on the holder; for although an advance followed on the purchase of last year's shear, the prices now sought are too far advanced to admit of prime cost being realised here. Unless great caution is manifested, it is more than probable we shall see great disasters for the trade, without considerable advances in the price of yarn, cannot cover cost on old bought purchases of wool.

SMITHFIELD.—MONDAY, May 30.

The supply of Beasts is much smaller than on Monday last; it is, however, quite sufficient for the demand. Trade on the whole

is rather better, but only in few instances is there any quotable advance. There is a large number of Sheep, which causes a slow sale. The largest Long-wools are rather lower, but sizeable ones and choice Downs are making about the same as of late. Lambs and Calves are readily disposed of at Friday's quotations. From Germany and Holland there are 559 Beasts, 1680 Sheep, 238 Calves, and 15 Pigs; from Scotland, 600 Beasts; from Norfolk and Suffolk, 2400; and 215 from the northern and midland counties.

Per st. of 8 lbs.—s d s d Per st. of 8 lbs.—s d s d  
Best Scots, Here- Best Long-wools— 0 0 0 0  
fords, &c. ... 4 2 to 4 6 Do. Shorn ... 4 0 4 4  
Best Short-horns 4 0 4 4 Ewes & 2d quality 0 0 0 0  
2d quality Beasts 3 0 3 6 Do. Shorn ... 3 6 3 10  
Best Downs and Lambs ... 5 8 6 4  
Half-breds ... 0 0 0 0 Calves ... 3 10 5 2  
Do. Shorn ... 4 4 4 6 Pigs ... 3 6 4 8  
Beasts, 498s; Sheep and Lambs, 25,680; Calves, 347; Pigs, 215.

FRIDAY, June 3.

We are moderately supplied with Beasts, and the demand is tolerably good. Monday's quotations are, therefore, fully maintained, and a fair clearance is effected. Sheep and Lambs are more plentiful; trade is slow, but there is scarcely any alteration in prices. The number of Calves is very large; however, there are not many choice ones, consequently, there is no reduction in best qualities. Inferior are rather lower. From Germany and Holland there are 201 Beasts, 880 Sheep, and 390 Calves; from Norfolk and Suffolk, 400 Beasts; and 130 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d Per st. of 8 lbs.—s d s d  
Best Scots, Here- Best Long-wools— 0 0 0 0  
fords, &c. ... 4 2 to 4 6 Do. Shorn ... 4 0 4 4  
Best Short-horns 4 0 4 4 Ewes & 2d quality 0 0 0 0  
2d quality Beasts 3 0 3 6 Do. Shorn ... 3 6 3 10  
Best Downs and Lambs ... 5 8 6 4  
Half-breds ... 0 0 0 0 Calves ... 3 10 5 2  
Do. Shorn ... 4 4 4 6 Pigs ... 3 6 4 8  
Beasts, 387; Sheep and Lambs, 11,410; Calves, 633; Pigs, 210.

HOPS.—BOROUGH MARKET, June 3.

Messrs. Pattenden and Smith report that from accounts received from the Hop plantations, a few fly have made their appearance, and are slightly on the increase. The market is firm, and prices about the same.

MARK LANE.

**MONDAY, May 30.**—The supply of English Wheat at this morning's market was small, which enabled factors to realise it quickly at the extreme prices of Monday last. Foreign met an improved inquiry from country buyers, and secondary qualities of red Baltic commanded an advance of fully 1s. per qr. on the quotations of this day se'night. All other descriptions were also the turn dearer. Barley meets with little inquiry, and secondary qualities are rather cheaper. For Beans and Peas there is an active demand, at very full prices. There is a good sale for Oats at last week's rates. Flour sells rather more freely.

**PER IMPERIAL QUARTER.**  
Wheat, Essex, Kent, & Suffolk ... White ... 3s. 5d. Red ... 3s. 5d.  
— Talavera ... 4s. 1d. Red ... 4s. 1d.  
— Norfolk ... Red ... —  
— Foreign ... 3s. 5d.  
Barley, grind. & distil., 23s to 26s ... Chev. ... 24s 30  
— Foreign, grinding and distilling ... 22s 30  
Oats, Essex and Suffolk ... 17s 20  
— Scotch and Lincolnshire ... Potato ... 22s 24  
— Irish ... Potato ... 21s 23  
— Foreign ... Poland and Brew ... 18s 22  
Rye ... 22s 32  
Rye-meal, foreign ... 32s 35  
Beans, Mazagan ... 30s to 32s ... 27s 30  
— Pigeon ... 34s to 37s ... 27s 30  
— Foreign ... Small ... 27s 30  
Peas, white, Essex and Kent ... Boilers ... 32s 34  
— Maple ... 32s to 35s ... Grey ... 30s 33  
Maize ... White ... 37s 44  
Flour, best marks delivered ... per sack ... 21s 37  
— 2d ditto ... ditto ... 21s 37  
— Foreign ... per barrel ... 21s 37

**FRIDAY, June 3.**—The supply of Wheat this week has been good, but moderate of other grain and Flour. This morning's market was again numerously attended from the country, and Wheat met an active inquiry, but the advance demanded restricted all but the most urgent buyers from operating, and sales were consequently not extensive, although at an improvement of fully 1s. per qr. The value of Barley, Beans, and Peas remains as on Monday, and the Oat trade is firm at that day's prices. For Flour there is a fair demand at an advance of 6d. to 1s. per barrel. Floating cargoes of Wheat from the South have been in great request, and purchased at fully 2s. per qr. above previous rates.

ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
	Qrs.	Qrs.	Qrs.	2090 sacks
English ...	3220	670	1940	
Irish ...			7260	
Foreign ...	14950	6740	15010	4480 sacks

IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
April 23 ...	44 7	31 5	19 0	27 3	34 9	31 11
— 30 ...	44 4	31 6	18 3	30 0	35 3	33 3
May 7 ...	44 6	31 4	19 0	30 7	35 2	33 3
— 14 ...	44 7	31 5	18 8	29 8	35 3	33 3
— 21 ...	43 11	30 11	19 1	35 8	36 0	32 1
— 28 ...	43 9	30 6	18 7	33 2	36 7	32 7
Aggreg. Aver.	44 3	31 2	18 10	31 1	35 6	32 9

FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Apr. 23.	Apr. 30.	May 7.	May 14.	May 21.	May 23.
44s 7d	...	...	...	...	...	...
44 7	...	...	...	...	...	...
44 6	...	...	...	...	...	...
44 4	...	...	...	...	...	...
43 11	...	...	...	...	...	...
43 9	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, May 31.**—Arrivals from Ireland and coastwise during the past week have been insignificant; but from foreign ports we have been pretty liberally supplied. At this day's market there was a fair attendance of the town and country trade, and a brisk demand was experienced for Wheat and Flour, at an advance of 1d. to 2d. per 70 lbs. and 6d. to 9d. per barrel on the prices of this day week; sack Flour, however, was not dearer. Oats met with a moderate demand, at late rates; but Oatmeal was neglected, and easier to buy. Barley, Beans, and Peas sold in retail at full prices. White Indian Corn was in fair request, and without change in value, but yellow was scarcely inquired for, and about 6d. per qr. lower. Floating cargoes of Wheat were held for 1s. to 2s. per qr. advance. **FRIDAY, May 27.**—The arrivals from Ireland and coastwise since Tuesday have been quite insignificant, and but moderate from abroad. At this day's market there was a fair attendance of the town and country trade, and a good consignment demand was experienced for Wheat and Flour at generally the extreme rates of Tuesday, and in some instances at a slight advance for extra qualities, which are scarce. Oats and Oatmeal were steady in price, but the sale was limited. Barley, Beans, and Peas were without change in value or demand. Indian Corn was not much inquired for, and barely supported late rates.

**CUTLERY WARRANTED.**—The most varied assortment of Table Cutlery in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales.

Three and a half Ivory-handled Table Knives, with high shoulders, 10s. per dozen; Desserts, to match, 9s.; if to balance, 1s. per dozen extra; Carvers, 3s. 6d. per pair; larger sizes, in exact proportion, to 25s. per dozen; if extra fine, with silver ferrules, from 36s.; White bone Table Knives, 6s. per dozen; Desserts, 4s.; Carvers, 2s. per pair; Black horn Table Knives, 7s. 4d. per dozen; Desserts, 6s.; Carvers, 2s. 6d.; Black wood-handled Table Knives and Forks, 6s. per dozen; Table Steels, from 1s. each.

The largest stock of Plated Dessert Knives and Forks, in cases and otherwise, and of the new Plated Fish Carvers in existence. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

THE PERFECT SUBSTITUTE FOR SILVER.

The REAL NICKEL SILVER introduced 20 years ago by WILLIAM S. BURTON, when plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either useful or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Threaded or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen ...	18s.	32s.	36s.
Dessert Forks " ...	30s.	54s.	58s.
Dessert Spoons " ...	30s.	56s.	62s.
Table Forks " ...	40s.	65s.	70s.
Table Spoons " ...	40s.	70s.	75s.

Tea and coffee sets, waiters, candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's.
Table Spoons and Forks, full size, per dozen ...	12s.	28s.	30s.
Dessert ditto and ditto ...	10s.	21s.	25s.
Tea ditto ...	5s.	11s.	12s.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating, exclusive of the shop devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares, Iron and Brass Bedsteads), so arranged and classified that purchasers may easily and at once make their selections. Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

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WHISKERS, &c.?—EMILY DEAN'S CRINILENE has been many years established as the only preparation that can be relied upon for the Restoration of the Hair in Baldness from any cause, preventing the Hair falling off, strengthening weak Hair, and checking Greyness, and for the production of Whiskers, Moustachios, Eyebrows, &c., in three or four weeks with certainty. It is an elegantly scented compound, price 2s., sold by all chemists, or will be sent post free, on receipt of 24 penny postage stamps, by Miss DEAN, 37 A, Manchester Street, Gray's Inn Road, London. "I have used your Crinilene, and have now a good pair of Whiskers," J. L. HIGGS, Dudley. "It has certainly improved my hair," J. THOMPSON, Durham.

Beware of similarly-named imitations, and observe the name—EMILY DEAN'S CRINILENE—in white letters on a red stamp.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.

**ALL Sufferers** from this complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free, with full instructions, on receipt of 7s. 6d. in postage stamps, cash, or Post Office order, payable at the General Post Office, to Dr. HERBERT LESLIE, 37A, Manchester Street, Gray's Inn Road, London, where he may be consulted daily, Sundays excepted, from 11 till 1, mornings, and 5 till 7 evenings only.—NOTICE.—All letters of inquiry must enclose two stamps for reply, or they will not be noticed.

PARR'S LIFE PILLS.

ARE ACKNOWLEDGED TO BE THE BEST MEDICINE IN THE WORLD.

The following facts have been mentioned to Mr. J. F. WINES, Leicester, who has preserved the names and residence of each of the parties, which he is ready to produce:—

A person in Oxford Street, Leicester, aged 44, had been ill two years, of influenza. The club surgeon said he was in a consumption, and would never recover. He began to take Parr's Life Pills three months ago, previous to which he had been confined to his bed six months. The Pills first brought away a great deal of mucus, and then he gradually recovered, can now walk about without a stick, and thought it his duty to make it known. He called again afterwards, and begged his name might not be published, as it might offend the club doctor.

The wife of Mr. BROWN, in Fleet Street, has been in a low way for some time; she took Parr's Pills regularly, and soon found her spirits more cheerful; and her sight and hearing, which had been affected, were improved. She said they were pleasant to take, not causing a sickly feeling, nor giving the least pain.

Miss EVANS, Chatham Street, is a mender in a warehouse; has been much afflicted for several years, and not able to do more than two hours' work in a day; she took Parr's Pills, and soon was improved in health, and could see much better. She now works her regular hours.

Mr. HENSHAW, of Bagworth, has been long subject to palpitation of the heart, and could not walk up hill. Had the advice of an eminent physician in Leicester, but was no better till he took Parr's Pills; but now he is quite recovered.

The wife of Mr. J. FROST, at the same place, was so tormented with a cough that she could not sleep. She had taken Parr's Pills, which had done her, her husband said, "a world of good."

Mr. R. VANN, of Belgrave, had been ill five years of palpitation of the heart. Had been in the infirmary, and under several physicians and surgeons. Has been gradually improving since he took Parr's Pills, and is now able to work.

Mrs. TURNER, of Whetstone, found Parr's Pills very beneficial for the scrofula.

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**HARTLEY'S PATENT ROUGH PLATE GLASS,**  
for CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTORIES,  
SKYLIGHTS, &c.

Packed in Crates, for Cutting up of the sizes manufactured.

	1/4th inch thick.	1/6th inch thick.	1/8th inch thick.
30 inches wide and from 40 to 50 long	0 5 1/2	0 7	0 9
Or 20 " " " 50 " 70 "	0 6	0 7 1/2	0 9 1/2
above 70 " "			

In Squares cut to the sizes ordered.

Under 8 by 6	0 4	0 5	0 6
8 by 6 and under 10 by 8	0 4 1/2	0 6	0 7
10 by 8 " 14 by 10	0 5	0 6 1/2	0 8
14 by 10 " 14 ft. sup., if the length does not exceed 20 inches	0 5 1/2	0 7	0 8 1/2
1 1/2 ft. sup. " 3 ft. sup., or if above 20 and not above 30 inches long	0 6	0 7 1/2	0 9

3 " " 4 " 20 "	0 6 1/2	0 8	0 9 1/2
4 " " 5 " 30 "	0 7	0 8 1/2	0 10
5 " " 6 " 35 "	0 7 1/2	0 9	0 10 1/2
6 " " 8 " 40 "	0 8	0 9 1/2	0 10 1/2
8 " " 10 " 45 "	0 8 1/2	0 9 1/2	0 10 1/2
10 " " 12 " 55 "	0 9	0 10	0 11
12 " " 15 " 65 "	0 9 1/2	0 10 1/2	0 11 1/2
15 " " 20 " 75 "	0 10	0 11	0 12
20 " " 25 " 90 "	1 0	1 1	1 1 1/2
25 " " 30 " 100 "	1 0 1/2	1 1 1/2	1 2
Quarries	0 6	...	...

PACKED IN BOXES OF 50 FEET EACH.  
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8 " 6	8 " 6	" 2 1/2d.	" 0 18 9
10 " 8	10 " 8	" 3d.	" 0 21 11
12 " 10	12 " 10	" 3 1/2d.	" 0 24 6

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3 1/2d. per square foot, according to size.  
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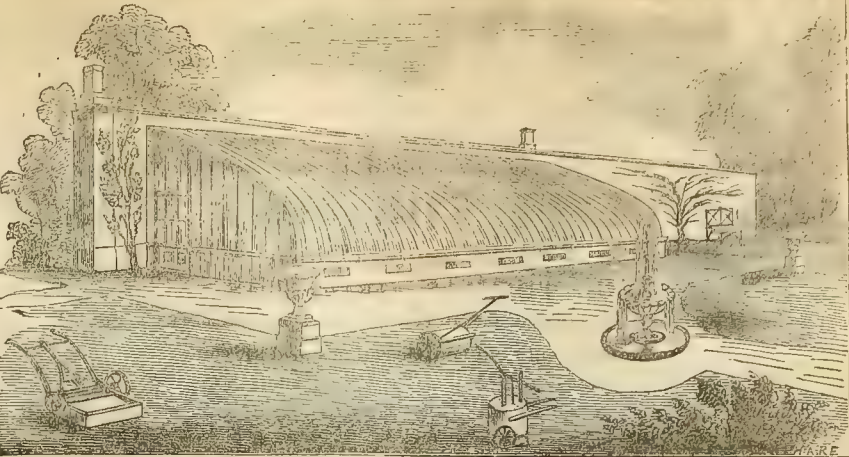
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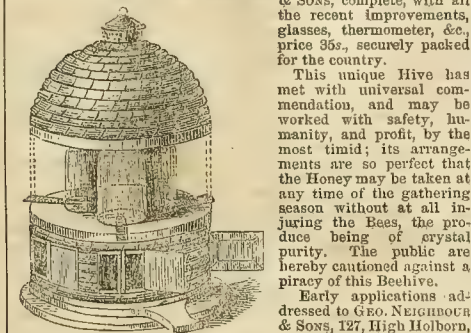
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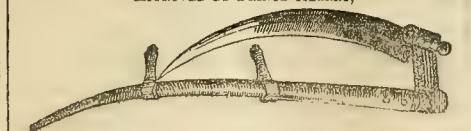


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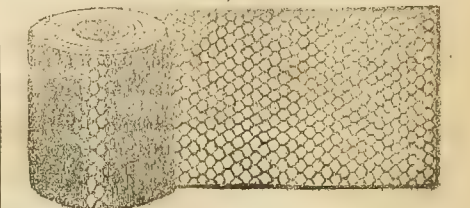
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1 1/2-inch " light "	8 "	6 "
1 1/2-inch " strong "	10 "	8 "
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All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free. Manufactured by **BARNARD & BISHOP**, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 24.—1853.]

SATURDAY, JUNE 11.

[PRICE 6d.

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**ROYAL PAVILION, BRIGHTON.**—The first (of two) GRAND FLORICULTURAL AND HORTICULTURAL EXHIBITIONS (open to all England), under distinguished patronage, will be held at the Royal Pavilion Rooms and Grounds, on TUESDAY and WEDNESDAY, the 5th and 6th July next, when upwards of 2000 will be offered as prizes to exhibitors.

Schedules can be obtained by applying to E. SPARY (General Director), Queen's Graperies; or to EDWARD CARPENTER (Seedsman), Secretary, pro tem.—Brighton, June 11.

**NORFOLK AND NORWICH HORTICULTURAL SOCIETY.**—The ROSE SHOW will take place at Norwich on WEDNESDAY, the 6th of July next, when (amongst other prizes), the following will be offered:—Roses, collection of 36 varieties, 3l., 2l., 1l., 15s., and 10s. Open to nurserymen and such amateurs as are members. ARTHUR PRESTON, Hon. Sec. Norwich, June 11.

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The Sixth Annual Exhibition of the Society will take place in St. George's Hall, on TUESDAY and WEDNESDAY, 13th and 14th SEPTEMBER, 1853. Four Silver Cups and other valuable prizes will be awarded.

Particular Notice to Exhibitors for the Extra Prizes.—The seating for Extra Prizes will be as follows: Gentlemen's Gardeners and Nurserymen's Plants on July 13th and 14th; Amateurs' Plants, 15th and 16th; and Cottagers', 18th and 19th. Exhibitors are requested to have their Plants ready for the Seating according to the above dates, as no other time will be allowed.—For further particulars see rules in schedule.

The Bradford Military Brass Band will be in attendance. Tickets, Schedules, and any information may be obtained from the Secretaries, or any of the Committee. Particulars will be fully announced.—By order.

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## EXHIBITION OF AMERICAN PLANTS.

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HORRA WATERER, Knap Hill Nursery.—June 11, 1853.

## EXHIBITION OF AMERICAN PLANTS.

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W. H. in thanking his friends for their hitherto liberal patronage, respectfully solicits a continuance of their kind support, and in so doing, assures them and the public generally, that nothing shall be wanting on his part to merit their approbation.

June 11.

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\*A. The usual discount to the trade when three or more are taken.—Bagshot, Surrey, June 11.

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Saxa Gothica conspicua .....	7 6
Streptocarpus biflorus .....	7 6
Tacsonia manicata, 1s. 6d. to .....	3 6
— Helleri .....	3 6
Tritoma aurea, 24s. per dozen .....	3 6
Tropæolum Triomphe de Gand .....	2 6
Weigela amabilis .....	7 6
— lutea .....	1 6

Fine Bedding Plants and Hardy Herbaceous Plants, in pots. See *Gardener's Chronicle* of May 7, 14, and 21.

SEED and HORTICULTURAL ESTABLISHMENT, Sudbury, Suffolk.

## COCHINS AND ROSES.

**MRS. STEDMAN,** Linkfield Place, Isleworth, respectfully calls the attention of the nobility, gentry, and amateurs generally, to her superb COLLECTION of ROSES, amongst which are running some of the best Cochins in the kingdom. Cochins China Eggs, 12s. to 30s. per dozen; Andalusian, 30s.; Black Spanish, 10s. 6d. Standard Roses from 18s. per dozen. Catalogues gratis on application.

**WILLIAM MASTERS, Exotic Nursery, Canterbury,** offers for sale 12 fine species of the new SIKKIM RHODODENDRONS, if selected by himself, for 3l., one of which will be the Edgeworthi so celebrated for its beauty, size, and fragrance.

W. M. has also a fine Collection of Stove and Greenhouse Plants, Orchids, and Ferns, which are in good health, and can be furnished at moderate prices.—June 11.

**NORMAN'S COLCHESTER CARDINAL.**—For sale, about 300 pipings of this splendid PINK, which received a First Class Certificate from the National Floricultural Society, July 1, 1852, and was designated as "purple, fine leaf, large and full; fine pod, and best of its class;" and figured in the October number of the "Florist."

Two pairs 5s., or 10 pairs 20s., including package and postage, on receipt of Post-office order or stamps.—Address Mr. HALLS, High Street, Colchester, Essex.

## RARE AND BEAUTIFUL FLOWERS FOR PRESENT GROWING.

**WILLIAM DENYER, SEEDSMAN AND FLORIST,** 82, Gracechurch Street, London, begs to offer the following:—

Antirrhinum: saved by an Amateur from a most superb and unique collection (unequalled in this country), recommended as being sure to produce splendid flowers, both novel in colour and exquisite in form, only in W. D.'s possession .....	1 0
Calceolaria, new hybrid, splendid colours .....	1 0
Cineraria, from a superb collection, all colours .....	1 0
Pansy, saved by Thomson and other celebrated growers from the best show flowers .....	1 0
Primula sinensis flabratia, various colours .....	1 0
Stocks, autumnal or late summer flowering, six bright and distinct colours .....	2 0
Stocks, Gigantic or Brompton, six distinct colours do. .....	2 0
*Stocks, Edgeworthi, perpetual, distinct colours, viz. white, rose purple, blue, and crimson .....	2 0
*These are large flowering, very double, and different to any other Stocks; lasting and flowering for several years.	
Wallflower, six gigantic varieties, imported .....	2 0

The whole of the above, including postage, for 12s., or separately at the prices named.

## BENJAMIN R. CAMP, St. John's Street Nursery, Colchester, offers the following:—

NEW VERBENAS, 6s. per dozen.  
Camille, Conquerant, Duchess of Kent, Edward-Milner, Favourite, General Bampfield, Gentile Adie, Juliette, Louis Miellet, Mazepa, Madame Malet, Madame Lacharme, Monsieur Bouchage, Ormsby Beauty, Olga, Princesse Navarre, Racine Romulus.

NEW FUCHSIAS, 1s. 6d. each, or 15s. per dozen.  
Ariel, Exquisite, Gem of the Season, Joan of Arc, Leader, Model, Nil Desperandum, Novelty, Pendula, Resplendent, Standard of Perfection, Splendissima.

## MISCELLANEOUS.

Scarlet Geraniums Gem, Flower of the Day, Shrubland Pet, and the Amazon, 1s. each.  
Princess Alice, 6s. per dozen.  
Heliotrope Voltairianum nanum, 1s. each.  
Phlox Drummondii Mayi variegata, and Thompsoni, 6s. per doz.

## NEW HARDY SHRUBS.

Berberis Darwini, 2s. 6d. each. Lonicera, new species, from Deutzia gracilis, 1s. 6d. each. China, 2s. 6d. each.

E. scallonia macrantha, 1s. 6d. ea. Mitrisia coccinea, 1s. 6d. each.

**EDWARD GEORGE HENDERSON AND SON,** Wellington Road, St. John's Wood, London, begs to offer the following in strong plants; early orders will have strong imported plants.

**ALLOPLECTUS SCHLIMMI,** a first-rate plant, with handsome ornamental crimson-purple and green foliage, flowering free, 1 foot high, 10s. 6d.

**BEGONIA MINIATA,** a splendid greenhouse variety, with B. cinnabarina flowers and B. fuchsoides habit, flowering freely on small plants, 10s. 6d.

**CENTROPOGON TOVARENSIS,** a fine plant, equal to Hebeclinium ianthinum for winter flowering, with fine bunches of rich purple flowers. 10s. 6d.

**THYRSACANTHUS RUTILANS,** a first-rate exhibition plant, flowering in graceful pendant racemes of scarlet-tubed flowers; a very superior plant.

**FUCHSIA MINIATA,** a new species, flowering in bunches of scarlet crimson-tubed flowers; habit of F. serratifolia. 10s. 6d. and 15s.

**CALCEOLARIA VIOLACEA,** a new species, quite novel, of a pale blue, beautifully spotted with red and yellow; the form of the flower securing it from being injured by wet weather, and from the dwarf, bushy habit, and small foliage, it is likely to prove one of the neatest-habited bedding plants in this beautiful tribe. 10s. 6d.

**RHODODENDRON ETENDARD DE FLANDRE,** very large purple, deeply blotched, and very large truss. 21s.

**RHODODENDRON DUC DE BRABANT,** semi-double white bordered with rosy lilac, upper petals yellow and brown spots. 21s.

**WEIGELA AMABILIS,** one of the best in this class, flowering in large bunches of fine rose flowers.

s. d.	Fuchsia Premier .....	10 6
	Begonia Prestonensis .....	10 6
	Gloxinia, White Perfection .....	10 6
	— theon .....	7 6
	— imperialis .....	7 6
	Wistarina sinensis alba .....	21 0

The above four varieties 31 6



## NETTING AND BUNTING FOR FRUIT TREES.

RICK CLOTHS, MARQUEES, TENTS, &amp;c.,

NEW OR SECOND-HAND, FOR SALE OR HIRE.

**BENJAMIN EDGINGTON** has prepared for the ensuing season an extensive assortment of Marquees, &c., for Horticultural Societies, Fetes, Cricket Clubs, &c. Rick Cloths with Poles, Pulleys, and Lines complete. A great variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. A Warehouse, 203, Piccadilly, London.

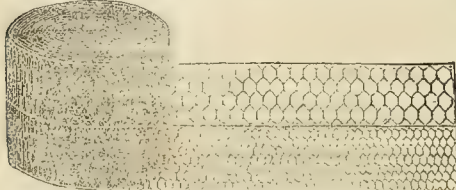
Address, by post, No. 2, Duke Street, Southwark, London.

## RIPE FRUIT, STRAWBERRIES, AND SEED

**BEDS—NEW TWINE NETTING** (Tanned if required).—1 yard wide, 14d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard; half-inch mesh ditto, 2 yards wide, 6d. per yard. **THE ELASTIC HEXAGON GARDEN NETTING**, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 4½d. per yard. Tanned Netting, 2 or 3 yds wide, 1½d. per yard; 4 or 6 yards wide, 3d. per yard—exactly the same as advertised by others at double the above prices. **FISHING NETS, POULTRY FENCING.**—A 20-yard Drag Net, with purse complete, 2l. 10s. A single walled Drag Net, any length and depth, 1s. per square yard. Casting Nets complete, 1s. 6d. per yard, measured round the lead line. Flue Nets, any size 1s. per square yard, complete. Minnow Nets, Eel Nets, Landing Nets, equally cheap, warranted first-rate quality and workmanship. Rabbit Net, 4 feet wide, 14d.; 6 feet wide, 2½d.; 8 feet wide, 3d. per yard. Each edge corded. 3d. per yard extra, suitable for poultry fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c., at War. CULLINGFORD'S, No. 1, Strathmore Terrace, Shadwell, London.—Orders by post, with Post Office Order or own reference, punctually attended to.

## HENRY J. MORTON, PATENT GALVANISED IRON

ROOFING WORKS, 94, Albion Street, Leeds. Agent for PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES. The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

**GALVANISED GAME AND POULTRY NETTING**, very strong and neat, NEVER REQUIRES PAINTING and cannot rust or corrode, made any width and length.

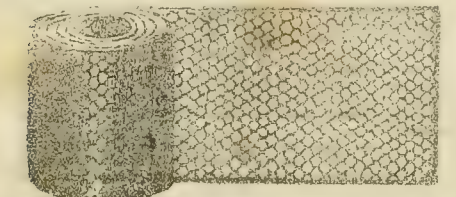
24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard. 24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. 0½d. per yard. **GALVANISED IRON SPOUTING**, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalted Roofing Felt, &c. Apply at 94, ALBION STREET, LEEDS.

## CHEAP WIRE GAME &amp; POULTRY NETTING,

5d. per running yard.

GALVANISED DITTO, 7d. per running yard, 2 feet wide.

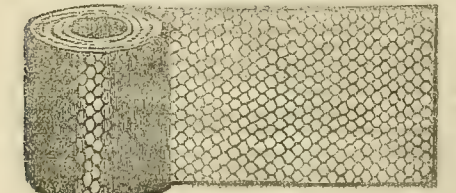


	Galvanised.	Not Galvanised.
24 in. wide, 2 in. mesh, 7d. per yard.	...	5d. per yard.
30 in. " 2 in. " 9d. "	...	6½d. "
36 in. " 2 in. " 10½d. "	...	7½d. "
48 in. " 2 in. " 1s. 2d. "	...	10d. "

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Ribs, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

## GALVANISED WIRE GAME NETTING.—

7d. PER YARD, 2 FEET WIDE.



	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 "	6½ "
2-inch " extra strong "	12 "	9 "
1½-inch " light "	8 "	6 "
1½-inch " strong "	10 "	8 "
1½-inch " extra strong "	14 "	11 "

If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## HEATING BY HOT WATER.

EFFICIENCY GUARANTEED.

**HOT-WATER HEATING APPARATUS**, upon approved principles, supplied and fixed in Horticultural and other Buildings, by WILLIAM DODDS & CO., Heating Engineers, 102, Leadenhall-street, London. First-rate references if required.

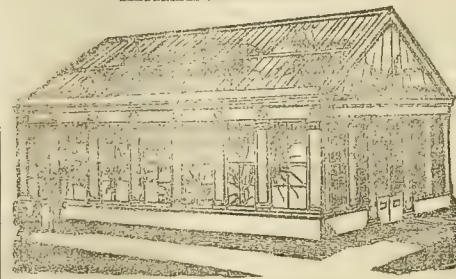
## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

**EDWARD AND A. WEEKS** (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.

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## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMOND**, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

## HOTHOUSES AND CONSERVATORIES.



**JAMES WATTS**, Hothouse Builder, Claremont Place, Old Kent Road, has 200 CUCUMBER and MELON BOXES and LIGHTS of all sizes, ready for immediate use, made of well-seasoned materials, packed and sent to all parts of the Kingdom.

**HOTHOUSES, CONSERVATORIES, &c.**, made and fixed complete at a considerable reduction, and Garden Lights of every description. References may be had to the Nobility, Gentry, and the Trade, in most of the counties of England.

## HORTICULTURE IN ALL ITS BRANCHES.



J. WEEKS &amp; Co., King's Road, Chelsea,



## HOTHOUSE BUILDERS.



The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The **HOT-WATER APPARATUS** (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.

## ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON**, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.

WAREHOUSE, 87, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long.	Squares in boxes, 100 feet each.
Under 6 by 4	13s.
6 by 4, 6½ by 4½	13s.
7 by 5, 7½ by 5½	15s.
8 by 6, 8½ by 6½	15s.
9 by 7, 9½ by 7½	20s.
10 by 8, 10½ by 8½	20s.
11 by 9, 11½ by 9½	20s.
12 by 10, 12½ by 10½	20s.
13 by 11, 13½ by 11½	20s.
14 by 12, 14½ by 12½	20s.
15 by 13, 15½ by 13½	20s.
16 by 14, 16½ by 14½	20s.
17 by 15, 17½ by 15½	20s.
18 by 16, 18½ by 16½	20s.
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20 by 18, 20½ by 18½	20s.
21 by 19, 21½ by 19½	20s.
22 by 20, 22½ by 20½	20s.
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24 by 22, 24½ by 22½	20s.
25 by 23, 25½ by 23½	20s.
26 by 24, 26½ by 24½	20s.
27 by 25, 27½ by 25½	20s.
28 by 26, 28½ by 26½	20s.
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188 by 186, 188½ by 186½	20s.
189 by 187, 189½ by 187½	20s.
190 by 188, 190½ by 188½	20s.
191 by 189, 191½ by 189½	20s.



## BEDDING PLANTS, ETC.

**SCARLET GERANIUMS, VERBENAS, CALCEOLARIAS, &c.**, established in Single Pots, selection left to ourselves, 3s. per dozen. See Spring Catalogue, which may be had by enclosing two postage stamps.

**VERBENA TRIFIDA ODORATA**.—White, very sweet-scented, half shrubby, growing from one to two feet high. When grown in greenhouse, is in bloom throughout the winter. 12s. per dozen.

**AZALEA INDICA**.—Specimen plants now in bloom.

H. LANE & SONS, the Nurseries, Great Berkhamstead, Herts.

## CHOICE PLANTS.

## YOUELL AND CO.

**BEG** to inform their friends and the public that this season, comprising all the novelties that they have thought worth attention, which will be supplied in any quantities suitable to the purchaser, at the prices quoted:—

## GREENHOUSE PLANTS, ETC.

**CAMELLIAS**.—Good strong plants, of the finest varieties, 21s. per dozen.

**ERICAS**.—Fine bushy blooming plants, of the handsomest flowering kinds in large 48s, 12s. per dozen.

**VERONICA ANDERSONI**.—This handsome free flowering plant cannot be too highly recommended; it is of easy culture, highly ornamental, and remains long in flower. Strong plants, 1s. 6d. each; smaller do., 9d.

**BURCHELLIA CAPENSIS NANA**.—This plant, a great improvement on the old Burchellia, is of very compact growth, and produces abundantly its heads of orange-scarlet flowers. Flowering plants, 12s. per dozen.

**SOLLIA DRUMMONDI**, a neat blue flowering creeper, suitable for trellises, 18s. per dozen.

**ACACIA CONFUSA and VIRGATA**, two handsome species, 1s. 6d. each.

**MANDEVILLA SUAVEOLENS**.—This fine creeper, of robust habit, produces numerous bell-shaped, highly fragrant flowers, of the purest white, in large clusters. Strong plants, 1s. 6d. each.

**PASSIFLORA RACEMOSA CERULEA**, the hardiest and most beautiful greenhouse, producing in abundance its pretty purple flowers. Strong plants, 1s. 6d. each.

**MITRARIA COCCINEA**.—This fine new shrub produced its fine scarlet bladdery flowers freely in our nursery last season, on plants in 48s. We confidently recommend it as highly ornamental; it makes a beautiful specimen. Strong plants, in large 48s, 1s. 6d. each; a few fine specimens, 3s. 6d. to 5s. each.

**PHILADELPHUS MEXICANUS**.—A neat dwarf shrub, producing flowers as fragrant as the Orange, 12s. per dozen.

**APHELEXIS**, fine varieties, 1s. each.

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Numerous species and varieties of Greenhouse Plants, such as *Heliconia*, *Chorozema*, *Eutaxia*, *Kennedy*, *Pimeles*, *Beaufortia*, *Correa*, *Cantua*, *Tecoma*, *Nerium*, *Epacris*, &c., &c. Our selection, 12s. per dozen; 75s. per 100.

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**ROSE "Paul's Prince Albert"**.—This fine Rose has been figured in the *Flora*, with the former; it is a Bourbon, of a fiery crimson. Nice grafted plants, 5s. each.

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**VERBENAS**, comprising such sorts as General Taylor, Zoe Monnier, Macrantha, Cardinal Wiseman, Ivis, Indith, Olga, Cornelia, Virginia, General Bideau, General Changarnier, Jean Bart, Model, Auricula, Stephanette, Albina, Montana, Marianne, Parton Madeline, General Courtigies, Coreus, with all the fine old standard varieties, 4s. per dozen.

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*Ditto*.—*Sultan*, fine dark scarlet, large well formed flowers, fine trussing, an excellent variety, 6s. per dozen.

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*Ditto* *Beauty of Montreal*, bright crimson, dwarf habit, a very free bloomer and distinct variety, 9s. per dozen.

*Ditto* *Sulphurea splendens*, fine yellow, 9s. per dozen.

*Ditto* *Kentish Hero*, orange bronze, fine standard variety, for bedding, 6s. per dozen.

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The Hollyhock Seeds were all saved from the finest and most approved varieties, which, it is well known, have been cultivated very successfully in the Exeter Nursery.

Sealed packets of Cineraria, at 2s. 6d. each; Calceolaria, at 2s. 6d. each; Hollyhock, at 2s. 6d. each. Free by post, and warranted by them.

N.B. It is now a good time to sow these Seeds, thereby securing a stock of strong early blooming plants.

Exeter Nursery, Exeter.—June 11.

## The Gardeners' Chronicle.

SATURDAY, JUNE 11, 1853.

## MEETINGS FOR THE ENSUING WEEK.

MONDAY, June 13	13	Royal Botanic Gardens (American Plant Show).....	2 P.M.
		Law Amendment.....	8 P.M.
		British Architects.....	8 P.M.
		Geographical.....	8 P.M.
		(Syria) Egyptian.....	8 P.M.
TUESDAY, —	14	Medical and Chirurgical.....	8 P.M.
		Zoological.....	9 P.M.
WEDNESDAY, —	15	Geological.....	8 P.M.
		(National) Floricultural.....	8 P.M.
THURSDAY, —	16	Antiquarian.....	8 P.M.
		Royal.....	8 P.M.
SATURDAY, —	18	Royal Botanic.....	8 P.M.

COUNTRY SHOWS FOR THE PRESENT MONTH.—14th: Cheltenham and West Kent (Farrington).—15th: Isle of Wight and Wycombe.—21st: Scottish Fanny (Dunfermline), Thornbury, and Great Marlow.—23d: Colchester.—23d: Maidstone, Chichester, Aylesbury, Salisbury, and Bath.—24th: Newbury.—25th: Staines.—28th: Meath, and Handsworth.—30th: Isleworth, Liverpool, Thame, and Ireland Royal Horticultural.

The announcement made last week of Mr. BOLLMANN's supposed discovery of a cure for the POTATO DISEASE has brought us many correspondents, for only one or two of whose communications we can find room. It now appears that half the letters of the alphabet put in their claim for a share of the credit of having anticipated the Russian professor. To all such statements we reply by asking for the results. We might with much greater reason claim for Sir ROBERT PEEL's Commissioners in Ireland credit for the idea of kiln-drying decaying Potatoes; these gentlemen having undoubtedly been the first to suggest the plan, as is shown by their reports, dated October 24 and 29, 1845 (see *Gardeners' Chronicle*, 1845, pp. 735 and 751). But the Commissioners could not contrive to carry out the plan, the Potatoes having rotted more rapidly than before, when exposed to a temperature required to produce their necessary dryness. All our correspondents, moreover, talk of the advantages of drying by mere exposure to air, as in Mr. CUTHILL's plan; whereas, the real point in the Russian proposal is to *high dry* them by exposure to a temperature equal to 136° and upwards; in fact, by partial roasting.

We have already described the most material of the facts recorded in Mr. BOLLMANN's pamphlet; let us now endeavour to explain his *opinions*, as far as we can reduce them to anything positive. The drying, he thinks, is more advantageous when rapid than when slow, and should always be continued until the rind of the Potato is quite hard, and completely covered with wrinkles. He is also of opinion that it will be found better to dry them in the autumn than in the spring; and to plant the dried sets as early as possible in the spring.

It was remarked that the high dried Potatoes not only escaped disease, but pushed with unusual vigour. The latter circumstance may be supposed to have been owing to the conversion of the insoluble starch of the Potato, by the heat to which it was exposed, into gum, dextrine, and sugar, substances immediately soluble, and ready to be taken into the system as soon as growth commenced.

In addition to the increased vigour, it would seem that the disease was expelled by a high temperature. This Mr. BOLLMANN supposes may be accounted for in one of two ways.

"If we admit the Potato disease to be analogous to the gangrene in animals, we must also recollect that it is of two sorts, the one dry and local, which is always the most dangerous—the other wet, and dispersed through the whole structure. The germ of the last form of disease may also be assumed to have been contained in every set of Potatoes since the appearance of the epidemic. But this wet gangrene is changed by drying into the dry local gangrene, which, at a high temperature, wholly loses its contagious quality. And thus we obtain a sound crop, because the Potatoes which we plant are already cured."

But the Potato disease may also be a putrid epidemic, readily communicated to the new crop, and then it may be compared to those contagious diseases to which men and animals are liable, and which act upon the organisation by means of a putrid principle. Now, as all organic matter loses its vitality when exposed to a temperature sufficiently high, so it may be possible that high drying destroys the putrid principle, without affecting the vitality of the Potato itself. It appears that vaccine matter

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loses its power when exposed to a temperature of 172°, as was ascertained at Constantinople in 1846 by Dr. RAFALOVITSCH; the virus of the plague has been observed to disappear in Egypt under similar circumstances. In another contagious affection peculiar to the human species, it has been demonstrated in the hospitals of St. Petersburg, by Dr. ROSENBERGER, that the contagious principle becomes weaker as temperature rises, and that the higher the temperature the more rapidly it was destroyed. For instance, he found it was annihilated—

	Deg.	Deg.
In 10 hours, at a temperature of	128	—138
" 2 " "	135	—145
" 1 " "	146	—156
" ½ " "	156	—167

It, therefore, is not unreasonable to suppose that the virus of the Potato disease may be destroyed by similar means.

In these interpretations of Prof. BOLLMANN'S views we have been careful to separate what is said to be certain from what is avowedly conjectural, and we now leave the subject to the only tribunal by which it can be judged—that of general experience.

In this country what are called Botanical Gardens have inconveniences enough to contend with, but they are nothing to what occurs in foreign establishments of the kind.

The following interesting account of the Botanical Garden at Halle is given by Professor SCHLECHTENDAL, as an example of the difficulties which such institutions in Germany have to meet, in answer to some remarks published in this Journal by our correspondent "Dodman," on the state of different public gardens in Germany.

The Botanical Garden at Halle is situated on the high banks of the Saal, on a substratum of porphyry, which is covered with a coat of earth of greater or less depth, with a rather rapid descent toward the Saal on the south-west, in which the porphyritic conglomerate partially breaks out in the form of crumbling masses of rock. The superficial contents of this arid plot, the water for which is obliged to be pumped up from the Saal, is about 18 acres. The soil is more or less clayey, in parts incapable of being worked after long drought, becoming as hard as stone, and full of large fissures. The sum of money which may be calculated on for its maintenance, amounts in round numbers to about 1500 dollars. Some of the smaller sources of income are of a fluctuating nature, depending on accidental circumstances, and therefore vary in different years. The receipts derived from actual labour within the garden, and which form part of the above-mentioned sum, are not less variable, amounting on an average to something like 200 dollars. Out of the income the following charges are to be defrayed: the salary of the head gardener, the daily wages of the labourers and apprentices (about eight or nine persons), the outlay for fuel, tools and pots, the purchase of earth, tan and manure, of plants and seeds, the cost of carriage and postage, and many other necessary matters. Everything, however, relative to new buildings or repairs comes from the University chest; propositions, however, of this kind for the year following are brought forward by the Director at the close of every year, and a greater or less portion is accomplished according to the means which are available. The necessity of turning the labour to profit makes the botanical garden, in point of fact, at the same time a market garden, and consequently a two-fold interest must be kept in view, though the principal object is to form a scientific institution. They endeavour, therefore, to support the revenue by letting out the produce of the orchard, by the sale of all kinds of plants, of Grass and hay, and by the raising of culinary herbs and vegetables. If the produce does not amount to the estimated quota, the deficiency cannot be replaced in any other way, but the garden has so much the less to expend. Now the produce of fruit and hay is very different in different years, and therefore this part of the income is extremely variable. The sale of vegetables is insignificant, since they are much cultivated about Halle, even in the open field, and several neighbouring towns are supplied from hence. The income from the sale of other plants, fruit trees, &c., is necessarily small in a place where there are not only many nurserymen, but in neighbouring districts also which are more or less connected by the railroad, and where the propagating of fruit trees is very general. These considerations make it a matter of necessity that nothing should go from the garden without an equivalent in money or plants; contributions of living plants must be made either for money, or in exchange, and there can be no question of gratuitous distribution. This dependence on profit requires a mass of labour which might otherwise be avoided; it robs the garden and its staff of a great deal of time which would

otherwise be devoted exclusively to scientific objects; it occupies a considerable space and a portion of the stoves, which ought to be devoted to other matters, and interferes with and injures in many ways the main interests of the institution.

Since the Botanical Garden is not a free agent as regards the needful repairs, but is in this respect dependent on the amount which can be spared by the University from its building fund, it is not in a condition, as is the case with every private individual or nurseryman, to make those arrangements which are necessary for the successful accomplishment of its object, or which are demanded by the progress of horticulture and the claims of the public. In this point, therefore, it is inferior to every private or nursery garden, which, if it is to be kept in a flourishing and remunerating condition, can and must meet the necessities of every moment, the desires of the public, improved modes of culture, and new inventions. On the other hand, the Botanical Garden has greater disadvantages to contend against, because it is necessarily limited in its operations, and cannot push its trade beyond a certain point, as is the case with other gardens. In short, this union of a scientific institution with a market business is in every point of view unfavourable, and the success of one part hinders the success of the other, so that no part can succeed perfectly. The only matter in which any liberality can be exercised is in the exchange of seeds, for no trade is carried on as regards these, since it would consume too much time, though a system of exchange with other botanical gardens, both at home and abroad, is constantly carried on. In other botanical gardens either no traffic is exercised, or only at the pleasure of the Director. All gardens are not interested in the system of exchange, since it is a matter which occupies much time and labour. All, however, strive to cultivate as great a number of plants as possible, while, in some, species of some particular family are more especially collected. Medicinal plants, those which are of importance in the arts, and poisonous species, are generally to be found in a botanical garden, though they do not always have a separate place. Every year a list of the seeds which have been gathered is printed, and communicated for their choice to the gardens in Germany, Italy, France, Belgium, Holland, Denmark, and Russia. The seeds which have been chosen are then forwarded, without any equivalent being demanded, and the same is the case with private individuals, if the quantity is sufficient. By this system new plants are distributed, rare species kept up, those which have been lost replaced, so that it is a fruitful source of improving collections, if the seeds are gathered with the requisite care, and correctly named.

In a scientific point of view a botanical garden is required to supply the necessary materials for instruction, and to give the pupils an opportunity of improving themselves in science. This is, however, in general, difficult to accomplish, since it depends partly on the range and mode of instruction, and partly on the means which are provided. Botanical gardens, however, are too little used for experiments which may be useful in different directions, in conducting which an intelligent gardener is requisite, without which such an institution can accomplish but little. The small pay which they in general receive bears no proportion to the degree of acquirement which must be demanded of them, if, in conjunction with the scientific board, they are to keep such an institution in active operation. Easy as it is—by the help of ample funds, through the purchases of beautiful plants, the building of proper houses, and the employment of numerous hands—to keep a garden in good condition, without such appliances it is difficult to accomplish anything. While the Kew Gardens have at their disposal an income of 7000*l.*, all the botanical gardens of Prussia together have not half so much, while that at Berlin is at least as well endowed as the five others taken together. Very little can be spent on the purchase of new plants, and every wealthy amateur can far surpass them. Finally, it may be remarked that a proper site is seldom chosen for a botanical garden, but one dependent on mere chance, which is often little adapted for the kind of cultivation required, a circumstance which is not the least of the impediments to which they are subject.

In conclusion, Prof. SCHLECHTENDAL, from whose account in the *Botanische Zeitung* we derive these facts, gives in round numbers what the institution actually performs. From 8000 to 9000 species are under cultivation, of which the greater part (5000 to 6000) are in pots; and since, except in rare cases, there are duplicates, the number of individuals so cultivated is considerable. From 2000 to 3000 species of hardy and tender plants are raised from seed annually. The seed catalogue comprises about 1000 species; from 2000 to 3000 packets of seeds are sent out, and the

exchange of living plants involves the communication of from 400 to 500 specimens. If we consider how much labour this involves, he thinks that in proportion to the means which are available, much cannot be expected.

#### ON THE WEARING OUT OF APPLE TREES.

Few men entertain a higher value for science than myself—few more willing to be guided by her precepts; for a clear deduction from innumerable facts is what we term science, and those who follow in that track will be spared a multitude of experiments that others have done for them; they will have gained an altitude, from which to commence their labours, without having to toil up the painful ascent; and, instead of being wearied at starting, may commence the upward track fresh from the labours of those who have gone before. But if any doubt should arise as to whether the previous adventurers have worked out a right track, it will then be both reasonable and proper to commence again; to collect new facts—and, if they will not accommodate themselves to the theory of those who preceded, it will be legitimate to doubt, if not reject, the dictum of those who have gone before. This appears to me to be the state in which we are placed on the subject of debility of certain well-known fruits that have been long in cultivation; for the physiologists assert that no degeneracy exists—and the men of practice, both as raisers of the trees and the orchardists who afterwards endeavour to bring them to maturity, assert as confidently that it does.

In the hope to elicit truth on this subject, I will briefly relate a few circumstances that have occurred to me during observations extending over 40 years; and, as they will be found in favour of the degeneracy of the variety, it will be for those who advocate the contrary system to show where the then seeming discrepancy occurs.

It must be premised that the country round the city of Canterbury was, in my young days, famed for the growth of Golden Pippins, Lemon Pippins, Royal Russets, Winter Nonpareils, Bologna (called always Polony) Pearmaines, and others of a like character. They were the sorts chiefly in our markets, they were the chief trees in our orchards, and they were those kinds that all planters wished to renew when a tree was blown down, or worn out from age, or had become valueless from any other cause. In some of my very early practice I was surprised to observe the size to which many of the trees had grown; they were timber trees by comparison.

On the estate of Mr. Tomlin, of Ash, about 10 miles from Canterbury, grew an enormous Golden Pippin that had been famed for the production of 40 bushels in a fruitful year, and which the old gentleman called his golden tree. He wished all the spaces in his orchard to be filled with this sort, but observing that the young trees did not shoot off kindly, but soon became laden with fruit, he thought the young trees grown in the nursery were not the same kind as his favourite tree. The next step was to obtain grafts from the old tree and work them on new stocks. This was done, and with no better success. It was then suggested that probably the land had become impoverished, from the growth of Apple trees for a couple of centuries, and it would be better to appropriate a small meadow adjoining, to the purposes of rearing a new orchard.

The Golden Pippin, the Lemon, and all the other kinds before mentioned, were selected, and great hopes were entertained of success. However, it was in a few years seen that they were not likely to form large trees any more in the new site than in the former one.

The old gentleman died, and fresh sorts were tried with good result by his successor.

Some very excellent land in the parish of Preston, about 7 miles from hence, had been very productive of fruit, and Mr. Robinson for years kept renewing the same sorts in his orchard, and he also planted a new one, and in such case the like result pertained.

He had an idea that, as it was better to change the seed-Wheat, so trees grown at a distance on different soils might be induced to grow more vigorously than such as had been raised near home. The same kinds were tried, a part of which were grown in the neighbourhoods of London, Maidstone, and from my father's nursery at Canterbury, with no better results. The same land was afterwards filled in with Lemon Apples, instead of Lemon Pippins, with Wellington or Dumelow's Seedlings, Sharp's Russets, Northern Greenings, &c. &c., and good and profitable orchards are the result.

I have recently been called in to do some landscape gardening on an estate only three miles from Canterbury, where, as early as 1815, I was engaged to plant up an orchard of entirely Winter Nonpareils, and another to be filled in with Golden Pippins, because one tree had acquired a moderate size of that variety. The Nonpareils grew tolerably at first, but ultimately cankered, and diminished in size perceptibly; so, that in the end, they were all rooted up and others substituted. This one Golden Pippin tree yet remains, and up to last autumn was bearing fruit; but not one of the many planted of the same kind exists to keep it company.

I need not multiply cases; for the whole experience of my life shows, that in no instance—although I have, under my father and myself, sent out thousands of these trees—in no instance, to my knowledge, is there a tree living that has acquired a size agreeable to its age, or



a condition likely ever to form a large tree; and let it be remembered that some of these older varieties were the largest trees in the old orchards.

Having given the history of the Golden Pippin, the Lemon Pippin, &c., in the orchard, the case would not be complete without stating what the result is from the continued cultivation of the same kinds in the nursery. I have continued to graft a very few from the scions obtained from the very large old Golden Pippin of Mr. Tomlin, and on whatever stock they are placed, the second year shows their weakness, and the third, if not earlier, canker sets in.

I have a double row of trees, all planted at the same time, of 200 kinds; this Golden Pippin is only one-eighth of the circumference of some others of the like age. These trees were planted for the purpose of obtaining grafts when required 25 years since.

From these facts, and a host of others within my personal knowledge, I deduce, 1st, that there was a time, when, in favourable circumstances, the older kinds of fruit must have grown as vigorously, or more so, than any other kinds; 2d, that grafts taken from those old trees, and treated similarly to newer varieties, do not at present, or have not for the last 30 years, grown as the old trees formerly must have done, or as the newer sorts at present actually do; 3rd, that it is not owing to alteration of climate, or of soil, or situation, that occasions the change. To what, then, except to the degeneracy of the variety, can it be attributed?

Our markets were full of the favourite sorts; our growers were anxious to plant, and did plant the same favourite kinds, that had the run of the market; but these sorts have wholly gone out, whilst other newer and more vigorous kinds have filled their places.

Speechley, a man of extensive practice, on this subject has explained the physiologists, for, writing in 1818, he says that if the old Apples are properly planted they will retain their good qualities "so long as the sun and earth endure."

I was of a contrary opinion then; but having now the accumulated experience of 30 years, I revert to the theory of Knight as the only solution of the facts I have acquired. But science is advancing, and we have many aids and appliances that our forefathers knew nothing of. Would not this subject be a good one for the microscopist to take up? Let a comparison be made of the relative size of the cells of the different varieties of Apples. Let the same sort be tested in different stages of health and decrepitude, and I opine that larger cells, endowed with a higher power of reproduction, will be found in one than in the other. Now, should this prove correct, is it not certain that the large old trees, that once grew so vigorously, had at that time cells of equal vigour and magnitude to those sorts that now form large trees?

After the enumeration of trials made, would it be fair of me to recommend that plantations should be made of the favourite old kinds? and yet, if the men of science are not to be accredited, they would be as likely to form large and productive trees as they once did. Here, then, is a fair field for further inquiry; and to this end, and with no ill-will or prejudice against men of science (for I know them), as I suspect that the physiologists are not on a right track, I would earnestly recommend them to commence this part of the subject *de novo*, and I doubt not that in the end practice and science will here, as in other cases, unite for the development of truth and the benefit of the human race. *Wm. Masters, Eccotic Nursery, Canterbury.*

#### THE APHELEXIS.

ALL the varieties of this useful genus are rather free growers, and, with moderate care, form compact handsome specimens; but, like the majority of hard-wooded plants, they are apt to suffer much from improper treatment—such as over-watering during winter—allowing the soil to become dry in hot weather—exposing them, when in a soft state, to sudden atmospheric changes—allowing them to become pot-bound, and permitting them to remain several months in that condition, then giving them a large shift, and applying water carelessly afterwards.

Cuttings made of firm young wood root freely enough, as do also bits of ripe wood having several shoots. They should be put in early in spring, planted in very sandy peat, covered with a bell-glass, placed in a temperature of about 55°—and, if properly cared for as regards water, and guarded from damp, they will soon emit roots. If ripe pieces of wood are used, they will be longer in emitting roots than young cuttings, but they will form plants sooner. Beginners will save time, however, by procuring young plants from the nursery at once; and if strong dwarf little ones are obtained, they are well worth what they usually cost. Supposing young plants to be obtained now (although too late to get a good season's growth), let them be placed in a cold frame or pit, or near the glass in the greenhouse will do, and be screened from the full force of the midday sun, and afforded a moist growing atmosphere. If the pots are moderately filled with active roots, give a shift at once into pots one or two sizes larger, according to the health and vigour of the plants. Keep the atmosphere rather close, and as moist as can conveniently be done, for a fortnight after shifting, and give water to the soil sparingly until the roots strike into the fresh material. As soon as they have become fairly established after potting, they should be freely exposed to air, night and day, merely screening them from the midday sun, and shutting them up for a few hours in the evening after syringing them;

but the night dews will be beneficial, and if in a cold pit the lights may be drawn off at night, except when there is any indication of a storm. Stopping and regulating the shoots must also be attended to, and most of the varieties require frequent stopping; but this should not be done immediately after shifting, nor until the roots have struck into the fresh soil, and it is advisable to manage so that the plants may make a moderate growth in autumn, after the last stopping. The atmosphere should be cool and rather dry after the middle of September, and by the end of the month the plants should be removed to their winter quarters, for which purpose a front shelf in the greenhouse will be found the best. During winter water must be applied carefully, and rather sparingly, for if given in excess at this season the plants will be ruined.

As early in spring as may be convenient remove them to a situation where they can be afforded a temperature of about 50°, with a moist growing atmosphere, and as much light as possible. If the pots are full of roots, shift at once, and, as soon as the plants seem to have taken to the fresh pot, stop them and regulate the shoots. In May, or as soon as mild warm weather has set in, remove them to a cold frame, and treat them during the summer as recommended for last season—giving a second shift as early as it may be required, but a large shift should not be given at this season. They should be wintered as recommended for last year, and if they are considered large enough for blooming, they should be allowed to remain in the greenhouse until the blossoms expand: while in bloom they may be placed in any airy cool situation, and if screened from the midday sun the colour will stand longer. If large handsome specimens are desired, it will probably be necessary to grow them another season, and in that case the plants must be placed in a growing temperature early in spring, and stopped and potted as recommended for other seasons. Well established specimens may be kept in the greenhouse after flowering, to make wood, and may be removed to the plant-ground in autumn, but a sheltered situation should be afforded them, and they must be removed to the greenhouse as soon as heavy rains shall have set in, especially if they have been fresh potted during the season.

Good rich turfy peat is the only suitable soil for this genus, and as the best pieces only should be used, break it up into nice small bits and mix it liberally with sharp silver-sand and broken potsherds, or small bits of broken coal. In potting, make the fresh soil rather firm about the old balls. *Alpha.*

#### Home Correspondence.

**Woods and Forests.**—I have read with great satisfaction the able exposure that has been made in your columns of the mismanagement of the royal woods. Having formerly lived near Chester, and now residing not far from Dean, I know personally what is going on in those places; and I can assure you that you quite understate the case as against their managers. The enclosed packet of papers is sent confidentially for your own guidance. Although these very papers cannot be used publicly, yet it will be easy to verify their exactness, now you know in what quarter to make enquiry. Depend upon it, a more rotten system than what prevails in these royal forests is not to be found in the British dominions. In the neighbourhood of the places themselves, it is openly asserted that the managers are so supported by persons of influence, that they snap their fingers at both the Commissioners and Parliament; and I think it must be so, otherwise what can be the explanation of the singular fact that their barbarous management goes on unchecked from year to year, as is pretty well shown by the instance of royal Oak bark, which still continues to be the worst that comes into the market, and to fetch the lowest price? See Paper No. 7. *Baccalaurius.*

**Potato Disease.**—The remarks in your leading article on this disease has recalled to my mind some facts which occurred to me when residing in Kent, in the years 1846, 1847, &c.; but the results from which I did not sufficiently follow up. During those years my Potatoes were very much diseased; and passing through a farm one day, I observed, under a shattered cart removed under a shed, a number of Potatoes apparently dried up. I was induced to take up several, and upon cutting them up I found that the disease had not only been arrested, but that the parts diseased seemed quite dead. Upon inquiry I learnt that these Potatoes were some odd ones, which, about two months before, had rolled there, when the crop had been sorted out before storing. It occurred to me that chance had thus offered me a means of staying the disease in Potatoes stored up. I accordingly ever after stored my Potatoes in such a manner as to get them thoroughly dried; and the plan I adopted having been made known through the columns of the *Times*, saved many tons to those who followed the simple mode I recommended. I also caused very many sadly diseased Potatoes scattered over the bottom of a flat basket to be put into an oven after the heat was drawn out, and kept there till almost too hot to hold in the hand; they were then spread over the brick-flooring to get cold. These Potatoes, when peeled, cleaned, &c., were boiled in the usual way, and when brought to table, I will not say were better, but certainly were preferred to the sound ones. This plan I repeatedly tried, and always with the same result; and having also been circulated through the *Times*, as before, I have reason to know was adopted with good effect. During the spring of

(I think) 1847, several of these dried Potatoes were planted to make up a deficiency of seed ones, and the man who planted them and dug them up distinctly stated to me that their produce was free from disease. At the time I was otherwise employed, and did not heed this information. On reading over your article, however, these facts are again brought to my remembrance, and the advice, "ever to plant Potatoes in dry coal ashes," "to cut the seed up some days before wanted, &c.," seem to bear out the fact recorded in your article, "that thoroughly dried Potatoes will always produce a crop free from disease." My duty as clergyman leads me often into conversation with farmers, &c., and I feel assured that a little more careful investigation will prove your position, both from the nature of the disease and the mode in which it spreads itself over the Potatoes. *Z., Wigan.*—Your introductory remarks in reference to Mr. Bollman's pamphlet on drying the Potato previous to planting, as a preventive of disease, brings to my mind a circumstance which occurred three years ago with me, and which (although I am rather sceptical in regard to these inquiries as to their permanent advantages) tends in some measure to confirm the opinion of the writer above alluded to. I had a piece of ground which I intended for Potatoes under late Broccoli, which did not come off so soon as I expected; consequently, to retard as much as possible, and to prevent exhaustion, I had recourse to drying the sets as well as I could naturally. This was done by exposing the tubers to the action of the sun in the day-time, and removing them into a thoroughly dry place at night, until life appeared to be almost dried out of them. However, they were planted in the beginning of June, and yielded a most excellent crop, entirely free from disease; whereas others, planted under far more favourable conditions, were very much affected. At the time I looked upon these results as somewhat extraordinary, more especially as many at that time urgently advocated early planting, as the only way to ensure a sound, healthy crop, free from the all-prevailing pest. Others, again, advised maiden soil, by the breaking up of old pastures, &c., as being the most judicious, but here they were grown on soil the very opposite, having been pretty well drained of its more valuable constituents, at the same time not over-charged [with stimulants of any kind; and in refutation of the theory and practice of those who recommend fresh soil as the only remedy, I may state that although my Potatoes were fearfully diseased last season, those were the most free which were grown on ground where Potatoes had been cultivated for several years successively without any manure, except a comparatively small portion of thoroughly decomposed leaves. It appears to me that a good deal has yet to be learned in reference to Potato culture in the present day, unless Mr. Bollman has really got at the root of the matter by artificial drying, so as to enable us to extend his experiments successfully to an unlimited degree. Not having quite finished planting, I intend to test Mr. Bollman's advice in conjunction with the plan which circumstances compelled me to adopt three years ago, and I will give publicity to the results. *George Fry, Lee, Kent.*

**Vines.**—I lately visited a gentleman's garden where excellent crops of Grapes have been produced for these 30 years past, without a single failure. This season they have made good wood as well as set abundance of fruit. They have, however, made no progress for three weeks, completely standing still. The leaves are all mottled, turned up at the edges, and dead; and the laterals, as they appear, are attacked in the same manner as the old wood. The border is situated in a low situation, and it has a clay bottom. Would the excessive rains we had in autumn and winter produce the mischief I have just described? *R. N. G. G.* [If the state of the Vines is accurately described, it is probably owing to a wet cold subsoil, and to insufficient ventilation.]

**Rhubarb.**—We have ventured to send you the produce of a new variety of Rhubarb, which we have received from Mr. Robert Salt, of Longton, Staffordshire. It is very early and productive, beautifully dark red all through, and the flavour most delicious when made into tarts. If you will give it a fair trial, we do not doubt that you will approve of it. *Hurst and M'Mullen, 3, Leadenhall Street.* [Very good, and a most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains.]

**Captain Norton's Blasting Cartridge.**—I am much obliged for the very clear and judicious manner in which you noticed my percussion cartridge for blasting in your Paper of Saturday last. To answer your very natural question, I can say that there is no danger of the iron rammer being forced out either in horizontal bore, or bore of any inclination, because the explosion is so instantaneous that the rupture in the timber takes place before the momentum of the blow from the fallen block ceases, and I prefer Hall's sporting powder for that reason, because its explosion is quicker than common blasting powder, or any other that I know of. I also prefer it because it allows a small convenient cartridge instead of a large one, being *multum in parvo* as well as less costly in consequence. There is no danger from the fragments of the timber, as the person holding the rope can choose his distance, and even stand behind a tree, and the charge in the cartridge can be graduated, or rather "modulated" to the resistance of the block to be blasted. I lately tried the experiment of allowing the heavy block or spar to strike the head of the iron rammer, by sliding down an inclined plane,



or shoot of boards made roughly for the purpose; it answered perfectly. This was done where a monster root of an ancient Beech lay in the ground, and there being no trunk to drive a strong nail into to suspend the driving block like a pendulum, the hole was bored into the root in a downward slanting direction, as I may say, from one great limb of the root into the opposite, as from hip to hip. Care must be taken not to bore into the fork of the roots, as clay is found there, which in great measure neutralises the effect of the explosion. It is best to cut a deep trench round the root before boring, as then the most unwedged part of the root can be selected, and the lower branching roots being cut, will allow the riven parts of the main root to separate. I have been trying the same description of cartridge in my submarine percussion petard, on the river here, with perfect success; and I am going to Ballingcolling, the artillery station about five miles from this, to try my cartridge in blasting rocks, where they are sinking a well. Captain Hadden, an intelligent officer of the Royal Engineers, comes with me, and I shall be happy to report the result. In blasting rocks, the hole which is made with a jumper is not so round as the hole bored in timber by an auger; therefore, to fill the inequalities, I insert in the upper part of the cartridge a cylindrical plug of baked potter's clay; this, struck by the iron rammer above, and forced up by the explosion of the powder below, makes a powerfully condensed tamping, and completely fills the inequalities; on the lower end of the baked clay is inserted a short broad-headed iron tack; the head of this strikes on the upper percussion-cap. I shall be happy to answer all questions to the best of my power, and shall be glad to see these observations in your own language in your next most useful *Chronicle*. I am a landed proprietor myself, both in Ireland and Australia, and therefore give the improvement of land my best attention. J. Norton.

*Repairing Gutta Percha Tubing.*—All "W. H." has to do is to provide himself with some old gutta percha, or an old sole of a shoe, or buy a new pair of gutta percha soles. Then heat his holed tubing, as well as that he is going to mend with, either in hot water or by means of a hot iron, and patch up the holes. Nothing is more easy than repairing old gutta percha pipes. And when too much holed for use they can then be sold for nearly as much as one can buy new for. James Cuthill, Cumberwell.

*Effects of the Winter.*—For the last three months I have anxiously turned to the accounts of the effects of the late winter weather on vegetation, to see if I had any companions in misfortune; but except a report from Fochabers in the early part of March, I have read and heard of nothing to equal what has been experienced here. Most of those who have written on this subject reside in Ireland, or the south and west of England, and, if Mr. Rivers' doctrine is correct, much of the virulence of a keen eastern frost has abated before it reaches there. Their remarks likewise have all had reference to lately imported exotics, whose comparative hardiness is not yet established. Some are stated to have stood the winter well, and to be as hardy as a Laurustinus, but four times during the last 15 years have the latter been killed here to the ground, and common Laurels the same. A fine collection of Roses has likewise suffered severely; nor is it alone the tender sorts, as Chinas, Noisettes, Bourbons, and their hybrids, which have been killed, but even Perpetuals and Gallicas have shared the same fate, though none of them were pruned. Wall trees have been sadly mutilated likewise, and even pyramid Pears. Last January I could boast of having some Apricot and Peach trees under my care whose symmetry and fruitful appearance would have received the approbation of our best gardeners; but every fruit-bud has been destroyed, and nearly all last year's wood, and even some young trees entirely killed. Figs thickly covered with Spruce Fir boughs on a south wall (on an east one they have escaped) had their wood severely damaged. To some it may appear singular that we have suffered so severely, but it is owing to the gardens here being in a valley (exposed to north-east winds) where the Stoke river (a tributary of the Ouse) commences, and where springs are so numerous that they immediately form a river. A sheet of water in the park is full of them, consequently it does not freeze in the sharpest weather, and the vapour that arises from its surface, and the meadows around, resembles a smoking dung-heap. This vapour having no means of escape condenses in the shape of hoar frost on every tree and shrub. To protect them if in a forward state would require a thick blanket; but in the present season they were neither nailed nor covered, and I was rather pleased when the frost set in, believing an ordinary one would do them no injury. I am, however, told where the Apricots were covered up with mats in the vale of the Wissey (Mr. Baring's, at Buckenham), that they have likewise perished. I wish Mr. Whiting had supplied the information in reference to the Deepdene which he asks for regarding the soil, situation, and climate of other places, and how the weather of February affected his fruit and vegetables. It is many years since I was at the Deepdene; but if I do not mistake its position it is one of the most sheltered spots in England, and what will not stand the winter there it would be dangerous to trust elsewhere. Apples, Cherries, and small fruits promise to be an abundant crop here; the buds of Raspberries are much injured, though the wood is sound. I find even the British Queen Strawberry healthy where the ground was flooded all the winter. J. Murdoch, Cley Hall, Swaffham. At this place Pinus Grenville, Benthiana, Monte-

zumae, insignis, Gerardiana, muricata, Sabiniana, macrocarpa, are uninjured; Cryptomeria japonica, 10½ feet high, is not hurt; Cupressus macrocarpa, 13 feet high, the same; C. torulosa, 11½ feet high, a little hurt; C. Uldeana, unhurt; C. Goveniana, 9 feet high, do.; Juniperus Bedfordiana, untouched; Taxodium sempervirens, a little hurt; Photinia serrulata, 14 feet high and 12 feet through, quite healthy; Spartium monospermum, is killed down nearly close to the ground, but is now making new wood; Deutzia staminea is slightly injured; Ceanothus azureus, trained to the south-east side of a wall, is a little injured; C. thyrsiflorus, do., unhurt; Benthania fragifera, do., much hurt; Escallonia montevicensis, do., all but the branches close to the wall killed; Escallonia rubra, much hurt; E. macrantha, 5½ feet high, uninjured; Ceanothus papillosus, in the shape of a standard, sheltered from the north and east winds by a high bank, is uninjured, it is now in full bloom; C. dentatus, do., a little more exposed, is much injured; C. rigidus, do., still more exposed, quite dead; Acacia dealbata, 20 feet high, unhurt; A. longiflora, and A. angustifolia, both killed; Cistuses of sorts planted on the south and west sides of a high bank are very much injured; Helianthemums of sorts, do., very much injured; Cytisus ramosus, against the south-east side of a wall, but little injured; do., in the open ground, nearly killed; Cerasus illicifolia, 5 feet high, unhurt; Bamboo, from the north of India, not injured; Erica arborea, 5 feet high, untouched; Fuchsia Ricartoni, 9 feet high and 14 feet through, uninjured; Paliurus aculeatus, unhurt; Viburnum odoratissimum, tops of young shoots killed; Calla æthiopica, planted in a shallow stream of water, is killed to the surface of the water, but it has recovered, and has now eight expanded flowers on it; Campanula Vidalii is dead. This place is about 160 miles west of London. The soil here is a rich stiff loam resting on a slaty subsoil. C. Elworthy, Nettlecombe, Somersetshire.

*Lilium giganteum.*—We are surprised to find that you have given credit to Messrs. Veitch for having first flowered this noble Lily in Europe. It bloomed in great perfection here in June 1852, a circumstance which was noticed in several of the Edinburgh papers at the time, and if you will refer to the "Botanical Magazine," vol. viii. No. 94, you will find a notice of it, accompanied with a figure made from a drawing taken on the spot. Cunningham, Fraser, and Co., Comely Bank Nursery, Edinburgh.

*Rings about the Sun.*—Your correspondent, who seems to be a star-gazer, wishes to have some information as to these rings. First, they have no connexion with the aurora borealis, or northern lights; secondly, they are solely owing to the haziness of the atmosphere, when the phenomena of mock suns are frequently visible. A week ago, two hours before sun-down, I saw these prismatic colours, and two parhelia or mock suns; they are very unusual in May. These phenomena are oftentimes very distinct in February, in which month they are frequent in the south. Mock-moons are also common, and lunar-rainbows also. The rings seen are only a part of this resplendent scene. The ring will sometimes be quite distinct, the parent sun in the centre, and due N. and S. and E. and W. will appear on this prismatic ring four mock suns, but more frequently only two. It is an interesting sight. X. Y. Z., Hunts.

*Rhubarb Wine.*—Can any one oblige me with a recipe for making brisk sparkling wine from Rhubarb? In your last week's Paper there are some directions, "but," as Mr. Cuthill says, "they do not appear to be perfect." If there is any work published on wine making that could furnish the information, I, for one, as well as I dare say many others, would very gladly avail themselves of it, and I would thank you for pointing their attention to it. A Reader. [Recipes for making Rhubarb wine have been given in our vol. for last year, pp. 389, 405.]

## Societies.

ROYAL BOTANIC, REGENT'S PARK.—The second exhibition of the season, held under the auspices of this Society, took place on Wednesday last. The weather was most propitious, and altogether the show was a good one for June. As usual one long tent was entirely filled with Orchids and Pelargoniums, both of which were again produced in admirable condition. Stove and greenhouse plants were perhaps scarcely so plentiful as they were in May, Mrs. Lawrence's fine collection from Ealing Park being absent; this deficiency was, however, in some measure made up by one or two others showing larger collections than they did on that occasion. Cape Heaths were numerous and fine, and there were some Azaleas; but their glory had almost departed, and there were few Cacti. Roses in pots, fine as they were this time, were certainly not near so brilliant or good as they were on the last occasion. Some fruit was shown, and among it were remarkable examples of Muscat and Black Hamburg Grapes. Three bunches of the former, from Mr. Bradley, were particularly good. A few Pine-apples were also produced, together with some good Peaches and Nectarines, the best of which came from Mr. Fleming; two or three dishes of Strawberries, one dish of Cherries, some Melons, and a collection of Citrons. As most of these things, however, as well as all the more important plants assembled on the occasion, may be expected to be at Chiswick this day, we defer offering any further remarks on this exhibition until next week, when any-

thing not reproduced at Chiswick, and requiring special report, will receive attention.

We take this opportunity of mentioning, however, that the exhibition of American plants provided by Mr. John Waterer, Messrs. Standish and Noble, and Mr. Baker, was very nearly in perfection, and as gay as it could possibly well be, furnishing an addition to the attractions of the day that appeared to give universal satisfaction. As much, we fear, we shall never be able to say of the Rose show. The plants are, however, well covered with buds, and promise to be better than they were last year.

CALEDONIAN HORTICULTURAL, May 7.—At this extra promenade meeting the following awards were made:—Shrubby Greenhouse Plants: 1st, Mr. Reid, Millbank, with Polygala Dalmaissiana, measuring 4 feet in height by 5 feet through, and Adenandra speciosa; 2d, Mr. Ritchie, Parsons-green, for Polygala acuminata and Pimelea Hendersonii. Cape Heaths: 1st, Mr. Ritchie, with Ventricosa coccinea minor, and an excellent specimen of Sindyana; 2d, Mr. Reid, for Sindyana and aristata major. Perennial Climbing Plant: 1st, Mr. Thomson, Loanhead, with Tropæolum tricolorum grandiflorum; 2d, Mr. Reid, with Kennedyia inophylla floribunda. Azaleas: 1st, Mr. Edwards, Lauriston Castle, with Cupid and Præstantissima; 2d, Mr. Reid, with Gledanesi and variegata. Cinerarias: 1st, Mr. Walker, Rosehall, with Lady Hume Campbell, Lady Gertrude, Cerito, and Lady Jane Grey; 2d, Mr. Mitchell, with Ravelston, Infant Prince, Blue Eyed Maid (seedling), Amy Robsart, and Azura multiflora. In forced Strawberries, an honorary award was voted to Mr. Pender, Moredun, for Keens' Seedling and Roseberry. Messrs. Dickson and Co.'s prize for Azaleas was gained by Mr. Edwards, with Halford striata, Minerva, and Egerton; a second premium was voted by the Society to Mr. Reid, for Triumphans, Duke of Devonshire, Optima, and Lateritia superba. Messrs. James Dickson and Son's prize for Auriculas was awarded to Mr. Henderson, Cargilfield, for Oliver's Lovely Ann, Grimes' Privateer, Clegg's Lady Blucher, Lady Ann Wilbraham, Hepworth's True Briton, Conqueror of Europe, Kenyon's Ringleader, Lightbody's Star of Bethlehem, Litton's Imperator, Taylor's Glory, Ashton's Prince of Wales, and Sykes' Complete. Of extra productions, Messrs. Dickson and Co. contributed Bossia inophylla, Heaths, &c. Messrs. P. Lawson and Son sent Tropæolum tricolorum grandiflorum, Salvia gesneriflora, Arbutus procera, &c. Messrs. Cunningham, Fraser, and Co., produced Rhododendron setosum in flower, Berberis Wallichii, and fine specimens of Bryanthus erectus, &c. Mr. Methven sent three seedling Rhododendrons—one a hybrid, with compact trusses of dark purple flowers. Mr. Handasyde exhibited a small plant of Deutzia gracilis; Mr. Stark sent greenhouse and Alpine plants, including Diosma speciosa and capitata, Illicium religiosum, Rhododendron glaucum, Menziesia empetrifolia, Epimedium rubrum, &c.; Messrs. Eagle and Henderson, Weigela rosea; Messrs. Downie and Laird, Cinerarias; Mr. Lightbody, Auriculas, including his seedlings, Sir John Moore, Meteor Flag, &c.; Messrs. Young and Mackay, Auriculas and Polyanthus; Mrs. Carstairs, Azalea ovata, with Calceolarias, Pelargoniums, Cinerarias, &c., also 25 heads of Giant Asparagus weighing 2 lbs. 2 ounces; Mr. M. Carstairs, a small window greenhouse. A Certificate of Merit was awarded to Mr. Reid, for a remarkably well-grown plant of Tree Mignonette, of a pyramidal form, and measuring 4 feet 3 inches in height, by 2 feet 6 inches in diameter. Mrs. Fraser sent Alpine plants and Ferns, including Corydalis nobilis, Trillium grandiflorum, Azalea procumbens, &c.; S. Hay, Esq., Rhododendrons splendidum, Gibsonii, &c., and Roses; Professor Syme, a cut specimen of Cantua dependens, bearing flowers, bunches of the white Banksian Rose, a pot of Warner's Conqueror Pea, bearing well filled pods, and two baskets of early Potatoes; D. Anderson, Esq., well kept Apples and Pears; A. F. Adams, Esq., a good plant of Dielytra spectabilis, Arum triphyllum, Coronilla glauca, &c.; Mrs. Balfour, Kennedyia monophylla; C. K. Sivewright, Esq., a seedling Cineraria; Mr. Anderson, Oxford, Strawberries; Mr. A. R. Glen, Epacris grandiflora; Mr. W. Rennie, Cacti, and Euphorbia splendens; Mr. Shearer, a Seedling Pansy; Mr. Fowler, Cinerarias; Mr. Stirling, Alpines, including Coptis trifoliata, Pulmonaria daurica, Aubrietia grandiflora, &c.; Mrs. MacLaren, Rhubarb; and Mr. Melville, two heads of Broccoli, of a variety between Wilcove and Mammoth, and said to be self-protecting when young.

## Notices of Books, &c.

*The English Cyclopædia.* Part I. 4to. Bradbury.—A re-issue of the best of the articles in the Penny Cyclopædia, with the matter partially classified. Geography, Natural History, Arts and Sciences, History and Literature, will each be published separately, which is an, undoubted improvement upon the mere alphabetical arrangement. The work is very nicely got up, and is wonderfully cheap.

*Traité pratique, &c.* (A Practical Treatise on Cider Apples.) By the Horticultural Society of the Lower Seine. Rouen. 16mo.—A good, but very concise account of the Norman method of managing the famous cider orchards of that part of France.

*Des diverses espèces de Rhubarbes.* (The sorts of culti-



vated Rhubarb known in France). A pamphlet by Messrs. Prevost and Malbranche, with 10 lithographic figures of the leaves of as many sorts. The French consider Myatt's Victoria the best and most productive. *Macintosh's Book of the Garden*. Part XII, is entirely occupied by an account of culinary plants, and contains no copper plates.

*Black's Library Edition of the Waverley Novels*. Vol. XIV. is occupied by the Fortunes of Nigel, and maintains, in every respect, the high reputation of this beautiful issue.

*The Sea-Weed Collector's Guide*. By J. Cocks, M.D. 12mo. Van Voorst.—A useful assistant to the inexperienced in the preservation of sea-weeds, and very much wanted by the young and ardent, if we may judge from the sad examples of failure presented by too many of our young friends who have passed a summer by the sea-side.

### Garden Memoranda.

THE AMERICAN NURSERY AT KNAP HILL, NEAR WOKING.—Those who wish to see American plants in all the grandeur and magnificence of which they are susceptible, and under the best of circumstances, should pay a visit now to the fields of Rhododendrons, Azaleas, and Kalmias, which were planted and established many years ago at Knap-hill. Every season, about this time, many acres are studded with the lovely blossoms of these charming plants; and, notwithstanding the unfavourable winter and spring that have just passed by, they are as fine at the present time as ever we remember to have seen them. It is true that the blossoms of some of the deep crimson sorts are lighter than usual, and that some of the early-flowering tender scarlet kinds have lost their buds by the late spring frost; but this is a circumstance the less to be regretted, for, by continually crossing the early kinds with late sorts, we can now enjoy the beauty of scarlet, or at least deep crimson Rhododendrons, which flower sufficiently late to be out of the reach of such a calamity. At the late Mr. Hosea Waterer's, at Knap-hill (where the business is now carried on by the nephews, Mr. A. Waterer and Mr. Godfrey), we noticed standard Rhododendrons 10 and 12 feet high, with clean stems 5 feet in length and 6 inches in diameter, bearing heads 30 feet round, and loaded with flowers. Trees of these dimensions are not uncommon here; and a knowledge of this fact alone, independent of the thousands of bushes and standards of less size, will serve to furnish lovers of American plants with some idea of the kind of treat a visit to these nurseries may be expected to afford. The scarlet, orange, and buff colours of the Azaleas, too, form an interesting intermixture, which renders the whole striking, varied, and effective. The broad-leaved Kalmias, of which there are immense specimens here, are however, as yet, scarcely sufficiently in bloom, but they promise to make a good display, though perhaps not quite so fine as last year. Among Rhododendrons, undoubtedly the best of the newer kinds is 'Braynum', a charming sort, with good shaped truss and flowers, which possess a colour about as fine as that of the Standard of Marengo Rose; Alarm, in the way of Charles Truffaud, and William Downing, deep claret with a very dark eye, are also acquisitions; Barclayanum, a vivid crimson, is just coming into blossom, showing that it is really late; Atrosanguineum is very dark, and Archimedes is one of the very best of bright rose colours; Brutus is desirable, and so is Desdemona; Nero and Onslowianum are two new and valuable kinds, as are also maculatum nigrum and rubrum, the former having exchanged the spots that are usually on the upper petals for a blotch of deep chocolate, which gives it a distinct and striking appearance. Other fine kinds consisted of Rembrandt, Titian, Vandyck, Victoria, and Vervaneum, to which must be added Currieum. Fastuosum is a well-known double kind, which still maintains its good character. The following free blooming and free growing varieties of catawbiense should be in every garden, viz.: elegans, azureum, bicolor, celestium, c. pictum, candidissimum, delicatissimum, Everestianum (an old but very fine kind), grandiflorum; purpureum elegans, roseum elegans, splendens, multumaculatum, and hyacinthiflorum. The latter has a lovely effect in the shape of a standard, and the flowers last longer in perfection than those of the single kinds. Album elegans is still one of the best whites. Of Azaleas, one of the best scarlets is coccinea major, but coccinea is also a good one; aurantiaca cuprea is a fine orange, and carnea delicatissima a pretty light pink, and a good trusser; decus hortorum is rose, with the back petal yellow; and of buffs and yellows, none surpassed pontica globosa and p. princeps. Of other fine kinds of various colours we remarked Gloria Patrie and Mundi, triumphans, imperatrix, monstrosa variabilis, Mortier, Ne plus ultra, persulcata, pontica imperialis, and p. monstrosa; prenitens, crocea distincta, and nitens. These are all first-rate kinds, in which no one need fear to be disappointed. Seedling Azaleas and Rhododendrons are very plentiful here, but it is only now and then that such gemmas Braynum, Alarm, and some others we have mentioned, can be picked from among the multitudes that are annually raised.

MR. JOHN WATERER'S AMERICAN NURSERY AT BAGSHOT is well worth inspection; it is pleasantly situated, not very far from the new military encampment, and is divided into compartments by well kept Arbor-vite hedges. Standard Rhododendrons of large size ornament the margins of the main walks, as well as the

interior of the compartments; and the fine broad, deep banks of Azaleas, which exist here and there, are at present truly striking. In addition to the varieties of Azalea already mentioned, most of which we saw here, we remarked some promising seedlings, the result of crossing the yellow Chinese kind with the large light-coloured viscocephala; some of the produce from this cross look as if they would be striped. Among high coloured Rhododendrons none were more striking than Grand Arab, Soleil d'Austerlitz, Blandyanum, vestitum coccineum, and Charles Truffaud. These are exceedingly bright and beautiful, and flowering as they do so late even in early seasons as the 25th of May, they will be found to be out of the reach of most frosts that are likely to hurt them. Leopard is a very fine spotted, rosy-lilac kind, and Towardianum has large, very finely-shaped blossoms, which must ever render it a favourite. Captivation is worth attention, on account of its compact, neat, conical heads. Blattem is a very dark kind, with large trusses; and Nobleman bicolor is good, as is also Mammoth. Lady Eleanor Cathcart is a most beautiful kind; but it is not in flower this year, all the wood that could be got from it having been taken for increase. John Waterer is also said to be a very fine sort, but none of its flowers are expanded yet. Catawbiense splendens and grandiflorum make charming standards; C. album elegans and delicatissimum are certainly the best whites; egegrum makes a pretty standard; and Marriagcanum is a fine kind, as are also mirandum, perspicuum, roseum elegans, and gemmiferum. The latter is a small rose-flowered kind, which looked as if it would force. We also remarked here a very excellent variety of Victoria. Rhodolencops, Lefevreanum, Melanostichum, Attraction, and Celebrandum, fine crimson kinds, will shortly be in bloom. Besides these fine Rhododendrons and Azaleas there were abundance of nice Kalmias. Both at Knap-hill and Bagshot Conifers grow splendidly in the bog earth, which prevails all over that district, and many fine examples of all the leading kinds are to be found at both places. A tree of Pinus macrocarpa at Knap-hill is at least 30 feet high. Some time ago it produced a large cone, from the ripe seeds contained in which many plants have been raised. We also noticed a magnificent Laburnum (Waterer's variety) forming a fine tree, clothed to the very ground with immense clusters of golden flowers. And here are fine standard trees of Wistaria sinensis, formed by leading its branches over Cherry trees, until the latter become quite covered with them, and now they are loaded with charming bunches of flowers. At the entrance of Mr. John Waterer's Nursery, next Bagshot town, stands a very fine Weeping Beech; it is exceedingly pendulous and handsome. While speaking of Conifers, we should have mentioned that plants of the Funeral Cypress\* have been all killed more than three parts down by the late frosts. We, however, trust that larger plants of this Cypress, whose growth will be less succulent, will share a better fate. Pinus patula has been also much browned in foliage at Knap-hill.

The first sown of the portion of Government Deodar seed entrusted to the care of the Messrs. Waterer, of Knap-hill, is now up, and the rest promises to vegetate satisfactorily. It has been sown in a series of long turfs pits covered with canvas frames.

MR. DOBSON'S, WOODLANDS NURSERY, ISLEWORTH.—An interesting little floral fête was held here the other day, and was well attended. The Pelargoniums, in the management of which Mr. Dobson is so famous, were in admirable condition, and a considerable amount of flower was furnished by Cinerarias, Pansies in pots, Fuchsias, and other plants. The nursery was beautifully clean, and the best of order seemed to prevail in every part. Daisies, which are largely grown here both in the shape of beds and as edgings, were just in perfection, and were deservedly much admired. They are ornamental in early summer; and when they are out of flower, they can be easily removed to make way for the usual bedding plants. Polyanthuses and Primroses, which are also cultivated here for the same purpose, are treated in a similar manner.

### FLORICULTURE.

CINERARIAS.—Your correspondent "R. F." amid much that is good, has repeated some advice he gave some two years ago with respect to the culture of the Cineraria, against which I wish, having given it a fair trial, to protest. He recommends the selecting in August as many of the strongest offsets as will form a nice specimen, that is, he considers a 9-inch pot requires several plants to form a specimen. I have tried many sorts in both ways, for the purpose of trial, and both have occasionally succeeded. But it is my purpose never again to use more than one plant in one pot, for two reasons. First, because it is very rarely that I get more flowers from several plants than from one; partly, I suppose, because the roots of the plants interfere with each other, for the foliage is hardly ever so free and good, and partly because the greatest care in selection and training will not ensure their blooming together. And in the next place, because the use of more plants than one in a pot checks the improvement in culture which "R. F." so justly praises in the beginning of his communication.

\* We must, however, report that in our own garden, on the London clay, the Cupressus funebris has not suffered from the winter in the smallest degree. Note by the Editor.

It was at your correspondent's instance that I tried the plan. I have tried it for two seasons; and finding that it gives me no more flowers than I can have without it, and that it is an encouragement to the slovenly cultivator (whom "R. F." and myself would equally desire not to encourage), I reject it. I quite agree with "R. F." that the greatest luxury the Cineraria appears to have is pure leaf-mould; and the Auricula seems hardly less to delight in it. *Iota*.

NATIONAL ANNUAL EXHIBITION OF TULIPS AT NOTTINGHAM, May 25.—This exhibition was acknowledged by all to be the most extensive and the best that has ever taken place. There were upwards of 1200 selected blooms exhibited, each bloom having been separately paid for, on entering the room, this being done to prevent the introduction of inferior flowers. The amount of money distributed as prizes amounted to upwards of 100l., which was chiefly contributed by the gentlemen of Nottingham. Among the prizes were five silver cups, which were placed to each successful stand for inspection. The following is a list of the prizes:—Class A. The National Tulip Society's silver cup, value 10 guineas, was awarded to Mr. Godfrey, of Chellaston, for two feathered and two flamed of each class, namely, Sovereign, Heroine, Queen Charlotte, Captain White, Triomphe Royale, Bagot, Magnum Bonum, Orleans, Count, Pilot, Lord Denman, and Camillus. The second Silver Cup, of 8l., was given to Mr. Allstrove, of Draycott, for Lord Milton, Lord Denman, Triomphe Royale, Duke of Devonshire, Gem, Count de Vergennes, Captain White, David, Aglaia, Sovereign, Salvatore Rosa, and Heroine. The third silver cup, of 6l., was awarded to Mr. Spencer, of Thulston, for Sovereign, Captain White, Catafalque, Polyphemus, Victoria Regina, Lord Denman, Gem, La Reine Aime, Heroine, Triomphe Royale, and Camillus. Class B. A Silver Cup, value 5l., the gift of S. R. P. Shilton, Esq., was awarded to Mr. Marsden, of Derby, for Duke of Devonshire, Allen's Sarah Ann, Triomphe Royale, Earl Douglas, Lady Jane Grey, Queen of Violets, Lord Denman, Chellaston Seedling, Pilot, Catherine, Bagot, and Polyphemus; 2d was assigned to the Rev. S. Cresswell, for Bacchante, Sphinx, Crown Prince of the Netherlands, Sarah Ann, Polyphemus, Aglaia, Prince of Wales, Captain White, Camillus, Emily, Duke of Devonshire, and Lavinia; 3d, to Mr. Turner, of Slough, for Pilot, Alexander Magnus, Princess Royal, Claudiana, Polyphemus, Magnificent, Captain White, Aglaia, Prince Albert, Heroine, King, and Van Amburgh; 4th, to Mr. Parkinson, of Derby, for Lord Milton, Camillus, Beauty of the Plain, Lady Cam, Aglaia, Alice Gray, Chellaston Seedling, Lady Stanley, Captain White, Charboniere, Triomphe Royale, and Queen Charlotte. Class C. A Silver Cup, 5l. value, the gift of the Nottingham Horticultural Society, was awarded to Mr. Houghton, of Hempsall, for Royal Sovereign, Captain White, Spencer's First-rate, Princess Royal, Heroine, and Aglaia; 2d, to Mr. Lawrence, of Hampton, for Pilot, Charles X., Brown's Salvatore Rosa, Lawrence's Friend, Clarissima, and Aglaia; 3d, to Mr. Clarkson, of Colwick, for Duke, Captain White, Bagot, Violet Wallers, Heroine, and Triomphe Royale; 4th, to Mr. Edwards, of Holloway, for Royal Sovereign, Pilot, Addison, Queen Charlotte, Heroine, and Triomphe Royale; 5th, to Mr. Lymberry, of Isdon Green, for Surpass Optimus, Strong's Sir R. Peel, Mrs. Lymberry, Nepaulse Prince, Lavinia, and Aglaia; 6th, Mr. Parkinson, of Derby, for San Jose, Captain White, Britannia, Princess Royal, Heroine, and Lady Colville; 7th, Mr. Marsden, for Polyphemus, Captain White, Buckley's Beauty, Purple Perfection, Heroine, and Triomphe Royale; 8th, Mr. Towle, for Royal Sovereign, Captain White, Unknown, Queen Charlotte, Midland Beauty, and Rosa Aglaia; 9th, Mr. Thornley, of Heston Norris, for Charles X., Captain White, General Barnaul, Incomparable to Grand, Count de Vergennes, and Triomphe Royale; 10th, Mr. Hudson, of Kingston, Nottinghamshire, for Magnum Bonum, Captain White, Bagot, Green Prince, and Triomphe Royale. Class D. Single Specimens: feathered bizarre, Polyphemus, Mr. Amson, of Congleton, flamed bizarre, Polyphemus, Mr. Edwards, Holloway; feathered byblemen, Godet Parfait, Mr. Battersby, Mansfield; flamed byblemen, Princess Royal, Mr. Gibbons, Bolton; feathered Rose, Heroine, Mr. Turner, Slough; flamed rose, Magnificent, ditto. Class E. Single Specimens in Classes. Feathered Bizarres: 1st, Sovereign, Mr. Godfrey; 2d, Surpass Optimus, Mr. Lymberry; 3d, Surpass Catafalque, Mr. Clarke; 4th, Catafalque, Mr. Gibbons; 5th, Magnum Bonum, Mr. Spencer; 6th, Grand Duke, Mr. Clarkson; 7th, Marius, Mr. Scott; 8th, Sphinx, Mr. Spencer. Flamed Bizarres: 1st, Polyphemus, Mr. Gibbons; 2d, Captain White, Mr. Jackson; 3d, Garriek, Mr. Edwards; 4th, Pilot, Mr. Turner; 5th, Venus, Mr. Gibbons; 6th, Lord Midleton, Mr. Spencer; 7th, Charbonier, Mr. Parkinson; 8th, Truth, Mr. Gibbons. Feathered Byblemens: 1st, Lord Denman, Mr. Hudson; 2d, Bagot, Mr. Harpham; 3d, Lewold, Mr. Edwards; 4th, Britannia, Mr. Houghton; 5th, Boscius, Mr. Orchard; 6th, Unknown, Mr. Hedderley; 7th, Midland Beauty, Mr. Parkinson; 8th, Midland Beauty, Mr. Towle; Flamed Byblemens: 1st, Alexander Magnus, Mr. Turner; 2d, Lord Denman, Mr. Spencer; 3d, Pilot Alexander, Mr. Gibbons; 4th, Princess Royal, Mr. Gibbons; 5th, Gibbons' Salvatore Rosa, Mr. Lakin; 6th, Queen Charlotte, Mr. Houghton; 7th, Prince of Wales, Mr. Spencer; 8th, Othello, Mr. Battersby. Feathered Roses: 1st, Heroine, Mr. Gibbons; 2d, Count de Vergennes, Mr. Barber; Nymph, Mr. Spencer; 4th, Aglaia, Mr. Gibbons; 5th, Lord Denman, Mr. Hudson; 6th, Ponteau des Blanc, Mr. Turner; 7th, Seedling, Mr. Spencer; 8th, Fanny Cento, Mr. Dakin. Flamed Roses: 1st, Aglaia, Mr. Lawrence; 2d, Camillus, Mr. Battersby; 3d, Triomphe Royale, Mr. Edwards; 4th, La Van Dikken, Rev. S. Cresswell; 5th, Camillus, Mr. Jackson; 6th, Triomphe Royale, Mr. Hudson; 7th, Seedling, Mr. Spencer; 8th, Lady Leicester, Mr. Gibbons. Class F. Seedlings that have never gained a prize before: feathered bizarre, Earl Richmond, Mr. Slater; feathered rose, Queen Victoria, Mr. Jackson; flamed rose, Lady Clifton, Mr. Jackson. Class G. Six dissimilar Breeders: 1st, Mr. Turner, for Pilot, Aide-de-Camp, Purple Perfection, Maid of Orleans, Lady Stanley, and Catherine; 2d, Mr. Gibbons, for Pilot, Duke of Hamilton, Purple Perfection, Princess Royal, Surpass le Grand, and Unknown; 3d, Mr. Battersby, for Gem, Sylph, Othello, No. 53, Sobran, and No. 49. Class H. Seedling Breeders, which had not taken a prize before: 1st, Mr. Battersby; 2d, Mr. Spencer; 3d, Mr. Frearson.

### SEEDLING FLOWERS.

CATARACTARIAN: J. P. Worthless, with the exception of No. 2, which is desirable on account of its rich dark spotting on a buff ground. In shape, however, it is a little deficient.—H & B. Valueless as show flowers, 16 and 17 look as if they would be good bedding sorts.—Othello. All too much ribbed by far. The Cineraria has bright colours, and might be useful, if it was better shaped.

GLOXINIA: R. H. B. Handsome, but certainly not better than others possessing the same colours now in cultivation.

PANSIES: H. D. Curious, but otherwise of little value.—Z Z. A rich dark self, which we should like to see again in better condition. J. K. Quite withered up when received.

PETUNIAS: H. D. A pretty variety, which can hardly fail to be useful.

### Miscellaneous.

Chiswick Exhibition.—One or two circumstances that were talked of amongst the exhibitors led me to think that much good to all parties concerned in these exhibitions would ensue from all the exhibitors acting together in their exertions to improve the shows. They



should hold a meeting annually, after the shows are over, to suggest improvements, and should elect an acting committee, to whom all cases of dispute should be referred, and through whom the exhibitors should communicate with the societies. They would find the benefit of each other's advice and suggestions; and no doubt much valuable assistance would be rendered to the societies and to the interest of horticulture; as it is, there is great want of communication between the societies and a great part of the exhibitors. I beg to throw out this hint to the exhibitors, and shall be glad if it leads to a wise and beneficial combination. *Omicron, in Turner's Florist, Fruitist, and Garden Miscellany.*

**Incrustrated Boilers.**—Mr. Ira Hill has informed us (*Lawrenceburg Register*) that he has accidentally made a valuable discovery, by which the deposition of lime upon steam boilers may be obviated. Two or three shovels of sawdust are thrown into the boiler, after which process, he states, he never had any difficulty from lime, although using water strongly impregnated with it. He has always found the inside of his boilers as smooth as if just oiled. Whether the lime attaches itself to the floating particles of sawdust, instead of the boiler, or whether the tannic acid in the Oak sawdust forms a salt with the lime which will not attach itself to iron, remains to be explained. The sawdust was placed in the boiler for the purpose of stopping a leak. The experiment is cheap and easily tried. *New York Tribune.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

In placing greenhouse plants out of doors, we recommended in our last Calendar that a somewhat shady situation (if circumstances permitted) should be selected for the purpose, that they might, in some way or other, be protected from the mid-day sun; at the same time it is no less necessary that the roots should have a similar protection, for nothing can be more injurious to the greater number of plants than exposing the pots in which they grow to the force of a broiling sun, for the least inattention in watering is likely to prove fatal to the plants, more particularly to hard-wooded kinds; it matters not whether the plants are in or out of the house, this evil should be prevented. Out of doors they may be plunged in ashes, or have the space between the pots filled with moss; and those plants in the house which have their pots most exposed should have them inserted in one a size larger, filling the space between the two with moss, sawdust, &c.; this will prevent the excessive evaporation from the soil containing the roots through the sides of the pot, and will save many plants from being lost during very hot weather. Stove plants should be closely watched (particularly those with large soft leaves) to guard against the red spider, which the present dry weather is encouraging. Syringe frequently, to keep them in check, and plants much infested with them should be dusted over with dry sulphur by the sulphurator; let the sulphur remain on the plants for a day or two, carefully shading them from the sun, and if possible keeping them in a close place; this will be found generally sufficient to kill the spider, when the plants may be washed with the syringe, and placed in their usual situation; particular care should likewise be taken with this class of plants in supplying them regularly with water, a short supply of which, causing the leaves to get flabby in dry weather, is sure to be taken advantage of by the red spider. Specimen and choice plants nearly done blooming should have the faded blooms picked off, and be well washed with the syringe; they should then be placed in a cool shady situation, to recover themselves before potting, which, as before advised, should on no account take place until a fresh growth has commenced. Shading will be necessary now to all descriptions of plant houses, unless the roofs are covered with creepers, and air admitted largely, allowing more or less by night, according to the description of plants grown, and the paths, floors, &c., kept damp by throwing water repeatedly over them, to preserve something like humidity in the atmosphere of the houses, which, under the extreme dryness of the external air, is rather difficult to keep up. Achimenes, Gesneras, Gloxinias, &c., as they begin to show for bloom, should be removed to more airy quarters, keeping them, however, partially shaded for a time, when afterwards they may be exposed to a larger share of light. Achimenes must be carefully attended to with water while growing.

#### FORCING DEPARTMENT.

Do not neglect the Vines in the early house, because the crop is cut; frequently syringe them, to destroy any red spiders, established since the ripening of the crop; they may be easily eradicated now. Both inside and outside borders will require water occasionally (see Calendar, p. 312). Admit air freely at all times; the object should be, by careful management, to preserve the foliage in a healthy state for the next two or more months, that a supply of properly elaborated sap may be stored up for next season's supply. In thinning the later crops of Grapes well tie out the bunches, and leave the berries thinner than for the early ones; the Grapes will keep all the better from not being too thickly set in the bunch. Muscats and St. Peter's will require constant fires, to set their fruit freely; the present is a favourable season for furnishing new Vineries, &c., with plants; the roots of the Vines being now in an active state, an immediate start may be expected. Plant only those

kinds in the same house which require similar treatment, and ripen about the same time. If a succession of fruit is desirable, better appropriate different houses for the purpose (even if smaller), than plant two such Vines as Hamburg and the Muscat in the same house. The fire-heat required to ripen the Muscats would prove injurious to the Hamburgs, independent of the extra cost. **PINERY.**—Withhold water to fruit, directly a change of colour is discernible. If the fruit is growing in pots lift them on the surface of the bed, which will help to improve both colour and flavour. Continue to water and syringe occasionally those yet swelling. Fires will be required, to allow for extra ventilation, which, at this period of the crop's ripening, is more than ever necessary. Do not allow the bottom-heat to decline much. That portion of the fruiting stock which did not show fruit in February will now be most likely to show; these should be taken care of, as they will bring heavy fruit in October. To assist them, remove the suckers and gills, and keep them regularly supplied with weak manure water, and frequently damped with the syringe. Allow plenty of air to the successions; a little water may be given those first potted; keep the bottom-heat at a uniform point, somewhere between 85° and 90°. **PEACH-HOUSE.**—Give all the air possible to the ripe fruit; shade where it is desirable to prolong the season. Bring on the second house by an increased temperature, kept damp by the frequent use of the engine, and sprinkling the floors, &c.; at closing time give the inside border a good soaking of weak manure-water. Turn out Cherries, in pots, removed from the houses, into an open quarter of the garden, placing some turfy loam round the balls; this will invigorate them much better than keeping them in pots through the summer; they will take up with good balls in the autumn for repotting. Commence as soon as possible pegging down runners of Strawberries for next season's crop of forcing plants.

#### FLOWER GARDEN AND SHRUBBERY.

During the continuance of the present dry weather, frequent waterings must be given, not only to the recently planted trees and shrubs, but likewise to the bedded plants, annuals, &c.; in watering, it will be better to give the soil a good soaking twice or three times weekly, in preference to a mere sprinkling of the surface daily, which has a tendency to make the surface bake; mulching, wherever practicable, should be adopted, as well as damping the foliage of newly planted things each evening. Peg down those plants required to cover the ground as they advance, and loosen the surface of the beds and borders, which should afterwards be neatly raked over. Carnations, Picotees, and herbaceous plants, with the taller growing bedding plants, should be staked and tied up, to prevent injury from high winds. The strength and height of the stakes must be proportionate to the size and height of the plant to be secured. Hollyhocks, Phloxes, Delphiniums, Asters, &c., if not already done, should have the shoots thinned out, before being tied up, to prevent an appearance of overcrowding, as well as to improve the size of the flowers. When showery weather occurs, let the Boxedgings be clipped. London Pride, Thrift, Daisies, &c., used for edging, should each year, or once in two years, be taken up, divided, and replanted when the blooming time is over. Roses now require watching, to prevent the ravages of the "Rose maggot;" a daily look over is the only preventive; wash with the engine, to dislodge the green-fly, or syringely with water, to which a small portion of naphtha or ammoniacal salts has been added; water freely, and mulch the surface around their roots.

#### FLORISTS' FLOWERS.

PINKS will now require considerable attention, the pods of those which have a tendency to burst should have a small ligature passed round them. Shade any flowers which may be forward. Take care that they have plenty of soft water: also an occasional dose of weak liquid manure. Make up a dung bed for a first crop of cuttings, which may be put in as they become ready. **PANSIES.**—Continue to propagate and mark all seedlings having good or singular properties. Though a flower may not be of good form, still if it have any novel traits of character it will be advisable to save seed from it, in order to perpetuate or improve both these and its form. **TULIPS.**—Attend to the directions given last week. Continue to plant out DAHLIAS. Considerable attention will be required in this dry and trying weather; mulch, to prevent evaporation; this will save much watering, and be at the same time very serviceable to the young plants.

#### HARDY FRUIT GARDEN.

Tie into the wall the shoots of Peaches, Apricots, &c., as they advance; keep down the attacks of aphides by remedies previously pointed out—a constant watch must be maintained for some time, as these pests suddenly reappear—after they are considered to be eradicated. Frequently look over Apricots, Pears, and Plums, to destroy a maggot, which, curling itself in the leaves, does them and the young fruit much injury. Gooseberries and Currants attacked by the caterpillar should be daily hand-picked, or the branches exposed to the full force of the garden-engine, which will dislodge the insects, when they should be destroyed with the back of a spade. The earth immediately under the trees should be watered and beaten firm, which will prevent more of the larva from rising to attack the shoots; where the earth is very light, a coating of clay or loam, the consistence of mortar, should be spread under the trees and made firm, to prevent their escape from the

earth. If these precautions are taken on the insects' first appearance, they are more easily kept from doing mischief.

#### KITCHEN GARDEN.

Continue to plant out fresh crops of Cauliflowers, Cabbages, Savoy, and Celery, in proportion to what the future demand is likely to be, and keep sowing at intervals of a fortnight such plants as Lettuce, Spinach, Radishes, &c., lasting but a short time in perfection. Select a cool and rather moist situation for the above through the summer months. The young Asparagus beds will be benefited by a dressing or two of salt applied in wet weather during the period of active growth. Seakale beds may have the same treatment. Salt on old worn-out soils acts most beneficially as a manure, in addition to its completely destroying slugs, worms, and other vermin; and it assists the growth of Celery and other cultivated marine plants considerably. Plant out Cardoons raised in pots into trenches similar to what were recommended for Celery. Hoe between and earth-up Potatoes, which at present look healthy, and we may add, our frame Potatoes have shown no indications of disease; this, however, the experience of last year taught us, affords no assurance that the Potato crop (out-door) will not again fail us. Peas, especially the tall growing kinds, should be stopped when they show bloom; this will not only throw them into bearing earlier, but make them more productive. Scarlet Runners treat the same, for similar reasons. Make up the deficiencies in the herb compartment by transplanting Thyme, Savory, &c., from the seed beds.

#### STATE OF THE WEATHER NEAR LONDON.

For the week ending June 9, 1853, as observed at the Horticultural Gardens, Chiswick.

June.	Month's Age.	TEMPERATURE.									Wind.	Rain.
		BAROMETER.		Of the Air.					Of the Earth.			
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.				
Friday..	3	30.127	30.080	64	37	50.5	54	52	N.E.	.00		
Saturday.	4	30.040	29.911	64	39	51.5	54	53	N.E.	.00		
Sunday.	5	29.836	29.848	69	39	54.0	54	52	S.E.	.00		
Monday.	6	29.882	29.836	74	39	56.5	55	54	S.W.	.00		
Tuesday.	7	30.000	29.942	75	44	59.5	56	54	N.W.	.00		
Wednes.	8	30.078	30.014	80	54	67.0	58	56	S.W.	.02		
Thursday.	9	30.017	29.973	69	50	59.5	59	56	S.W.	.40		
Average..		30.010	29.943	70.7	43.1	56.9	57.7	53.9		.03		

June 3—Uniform cold haze; fine; clear and cold at night.  
4—Slightly overcast; cloudy and fine; clear.  
5—Very fine; slightly overcast; hot sun occasionally; very clear.  
6—Very fine throughout; clear at night.  
7—Bazy; very fine, partially overcast.  
8—Very fine; overcast; rain at night.  
9—Very fine; cloudy and mild; drops of rain occasionally at night.  
Mean temperature of the week 13 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending June 18, 1853.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 12	71.7	50.4	61.0	11	0.78 in	—	5	3	1	5	2	2	2
Mon. 13	72.8	49.3	61.1	12	0.56	1	5	3	1	2	7	6	2
Tues. 14	73.1	49.7	61.4	11	0.24	1	2	4	1	4	6	6	2
Wed. 15	74.1	50.0	62.0	12	0.38	1	4	2	4	4	6	6	2
Thurs. 16	72.1	49.4	60.8	11	1.50	2	3	4	1	6	6	6	2
Friday 17	73.1	50.0	61.6	15	0.80	1	4	2	4	4	6	6	2
Satur. 18	72.9	51.0	61.9	15	0.30	2	2	2	4	4	6	6	2

The highest temperature during the above period occurred on the 12th and 18th, 1842—therm. 80 deg.; and the lowest on the 15th, 1850—therm. 50 deg.

#### Notices to Correspondents.

**AQUILEGIA:** A. R. A. fragans is pale yellow; A. Jucunda is blue and white; very like glandulosa.

**FISH SPAWN:** A. B. C. is anxious to learn the best method of transplanting the spawn of the grayling.

**FRUIT TREES:** W. Parton. You will be able to obtain a white Nectarine tree by applying to any of the London nurserymen. Indeed your nearest respectable nurseryman can surely undertake to furnish you with one in autumn—the proper season for planting it. The Fig, from your description, is, perhaps, the Nerii; if so, it is good.

**GRAPES:** C. They are attacked by mildew, for which sulphur is a certain remedy, provided it is applied the moment the mischief appears.

**INSECTS:** G. O. The beetles which have attacked the leaves of your Plum and Peach trees are the *Hylobius Abietis*, a species generally injurious in Fir plantations. The easiest way of getting rid of them is, to lay a sheet under the trees in the day and shake them at night, when the beetles come out to feed.—G. F. (Lee, Kent). Your Asparagus is attacked by the Asparagus beetle, *Crioceris Asparagi* (*Gard. Chron.*, 1845, p. 592). Both the beetles and their grubs are so conspicuous that hand-picking may be easily adopted. W.

**LEAVES:** York. The spotting of your leaves is doubtless caused in some way or other by cold and damp. We could find no blight or insects on them.

**NAMES OF FRUITS:** Q. Q. The three sorts of Apples had been too loosely packed, and the labels were in consequence detached. The hard green apple, probably No. 3, is the Easter Pippin, generally called the French Crab. The russety flat Apple, with an open eye, is Wheeler's Russet, probably No. 1. The small crab Apple, greenish yellow, with a blotch of dull red next the sun, and having a small close eye, is Hunt's Deutscher.

**NAMES OF PLANTS:** Doel. Melia Azedarach.—J. F. Pyrus hybrida.—A. B. C. Only the Primula elatior or Oxlip.—E. C. The flesh-coloured Orchis Morio.—A. D. Dendrobium Devonianum, Epidendrum ionosum.—W. P. P. It is the common Chinese Berry.—T. Celtis australis.—T. B. Prunus Padus, the Bird Cherry.—C. F. Stellaria graminea, in an imperfect state.—K. B. Leptospermum lanigerum.—D. G. S. 1, Dactylis glomerata; 2, Arrhenatherum avenaceum; 3, Poa pratensis; 4, Bromus sterilis, very young.—G. B. 1, Aerides affine; 2, a variety of *Ocuidium maculatum*; 3, *Angozanthus flavidus*.

**PAINTING GLASS FOR SHADE:** B. & C. Common whitewash is what is usually employed; but at Kew, white-lead has been used for the purpose, "pouncing" it afterwards with the brush, to destroy all lines.

**SUGAR BOILER'S REFRIGER:** T. P. P. It is a manure about twice as strong as farm-yard manure; but it varies in strength, according to the quantity of blood it contains.

**VINES:** C. P. Cold at the root is doubtless the cause of the berries having fallen off.

\* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

PERUVIAN GUANO.—The guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.

WILLIAM INGLIS CARNE, 10, Mark Lane, London.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

PERUVIAN GUANO, guaranteed the genuine importation of Messrs. A. GIBBS & SONS. A constant supply of LINSEED and RAPE CAKE. EDWARD PURSER, Secretary.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton 27 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites... .. " 5 0 0

Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## MANURES, LINSEED CAKE, &amp;c.

**DIXON AND CARDUS**, Northam, Southampton, have on sale, in any quantity, the following articles, pure and unadulterated and at the lowest prices:—

Home-made Linseed Cake. Linseed for feeding.  
Rape Cake. Linseed Oil.

## MANURES.

Superphosphate of Lime.	Peruvian Guano.
Calced Bone.	Wheat Manure.
Fine ditto, for dissolving.	Mangold Wurzel Manure.
Bones, half-inch.	Potato Manure.
Ditto, dust.	Sulphuric Acid.
Ditto, fine, for dissolving.	Gypsum.
Animal Guano, or Dried Flesh	Nitrate of Soda.
Manure, from South America.	

Orders addressed to DIXON & CARDUS, Linseed Mills and Artificial Manure Works, Northam, Southampton, will receive prompt attention.

## SEWAGE CHARCOAL MANURE.

**PEAT CHARCOAL**, completely saturated with LONDON SEWAGE, will be found a most efficient Manure for any Crop; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, and will be delivered at the London Terminus of the Railways at 60s. per ton, and in quantities less than half a ton, at 4s. per cent., for ready money only; it may be also procured from Messrs. G. Grass & Co., Agricultural Seedsmen, 26, Down Street, Piccadilly; or from any other of the Company's Agents.

"Sewage Manure, absorbed in Charcoal, is a first-rate fertiliser; we have tried it on French Beans, Dahlias, Roses, and Cabbage Plants. We put half a pint to each Rose and Dahlia, sowed it in the row with Beans, and put a few pinches to each plant of Cabbage. The effect is perceptible very soon, but it will be twice as efficacious the second year as the first."—*The Garden*, by Mr. GLENNY.

Thomas Cartwright, Esq., of Aynhoe Park, having had 2 tons in the spring, which he tried on Turnips, ordered 30 tons, and writes as follows:—"Nov. 7, 1852. I have used the Sewage Charcoal Manure largely this autumn on Wheat and Beans;" and he then adds:—"On the whole, I like the Sewage Charcoal very much, and think it a very useful manure, and intend always to have some for my Turnips."

**ARTIFICIAL MANURES, &c.**—Manufacturers and others engaged in making ARTIFICIAL MANURES, may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

Gentlemen desirous of receiving instructions in chemical analysis and assaying, will find ample facility and accommodation at the College.

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**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK POTTERGILL, 294 A, Upper Thames Street.

## DO YOU BRUISE YOUR OATS YET?—

One bushel of Oats crushed will nearly make two. Immense saving, and important improvement of the Animal. Two Machines for Bruising Oats and Cutting Straw, 4l. 6s. Od. Oat Crushers, half Cutters, Ploughs, Threshing Machines, Domestic Flour Mills, Light Carts, Mining Tools, Brick and Tile ditto, Corn Dressing ditto, and Haymakers' ditto. Order early. Horse and steam Machinery put up, &c. Repairs done.  
Pamphlet on Feeding, 1s. List, with 240 Illustrations, 1s.; per post, 1s. 4d.

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**A PRIZE MEDAL FOR SUPERIOR LOCKS** WAS AWARDED TO J. H. BOOBYER, AT THE GREAT EXHIBITION OF 1851.

**THE CELEBRATED AGRICULTURAL DIGGING FORK, PATENT SPADES, DAISSY RAKES, SCYTHES**, Draining and other Garden Tools. Mole Traps, 6s. per dozen. Carpenters' and Smiths' Tools, &c. Best fine cut Clasp and Rose Nails at the lowest reduced prices. Sword-cutters for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.; at J. H. BOOBYER & Co.'s (late Street & Bonney's), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope Street, Clerkenwell, London. Established nearly 200 years for the sale of goods from the best Manufacturers at the lowest prices. Goods forwarded to any part on the receipt of remittance.

## MR. SAMUELSON'S PATENT DIGGING

MACHINE, capable of digging 4 acres per day, with four to six horses, price 27l. 10s., is now at work daily in the neighbourhood of Banbury. Agriculturists, road and railway contractors, and others interested in its operation, may see it by applying to Mr. B. SAMUELSON, Britannia Works, Banbury.

**BUDDING'S LAWN MOWER**, with SAMUELSON'S REGISTERED IMPROVEMENTS, lightening the draught by one-half, and enabling one unskilled labourer to work it unassisted; reviewed and commended in the "Practical Mechanic's Journal" of February 1. Price 5l. 10s. and 6l. Larger sizes for pony draught, 7l. 5s. and 10l.

Apply as above, or to any Ironmonger or Implement Dealer in town or country.

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The ensuing MIDSUMMER VACATION will terminate on the 11th of AUGUST.

Students are admitted either as Boarders or as Out-Students. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as for agricultural education.

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Every information will be given at the Offices of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter.

THOMAS MAX, Secretary.

**NORFOLK** has been long and justly celebrated for the production of the Turnip well known as the WHITE NORFOLK; this has induced YOELELL & Co. to give particular attention to this "one kind," and they flatter themselves that the sample they have now to offer is such as will fully bear out the high character attached to this fine variety. Price 30s. per bushel; bags 1s. each. Post-office orders or reference is respectfully requested from unknown correspondents.

YOELELL & Co., Seed Merchants, Great Yarmouth, Norfolk.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, JUNE 11, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June 15—	Agricultural Society of England.
THURSDAY, — 16—	Agricultural Imp. Society of Ireland.
WEDNESDAY, — 22—	Agricultural Society of England.
THURSDAY, — 23—	Agricultural Imp. Society of Ireland.

ALTHOUGH we have not sufficient evidence before us as to the advantages or disadvantages of the continental practice of tail inoculation for PLEURO-PNEUMONIA to enable us to arrive at an accurate decision, yet we must confess that we are by no means prepossessed in its favour. The practice cannot be said to have been followed in this country, and the evidence collected by Professor SIMONS on the Continent appears very contradictory. The practice of inoculation for this disease differs from the same practice in other diseases in one remarkable respect. The custom, in the case of cowpox and smallpox, is to use the infectious matter contained in the pustules of the living, though diseased, animal; and we can, of course, select the healthiest and strongest animal, and the most favourable type; but here this resource is not open to us—there are no pustules in pleuro-pneumonia, and we must seek in the disorganised tissues of the dead animal for the infectious matter wherewith to propagate this prophylactic disease. To our mind, this at once constitutes a strong and striking objection. We cannot divert our minds from the many deaths which have occurred from slight wounds received in the dissection of dead bodies; and as gangrene is sometimes present in the last stages of

pleuro-pneumonia, our advice is to abstain from the dangerous remedy, which may probably be found worse than the disease. Until we receive much more favourable evidence than has yet appeared, we say let well alone, preserve the tails of your beasts intact, and risk not ghastly wounds and sloughing sores in that most important appendage and essential conductor to the comfort and appearance of the animal. W. C. S.

PRINTED regulations for the management of landed estates could be easily drawn up, so as to possess merit, if soils and climate were equal—if tenants' skill and capital were always at par—and if practice were stationary; but, in the absence of these conditions, it is no easy matter, in these times of "tenant right" and progress, to avoid the risk of losing an independent tenantry. True it is that a landlord has a right to do with his own as he thinks proper, but this is only true so long as he cultivates his estate with his own capital, for the moment he proposes to involve a tenant's capital in its cultivation, that moment the absoluteness of his right ceases—for surely the tenant also has a right to do with his own skill and capital as he thinks proper. In short, leases are mutual contracts between landlords and tenants, and if it be attempted successfully to supersede them by printed regulations, these should, at all events, be of the most general form possible, preliminary in character, and not only free from everything arbitrary, but consulting in all cases the skill, capital, and rights of the tenant in the most liberal spirit, making the broadest possible provision for diversity of soils and climate, as well as progress in science, their object being merely to convey an idea of the landlord's side of the question, which is all their use in practice.

It may be observed that where landed estates are managed with the joint capital of the landlord and tenant, the printed regulations for controlling them should, according to equity, be drawn up by both parties, the proof sheet being revised by the latter as well as the former. If a landlord would send his proof-sheet for the revision of his resident tenantry, the revised proofs would show the dangers apprehended on both sides, and difficulties would increase with the size of estates, number of farms and diversity of soils. Even granting the possibility of revising such a proof-sheet, so as to serve for a general lease, it could only be accepted as such by the resident tenantry, and not by their successors; and even the resident tenants themselves would be bickering for alterations at the expiry of their leases, owing to the progress made in science since their commencement; and the more rapid this progress the more difficult will it be found to bind farmers to arbitrary rules for long terms. Under such circumstances, however, the incoming tenant could not charge the landlord with arbitrary feudalism, because then the printed regulations would have been, so to speak, constitutionally drawn up.

In practice, independent tenants of capital pay no attention whatever to printed regulations beyond that respect due to them as coming from the landlord. They only look upon them as the one half of a proposition of which the other half has to come from themselves; and landlords as invariably relieve such tenants from any delicacy they may feel in advancing objections; by telling them in the very outset that any alterations will be made which they deem proper; on the other hand, ignorant tenants, deficient of capital, are but too often willing to accept of any regulations, and any rent, in order to get farms.

If such, therefore, be the case with printed regulations in practice, what, it may be asked, have they to recommend them? For if the landlord and the independent tenant deal thus summarily with them; and if all the "fire-side farming," which they contain only chimes in with the slovenly practice of the latter class of tenants, it is very plain that the landlord's true interest is somewhat in danger. In short, where printed regulations cannot be accepted as a whole, as they seldom can, they should not form a part, but be thrown overboard altogether. Any landlord may see the propriety of this; agents may not, and out of courtesy to them, tenants seldom adopt this straightforward course, but agree to a medium one, subscribing the printed regulations with exceptions. Such is, in fact, the character of probably nine-tenths of all the leases where printed regulations exist, giving rise to a vast amount of misunderstanding and lawsuits between landlords and tenants, which otherwise would never have been heard of, numerous examples of which might be quoted did our limits permit; and, but for the general good understanding which exists between them, things would be tenfold worse than they are.

At all times, but especially the present, the management of landed estates is a subject of by far



too much importance for any landlord or agent, however talented, to say how they should be cropped and manured for the next 20 years, and otherwise managed in detail. The amount of ignorance in general is only equalled by the diversity of opinion which exists, and parties cannot be too cautious in laying down rules to-day for the practice of to-morrow, so long as this diversity of opinion exists.

#### ON THE PROPERTIES OF STRAW.

Your correspondent, Mr. Goodiff, in the commencement of his observations on the properties of straw (*Agricultural Gazette*, No. 6, p. 90), refers to a paper by Dr. Voelcker "On Nutrition," taken from Blackie's "Cyclopaedia of Agriculture"—a work of great merit, replete with information, and to which I have frequent recourse. I had previously given Dr. Voelcker's paper some attention; on looking over the columns headed "Practical Results from direct Feeding Experiments," I find so great a discrepancy as to deprive it of much weight. Taking, for example, Rye-straw; the nutritive value is given by Block at one-half, by Petch at 1-5th, by Meyer at 2-3rds, and by Thaer at 1-7th that of hay; or taking hay, at the market price of 3*l.* 10*s.*, as the basis of calculation, Rye-straw is estimated by Block at 35*s.*, by Petch at 14*s.*, by Meyer at 46*s.* 8*d.*, by Thaer at 10*s.* 6*d.*, and by Schwartz at 17*s.* 6*d.* In the other materials of food—Turnips, Linseed-cake, &c.—there is a similar discrepancy. From the names at the head of each column, I observe they are of foreigners (French, Germans, and Swedes), and I think it somewhat singular, and not to our credit, that we have to look to dwellers in other climes (with whose means and modes of carrying on their operations we cannot be so conversant) for information on subjects so interesting and important. We are carrying on the business of cattle-feeding and meat-making on a scale and with a success far exceeding that attained by foreigners; and I think it belongs to our agricultural societies to institute experiments for supplying statistical information derived from and applicable to our own procedure. Besides the practical value, Dr. Voelcker's paper contains a theoretical value by MM. Boussingault and Fresenius, taken from their comparative quantity of nitrogen, or flesh-forming property, and not having regard to that of respiration. Tested by the market price—which I consider a far safer estimate than the experiments above referred to, being the combined experience of the consumers, carried on through ages—a considerable discrepancy will be observed. Take, for example, Beans, which, though not without a considerable proportion of carbon, may be termed nitrogenous food. At 3*s.* a quarter (which may be deemed an average price), or about 7*l.* 10*s.* per ton, at the theoretical computation of 100 equivalents of hay to 23 of Beans, it would reduce the price of hay to 34*s.* per ton, whilst 70*s.* per ton may be taken as the average price. It is clear that experience is not ruled solely by the proportion of nitrogen. You cannot feed, or even maintain an ox or a cow on Beans, whilst on good meadow hay only their condition may be improved; it affords, besides a moderate per centage of nitrogen, material for the process of cudding or rumination, in the vulgar but expressive parlance of this district, termed the "fill-belly" property.

I know of no two materials of food more similar in character than hay and straw; they are both of the family of Grasses. If you allow your Grass to ripen its seeds before you mow, the produce will be hay-like straw; if you cut Oats in a green state, after they have flowered, and treat the produce as hay, it will be very similar in nourishing effects. An acquaintance of mine cut a field of Oats in this state, owing to its being much lodged—an exceedingly heavy crop. After selecting some of the ripest portion, and threshing out the grain, he informs me that he has wintered nearly 70 head of fair-sized Irish cattle solely on the produce of 16 acres; their condition is so materially improved that he calculates on bringing them to market as very early Grass-fed animals. I am inclined to think that a more economical use of heavy strawed and lodged crop of Oats could not be resorted to.

Mr. Goodiff inquires if there is not some absurdity in treating straw as of little value (I did not say valueless) as manure, with an advocacy for it as food. Certainly not. If we consider food rich in nitrogen, as Beans, &c., it will be found that their value as direct manure scarcely exceeds one-third of that as food;—a very necessary consequence, since Beans as food possess the twofold attributes of food for animals, and also for plants. When eaten, they are deprived of the former, and apparently more valuable one, and serve only for the latter; it appears to me, however, that a very different comparison obtains with regard to carbon. I now call attention to what I think has an important bearing on the question at issue. We are told that in the materials for food the requirements for two processes must be attended to—nutrition and respiration. For the former, fibrin, albumen, and casein; for the latter, oil, starch, sugar, &c. The leading characteristic of the former is azote or nitrogen; now, it is remarkable that whatever substances contain these are recognised and sought for as fertilisers, whilst oil, fat, starch, sugar, &c., the leading characteristic of which is carbon, have no such repute. We find the compounders and vendors of manure setting forth the per centage of nitrogen-ammonia in their manures, but none of them dilating on the proportion of carbon. Now, oil, fat, starch, sugar, &c., are valuable constituents of food, necessary

for respiration and constituting the fat-forming properties. If they are valuable as manure, I must admit that I am not aware of it. Straw, the subject of discussion, contains about 50 per cent. of carbon, with about one-fourth or 0.25 of nitrogen.

There appears too an important distinction in the office performed by carbon in the nourishment of animals, as compared with that of plants. We are aware that cattle subsist in an atmosphere of from 40° to 50° colder than their constitution; and we are told that the carbon of their food is the fuel which supports this warmth. The greater the difference of temperature—that is, the greater the degree of cold to which the animal is subjected, the more carbonaceous food is required to effect the purpose. Now, when vegetation is active, the atmosphere of the soil will be colder than that on its surface; the consequence is, a constant interchange and circulation of the air charged with carbonic acid. We see in this that one great advantage from drainage, deep cultivation, and comminution of the soil, is the facilitating the circulation of the air in the soil, in addition to the admission of rain. The author of "A Word in Season" shows us that without the application of a shovelful of manure, he has by this means been enabled in the course of six or eight years to raise 16 to 18 tons of straw from each acre of his land.

Mr. Goodiff distinctly says that straw, with its carbon, supplies plants with the most essential organic elements of their constitution, and appears to cite Liebig in support of this. Now, on referring to that eminent author's chapter on the assimilation of carbon, after giving data and statements which almost startle by their novelty and clearness, he says, at page 15:—"The facts we have stated in the preceding pages prove that the carbon of plants must be derived solely from the atmosphere."

"I cannot admit Mr. Goodiff's definition of the manure from Irish cattle. We are taught that these animals (I am not aware that the Irish are an exception) are composed of carbon, nitrogen with hydrogen, and oxygen; their bones contain phosphate of lime, the whole of which undergo a continual change or waste; some portion of each is constantly being ejected—the carbon chiefly through the nostrils, the nitrogen and phosphate in the excrement. If the animal be supplied with food equal to repair this waste, whether it be straw or other material, it will be found that the excrement, abstracting the water, is doubly rich in nitrogen and phosphate, whilst more than one-half of the carbon has been dissipated; and I have no hesitation in saying, that if the Irishman's manure be subjected to analysis, it will contain a fair per centage of nitrogen and phosphate of lime.

The two processes of nutrition of animals, and decomposition of vegetable or other matter, are defined to be slow combustion. I have instituted experiments on my own cattle (which I may some day offer for insertion in your columns), assisted by the analysis of Professor Way; I find the dry material of the food is reduced to one-half, or, in some instances, more than that. Now, it is somewhat remarkable that Professor Johnston, in his admirable treatise on "The Elements of Agricultural Chemistry," states that a like diminution is attendant on the complete rotting of the dung heap. It appears that in the process of digestion, the loss has been almost wholly sustained in the elements of carbon, whilst the nitrogen and phosphates are accounted for, with little if any diminution in the increase of weight and in the excrement. I feel satisfied that in the process of decomposition, a somewhat similar loss will occur in the carbon, attended with a much greater waste of the nitrogen or ammonia. I now repeat an inquiry I have before made in your columns—How does it happen that the philosopher and the practical man see with indifference the 50 per cent. of carbon dissipated by fermentation, whilst they evince such care and anxiety to retain the one-half per cent. of nitrogen? The only answer I can suggest is, that if you supply your plants with a sufficiency of nitrogen, phosphate of potash, and other minerals, they will derive from the atmosphere a cheap and abundant supply of carbonic acid.

Pending these discussions on straw, your columns have been occupied by one of far wider range, and conducted by men versed in science and practice—Mr. Lawes and Mr. Russell, both of whom have given their views on the properties of straw as manure. Mr. Lawes has arrived at the conclusion, that for Wheat, it has no effect except from its nitrogen; that the carbon of straw does not tend to increase the produce of a succeeding crop of straw (the material of all others one would expect it to influence); he thinks, however, that the carbon of straw does administer to the growth of the Turnip. It will, I imagine, be somewhat difficult to explain on what principle this result ensues. Mr. Russell attributes to the carbon of straw no virtue whatever beyond the retention of the ammonia, giving it out more slowly, and lengthening the vitality of the plant. I may now refer to my premises, that vague notions were held as to the value of straw as manure, and that carbon held in science a doubtful, and in practice, a neglected position. All that can be determined seems to be that it has a value in nitrogen about 3*s.* 6*d.* per ton, to which some little may be added for its mineral properties—silica, potash, &c. It is of service in keeping open strong soils, rendering them pervious to the atmosphere—a mechanical effect produced by abundant tillage. Then, too, its humus—the vegetable residuum after the fermentation of the dung or manure heap—should not be altogether omitted. Liebig attributes to it an agency in supplying carbonic acid from the

atmosphere. Peat soil has the like properties with the humus of straw, but is held in little estimation in localities where it abounds, and may be had for the expense of digging and carting it a short distance; it is rarely used.

My occupation as a farmer being in a Grass district, with about 12 acres in tillage, more than one-eighth of my holding, I find it advantageous to apply the whole of my tillage land to the root and Bean crop. By selling off one acre of early Potatoes, I can purchase with the proceeds straw, the produce of 10 to 12 acres, and am thus enabled to maintain a much greater number of cattle. Having boarded floors in my stalls, I use the straw as food; at the present time (May) I mix it, chopped with my first cutting of Grass, for soiling; I do this partially through the Grass season, but especially with the after-math. I find it corrects the laxative property of the young Grass; I use it too with the root crop throughout the winter season. I pay for the straw from 35*s.* to 40*s.* a ton, which will, I think, be fourfold its value to the grower as manure. If he will lower his terms, the community of Grass growers and townsfolk farmers are sure to purchase much more from him, and we shall both derive great benefit from the interchange. There is a third party to this—the landlord. I suggest for his consideration the device of some sagacious members of his class, who allow their tenants to send out the straw to stable and stall-keepers in their neighbourhood, on condition that they fetch it back, together with the excrements of the cattle to which it has served as bedding. In this case the straw is simply used as a vehicle for conveying fertilising material, for improving the condition and value of the land. It would probably be an equal, if not a greater boon, to allow the tenant to sell his straw to the best advantage, on condition that he bought with the proceeds manure best adapted for his purpose. Y.

#### KILWHISS v. ROTHAMSTED.—No. VI.

WHAT IS THE USE OF CARBON IN AGRICULTURE?

"What do you mean by an excess of ammonia (for Turnips?—Will this point be reached in using so much box-fed dung, or may I add to this, one, two, three, or more cwt. of ammoniacal salts or Peruvian guano?"—MR. LAWES, in the *Agricultural Gazette*, 21st August, 1852.]

DID any one ever doubt that the largest crops of Turnips could be grown with plenty of rich box-fed manure? It must readily be admitted that "carbon" of such quality will raise Turnips, and also Wheat, even after the former have appropriated the more prominently nitrogenous matters. But Mr. Lawes must be compelled to grant that when the Turnip can dispense with the direct application of ammoniacal manures, it can at the same time dispense with his own beloved superphosphate. At least, the action of phosphates in such circumstances must be held as altogether casual; they merely assist the small seed of the Turnip in extending its roots. Then let this explanation be distinctly understood, and let us hear no more about the "otherwise useless refuse of our corn crops" being the real pabulum of the "root crops."

The Rothamsted Turnip experiments, from which such a profusion of deductions were drawn, extended over three years, 1843-44-45; the experiments of the two first years with reference to the effects of nitrogenous manures are not only unsatisfactory, but they are entirely worthless, unless as showing that if Rapecake and ammoniacal manures are drilled in large quantities with the seed, a great destruction of plants ensues. I have always felt that the results of these two years would not bear criticism. Those for 1845 are certainly much less objectionable, they showed that superphosphate alone produced average weights of bulbs, 1-21 lbs.; do., and 10 cwt. of Rapecake, 1-37 lbs.; do., do., and 3 cwt. of sulphate of ammonia, 1-13 lbs.; do., and 3 cwt. of sulphate of ammonia, 1-18 lbs.

I will only repeat what I formerly said about this experiment, that the Turnips ought to have been sown much earlier when they were so liberally dressed with ammoniacal manures. It showed a want of appreciation of science not to have attended to this. The experiment was not only mismanaged in this particular, but by far too little space was given to those plants which were so liberally supplied with Rapecake and ammonia. Nearly eight plants were crowded together on a square yard! And behold the result of this scientific experiment as distinguished from a practical one. To lead me away from the points to which my criticisms referred, Mr. Lawes writes very learnedly, and puts me in possession of some very useful information in the following passage:

"If, allowing for soil and climate, the farm-yard manure in Scotland bore the same proportion to the amount of Turnips produced as in the Eastern Counties of England, direct ammoniacal manures would prove much less valuable than they are now found to be." &c.—*Agricultural Gazette*, 21st August.

The proportion of land in Turnips on farms in the Eastern Counties is much greater than it is anywhere in Scotland. This crop is far from being overmanured in Scotland, although the greater proportion of the crop is yet of such as have shorter "orbits." According to this new explanation, if the Norfolk farmers were to have three-eighths of their land in Turnips instead of a fourth, guano would then be more valuable than it is now found to be. But the following recommendation was contained in one of the most carbonaceous pages in the Rothamsted papers:—

"It would probably be advantageous to have a greater proportion than one-fourth of the farm under Turnips each year; at present, on the Norfolk system, one-fourth of the farm is Clover, but broad Clover cannot be obtained with certainty so often. If, instead of this, one-eighth of a farm was Clover and three-eighths Turnips, a larger proportion of winter food would be obtained, and as much Clover would be grown upon an eighth as is grown



on a fourth of the farm."—*Royal Agricultural Society's Journal*, Vol. VIII., page 232.

Hence, notwithstanding the adverse influences of the season for Turnips in the Eastern Counties, and the "admitted uncertainty of this crop, a great extension of its culture is proposed as consistent with the dictates of science. But in these circumstances the direct application of ammoniacal manures was never hinted at as being a necessary consequence of this additional eighth of Turnips; but would it not have been a much more sound and sensible advice to have told the Norfolk farmers to grow Swedes or Beet over one-fourth of their holdings, and advised them to apply nitrogenous manures, rather than to grow Norfolk Whites over three-eighths, with the less luxurious fare of "carbon" and phosphates. There were no distinctions drawn between one variety of Turnips and another, as requiring more or less ammonia, in all Mr. Lawes' writings, before I criticised his papers. It will not do for him to turn round and say he only meant the raising of Turnips for "rotation effect." When he was giving advice, in 1846, to the Norfolk farmers, he wrote plainly enough in his pamphlet on artificial manures:—

"My experiments show that ammonia is not a necessary ingredient in a Turnip manure; it has always a tendency to produce the primary organs of plants, leaf and stem. As it is the object of agriculture to produce bulb rather than leaf, those manures should be employed which best effect this; phosphate and sulphate of lime, and carbonaceous substances not rich in ammonia are therefore most suitable to this crop."

I would have been very naturally led to believe, from this extract as well as others which I have already given, that manures rich in nitrogen could not grow bulb at all; but Mr. Lawes' latest (Oct. 9) is certainly a great improvement on his earlier opinions:—

"A due supply of nitrogenous manures is very important for the Turnip crop; yet, that an excess of it may both reduce the amount of nitrogen collected from natural sources, and lessen the feeding value of the crop."

But this statement goes right against his own experiments, and shows that he places no reliance upon them. He now admits that ammonia can be substituted for carbon in the mere production of bulbs; and what he chiefly means now to make out is, if you give a plant as much food as it can assimilate in a given time through its roots, it cannot take what the atmosphere can supply. But this holds as true in regard to carbon as it does in regard to ammonia. He has, however, still another consolation left in regard to carbon; this he imagines is the active manual agent in producing Turnips of a high feeding value, because this substance favours a "special deposition" (?) and a "healthy ripening of the bulb." He alludes to the labours of two individuals on the subject:—

"Dr. Anderson considers that an increased per centage of nitrogen would be the index of a proportionally increased feeding value of the crop."

"Dr. Voelcker has found by direct experiment that some succulent vegetable substances may contain nearly one-fourth of their nitrogen in the form of ammoniacal salts. Our own views on the point, when we say that these matters are 'only brought within the range of the organism, themselves as yet unorganised, &c.'" This opinion, then, we say, would seem to require little further confirmation.

I never did consider that the inferences which Dr. Anderson has drawn from his researches on the feeding value of Turnips were borne out in practice, inasmuch as the physical condition of soils appears to have much less influence on the quality of Turnips than the chemical composition of soils. The well-known and recognised facts on this subject amongst practical men in Scotland, and the easy classification which these facts admit of, have long appeared to me to place the matter beyond a doubt that the feeding value of Turnips is in a great measure dependent on the presence of certain mineral constituents in the soil. If these mineral matters are abundant, the quality of Turnips will not be influenced by the nature of the manure. If they are not in sufficient quantity, a larger root may be grown than you have mineral material to build up its better properties. It may be said with perfect certainty that carbonaceous matters have nothing to do with the feeding value of roots, Clovers, &c., unless as tempering the supply of nitrogen, and so far only as they are capable of yielding up mineral ingredients. Why, the Turnips which are grown on our peaty soils in Scotland are, for feeding sheep, scarcely worth the eating. I might call Mr. Lawes' attention to a fact, nearer home, which is as good as a hundred laboratory experiments, that the carbonaceous soils in the fens of Lincolnshire produce very bad qualities of roots, &c. I had the pleasure of listening to a paper by Dr. Voelcker on the subject to which Mr. Lawes allerts, and an admirable paper it was. But I must refresh Mr. Lawes' memory, in pointing out the fact, that when he formerly wrote about certain matters being only brought within the "range of organism" that this was merely applied to the leaves of Turnips. In the "Few Words of Advice on Artificial Manures," he is most explicit on this subject; the capitals are his own:—

"From the fact that a plant which should receive abundant supplies of nitrogen, and when this manure is judiciously applied, will certainly return them in any crop in a rotation. We cannot be saying this, that the value of a crop of Turnips in proportion to its weight is two-fold on a Carbonaceous soil, as compared with a peaty soil, that the Turnips on the peaty soil are not so valuable. Now the manure used on the peaty soil of Turnips, or even clover, for the best of the Turnips, so far as the Turnips, the leaves, and the straw is of the Turnips, is the same. For the reason I should recommend the growth of Turnips and clover manure to be applied to the Turnips, which is the same as to the clover. Now I say that the Turnips, which are produced on the peaty soil, are not so valuable as the Turnips which are produced on the Carbonaceous soil, provided manure is abundantly supplied."

I need not say one word more on this subject. Mr.

Lawes ought to call attention to his former errors, when he so readily adopts the opinions of others. The very extravagant views which Mr. Lawes expressed in regard to the action of nitrogenous manures on leguminous plants, in his pamphlet on manures, and also in the 8th vol. of the *Royal Agricultural Society's Journal*, have now been entirely abandoned, and an opposite view, as extreme and as extravagant, is now substituted. His experiments, it would seem, can prove anything. All must now subscribe to the following:—

"The effect of alkalies on leguminous plants perhaps approaches nearer to consistency with the theory of Baron Liebig than any other fact which has come under our observation, for the alkalies, which are found to have a very marked effect upon their increased growth, predominate largely in their ashes."—*Royal Agricultural Society's Journal*, Vol. XII.

Mr. Lawes has certainly led his friends by a very roundabout path in bringing them to such a position as, that they can at last have a prospect of that rock of agriculture, the mineral theory. In 1845, Baron Liebig, in detailing the principles upon which his manures were to be manufactured, wrote as follows:—"Experiments in which I am at present engaged will show whether in future times the cost of this mineral manure can be greatly lessened by excluding half or the whole ammonia. I believe that this can be accomplished for many plants, such as Clover and all other very foliaceous vegetables, and for Peas and Beans, but my trials are not so far advanced as to prove the fact with certainty."

In regard to Mr. Lawes' article of Sept. 25, little need be said; the greater part of it has no reference to anything which I had written in my papers. A good deal has been done, however, with the view of strengthening the weaker parts of the wall of Rothamsted. What was formerly made a very simple question has now been made as complex and as indefinite as it is possible to make it. If proof be wanted as to the assertion, I will proceed to give it; but I consider he has allowed the citadel to be taken, in not being able to furnish "a single argument worth refuting that the sources of growth of one family of plants are at all different from another. No doubt the explanation which I gave of certain facts, is despised, but great caution has been exercised in quoting the erroneous passages. As it seems to impart great comfort that I never referred to the 'varying character of the sun's rays throughout the seasons,' I will not rob him of this consolation, and will even further confess that I never did for once imagine that 'the heat capable of being eliminated by the process of animal respiration must first have been rendered latent during the growth of the plant.'"

I once intended to have entered upon the principles which seem to determine the economy of manure made on the farm, contrasted with artificial manures, but space does not permit. I suppose Mr. Lawes is well aware that the basis upon which he has made his calculations is far from being correct, although these same figures are now and then quoted with the utmost confidence by very active men too. Our agricultural systems and practices will ultimately be arranged around a few simple principles. The most correct experiments can never be relied upon for general conclusions; they are only valuable so far as they go. Truth can never suffer from a free and full discussion; and the immense quantity of agricultural speculations which are daily made are sufficient to show that we are very far yet from understanding the laws which regulate our practices.

Believing that enough has been written in vindication of my criticisms of Rothamsted papers, I conclude. I do not hesitate to acknowledge that the agricultural public are much indebted to Mr. Lawes for his labours in the field of agricultural science, but I think that the system through which he has attempted to elucidate our agricultural practices is not the best calculated for that end. I would be quite willing to do justice to Mr. Lawes' labours, but the deductions which he has drawn from his experiments should be as freely criticised as the opinions of others. I do not complain of the way in which Mr. Lawes has thought it best to conduct his reply, but I must say that my "manner" would have been somewhat different if there had been less display of mere authority on his part. I consider that I cannot be accused of any unfairness. All the materials which were at my disposal have not been made use of; this should be kept in mind, and as a friendly admonition, it should not be cast away. R. Russell, Kilwhiss.

#### BLACK-FACED AND CHEVIOT SHEEP.

At a recent meeting of the Pennicuik Club, Mr. M. Spittal gave a comparison of the Cheviot and black-faced breeds in high and exposed districts, as follows:

On a good pasture farm, where it is not so much exposed, and the quality of the pasture good, and the herbage of a finer description, on such a farm as this, I would consider the Cheviot breed to be the best and most profitable for the tenant. But, again, in many places this change has proved to be the opposite—so that, instead of a good black-faced stock of ewes, is now to be seen a stunted and ill-thriving stock of Cheviots, the elevation and pasture being utterly unsuited for that breed. But the real value of a Cheviot and black-faced stock of sheep, respectively, upon a high and exposed district, where the pasture is of a coarse description, will be the best understood if reduced to figures. I shall now give a statement of a place that I am well acquainted with, which at one time was stocked with a black-faced stock of ewes, which was of the best description; it is now stocked with Cheviots, and of the smallest kind. There were 480 of a regular black-faced stock of ewes,

and disposed of at the age of five years old; there are now 400 Cheviots of a regular stock, and disposed of at the same age, allowing 10 field ewes or gimmers of the black-faced sheep, and 20 of the Cheviots—

BLACK-FACED.			
298 lambs, 8s.	...	...	£ 119 0 0
91 ewes, 16s.	...	...	72 16 0
5 field ewes, 20s.	...	...	5 0 0
84 stones wool, 14s. 6d.	...	...	60 18 0
			£257 14 0

CHEVIOTS.			
220 lambs, 8s.	...	...	£88 0 0
70 ewes, 22s.	...	...	77 0 0
10 field ewes, 26s.	...	...	13 0 0
45 stones wool, 24s.	...	...	54 0 0
			£232 0 0

Balance in favour of black-faced sheep ... £25 14 0

This clearly shows that the black-faced sheep are the most profitable in the high and exposed districts where the herbage is of a coarse description. But, again, where the pasture is finer, and of a better feeding quality, not being so highly elevated and exposed, there, in my opinion, a Cheviot stock of sheep would be the most profitable breed, or a stock of black-faced ewes, and crossed with a Leicester ram.

We quote the following from Blackie's "Cyclopaedia of Agriculture," article CHEVIOT.

"The comparative value of Cheviot and black-faced sheep, on stony and barren grazings, will be better understood if reduced to figures; and we shall, accordingly, endeavour to illustrate it by taking an instance, and comparing its results under two different sets of circumstances. Suppose a farm, capable of keeping 1000 head ewes, which, if disposed of at four years old, implies the usual complement of 360 hogs, making a total of 1360. The same ground, if stocked with Cheviots, would not keep more than 1200 in all. The returns may be stated as follows:—

Cheviots:—			
560 lambs, at 10s.	...	...	£280 0 0
300 ewes, at 17s.	...	...	255 0 0
1200 fleeces, at 2s. 6d.	...	...	150 0 0
			£685 0 0

Black-faces:—			
600 lambs, at 8s.	...	...	£240 0 0
340 ewes, at 12s.	...	...	204 0 0
1360 fleeces, at 1s. 3d.	...	...	85 0 0
			£529 0 0

Balance ... £156 0 0

There being 160 more sheep of the latter than of the Cheviots, and the rent being the same in both cases, the annual value of this number falls to be deducted: 160 sheep, at 7s. 9d. ... £112 0 0  
Turnips for 300 Cheviot hogs, at 3s. ... 45 0 0  
Half per cent. extra loss from storms, &c., among the Cheviots, taking an average of years, say ... 10 0 0  
£117 0 0

Balance in favour of Cheviots ... £39 0 0

Thus showing a profit, in favour of the Cheviot, on the assumption that the ewes do not receive Turnips, without which, on the description of grazing under consideration, they would seldom all be able to come through the winter and spring months. But as a Cheviot ewe stock is hazardous, suppose wethers were substituted in their place; of these as many may be kept as of the black-faces:—

Gross returns of black-faces	...	...	£529 0 0
440 Cheviot wethers, at 26s.	...	...	572 0 0
1360 fleeces, at 2s. 6d.	...	...	170 0 0

Deduct 460 wether lambs, at 10s.	...	...	£460 0 0
			512 0 0

Balance in favour of black-faces ... £17 0 0

In this case the wether lambs are supposed to receive no Turnips, without which, in very many cases, they will not do."

#### Home Correspondence.

*On the Raising of Turnip Seed.*—From many years' practical experience and observation in the farming of land, I am convinced that Turnip seed should always be raised annually from full-sized, selected, and transplanted bulbs. Seed thus grown produces a much better crop of Turnips than seed raised from late-sown or small Turnips, which cannot be properly picked, and are never transplanted. This tends greatly to degenerate and deform the bulbs, to enlarge the roots and shaws, to cause the disease known as finger and toe, and to occasion the Turnips to run into shoots. The seed, also, grown from Turnips sown after a hay crop in July or August (now too much practised in the Lothians) tends to degenerate, from the fact that most of its nourishment is derived from the soil, instead of wholly from the self-sustaining power of the plant, as is the case where the seed is raised from full-sized and well-selected bulbs; the growth of any plant being found to depend very much on the innate strength and vigour of the embryo or stock. Andrew Thallon, Leith.

*The Holly as a Fence Plant.*—The usual, and, indeed, the only objection to the Holly as a hedge plant is the slowness of its growth; this objection, however, I think will only be found to hold good where the necessary attention to the due preparation of the soil, and the removal and after culture of the plants have been neglected. I have seen Holly hedges which, under proper treatment, become fences in as short a time as one of Hawthorn, Privet, or almost any other sort of hedge plant would have done, and this will not appear surprising when the annual growth of the Holly is considered (the leading shoots under favourable circumstances seldom falling short of 8 or 10 inches); it



may easily be supposed that a few years would suffice to make a good fence where every care had been taken in the selection and proper insertion of the plants. And the climate of England is peculiarly favourable to Holly, for it seems to grow in almost any soil not overcharged with moisture, and will thrive in a gravelly soil, over a substratum of chalk, as they may be seen in Kent, Buckinghamshire, and some other counties, growing to perfection in soils of this description. The plants are propagated in the same manner as the Hawthorn, only the seeds and plants are a year or so longer in the nursery beds, but the young plants are sold at the nurseries according to their ages and height, varying from 2s. 6d. to 20s. per 100 plants. Care is necessary in removing the plants without injuring the roots, which should be protected by a large ball of soil, and should be planted immediately during the winter and early spring months, but if transplanted in the early autumn months, unless the season itself be very wet, great care must be taken to prevent the effect of evaporation, by constantly keeping the earth around the roots in a moist state. The Holly, wheresoever established, possesses this advantage over the common Quickset, that the longer it stands the stronger it grows, as Holly hedges are known to last for generations. *Feversham.*

*Cost of Keeping Sheep.*—Observations on this subject have lately been made in your Journal, and, as it is a matter that has for some time engaged my attention, from having had occasion to notice among my neighbours the prevalence of undecided and crude notions respecting the value of Grass land in reference to the number of head of stock that can be maintained throughout the year,—I have commenced keeping an accurate account of the quantity placed in each field with every date of removal, so as to charge the rent and outgoings upon the stock, thereby taking credit for the surplus arising from the sale or increased value as comprising the interest on capital, expense of attendance, and profit; supposing, which I trust may be the case, that the live stock will leave a favourable balance on the year's transactions, after such expenditure is defrayed. This is, however, extending the view beyond sheep, although so much connected with the inquiry as to lead to the consideration of the cost of keeping out of doors store and feeding beasts, as well as young horses or other stock, at some future time. The average cost of keeping sheep may be stated to be 3d. per head per week, subject to great variation, according to their size and age. Ewes, with one or two lambs at their side, are to be reckoned as two sheep; and those big long-woolled one and two shear sheep, that devour the fine crops of Coleseed in winter with such marvellous rapidity, may be reckoned as two or three of the fine dandy-looking Leicester that are sometimes brought from the upland districts, or the smaller nimble short-wools that occasionally find their way down here. The kind of pasture and mixture of stock will materially affect the question. Some graziers run half a sheep an acre among bullocks in their best pastures, without missing their keep, and, so far from calculating their cost, believe the land to be better for the cattle; and on the same good land, after the spring growth of Grass has been eaten off and the beasts sent to market, younger but large stock replace the fattened ones, and two or three sheep an acre of the forwardest hogs or shearlings (June and July) are made up for sale; wether hogs from Turnips are put upon seeds in April, being occasionally changed to a piece of good Grass land, or later in the year to eddish; the same with ewes having lambs, but the ewe hogs or store sheep not breeding are treated with short commons frequently—they are put among young Beans, on fallows before being turned up, in "droves," on occupation roads, and in autumn range the stubbles. It is astonishing what a number of sheep some small farmers will run about hedges, and roadsides in this way, at little more than the weekly pay of a lad to follow them; they are, perhaps, small jobbers also, and, by turning their bargains skilfully, rise to dealers and a larger occupation. There is but little poor grazing land, or "sheep pasture" in this neighbourhood; but where such is rented at from 25s. to 35s. per acre, it is stocked late, and on "the best of these soils little fear is felt as to their being overstocked at the commencement of the season,"\* but afterwards they must either be thinly stocked, or, according to the summer being dry or wet, have proportionate intervals of rest; and if the aspect is bad, or the soil cold or undrained, so as to produce coarse herbage, heavily stocking for short periods will suit the sheep better and improve the land more than by running them in the same field for a long time. In the autumn a new state of things is altogether presented. Turnips, Coleseed, Mangold Wurzel, and corn enter into the computation, and the cost does not then depend so much upon the kind of sheep as upon whether the season has been favourable to the growth of roots. If the Turnip crop has been a failure, high prices are demanded and given—as much as 1s. per head per week has been paid; last winter 6d. per head was paid merely for the roots as they were on the ground. Now, it would have answered this gentleman's purpose better to have paid 8d. per head, and have had the roots raised and cut. In some seasons, as the last, in parts of Norfolk it was said that persons were glad to give the crop of Turnips to be eaten on the land. Coleseed has been often sold at 2d. to 3d. per head per week, but the common rate is from 3d. to 4d. for shearlings, and 1d. per head less for lambs. A farmer who has generally 200 or 300 sheep out on "joist," tells me he can

every autumn get good stubble keep at 1d. per head, and can mostly hire Grass keeping at a less cost than putting the sheep on the land he regularly occupies as a part of his farm. One can readily conceive that capitalists may occasionally stock the land of needy persons on easy terms; but it seems strange that Grass land should be so sublet one year after another, at a less rate than the amount of rent and taxes, although I know of a case recently where a good piece of 16 acres of old pasture changed hands, on the landlord observing a strange mark on the sheep, and, after inquiry, finding they did not belong to his tenant. *J. W. Peterborough.*

*Worn-out Pasture.*—If the worn-out pasture, referred to in your article in the *Gazette* of June 4, has been stocked with Down sheep, and but little or no manure laid on, it must become worn out, for sheep cut out all the finest Grasses. I am ignorant of the situation of the land; but, if chalk can easily be had, in my opinion if from 30 to 40 tons of chalk per acre be laid on, and sheep kept out entirely, and the pasture only fed with cattle, and they be supplied with corn or cake daily during the summer for two or three years, the poverty-stricken appearance will be removed, and a satisfactory improvement may be expected. *George Dyer, Islington.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House, in Hanover Square, on Wednesday, the 8th of June: present, Mr. RAYMOND BARKER, V.P., in the chair; Right Hon. James Grattan, Sir M. W. Ridley, Bart., Sir C. Lemon, Bart., M.P., Mr. Burke, Mr. D. Barton, jun., Mr. Corrance, Mr. Darnbrough, Mr. Dyer, Mr. Freeland, Mr. Gadesden, Mr. Baskerville Glegg, Mr. Curtis Hayward, Mr. Fisher Hobbs, Mr. Manning, Mr. Orlebar, Mr. Parkins, Mr. Pocock, Mr. Rowlandson, Prof. Simonds, Mr. Spencer Stanhope, and Mr. French (Freehill).

Communications were received—1, from Sir Emerson Tennent, transmitting from the Board of Trade two copies of Prof. Bollman's Essay on the Preservation of Potatoes; 2, from the Imperial Free Economical Society of St. Petersburg, copies of their published Transactions; 3, from Mr. Philip Bowes, of 26, King William Street, Strand, a copy of his Treatise on Farm Book-keeping by double entry; and from Mr. Grey Porter, a copy of his Farm Account Pocket-book; 4, from Mr. Harding, of Tern Hall, Market-Drayton, a set of his Plans for Dairy-farm Buildings, and a copy of his Address on Farm Improvements, delivered before the North Staffordshire Agricultural Society; 5, from the Rev. E. Benyon, copies of his Plans of Farm Cottages; 6, from Mr. Hornsby, statements on the subject of poison for rats and mice in farm homesteads; 7, from Mr. Hill Dickson, letters informing the Council of the completion of his Flax machinery at Grove Street, Deptford. The Council ordered their usual acknowledgments for the favour of these communications, and adjourned to Wednesday, the 15th of June.

MEETING OF THE BATH AND WEST OF ENGLAND AGRICULTURAL SOCIETY AT PLYMOUTH.—The benefits which the Royal Agricultural Society of England conferred on the west of England, and the great interest which it excited by the Exeter Meeting in 1850, gave rise to a desire for the annual recurrence, within the western district, of meetings of a similar character during the number of years which must elapse before that Society would again visit this part of England. Although the Devon and the local agricultural societies had rendered great service, by awakening a spirit of inquiry, they were so numerous, and aimed at such a variety of objects with slender funds (which, from various causes, were obtained with difficulty), that it was deemed advisable to establish a migratory society for the four western counties, which, by comprising a large district, would be possessed of a sufficient income to give prizes for breeding stock, for improved implements, and especially for cheap articles suited to hilly ground and small farms; to give encouragement to the ironmongers in the market-towns, to find out the most acknowledged improvements, and to keep the articles on sale; to encourage the local wheelwrights, carpenters, and smiths, many of whom are ingenious and good workmen, but want extended knowledge and a higher standard of excellence in point of workmanship; to distribute a journal to the members, containing practical information in the form of prize essays and reports of careful experiments: in short, to carry into every corner of the West the results attainable by "practice with science." The utility of a Society with the above objects holding its meetings at different places by rotation, was fully tested by the working of the Yorkshire Agricultural Society, which was established one year earlier than the Royal Agricultural Society. It was first necessary to consider over what district in the West it would be convenient for a similar Society to hold its meetings and collect subscriptions: the annual income needed for the before-named purposes being estimated as follows—Premiums for stock, 350*l.*; for implements, 150*l.*; for essays and experiments, 50*l.*; expenses of show yard beyond receipts, 100*l.*; printing and paid secretary, 150*l.*; total, 800*l.* To effect this, it was deemed important, in the first place, to secure the co-operation of the Bath and West of England Agricultural Society, established in the city of Bath, on September 8th, 1777, "for the encouragement of agriculture, manufactures, and commerce, and the fine arts, in the counties of Somerset,

Wilt, Gloucester, and Dorset." The present title of the Society was adopted on the 14th December, 1790, by the following resolution:—"That on account of the now-established character of this Society, and the widely extended residences of the subscribers, the title of the Society should become altered, and stand as under, viz., The Bath and West of England Society for the encouragement of Agriculture, Arts, Manufactures, and Commerce." The first volume of its papers appeared in 1780; 14 volumes appeared as communications accumulated from time to time until 1816, when publication ceased until 1829, when the first part of a fifteenth volume appeared, which seems not to have been completed. On the 21st of November, 1850, T. D. Acland, Esq., published "A letter to W. Miles, Esq., M.P., containing a proposal for the establishment of annual agricultural meetings to be held successively in different towns of the west of England." The subject was brought before the annual meeting of the Bath and West of England Agricultural Society on the 3d of December, and received in the most liberal manner by its members. A committee was formed, "To take into consideration the proposal of holding a summer exhibition of breeding stock and implements in the western counties." A large number of noblemen, gentlemen, and farmers gave their sanction to the plan proposed by Mr. Acland, by allowing their names to be added to the list of the provisional committee. At a meeting of the committee held at Bridgewater on the 30th of January, a sub-committee was appointed to confer with the Devon Agricultural Society, with a view to the promotion, consisting of Mr. Porter, of Hembury Fort; Mr. Blandford, of Orchard Portman; Mr. J. T. Davy, of Rose Ash; Mr. Kidner, of Bickley; Mr. Morle, of Cannington; Mr. Wippell, of Rudway; and the hon. secretaries entered into communication with the Devon Agricultural Society. The negotiation terminated in a union between the two societies. A communication was then opened with the trustees of the surplus remaining from the fund raised for the reception of the Royal Agricultural Society at Exeter, which surplus had been set aside for "the advancement of agricultural science." The interest of the fund was placed at the disposal of the Bath and West of England Society, but the capital remains in the hands of the trustees, who can only deal with it under the authority of another public meeting of the subscribers. Meetings of the committee were successively held at Bath, Bridgewater, Taunton, and Exeter, at which resolutions were agreed to with a view to define the objects proposed, and the means by which they were sought to be attained, and especially the formation of a Council of the Society representing the whole district on fair terms. The new code of laws was finally adopted on the 30th of August, 1851, under which the Bath and West of England Agricultural Society has been administered since that date. The first summer meeting of the enlarged Society was held at Taunton in 1852. Lord Portman was president. The amount offered for prizes was 484*l.*, distributed as follows:—148*l.* for cattle, 99*l.* for sheep, 30*l.* for pigs, 40*l.* for horses, and 167*l.* for implements. There were 379 head of live stock exhibited, and above 400 entries of implements. The Society also offered prizes for essays, "On the Effect of the Climate on the Cultivation of the West of England," "On Draining the Bridgewater Level," and "On the Best Mode of Growing and Consuming Root Crops." In the autumn of 1852 a deputation was appointed to visit the towns of Torquay, Newton, Totnes, and the three towns of Plymouth, Devonport, and Stonehouse, to inspect the different sites offered to them, and to report as to the most eligible for holding the country meeting of the Society in 1853. G. W. Soltan, Esq., waited on the Council, and stated the facilities which the three towns of Plymouth, Devonport, and Stonehouse, could offer for the shows of cattle and implements; besides which he offered, on behalf of these towns, to give the Society, towards defraying the expenses, nearly 500*l.* in cash. The Council selected the three towns of Plymouth, Devonport, and Stonehouse. Sir T. D. Acland, Bart., M.P., is the President for the year 1853; Mr. Ridler, of Milverton, Director of the Show-yard. The number of implements shown is about 30 per cent. more than last year.

### STEWARDS OF DEPARTMENTS.

*Cattle.*—Mr. J. W. King, Chilton Follen; Mr. J. Fry, Wellington; Mr. H. Trethewy, Grampound. *Implements.*—Mr. C. Gordon, Jun., Gittisham, Honiton; Mr. J. E. Knollys, Buckland, Filleigh; Mr. S. Pittman, Runwell Lodge, Taunton.

The following is a summary of the stock exhibited:

Bulls 48, Cows 24, Heifers 31, Rams 107, Ewes 145, Boars 22, Sows 30, Horses 11, Mares 6—424. *Extra Stock.*—Cows 4, Rams 1, Ewes 8, Cart Horses 4, Mares 2—19. Total number of stock, 443.

The trial of implements commenced on Monday, the 6th, on Keyham Barton; a good deal of rain fell during the day. On Tuesday the weather cleared up, and the sun shone out, which proved a very agreeable change for the Plymouth sight-seers. The implements were pretty much the same as those so frequently exhibited at the Royal Agricultural meetings. We noticed a very useful paring plough, made by Vanstone, of Buckland Filleigh, Devon: the share is 16 inches wide, and turns 8 inches of the pared turf on the other half, leaving a hollow between; it did its work in excellent style. The digging machine which has been so much talked of is a sort of large Norwegian harrow; it required six horses to work it. The opinion we formed of it was, that if a farmer's object be to make six horses do as much work as possible, he had better use good ploughs and harrows. The reaping-machines were tried on a piece of Rye. The first was

\* Mr. Smith, on Management of Grass Land, (Ag. Journal, No. 21, p. 7.)



the machine exhibited by Mr. Hussey at the Exhibition of 1851, it worked pretty well; Mr. McCormick's was next tried, which did its work well, but we should imagine it would knock out the grain. The next was a machine manufactured in Manchester, under the superintendence of Hussey, and improved by him. Hussey was present at the trial on Tuesday, and raked off the corn himself. His machine did its work admirably. Hussey's mowing machine was next tried on a piece of young Grass; the mowing machine is very similar to the reaper, but has no stage; the Grass is cut, and falls over the knives evenly on the ground as soon as it is cut. Busby's hand-hoe is well adapted for hilly land; his horse-hoe maintained its former reputation. The show yards were thrown open to the public on Wednesday, as soon as the judges had made their awards. The weather was very unfavourable in the early part of the day, consequently numbers were prevented from visiting the yard, as well as from visiting the park and grounds of the Earl of Mount Edgecombe, who kindly threw them open to the public. Thursday proved a finer day, though we had occasional showers. Though the roads were thronged with visitors and vehicles, ample provision was afforded for reaching the ground without trouble. The annual general meeting was held at the Guildhall, at 2 o'clock, Sir T. D. Acland, Bart., M.P., in the chair. A report was read and adopted, extracts from which we shall publish hereafter. Resolutions, confirmatory of all the recommendations in the report, were proposed and seconded by Sir Stafford Northcote, Bart., and other gentlemen. On Friday the Mayor of Devonport will entertain Sir T. D. Acland, Bart., and the members of the Council of the Bath and West of England Agricultural Society. H. St. John Maule, Esq., the secretary to the Society, has been untiring in his exertions to carry out the objects of the Society, and, indeed, all the arrangements.

## JUDGES' AWARDS.

## CATTLE AND IMPLEMENT LIST.

## CATTLE.

- CLASS I. *Devon*. For the best bull, above two and under four years old on 1st September last, 121, to R. Jackman, Launceston; 51, to R. Wright, Taunton.
- CLASS II. For the best bull, under two years old on the 1st September last, 121, to George Turner, Exeter; 51, to John Quartley, Molland.
- CLASS III. For the best bull, not exceeding twelve months old on 1st September last, 51, to J. Tucker, Taunton; 31, to S. Farthing, Bridgewater; (highly commended) J. W. Buller, Crediton; (commended) George Turner, Exeter.
- CLASS IV. For the best cow in calf, or in milk, having had a calf within six months, 101, to S. Farthing, Stowey; 51, to Wm. Gibbs, Bishop's Lydiard.
- CLASS V. For the best heifer, in milk, or in calf, above two and under three years old, 101, to W. M. Gibbs, Bishop's Lydiard; 51, to George Turner, Exeter.
- CLASS VI. For the best pair of heifers, under twelve months old on 1st September last, 51, to James Hole, Dunstun.
- CLASS VII. *South Devons or South Hams*. For the best bull, above two and under four years old on 1st September last, 81, to P. Lye, Stokenham; 41, to J. Cockram, Brixton.
- CLASS VIII. For the best bull, under two years old on 1st September last, 81, to H. Huxham, Slapton; 41, to P. M. Toms, Coyton.
- CLASS IX. For the best cow in calf, or in milk, having had a calf within six months, 81, to T. Newman, Mamhead; 41, to T. Butland, Diptford.
- CLASS XII. *Cattle of any other pure breed*. For the best bull, above two and under four years old on 1st September last, 121, to E. Stratton, Swindon; 51, to W. Hitchman, Long Ashton.
- CLASS XIII. For the best bull, under two years old on 1st September last, 121, to C. H. Abbott, Long Ashton; 51, to Hon. P. P. Bouverie, Hannington.
- CLASS XIV. For the best bull, under twelve months old on 1st September last, 51, to J. Tryacke, jun., Falmouth; 31, to Wm. Hitchman, Long Ashton.
- CLASS XV. For the best cow in calf, or in milk, having had a calf within six months, 101, to R. Stratton, Swindon; 51, to Rev. J. Vane, Bristol.
- CLASS XVI. For the best heifer, in milk or calf, above two and under three years old, 101, to R. Stratton, Swindon; 51, to ditto.
- CLASS XVII. For the best pair of heifers, under twelve months old on 1st September last, 51, to R. Stratton, Swindon.

## SHEEP.

- CLASS XVIII. *Long Woolled*. For the best yearling ram, 51, to S. Kingdon, Collympton; 31, to J. Moore, Crediton.
- CLASS XIX. For the best ram of any other age, 51, to J. Bodley, Pomeroy; 31, to S. Partridge, Crediton.
- CLASS XX. For five ewes of the same flock, 51, to J. Moon, Crediton; 31, to J. W. Buller, Crediton.
- CLASS XXI. For the best pen of five two-teeth ewes, 51, to J. W. Buller, Crediton; 31, to J. Moon, Crediton.
- CLASS XXII. For the best yearling ram of the pure Leicester-shire breed, 51, to J. W. Buller, Crediton; 31, to J. Moon, Crediton.
- CLASS XXIII. *Southdowns*. For the best yearling ram, 51, to J. Moore, Pusey; 31, to Sir J. Kennaway, Bart., Ottery St. Mary.
- CLASS XXIV. For the best ram of any other age, 51, to J. Moore, Pusey; 31, to Sir J. Kennaway, Bart., Ottery St. Mary.
- CLASS XXV. For the best five ewes of the same flock, 51, to J. Moore, Pusey.
- CLASS XXVI. For the best five two-teeth ewes, 51, to Sir J. Kennaway, Bart., Ottery St. Mary; 31, to T. Newman, Mamhead.
- CLASS XXVII. *Dorsets*. For the best yearling ram, 51, to T. Danger, Bridgewater; 31, to D. W. Gibbs, Wellington.
- CLASS XXVIII. For the best ram of any other age, 51, to T. Danger, Bridgewater; 31, to ditto, ditto.
- CLASS XXIX. For the best five ewes, 51, to Mr. G. Coombe, Crouch St. Michael; 31, to Mr. Culverwell, North Petherwin.
- CLASS XXX. For the best five two-teeth ewes, 51, to T. Danger; 31, to G. Coombe, Crouch St. Michael.
- CLASS XXXI. *Mountain Sheep*. For the best ram. No competition.
- CLASS XXXII. For the best five ewes, of any age, 41, to J. Quartley, Molland; 21 prize, ditto.

## PIGS.

- CLASS XXXIII. *Large Breed*. For the best boar, under three years old, 41, to H. Blandford, Chippenham.
- CLASS XXXIV. For the best breeding sow, 41, to Mr. Blandford, Chippenham; 21, to Rev. C. T. James, Evington.
- CLASS XXXV. *Small Breed*. For the best boar, under three years old, 41, to W. Northey, Lake Liffon.
- CLASS XXXVII. For the best breeding sow, 41, to W. Dogherty, Landreath; 21, to W. Northey, Launceston.
- CLASS XXXVIII. For the best pen of three breeding sows, under eight months, 21, to J. Moon, Crediton; 11, to W. Northey, Launceston.

## HORSES.

- CLASS XXXIX. For the best stallion, for agricultural purposes, under six years old, 101, to H. D. Seymour, M.P., Wincanton; 51, to T. K. Bickell, Tavistock.
- CLASS XL. For the best mare in foal, or with a foal by her side, 101, to R. Forrester, Tavistock; 51, to J. & W. Perry, Oakhampton.
- CLASS XLI. For the best thorough-bred stallion, suited for country purposes, &c., 151, to T. K. Bickell, Tavistock.

## IMPLEMENT AWARDS.

- Section I.—PREPARATION OF GROUND.
1. For the best plough for deep ploughing, 31, J. Eddy, Kenford.
  2. For the best plough, for general purposes, 31, Howard & Co., Bedford.
  3. For the best paring plough, to be worked by two horses, 31, J. Vanstone, Buckland Filligh.
  4. For the best subsoil plough, to be worked by not exceeding three horses, 31, Dray & Co., London.
  5. For the best turnwrest plough, 31, John Eddy, Kenford.
  6. For the best heavy harrow, 21, Howard & Co., Bedford.
  7. For the best light harrow, Howard & Co.
  8. For the best cultivator, grubber, and scarifier (wide), 31, Charles Hart, Wantage.
  9. For the best ditto (narrow), to be worked by two horses, 21, Richard Coleman, Chelmsford.
  10. For the best roller, 21, Wightman & Co., Chard.
  11. For the best clod-crusher or clod-presser, 21, William Cambridge, Bristol.
- Section II.—CULTIVATION OF CROPS.
12. For the best corn drill, 51, Hornsby & Son, Grantham.
  13. For the best corn drill, for small occupations, in hilly districts, 51, Hornsby & Son, Grantham.
  14. For the best Turnip and manure drill, 51, Hornsby & Son, Grantham.
  15. Ditto (highly commended), J. L. Bowhay, Modbury.
  16. For the best and most economical small occupation seed and manure drill, for flat or ridge work, 51, Holmes & Sons, Norwich.
  17. For the best seed distributor worked by hand, 21, Fowler & Fry, Bristol.
  18. For the best general manure distributor, 31, J. L. Bowhay, Modbury.
  19. For the best horse-hoe, for green crops on the ridge, 21, William Busby, Bedale.
  20. For the best ditto on the flat, 21, William Busby, Bedale.

## Section III. HARVESTING CROPS, AND PREPARING FOR MARKET.

21. For the best reaping-machine, 51, Obediah Hussey, Stamford.
  22. For the best horse-rake, for hay or corn, 21, J. & F. Howard, Bedford.
  23. For the best portable steam-engine, not exceeding 4-horse power, 151, Hornby.
  24. For the best portable threshing-machine, with straw shaker, to be driven by steam, not exceeding 4-horse power, 51, Burrell, Dray, & Co., London, exhibitors.
  25. For the best portable threshing-machine, with straw shaker, not requiring more than four horses, 51, B. J. Webber, Newton Abbott.
  26. For the best straw shaker, 11, Holmes & Son, Norwich.
  27. For the best portable threshing-machine, not requiring more than two horses, 51, Barrett & Co., Reading.
  28. For the best hand-power threshing-machine, 31, Barrett & Co., Reading.
  29. For the best Clover-seed drawer or sheller, 11, Holmes & Son.
  30. For the best winnowing-machine, 31, Hornsby & Co., Grantham.
  31. For the best one-horse cart, for general purposes, 41, W. Busby, Bedale, and T. Milford, Thorverton.
  32. For the best two-horse waggon, 41, T. Milford, Thorverton.
- Section IV. PREPARATION OF FOOD FOR STOCK.
33. For the best chaff and litter cutter, worked by horse or steam power, 51, Smith & Ashley, Stamford.
  34. For the best chaff cutter, worked by hand, Rickard & Chandler, 21, R. Cornelius, Plymouth, exhibitors.
  35. For the best Turnip cutter, for cattle, 21, H. Carson, Warminster.
  36. For the best Turnip cutter for sheep, 21, Burgess & Key, London.
  37. For the best corn and pulse bruiser, 21, W. P. Stanley, Peterborough.
  38. For the best oil-cake crusher, suited to crush every description of cake, 21, Fowler & Fry, Bristol.
  39. For the most economical steaming apparatus, for preparing food for cattle, pigs, &c., 31, W. P. Stanley, Peterborough.

## Section V. MISCELLANEOUS.

40. For the best churn, 11, Burgess & Key, London.
  41. For the best cheese-press, 11, W. Carson, Warminster.
  42. For the best cider-press, 21, A. Smith, Exeter.
- Section VI.
43. For the best and most economical collection of implements suited to tenants occupying not more than 100 acres of arable land, 101, Barrett & Co., Reading.
  44. For the best collection of draining tools, 31, Burgess & Key, London.

## SPECIAL AWARDS.

- W. Busby, Bedale, for a cheap Norwegian harrow and clod crusher, 11.
- C. H. Webber, for an iron field roller, 71.
- J. L. Bowhay, Turnip and manure drill, 71.
- J. L. Bowhay, seed and manure drill, ridge work, 11.
- R. S. Reeves, for Chandler's liquid manure drill, 21.
- Hill & Co., for an iron rick-stand, 21.
- Alex. Smith, gravel and manure screen, 11.
- J. Wescott, beehives, 11.

## POULTRY.

EXETER, May 27.—The Devon and Exeter Botanical and Horticultural Society held an Exhibition of Poultry, Rabbits, and Pigeons, at Exeter, in conjunction with their usual Horticultural show: upwards of 120 pens of poultry were exhibited, and comprised numerous specimens of a first-rate character. The competition for prizes was limited to residents in the four western counties. Edward Hewitt, Esq., of Eden Cottage, Spark Brook, Birmingham, officiated as the judge of poultry, and his awards gave general satisfaction. The following was the result:—

- CLASS I. *Black Spanish*, cock and two hens, 1st, Medal, R. T. Head, Esq., the Briers, Aliphington, near Exeter; 2d, R. T. Head, Esq.; 3d, Mrs. Devenish, Honiton; an extra prize, for chickens of 1853, was awarded to Boughton Kingdom, Esq., of Exeter.
- CLASS II. *Minorcan*, cock and two hens, 1st, T. Coulson Sanders, Esq., Exeter; 2d, Mr. Elias Knott, Woford, near Exeter; 3d, Clifford Shilreiff, Esq., Pinhoe, near Exeter.
- CLASS III. *Dorkings* (Coloured), cock and two hens, 1st, Medal, J. F. Pearce, Esq., Whimple, Devon; 2d, J. F. Pearce, Esq.; 3d, Clifford Hewitt, Esq., Hynthe, Devon; an extra prize to Mr. Daniel Hoskins, Exeter.
- CLASS IV. *Dorkings* (White), cock and two hens, 1st, Miss Patterson, Feniton Court, Devon.
- CLASS V. *Cochin China* (Buff), cock and two hens, 1st, Medal, not awarded; two 2d prizes, Mr. W. L. Channing, Heavitree,

near Exeter; 3d, R. T. Head, Esq. Extra Prizes: For a cock and hen, to Thomas Atkins, Esq., Balbicombe, near Torquay (the second hen having died during transit to Exeter, Mr. Atkins was prevented competing for the Medal); for four chickens of 1853, a Medal to R. T. Head, Esq. (these chickens were highly commended and pronounced by the judge to be the best fowls in the exhibition); for chicken of 1853, to Dr. Scott, of St. Leonard, near Exeter, and to Mr. W. L. Channing.

CLASS VI. *Cochin China* (Partridge-coloured), cock and two hens, 1st, Thomas Atkins, Esq.; 2d, Mr. W. Connert, Magdalen Street, Exeter; 3d, W. Wevill Rowe, Esq., Milton Abbot, Devon.

CLASS VII. *Cochin China* (White), 1st, not awarded; 2d, the Rev. J. Coventry, St. Michael's Parsonage, Ottery St. Mary, Devon.

CLASS VIII. *Malays*, cock and two hens, 1st, Henry Adney, Esq., Lympstone, Devon; 2d and 3d, withheld; Extra Prize, to Mr. L. Berry, Chist St. George, Devon, for a pair of white Malays.

CLASS IX. *Game*, cock and two hens, 1st, Mr. W. Bickell, St. Lidwells, Exeter; 2d, Mr. Daniel Hoskins, Exeter; 3d, Mr. W. Bickell.

CLASS X. *Hamburgh* (golden pencilled), cock and two hens, 1st, Rev. J. Coventry; 2d, W. Wevill Rowe, Esq.

CLASS XI. *Hamburgh* (golden spangled), cock and two hens, 1st, Rev. H. K. Venn, Honiton, Devon; 2d, Augustus Paul, Esq., Torquay; 3d, W. Wevill Rowe, Esq.

CLASS XII. *Hamburgh* (silver pencilled), cock and two hens, 1st, W. Wevill Rowe, Esq.; 2d, Miss Dyott, 2, Torwood Mount, Torquay; 3d, Mr. James Westcott, Thorverton.

CLASS XIII. *Hamburghs*, *Silver Spangled*, cock and two hens, 1st, W. K. Sprague, Esq., the Quarry, Falmouth, Devon; 2d, Augustus Paul, Esq.; 3d, W. Wevill Rowe, Esq.

CLASS XIV. *Polands*, black with white crests, 1st, Miss Dyott; 2d, Miss Selina Northcote, Upton Pyne, Devon.

CLASS XV. *Polands*, *Golden*, None.

CLASS XVI. *Polands*, *Silver*, 1st, W. Wevill Rowe, Esq. J. W. Gray, Hon. Sec.

[We have been forced, by want of room, to omit the awards for bantams, rabbits, pigeons, &c.]

*Poultry Literature*.—I am an amateur of Poultry, as who is not in these days? I find in this, as in everything else, the pursuit of knowledge is a difficult one. I have a brother, a book-man fresh from college. Of course on his arrival I showed him my pets; he put a number of questions to me, and declaring my answers to be unsatisfactory, he told me to read. Although young, and I believe good-looking, I may say that without being a "blue stocking" I like information, and even dare, when necessary, to face a dry book. Accordingly I bought all those that treated of Poultry, and read them, but I was obliged to confess my disappointment. I wrote to my brother, who advised me to wait for the "coming man" in the shape of "The" Poultry-Book. I did so, and now write to express my disappointment. I see drawings beautifully executed but representing impossible fowls, and to my inexpressible disappointment the letter-press is for the greater part a *réchauffé* of articles that have already appeared in the "Cottage Gardener." The aim of the latest Poultry writers would seem to be to make a book, and to drag through a weary length of pages that which could be well described in a few lines. I want an author confident in his opinion, as a man who writes should be, whose book I could take up, and depend upon; but when I find half the information is borrowed, and that the compiler is merely printing the opinions of his friends, I confess it makes me cross, and I throw down the book with the idea that by teasing and importuning my friends I could write one myself. Can you help me, Mr. Editor? Is there a "coming man?"—my brother says there is—and have we any prospect of a Poultry Book that will bear comparison with those written on other subjects, or is every one to be either a reprint of all its predecessors or a collection of scraps? *Maria*.

## Calendar of Operations.

## JUNE.

RHINS OF GALOWAY, June 4.—The spring of the present year dawned with brighter prospects for the farmer; the price of fat and lean cattle and cheese (the mainstay of this district), reaching a remunerating price, and with a good seed time for spring corn, all seemed to go on happily and well; but towards the time when the showers of spring were necessary to promote vegetation, we have had a period of cold, bleak weather, succeeded by dry, withering sunshine, with scarcely a shower for the last five weeks. Wheat, especially winter sown, looked healthy and well till of late, but it is now beginning to assume a scorched and stunted appearance, except on very deep land. Oats braided well, and also, till a few days ago, looked wonderfully well; but the dry weather has begun to tell; and if we have not rain soon, on all light lands the prospect of a good crop will be rather doubtful. The pastures throughout the district have generally been very scanty, except where they had been well trained before putting on the stock; even such is suffering very severely, in many cases completely burnt up, a thing few in the district have seen at so early a period of the season, and if rain do not come very soon stock will be very ill off. Turnip sowing has been very much retarded by the want of moisture, many being afraid to sow, the land being so remarkably dry; where they have been sown early there are great complaints of their being eaten up by the fly. The cultivation of Mangold Wurzel has been very much increased this season, also Beans and Carrots.

## Notices to Correspondents.

BREK: J. C. The following is a recipe:—Boil 54 gallons of water in a copper; run it into a mash-tub, and let it cool to 90° Fahr. Put in bushels of malt; let it stand three hours, covered with sacks, &c., to keep steam in; run into underback, and immediately pump into copper. Mix, and stir 8 lbs. of Hops with it. Boil three hours; run in trough to cooler, mixing 25 lbs. of sugar, with the hand, in the wort as it runs along the trough. Cool to 70°; and let down into working-tub. Make a second wort in precisely the same way as the first, with the same malt and Hops, and 25 lbs. more sugar; cool it separately, and mix it with first wort in the working-tub. Put one pint of yeast into flat-bowl; put bowl into wort, so that wort can just touch yeast. Let it work 12 hours, during which time skim off yeast three times. Keep it covered except when being skimmed; and back off into casks in cellar. It may work a fortnight. Fill up the casks every morning with what has worked out of the cask hole into the tub beneath. Skim it before returning it to cask, cleaning away all the yeast which rises to the top of the cask through the bung-hole. Put three or four handful of dry Hops into cask through bung-hole, and bung it up.

BOOKS: J. P. The fullest books on the management and diseases



of horses, cattle, and sheep, are the use of the Society for the Diffusion of Useful Knowledge.

**GRANARY: A Country Gentleman.** We imagine that a tile floor placed upon arches is perfectly fit for a granary; and that the fear of the coldness of the tiles or of the consequent condensation vapour on them is unfounded. Perhaps some reader will give his experience.

**LINSEED.** It should be used with great caution with young calves. A master laying down a rule to his herdsman as to quantity for each calf has been known in some cases to prove fatal; the servant ought to be competent to judge what quantity it will be right to give from the effect produced. My opinion is that no calf ought to have Linseed till over a month old. I find, however, from experience in the rearing of calves, the less Linseed I used the more healthy they were. I believe it very good for matured animals if rightly used, but for calves for breeding purposes, there is not that benefit derived that is often imagined. In feeding Linseed it sometimes gets too much fire, which renders it too gluey to incorporate well with the milk; the calf turns shy and will not drink it, it is then too often handed over to its neighbour who drinks more freely and gets a double quantity, and as you will readily suppose, disorder is the result; hence the propriety of having an efficient man who knows how to treat a sickly appetite. With regard to the preparation of Linseed the plan I have adopted was to crush the seed, place 1 quart of it in a tub, pour on a gallon of cold water and let it stand 24 hours, then add a little warm water, and stir it well together; it is then ready to mix with the milk. That quantity is sufficient for four strong calves, mixed with from 5 to 7 quarts of milk at each end of the day. If 3 quarts new and 4 quarts skim milk could be afforded, abandon the use of Linseed altogether. I. K.

**MANURE: An Old Subscriber.** There is no occasion to pull down the buildings. Wash every part well with soap and hot-water, then whitewash, and you need not fear the result. W. C. S.

**WIREWORM: C.F.L.** Pressure in summer by Crosskill's clod-crusher, and exposure during winter by thorough autumnal cultivation, seem to be the chief remedies. You may try gas-lime and salt, but remember that anything of that kind that will kill a wireworm will also kill a plant. [Our correspondent, who gives his address, says:—“I see some one asks about Burgess & Key's pumps for forcing liquid manure, &c. I have seen them tried, and like them much—the large sort (not the lever pump, with a horizontal handle), but those with fly-wheels.”]

**SEEDS.** The Government has decided on repealing the duty on Clover and other Grass seeds. *Times*, June 10.

**MANURE: A Subscriber without Strain** (p. 363). For the first line in second column, p. 363, read, “Their aim is to fix or retain the ammonia and improve the application.”

## Markets.

### COVENT GARDEN, JUNE 11.

The weather having now become favourable, most things in season are supplied in abundance. Forced Peaches and Nectarines are becoming plentiful. Strawberries fetch from 6d. to 1s. an ounce, but more are sold at the former price than at the latter. The supply from the Continent of Peas, Potatoes, Carrots, Artichokes, Endive, and Lettuce, is still well kept up. Rhubarb is abundant. Young Carrots and Turnips fetch from 9d. to 1s. 3d. per bunch. Old Potatoes have fallen greatly in price, and there is a good supply of new ones, particularly Cornish Kidneys, at 21s. to 36s. per cwt. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Eucharis, Roses, Cyclamens, Mignonette, Cinerarias, Tulips, and Azaleas.

### FRUIT.

Pine-apples, per lb., 6s to 12s  
Grapes, hothouse, p. lb., 3s to 10s  
Peaches, per doz., 12s to 20s  
Nectarines, per doz., 12s to 20s  
Strawberries, per doz., 3d to 9d  
Apples, dessert, p. bush, 10s to 15s  
— kitchen, do., 6s to 12s

### VEGETABLES.

Cabbages, per doz., 1s to 2s  
Cauliflowers, each, 4d to 8d  
Greens, per doz., 2s 6d to 4s  
French Beans, p. 100, 9d to 1s 6d  
Asparagus, per bundle, 1s to 4s  
Rhubarb, p. bundle, 3d to 8d  
Potatoes, per ton, 80s to 120s  
— per cwt., 4s to 8s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 4d to 1s  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 2s to 3s  
Onions, per bushel, 6s to 10s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d  
Tomatoes (foreign), p. doz., 6s to 8s

### HAY.—Per Load of 36 Trusses.

**SOUTHFIELD, JUNE 9.**  
Prime Meadow Hay 80s to 85s  
Inferior do. ... 70 75  
Rowen ... 45 52  
New Hay ... ..  
Clover ... 90s to 100s  
Second cut ... 70 90  
Straw ... 28 33  
E. J. DAVIS.

**CUMBERLAND MARKET, JUNE 9.**  
Prime Meadow Hay 88s to 94s  
Inferior do. ... 70 80  
New Hay ... ..  
Old Clover ... 100 108  
Inferior Clover ... 84s to 94s  
New do. ... ..  
Straw ... 30 34  
JOSHUA BAKER.

**WHITECAPLE, JUNE 9.**  
Fine old Hay ... 80s to 86s  
Inferior do. ... 85 75  
New Hay ... ..  
Straw ... 26 30  
Old Clover ... 80s to 84s  
Inferior do. ... 70 90  
Fine 2d cut ... 88 94  
Inferior do. ... 80 84

### POTATOES.—SOUTHWARK, JUNE 6.

During the past week the supply has been far greater than the demand, and trade has been extremely heavy; many inferior sorts unsaleable. The following are this day's quotations:—Yorkshire Regents, 80s. to 130s.; Lincolnshire do., 75s. to 110s.; Scotch do., 80s. to 110s.; do. reds, 70s. to 85s.; French whites, 70s. to 75s.; Rhishen, 70s. to 76s.

### WOOL.

**BRADFORD, THURSDAY, JUNE 9.**—The continued firmness in price for anything clean and good in class in colonials clearly shows a strong desire for this kind of wool, which during the present sales has not been offered in great plenty. The continual opening of the Yorkshire and other weekly markets is completely paralysing all engaged in the trade; for, high as the prices are, all is regularly cleared away, at prices not at all commensurate with what is selling here, and in which the spinners positively refuse to give, seeing no prospect but that of an absolute loss when made into yarn. The old practice of not liking to lose any farmers' lots, if continued to be bought at the prices at which the new clip has opened, we fear will tell on the holder; for although an advance followed on the purchase of last year's shear, the prices now sought are too far advanced to admit of prime cost being realised here. Unless great caution is manifested, it is more than probable we shall see great disasters, for the trade, without considerable advances in the price of yarn, cannot cover cost on old bought purchases of wool.

### SMITHFIELD.—MONDAY, JUNE 6.

The supply of Beasts is much shorter, and consequently trade is better. Prices on the average have advanced about 2d. per

8 lbs. There is also a smaller number of Sheep and Lambs; they are readily disposed of, but we cannot quote higher rates, although in a few instances they are better. Good Calves continue fully as dear as of late. From Germany and Holland there are 557 Beasts, 1510 Sheep, and 241 Calves; from Scotland, 250 Beasts; and from Norfolk and Suffolk, 2500.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. ... 4 4 to 4 8  
Best Short-horns 4 2—4 6  
2d quality Beasts 3 2—3 8  
Best Downs and Half-breeds ... 0 0—0 0  
Do. Shorn ... 4 4—4 6  
Beasts, 4009; Sheep and Lambs, 24,000; Calves, 335; Pigs, 255.  
FRIDAY, JUNE 10.

The number of Beasts is by no means excessive, but there having been a bad trade at the dead markets during the week, we are obliged to submit to lower prices here to-day. We have a larger supply of Sheep and Lambs than for some time past, and there is a considerable falling off in the demand, consequently prices are lower. Several Lambs remain unsold. The supply of Calves is larger, but choice ones, which form but a small proportion, are nearly as dear as of late. From Germany and Holland there are 168 Beasts, 1220 Sheep, and 422 Calves; and 125 Milch Cows.

### HOPS.—BOROUGH MARKET, JUNE 10.

Messrs. Pattenden and Smith report that the accounts received from the Hop plantations during the last few days are very unsatisfactory, the line being in a weakly state, and flies having made their appearance, four and five on a leaf pretty generally, and in sheltered situations 20 to 30. Our market is in an excited state, and prices have advanced considerably since this day week. The duty has been done to-day at 110,000.

Mid and East Kents ... 26 0 0 to 29 0 0  
Weald of Kents ... 6 0 0 to 7 0 0  
Sussex ... 5 16 0 to 6 12 0  
Old Hops ... 1 15 0 to 4 0 0

### MARK LANE.

**MONDAY, JUNE 6.**—The weather since Friday has been fine, with southerly wind and a warmer temperature. The supply of English Wheat to this morning's market was small, and disposed of at an advance of 2s. per qr. upon the prices of this day's receipt. A similar improvement was established in the sales made upon foreign, but the higher pretensions of holders checked business to some extent. The value of Barley remains as last week. Beans and Peas are scarce, and bring an advance of 1s. to 2s. per qr. Oats meet a fair demand, at 6d. per qr. above the prices of this day week. Flour is 1s. per barrel dearer.

**PER IMPERIAL QUARTER.**  
Wheat, Essex, Kent, & Suffolk ... White ... 39—47  
— — — — — ditto ... 43—60  
— — — — — Talavera ... 55—60  
— — — — — Norfolk ... Red ... — — —  
— — — — — Foreign ... 35—58  
Barley, grind. & distill., 23s to 26s. ... Chev. ... 24—30 Maltng. ... 25—29  
— — — — — Foreign ... grinding and distilling ... 22—30 Maltng. ... 29—32  
Oats, Essex and Suffolk ... 17—20  
— — — — — Scotch and Lincolnshire ... Potato ... 17—22  
— — — — — Irish ... Potato ... 19—20  
— — — — — Foreign ... Poland and Brew ... 14—20  
Rye ... 18—22 Foreign ... — — —  
Rye-meal, foreign ... 35—38 Harrow ... 35—38  
Beans, Mazagan ... 33s to 36s ... Tick ... 32—37 Egyptian ... 25—30  
— — — — — Pigeon ... 36s — 40s ... Winds ... 40—44  
— — — — — Foreign ... Small ... 30—33 Foreign ... 32—42  
Peas, white, Essex and Kent ... Boilers ... 40—43  
— — — — — Maple ... 33s to 35s ... Yellow ... — — —  
Maize ... 30—33  
Flour, best marks delivered ... per sack 37—44  
— 2d ditto ... ditto 21—37 Country ... 21—37  
— Foreign ... per barrel 22—25 Per sack ... 35—38

**FRIDAY, JUNE 10.**—The supply of grain this week has been very small, and moderate of foreign; but we hear of several vessels from Dantzic being in the river. This morning's market was attended by several country buyers from a distance. English Wheat commanded the extreme rates of Monday, but foreign being generally held for an advance, sales were checked, and we are unable to quote any improvement. The same may be said of Flour. There is a fair demand for Barley, Beans, and Peas, at Monday's quotations. Oats command an advance of 6d. per qr. Considerable transactions have taken place in floating cargoes of Wheat from the South of Europe, the prices paid being 36s. 6d. to 39s. for Polish Oatmeal, 38s. to 42s. for Galatz, and 35s. for Roumelia, c. f. and i.

### ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 550	Qrs. 60	Qrs. 40	1030 sacks
Irish ...	10310	2670	1320	5510 bbls
Foreign ...	10310	2670	1320	5510 bbls

### IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
April 30 ...	44 4	31 6	18 8	3 0	35 8	33 3
May 7 ...	44 6	31 4	19 0	3 0	35 2	33 3
— 14 ...	44 7	31 5	18 8	2 8	35 5	33 3
— 21 ...	43 11	30 11	19 1	3 5	36 0	32 1
— 28 ...	43 9	30 6	18 7	3 2	36 7	32 7
June 4 ...	43 3	29 6	19 0	3 4	36 9	33 8

**AGGREGATE AVER.** 44 1 30 10 18 10 32 2 35 10 33 0

### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Apr. 30.	May 7.	May 14.	May 21.	May 28.	June 4.
44s 7d	...	...	...	...	...	...
44 6	...	...	...	...	...	...
44 4	...	...	...	...	...	...
43 11	...	...	...	...	...	...
43 9	...	...	...	...	...	...
43 3	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, JUNE 7.**—The arrivals from Ireland and coastwise during the past week have been fair of Oats, but insignificant of other articles; and from foreign ports we have been but moderately supplied. At this day's market there was a fair attendance of the town and country trade, and several buyers from a distance, and a good demand was experienced for Wheat and Flour, at an advance of 2d. to 3d. per 70 lbs. on the former, and 1s. per barrel on the latter article. Oats were firm at late rates, but Oatmeal was neglected, and barely as dear. Barley and Peas were held for extreme prices; and Beans, being extremely scarce, brought 1s. per qr. more money. Indian Corn, both soft and on the spot, was scarcely inquired for, and without any improvement in value. **FRIDAY, JUNE 3.**—The arrivals from Ireland and coastwise since Tuesday have been rather more liberal of Oats, but otherwise continue insignificant. At this day's market there was a fair attendance of the town and country trade, and a large business was done in Wheat and Flour at an advance of 1d. to 2d. per 70 lbs. on the former, and fully 6d. per barrel and sack on the latter article. Oats and Oatmeal met with a slow sale at barely late rates. Barley and Peas were offered on the same terms as on Tuesday; and Beans were held for 1s. per qr. advance. Indian Corn, both white and yellow, attracted little or no attention, and remained nominally without change in value.

**PAGE AND CO.'S COMPOSITION** for the Destruction of Blight upon Roses, Wall Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra strong, in jars, 1s. 3d., 2s. 6d., 5s., and 10s. (jars included); fit for use, per gallon, 1s. 6d. (jars extra). For Thrip, Scale, Green-fly, and Red Spider, add 3 parts water to 1 part Composition. Destruction will be greatly accelerated upon infested Cucumbers, Melons, and Plants in general, and framed by Syringing and shutting up early. Specimens might be dipped into the liquid without the least injury to flowers or foliage. Wall Fruit Trees and Roses have been Syringed while in full blossom with the most beneficial effects, and the former even up to the ripening of the crop. For Mealy Bug the Composition may safely be used in its full strength, as any portion of the liquid reaching the roots will act as a manure. For Testimonials, see last page of *Gardeners' Chronicle* of March 12—37 and 38, Oxford Street, Southampton.

**CARSON'S ORIGINAL ANTI-CORROSION PAINT**, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable outdoor Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Plaster, Cement, &c., work, as has been proved by the practical test upwards of 50 years, and by the numerous (between 500 and 600) Testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to **WALTER CARSON & SON**, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

**THE ROYAL EXHIBITION.**—A valuable newly invented, very small, powerful, waistcoat-pocket Glass, the size of a Walnut, to discern minute objects at a distance of 4 or 5 miles, which is found to be invaluable for YACHTING, and to SPORTSMEN, GENTLEMEN, and GAMEKEEPERS.

**TELESCOPES.**—A new and most important invention in Telescopes, possessing such extraordinary powers that some—34 inches, with an extra eye-piece—will show distinctly Jupiter's Moon, Saturn's Ring, and the Double Stars. They supersede every other kind, and are of all sizes—for the waistcoat-pocket, Shooting, Military purposes, &c. Opera and Race-course Glasses with wonderful powers; a minute object can be clearly seen from 10 to 12 miles distant.—Invaluable Acoustic Instruments for relief of extreme Deafness.

Messrs. S. & B. SOLOMONS, Opticians and Aurists, 39, Albemarle Street, opposite the York Hotel, London.

**CUTLERY WARRANTED.**—The most varied assortment of Table Cutlery in the world, all warranted, is on Sale at **WILLIAM S. BURTON'S**, at prices that are remunerative only because of the largeness of the sales.

Three and a half inch Ivory-handled Table Knives, with high shoulders, 10s. per dozen; Desserts, to match, 9s.; if to balance, 1s. per dozen extra; Carvers, 8s. 6d. per pair; larger sizes, in exact proportion, to 25s. per dozen; if extra fine, with silver ferrules, from 36s.; White Bone Table Knives, 8s. per dozen; Desserts, &c.; Carvers, 6s. per pair; Black horn Table Knives, 7s. 6d. per dozen; Desserts, &c., Carvers, 2s. 6d.; Black wood-handled Table Knives and Forks, 6s. per dozen; Table Steels, from 1s. each.

The largest stock of Plated Dessert Knives and Forks, in cases and otherwise, and of the new Plated Fish Carvers in existence. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

**THE PERFECT SUBSTITUTE FOR SILVER.**—The REAL NICKEL SILVER introduced 20 years ago by **WILLIAM S. BURTON**, when plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen ...	18s.	32s.	36s.
Dessert Forks " ...	30s.	54s.	58s.
Dessert Spoons " ...	30s.	56s.	62s.
Table Forks " ...	40s.	65s.	70s.
Table Spoons " ...	40s.	70s.	75s.

Tea and coffee sets, waiters, candlesticks, &c., at proportionate prices. All kinds of re-plating done by the patent process.

**CHEMICALLY PURE NICKEL NOT PLATED.**

	Fiddle.	Thread.	King's.
Table Spoons and Forks, full size, per dozen ...	12s.	23s.	30s.
Dessert ditto and ditto ...	10s.	21s.	25s.
Tea ditto ...	5s.	11s.	12s.

**WILLIAM S. BURTON** has **TEN LARGE SHOW ROOMS** (all communicating), exclusive of the shop, devoted solely to the show of **GENERAL FURNISHING IRONMONGERY** (including Cutlery, Nickel Silver, Plated, and Japanned Wares, Iron and Brass Bedsteads), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street, corner of Newman Street; Nos. 1 and 2, Newman Street; and Nos. 4 and 5, Perry's Place.

**HOLLOWAY'S PILLS AN UNFAILING REMEDY FOR BILE, APOPLEXY, AND COMPLAINTS ARISING FROM IMPURITY OF THE BLOOD.**—Mr. H. Berry, a master cooper, residing in the Oldham Road, Manchester, informs Professor HOLLOWAY, by letter dated May 12, 1863, that for four years he was a continual sufferer from bile, sick headache, loss of appetite, and dimness of sight, all originating from an impure state of the blood. He had been under medical treatment of the first eminence in Manchester, but received little or no relief. At length, however, he tried HOLLOWAY'S PILLS, and in about three months this extraordinary medicine so purified the blood that the disease totally disappeared and he is restored to perfect health.—Sold by all Druggists, and at Professor HOLLOWAY'S, 244, Strand, London.

**SOUND AND WHITE TEETH** are not only indispensable requisite to a pleasing exterior in both sexes, but they are peculiarly appreciated through life as a blessing highly conducive to the purposes of health and longevity. The great esteem in which the public have long held

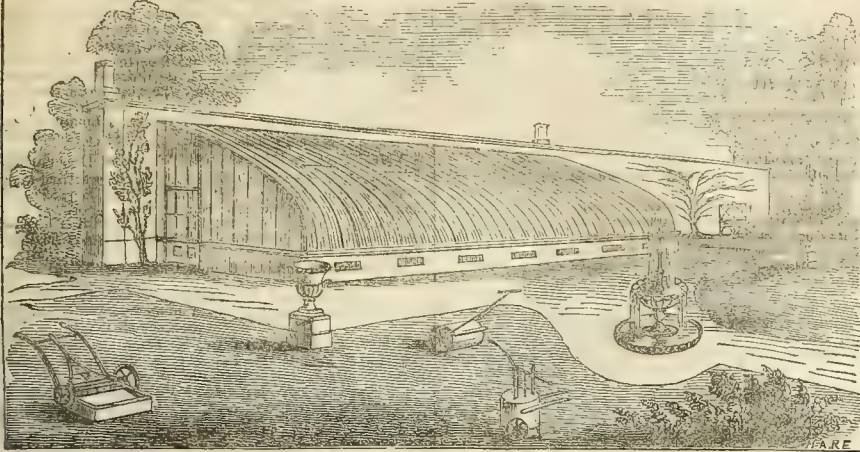
**ROWLAND'S ODONTO**, OR PEARL DENTIFRICE, precludes the necessity here of entering into a minute detail of its merits, and the singular advantages it so eminently possesses over the usual powders sold for the teeth. It is sufficient to observe that ROWLAND'S ODONTO not only has the property of rendering the above beautiful organs of the mouth dazzlingly white, but it strengthens their organic structure, and fulfils the pleasing task of rendering the breath sweet and pure. It should never, in particular, be forgotten that, when used in early life, it effectually prevents all aches in the Teeth and Gums—effaces all spots and discolorations whatsoever—eradicates scurvy—and, in a word, soon realises the chief attribute of health and beauty—

**A FINE SET OF PEARLY TEETH.**—Price 2s. 9d. per box.

Beware of SPURIOUS IMITATIONS. The genuine article has the words "ROWLAND'S ODONTO" on the label, and "A. Rowland & Sons, 20, Hatton Garden," engraved on the Government Stamp affixed on each box. Sold by them, and by Chemists and Perfumers.



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EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

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## REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT  
IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

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## WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... 3 0 0  
Larger sizes if required.

To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest Pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,  
**JOHN WARNER & SONS,**  
8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water, Fire Engines, &c.

JOHN WARNER AND SONS,  
CRESCENT, JEWIN STREET, LONDON.  
GALVANISED IRON TUB GARDEN ENGINE,

With Warner's Registered Spreader,  
Is strongly recommended, for durability and low price, viz., £3.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height, by Steam, Horse, or Manual Power.



**J. TYLOR AND SONS' IMPROVED GARDEN ENGINES.** These Garden Engines are of a very superior make, and of the best quality and material. The Pumps are constructed so that they do not get out of order. In best Oak Tank, painted, No. 1, 10 gals.; No. 2, 15 gals.; No. 3, 25 gals.; No. 4, 40 gals.; No. 5, 60 gals.; No. 6, 80 gals.; No. 7, 100 gals.; No. 8, 120 gals.; No. 9, 150 gals.; No. 10, 200 gals. Prices and particulars of these Engines, and of all other kinds of Machinery, may be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, **J. Tylor and Sons,** Whitehall Lane, No. 1, Street, London.

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THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.  
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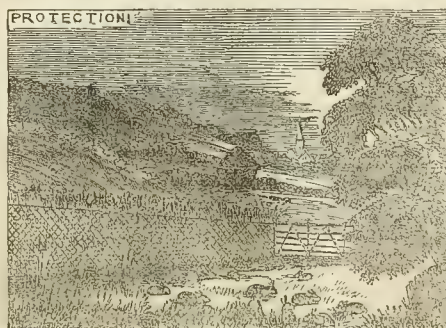
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## KOH-I-NOOR GERANIUM.

**W. TURNER, Florist**, begs to inform the Nobility, Gentry, and the trade in general, that he is prepared to send out his new and splendid Geranium, Koh-i-noor, a plant of free growth and dwarf habit, even dwarfier than Tom Thumb, large bloomer, and better expander of the foliage. The flower is perfectly round, of large size and substance, of the brightest scarlet, with a beautiful violet hue; has been seen and pronounced by competent judges to be the brightest gem ever sent out. Plants 5s. each. No discount. A remittance from unknown correspondents.—Richmond Garden, Madingly Road, Cambridge.

## TURNIP SEEDS, DIRECT FROM THE GROWERS.

**JOHN SUTTON AND SONS, Reading, Berks.**

## PRICES FOR JUNE AND JULY, 1853.

A Gallon of Turnip Seed weighs

RIVERS' STUBBLE SWEDE, a large and first-rate sort in every respect, especially for late sowing

DALE'S HYBRID, Green-topped Yellow Turnip.

SUTTON'S PURPLE-TOPPED YELLOW HYBRID, the hardiest, largest, and most nutritious of all Hybrid Turnips

SUTTON'S GREEN-TOPPED YELLOW HYBRID, particularly adapted for poor soils and for late sowing. It will produce a heavier crop than any other under such circumstances.

LINCOLNSHIRE RED GLOBE, a superior variety, presented to us by Philip Fusey, Esq., M.P., being more solid and larger than any other. (See remarks by Editor of *Agricultural Gazette*, Nov. 27, 1852.)

YELLOW TANKARD (or Tankard Swede)

SUTTON'S EARLY SIX WEEKS, very early and large. (See Mr. Hickman's and other Letters.)

ORANGE JELLY (new seed will be read in July), direct from Mr. Chivas

GREEN ROUND, and other old sorts, at lowest market prices.

Mr. K. HICKMAN, of Brimpton House, near Newbury, in a letter, dated February 1st, 1853, says—"I must also mention the SIX WEEKS TURNIP as the best sort I have ever seen for earliest and latest sowing. I have grown them several years, and have invariably found them to produce more feed in less time than any other Turnip. I have had them after Wheat, of a good size, within six weeks from the time of sowing."

N.B. The above will be sent, carriage free, except parcels under 20s. value.

Address—JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

NEW AND SELECT PLANTS offered by BASS AND BROWN. The usual allowance to the trade, except the five English Fuchsias.

Aphelandra variegata

Ecchmea fulgens, 5s. to

Begonia Prestonensis

— miniata, 7s. 6d. to

Berberis Darwini

Balsamina latifolia, 2s. 6d. to

Cissus discolor, climber, superb variegated foliage

Cyrtocarpus reflexa

Canna Warszewiczae, or sanguinea, splendid

Deutzia gracilis, in flower, 1s. 6d. to

Dillwynia cinnabarina

— scabra

Echites Harrii, fragrant yellow flowers, carmine striped, red throat

Æchynanthus splendens, 2s. 6d. to

Fuchsia miniata, a superb Continental variety, an abundant bloomer

— King Charming (Mayle's)

— Incomparable (Mayle's)

— Dr. Lindley (Banks')

— England's Glory (Harrison's)

— Perfection (Banks')

Fitz-Roya Patagonica

Genera zebrina compacta

Gloxinia imperialis

— Mrs. A. Adanson, a fine Continental variety

Geraniums, new varieties, sent out in October. See reduced prices in our Advertisement in *Gardeners' Chronicle* of May 7, 14, and 21.

Gloriosa Planti

Hoya campanulata, 2s. 6d. to

— coriacea, 3s. 6d. to

— imperialis, 2s. 6d. to

Hipocastrius mysorensis

Ilex palmata

Lobelia St. Clare

Mimulus variegata, a beautiful Continental variety, cream colour, with rich dark blotches

Petunia Prince de Robn

Passiflora Comte Nesselrode

— alata superba

— Comte Kieseloff

— corallina grandiflora

Phlox Roi Leopold

— Drummondii Mayi variegata, 12s. per dozen

— Drummondii Thompsoni, 6s. per dozen

Plectranthus, one for plants, beautiful variegated foliage, fine strong plants, 2s. 6d. to

Salvia kinabalu, beautiful blue and white, per dozen, 12s.

Saxea Gothica conspicua

Streptocarpus biflorus

Tacoma mandata, 1s. 6d. to

— Helleri

Tritonum arabia, 2s. per dozen

Tropæolum Triumphant de Gand

— Weigandii amabilis

— Intea

Fine Bedding Plants and Hardy Herbaceous Plants, in pots. See *Gardeners' Chronicle* of May 7, 14, and 21.

SEED AND HORTICULTURAL ESTABLISHMENT, Sudbury, Suffolk.

## EXHIBITION OF AMERICAN PLANTS.

ROYAL BOTANIC GARDENS, REGENT'S PARK. JOHN WATERER begs to announce that his unrivalled Collection of RHODODENDRONS, AZALEAS, &c., is now in bloom, and may be viewed by orders from Fellows of the Society.

The Plants at the Nursery are now in great beauty, and will continue in perfection throughout the month of June. The Military Encampment on Chobham Common is but two miles distant.

American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway.

## EXHIBITION OF AMERICAN PLANTS.

Knap Hill Nursery, Woking, Surrey.

THE AMERICAN PLANTS at this Nursery are just now in great beauty, and may be seen daily. The Nursery is within an hour's ride of London, being near the Woking Station of the South-Western Railway, where all trains stop, and from whence capital conveyances may be obtained.

\* The Military Encampment on Chobham Common is within a short distance of the Nursery.

HOSEA WATERER, Knap Hill Nursery.—June 18, 1853.

## EXHIBITION OF AMERICAN PLANTS.

WINDLESHAM NURSERY, BAGSHOT, SURREY, NEAR THE MILITARY CAMP, VIRGINIA WATER, AND STAINES STATION.

GEORGE BAKER begs to announce his extensive collection of AMERICAN PLANTS is now in flower and may be seen gratis.

G. B. is a large contributor to the American Exhibition in the Royal Botanic Gardens, Regent's Park; they are now in perfection, and will continue during the month of June.

## COCHINS AND ROSES.

MRS. STEDMAN, Linkfield Place, Isleworth, respectfully calls the attention of the nobility, gentry, and amateurs generally, to her superb COLLECTION of ROSES, amongst which are running some of the best Cochins in the kingdom. Cochins China Eggs, 12s. to 30s. per dozen; Andalusian, 30s.; Black Spanish, 10s. 6d. Standard Roses from 18s. per dozen. Catalogues gratis on application.

BENJAMIN R. CANT, St. John's Street Nursery, Colchester, offers the following:

NEW VERBENAS, 6s. per dozen. Camille, Conquerant, Duchess of Kent, Edward Milson, Favourite, General Bismarck, Gentile Adèle, Juliette, Louis Mieliez, Mazepa, Madame Malet, Madame Lacharme, Monsieur Bouchage, Ormby Bay, Olga, Princesse Navarre, Racine Romulus.

NEW FUCHSIAS, 1s. 6d. each, or 15s. per dozen.

Ariel, Exquisite, Gem of the Season, Joan of Arc, Leader, Model, Nil Desperandum, Novelty, Pendula, Resplendent, Standard of Perfection, Splendissima.

## MISCELLANEOUS.

Scarlet Geraniums Gem, Flower of the Day, Shrubland Pet, and the Amazon, 1s. each.

Princess Alice, 6s. per dozen.

Heliotrope Voltairianum novum, 1s. each.

Phlox Drummondii Mayi variegata, and Thompsoni, 6s. per doz.

## NEW HARDY SHRUBS.

Berberis Darwini, 2s. 6d. each. Lonicera, new species, from Deutzia gracilis, 1s. 6d. each. China, 2s. 6d. each.

Escallonia macrantha, 1s. 6d. each. Mitrasia coccinea, 1s. 6d. each.

CHOICE AND RARE SEEDS SUITABLE FOR PRESENT SOWING.

WILLIAM DENYER, SEEDSMAN AND FLORIST, 82, Gracechurch Street, London, begs to offer the following:—

Antirrhinum: saved by an Amateur from a most superb and unique collection (unequaled in this country), recommended as being sure to produce splendid flowers, both novel in colour and exquisite in form, only in W. D.'s possession

Calceolaria, new hybrid, splendid colours

Cineraria, from a superb collection, all colours

Fansy, saved by Thomson and other celebrated growers from the best show flowers

Primula sinensis fimbriata, various colours

Stocks, autumnal or late summer flowering, six bright and distinct colours

Stocks, Gigantic or Brompton, six distinct colours

\*Stocks, Emperor, or perpetual, distinct colours, viz. white, rosy purple, blue, and crimson

\*These are large flowering, very double, and different to any other Stocks; lasting and flowering for several years.

Wallflower, six gigantic varieties, imported

The whole of the above, including postage, for 12s., or separately at the prices named.

CHOICE NEW FUCHSIAS, VERBENAS, ETC., OF 1853, AT GREATLY REDUCED PRICES.

WILLIAM RUMLEY AND SONS are now sending out fine healthy plants of the following superb new FUCHSIAS of this season—12 for 21s., 6 for 12s., or 2s. 6d. each:—Banks' Glory, Perfection, Dr. Lindley, Lady Emily Cavendish, Smith's Beauty, Lady Franklin, Patterson's Mrs. Patterson, Vestal, Brilliant, Maule's King Charming, Incomparable Henderson's Duchess of Lancaster, and Turner's Model.

VERBENAS.—The following choice new varieties of 1853—20 for 18s., 12 for 12s., or 6 for 7s. 6d., viz.:—Smith's Garland, Orestes, Middlesex Rival, Discount, Young's Glory, Elizabeth, Mrs. Kirkpatrick, Vesta, Mockett's Purple King, Barnes' Dane-croft Beauty, Purity, Madame Lemonier, Princess Marianne, Madame Barnes, Madame Bouchard, Madame Ivery, Madame Rougier, Madame Pommeroy, Mons. Derouit, Midlo. Gonnet, Princess Matilda, Beauté de Paris, Caroline Colmens, Fulgorie, Luciane, and Souvenir d'Ivry.

Tropæolum Heckerianum and Triumphant de Gand, 1s. each.

Balsamina latifolia alba, 1s. each. Fuchsias, all the best of last year, 6s. per dozen. Verbenas, do. 4s. to 6s. per dozen. Geraniums, extra fine, 9s. to 20s. per dozen. Choice Bedding Plants, 3s. to 4s. per dozen. Choice China and Seed, 1s. and 2s. 6d. per packet.

The above will be forwarded immediately, hamper included, or free by post, on receipt of a post-office order payable at Richmond. A General Descriptive Catalogue may be had on application.—Gilling, Richmond, Yorkshire.

**SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.**—The THIRD EXHIBITION OF FLOWERS of the above Society will be held at the HORNS TAVERN, KENNINGTON, on TUESDAY, JUNE 28, when Prizes will be awarded for the following productions, viz.:

PELARGONIUMS, and fancy varieties; PINKS, ROSES, and RANUNCULUSES; also, for the best collection of MISCELLANEOUS PLANTS, the large Silver Victoria Medal, as an OPEN PRIZE TO HONORARY AND NON-MEMBERS. First Class Certificates will be awarded to Seedling Florist Flowers, for such as may be deserving of the same. The following Exhibitions will also take place, viz.:—Thursday, July 28; Wednesday, September 21; and Wednesday, November 23.

Subscriptions, 20s. per annum, entitling each Member to the privilege of attending all Flower Shows, Lectures, and Meetings of the Society, of Exhibiting Flowers, Plants, &c., their own growth, in competition for prizes, without any charge for entry, and also to have two free admissions for friends at each Flower Show or Lecture. Honorary Members, 10s. per annum, will have the same privilege, with the exception of not exhibiting Plants, Flowers, &c., in competition. List of Prizes, and the Rules of the Society may be had at the Horns Tavern, Kennington, and of the Honorary Secretaries, pro tem., JOHN BUSSELL, Esq., Lower Kennington Lane; WILLIAM TRAHAR, Esq., 5, Kensington Gore.

Admission to Members and Honorary Members at 2 o'clock; Non-members, 1s. each.

## GRAND DAHLIA SHOW.

**THE HACKNEY & SHACKLEWELL SOCIETY** will hold their ANNUAL EXHIBITION on THURSDAY, Sept. 1, at the Manor Rooms, Hackney. Further particulars on application. Wm. HOLMES, Hon. Sec. 2, St. Thomas Place, Well Street, Hackney.

**ROYAL PAVILION, BRIGHTON.**—The first (of two) GRAND FLORICULTURAL AND HORTICULTURAL EXHIBITIONS (open to all England), under distinguished patronage, will be held at the Royal Pavilion Rooms and Grounds, on Tuesday and Wednesday, the 5th and 6th July next, when upwards of 2000 will be offered as prizes to exhibitors.

Schedules can be obtained by applying to E. SPARY (General Director, Queen's Grapery); or to EDWARD CARPENTER (Seedsmen, Secretary, pro tem., Brighton, June 18.

**COUNTY OF GLOUCESTER AND CHELTENHAM HORTICULTURAL SOCIETY.**—The Horticultural Exhibition of all Nations, under the immediate patronage of her most gracious Majesty the Queen, H. R. H. Prince Albert, his Imperial Majesty the Emperor of the French, his Majesty the King of the Belgians, H. R. H. the Duke of Cambridge, &c., will be held in the Pittville Grounds, Cheltenham, on TUESDAY, the 12th July, 1853. Schedules and every information may be obtained of J. H. WILLIAMS, Honorary Secretary, 382, High Street, Cheltenham.

**NORTHAMPTON AND NORTHAMPTONSHIRE FLORAL AND HORTICULTURAL SOCIETY.**—Open to all England.

The Committee of the above Society beg to announce that their next Exhibition will take place on THURSDAY, the 14th July, 1853, in extensive and beautiful Gardens adjoining the Blisworth Station of the London and North-Western Railway, when the following extra prizes will be given:

Seven Guineas for the best 18 Stove and Greenhouse Plants; not less than 12 distinct species; Pelargoniums, Potunias, Verbenas, Calceolarias, and all annuals excepted. Three Guineas for the second best. The first prize will not be awarded unless there are three competitors, except especially recommended by the Judges.

Also will be given, Two Guineas for the best 12 Carnations and 12 Pinks, distinct varieties. One Guinea for second prize.

All exhibitors must send a statement in writing to me on or before Thursday, the 7th July, of their intention to show, in order that arrangements may be made for exhibiting.

By special permission of the Lord of the Royal Horse Guards (Blue) will attend during the day.

JOHN MACQUEEN, Honorary Secretary.

Drumery, Northampton, June 18.

**CRIMSON-FLOWERED IVY-LEAVED GERANIUM.**

**STANDISH AND NOBLE** have now to offer the above, which they can recommend as a BEDDING PLANT of the first class. It has the habit and foliage of the well known old variety, but the flowers are of the brightest crimson. They are produced in the greatest profusion, and are raised well above the leaves upon stout footstalks. Plants, in June, 10s. 6d. each.

\* The usual discount to the trade when three or more are taken.—Bagshot, Surrey, June 18.

**WILLIAM MASTERS, Exotic Nursery, Canterbury,** offers for sale 12 fine species of the new SIKKIM RHODODENDRONS, all selected by himself, for 3l. one of which will be the Edgeworthia so celebrated for its beauty, size, and fragrance.

W. M. has also a fine Collection of Stove and Greenhouse Ferns, Orchids, and Ferns, which are in good health, and can be furnished at moderate prices.—June 18.



# ROYAL BOTANIC GARDENS, REGENT'S PARK.

LIST OF PRIZES AWARDED AT THE EXHIBITION, HELD ON WEDNESDAY, JUNE 8.

## EXTRA GOLD MEDAL.

To Mr. Cole, Gardener to H. Colyer, Esq., Dartford, Kent, for 20 Stove and Greenhouse Plants.  
To Mr. Franklin, Gardener to Mrs. Lawrence, Ealing Park, for 25 Exotic Orchids.

## LARGE GOLD MEDAL.

To Mr. Speed, Gardener, Edmonton, for 20 Stove and Greenhouse Plants.

## MEDIUM GOLD MEDAL.

To Messrs. Fraser, Nurserymen, Lea Bridge Road, Leyton, Essex, for 16 Stove and Greenhouse Plants.  
To Mr. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 12 Stove and Greenhouse Plants.  
To Mr. Williams, Gardener to C. B. Warner, Esq., Hoddesden, Herts, for 25 Exotic Orchids.  
To Messrs. Veitch, Nurserymen, Exeter, and Exotic Nursery, Chelsea, for 18 Exotic Orchids.  
To Mr. Blake, Gardener to J. H. Schröder, Esq., Water Lane, Stratford Green, Essex, for 16 Exotic Orchids.  
To Messrs. Lane & Son, Nurserymen, Great Berkhamstead, for 12 Roses, in 13-inch pots.

## GOLD MEDAL.

To Mr. Turner, Nurseryman, Slough, for 12 Pelargoniums, in 8-inch pots.  
To Mr. Carrigan, Gardener to E. Laurence, Esq., Kentish Town, for 12 Pelargoniums, in 8-inch pots.  
To Messrs. Rolleston, Nurserymen, Tooting, Surrey, for 16 Stove and Greenhouse Plants.  
To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, Surrey, for 12 Stove and Greenhouse Plants.  
To Messrs. Rolleston, Tooting, Surrey, for 10 Cape Heaths.  
To Mr. Smith, Gardener to W. Quilter, Esq., Crown Hill, Norwood, for 10 Cape Heaths.  
To Messrs. Paul, Nurserymen, Cheshunt, Herts, for 12 Roses, in 13-inch pots.

## LARGE SILVER GILT MEDAL.

To Mr. Clark, Nurseryman, Streatham Place, Brixton, for 16 Stove and Greenhouse Plants.  
To Mr. Dods, Gardener to Sir J. Cathcart, Bart., Cooper's Hill, Englefield Green, for 12 Stove and Greenhouse Plants.  
To Messrs. Rolleston, Nurserymen, Tooting, for 18 Exotic Orchids.  
To Mr. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Cheam, Surrey, for 16 Exotic Orchids.  
To Mr. Francis, Nurseryman, Hertford, for 12 Roses, in 13-inch pots.  
To Mr. Terry, Gardener to Lady Puller, Woburn Abbey, Herts, for 8 Roses, in 13-inch pots.  
To Mr. Hume, Gardener to R. Hanbury, Esq., Poles, near Ware, Herts, for 8 Exotic Orchids.

## LARGE SILVER MEDAL.

To Mr. Constantine, Gardener to C. Mills, Esq., Hillingdon, for 6 Calceolarias, in 11-inch pots.  
To Mr. Dobson, Nurseryman, Isleworth, for 12 Pelargoniums, in 8-inch pots.  
To Mr. Holder, Gardener to the Rev. E. Coleridge, Eton College, for 12 Pelargoniums, in 8-inch pots.  
To Mr. Turner, Slough, for 6 Fancy Pelargoniums, in 8-inch pots.  
To Mr. Smith, Gardener, Dartmouth House, Blackheath, for 6 Fancy Pelargoniums, in 8-inch pots.  
To Mr. Turner, Slough, for 6 Pelargoniums, second year of blooming.  
To Mr. Williams, Gardener to Miss Traill, Hayes Place, Bromley, Kent, for 6 Stove and Greenhouse Plants.  
To Mr. Green, Gardener to Sir E. Antrobus, Bart., for 6 tall Cacti.  
To Messrs. Fairbairn, Nurserymen, Clapham, for 10 Cape Heaths.  
To Mr. Cole, Gardener to H. Colyer, Esq., for 10 Cape Heaths.  
To Mr. Smith, Gardener to W. Quilter, Esq., for 9 Cape Heaths.  
To Mr. Taylor, Gardener to J. Coster, Esq., for 6 Greenhouse Azaleas.

## SILVER GILT MEDAL.

To Mr. Parker, Stanmore, for 6 Pelargoniums, of superior growth.  
To Mr. Westwood, Turnham Green, for 6 Fancy Pelargoniums, in 8-inch pots.  
To Mr. Parker, Gardener, Stanmore, for 6 Fancy Pelargoniums, in 8-inch pots.  
To Mr. Dobson, Isleworth, for 6 Pelargoniums, second year of blooming.  
To Messrs. Pamplin, Nurserymen, Leyton, Essex, for 16 Stove and Greenhouse Plants.  
To Mr. Green, Gardener to Sir E. Antrobus, Bart., for 8 Exotic Orchids.  
To Mr. Taylor, Gardener to J. Coster, Esq., for 4 Ixoras.  
To Mr. Rhodes, Gardener to J. Philipps, Esq., Stamford Hill, for 12 Stove and Greenhouse Plants.  
To Mr. Meredith, Gardener to his Grace the Duke of Sutherland, Cliveden, Buckinghamshire, for 6 Stove and Greenhouse Plants.  
To Messrs. Fraser, Leyton, for 10 Cape Heaths.  
To Mr. Williams, Gardener to Miss Traill, for 10 Cape Heaths.

## PLANTS AND FRUIT.

To Mr. Roser, Gardener to G. Bradbury, Esq., Bedford House, Streatham, Surrey, for 9 Cape Heaths.  
To Mr. Taylor, Gardener to J. Coster, Esq., for 6 new Azaleas.  
To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, Herts, for 16 Orchids.  
To Mr. Dodds, Gardener to Col. Baker, Salisbury, for a fruit of the Providence Pine-apple.  
To Mr. Bayley, Gardener to T. T. Drake, Esq., for a Moscow Queen Pine-apple.  
To Mr. Turnbull, for a fruit of the Pine-apple.  
To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., Coleorton Hall, Ashby-de-la-Zouch, for 12 lbs. of Grapes.  
To Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Kent, for a dish of black Hambro' Grapes.  
To Mr. Constantine, Gardener to C. Mills, Esq., Hillingdon, Herts, for a dish of Black Prince Grapes.  
To Mr. Bayley, Gardener to T. T. Drake, Esq., for a dish of White Muscadine Grapes.  
To Mr. Bradley, Gardener to S. M. Peto, Esq., Somerleyton, Suffolk, for a dish of Muscat Grapes.  
To Mr. Martin, Gardener to Sir H. Fleetwood, Bart., for a dish of Frontignan Grapes.  
To Mr. Fleming, Gardener to the Duke of Sutherland, for a dish of Peaches.  
To the same, for a dish of Nectarines.

## SILVER MEDAL.

To Mr. Ward, Gardener to G. Bishop, Esq., South Villa, Regent's Park, for 6 Fuchsias.  
To Mr. Westwood, Nurseryman, Turnham Green, for 12 Pelargoniums, in 8-inch pots.  
To Mr. Wiggins, Gardener to E. Beck, Esq., Isleworth, for 12 Pelargoniums, in 8-inch pots.  
To Mr. Robinson, Gardener to J. Simpson, Esq., Thames Bank, Pimlico, for 6 Fancy Pelargoniums, in 8-inch pots.  
To Mr. Hamp, Gardener to J. Thorne, Esq., Mawbey House, South Lambeth, for 12 Stove and Greenhouse Plants.  
To Mr. Over, Gardener to W. M'Mullen, Esq., Clapham, for 6 Stove and Greenhouse Plants.  
To Mr. Watson, Gardener to Mrs. Tredwell, St. John's Lodge, Norwood, for 9 Cape Heaths.  
To Messrs. Lane & Son, for 6 new Azaleas.  
To Messrs. Rolleston, for a plant of Caladium bicolor.  
To Mr. Bayley, Gardener to T. T. Drake, Esq., Shardeloes, Amersham, Bucks, for a fruit of the Providence Pine-apple.  
To Mr. Harrison, Outlands Palace Gardens, Weybridge, Surrey, for a fruit of the Old Queen Pine-apple.  
To Mr. Davis, Market Gardener, Oak Hill, East Barnet, for a fruit of the Pine-apple.  
To Mr. Lusley, Gardener to J. Hill, Esq., Streatham, Surrey, for a dish of Black Hambro' Grapes.  
To Mr. Henderson, Gardener to G. Beaumont, Esq., Coleorton Hall, for a dish of Black Hambro' Grapes.  
To Mr. Martin, Gardener to Sir H. Fleetwood, Windsor Forest, Berks, for a dish of Black Prince Grapes.  
To Mr. Taylor, Gardener to J. Coster, Esq., for a dish of Muscadine Grapes.  
To Mr. Turnbull, Gardener to the Duke of Marlborough, for a dish of Muscat Grapes.  
To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for a dish of Frontignan Grapes.  
To Mr. Morrison, Gardener to A. Donovan, Esq., Frimfield Park, Uckfield, Sussex, for a dish of Grapes.  
To Mr. Constantine, Gardener to C. Mills, Esq., for 3 Vines, in pots.  
To Mr. Evans, Gardener to C. N. Newdegate, Esq., Arbury Hall, for a dish of Peaches.

## SMALL SILVER MEDAL.

To Mr. Hoyle, of Reading, Berks, for a Seedling Pelargonium, 'Regalia.'  
To Mr. Turner, Slough, for 36 Pansies.  
To Mr. Holder, Gardener to the Rev. E. Coleridge, Eton College, for 24 Pansies.  
To Messrs. Pamplin, for 9 Cape Heaths.  
To Mr. Carson, Gardener to W. F. G. Farmer, Esq., for a plant of Huntley's Nova sp.  
To Messrs. Henderson, Pine-apple Place, for Gloriosa planti.  
To Messrs. Veitch, for Liliun giganteum.  
To Messrs. Veitch, for Ixora Nova sp.  
To Mr. Wood, Nurseryman, Norwood, for 6 Hardy Alpine Plants.  
To Mr. Woolley, Gardener to H. B. Ker, Esq., for 12 Exotic Ferns.  
To Mr. Williams, Gardener to C. B. Warner, Esq., for 30 British Ferns.  
To Mr. Mason, Gardener to G. Vivian, Esq., Claverton Manor, Bath, for a fine plant of Statice Holfordi.  
To Mr. Davis, Market Gardener, Oak Hill, East Barnet, for a fruit of the Providence Pine-apple.  
To Mr. Harrison, Outlands, for a fruit of the Pine-apple.  
To Mr. Bayley, for Bayley's green-fleshed Melon.  
To Mr. Patterson, Gardener to the Baroness Weanman, Thame Park, Oxon, for 12 lbs. of Grapes.  
To Mr. Munro, Gardener to Mrs. Oddie, Colney House, St. Albans, Herts, for 12 lbs. of Grapes.

To Mr. Miller, Gardener to Sir W. Smith, Bart., Eardiston House, Worcestershire, for a dish of Black Hambro' Grapes, grown in pots.  
To Mr. Forbes, Gardener to the Duke of Bedford, Woburn Abbey, for a dish of Black Hambro' Grapes.  
To Mr. Williams, Gardener to C. B. Warner, Esq., for a dish of Muscadine Grapes.  
To Mr. Cowan, Gardener to E. A. Jones, Esq., Wanstead Grove, Essex, for a dish of Peaches.  
To Mr. Evans, Gardener to C. Newdegate, Esq., Arbury Hall, for a dish of Nectarines.  
To Mr. Wilson, Nurseryman, Warwickshire, for a dish of Black Cherries.  
To Messrs. Henderson, Wellington Road, for a collection of Calceolarias.  
To Mr. Munro, Gardener to Mrs. Oddie, Colney House, St. Albans, Herts, for 12 lbs. of Grapes.

## BRONZE MEDAL.

To Mr. Williams, Gardener to C. B. Warner, Esq., for 13 variegated Orchids.  
To Mr. Williams, Gardener to C. B. Warner, Esq., for a collection of Oranges and Lemons.  
To Mr. Bragg, Nurseryman, Slough, for 36 Pansies.  
To Mr. Over, Gardener to W. M'Mullen, Esq., Clapham, for 9 Cape Heaths.  
To Mr. Hume, Gardener to R. Hanbury, Esq., for a plant of Sarcocolla Calceolus.  
To Messrs. Henderson, Nurserymen, Pine-apple Place, for a plant of Azalea Verschaffelti.  
To Messrs. Henderson, St. John's Wood, for a plant of Phrynium splendens.  
To Messrs. Veitch, for a new annual, Leptosiphon luteum.  
To Mr. Smith, Gardener to Sir H. Anderson, Esq., The Home Villa, Regent's Park, for 6 Hardy Alpine Plants.  
To Mr. Smith, Gardener to J. Anderson, Esq., for 30 British Ferns.  
To Mr. Francis, Hertford, for a collection of Roses worked on the Manetti Rose as a stock.  
To Mr. Thompson, Gardener to Captain Trotter, Dyrham Park, Barnet, for a dish of Kitley's Goliah Strawberries.  
To Mr. Cole, for a fine specimen of Hoya bella.  
To Messrs. Veitch, for a plant of Aphelexis sesamoides.  
To Mr. Martin, Gardener to Sir H. Fleetwood, Bart., Windsor Forest, Berks, for a dish of Black Hambro' Grapes.  
To Mr. Fleming, Gardener to the Duke of Sutherland, for a dish of Black Hambro' Grapes.  
To Mr. Davis, Market Gardener, Oak Hill, East Barnet, for a dish of Black Hambro' Grapes.  
To Mr. Spary, Queen's Graperies, Brighton, for a dish of White Muscadine.  
To Mr. Forbes, Gardener to the Duke of Bedford, Woburn Abbey, for a dish of Peaches.  
To Mr. Bradley, Gardener to S. M. Peto, Esq., for a dish of Apricots.  
To Mr. Harrison, Market Gardener, for two dishes of Keens' Seedling Strawberries.  
To Mr. Scrogie, Gardener to W. H. Whitbread, Esq., South Hill Park, Bedfordshire, for one fruit of the green-fleshed Melon.

## CERTIFICATE OF MERIT.

To the Rev. J. R. Roper, Wick Hill, Brighton, for a plant of Hemanthus sp.  
To Mr. Wood, Nurseryman, Norwood, for a very interesting collection of 43 Hardy Plants.  
To Mr. Turnbull, Gardener to his Grace the Duke of Marlborough, Blenheim, Oxon, for a fruit of the Providence Pine-apple.  
To Mr. Fleming, Gardener to the Duke of Sutherland, Trentham, for a smooth Cayenne Pine-apple.  
To Mr. Fogg, Gardener to A. Pryor, Esq., Dover House, Rochester, for an Egyptian green-fleshed Melon.  
To Mr. Grant, Gardener to G. H. Simms, Esq., Bathwick Hill, Bath, for a green-fleshed Melon.  
To Mr. Munro, Gardener to Mrs. Oddie, Colney House, St. Albans, Herts, for a green-fleshed Melon.  
To Mr. Fleming, Gardener to the Duke of Sutherland, for a green-fleshed Melon.  
To Mr. Spary, Nurseryman, Queen's Graperies, Brighton, for 12 lbs. of Grapes.  
To Mr. Grant, Gardener to G. H. Simms, Esq., Bathwick Hill, Bath, for a dish of Black Hambro' Grapes.  
To Mr. Wortley, Gardener to Mr. Maubert, Norwood, for a dish of Black Hambro' Grapes.  
To Mr. Munro, Gardener to Mrs. Oddie, for a dish of Black Hambro' Grapes.  
To Mr. Miller, Gardener to Sir W. Smith, Bart., Eardiston House, Worcestershire, for a dish of West's St. Peter's Grapes, grown in pots.  
To Mr. Woolley, Gardener to H. B. Ker, Esq., for Dendrobium sp.  
To Mr. Wilson, Nurseryman, Warwick, for a dish of Peaches.  
To Mr. Davis, Market Gardener, Oak Hill, for a dish of Peaches.  
To Mr. Fogg, Gardener to A. Pryor, Esq., Dover House, Rochester, for a dish of Nectarines.  
To Mr. Vane, Gardener to Sir T. Hare, Bart., Stow Hill, Downham, Norfolk, for Oranges and Lemons.

## PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

**JOHN CATTELL, NURSERYMAN AND SEEDSMAN,** Westerham, Kent, begs respectfully to inform the Public that Plants of his superior true sorts of the above are now ready, and will be forwarded as usual to order, on receipt of postage stamps or post-office order, made payable here, at the under-named prices, basket or mat, and package included.

All the sorts of Early Cabbage, Savoy, and Kale, including Brussels Sprouts, 4s. 6d. per 1000; all the sorts of Autumn and Spring Broccoli, 5s. 6d. per 1000; all the sorts of Celery, 5s. 6d. per 1000; Cauliflower, Early and Late, and Red Cabbage, 9d. per 100; Drumhead or Cattle Cabbage, 4s. per 1000; 6d. per 1000 less when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the Edenbridge Station of the South-Eastern Railway.

Seed of Cattell's Dwarf Barnes and of his superior Dwarf Reliance Cabbage may be had in packets by post, as usual, for 12 penny stamps per packet, the former containing 1 oz. and the latter 4 oz.

## ROSE NURSERIES, HERTFORD.

**E. P. FRANCIS** begs leave to inform his patrons and friends of Horticulture, that the Hybrid Perpetual New QUEEN VICTORIA ROSE, exhibited by him at Regent's Park, June 8, and at Chiswick, June 11, is the same as introduced by Mr. Paul in 1851, and that it will always be sent out by E. P. under the same name of Hybrid Perpetual New Queen Victoria Rose. Strong Plants on Manetti Stocks, 3s. 6d. to 5s. each.

**WAITE'S KING OF THE CABBAGES.**—This is the earliest and best Cabbage in cultivation, and quite distinct from the Enfield.

J. G. WAITE feels inclined to think many parties have been deceived in having had Enfield sent them for this Cabbage, they therefore condemn the merits of it without having had the REAL THING, which is quite distinct from all other varieties. To be had in any quantities of not less than 1 lb. at 4s. per lb.

J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

**N. GAINES** begs to announce to the nobility and gentry that his large collection of PELARGONIUMS or GERANIUMS, both show and fancy varieties, are now in full bloom, containing nearly all the proved kinds, and most of the novelties of the season; also many good SEEDLINGS, including his variegated variety ATTRACTION, which can be seen at the Nursery, Surrey Lane, Battersea, London, any day, Sundays excepted.—June 18.

**NORMAN'S COLCHESTER CARDINAL.**—For sale, about 300 pipings of this splendid PINK, which received a First Class Certificate from the National Floricultural Society, July 1, 1852, and was designated as "purple, fine leaf, large and full; fine pod, and best of its class;" and figured in the October number of the "Florist."

Two pairs 5s., or 10 pairs 20s., including package and postage, on receipt of Post-office order or stamps.

Address Mr. ROBERT HALLS, High Street, Colchester, Essex.



## HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, JUNE 11, 1853.

## AWARD OF THE JUDGES.

## THE LARGE GOLD MEDAL.

1. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for 20 Stove and Greenhouse Plants.

## THE GOLD KNIGHTIAN MEDAL.

1. To Mr. Green, Gardener to Sir E. Antrobus, Bart, F.H.S., for 20 Stove and Greenhouse Plants.
2. To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for 20 species of Exotic Orchids.

## THE GOLD BANKSIAN MEDAL.

1. To Messrs. Fraser, of Lea Bridge Road, Essex, for 20 Stove and Greenhouse Plants.
2. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 15 Stove and Greenhouse Plants.
3. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for 6 Stove and Greenhouse Plants in 20-inch pots.
4. To the same, for 10 distinct varieties of Cape Heaths.
5. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids.
6. To Messrs. Rollisson, of Tooting, for 15 species of Exotic Orchids.
7. To Mr. Terry, Gardener to Lady Puller, of Youngsbury, Herts, for 12 varieties of Roses in 13-inch pots.
8. To Messrs. Lane & Son, of Great Berkhamstead, for the same.
9. To Mr. Holder, Gardener to the Rev. E. Coleridge, of Eton College, for 12 Pelargoniums in 8-inch pots.
10. To Mr. Turner, of Slough, for the same.

## THE LARGE SILVER GILT MEDAL.

1. To Mr. Speed, of Edmonton, for 20 Stove and Greenhouse Plants.
2. To Mr. Dods, Gardener to Sir John Cathcart, Bart, F.H.S., for 15 Stove and Greenhouse Plants.
3. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 Stove and Greenhouse Plants in 13-inch pots.
4. To the same, for 6 newer kinds of Greenhouse Azaleas in 8-inch pots.
5. To Messrs. Veitch & Son, for 15 species of Exotic Orchids.
6. To the same, for *Philisia buxifolia*.
7. To Mr. Blake, Gardener to J. H. Schröder, Esq., F.H.S., for 10 species of Exotic Orchids.
8. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for 6 varieties of Greenhouse Azaleas.
9. To Messrs. Rollisson, for 10 varieties of Cape Heaths.
10. To Mr. Roser, Gardener to J. Bradbury, Esq., F.H.S., for 10 varieties of Cape Heaths in 11-inch pots.
11. To A. Rowland, Esq., F.H.S., for 12 varieties of Roses in 13-inch pots.
12. To Mr. Francis, of Hertford, for the same.
13. To Mr. Carrigan, Gardener to E. Lawrence, Esq., of Kentish Town, for 12 Pelargoniums in 8-inch pots.
14. To Mr. Dobson, of Isleworth, for the same.
15. To Mr. Smith, Gardener to F. Newdigate, Esq., of Blackheath, for 8 Fancy Pelargoniums in 8-inch pots.
16. To Mr. Turner, of Slough, for the same.

## THE CERTIFICATE OF EXCELLENCE.

1. To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for 6 Stove and Greenhouse Plants in 13-inch pots.
2. To the same, for 6 newer kinds of Greenhouse Azaleas in 8-inch pots.
3. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 10 species of Exotic Orchids.
4. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for 6 species of Exotic Orchids.
5. To Mr. Green, Gardener to Sir E. Antrobus, Bart, F.H.S., for 6 varieties of Greenhouse Azaleas.
6. To the same, for 6 distinct varieties of Tall Cacti.
7. To Messrs. Fairbairn, of Clapham, for 10 varieties of Cape Heaths.
8. To Mr. Watson, Gardener to Mrs. Tredwell, of St. John's Lodge, Norwood, for 10 varieties of Cape Heaths in 11-inch pots.
9. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 varieties of Cape Heaths in 8-inch pots.
10. To Messrs. Paul, of Cheshunt, for 12 varieties of Roses in 13-inch pots.
11. To Messrs. Rollisson, for a collection of Variegated Plants.
12. To Mr. Robinson, Gardener to J. Simpson, Esq., of Thames Bank, Pimlico, for 12 Pelargoniums in 8-inch pots.
13. To Mr. Westwood, of Acton Lane, for the same.
14. To Mr. Miller, Gardener to R. Moseley, Esq., of Pine-apple Place, Maiden Hill, for 6 Fancy Pelargoniums in 8-inch pots.
15. To Mr. Ambrose, of Battersea, for the same.
16. To Mr. Constantine, Gardener to C. Mills, Esq., of Hillingdon, for 6 Calceolarias in 8-inch pots.
17. To Mr. Turnbull, Gardener to the Duke of Marlborough, at Blenheim, for a Queen Pine Apple weighing 3 lbs. 2 oz.
18. To the same, for an Antigua Queen Pine-apple, weighing 4 lbs.
19. To Mr. Dods, Gardener to Colonel Baker, F.H.S., for a Providence Pine Apple, weighing 6 lbs. 15 oz.
20. To Mr. Meredith, Gardener to the Duke of Sutherland, F.H.S., at Cliveden, for Grapes in pots.
21. To Mr. Frost, Gardener to E. L. Betts, Esq., F.H.S., for Black Hamburg Grapes.
22. To Mr. Lushy, Gardener to J. Hill, Esq., of Streatham, for Black Prince Grapes.
23. To Mr. Rust, Gardener to J. MacLaren, Esq., F.H.S., for Muscadine Grapes.
24. To Mr. Bradley, Gardener to S. M. Peto, Esq., F.H.S., for Muscat Grapes.
25. To Mr. Henderson, Gardener to Sir G. Beaumont, Bart, Colston Hall, for Grizzly Frontignan Grapes.

## THE LARGE SILVER MEDAL.

1. To Mr. Watson, Gardener to Mrs. Tredwell, of St. John's Lodge, Norwood, for 6 Stove and Greenhouse Plants, in 8-inch pots.
2. To Mr. Ivison, Gardener to the Duke of Northumberland, at 4, St. Asaph, for 6 species of Exotic Orchids.
3. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of Helichrysums.
4. To the same, for *Lyra alba*.
5. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 distinct Greenhouse Azaleas.

## TO NURSERYMEN AND FLORISTS.

THE SUBSCRIBER having formed a wide and respectable connection with the trade of this country, will be happy to receive orders to forward an Extract List of Prices of their general & selectable for Exportation, with terms and mode of payment, free on board, at Liverpool, Dublin, or London. All communications, samples, and cards to be sent out prepaid per return packet. Can supply Wood Churned upon special terms in quantity.

J. J. BLACK, Commission Agent, 135, Forty-second Street, 14th Avenue, New York.

6. To the same, for Muscadine Grapes.
7. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for a collection of Hothouse Ferns.
8. To Messrs. Pamplin, of Lea-bridge Road, Essex, for 10 varieties of Cape Heaths in 11-inch pots.
9. To Mr. Smith, of the Cottage, Streatham, for 6 varieties of Cape Heaths in 8-inch pots.
10. To Mr. Terry, Gardener to Lady Puller, of Youngsbury, Herts, for 25 varieties of Cut Roses.
11. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for a collection of Variegated Orchids.
12. To the same, for Fruits of Oranges, Citrons, and Lemons.
13. To Messrs. Osborne, of Fulham, for a species of Oxycobium.
14. To Mr. Robinson, Gardener to J. Simpson, Esq., of Pimlico, for 6 Fancy Pelargoniums in 8-inch pots.
15. To Mr. Westwood, of Acton Lane, for the same.
16. To Mr. Harrison, of Oatlands Palace Gardens, Weybridge, for a Queen Pine-apple weighing 3 lbs. 2 oz.
17. To Mr. Chapman, Gardener to J. B. Glegg, Esq., F.H.S., for a Black Jamaica Pine-apple weighing 2 lbs. 9 oz.
18. To the same, for 6 *Violetta Hative* Nectarines.
19. To Mr. Turnbull, Gardener to the Duke of Marlborough, at Blenheim, for a Providence Pine-apple weighing 5 lbs. 8 oz.
20. To the same, for Muscat Grapes.
21. To Mr. Constantine, Gardener to C. Mills, Esq., of Hillingdon, for Grapes in pots.
22. To Mr. Lushy, Gardener to J. Hill, Esq., of Streatham, for Black Hamburg Grapes.
23. To Mr. Martin, Gardener to Sir H. Fleetwood, Bart, F.H.S., for Black Prince Grapes.
24. To the same, for Black Frontignan Grapes.
25. To Mr. Paterson, Gardener to the Baroness Wenman, of Thame Park, Oxon, for Noblesse Peaches.

## THE SILVER KNIGHTIAN MEDAL.

1. To Mr. Meredith, Gardener to the Duke of Sutherland, F.H.S., at Cliveden, for 6 Stove and Greenhouse Plants in 13-inch pots.
2. To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for 6 species of Exotic Orchids.
3. To Mr. Green, Gardener to Sir E. Antrobus, Bart, F.H.S., for a collection of Helichrysums.
4. To Mr. Busby, Gardener to J. Crawley, Esq., F.H.S., for 25 varieties of Cut Roses.
5. To the same, for Dendrobium nobilis.
6. To the same, for Muscadine Grapes.
7. To Mr. Mason, Gardener to G. Vivian, Esq., of Claverton Manor, Bath, for Statice Holford.
8. To Mr. Francis, of Hertford, for a collection of Roses on Manetti stocks.
9. To Mr. Roser, Gardener to J. Bradbury, Esq., F.H.S., for 6 Fancy Pelargoniums in 8-inch pots.
10. To Mr. Bragg, of Slough, for 12 Pinks in 8-inch pots.
11. To Mr. Turner, of Slough, for 12 Pansies in 8-inch pots.
12. To Mr. Jackson, Gardener to G. Beaufoy, Esq., of South Lambeth, for Grapes in pots.
13. To Mr. Spivey, Gardener to J. A. Houlton, Esq., F.H.S., for Black Hamburg Grapes.
14. To Mr. Hill, Gardener to R. Sneyd, Esq., F.H.S., for Black Prince Grapes.
15. To the same, for Elvage Nectarines.
16. To Mr. Alport, Gardener to H. Akroyd, Esq., of Nantwich, Cheshire, for Muscat Grapes.
17. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Trentham, for Noblesse Peaches.
18. To Mr. Smith, of Twickenham, for British Queen Strawberries in pots.
19. To the same, for a dish of British Queen Strawberries.
20. To Mr. Harrison, of Oatlands Palace Gardens, for a dish of Keens' Seedling Strawberries.
21. To Mr. Tegg, Gardener to A. Pryor, Esq., F.H.S., for a King's Green-fleshed Melon.

## THE SILVER BANKSIAN MEDAL.

1. To Mr. Green, Gardener to Sir E. Antrobus, Bart, F.H.S., for 6 species of Exotic Orchids.
2. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of Helichrysums.
3. To Mr. Watson, Gardener to Mrs. Tredwell, of St. John's Lodge, Norwood, for Erica Cavendishii.
4. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for *Leschenaultia formosa*.
5. To Mr. Turner, of Southgate, for 12 Alpine Plants.
6. To Messrs. E. G. Henderson, of St. John's Wood, for *Dictyanthus Pavoni*.
7. To Mr. Ivison, Gardener to the Duke of Northumberland, F.H.S., at Syon, for Tropical Fruits.
8. To Mr. Willmer, of Sunbury, for 12 Pinks in 8-inch pots.
9. To Mr. Bragg, of Slough, for 12 Pansies in 8-inch pots.
10. To Mr. Constantine, Gardener to C. Mills, Esq., of Hillingdon, for Black Prince Grapes.
11. To Mr. Brocktrot, Gardener to W. L. Gower, Esq., F.H.S., for Muscat Grapes.
12. To Mr. Hill, Gardener to R. Sneyd, Esq., F.H.S., for Noblesse Peaches.
13. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Trentham, for Elvage Nectarines.
14. To Mr. Ironmonger, Gardener to S. R. Heseltine, Esq., F.H.S., for a dish of British Queen Strawberries.
15. To Mr. Mann, of Isleworth, for a dish of Keens' Seedling Strawberries.
16. To Mr. Robertson, Gardener to Lady Emily Foley, of Stoke Edith Park, Hereford, for a Golden Queen Melon.

## THE CERTIFICATE OF MERIT.

1. To Mr. Busby, Gardener to J. Crawley, Esq., F.H.S., for 6 species of Exotic Orchids.
2. To Messrs. Veitch, for a collection of Helichrysums.
3. To the same, for *Cattleya Mossiae*.
4. To Messrs. Pamplin, for *Epiphyllum cereolum elegans*.
5. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for *Warrea discolor*.
6. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for *Cypripedium humile*.
7. To Mr. Dobson, of Isleworth, for 12 Pansies in 8-inch pots.
8. To Mr. Constantine, Gardener to C. Mills, Esq., of Hillingdon, for a dish of British Queen Strawberries.

## CINERARIAS.

EDWARD GEORGE HENDERSON AND SON, Wellington Road, St. John's Wood, London, are now prepared to book orders for SEED of the above, which will be forwarded in 2s. 6d. and 5s. packets. The Cinerarias are saved from the best named varieties, and will be ready after the 20th of June, and the Calceolarias the end of July.

E. G. H. & S. also beg to say that the varieties of Calceolarias from which the Seed is saved can be seen in full flower at the Nursery.

## LEUCOJUM AUTUMNALE.

MESSRS. WILLMOTT AND CHAUNDY, SEED-GROWERS AND NURSERYMEN, Lewisham, near London, beg to offer Bulbs of this rare and elegant little flower, at 2s. 6d. per dozen. They can be sent by post, and a remittance in postage stamps to the amount of the order given will be expected from unknown correspondents.

## The Gardeners' Chronicle.

SATURDAY, JUNE 18, 1853.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	June 20	{	Royal Botanic Gardens (American Plant Show).....	2 P.M.
			Chemical .....	8 P.M.
			Statistical .....	8 P.M.
TUESDAY,	—	21—	Linnean .....	8 P.M.
WEDNESDAY,	—	22—	Microscopical .....	8 P.M.
THURSDAY,	—	{	Royal Soc. of Literature .....	8 P.M.
			Numismatic (Anniversary) .....	7 P.M.
FRIDAY,	—	24—	Pathological .....	8 P.M.
SATURDAY,	—	25—	Royal Botanic .....	3 P.M.

CONVENT SHOWS FOR THE ENSUING WEEK.—21st: Scottish Fanny (Dunfermline), Thornbury, and Great Marlow.—22nd: Colchester. 23rd: Maidstone, Chichester, Aylesbury, Salisbury, and Bath.—24th: Newbury.—25th: Staines.—26th: Meath, and Handsworth.—30th: Isleworth, Liverpool, Thame, and Ireland Royal Horticultural.

The second meeting of the HORTICULTURAL SOCIETY took place last Saturday, at Chiswick. The day was one of the best possible in England: the sun shone brightly but fitfully, the flowers sparkled, and the air, as it warmed, was filled with their fragrance; while the still unsullied verdure of the gardens, which had now acquired its full development and deepest tone, formed the richest possible frame to the brilliant picture. The number of visitors was 7044, among whom was as usual a very large number of persons of distinction.

The greatest novelty was a dark-green evergreen bush, called *Philisia buxifolia*, imported from South Chili, by Messrs. VERRON. It was just producing, for the first time, its crimson bell-shaped flowers, which promise to render it a valuable acquisition, if, as is believed, and as it has proved at Exeter, the plant should be found perfectly hardy. There was also a pretty New Holland Oxycob from Messrs. OSBORNE & Co., of Fulham, and one or two other plants of minor note.

Roses were in perfection; no longer, however, small straggling bushes, as they have usually been, but stately, erect specimens, loaded with flowers, as if in the open ground. Greenhouse and stove plants were still defective as regards variety and novelty, but as examples of cultivation unsurpassable. A *Coleonema rubrum*, from Mrs. LAWRENCE, was especially admired for graceful form, and the most ample development. Examples, too, of Heaths, were not uncommon, which 20 years since would have been believed to be fabulous. As to Orchids, we have exhausted ingenuity in the endeavour to find sober terms expressive of their beauty, and we can only now declare that they leave nothing to be accomplished by mere cultivation; one of the Saccolabes was a living fountain, gushing with streams of glittering blossoms.

The fruit growers have evidently decided upon showing that they are not in skill behind their floral competitors in any branch of their art except Pine Apples, none of which called for remark. The Grapes were quite admirable; and no such Strawberries as those from Mr. SMITH, of Twickenham, have been seen since the day when the Speaker of the House of Commons astonished the world by the produce from his garden at Heckfield. Never up to the present time had such Muscats been shown in June as came from Mr. Peto's place in Suffolk; they would have been regarded as very fine specimens for October. Nor should the Frontignans or Black Hamburgs and the Grapes in pots be passed over without special mention in this place.

Upon looking at the entries on this occasion, we find that 79 persons produced 185 different subjects of exhibition, and that 124 medals were awarded; so that it would appear as if each exhibitor received rather more than a medal and a half; or, if we express the result in money, that about 320l. were given away in prizes, so that each exhibitor received something more than 4l. But this is very far from the fact; the number of exhibitors receiving prizes having been in reality 64, and 15 having been nowhere. Nor can any useful average of the sums received by each be struck, in consequence of the great variety of medals contended for and won. For instance, one exhibitor (Mrs. LAWRENCE) gained 7, one (Mr. TAYLOR) 6, one (Mr. GREEN) 5, five 4 each, seven 3 each, and sixteen 2 each. And the value of the prizes was as different as the numbers, one exhibitor (Mrs. LAWRENCE) having gained 46l., and two of the double prize men only 2l. 5s. And so it must always be; great winners, small winners, and losers making up all such competitions.

In a critical notice of the Paris May exhibition of the Imperial Horticultural Society, a French reviewer complains of the undue profusion of medals there awarded, and compares it to the prizes distributed in a children's school. It appears, however, that only 111 medals were given away by the



Imperial Society among 106 exhibitors, so that profusion, if profusion there be, is on the English, not the French, side. It is, however, conceivable that the awards may have been the reverse of profuse; for the show is represented by the same authority as having been a very fine one, and it is by no means impossible that everything exhibited may have deserved some mark of recognition. Such at least was the case last Saturday, with a very few exceptions.

We have to announce, for the information of the subscribers to the Scotch expedition to Oregon, that the Edinburgh committee have just received a parcel of seeds, among which are *Abies nobilis* and *Pinus ponderosa*, *monticola*, and *Pattoniana*, in apparently good condition. We have ourselves seen cones of three new species of Pines in this collection, but we are not informed whether there are seeds of them or not.

### GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE Anniversary Festival of this Charity was celebrated on Monday last, at the London Tavern, under the chairmanship of SAMUEL LAING, Esq., M.P., who was supported by more than 100 distinguished patrons and friends of the Society.

The tables, as on former occasions, were decorated with a profusion of the choicest flowers, and the dessert (contributed by some of the most eminent gardeners in the country), was of the highest character. It is only due to the proprietors of the establishment to state that the dinner and wines were in complete accordance with the above elegant and agreeable accessories. Conducted in this tasteful and liberal manner, the annual dinner of this Institution has already become a feature of the season; and its recurrence will be looked forward to with greater pleasure as the Society and its operations are more widely known.

After the usual manifestations of devoted loyalty—the health of the Queen being proposed as Patroness of the Institution—the Chairman gave “the Army and Navy,” observing that sitting, as they literally did, under the shadow of their vines and fig-trees, in peace and tranquillity, amidst those rumours of wars which vexed the political horizon, it was incumbent upon them to remember the gallant services to which they were indebted for the blessings of peace.

CAPTAIN VERNON HARCOURT, R.N., and GENERAL SIR JOHN WILSON replied to the toast; the former contrasting the present peaceful aspirations of society with the belligerent tendencies of his own early days; when, promotion being the only object sought, the standing toast among the officers of the Navy was “A bloody war and a sickly season.”

The Chairman then proposed the health of his Grace the Duke of Devonshire, the President of the Institution, which was received with great applause. That applause, the Chairman observed, was a gratifying and peculiar symptom of the present times, and of the links which bound together the different orders of British society; and certainly, among the many illustrious members of the aristocracy, no one could be more entitled to their regard than the Duke of Devonshire. His Grace had employed the opportunities afforded by his exalted station for the good and satisfaction of the great mass of his fellow countrymen; and had thereby done much to promote those happy and harmonious feelings which had excited so beneficial an influence on all classes. (Cheers.) He had hoped that his distinguished friend Sir Joseph Paxton would have been present to acknowledge this toast, but he had received a letter from him stating that an unexpected engagement in the north, very much indeed to his regret, had rendered it impossible for him to be present. He felt that there was a peculiar connection between the names of the Duke of Devonshire and Sir Joseph Paxton; and future history would say of those eminent individuals, that while the latter had shown that in the humble ranks of British industry there might lurk the genius of a Michael Angelo or a Raffaele, we did not lack the spirit of a Mæcenas or a Medici to patronise that genius. (Loud cheers.)

The Chairman in proposing “Prosperity to the Gardeners' Royal Benevolent Institution,” explained briefly the origin of the Association in 1838, in the charitable feelings of a few individuals, who founded it upon the principle of encouraging habits of self reliance and prudent forethought. Among its peculiar features were those by which a subscriber of 15 years' standing was entitled to a pension, in preference to other candidates; by which the widow of the pensioner was entitled to take his place without trouble or expense. The pension to old and necessitous gardeners was 16s. per annum, and to the widows of gardeners 12s. In 1851 the success of the Society was established, for in that year the Duke of Devonshire, acting on the suggestion of Sir Joseph Paxton, who had taken a warm interest in the Society throughout, mentioned its existence and operations to her Majesty, who at once gave it the sanction of her name, with a donation of 50l. Its prosperity since could, however, only be looked upon as a commencement, for considering the very large number of working gardeners, whose wages enabled them to lay up for old age, it was evident that the number of pensioners now upon the funds 33, though considerable in itself, was quite inconsiderable in comparison to the results they might soon hope to achieve.

Proceeding to more general observations, he might say that there had on that occasion been merely been engaged in the enjoyment of a good dinner, and an agreeable evening, but they had done a great deal more, because he believed that the practice of holding public dinners in celebration of a charitable object really played no inconsiderable part among the institutions of the country. The happy union of all classes which strongly marked the present age, as contrasted with a time within his own remembrance, was greatly promoted by public dinners, at which men of all classes and conditions, from the wealthy and the noble, to the men who, by the honest labour of their hands, or by the equally arduous labour of the brain and the pen, had raised themselves from a humble sphere, met at the same board, on terms of the most perfect and unassuming equality, and worked together for the common good. It was not a little remarkable that this blending of all classes had occurred at the very time when the lower classes had been rising in the scale of that knowledge which was power; and when the democratic elements of society were extending themselves most rapidly. At such a time the superficial observer would apprehend the greatest danger to the throne and the aristocracy; but on the contrary, there was now more loyalty and less party strife and animosity than in any former period of British history. (Cheers.) Public dinners, therefore, as promoting this result, were of great importance. He had himself remarked the astonishment of intelligent foreigners at the effect of such assemblies; and it had indeed been remarked that while the constitution of France might be called a despotism tempered by songs, the British constitution consisted of a monarchical government cemented by public dinners. (Cheers.) These remarks applied to all public festivals; but their own especial object was to bring a sort of triumph song in honour of the noble and beautiful science of horticulture. One of the claims of that science to support was its antiquity, which would always have its weight among a people so conservative, in the best sense of the word, as the British people. Our first parents were described by Milton as engaged in the cultivation of those very fruits which graced

the board this day. Another of the claims of horticulture was its universality. It carried pleasure and enjoyment into the loftiest and the humblest homes. Passing by railway among the roofs of the poorer parts of London, amongst a chaos of bricks and mortar—a region reminding the spectator of Dante's “Inferno,” where hope and joy were abandoned for ever—nothing could be more striking than to perceive at the lattice windows of the lowliest abodes a Geranium blooming, or some other symptom of a taste for the beauties of creation, which could only be indulged by those classes through the medium of the gardener's art. That art was essentially English. In no part of the Continent, excepting, perhaps, in Holland, was anything to be found at all resembling the neat and trim enclosures which surround our labourers' cottages. The gardener was an enemy to all slovenliness and disorder; the same feeling was characteristic of the British nature; for, whatever Englishmen did, they did it well and thoroughly; and the same principle which in gardening led to neatness, symmetry, and order, in the greater arts of commerce and manufactures, had contributed to the unrivalled grandeur of England as a nation. (Cheers.) The universality of the gardener's art was also shown by the permanence with which it retained its hold of the affections to the last. The man who in early life had been fond of gardening, although immersed for a time in the struggles and competitions of daily life, always returned with delight to his natural taste for horticulture. Our exhibitions of fruits and flowers enjoyed perennial popularity, notwithstanding all our fancy for occasional exotics. At one time the public might indulge the whim of breeding Cochon China fowls; at another a polka mania might seize them, and old and young, grave and gay, were turning round to the sound of the cornet-piston;—next year, instead of turning themselves, they might set their chairs and tables turning (laughter); but however they might indulge in such harmless fancies, they always came back in the long run to gardening, as a subject they could never exhaust. (Cheers.) The range of gardening was of the widest character; with the example of Sir Joseph Paxton before him, he was justified in saying, that on the one hand it approached the confines of the highest art. In the gardens that surround the Crystal Palace they would next year have an opportunity of seeing the height to which the science of gardening could attain, for there, under the auspices of Sir Joseph Paxton, it would be elevated into the dignity of a Fine Art. On the other hand, he had only to turn to his friend Mr. Mechi (cheers), to show that the agriculturists might take a leaf out of the gardener's book. Agriculture must always be the mainstay of this country, but to be carried on successfully it must be conducted with the care, the assiduity, and the minute attention of the gardener. (Cheers.) The science, therefore, ranged from the heights of Parnassus to the depths of Tiptree Hall Farm. (Cheers.) The great movement of the present day was towards the education and improvement of the working classes. Now the profession of gardening might be selected as at the head of those adopted by working men; and without wishing, as a Scotchman, to say anything invidious, he might add that a Scotch gardener was the *beau ideal* of a working man. How important, therefore, was it that the working gardener should set an example to other working men in the mainspring of independence—that self denial and economy which enabled them to make provision for their support in old age. The great discoveries of California and Australia had removed many of the physical difficulties from the labourer's path; he hoped the day would never be seen again when a man would seek for profitable employment without being able to obtain it; but the great thing needed (and in which this Society would prove most beneficial) was to instil into the minds of the working gardener the conviction that prudence and economy were virtues of the highest order. (Cheers.) Succeeding as he did most inadequately the gifted chairman of the last anniversary (Mr. Charles Dickens), he trusted, nevertheless, that his inferiority would not be felt in the diminution of their subscriptions. In supporting that Institution they were sowing a good seed, which would in due time spring up and bear fruits which none of them could at present contemplate. Thanking the company for their indulgence, he would at once propose the toast “Prosperity to the Gardeners' Royal Benevolent Institution.” (Great applause.)

The Hon. Mr. Justice HALBURTON proposed the health of the chairman. Visiting England as he did only at intervals of about 10 years, he was always astonished at the number of institutions, literary, scientific, humane, religious, practical, and experimental, which adorned the metropolis; and amongst these he had derived as much satisfaction from the Gardeners' Benevolent Institution as from any. The gardeners were students of Nature; he had studied Nature in mankind; others preferred to study the wild animals in the Zoological Gardens, or those in a certain menagerie of which the Chairman was a member, and where the bull-baiting and gladiatorial of political legislation might be constantly witnessed. (Laughter.) He had witnessed the assembly of 12,000 persons at the Botanic Gardens in the Regent's Park, and the magnificent objects which attracted them,—and who had done this? The Gardeners. Considering the benefits conferred upon the community by the gardeners, and the advantages of this Association, he regarded the title as a misnomer; it should have been called a society for promoting the taste, enlarging the mind, and refining all classes of society. (Cheers.) The Chairman was connected with the new Crystal Palace. (Hear, hear.) Who had raised the Crystal Palace in Hyde Park, and was about to raise its successor? Not an architect but a gardener. (Cheers.) All honour to that distinguished man, and all success to his undertaking; and might it be hoped that there would be no disposition to prevent the poor of this country visiting it. (Applause.) He had confidence in the good sense and good feeling of the lower orders of society everywhere. Trust them, and confide in them, and they would repay that trust and confidence by respecting themselves; but if they were baricaded with the terrors of the law, and threatened with man-traps and spring-guns, what could be expected of them but brutality. (Cheers.) His sympathy was for the poor, who were compelled to toil; and as God shall give them a seventh day of rest, that portion of it not devoted to his worship should be devoted to the refreshment of the body and the improvement of the mind, in breathing the fresh air, and contemplating the glories of nature and of art. (Loud cheers.) The Chairman, as a promoter of the Crystal Palace, and as the advocate of this Society, deserved their gratitude, and therefore he most cordially proposed his health. (Cheers.)

The CHAIRMAN, in acknowledging the toast, said that if he had before had occasion to regret the comparison between himself and the Chairman of last year, he must feel more desirous to put back the hand of time for twelve months, and to restore the former president, whilst he himself might sit by to hear “Boz” assure “Sam Slick” of the welcome he so highly merited. Although indebted to the task, he could assure them that on the part of the present company, that given as sound sterling common sense and humour were dear to the hearts of Englishmen, so long the books which he had written would be “Household Words” in the home of every Englishman. (Cheers.) As regarded their kind reception of the toast, he believed it was to be attributed mainly to the position which he occupied as chairman of the Crystal Palace Company; and he might be allowed to say, that having passed an active and busy life, and being placed in many important capacities, there was no capacity in which he stood that he could look upon with so much unmixed satisfaction as that of chairman of the Crystal Palace Company. (Loud cheers.) As a member of that menagerie to which he had made allusion, he must confess that, although there were beasts there who roared and asses who brayed, there were nevertheless noble hearts and gifted minds, devoted to the good of the people, and therefore he felt it a pride and an honour to be a humble and unworthy member of that assembly. (Cheers.) However, he would rather be viewed in connection with the Crystal Palace. Those occupations in life which brought the most satisfaction

were always those upon which our exertions were made disinterestedly, and for the good of our species. He had worked in common with other directors in many public companies, both from public and private motives, to get money and acquire fame, but in the Crystal Palace Company he might say honestly, for himself and the other directors (and in the presence of one of them, Mr. Anderson), that they one and all of them had promoted it from a pure and disinterested desire to elevate the condition of the working classes. (Great applause.) Their efforts, however, would have been in vain but for the pre-eminent genius of his friend Sir Joseph Paxton. The attempt would be eminently successful; it would be an era in the history of the country; and for that result the public were mainly indebted to the genius which had been raised up among the working gardeners of this country—the genius of the great Sir Joseph Paxton. (Loud cheers.) He begged to return thanks for the honour they had done him, and hoped early next year to have the honour of meeting them in the most beautiful garden ever created in this world,—the garden of the Crystal Palace. (Renewed cheering.)

Mr. JAMES THOMPSON proposed the health of Mr. Justice Haliburton, or, as the Romans distinguished their heroes by their achievements rather than their names, of Mr. Samuel Slick, of Slickville. (Cheers.)

Mr. JUSTICE HALBURTON briefly replied. As an old lawyer he felt how much more difficult it was to speak for himself than for others; and, moreover, appreciated the lawyer's proverb, that “he that pleads his own cause has a fool for his client.” (Cheers.)

The CHAIRMAN proposed the health of Mr. CUTLER, the Secretary, who acknowledged the compliment, and read a list of subscriptions; amounting in the whole to about 250l, including the following names:—

	£	s.		£	s.
The Duke of Devonshire,	21	0	Capt. Harcourt, R.N.	10	10
K. G.	21	0	Henry G. Bohn, Esq.	10	10
S. Laing, Esq., Chairman	21	0	Messrs. Lee	5	5
A. Anderson, Esq., M.P.	10	10	J. J. Blandy, Esq.	5	5
Sir Joseph Paxton	10	10	J. J. Mechi, Esq.	5	5
Right Hon. L. Sullivan	10	10	H. B. Ker, Esq.	5	5
Lewis Loyd, Esq.	10	10	Messrs. Wrench and Son	5	5
Joseph Masterman, Esq.	10	10	T. Grissell, Esq.	5	5
Sigismund Rucker, Esq.	10	10	James Thompson, Esq.	5	5

### Home Correspondence.

*Wearing-out of Fruit Trees, &c.*—Mr. Masters' observations on this subject, I think, go strongly to corroborate the Knightian theory, and confirm my belief in its correctness, let physiologists say what they may. In a controversy which sometime ago occupied a part of your Paper (and in which I took some small share), about the propriety of pruning timber trees, I uniformly avoided the physiological question, and founded my remarks on palpable Nature and observation. In adopting the theory of Knight respecting the wearing-out of certain varieties of fruit trees, Mr. Masters has, I think, wisely done the same. Some 25 or more years ago I was hard pressed to procure and cultivate what once was a very celebrated Pink—among florists its cognomen was “Leuchar's Defiance.” All efforts to get it proved abortive; in short, the sort had become extinct. This led to reflection, which resulted in the belief that Leuchar's Defiance had reached the natural period of its existence, and had disappeared like all mortal things. Subsequently an aged clergyman from Suffolk paid me a visit; he was a great admirer of the Carnation, and among other matters, he gave me the history of a very remarkable one he had raised from seed. It was greatly admired by his friends, and was widely distributed among them; after a series of years, one lost it, and another lost it, and renewed applications were made for it, till ultimately it was found to be extinct. These I take as proofs of the correctness of Mr. Knight's theory—that the date of any tree is to be reckoned from the time it germinated from a seed; that all multiplication by grafting or otherwise is no more than a continuation of the original life, and when the original seedling tree reaches its natural period of existence, all its progeny by grafting will follow to the tomb of the Capulets. Now take the case of a Picotee, for instance. I happen to raise a fine seedling, and call it *Quercus' Incomparable*; all the floral world admire and procure it by the ordinary means of multiplication. But look at the original plant; common sense and a moment's reflection on its fragile substance will tell that it never was in nature that it should endure for ever; and so of trees, from the nearly extinct Golden Pippin to the Cedar of Lebanon. Seed is the true originator, and hence the necessity for new varieties of fruits to fill the places of old and justly admired kinds, whose loss we may lament, but we cannot restore them. *Quercus*.—Will you allow me to correct an error. In my late communication, you have printed (speaking of men of science) for I know them, honour them was my word, William Masters, Exotic Nursery, Canterbury.

*Fig Trees*.—I have a large Fig tree which has been planted for some years against the end of a building with a south aspect, and it has ripened its fruit perfectly well until two years ago, when I built a Vinery in front of it, retaining the Fig on the back wall, so as perfectly to enclose it. Since then it has thrown out long succulent branches, three times their previous length, and it produces no fruit. Is there any remedy for this? *J. G. Ipswich*. [Yes; taking off the glass roof, except in the hot weather of autumn when the fruit is ripening, and in winter when shelter is wanted.]

*Rhubarb Wine*.—The readers of your Paper must feel obliged to Mr. Cuthill for his numerous contributions; but in the article of Rhubarb wine, I must beg leave to set him right, because in his directions for making it, he does not proceed on scientific or chemical principles. By the process he recommends, there is no certainty of obtaining a liquor always of the same quality. The whole art of wine making consists in the proper management of the fermentation process; the same quantity of fruit, whether it be Rhubarb, Currants, Gooseberries, Grapes (unripe), leaves, tops and tendrils, water and sugar will produce two different kinds of wine, by



*Early Peas.*—Your correspondent "F. D." must have been much disappointed, after being charged 11s. for about a pint and a half of Peas, to find them not eatable. Being in town lately, I called at Covent Garden, and inquired the price of Peas, and found 5s. per quart were asked for what I considered almost miserable

<i>Aphelaxis macrantha</i>	<i>Ixora crocata</i>
" <i>purpurea</i>	<i>Azalea variegata</i>
<i>Draconophyllum gracile</i>	" <i>praestantissima</i>
<i>Leuchtenaultia Baxteri</i>	" <i>coriata</i>
" <i>formosa</i>	<i>Erica Cavendishi</i>
<i>Allamanda nerifolia</i>	" <i>Clowessiana</i>
<i>Polygala cordifolia</i>	<i>Dillwynia ericifolia</i>
" <i>oppositifolia</i>	<i>Tetradlea verticillata</i>
" <i>Dalmatiana</i>	<i>Hoya bella</i>
<i>Ixora coccinea</i>	<i>Acrophyllum venosum</i>

HELICHRYSUMS were exhibited by Mr. May, Mr. Green, Mr. Taylor, and Messrs. Veitch. The varieties consisted of *Aphelexis spectabilis*, *S. grandiflora*, speciosissima, *rupestris*, *purpurea grandiflora*, *macrantha purpurea*, *in. rosea*, *humilis*, *retorta*, *sesamoides*, *s. purpurea*, *s. superba*, and *s. rosea*. Among the above



the best is certainly *macrantha purpurea*, a deep red kind, and said to be more easily managed than some of the less handsome sorts.

**ORCHIDS.**—These were again exhibited in great quantities, and proved, as they always do, one of the greatest attractions of the day, being scarcely second in this respect to the fruit, opposite which the crowd was, as all who were there know, dense and continuous during the whole afternoon. In collections of 20 plants Mr. Franklin, gr. to Mrs. Lawrence, received the highest award for—

<i>Aerides crispum</i>	<i>Saccolabium prismosum</i>
" <i>affine</i>	" <i>guttatum</i>
" <i>odoratum</i>	<i>Phalenopsis grandiflora</i>
" <i>roseum</i>	<i>Sobralia macrantha purpurea</i>
<i>Cattleya Mossiae</i>	<i>Trichopilia tortilis</i>
<i>Dendrobium caeruleum</i>	<i>Phaius Wallichii</i>
" <i>secundum</i>	<i>Odontoglossum citrosum</i>
<i>Oncidium Papilio</i>	<i>Stanhopea oculata</i>
" <i>flexuosum</i>	<i>Anguloa Clowesi</i>
" <i>pulvinatum</i>	<i>Vanda Batemanni</i>

More beautiful plants than all the above could scarcely be wished for. We learned from Mr. Franklin that they had been wintered on the dry and cool system, scarcely a drop of water having been given them all the winter, and the temperature of the house never being higher than 55°. The most striking plant in the group was doubtless the Moss *Cattleya*, which was covered all over with blooms that were matchless for uniformity and delicacy of colouring. Indeed, there was not an ill-shaped or bad flower on the whole plant, and they looked all the better for belonging to one of those varieties that have almost as much orange as purple in the lip. Next to this, *Sobralia macrantha* was most admired; its numerous large purple flowers being very showy. Among *Aerides*, there was a good example of *odoratum*; but by far the handsomer of the two on this occasion was *A. affine*, whose multitudes of pendent spikes of rosy purple flowers falling in thick succession one above the other had a charming effect. *Dendrobium caeruleum*, and *Phaius Wallichii* were both fine plants; *Dendrobium secundum* was highly coloured; the *Stanhopea* was well flowered; and the three yellow Tulip-like flowers of the *Anguloa* did not escape observation. Altogether, this collection well deserved the Gold Medal which was awarded it.

The next group in point of merit was furnished by Mr. Williams, gr. to C. B. Warner, Esq., and contained,

<i>Aerides odoratum</i>	<i>Saccolabium prismosum</i>
" <i>purpurascens</i>	" <i>guttatum</i>
" <i>crispum</i>	<i>Phalenopsis grandiflora</i>
" <i>Larpenae</i>	<i>Sobralia macrantha</i>
" <i>maculosum</i>	<i>Trichopilia suavis</i>
<i>Cattleya Mossiae</i>	<i>Cypripedium Lowi</i>
" <i>intermedia</i>	" <i>barbatum</i>
<i>Dendrobium nobile</i>	<i>Calanthe masuca</i>
<i>Oncidium ampliatum</i>	" <i>veratrifolia</i>
" <i>guttatum</i>	<i>Burlingtonia venusta</i>

The Low Lady's Slipper (*Cypripedium Lowi*), though not new, was, nevertheless, perhaps the greatest novelty in this collection; but it was not so fine as the example of it that was shown by Mr. Williams in May. *Dendrobium nobile* was a good plant; *Cattleya intermedia* was well flowered; it was the best variety, viz., the sort having the deep purple lip. The most striking plants, however, were the *Aerides* and the *Calanthes*; indeed, it is seldom one sees *C. masuca* so well flowered as it was on this occasion, although near half the spikes had not expanded; the white-blossomed one, too, had near a dozen and a half of flower-spikes on it. The spotted *Saccolabe* was also in beautiful condition, having six glorious racemes of flowers just in perfection, each raceme measuring more than a foot in length; and there was a fair example of the Spotted *Oncid*, which is a good cinnamon-brown flowered kind.

In collections of 15 Orchids Messrs. Rolleston showed

<i>Aerides virens</i>	<i>Saccolabium guttatum</i>
<i>Cattleya Mossiae</i>	<i>Phalenopsis grandiflora</i>
" <i>Aelandae</i>	<i>Sobralia Galeottii</i>
<i>Dendrobium clavatum</i>	<i>Vanda teres</i>
" <i>transparens</i>	" <i>tricolor</i>
" <i>nobile</i>	<i>Brassia verrucosa</i>
<i>Oncidium ampliatum majus</i>	<i>Cyrtocidium stellatum</i>
" <i>spheculatum</i>	

The most showy plants in this group were *Oncidium spheculatum*, and the clear yellow *ampliatum majus*, the *Dendrobium nobile*, and the *Sobralia*, but the latter wants the fine purple of *macrantha* to set it off to equal advantage with the fine kind just named. *Cattleya Mossiae* had an unusual amount of colour in it, and the bright-yellow dark-eyed *Dendrobium clavatum* was worthy of the notice it received. *D. transparens*, though not showy, is a neat kind for small collections. *Cyrtocidium stellatum* is also very useful, on account of the numberless upright flower-spikes it throws up, each being thickly set with pale straw-coloured blossoms, having a white lip; and last, but not least, was the large white Butterfly-plant (*Phalenopsis grandiflora*), which was certainly the best specimen of the kind at the whole show. It was exhibited to much advantage, leaning forward towards the visitors on a suitably elevated wooden support.

Messrs. Veitch, who were second in this class, had—

<i>Aerides virens</i>	<i>Saccolabium prismosum</i>
<i>Cattleya Aelandae</i>	" <i>guttatum</i>
" <i>Mossiae</i>	<i>Phalenopsis grandiflora</i>
<i>Dendrobium Devonianum</i>	<i>Sobralia macrantha superba</i>
" <i>tortile</i>	<i>Laelia purpurata</i>
<i>Oncidium ampliatum majus</i>	<i>Cypripedium barbatum</i>
<i>Vanda suavis</i>	

The remaining portion of this collection consisted of two unnamed *Aerides*. The Moss *Cattleya* in it was very finely flowered, and the white blossoms of *Dendrobium tortile*, with their pale primrose lip, were not unattractive. The *Vanda suavis*, although the same fine plant that was shown in May last, was still in per-

fection, proving it to be a species that keeps long in beauty. The charming *Dendrobium Devonianum*, elevated on a pedestal set in a pot, was much admired; although it was hardly so fine as we have seen it from the same firm at former shows. *Laelia purpurata* with purple trumpet-shaped lip, the rest of the flower being white, is a magnificent species which commanded much attention; and lastly we may mention that not the least interesting among the rarities in this collection was the *Aeland Cattleya*, with its green brown barred flowers with purple tipped lip. This is a dwarf species which, though not possessed of gay and striking colouring, is nevertheless very beautiful, and will doubtless be always a favourite. It is, however, not the most easy kind to manage.

In groups of 10 Orchids Mr. Blake, gr. to J. H. Schröder, Esq., was first with—

<i>Aerides crispum</i>	<i>Phalenopsis grandiflora</i>
<i>Cattleya Mossiae</i>	<i>Calanthe veratrifolia</i>
<i>Oncidium ampliatum majus</i>	<i>Laelia cianarina</i>
<i>Saccolabium prismosum</i>	<i>Cypripedium barbatum</i>
" <i>guttatum</i>	<i>Phaius Wallichii</i>

This was a very good collection. The *Laelia*, though the same fine plant that was shown by Mr. Blake, last May, was still in great perfection. The Lady's Slipper (*Cypripedium*), had upwards of a dozen and a half of flowers on it. The *Saccolabes* were also well bloomed, and so was *Aerides crispum*, though it was not so highly coloured as some. The *Phalenopsis* was likewise a good example of that most useful plant.

Mr. Carson, gr. to W. F. G. Farmer, Esq., who gained the second prize, sent

<i>Aerides odoratum</i>	<i>Epidendrum aloifolium</i>
<i>Cattleya Mossiae</i>	<i>Acineta Humboldtii</i>
<i>Dendrobium moschatum</i>	<i>Odontoglossum citrosum</i>
<i>Saccolabium guttatum</i>	<i>Cologyne asperata</i>
<i>Phalenopsis grandiflora</i>	<i>Cyrtocidium stellatum</i>

The "lion" of this group was undoubtedly the *Humboldt Acineta*, whose numerous spikes of brown spotted flowers protruding through the bottom and sides of the square wire basket in which it was growing, excited universal attention. The Musk *Dendrobium* was also a fine specimen of the kind, being large and tolerably well flowered. The *Cattleya* had more orange in its lip than is usually found in even the best varieties of that species. The flowers of the *Odontoglossum* were large and fine; but they were destitute of that delicate pink tinge which, when found in them, sets them off to so great advantage.

Collections of 6 Orchids were produced by Mr. Woolley, Mr. Iverson, Mr. Kinghorn, Mr. Green, and Mr. Busby. Among these were *Aerides crispum* and *odoratum*; *Barkeria spectabilis* (very good), *Saccolabium guttatum* (fine specimen), *Cattleya Mossiae*, *intermedia* and *Forbesii*; *Brassia verrucosa*, *Wrayae*, and *maculata*; *Dendrobium Pierardi*, *latifolia*, and *nobile*; *Oncidium ampliatum majus* and *Baueri*, *Epidendrum macrochilum* and *crassifolium*; *Phalenopsis grandiflora* and *Calanthe veratrifolia*.

We ought to remark that the *Brassia maculata* mentioned above was the true kind, which is very rarely to be met with, and very different from the sort which commonly goes under that name. It came from his Grace the Duke of Northumberland, at Syon.

Of SPECIMEN ORCHIDS, Messrs. Veitch contributed a beautiful example of *Cattleya Mossiae*, finely grown and well flowered; and Mr. Busby had a good *Dendrobium nobile*.

The only rare Orchids which were thought worthy of reward were *Warrea discolor*, from Mr. Carson, and the pink-flowered hardy *Cypripedium humile*, from Mr. Woolley. Other kinds shown in this class consisted of a white *Maxillaria*, like *Harrisoniae*, from Mr. Woolley, and a so-called *Saccolabium* from Messrs. Veitch. The latter, however, did not appear to be very different from *Aerides maculosum*.

AZALEAS were again produced, but, as might be expected, they were much inferior to what they were in May. They were, however, far from being ineffective. Mr. May, gr. to Mrs. Lawrence, sent large well cultivated plants of *Gledstanesii*, *magnifica*, *lateritia*, *Coronata*, *Minerva*, and *optima*; Mr. Green, who was second, had *Minerva*, *variegata*, *praestantissima*, *optima*, *purpurea superba*, and *Gledstanesii*; Mr. Taylor sent a third group, consisting of *variegata*, *praestantissima*, *excelsa*, *optima*, and *lateritia*. Of newer kinds, in 8-inch pots, the last-named exhibitor contributed *Gledstanesii formosa*, a good variety; *Perryana*, still one of the best rosy-salmon kinds in cultivation; *Coronata*; *Juliana*, in the way of *Perryana*; *Grieswoodiana*, a salmon-pink; and *striata formosissima*, a purple-striped white; Mr. Kinghorn furnished *Exquisita*, a seedling, *Colorans*, *St. Margaret's*, *rosea punctata*, and *Perryana*; Mr. Roser produced *Grieswoodiana*, *dilecta*, *rosea*, *Celsi*, *maculata* (semi-double), and a kind named *extranea*.

Of tall Cacti, in flower, Mr. Green had *Cereus Mallesoni rosea*, *C. Egertonii*, *Epiphyllum rubrum ceruleum*; and the white *E. crenatum* and *speciosum elegans*. Mr. Pamplin had a handsome seedling called *Epiphyllum ceruleum elegans*, to which a Certificate of Merit was awarded.

RHODODENDRONS were this time confined to *R. ponticum coccineum* from Messrs. Ivory & Son, of Dorking, and another called *Lady Bridport*, a really handsome pink sort, from Mrs. Conway, of Earl's Court, Brompton.

ROSES in pots were again shown in admirable condition. Messrs. Lane, to whom the first prize was awarded, produced *Coupe d'Hebe*, in the form of a stately pyramid, nearly 5 feet high, and covered with perfect

blooms; associated with it was also the beautiful *Souvenir de la Malmaison*, large and fine, though slightly past its best; *Queen* was in perfection, and *Magna rosea* was nearly as tall and fine as the *Coupe d'Hebe* just mentioned. Others consisted of *Chéné-dolé*, *Duchess of Sutherland*, *Paul Ferras*, and other favourite sorts. Mr. Francis produced good specimens of *Junco*, a hybrid *China*, with delicate pink blossoms, having a rosy centre; *Coupe d'Hebe*, *Chéné-dolé*, *Baronne Prevost*, *Comte Boubert*, *General Allard*, *Paul Ferras*, *La Reine*, and *Le Pactole*. The latter had been fine; but having been long in blossom, its beauty had become a little tarnished. The blooms of *La Reine* were large and showy, but somewhat confused, a fault to which this variety is liable. In Messrs. Paul's group we remarked *Great Western*, a fine Rose, but apt to show a green eye; *Blairi No. 2*, *Caroline de Sausal*, a new and beautiful kind, with delicate pink flowers, having a rosy centre; *Madame Legras*, a good white, and others were furnished in good condition. In the amateur's class a fine group was contributed by Mr. Terry, in which were well-bloomed plants of *Baronne Prevost*, *Blairi No. 2* (scarcely out enough), *Chéné-dolé*, *Elise Sauvage*, *Coupe d'Hebe*, *Paul Ferras*, *Lamarque*, *Sophie de Marceilly*, *Trompe de Laqueue*, *Bougère*, and *Niphetos*. A collection from A. Rowland, Esq., comprised *Coupe d'Hebe*, in great perfection; *Augustine Mouchelet*, a pretty rosy crimson kind; *Auguste Mie*, *Paul Ricaut*, a very fine rose; *Baronne Prevost*, in capital order; and the yellow *Vicomtesse Decazes*. Mr. Francis received a silver Knightian medal for a nice collection on Manetti stocks in small pots; among them we noticed Paul's new *Queen Victoria*, and many good old sorts. Mr. Terry and Mr. Busby showed each 25 varieties of cut Roses, which, notwithstanding the heat of the day, kept in good condition, and were much admired.

CAPE HEATHS were numerous and well flowered; seldom have we seen such a fine collection as that which was contributed by Mr. May, gr. to Mrs. Lawrence. The plants were not only large and well bloomed, but they were grown in such a manner that their natural habits were distinctly brought out, a point for which we have been long contending, but which we have never seen fully realised until Saturday last. In this group the *Cavendish Heath* was not scrubbed and cropped in so as to form a stiff round bush like a tri-color; on the contrary, its luxuriant branches were permitted to grow free and unrestrained as Nature directed them, and the result was that so fine a plant of the kind as Mr. May showed is very rarely to be met with. The same remark applies to *Bergiana*, which was loaded with small round purple blossoms; *Westphalia*, *ventricosa breviflora*, *tricolor rubra*, *ventricosa grandiflora* (a fine variety), *v. hirsuta*, *perspicua nana*, and indeed to the whole collection, which furnished an example of good cultivation which we trust will not be lost on Heath growers in general. Messrs. Rolleston and Fairbairn also contributed fine collections, and some good plants in small pots came from Messrs. Roser, Watson, Pamplin, Taylor, and Smith. Among the different varieties we noticed *vestita coccinea*, *Beaumontia*, *mutabilis*, *ventricosa magnifica*, *v. grandiflora*, *metuliflora*, *depressa*, *tricolor Wilsoni*, *t. elegans*, *perspicua nana*, *elegans splendens*, *florida*, and other fine kinds. Mr. Epps had three seedlings well worth attention; their names were *jasmiflora major*, *tricolor elegans*, and *t. splendens*.

SINGLE SPECIMENS.—The best consisted of *Ixora alba*, a beautiful plant, though hardly in perfection, from Mr. May, gr. to Mrs. Lawrence; *Statice Holfordi* (Why not *macrophylla*?), from Mr. Mason, gardener to G. Vivian, Esq.; *Erica Cavendishi*, from Mr. Watson, gardener to Mrs. Tredwell; the *Cattleya Mossiae* and *Dendrobium nobile*, from Messrs. Veitch and Busby, already alluded to; and *Leschenaultia formosa*, from Mr. Carson. In addition to these there were also *Gompholobium polymorphum*, a fine plant, not on a trellis, but in the shape of a bush, from Mr. May; *Aphelexis sesamoides*, from Messrs. Veitch; and a good example of *Gardenia Stanleyana*, from Mr. Iverson—the beauty of the latter was, however, lost by the exposure and heat of the day causing its flowers to collapse.

Novelties consisted of the crimson bell-flowered *Philisia buxifolia*, alluded to elsewhere; *Lilium giganteum*, a fine specimen; an *Ixora* very like *Banhuca*; and a piece of a coarse white-flowered *Umbellifer*, called "Gulper," which was stated to be a Persian drug used in all Indian pickles, to give their peculiar flavour, from Messrs. Veitch; an orange-flowered *Oxycloe* from Messrs. Osborne, of Fulham; *Dictyanthus Pavoni* and a purplish blue *Scutellaria* from Messrs. E. G. Henderson, Wellington Road; and the *Warrea discolor* and *Lady's Slipper*, &c., mentioned under the head of Orchids.

A collection of miscellaneous plants, chiefly variegated, was furnished by Messrs. Rolleston. It consisted of various species of *Anectochilus* and *Physurus*, the red and white-veined *Marantas*, *Cheirostylis marmorata*, *Rhexia chrysophylla*, *Arum giganteum*, *Duranta Baumardi*, and other plants, some of which will be found described at p. 327. A beautiful collection of variegated Orchids was also furnished by Mr. Williams.

MISCELLANEOUS SUBJECTS comprised a branch of *Eucalyptus coccifera*, which is hardy in our midland counties, and the new pale yellow orange-eyed annual *Leptosiphon luteum*, from Messrs. Veitch; flowering plants of *Aquilegia glandulosa*, much damaged by travelling, from Mr. Grigor, of the Nurseries, Forbes, N. B.; a fine collection of Iris blooms, from Mr. Salter, Ver-



sailes Nursery, Hammersmith; and boxes of cut blooms of Rhododendrons and hardy Azaleas, from Messrs. Lane.

**HOTHOUSE FERNS.**—The following were shown, intermixed with Orchids, by Mr. Woolley, viz., *Adiantum foveolatum*, *formosum*, *cuneatum*, *concinnum*, *trapeziforme*, and *macrophyllum*; *Gymnogramma sulphurea*, *Goniopteris vivipara*, *Darea cicutaria*, and *Blechnum brasiliense*.

**ALPINE PLANTS** came from Mr. Turner, of Southgate; among them we remarked *Ajuga alpina*, *Lysimachia nemorum*, *Veronica montana*, *Viola mutabilis*, *Alchemilla montana*, and *Listera Nidus Avis*. This last had been grown in a pot for two years, and was making good provision for a new growth in 1854. Mr. Turner says it is certainly not parasitical.

**PELARGONIUMS** were numerous and in excellent order, as they always are at the June show. Some of the prizes were closely contested. The Gold Medal was awarded to Mr. Turner, of Slough, for the best 12 varieties, consisting of *Enechantress*, *Magnet*, *Mochanna*, *Narcissus*, *Virgin Queen*, *Magnificent*, *Rowena*, *Rosamond*, *Ganymede*, *Constance*, *Centurion*, and *Alonzo*; 2d, Mr. Dobson, Isleworth, with *Star*, *Purpurea*, *Harriet*, *Incomparable*, *Governor*, *Loveliness*, *Chloe*, *Vanguard*, *Gertrude*, *Emily*, *Empress*, and *Commander*; 3d, Mr. Westwood, Turnham Green, with *Pulchellum*, *Constance*, *Chastity*, *Mont Blanc*, *Dowager*, *Claudiana*, *Norah*, *Delicatissimum*, and other sorts, the same as those mentioned above. In the private grower's class, the first prize was awarded to Mr. Holder, gr. to the Rev. E. Coleridge, Eton College, for 12 finely grown plants, but they were not sufficiently in bloom, a few more days would have improved them materially; they consisted of *Star*, *Lord Gough*, *Gulielma*, *Beauty of Montpellier*, *Forget-me-Not*, *Village Maid*, *Constance*, *Narcissus*, *Alderman*, *Norah*, *Maid of Perth*, *Centurion*, and *Magnificent*; 2d, Mr. Carrigan, gr. to G. Laurence, Esq., Kentish Town; 3d, Mr. Robinson, Pimlico. The varieties in these two collections which were not in the first, were *Ganymede*, *Ajax*, *Painter Improved*, *Princess Royal*, *Rosamond*, *Enechantress*, *Conspicuum*, *Exactum*, *Prince of Orange*, *Little Nell*, *Rowena*, *Constance*, *Flying Dutchman*, *Pearl*, *Alonzo*, and *Emily*. **FANCIES.**—These were not well bloomed, if we except the first lot in the nurserymen's class, each of which was in perfection, and well varied in colours. The sorts were *Madama Rosati*, *Delicatum*, *Anais*, *Caliban*, *Richard Cobden*, and *Erbescens*; 2d, Mr. Ambrose, Battersea, with *Magnum Bonum*, *Figaro*, *Triumphant*, *Jenny Lind*, *Defiance*, and *Reine de Français*; 3rd, Mr. Westwood. **Private Growers:** 1st, Mr. Smith, gr. to F. Newdigate, Esq., for *Defiance*, *Albion*, *Jenny Lind*, *Hero of Surrey*, *Advancer*, and *Empress*; 2d, Mr. Miller, Edgeware Road, with *Odette*, *Richard Cobden*, *Modestum*, *Triumphant*, *Emma*, *Erbescens*; 3d, Mr. Robinson, with *Fairy Queen*, *Gipsy Queen*, *Princess Galitz*, *Advancer*, *Delicatum*, *Statiaski*; 4th, Mr. Roser, Streatham.

**CALEOCLARIAS.**—One collection only was exhibited; it came from Mr. Constantine, gr. to C. Mills, Esq., of Hillingdon; the plants were extremely well grown, but they were perhaps a little too stiffly trained.

**PINKS**, in pots.—Two collections were sent; the first, a very good one, came from Mr. Bragg, of Slough; the second, from Mr. Wilmer, of Sunbury. Mr. Bragg's kinds were *Ruby*, *King of Purples*, *Milo*, *Koh-i-noor*, *Ada*, *Eliza*, *Kolla*, *Hector*, *Jupiter*, *Mrs. Bragg*, *J. Dickson*, and *President*.

**PANSIES**; these also were in pots.—1st, Mr. Turner, with *Nousuch*, *Monarch*, *Alfred the Great*, *Antonio*, *Duke of Norfolk*, *National*, *Sir J. Cathcart*, *Flower of the Day*, *British Queen*, *France Cycole*, *Pompey*, and *Pandora*; 2d, Mr. Bragg; 3d, Mr. Dobson.

Messrs. E. G. Henderson sent several seedling fancy *Pelargoniums*; the best of which were *Constance*, white and rich deep purple, very smooth, stout, and of good shape; *Hebe*, *Loveliness*, *Lady H. Campbell*, and *Jeannette*, also possess some merit. The same firm sent several *Calceolarias*, for bedding purposes, with some other plants; Mr. Constantine had some shrubby *Calceolarias*, of good rich colours, and large well-shaped flowers.

The show of **FRUIT** was very good, especially the *Grapes*, both white and black, and there were some remarkably fine *Strawberries*. *Pine-apples* did not exceed mediocrity. The best *Queen* was one weighing 3 lbs. 2½ oz., from Mr. Turnbull, gardener to the Duke of Marlborough, at Blenheim. Mr. Harrison, of Oatlands, had also a good fruit weighing 3 lbs. 2 oz. An *Antigua Queen*, weighing 4 lbs., came from Mr. Turnbull; and Mr. Chapman, gardener to J. B. Glegg, Esq., sent a *Black Jamaica*, weighing 2 lbs. 9 oz. Of *Providences*, Mr. Dods, gardener to Colonel Baker, of Salisbury, had the best fruit, though not the heaviest; it weighed 6 lbs. 15 oz. Mr. Turnbull produced one 5 lbs. 8 oz.; and Mr. Watson, gardener to Mrs. Tredwell, sent an *Enville*.

**GRAPE.**—Beautiful examples of *Black Hamburg*, large both in bunch and berry, and as black as sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall Kent. These well deserved the first prize which was awarded them. Mr. Lushey and Mr. Spivey had also very fine exhibitions of the same variety. Good *Black Hamburgs* were likewise contributed by Mr. Meredith, gr. to the Duke of Sutherland, at Clive; Mr. Hammon, of Oatlands; Mr. Dods, gr. to J. Cathcart, Bart.; Mr. Williams, gr. to C. B. Warner, Esq.; Mr. Martin, gr. to Sir H. Fleetwood, Bart.; Mr. Foley, gr. to W. Everett, Esq.; Mr. Hen-

derson, gr. to Sir G. Beaumont, Bart.; and Mr. Morison, gr. to A. Donavon, Esq., of Fairfield Park, Sussex, who showed Jolson's *Richmond Villa Black Hamburg*. Mr. Lushey, gr. to J. Hill, Esq., sent the best *Black Prince*, and this variety of *Grape* was furnished in capital condition by Mr. Martin; Mr. Hill, gr. to R. Sneyd, Esq.; and Mr. Constantine, gr. to C. Mills, Esq., of Hillingdon. *Muscadines* quite ripe and otherwise excellent, came from Mr. Rust, gr. to J. MacLaren, Esq.; Mr. Taylor, gr. to J. Coster, Esq.; and Mr. Busby, gr. to J. Crawley, Esq., of Stockwood Park. Mr. Williams had also examples of this *Grape*. *Muscats* beautifully ripened, and altogether such fruit as one rarely sees at this season, were contributed by Mr. Bradley, gr. to J. M. Peto, Esq., M.P.; Mr. Turnbull, Mr. Alport, and Mr. Bucktrout also sent very good bunches of this *Grape*. Three well-ripened bunches of *Grizzly Frontignan* were produced by Mr. Henderson, gr. to Sir G. Beaumont, Bart.; and *Black Frontignan*, beautiful specimens, came from Mr. Martin, gr. to Sir H. Fleetwood, Bart.

**GRAPES** in pots were shown by Mr. Meredith (1), Mr. Constantine (2), and Mr. Jackson, gr. to G. Beaufort (3). Mr. Meredith's were *Black Hamburg*, and exceedingly fine. The rest were *Muscadines*, *Esperione*, and *Sweetwater*. Mr. Whilding, gr. to Capt. Kennett, of Ham, had three *Vines* struck from the eye on the 8th of February last, each bearing a bunch of *Grapes*. All reflected very great credit upon their growers.

Of **PEACHES** there was a fair display. Mr. Paterson, gr. to the Baroness Wenman, sent large and fine specimens of *Noblesse*; and Mr. Fleming, gr. to the Duke of Sutherland, had the same variety, and *Royal George*, in very good condition. *Noblesse*, also, came from Mr. Hill. Mr. Chapman, gr. to J. B. Glegg, Esq., sent *Grosse Mignonne*; Mr. Constantine, *Royal George*; Mr. Fish, gr. to Col. Sowerby, *Noblesse* and *Royal George*; Mr. Tegg, gr. to A. Pryor, Esq., *Royal George*; and Mr. Evans, gr. to C. N. Newdigate, Esq., *Violette Hative*.

Of **NECTARINES**, Mr. Chapman produced fine specimens of *Violette Hative*, beautifully coloured; Mr. Hill and Mr. Fleming had very good examples of *Elruge*. This variety was also furnished by Mr. Paterson, Mr. Martin, and Mr. Busby. Mr. Henderson sent *Violette Hative*, Mr. Evans the same variety and *Brugnon*, and Mr. Tegg the *Tawney Nectarine*.

**STRAWBERRIES.**—A wonderfully fine dish of *British Queen* was shown by Mr. Smith, of Twickenham. Indeed, it is seldom one has an opportunity of seeing such *Strawberries* as these were. The same exhibitor had also some well-fruited *British Queens* in pots. Mr. Ironmonger and Mr. Constantine also sent good dishes of this variety; Mr. Harrison, of Oatlands, and Mr. Mann, of Isleworth, had the best *Keens' Seedling*; Mr. Roake, of Chertsey, also showed a few fruit of this kind, ripened in the open air, the only instance of natural *Strawberries* this day produced.

Of **MELONS**, the best-flavoured was *King's Green-fleshed* from Mr. Tegg, gr. to A. Pryor, Esq.; and the second best, *Golden Queen*, from Mr. Robertson, gr. to Lady Emily Foley, Stoke Edith Park, Hereford; the *Bromham Halls*, from Mr. Rust, and Mr. Edwards, gr. to G. Brunner, Esq., were also very good. Other sorts consisted of *Greengage*, 8 lbs. 6 oz., *Seymour's Golden Perfection*, and *Persian Hybrid*.

Of other kinds of fruit, Mr. Williams, gr. to C. B. Warner, Esq., sent a collection of *Oranges*, *Citrons*, and *Lemons*; and Mr. Ivison, gr. to the Duke of Northumberland, at Sion, tropical fruits, consisting of *Gamboge*, *Rose Apple*, and ripe pods of *Vanilla*.

**ROYAL BOTANIC, June 8.**—Foremost among things shown here and not re-produced at Chiswick on Saturday last, we have to notice, in accordance with our promise, made at p. 374, Mr. Cole's fine collection of *Stove* and *Greenhouse Plants*, which consisted of:—

<i>Aphelexis macrantha purpurea</i>	<i>Clerodendron splendens</i>
<i>purpurea grandiflora</i>	<i>Dipladenia crassicauda</i>
<i>Leschenaultia formosa</i>	<i>splendens</i>
<i>Polygala Dalmatiana</i>	<i>Erica tricolor Wilsoni</i>
<i>cordifolia</i>	<i>Hoya imperialis</i>
<i>Allamanda cathartica</i>	<i>Ixora javanica</i>
<i>grandiflora</i>	<i>Pimelea mirabilis</i>
<i>Azalea optima</i>	<i>decaussata</i>
<i>fulgens</i>	<i>Rondeletia speciosa</i>
<i>Boronia pinnata</i>	<i>Stephanotis floribunda</i>

The *Ixora javanica* in the above was a very fine specimen, but scarcely sufficiently advanced in bloom. The *Dipladenias* were also beautifully grown and flowered, and less cannot be said of the *Allamandas*. The *Rondeletia*, *Hoya imperialis*, and *Clerodendron splendens*, were also unusually fine. Messrs. Rolleston and Mr. Clarke, of Streatham, showed collections of 16 *Stove* and *Greenhouse Plants*; and groups of six were contributed by Mr. Williams, gr. to Miss Traill, and Mr. Over, of Clapham.

Of **CATE HEATHS** Mr. Smith, gr. to W. Quilter, Esq., of Norwood, produced a group of admirably cultivated plants. They were beautifully flowered, and altogether in first-rate condition. The sorts were not different from those mentioned in another column.

Among **ORCHIDS** we find that Mr. Hume, gr. to R. Hanbury, Esq., the Poles, near Ware, had an interesting group of 8 plants. Among them were the seldom-seen *Calanthe masuca*, and a very fine specimen of *Aerides odoratum*. Mr. Hume also showed the white-flowered *Sarcophyllus Calceolus*, and a well-flowered plant of *Odontoglossum hastilabium*.

Messrs. Veitch showed the *Jasmine*-flowered *Rhododendron*, and *Hexacentris myrsocinis*.

In addition to what was stated about fruit at p. 374,

we may mention that Mr. Bradley, gr. to S. M. Peto, Esq., M.P., showed a dish of well-ripened *Moorpark Apricots*, being the first and only specimens of this fruit that have as yet appeared this season.

## Notices of Books, &c.

*On the Anæsthetic Properties of the Lycoperdon Proteus, or Common Puff-ball.* By B. W. Richardson. A pamphlet. Richards.

WHAT is *Lycoperdon Proteus*? Mr. Richardson has ascertained that a common puff-ball of some sort, when burnt, acts upon the animal system like chloroform, ether, Mandrake roots, and similar agents. But he has omitted to say what puff-ball he means. Is it *Lycoperdon giganteum*?—often many feet in circumference; or *L. caelatum*?—or *L. pusillum*?—or *L. gemmatum*?—or *L. pyriforme*?—each of which has been called *Lycoperdon Proteus*. That a man of science should have neglected to indicate clearly the plant in which he finds the properties he speaks of is a singular circumstance.

Be that as it may, it appears that a puff-ball of some sort or other has the power of depriving animals of consciousness, and of rendering them insensible to pain, in a remarkable manner. That something of this kind occurs when the smoke of *Lycoperdon giganteum* is introduced into a hive of bees is known, indeed, to apirians, who commonly use it when they wish to take honey without injuring their bees. But we do not remember that the substance has been hitherto applied in any other case. Mr. Richardson, however, makes the following statements, among many others:—

"My first experiment was made on the 28th of last March. A kitten was placed in a bell-shaped glass vessel, open at bottom and top. Smoke from a piece of the fungus ignited was allowed to rise pretty freely into the bell; but several interruptions occurred, so that 35 minutes elapsed before any positive effect took place. By that time, however, the creature was fairly narcotised: a cut in the ear produced no sign of pain. The breathing was reduced to eight respirations per minute, and the temperature of the body was lowered. From time to time, after removal from the bell, I counted the breathing and the heart-beat, and found them gradually increasing in number, and the body becoming warmer. The sleep, however, was profound; and, after a period of two hours, no sign of sensibility to pain could be elicited. I laid the animal down by the side of her mother, and in the morning found her skipping about as well as ever."

"Finding that the impure fumes of the burning fungus were rather painful to breathe, as they produced some degree of irritation in the throat, and caused the eyes to water, I made them pass through a solution of caustic potash, previous to exposing the animal to their influence. This was easily done. The smoke, being produced in a large closed vessel, was forced by water-pressure through a Wolff bottle containing a solution of caustic potash, and was received in an inverted glass bell. I thus obtained a perfectly clear gas, free from carbonic acid. A young cat was now placed under the bell; she became slightly convulsed in 30 seconds, and was profoundly narcotised in two minutes. The heart-beats were not much affected, and recovery took place in seven minutes after removal from the vessel."

"This experiment was performed on the 13th of April; and on the following day I repeated the experiments, both with the impure and clarified vapour, in the presence of Dr. Willis and Dr. Cormack, with complete success."

"Mr. Sampayo, a gentleman residing in Barnes, had a favourite dog, which was very old, was constantly troubled with cough, and had a large and painful tumour over the abdomen. As the owner of the dog wished to have this tumour removed, Dr. Willis thought there would be a good opportunity for trying the anæsthetic power of the fungus during an operation. He therefore kindly undertook to cut out the growth, if I chose to produce narcotism. I did so with the impure smoke of the fungus. The animal was narcotised in six minutes; and the operation, which occupied 10 minutes, was done without the merest sign of pain until the last suture was being put in, when winning took place. Neither the heart nor the respiration seemed much affected in this instance. The recovery was so rapid, that, in six minutes, it would have been impossible to tell, without previous knowledge of the fact, that the animal had been subjected either to narcotism or operation."

We have not space for further extracts. Let us add, however, that the subject is one of great interest, and that Mr. Richardson's statements well deserve consideration.

*Bradshaw's Continental Railway Guide.*—This work, to the great utility and general accuracy of which all travellers bear witness, has been just issued in the form of a bound half-crown volume, with several maps and plans, and a good deal of additional matter, which add considerably to the utility of the original. We must, however, protest against Mr. Bradshaw's recommendations of hotels. As an example, look at Paris!

## FLORICULTURE.

**FUCHSIAS FROM SEED.**—The majority of *Fuchsias* ripen seed freely; but, unless they are hybridised, it is almost waste of time to sow it, for the flowers so pro-



duced are seldom equal, and more frequently inferior, to the parent plant. The operation of fertilising is easily performed on the Fuchsia, the pistil being prominent, and the pollen plentiful. In selecting plants for hybridising, it is necessary to bear in mind that those bearing the seed, will communicate their habits most to the seedlings; the plants from which the pollen is taken may be of indifferent habits, provided the flowers have good properties. Having selected the flowers intended to be fertilised, cut out their stamens as soon as they open, and, when they are fully expanded, apply the pollen from the flowers, the properties of which you wish to impart: tie something round them, to distinguish them from the others, and when they are ripe, the seeds may be separated from the pulp by washing them out in clear water; the good seed will sink to the bottom. The seeds may be sown any time in the early part of spring, in a pot of light soil, and placed in a greenhouse; they do not require much heat to vegetate them; at least I have found them come up quite as well, if not better, without it, and the plants so produced are much stronger than those raised in a higher temperature. As soon as they are of size to handle nicely, pot them singly in small pots, and place them in a light airy situation; if they are grown in a close atmosphere, it tends to draw them out weak and lanky, so that the true habit of the plant is not seen; shift them into larger pots when necessary; a 4 or 6-inch pot will be large enough, as large shifts only tend to keep them growing, and retard their flowering; they should never be topped or pruned until they flower. The principal object is to ripen their growth quickly, so that their flowers may be seen as soon as possible. Many of them will bloom the same season; after they have done growing, and the foliage drops off, they should be sparingly watered, and be kept almost dry all winter. The following spring water them freely, and when they show signs of growth, place them where they will have plenty of air and light; but do not shift them until they flower, for reasons before mentioned. I prefer flowering seedlings out of doors, after all danger of frost is past, as I have invariably found that the colours come brighter and more distinct than when kept in the house. It is desirable, however, to choose a situation where they will be somewhat shaded from the sun in the hottest part of the day. The Fuchsia is not very particular as to soil; any good garden mould will suit the plants well enough, provided it is of a free porous texture, and the pots well drained. Many of the strong-growing sorts are frequently destroyed by being put into large pots in a rich soil. This is often the reason why serratifolia, fulgens, corymbiflora, and some of these sorts are shy in flowering. I once potted two plants of serratifolia, the one in rich turfy loam and dung, the other in a poor worn-out soil, mixed with a few pieces of broken bricks; the result was, that the former grew most luxuriantly, and showed no flowers at all till late in autumn, whereas the other made a very short growth, and flowered profusely the greater part of the season. The less robust varieties do better when planted in good loam, with about a third part of well decomposed manure. W. S.

NEW PELARGONIUMS AT REGENT'S PARK SHOW.—Of seedlings, there was a considerable number. The medal for the best scarlet was awarded to Mr. Hoyle, for Regalia, a flower brighter than any other yet exhibited, and of good form; it is also much finer than scarlets generally. Amongst other seedlings from Mr. Hoyle we noticed Zeno, a large even flower, of good shape, dark top, with rosy bottom petals, and clear white centre; Carlos is another of this class, but darker in the top, and larger—a noble flower for exhibition. Nonpareil has the best shape and is the freest bloomer of all the spotted kinds, being large and very smooth. Eugenia, another of this showy class, is well marked, and also of good shape. Rival Queen is warm orange rose, with clear white throat; large, and a free bloomer. Majesty has black top petals, margined with rosy purple; lower petals light, throat clear white; a very large flower. Mr. Turner exhibited two seedling whites, free bloomers, and of good shape. Also Astarte and Una; these were raised by W. Hocken, Esq. Duchess of Wellington appeared to be a good stout flower, darker, and of better shape, but as free as Constance, which it resembles in habit. Pilot is a bold free crimson scarlet. Others were of less note.

AURICULAS: *Iola*. You have used the bones for drainage in too fresh a state. You had better remove them immediately, and repot into fresh soil.

CAMELLIAS: *Flora*. Your question, "How am I to restore my sickly plants to health?" is one that is often asked. When Camellias get into ill health, from whatever cause, the best plan is, to turn the plants out of their pots in spring, to examine their roots; and if these are found to be dead or dying, to shake the soil entirely away from them, removing, at the same time, all pieces that are dead. The top must also be well shortened in, in order to preserve a sort of balance between that and the root. These things being done, place the plant in a pot just large enough comfortably to admit the roots, in a compost consisting of two parts peat to one of loam, using a little more sand than for plants in health. When potted, water, to settle the soil; place them in a gentle bottom heat, and keep them close; watering at the root but sparingly till the plants begin to grow, but frequently syringing their tops with tepid water. If they have made good roots by autumn, they may be either shifted into larger pots then, or in the following spring, when they may receive the same treatment as the general collection.

#### SEEDLING FLOWERS.

CALCEOLARIAS: *J. J.* A large clear yellow, and a profuse bloomer. As a florist flower deficient in shape, but it looks as if it would make an effective bedding plant.

CINERARIAS: *G.* Brilliant in colour but starchy, and too large in the disk.

EPHYLLUMS: *O. K.* All extremely handsome, and well worth taking care of.

PELARGONIUMS: *B. E. C.* It would be unfair to offer an opinion on them, as they had all fallen to pieces before they reached us.

#### Miscellaneous.

How to drive away Moles.—Take 1 lb. of Bean-meal, 3 oz. of slacked lime in powder,  $\frac{1}{2}$  oz. of powdered verdigris, and 4 oz. of essential oil of Lavender. After mixing thoroughly the powdery part of this composi-

tion, incorporate the oil. With a little water work the mixture into a dough. With this form balls the size of hazel-nuts; they will harden after having been exposed to the air for 24 hours. Introduce them 20 or 30 feet apart into the mole's runs, or one ball may be dropped into the hole of each mole-hill, taking care to cover it up immediately. The smell of these ingredients is so offensive to the mole, that he immediately deserts his ground. The mixture is, at the same time, a violent poison for moles, rats, and all such vermin. *Flore des Serres*.

#### Calendar of Operations.

(For the ensuing week.)

##### PLANT DEPARTMENT.

As light has now reached the maximum point, and solar heat nearly so, fires may be dispensed with in the Orchid houses and stoves, except, perhaps, on the evenings of wet days, when a little fire will be necessary, to allow for admitting air early in the morning. As plants at this season are making way fast, the above conditions must be taken advantage of, to supply air in liberal quantities, which, in conjunction with light, will help to arrest the rapid growth of those plants whose disposition to bloom depends mainly on a pretty free exposure to both at the same time; there are but few plants but it will benefit, by inducing a sturdy habit, and consequently the commencement of well-ripened wood. Remove to houses with a north aspect, or under the shade of a north wall, any plants whose period of blooming it may be desirable to prolong. Place in their blooming pots the principal stock of Chrysanthemums, using for potting a rather heavy loam with a portion of well rotted cow-dung. Seedling Chinese Primroses, Cinerarias, and other plants required to furnish the winter supply of bloom should now be forwarded by shifting into 60 pots. Keep them in a cold frame, where a slight shade can be given them in hot weather, or, what is better, turn the frame to the north. Look to the stock of plants out of doors in showery weather, to see none of the stock is suffering from imperfect drainage, and throw screens over delicate plants during heavy rains, especially such as have been recently potted.

##### FORCING DEPARTMENT.

VINERY.—Continue the thinning and routine culture in the late Vineries; as red spider may be likely to attack the foliage during the prevalence of hot weather, the walls should be washed over with the sulphur and lime previously recommended. This will most likely, with a moist air kept up by damping the floors and paths of the houses on hot days, keep them in check; but should they get established, the pipes or flues must be washed over, and a slight fire applied, to throw the fumes of the sulphur into the house. The former steps, however, we have generally found sufficient. PEACH-HOUSE.—After the crop in the early house is gathered, the trees should be daily washed with the engine, to dislodge any red spiders which may have established themselves during the suspension of the syringe; an early opportunity should likewise be taken of removing any further extra wood from the trees than what will be required for bearing next season. The remaining shoots being then neatly tied in, will have all the advantages of light and air, necessary to produce well-ripened, and, consequently, fruit-producing wood.

##### FLOWER GARDEN AND SHRUBBERIES.

The most pressing work at present is that of keeping the place in order. A little pains taken with the walks at this season, will be amply repaid by the air of comfort and pleasure which well-kept walks give to any place. The edgings, whether of Grass or Box, or other evergreen, should be repaired or clipped. This may appear to some to be an unseasonable time for such work; but where it can be done, the effect produced amply repays for the trouble; and in flower gardens effect is everything. This is the best time of all to clip evergreen hedges or edgings, as they have time to make and mature a new growth, while the season is far enough advanced to prevent their growing very materially out of shape. Watch the different annuals as they come into flower, and mark those varieties whose superior habit of growth, size of flower, or brilliancy of colour, make it desirable to procure seed from them; and that these good qualities may be perpetuated in their progeny, destroy inferior ones as soon as they expand their first flower.

##### FLORISTS' FLOWERS.

RANUNCULUSES, though rather late this season, will, in many instances, be in bloom, according to the locality; the awning should be put over them, and, should the weather set in very hot, the paths may be watered. We need not impress on the amateur the necessity of keeping the beds free from weeds, and destroying the insects which may harbour about them. TULIPS on the offset and exposed beds will require taking up at an earlier period than those which have been covered; as soon as the foliage begins to change they should be taken up, choosing a dry day for the operation. They should be stowed away in some dry, airy place, where mice cannot have access to them, allowing the fibres and husk or skin to remain till the bulb is thoroughly dry. AURICULA and POLYANTHUS seed must be attended to; as soon as the capsules turn the least brown they should be gathered. PINKS.—Take care that the pods do not burst; those which have had ligatures round them will require easing and retying. The longest Grass may be "piped," the plants will then put out an abundant stock for later cuttings.

##### KITCHEN GARDEN.

Advantage should be taken of the present showery weather to plant out a good breadth of Savoys, Brussels Sprouts, Winter Greens, and the early Broccolies. If the ground for the above has been properly prepared (for which the late dry weather has been very favourable), a considerable quantity can be got out in a short time. If the plants have been kept thin, the early-sown ones will be now nice stocky plants. Plant with a trowel in a shallow trench or deep drill; there is a little more trouble in this than by the more common way of planting with the dibble and setting-stick; but the trouble is amply repaid by the more rapid growth of the crops. Parsley, Onions, Carrots, and most other summer crops should now have their final thinning. A last sowing may now be made of Walcheren Broccoli and the late Cauliflower; this crop will continue the supply up to Christmas. Sow Endive for an early supply. Lettuce and other salad plants should, as previously directed, be sown at short intervals on the spot where they are to remain; the time between each sowing may, however, be lessened for the next two or three times, as during the hot weather of July and August these crops, particularly on dry soils, continue but a short time in perfection. Stick Peas and Scarlet Runner Beans, and pay every attention to advancing crops.

##### STATE OF THE WEATHER NEAR LONDON, For the week ending June 16, 1853, as observed at the Horticultural Gardens Chiswick.

June.	Moon's Age.	BAROMETR.		TEMPERATURE.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.		
Friday.. 10	4	29.9.9	29.8.3	83	57	70.0	59.4	66	S.E.	.02
Saturday 11	5	29.7.1	29.6.0	80	53	66.5	61	57	E.	.1
Sunday 12	6	29.2.8	29.2.7	65	51	59.0	61	56.3	W.	.2
Monday 13	7	29.7.3	29.7.2	55	51	53.0	58	56	W.	.77
Tuesday 14	8	29.9.37	29.8.81	71	48	59.5	57	55	S.	.36
Wednes. 15	9	30.0.07	29.9.61	70	55	62.5	57.3	54.3	S.W.	.00
Thursday 16	10	30.0.37	29.9.85	82	48	65.0	59.4	57.3	S.	.00
Average ..		29.8.50	29.8.18	72.2	51.8	62.0	59.1	56.2		1.45

June 10—Overcast; slight rain; fine; overcast.  
11—Fine; slight haze, and hot; very fine; overcast; rain in the evening.  
12—Slightly overcast; cloudy; overcast; rain.  
13—Constant rain throughout.  
14—Cloudy; heavy thunder showers, 2–3 P.M.; cloudy.  
15—Very fine; heavy clouds; overcast.  
16—Very fine throughout; clear at night.  
Mean temperature of the week 1.5th deg. above the average.

##### STATE OF THE WEATHER AT CHISWICK, During the last 27 years, for the ensuing week, ending June 25, 1853.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 19	71.2	51.8	61.5	13	0.37 in.	1	1	1	1	1	1	1	1
Monday 20	73.0	52.8	62.9	11	0.21	1	1	1	1	1	1	1	1
Tuesday 21	74.7	55.5	65.1	10	0.68	1	1	1	1	1	1	1	1
Wednesday 22	74.3	50.8	62.0	11	0.59	1	1	1	1	1	1	1	1
Thursday 23	73.5	49.4	61.5	6	0.44	1	1	1	1	1	1	1	1
Friday 24	73.4	52.0	62.7	10	0.49	1	1	1	1	1	1	1	1
Saturday 25	71.8	53.2	62.0	14	0.72	1	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 19th and 22d, 1946°—therm. 93 deg.; and the lowest on the 23d, 1851°—therm. 34 deg.

#### Notices to Correspondents.

ARNOR-VITE: *Sub.* There is no reason why the plant should not be removed. Wait till next September, then very carefully pick all the little roots out of the ground and transplant it carefully. Arrange the roots in a radiating manner upon the new ground, cover them with earth, and water the ground thoroughly without treading, having previously fixed the plant immovably by a strong triangle, so secured to the stem that it will not chafe the bark.

ASPARAGUS: *A Young Gardener*, near Spalding, should learn to write and spell before he inquires about the reasons of things. Let him be satisfied with knowing that fasciated specimens of Asparagus are not uncommon, and that his is probably of that nature.

CHISWICK EXHIBITION: *T. C.* We cannot question the decision of the judges. Better men could not be found to determine the merits of your collection. *GARDEN NETTING: J. W. A.* We are unacquainted with any method of making it waterproof, but you may increase its durability by steeping in a tan pit.

INSECTS: *Rev R. J. M.* Your moth is the *Smerinthus ocellatus*, one of the largest and handsomest of British species.—*Alpha*. The proximity of your house to the Thames, and the nature of the soil, have nothing to do with the great quantity of cockroaches and crickets with which it is infested. The most efficacious plan which we have found to get rid of the former, is to lay bits of bread on the floors after dark, and in an hour or two to visit the spot with a pot of boiling water, which is to be dashed over the assembled mass. Crickets are not so easily got rid of. *W.*

LAW: *Iola*. We will see what reply can be made to your inquiries; but you must have patience till next week.

NAMES OF PLANTS: *K. B.* *Iris susiana*.—*A. Sub.* Not *Erythraea latifolia*, but *Luzula campestris*.—*Dis.* The plant now received is *Doronicum Pardalianche*. If any other plant has been so called, it must have been by inadvertence, or in consequence of the specimen having been scarcely examinable.—*J. M. J.* Your letter is all but illegible. The specimen belongs to the common Bean Tree, *Pyrus Aria*.—*W. K.* *Bignonia stans*.—*J. Castle Cary*. *Cytisus Adami*, a mule between *C. Laburnum* and *C. purpureus*.—*Craven*. *Syringa Josikaea*, *Clethra arborea*, and *Evernia flavicans*.—*J. W.* No *Oxalis* can be named from the inspection of a mere flower. Leaves and flowers and stem must be examined.—*J. R.* *Listera Nidus Avis*.—*L. N. R.* 1, *Polypodium Dryopteris*; 2, *Lastrea Phegopteris*; 3, *Cystopteris fragilis*. *S.*—*C. F.* They are correctly named.—*J. W.* *Epidermum umbellatum*.

RUST IN GRAPES: *Young Gardener*. They have possibly been exposed to streams of cold air when very young and tender. That would destroy the vitality of the skin and cause rust.

THORNES: *Eboracensis*. We have heard no complaints about the plant Thorns this year, nor have we observed anything unusual in their condition. With us they are flowering quite as well as the crimson kinds.

MISC: *W. G. A.* *Pedia Cornucopiae* and *Picridium vulgare* are sometimes used in salads. The seeds of the Quinoa are given to poultry, or made into porridge.



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**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

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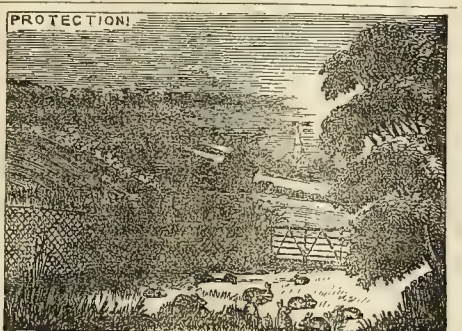
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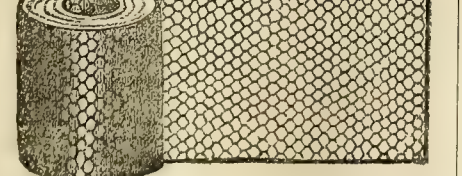
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1½-inch " light " ...	8 " "	6 " "
1½-inch " strong " ...	10 " "	8 " "
1½-inch " extra strong " ...	14 " "	11 " "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.  
Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## BAKER'S FOUNTAINS.

THE PHARMACY, DRAUGHT STREET, KING'S ROAD, CHELSEA.  
**MESSRS. BAKER** can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

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**MARRIOTT'S HUMANE COTTAGE BEEHIVE** is best for obtaining Honey without killing the Bees; its finished workmanship and practical utility for assisting nature speaks for itself. Exhibition of the Honey Bee in numerous Glass and other Hives in the Royal Surrey Zoological Gardens.

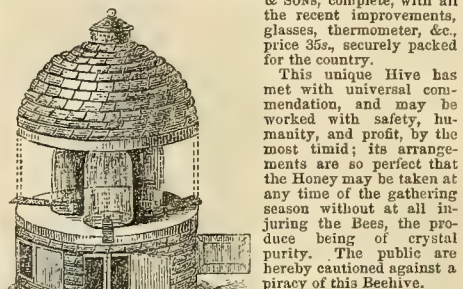
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The terms and other particulars may be had on application to the Principal.

**POULTRY SHOW.**—The First Annual London Great SUMMER POULTRY SHOW will be held at the Baker Street Bazaar, on WEDNESDAY the 27th, THURSDAY the 28th, and FRIDAY the 29th of July, 1853. The Prize List and Rules can be had upon application to JAMES HENRY CATLING, Secretary.

## THE DERBYSHIRE AND MIDLAND COUNTIES

EXHIBITION OF POULTRY will be held at DERBY, on the 17th and 18th of NOVEMBER next. Open to all competitors. Schedules of prizes and regulations may be had on application to the Honorary Secretary, enclosing a stamped directed envelope.

Subscribers of 10s. 6d. will receive five tickets of admission to the private view on Thursday, the 17th. Parties wishing to become subscribers are requested to forward their names as early as possible.

ALFRED MADELEY, Hon. Sec.

Derby, June 18th, 1853.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, JUNE 18, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June 22—Agricultural Society of England.	
THURSDAY, " 23—Agricultural Imp. Society of Ireland.	
WEDNESDAY, " 29—Agricultural Society of England.	
THURSDAY, " 30—Agricultural Imp. Society of Ireland.	

Our number for May 28 certainly betrays the need that exists of re-laying, in some public and unmis-takeable manner, the very foundations on which the theory and practice of land drainage have been based. A very extraordinary communication on the subject of SWAMP DRAINING, addressed to the Council of the Agricultural Society, appeared in the report, then published, of their Council meeting held on Wednesday May 24. The writer proposed in it to drain land without a fall, "that is to say, where the surface of the water in the adjoining brook or river is nearly even with the surface of the land,"—by laying the drains level with the bottom of the brook in question, or at least two or three feet deep in the stream; all that was needed for success being—"1st, that a shaft, or pipe, be fixed at the upper end of the drain, so that the atmospheric pressure may bear thereon, but not allowed to pass through;"—"2d,



that the drains be laid in a judicious manner," &c.—and, "3d, that the least number of outlets into the discharging stream as practically necessary be made, such outlets being at the lowest part of the stream as regards the land to be drained." The writer further remarked that "there will be no detriment to the drainage should the bed of the drain undulate, or be laid lower than the discharging orifice; but frequently it will be found advantageous to submerge the drains purposely, in order to exclude the atmospheric air, and thus prevent or lessen the danger of stoppage from the sedimentary accumulation of the peroxide of iron which often abounds in low lands and in bog earths." Now, these remarkable statements are, we believe, calculated to mislead just to the extent to which they are intelligible; and we must add, that it is an unfortunate result of the strictly official character of all reports of the English Agricultural Society's meetings, that all such slips, whether in the editorship, or indeed the appearance at all of such communications as we refer to, recoil upon the Society itself and damage its influence, instead of being lost, as they would be, in the general contest of opinion, if public reports of the fullest, frankest, character were attainable. A much sounder public judgment arises on other subjects out of the freest and even roughest public canvassing of their merits and demerits than is attainable where public opinion is under the strict guidance of authority; and we believe that sounder judgments of agricultural matters, too, will be generally arrived at when such advice and explanations as are given above on land drainage shall be left to stand on their own legs, instead of being in a manner sanctioned by appearing in a report from which it is understood that everything deemed objectionable is excluded.

We observe that the writer of this communication speaks of his method of drainage having been attended "to some extent with the best possible results." That of course is the true test of his plan; but we must contend that the result in question has been attained *in spite* of the practice as described, and *notwithstanding* the causes which are asserted to have been in operation. We understand the land to be nearly on a level with the running water beside it, and yet that by digging drains, opening 2 or 3 feet beneath the surface of this water, the land has been made sound for the heaviest cattle; but to do this would just bring the water more easily into the land, where, however, the drainers have long since found it already is, up to the level of the reservoir in the stream. Not the slightest advantage can be served by sinking the mouth of the drain below the level of the water into which it is to run—certainly not as regards the facility with which the channel will act as a *drain*, nor yet on account of excluding the air. It is proposed to do this, either by submerging the channel or making it undulate (!), in order to hinder the formation of the peroxide of iron; but who wants to keep soluble salts of iron in the land?—for that is the other term of the alternative. The peroxide of iron is in itself harmless, except as being apt to clog the drainage pipes; but to make the channel of the drain undulate up and down is the very way to ensure its being clogged by other causes if not by this; and even if this device shall so far exclude the air as to hinder the oxidation of the soluble salt of iron supposed to be present, the iron, it must be remembered, is still present in a poisonous state.

The sole operating cause in land drainage is the weight of the water; a deep drain is more efficient than a shallow one, just because a greater weight of water is thus pressing its way out of the exit hole; and the secret of Mr. DUMOLO's success must be not in his having introduced the water of the stream, as his description seems to indicate, into the land by channels cut deep below its level, nor yet to the pressure of the air acting through the shaft cut at the upper end of the drain (!), for just as great an atmospheric pressure is acting at the lower, but to the outlet being "at the lowest part of the stream as regards the land to be drained." The whole question of swamp-drainage, as of any other, is dependent simply on the difference of level between the exit and the field to be laid dry. If the level of the water beside the field cannot be lowered, whether by straightening the brook or deepening its channel upwards from a distance, then a *drain* must be brought up from a lower level, however far away, and the waters of the field must find their way through it, the running water by its side and nearly on a level with its surface, being, in such a case, of no use whatever as an exit channel for them.

A VERY interesting discussion took place last week before the London Farmers' Club, on STEAM ENGINES AND THEIR AGRICULTURAL USES. The particular point under discussion was the form of engine

best adapted to ordinary farming purposes; but while determining the circumstances under which the preponderance of advantage lay on the side of fixed and of portable engines respectively, other topics of more general interest came up as subject matter of the conversation; and on the general question of machinery in its true relations to labour, we think that Mr. THOMAS was right in congratulating the Club on their change of opinion since he had opened a debate amongst them on agricultural machinery four years before. The remark was, we believe, due to what Mr. BAKER of Writtle had said expressively of his own change of opinion on the subject.

"At one period of his life he had entertained strong prejudices against all machinery for agricultural purposes, believing it to be injurious to the labourer, and in its tendency opposed to the true interests of the country. That was, he hoped, a humane objection. He had, however, altered his opinion. He did not now fear any surplus labour, and the farmer having been compelled to enter into competition with the foreigner, he felt it to be absolutely necessary that he should avail himself of all the aids within his reach."

To which Mr. THOMAS replied:—

"Four years ago it had been his lot to open a discussion, in that room, on the subject of machinery, and he then dwelt on the unavoidable necessity that the farmers of England should use machinery to a larger extent. He showed, that so far from the employment of machinery being any disadvantage to the labouring poor, it would, in the long run, be an advantage to them; inasmuch as, by increasing the productive powers of wealth, it would enable the farmer to employ more and more hands, and to bring his land into a higher state of cultivation. To his amazement those doctrines were met with a perfect storm of dissent, and the conclusion which he drew was negated by a majority of more than two to one. He congratulated the club on having changed its opinion. He had always felt that the support of the poor was no more incumbent, morally, on the farmers than on any other portion of the community; and when he saw the manufacturing districts in such a high state of prosperity, in consequence of the use of machinery, he could not doubt that similar causes would produce similar effects in the case of agriculture."

Let us add, on the sentiment expressed in the last sentence here quoted, that while it states the truth, it does so negatively rather than positively: the support of the poor is not incumbent on the farmer *more* than on any other class: the fact being that every *individual* is, as regards the principle out of which all social duty springs, related alike to every other individual of whatever class around him: the duty of 'neighbour' being, we imagine, irrespective of class and station altogether. And we think that a little more confidence might be placed, than is, upon right social results following the vigorous carrying out of the essential and justifiable instincts and tendencies of human nature in the individual. Thus we believe that the best way in which a man can benefit his neighbour is energetically and successfully to pursue his own calling, for in that way is employment the most abundantly provided for others. We know that in other manufactures machinery has benefited labour, and we have no doubt it will be so in agriculture also; and there are not wanting plain enough indications of the steps by which in the making of corn and meat as well as in that of calicoes such a result will follow such a cause.

This however was a mere incidental point in a debate remarkable even among those of the London Farmers' Club for its practical and instructive character.

Mr. ALLAN RANSOME, of the well-known firm at Ipswich, opened the discussion. He recommended as the engine most applicable to agricultural purposes, for powers up to six or eight horses, that known as the horizontal engine, if to be used as a fixed engine, with the Cornish boiler, and if to be used as a portable engine, with a multitubular boiler on wheels. And on the question of preference between fixed and portable engines he referred to the greater cheapness, the durability, less liability to stoppage for repairs, less annual cost, and less attention required to make it work to advantage, on the part of the former; and, on the part of the latter, to the fact that the crops might often be threshed directly from the stack, and the expense of removing into the barn avoided, and that as on most farms there could scarcely be found full employment for a steam-engine, the use of the portable engine might be shared by two or three others. For his part, were he farming to the extent of 400 or 500 acres, and his homestead fairly situated near its centre, he should prefer to erect a stationary engine. Were his farm much smaller than this, he should probably content himself with the purchase of a portable one, or avail himself of the advantages offered by the itinerant steam-engine thrashing for hire; but if the occupation should be one which,

from its extent, involved the necessity for outlying premises and stacks at considerable distance from the homestead, he should arrange his general machinery at home in such a manner as that it should be driven by a fixed engine, and, for the distant yards, avail himself of the opportunity of combination with others, or of hiring occasionally.

Mr. CUTBERT JOHNSON referred to the use of fixed engines in the work of irrigation, not so much, though that also was mentioned, to that use of it of which Mr. Mear's farm is so good an instance, where the manure is all diluted with water and spread by jet, as to the raising of water to a level from which it might flow by ordinary gravitation over land in the ordinary fashion of irrigated meadows. He stated what we did not previously know, that latterly, at Edinburgh and some other Scotch districts, after water had been used for the purpose of irrigating Grass-lands and had been allowed to flow over the field, through its own gravity, it had afterwards been applied a second time by means of the steam-engine. In this way, after being used once, it had been applied to other portions of land with advantageous results. He believed that there were a great many farmers situated in the neighbourhood of streams which did not at present flow on the land by their mere gravity, but which might be made to irrigate it by means of the steam-engine. Mr. ALLAN RANSOME, through his partner, Mr. MAY, had told him that one hundredweight of coals, burnt in the boiler of a steam-engine—the pumping apparatus being good, and adapted to the engine—would raise 1,600,000 gallons of water one foot. The same quantity would raise 400,000 gallons four feet. So that one hundredweight of coals would raise a body of water sufficient to saturate an acre of land. He need hardly say that, supposing these saturations were required to be repeated 18 times in the year, they had then ordinary Grass-lands converted, at an expense of 18s. per annum, into water-meadows; and it was for all to consider whether the conversion of Grass-land, with its crop or crop and a half per acre, into land which produced three or four crops, was not a matter worthy of their attention.

The general tendency of subsequent speakers was to recommend fixed over portable engines, Mr. THOMAS, in particular, referring to an experience of the latter, during some disability on the part of his fixed engine, which rendered the superiority of the latter perfectly clear to his mind. Mr. BRADSHAW, too, said that having been about to purchase a steam-engine, his attention was naturally directed to the question whether a portable or a fixed engine would be the best for his purpose; and having resided for 10 years in a manufacturing district, he had the advantage of being acquainted with some of the most eminent practical mechanics in the country. Every practical man whom he had consulted, including Mr. NASMYTH, advised him not to have a portable engine, but a fixed one, in order, as it were, that he might centre all the leading operations of his farm on one point. The superior advantages of fixed engines were, he thought, fully established by what had been done by their neighbours in the north; and he referred to the many tall chimneys on the Lothian farms as proofs that there this question they were debating had already been decided. On the other hand, there are no doubt many instances in which a number of small farms in one neighbourhood, in the hands of one tenant, will illustrate the occasional superiority of locomotive engines. Mr. PAYNE, for instance, stated that his farm was so arranged that there were four or five homesteads, and, speaking for himself, he should say that a portable engine was decidedly the best for him under these circumstances. The resolution arrived at, at the close of the debate, seems fairly to embrace the results of the discussion, namely, "That where the buildings are situated in a central position of the occupation, and where they are convenient for the purpose, fixed engines are preferable to portable ones; but this meeting is nevertheless of opinion that, in the present state of agriculture, the introduction of the portable engine has been, and will be for many years, a great advantage, inasmuch as it enables many persons to avail themselves of the advantage of steam, who otherwise could not have the opportunity of raising steam in any other manner, but perhaps more especially from the fact of its being a means by which the use of steam may become more generally appreciated, and ultimately become generally adopted in its best form."

#### ON WIRE FENCING.

REGARDING the first consideration of fencing, the advantages of "wire fencing," as compared with any live fence, are, that it becomes useful as soon as it is fixed; that it can be fixed in situations so unfavourable with respect to soil and situation that the Thorn, Holly, or any other plant cannot be raised; that it requires neither care nor attention, nor the extra expense of



weeding and trimming which attends the live fence; that it is not injured by hedge-breakers, but puts temptation out of their way; that it occupies very little room, and does not destroy the growing crops by overshadowing them, or by harbouring birds and vermin, or form a nursery for the growth of Thistles and other weeds; also it allows of the free circulation of air, and in winter forms no barrier to collect the drifting snow; it cannot be hurt by cattle;—for these reasons the wire fencing is the best species of fence, and the cheapest, as shown by the following calculations.

I have taken 20 rods as the length, both for the sake of closer comparison, and also as being the proper distance at which the stretching posts for the wires should be fixed. The prices of the wire, screws, posts, and timber, &c., are all retail prices, consequently the greatest sum has been given for the materials. The principal posts, of heart Oak, 8 feet long (squared sides to 4 feet) and 8 inches square, and delivered at the distance of 6 miles from the timber yard. Larch poles, 3½ lbs. per 100, delivered at the distance of 9 miles from where they were felled.

Two principal posts, heart Oak, 8 feet long, 8s. each	£0 16 0
38 Larch posts, 6 feet in length (pointed to be driven down), each post 4 inches nearly diameter and costing 4½d. each	0 14 3
Carpenter two days, at 3s. 4d. per diem. Boring the five holes in the posts and sharpening them, preparing the timber, &c.	0 6 8
Two large iron braces (for principal posts), sold by weight	0 4 0
Five 10-inch long screws for drawing up the wires, 5½d. each	0 3 4
Five small screws to hold the wires and nuts, &c., 4d. each	0 1 8
Extra Larch and timber for angle posts, &c.	0 6 0
Four bundles of No. 5 wire, each bundle weighing 65 lbs., measuring 156 yards, cost 8s. 6d., carriage and all included. Five wires for 20 rods will cost 1s. 6d. per rod	1 10 0
Two men digging holes for principal posts and angle posts, and driving down intermediate posts, each man 2s. 6d. per day for two days	0 10 0
A wire stretcher, who works by the day, for 6s. a day, two days	0 10 0
Total cost for 20 rods of wire fencing	£5 1 11

Which would be about 5s. 1d. per rod, or 5½ yards long measure, and this sum would be less if the work were done over even ground and without any angle posts to dig down, &c. When Oak is used for the intermediate posts they will cost 1s. each, but of course not so many as of the Larch need be applied for that purpose, but the distances may vary from 10 to 12 feet. The posts are, as to their height out of the ground, 3 feet 6 inches, and the wires are run in, or fastened with staples, which is the better plan; thus, the first wire 4 inches from the top, second wire 16 inches, third wire 25 inches, fourth wire 31 inches, and fifth wire 37 inches. I cannot, in this short essay, enter into the plans for fixing the posts and drawing the wires tight, but they are so simple that many of the yeomen and farmers put up the wire fences themselves, and the only machine they use for drawing the wire quite tight being the common timber jack.

It has been shown that these fences are quickly put up and easily mended when broken, the only drawback being that they most effectually stop that most manly and purely English sport, fox-hunting; but as a remedy to this evil I suggest the erection of long wooden styles at the corners of the field, which will thus direct the sportsmen where they can ride, and also keep the work-people from trespassing over the corn-fields.

The cost of forming a common Hawthorn hedge is as follows:

Ploughing and preparing the land, manuring, and forming the raised mound for the plants for 20 rods, and dibbling them in at 5 inches apart	£0 8 0
20 rods would require 1200 plants, at 10s. per 1000, cost	0 12 0
Fixing, &c., and carpenters' work, including cost of timber and poles, post and rail fence, posts 10 feet apart, 5 feet high, and 3 rails, at 2s. 6d. per rod for 40 rods, as there would be the two sides of the hedge to defend, would cost	5 0 0
	£6 0 0

Thus leaving a balance of nearly 18s. in favour of the wire fence, whilst the live fence would have, even if it cost less at the formation, a constant annual charge for trimming or clipping, besides the immense loss of ground. The Rev. Mr. Rham calculated the loss of land in hedges and ditches to be 1 acre in 25; by taking the estimates made by Mr. Grant in Devonshire, and those made by myself in Kent, it gives the average 1 acre in 27. I found even in this closely cultivated county, that 5 acres were gained on a farm of 203; 3 acres were gained on a farm of 180 acres. There has been on one farm hedging in length equal to seven miles, on three others, 9 miles, and these only the boundary fences.

Mr. James M<sup>r</sup>Queen's calculations in his "Statistics of the British Empire" state the quantity of cultivated land to be in England 25,632,000 acres, of which 16,523,400 acres were arable and garden, and 15,379,200 acres pasture and meadow land, &c. The value of the land he states to be 25s. per acre, which is equal to 32,010,000. The loss of 1 acre in 27 would be equal to nearly 444,370 acres in England, and the loss in money at the above rate, 1,136,790l. in round numbers. Imagine 544,370 acres reclaimed by judicious plantations, the gain to the landowner and to the nation. This exceeds by 999,000 acres the quantity of crown lands reserved for the purpose of raising timber for the navy, &c., besides the land which is now placed under the head of uncultivated but improvable land, amounting to 3,450,000 acres. The crown lands now appropriated for the growth of timber amount to 5,430 acres in England; so there need be no fear of the wants of the British navy being

neglected or injured by felling the hedgerow timber of this country. And landlords can erect barns and buildings by purchasing foreign timber, and using it, for a less sum than by applying the Elm boards, &c., of this country for that purpose. *Peverham.*

### Home Correspondence.

**Liquid Manure.**—I have frequently noticed with interest several articles in your columns respecting the best plan for collecting sewer water and farm-yard drainings, and also on the fertilising properties of this most valuable manure. From frequent observation I am inclined to think that a good deal of ignorance still exists amongst many farmers on this subject, or a want of means to carry out the plan, as I have very often noticed the urine actually drained away from the cattle-yards, &c., and wasted; and also means used to get rid of the sewerage, this being considered the best plan to employ this most useful manure. Many of those farmers are actually paying great prices for guano, and wasting it at their very doors. But although there are many who cannot, or will not, see the use of farm-yard drainings and sewerage as a manure, there are, on the other hand, many who are convinced of its value, but who are not in a position to construct expensive tanks. I think this subject is worthy of the still further consideration of our great practical and experimental farmers, not so much how large and expensive tanks can be erected, but the simplest and least expensive plan of collecting, and the best time, and how to apply the liquid. Then perhaps the small farmer might be able to have his liquid-manure tank as well as the great. *An Observer.*

**Thin Seeding.**—As harvest approaches, we shall be anxiously expecting to hear of not a few who have proved successfully and satisfactorily, by experience, the utility of adopting our system of thin and single seeding, and who have determined in a great measure the natural capabilities of the growth of corn sown or planted in single grains at wide distances. By way of illustration we beg to state the following example of the promising production of three plants of Wheat from single grains, occupying one square yard of common land, in ordinary cultivation, or 3 square feet to each plant, equal to about 1½ pint of seed per acre, now growing by ourselves (for inspection, if required), and now in full ear (June 10), containing at least 240 ears, or 80 on each plant. Reckoning only 50 kernels in each ear, is equal to 4000-fold (it often happens that 80 perfect kernels are contained in one ear when plants stand at such distances, enabling them to perform their natural capabilities), saying nothing of extreme cultivation by the aid of strong manures, which we hold to be comparatively unimportant; for though this produces a rampant growth, yet it is not always to be relied upon for the production of a full and sound crop of corn, being subject to more various vicissitudes of climate and atmosphere. As we believe it quite possible to hear of competitors, we hope and trust we shall do so. The following calculation shows the quantity which may be grown per acre upon the same principle as our own; accordingly, as a matter of consequence, those numerous agriculturists who contend for the opposite extreme, that 2 or 3 bushels of seed per acre is absolutely necessary, of course ought to expect immense crops! or, they must admit that much seed is actually wasted:—

EXAMPLE.	
4840 yards in an acre.	
240 ears in a yard, on 3 plants.	
193600	
9680	
1161600 ears in an acre.	
50 kernels in an ear.	

Supposed kernels } 20,000 } 5808,0000 kernels in acre.

- 1) 2904 quarters ditto.
- 4) 363 pecks ditto.
- 4) 90 3 bushels ditto.
- 2) 22 2 3 coombs ditto.
- 11 0 2 3 quarters ditto.

Answer: 11 quarters 0 coombs 2 bushels 3 pecks per acre.

N.B. In fine samples of Wheat, not more than 16,000 kernels are contained in 1 quart, which would give the product one-fifth more! *Hardy & Son, Seed-growers, Maldon, Essex.* [Such calculations go upon the untrustworthy principle that horticultural truth, multiplied by the number by which the extent of a garden will "go" in that of a farm, is just agricultural experience.]

**Wheat Crop in South Hants.**—Last year the wheat crop was very deficient in quantity as well as quality; and this present coming harvest presents a gloomy future to the farmer. Never was seen in South Hants such a small breadth of wheat sown, and what is sown and awaits the sickle will be the smallest yield in the remembrance of man. Many yards which could boast of four or five ricks, will have only one or one-and-a-half at most; and the quantity of land sown to wheat is smaller, owing to the continuous wet weather. The fields of wheat look miserably backward and naked;—much was so had it been ploughed up and the land sown to barley. As to old wheat, there is very little in the country. Bakers charge for ordinary bread one shilling the gallon loaf, and bakers give 10l. to 11l. only for wheat per load. *R. S. T., Hants.*

**Waste Manure.**—Your correspondent, Mr. Morton,

of Edinburgh, in your *Gazette* of June 4, has put himself to a deal of unnecessary trouble—in fact, he has reckoned without his host—in pointing out a source from which a great quantity of manure might be made, namely, by collecting the rubbish that grows in woods, affirming that we might have plenty of it and good, and he also gives some rules for making it; but let us first see if we can get it, and then it will be time to set about turning it to good account. Our country gentlemen are still too conservative to allow any such up-rooting system to prevail. Does not Mr. Morton know that the landlords who grow wood and hold it are generally interested in preserving the undergrowth as a protection and cover for the ancient and indigenous inhabitants?—and just let me ask where they would go to if such covers were done away with? They would have to sleep where they now feed—among the farmers' crops; and who shall tell the evil they would commit by lying where they feed, and the risk they may run by the thievish poachers? Such a thought is enough to disturb the mind of a well-wisher to his country. They are not like the labourers, who find work, and gladly come to it, though there they can find no home; no, these old inhabitants know better than that—they will depart to a more hospitable country, where their life will not be disturbed by the sound or slash of the scythe. But here follows the worst result of all: our sportsmen will depart, and the sun of England will then be set. We shall have none but the selfish money-making class left, who will level our beautiful serpentine hedges. The variegated surface of the land will be converted into a vast barren wilderness, where nothing would be seen but Turnips, Corn, Clover, *ad infinitum*. I think we should all be off to Australia, or to some other fine country, where the hand of innovation has not yet showed itself—where Nature shows herself in all her noble grandeur—where our ears will not be assailed by the harsh sound of the puffing engine and the noisy rattling of the railway train. I must confess that I, like a great many others, have sometimes been simple enough to think it was hard that the corn-field should be cropped with weeds from the seed matured in an adjoining plantation. I have thought the farmer ought to be allowed to sow his own fields, but I found this was a mistake; and I found that it was the landlord that ought to provide the seed, as it was he who stocked it. The farmer and the nation did thus bear the expenses, just as they would any ordinary tax. It is true that taxes are an evil, but they must be borne, and I do not see why this kind of tax should not be put up with. So I think I have proved that a practice such as Mr. Morton suggests, ought not to be adopted, even though we might have manure at home, though it may cost little, though the trees may grow better without it, and though the cultivated fields may be cleaner in the vicinity. *G. S.*

**The Thorn for Hedges,** or, as it is commonly called, Quicket, is raised from the seeds, gathered in October or November; the haws are mixed with sand or dry earth, and turned, to separate the seeds from the pulp; they are sown in beds in February or March of the second year of their gathering, being covered with fine soil to the depth of an inch or rather less. The seedlings are planted into nursery rows when strong enough, which will be generally in the autumn of the second year, and then, in about three years, they will be ready to be transplanted into the hedgerows. But the plants are usually purchased from public nurseries where they have been budded for two or three years, and cost from about 7s. 6d. to 15s. per thousand plants. The Hawthorn is also frequently transplanted from the woods; for, being indigenous throughout Britain, it may be found in almost all extensive covers. According to the mildness of the season and other favourable circumstances, hedges may be planted during the winter or early spring months; but the same precautions are necessary in transplanting Thorns as those that are taken in removing forest and other trees or shrubs; and I strongly recommend the same time of the year, namely October, after which month no tree or shrub can be moved with any certainty of success. In preparing the plants for the hedge, great care must be taken to choose such as have good fibrous roots and clean stems; the tops of the stems should be cut off with a sharp knife 6 inches above the roots, giving the cut an inclination upwards. All diseased or decayed fibres, &c., should be removed, as well as the long part of the tap root; nor must the planting be delayed a day after they are prepared; in fact, the direct line of the intended fence should have been stumped out, and the ground made ready for their reception previously. Hedges are generally planted on banks, having a ditch on one side, and sometimes on both; but (except in the case of forming a fence against a road, or on flat wet land, where ditches are required as drains) it is a great waste of ground to have any ditch, and therefore I prefer the hedge being planted on the plain surface of the soil. The ground for the reception of the plants which are to form a hedge should undergo a thorough preparation, by being trenched with the spade at least two "spits" deep, or being deeply ploughed, if of sufficient length to allow of the use of the plough, but in either case a good quantity of manure must be applied; but the width of the ground prepared need not exceed 2 feet, of course care having been taken in considering the aspect of the land, the quality of the soil, &c. The planting is then commenced by first stretching a line along the middle of the trenched or ploughed land, and a man with a common garden dibble precedes, making the necessary holes in the soil, 5 inches apart, alternately 2 inches on either side of the line; and another man follows with



the already trimmed plants, putting them into the dibbled holes, and carefully and lightly treading them down on every side with the foot, which will leave where the plants stand a little hollow to catch the rain, and retain the moisture about the roots. The single ditch may be used when fencing against a road or a distinct property; the ditch should be made on the same side as the road, &c., the soil having been thrown up from the ditch to form a mound, upon which the plants are laid (following the same rule as in dibbling, of having two lines of plants) about 6 and 10 inches from the side of the bank, the roots being towards the field side, and from where the good soil is thrown upon the roots. *Feversham.*

### Societies.

#### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

An adjourned Meeting of the last Monthly Council having been held at the Society's House in Hanover Square, on Wednesday, June 15, for concluding the arrangements for the appointment of Judges of Implements and Stock at the Gloucester Meeting, it was followed by an ordinary Weekly Meeting of the Council; present, Lord ASHBURTON, President, in the Chair; Lord BERNERS, Lord CAMOYS, Hon. John Jervis Carnegie, Hon. R. H. Clive, M.P., Sir Thos. Dyke Acland, Bart., M.P., Sir M. White Ridley, Bart., Sir Montague Cholmeley, Bart., Mr. Raymond Barker, Mr. Hodgson Barrow, M.P., Mr. Burke, Mr. D. Burton, jun., Dr. Calvert, Mr. Cavendish, Mr. Des Vœux, Mr. Druce, Mr. Dyer, Mr. Gadesden, Mr. Garrett, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Cuthbert Johnson, Mr. A. G. Jones, Mr. W. Jones, Mr. C. Lawrence, Mr. Maning, Mr. Orlebar, Mr. Chaudos Pole, Mr. Porter (Hembury Fort), Mr. Pugh, M.P., Mr. Rowlandson, Prof. Simonds, Mr. J. E. Thomas, Capt. Henry Vyner, Mr. Jonas Webb, and Mr. Yorke.

**AGRICULTURAL GEOLOGY.**—The President laid before the Council various communications, addressed to him, by Mr. Trimmer, in reference to the establishment of a Lectureship on Agricultural Geology. The communications having been read, a general opinion was expressed by the members present, that whatever might be their different views of the extent of benefit to be derived to agriculture from abstract geological knowledge, there was no one who, from his experience of superficial deposits, was better qualified than Mr. Trimmer for the practical department of Agricultural Geology. Lord BERNERS bore particular testimony to the value of Mr. Trimmer's knowledge in supplying him with most interesting and useful advice in reference to his lordship's own property in Leicestershire; and the President considered that courses of lectures on surface-soils and deposits near the surface would furnish much aid in improving the fertility of particular districts; and Mr. Rowlandson dwelt on the especial necessity, in all cases of soils, of having a chemical as well as physical examination made of their peculiar properties.

**FOREIGN AGRICULTURE.**—Communications having been laid before the Council from the Georgofili Society of Florence, and the Imperial Agricultural Society of Valenciennes, conveying an intimation from each of those agricultural bodies of their wish to transmit to the Society their published transactions, and written information of the occurrence of interesting facts in agricultural science and practice, it was resolved unanimously, on the motion of the Hon. R. H. Clive, M.P., seconded by Mr. Jonas Webb, that each of those institutions should be placed on the list of Corresponding Societies, and the Journals forwarded to them accordingly.

Mr. Harriott exhibited to the Members a model of his Pulverising Clod-crusher and Presser; and M. Terwagne, of Lille, transmitted an account of his work on the treatment of textile plants; including comparative analyses of the products obtained in the processes of Schenck, Watts, and Delisse; and an account of his own process by means of rural machinery, and preparations for the treatment of Flax and Hemp.

The Council ordered their usual acknowledgments for the favour of the communications then made to them, and adjourned to the 22d of June.

**BATH AND WEST OF ENGLAND SOCIETY.**—We now present, as was last week promised, extracts from the council report:—The Society at present consists of 73 governors, being subscribers of 2*l.* or upwards; 9 life members, by composition of 10*l.* in lieu of annual subscription; and 528 members, by annual subscription of 1*l.* or 10*s.*; making a total of 610 members, being an increase of 190 since the last meeting. The council have great satisfaction in announcing that they have been honoured with the gracious patronage of H.R.H. the Duke of Cornwall, accompanied by a donation of 20 guineas. Nor can they forget that the Crown was a munificent contributor to the funds of this Society in its earlier days. They venture to trust that Cornish agriculturists, following the royal example thus set them, will be incited to adopt a similar course, and to illustrate, as ever, their motto, "One and All."

**The Journal.**—The council have to report that, in compliance with the wish expressed in several quarters, they published the first number of their journal without waiting for the award of the prizes offered for essays on various subjects of local interest. They have to acknowledge with gratitude the use made of other publications of high repute, but especially of the "Journal of the Royal Agricultural Society of England." It has been their wish, and that of the committee to whom they intrusted this department of their duty, that their journal

should be adapted to the local wants of the practical farmer in the west of England, while it should aim at enlarging the range of his inquiries into the experience of others, and his acquaintance with the results of science. The journal committee speak in the highest terms of the value of the essays sent in to compete for the prizes offered. They have obtained the permission of several of the contributors, besides the successful competitors, to make use of their papers in the next number of the journal. Prizes have already been offered on the subjects of Cider, of the Devon Clays, of the Consumption of food by Stock, and, by the liberality of Sir Alexander Hood, on Scouring Land in the Pastures of Somerset. The council have not ventured as yet to undertake any course of combined experiments, but they beg to draw the attention of the members to the report of the experiments on guano and coprolites made by members of the Yorkshire Society, contained in the journal of this Society (page 235), and they would be glad to receive suggestions as to any subjects in which the general co-operation of the council might be acceptable or useful to the members; as they believe that no measure can better promote the improvement of the agriculture of a district than a well-arranged course of experiments, tried by a sufficient number of practical men, simultaneously, under the requisite precautions, and directed to ascertain some specific point.

**Finance.**—At the earliest possible period after the accounts for the Taunton meeting were closed, the council forwarded to every member of the Society an abstract of its receipts and expenditure, made up to July 1, 1852. A complete balance-sheet was subsequently made up to the 1st November, 1852, and published in the first number of the Society's journal, delivered to members in January last. The balance which appeared in favour of the Society at that time was required for the payment of the expenses of printing and circulating the journal; for the premiums awarded to the prize essays; and for the current official expenses. The whole account for this year will be made up as soon as possible, and published with the next number of the journal. The cash at present in hand is 1058*l.* 6*s.* 7*d.*; and although the liabilities already incurred for prizes to be awarded, and the general expenses of the exhibition, exceed the amount of cash in hand, there is good reason to hope that the receipts at the doors of the yard will enable the council to present a favourable account at the end of the season. With regard to the future financial prospects of the Society, the council are enabled to report a steady advance; at the same time they wish to impress upon every individual member the need of further personal exertion, in order to place the finances of the Society, not only on a sound basis, but in a course of progressive prosperity. The income derived from annual subscriptions has not yet reached 700*l.* The prizes offered in the present year at Plymouth amount to 710*l.* The cost of publishing the journal, and all the expenses incident to the annual meeting, and to general management, must therefore be provided from funds which are precarious in their nature and uncertain in amount.

**Judges—Instructions.**—The same instructions have been given to the judges as on the former occasion, directing their special attention to the circumstances of the generality of farmers in the west of England, in the following terms:—"The judges are instructed, generally, to bear in mind the object of this Society, namely, to benefit the agriculture of the west of England; and, therefore, that those animals and implements should be encouraged which are suited to the soil, climate, and other peculiarities of the district. With regard to cattle, sheep, and pigs, not to take into consideration the present value to the butcher of the animals exhibited, but to decide according to their relative merits for the purpose of breeding; therefore that particular attention should be given to those points which indicate a tendency to produce offspring with healthy constitutions, having due regard to symmetry, size, and such other points as afford the best prospect of profit. With regard to horses, to consider especially the qualification for farmers' work in a hilly country, whether as agricultural horses or as hackneys. With regard to implements, to bear in mind that, in the west of England, farms are generally of small extent; to give especial attention to small implements for the cultivation of green crops, and for the preparation of food for stock; and, generally, to give the preference to implements of simple construction and light weight (with due regard to strength), handy for use in a country in which stony ground is very common. With regard to all classes of stock and implements, to give no prize in any class in which the articles exhibited do not possess sufficient merit to deserve a recommendation. They have further instructed the judges of stock to pay particular attention to the cudition of animals exhibited as breeding stock, and to refuse the prize to such animals as are, in their opinion, over-fed. They have also instructed them to take special notice of the manner of shearing, and to do all in their power to discourage the practice of hiding defects by evading the rule that the sheep shall be close shorn." The council have not lost sight of the recent regulations of the Royal Agricultural Society, in reference to the condition of breeding stock, but they have thought it better to wait till experience shall have tested the efficiency of regulations made under such high authority, before they recommend the Society to adopt some course having the like object in view.

**OXFORDSHIRE AGRICULTURAL SOCIETY.**—The annual show of stock and ploughing match of this Society

were held in the city of Oxford, on Wednesday, the 8th inst. It has been usual to hold its annual gatherings alternately at Woodstock, Witney, and Dorchester, but as Oxford possesses so many advantages in the way of railway communications, it was thought advisable to hold the meeting this year, by way of experiment, in that city; and if it should answer the expectations of its promoters, we have no doubt it will be held there annually. This Society was established in the year 1811, to promote and extend a knowledge of the theory and practice of agriculture and husbandry, and the arts which have a tendency to the improvement thereof, and particularly to excite, by premiums and otherwise, a spirit of industry and emulation among servants and labourers in husbandry; also to encourage generally all useful improvements, experiments, and inventions, and to promote the better construction or application of instruments in agriculture. The following is a summary of the prizes awarded by the Society since its establishment:—To servants, 2660*l.* 14*s.*; to members for stock, 2882*l.* 10*s.* We regret that we have not room for the list of prizes awarded on this occasion, but we must make room for the following remarks by Mr. Pusey:—He might, perhaps, have had some difficulty in coming here had he not felt that, at his time of life, he had altogether renounced the turmoil of politics, and therefore there could be no mistake as to the motive of his attendance; but although he had withdrawn from the turmoil, as he had said, of politics, he trusted that God would yet spare him a few years to devote to the service of the farmers of England. He sincerely hoped that the farmers would forget any little differences which had arisen between him and themselves, as he had done; and he trusted that in his humble office he should still be useful to them. He had witnessed with much interest the show of to-day; although it was small it was very good for a country show, and there were many indications of improvement. In the first place, he was glad to see travelling steam-engines amongst them, and that they were gaining ground among practical agriculturists; for when they had received their sanction—and not till then—they would take root in the country. Another object of interest was the exhibition of half-bred sheep. He did not intend to say anything against their own breeds of sheep, because different kinds were suited to different localities and descriptions of food, but still he could not help saying that, in his opinion, half-bred sheep were what they had long required. Many of them used the first-cross, and found them to be profitable sheep when they sent them to the London markets, but there was this disadvantage attending them—they were constantly under the necessity of purchasing fresh ewes. He might mention that since he had been in this room he had done a stroke of business with Mr. Gillett, having purchased 10 ewes to be picked from his flock. Perhaps it would not be well to state the price, as it might have the effect of augmenting the sum to be paid in future purchases. He never was a speaker, and it was not likely that he should become one at his time of life, but still he should like to say a few words respecting the state of the Thames. The Thames was a good neighbour when it took possession of their land for a short time, but when it remained for three or four months there was a great disadvantage attending the visit. But, nevertheless, he should be sorry to get rid of the navigation and mills of the river, and to leave it almost a dry bed in the summer; and he was happy to say that the committee which had been sitting for some time in Oxford now saw their way out of the difficulty at a very moderate expense. The committee intended to meet during the ensuing week, and their report would be shortly laid before the landowners, who, if he was not mistaken, would find it to their advantage to invest a little money in the undertaking. He was happy to say that a fresh connection had sprung up between himself and the English farmers, inasmuch as the Royal Agricultural Society had done him the honour to select him as their chairman for the next year. This city was, as they were aware, the very cradle of that Society; and as the next meeting was to take place at Gloucester, he hoped to have the pleasure of there meeting many of those gentlemen whom he now saw before him. In the following year, if health remained to him, he was to preside at the Lincolnshire meeting—a county which, at the present moment, was exceedingly interesting in consequence of the conversion of many bogs and fens into corn fields as smiling as any the country possessed. Considering the facilities afforded them for travelling by railway, he hoped they would remember the invitation he now gave them, and that many of them would do him the honour of supporting him on that occasion.

**FLAX SOCIETY: BELFAST, May 25.**—Some Flax-seed, of a new variety, had been obtained, for trial, from Mr. Frederick A. Haage, of Erfurt, Prussia, who gave the following details concerning it:—"It was found by Sir R. Schomburgk, in the vicinity of the River Orinoco, in South America, who recommended it very particularly on account of its tall growth and the extraordinary strength and very fine white and silky texture of its fibre. It is smaller in the flower, which is white, than any of the other cultivated kinds, and the upper part of the stem is more or less spirally twisted before coming into flower. I have named it *Linum Americanum album*, to distinguish it from the other white flowering kind cultivated in the north-eastern provinces of Prussia and adjoining Russian governments. This South American Flax is much superior in strength and length to that



kind, which I believe is the *L. acuminatum*, indigenous to Asia, and perhaps synonymous with *L. usitatissimum* fl. alb." The seed procured from Mr. Haage had been distributed in small parcels among some of the Society's members, to be sown beside an equal quantity of the ordinary Flax-seed, in order that the growth of each might be compared and as well as the yield and quality of fibre.

## Reviews.

*Modern Views on the Relations between Landlord and Tenant, Tenant Right, and Compensation for Improvements.* By Edward Bullen, Esq. Saunders & Stanford. (Pamphlet.)

For the amendment of the law which, in this country and in Ireland, regulates the mutual rights of landlord and tenant with reference to fixtures and improvements erected and made by the latter, the writer of the above pamphlet proposes to obtain from both Houses of Parliament a "Declaratory Resolution," in which what, in the writer's opinion, the justice of the case requires shall be solemnly set forth. Such a declaration, the author hopes, would have an effect which legislation could never produce, namely, the effect of letting both landlord and tenant know what, in the opinion of others, their mutual claims in justice are, and yet of leaving them to be guided or not by such opinion as they may seem fit. Whether a declaratory resolution of this description would produce any effect at all, except that of placing the Legislature in the somewhat unenviable position of solemnly admitting the existence of a great evil, and yet declining to take any steps for its removal, appears to be open to considerable doubt. We agree with the writer in thinking that legislation is not desirable if the object to be attained can be reached in some other way; we also concur with those who refuse their assent to the proposition that no alteration in the law is requisite, because landlords and tenants can, by entering into agreements, settle what their mutual rights and duties shall be. The law which comes into operation in the absence of agreement is extremely harsh, and requires a thorough revision, and to be replaced, not by a declaratory resolution, obligatory on no one, but by a new set of laws, binding upon all, except so far as persons may choose to consent to the contrary.

*Our Coal Fields and our Coal Pits; the People in them and the Scenes around them.* By a Traveller Underground. Longmans.

This is one of those useful volumes, readable as well as instructive, comprised in Messrs. Longmans' Travellers' Library. Like its companions in the series, it contains a fund of valuable information, conveyed in a popular and attractive style. Farmers have not much occasion to be travellers underground, but it is not the surface only which many of our readers have to do with; and as owners as well as occupiers do us the honour to read our columns, we notice this not-agricultural work as one in which many of them may see the geological value of their property demonstrated. There are many instances—some of them specified in the work before us—in which landowners have been content with the value of the surface only of their estates, in ignorance of the far greater value of what lay below it; instances, too, in which surface indications have been misconstrued, so as to lead to great waste of means in a useless search after minerals which had no existence. A little geological information, such as the author of this book has given us, would have added to their wealth in the one case and saved their losses in the other. We extract an illustration or two on these points.

"Why should coal be found only in certain localities? Because it has a precise and regular position in the series of British strata, and is never found in any very great or available quantity out of that position. Coal, as to its geological position, is known with as much certainty as the position of a floor in a house, or a volume in a series of books. Suppose all the British strata to be represented by volumes, say the volumes of an Encyclopædia, and that coal should be represented by volume 19; then you might as well expect to find volume 19 in the books, in the place of volume 1 or 2, as coal at Blackheath. A mere modicum of geology suffices to fix the true position of true coal."

"But if coal naturally, or rather geologically, lies so low down in the lines of strata, how is it that it is sometimes found near (comparatively) to the surface of the earth, and again at other times very deep down? Because, although all stratified rocks bear ample evidence of having been deposited horizontally, or nearly so, they show equally ample evidence of having been subsequently raised or depressed by various causes, some extending over large portions of the globe, while others are comparatively local."

"Your toast, when buttered and cut up, lies temptingly horizontal on its plate; that is the original position of the strata. Your bread and butter, however, lies inclined and edgeways on its plate; that is the actual position of the strata. Imagine the crust of the pieces of bread and butter to be the crust of the earth, and you have the stratification pretty accurately. You can get at any piece of bread and butter you like, by taking hold of its own crust, without disturbing the other pieces. Not so with the toast which lies flat; you must remove each piece of toast successively, to reach the middle or lowest piece. That is what we should have been compelled to do for coal (or rather could not have done) if Providence had not mercifully broken it up into

patches or basins for our acquisition after due labour. I take this most familiar illustration, that the young reader may learn a lesson of science even at the breakfast table."

For instances of failure in the search after coal, note the following:—

"Some years ago, ignorant people persuaded" the Duchess of Dorset to expend about 10,000*l.* in vainly searching for coal at Bexhill, in Sussex; where any geologist (as now instructed) could have at once pronounced that none would be found. Again, in 1839, a most extensive display of steam-engines and shafts was made at the Kingsthorpe pits, about a mile from Northampton; a joint-stock company was organised to work the supposed coal underground, and only found there was none of any value after they had sunk 20,000*l.*, as well as many shafts or bores. All this foolish expenditure had been made upon a mere imaginary expectation of coal. An uneducated well-sinker had bored through a bed of clay, which resembled the clay overlying coal, and a little lignite, or imperfect coal, had probably been found. This was enough; no experienced geologist was consulted; a large amount of capital was subscribed by rich and poor, and the whole expended without any return, save that of empty buckets from the sinkings."

The volume is, as its title indicates, something more than a mere book on the economical geology of coal—it is enlivened with sketches, tales, and memoirs—quaint local poetry and original imitations of the same—not to speak of the liveliness and even oddities of the style in which the whole is written.

## POULTRY.

THE WEST KENT ASSOCIATION held its first exhibition of poultry on Tuesday, Wednesday, Thursday, and Friday last, at the delightful village of Farningham. No spot could be better chosen, lying in a charming valley, sheltered on every side by wood-crowned hills. The ancient loyalty of the county did not belie itself on this occasion. The entrance to the village was under an arch of evergreens, and the bridge was covered with a canopy of verdure and flowers, supported by 10 pillars, forming the supports of as many arches. On the London side were the Royal arms, the motto in flowers "Loyal en Tout," and "God save the Queen;" on the opposite the White Horse of Kent, and for inscription, "Queen and State," surrounded by the proud "Invicta." A magnificent show of flowers added its charms to the poultry, and with the assistance of the band of the Royal Artillery, combined to form an attraction of no ordinary nature. But our business is with the poultry; the exhibition originated entirely with Mr. Dray, and his exertions must have found a rich recompense in the treat afforded to amateurs, and in the full attendance of the nobility and gentry of the neighbourhood and the vicinity. The prize-list comprised 27 classes, exclusive of rabbits and pigeons, and these, combined with the extra stock, produced 370 entries. Although the season of the year is not favourable to poultry shows, yet the amateur finds both interest and instruction in watching the produce of the year, and speculating on the probability of the chicken prizes of June being confirmed by the award of similar honours to the same birds in the winter. The classes best represented were Cochins, Spanish, and Polands. Good specimens of other breeds were not wanting, but it was matter both of surprise and regret, that, in a county holding no mean position among those that supply London with the best poultry for the table, the really useful Dorking fowl should not have been exhibited in greater numbers, and of higher quality. Mr. Fairlie, of Cheveley Park, took eight prizes. The first, for Cochins, in two classes; also two for turkeys, &c. Cochins China chickens introduced a name hitherto unknown; that of Mr. Jecks, who took prizes with some beautiful chickens, which met a ready sale; Mr. Lewry took the principal prizes in Dorkings; Mr. Owen, another new exhibitor, took both prizes in Spanish, with some excellent birds; Mr. Fairhead took the prize for white Cochins; the prize for golden Hamburgs went to Shropshire, being taken by Mr. Chune, who guarded his pen with a prohibitory price of 1000*l.*; Mrs. Rawson was successful in class 11, as also in 13, taking two prizes therein; Mr. Edwards took the prize for Polands, with white crests; Mr. Howard took a prize for cross-bred fowls. We cannot approve of this class, thinking little good will arise from it, nor have judges any sufficient rule whereby they may form a right judgment. Mr. Bartlett took a prize for six beautiful Cochins; Mr. Edwards was successful in the game fowls. The competition in Sebright bantams was very close between Mr. Atkins and Mr. Clinton, both of whom took prizes. Mr. Baker and Mr. Fairlie each took prizes for other varieties. These are the principal; but to the list we must add, with pleasure, that Mr. Dray was twice among the successful. We doubt not the foundation is laid for greater exhibitions hereafter, and the exertions of the committee, especially of Mr. Russell, for the comfort of all who attended, could not fail to make it a treat which will be anxiously looked for again. Mr. Baily, of Mount Street, acted as judge, having been deprived of the valuable assistance of Mr. Andrews, of Dorchester, by the indisposition of that gentleman.

*Poultry Literature.*—The tender wail of your fair correspondent, "Maria," will be sympathised in by hundreds. She is not alone in her grief. The "Poultry Book," heralded by no less than five Leaders of a

cotemporary, judiciously extended over several months' besides incessant indications of its advent in the pithy "Notices to Correspondents," had been looked forward to with feverish anxiety by all the poultry amateurs in the kingdom. The Old Testament writers, the Greek poets, the Latin historians, the quaint old English writers (such as Sir Anthony Fitzherbert, 1532, and Tusser, 1578), the more modern ones, Mowbray, Dickson, Nolan, and Richardson; ay, and the graceful and practical essayist Dixon, together with many other writers who had directly or indirectly, purposely or incidentally, presumed to refer to "poultry," had been pompously ushered before the said editorial chair for judgment, and, after a tedious hearing, extending from July 8 to Dec. 2d, 1852, were dismissed with the following rebuke:—"One great deficiency more or less detracts from the value of all the publications we have passed over rapidly in review—they are not original works . . . they retail again and again what their predecessors had borrowed before, and that without sufficient knowledge to select ancient truths, always valuable, but republishing them with equally ancient errors." This "deficiency of knowledge" was often mixed up with "gross ignorance" as to the diseases of fowls; but in order that the poultry world may not sink into utter despair at this thought; and from the circumstance that "the entire personal experience and observation" on poultry, were summed up "in a thin duodecimo of 58 pages," it was prophetically assumed that the "best breeders of poultry" were about to contribute the results of their experience, so as to form what the editor believed would be "the most trustworthy work on poultry that has hitherto appeared." "It will be published in five or six cheap and highly illustrated numbers, and the first of these numbers will appear in January next." Now, sir, all these high promises have ended in bitter disappointment. Three numbers of this said "Poultry Book"—this "most trustworthy work"—have appeared, and they contain, in an exaggerated degree, all the faults denounced by the editor in its predecessors. It is faulty in arrangement, inelegant in style, inaccurate in its illustrations, contradictory in its facts, and is in very truth, as "Maria" terms it, a *réchauffé* of articles that have already appeared in the "Cottage Gardener." This is the disappointment, because all who read the "Poultry Book" have read the "Cottage Gardener." In the first place, it did not appear, as promised, in January, and, when it did arrive, the first number contained an emblazoned portrait of a Shanghai hen, with the legs of a "creepie!" The second number was enriched with a marvellous egg, with the yolk at the bottom of it, and two young embryo chickens staring with amazement (as well they might) from each end of the egg at this terrible disaster! In the third number, this "gross ignorance" of the "physiology" of fowls is attempted to be amended, and we are forthwith favoured with portraits of Captain Hornby's Spanish fowls. They are, indeed, wonderful creatures! Well might the gallant Captain carry all the prizes, as he certainly does, from the north, east, west, and south of the kingdom!—for verily we never saw such Spanish fowls as those which are represented in "The Poultry Book" before us. Our Spanish fowls are simply black in colour, richly shaded with green, but these revel in all the colours of the rainbow. The hen is enriched with a beautiful golden halo around the upper two-thirds of her face; the cock's beak is yellowish, and his face is decorated with stripes of yellow and green; his breast is adorned with light green feathers, and the hackles terminate in an exquisite fringe of grey; and his tail! oh, his tail!—who shall describe the glories of that nether appendage, resplendent as it is with every variety of hue, from the blackness of the raven's plume to the whiteness of the mountain snow. We congratulate Captain Hornby on having concentrated in the tail of his Spanish cock all the excellences, as far as colour is concerned, of the white Spanish, the grey Dorking, and several other varieties besides. If these are, however, the beauties upon which he relies, let him look to his laurels.

"O formose puer, nimium ne crede colori;"

A "Poultry Book" Purchaser.

**POULTRY:** Mr W K. Try castor oil (a tablespoonful), and then give pills of equal parts of gentian, mustard, and ginger; stimulating food, as crusts soaked in strong old ale. If this fail, give the bird a vapour bath. Fill a pail or tub with boiling water, place a sieve over the top, put the fowl in it, and cover the whole with a thick cloth. Leave him in it from ten minutes to a quarter of an hour, and repeat every day, or oftener if necessary. Feed very high all the time, but give no meat. *J. Baily, 113, Mount Street.*

## Calendar of Operations.

### JUNE.

**BORDER OF THE FENS, June 13.**—During this month chiefly is distributed the manure which has been accumulated during the winter. Where the yards are large, and have been occupied by growing stock, the manure is turned over into a great heap in the centre about the beginning of May, but that from stables, boxes, pigsties, and other sources, is carted into the field at convenient times throughout the spring, where a large square stack or heap is raised 6 or 8 feet high. This morning we began to spread it over the land at the rate of 16 loads per acre; two men filling, one man emptying, with two carts and three horses, one man and two boys evenly distributing and breaking the manure, two ploughs being employed, with two horses to each; an iron roll will follow, leaving it ready for the manure drill. This morning three Wheat ears, quite out of the sheath, were taken from a field where plenty of others might be gathered, it is so forward that we expect to see the field in full ear before this week is out. In the Fens generally the Wheat looks remarkably well, a full plant and a good colour, though requiring the rain which has partially



allen within this day or two. The late sown Wheat is everywhere thin; on the clay lands it is stunted, and occasions fears to prevail of its unproductiveness. Hoers and weeders have been much employed; great complaints are made by some of the injury done by the wireworm to Wheat and Oats in the Fens. Genial showers may stop their ravages. Mowing Grass has partially commenced, we think too soon; the last five or six weeks of dry weather may have hindered the growth of Clover and Grass, but as they are scarcely yet in flower, warmth and wet will doubtless aid much both in weight and quantity. Store stock is greatly in demand, and useful two-year old steers are from 30s. to 2l. a head dearer than last year. Mangold Wurzel has not come up well, owing to the continued drought; if it do not soon make its appearance we shall have to plough again, and sow Coleseed or Turnips. As we clear off Tares when our regular Turnip seeding is done, i.e., as soon as we can spare men and horses, we shall give a light dressing of manure, and sow white Turnips. We did so with 2 acres last year in a field where 3 acres of Potatoes and 3 of Mangold grew. The Barley, this year, on the Tare land, is darker, and thicker, and stronger by half than the other portions, although the whole field looks well, and bids fair to be a heavy crop. I would add a remark upon manure. I have noticed on several farms this spring old heaps of manure, either in the middle or on the sides of a field of growing corn, not near a fallow, or intended, as far as I can learn, to be applied to root crops; it strikes me that these odds and ends of manure show great improvidence and waste. Surely all manure not intended for eddishes should be cleared up either with the last sowing of Turnips in August, or at latest used with Tares in September. There should, I apprehend, be at least one thorough sweeping out of all matter available for fertilising the soil in each year, old manure parting with so much of its volatile and most valuable properties as to become nearly inert. Implements of all kinds require to be looked over now, and when not used put under shelter. A little paint should be used, to fill up cracks, keep out the wet, and prevent the prejudicial effects of dirt and damp upon the wheels and framework of carts, &c., &c. Sheep-shearing is nearly over, and I hear it spoken of unfavourably; the wool is deficient in weight and quality. We shall know more about it when our friends weigh their wool. The sheep themselves have greatly improved in condition during the last fortnight—most meat always suiting them, it is said. Men are well employed; at present we have plenty of labourers, their wages are from 11s. to 12s. per week; hoeing, from 2s. to 2s. 6d. per acre; women, 10d. per day for weeding; gangs of children, 10s. 6d. per score of 20 per day. J. W., *Feterborough*.

### Notices to Correspondents.

**BLOOD: E.F.I.** The nearest to an answer that we can give is to say that the offal of an ox of 6 or 7 cwt. includes among its items 3 or 4 stones of blood, and that of sheep of 20 lbs. a quarter or thereabouts, about 6 lbs. of blood. We have asked elsewhere for information. We see that a writer speaks of the blood as generally 1-14th of the net weight of an animal, i.e. of its carcass weight, which will correspond generally to 1-30th of the live weight.

**FORCING PUMP: O.R.** A correspondent, who gives his name and address, speaks to the value of this pump. He has one at work now, pumping up liquid manure, and distributing it, through hose, a distance of 600 feet.

**WESTRUP'S CONICAL FLOUR MILL.** Can any of our readers give us an opinion of it, founded on experience?

**MISC: Carmarthen.** We will as early as possible make different arrangements.

## Markets.

### COVENT GARDEN, JUNE 18.

The weather being favourable, most things in season are supplied in abundance. Forced Peaches and Nectarines are plentiful. Strawberries from the open ground are now beginning to come in. The supply from the Continent of Peas, Potatoes, Carrots, Artichokes, Endive, and Lettuce, is still well kept up; and there have been some good French Cherries in the market this week. Rhubarb is abundant. Young Carrots and Turnips fetch from 9d. to 1s. per bunch. Green Peas are coming in in very good condition, at from 1s. to 1s. 6d. per quart shelled, and from 3s. to 4s. 6d. per bushel sieve. Old Potatoes are almost unsaleable. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonette, Cinerarias, Tulips, and Azaleas.

### FRUIT.

Pine-apples, per lb, 6s to 12s  
Grapes, hothouse, per lb, 3s to 10s  
Peaches, per doz, 12s to 20s  
Nectarines, per doz, 12s to 20s  
Strawberries, per pot, 1s to 15s  
Apples, dessert, per bush, 10s to 25s  
Kitchen, do, 6s to 12s

### VEGETABLES.

Cabbages, per doz, 1s to 2s  
Cauliflowers, each, 2d to 4d  
Greens, per doz, 2s 6d to 4s  
French Beans, per 100, 9d to 1s 6d  
Asparagus, per bundle, 1s to 4s  
Rhubarb, per bundle, 3d to 6d  
Potatoes, per ton, 80s to 120s  
per cwt, 4s to 8s  
per bush, 2s 6d to 6s  
Turnips, per doz, 3s to 4s  
Cucumbers, each, 2d to 1s  
Celery, per bundle, 1d to 1s 6d  
Carrots, per doz, 3s to 8s  
Spinach, per sieve, 1s to 2s  
Onions, per bushel, 8s to 12s  
Beet, per doz, 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb, 6d to 8d  
Tomatoes (foreign), p. doz, 6s to 8s

### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, June 16.**  
Prime Meadow Hay 78s to 85s  
Inferior do. ... 65 72  
Rowen ... 40 50  
New Hay ... ..  
**CUMBERLAND MARKET, June 16.**  
Prime Meadow Hay 90s to 95s  
Inferior do. ... 65 84  
New Hay ... 60  
Old Clover ... 100 108

### POTATOES.—SOUTHWARK, June 13.

During the past week the supply, both coastwise and by rail, has been large for the season, and the weather very warm. The demand has fallen off considerably, and all second rate sorts are unsaleable. The following are this day's quotations:—Yorkshire Regents, 70s. to 120s.; Lincolnshire do., 60s. to 90s.; Scotch do., 60s. to 100s.; do. reds, 60s. to 80s.; Rheinish, 6s. to 70s.

### WOOL.

**BRADFORD, THURSDAY, June 16.**—The sales of colonial wools by auction have closed with great firmness, notwithstanding the bank having raised the rate of interest, and other features of uneasiness. The new clips of English wool continue to be sold as brought to market, at prices wholly out of the reach of the consumer, and it is to be feared ere long either a great loss must be occasioned to the stapler, or a stoppage of the machinery will be inevitable.

### SMITHFIELD.—MONDAY, June 13.

The supply of Beasts is very little larger than on Monday last; trade is not quite so good as on that day, but rather improved

from Friday. Sheep and Lambs are rather more plentiful. Being a thorough wet day causes the stock generally to show badly. A few choice Downs make 4s. 8d., but too seldom to be quoted. There is more demand for Lamb than on Friday, but we cannot quote higher. Calves are rather lower. From Germany and Holland there are 753 Beasts, 2900 Sheep, and 340 Calves; from Scotland, 230 Beasts; and from Norfolk and Suffolk, 2500.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 4 4 to 4 6	Best Long-wools ... 0 0 to 0 0
Best Short-horns 4 2 to 4 4	Do. Shorn ... 4 2 to 4 4
2d quality Beasts 3 4 to 3 8	Ewes & 2d quality 0 0 to 0 0
Best Downs ... 0 0 to 0 0	Do. Shorn ... 3 6 to 3 10
Half-breds ... 0 0 to 0 0	Lambs ... 5 4 to 6 0
Do. Shorn ... 4 4 to 4 6	Calves ... 3 6 to 4 10
Beasts, 4083; Sheep and Lambs, 25,610; Calves, 420; Pigs, 380.	Pigs ... 3 4 to 4 4

FRIDAY, June 17.  
We have about an average number of Beasts, but the quality is inferior, consequently choice descriptions realise Monday's quotations without much difficulty; middling kinds are rather lower. There is a shorter supply of Sheep and Lambs; trade is slow; prices are better than on Friday, but we cannot quote higher than on Monday last. There is no alteration in the Calf trade. Our foreign supply consists of 188 Beasts, 1110 Sheep, and 456 Calves; from Norfolk and Suffolk, 400 Beasts; and 132 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 4 4 to 4 6	Best Long-wools ... 0 0 to 0 0
Best Short-horns 4 0 to 4 4	Do. Shorn ... 4 2 to 4 4
2d quality Beasts 2 3 to 3 6	Ewes & 2d quality 0 0 to 0 0
Best Downs ... 0 0 to 0 0	Do. Shorn ... 3 6 to 3 10
Half-breds ... 0 0 to 0 0	Lambs ... 5 4 to 6 2
Do. Shorn ... 4 4 to 4 6	Calves ... 3 6 to 4 10
Beasts, 880; Sheep and Lambs, 10,780; Calves, 749; Pigs, 290.	Pigs ... 3 4 to 4 4

### COAL MARKET.—FRIDAY, June 17.

Hollywell, 16s.; Wallend Braddell's Hutton, 15s.; Wallend Haswell, 15s. 6d.; Wallend Lambton, 15s. 6d.; Wallend Tees, 15s. 6d.—Ships at market, 86.

### MARK LANE.

**MONDAY, June 13.**—There was a good supply of Wheat from Essex and Kent at this morning's market, which was disposed of at an advance of 1s. to 2s. per qr. upon the prices of this day's night. Foreign was in good demand from country buyers; but we are unable to raise our quotations, although an improvement of 1s. per qr. was established upon the sales of this day week. For Barley there is a fair trade, at fully late rates. Beans and Grey Peas are 1s. per qr. dearer; white are unaltered in value. Oats bring 6d. per qr. over the price of Monday last. Flour is held for a slight advance.

PER IMPERIAL QUARTER.	S. s.	S. s.
Wheat, Essex, Kent, & Suffolk ... White	42—55	Red ... 40—48
— fine selected runs ... ditto	44—61	Red ... 46—53
— Talavera ...	55—61	Red ...
— Norfolk ...	35—40	Red ...
Foreign ...	35—40	Red ...
Barley, Kent, & Suffolk ...	24—30	Malting ... 25—29
— Foreign, grinding and distilling ...	22—30	Malting ... 23—32
Oats, Essex and Suffolk ...	17—20	
— Scotch and Lincolnshire ... Potato	22—24	Feed ... 17—22
— Irish ...	21—23	Feed ... 19—20
— Foreign ... Poland and Brew	19—22	Feed ... 15—21
Rye ...	29—32	Foreign ...
Rye-meal, foreign ...	35—39	
Beans, Mazagan ... 33s to 37s	Tick ... 35—39	Harrow ... 35—39
— Pigeon ... 38s — 41s	Winds ...	Longpod ...
— Foreign ... Small	34—40	Egyptian ... 32—34
Peas, white, Essex and Kent ... Boilers	40—43	Suffolk ... 40—44
— Maple ... 32s to 37s	Grey ... 31—35	Foreign ... 32—44
Maize ... White	37—44	Yellow ...
Flour, best marks delivered ... per sack	37—44	
— 2d ditto ... ditto	21—37	Country ... 21—37
— Foreign ... per barrel	22—25	Per sack ... 35—38

**FRIDAY, June 17.**—There has been a good supply of foreign Wheat this week, fair of English, and of other grain small. This morning's market was moderately attended only, including some distant purchasers. Nevertheless, the sales of foreign Wheat were confined to necessitous buyers at Monday's rates. The value of English is also unaltered. Barley, Beans, and Peas bring fully Monday's quotations. There is a good trade for Oats, and in some instances Monday's prices were exceeded. Flour is fully as dear, and the finest brands are in request. Holders of cargoes of Wheat from the South show more disposition to sell, and some business has been done at a trifling reduction.

### ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 2940	Qrs. 340	Qrs. 250	1090 sacks
Irish ...	—	—	2270	—
Foreign ...	13420	—	7850	1680 brls

### IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
May 7	44 6	31 4	19 0	30 7	35 2	33 3
— 14	44 7	31 5	18 8	29 8	35 5	33 3
— 21	43 11	30 11	19 1	35 8	36 0	32 1
— 28	43 9	30 6	18 7	33 2	36 7	32 7
June 4	43 3	29 6	19 0	34 0	36 9	33 8
— 11	43 11	29 10	18 10	34 9	38 1	34 9
Aggr. Aver.	44 0	30 7	18 10	32 0	36 4	33 3

### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	May 7.	May 14.	May 21.	May 28.	June 4.	June 11.
44s 7d	...	...	...	...	...	...
44 6	...	...	...	...	...	...
43 11	...	...	...	...	...	...
43 11	...	...	...	...	...	...
43 9	...	...	...	...	...	...
43 3	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, June 14.**—The arrivals from Ireland and coastwise during the past week are scarcely worth naming, but we have to note a good supply of Black Sea Wheat, with a tolerably fair import of Flour and Indian Corn. There were but few buyers in attendance at this day's market, and the general reports from the country being favourable as to the benefit to the crops from the late rains, attended with a more general belief in the ultimate pacific solution of the Eastern question, the trade has lost the buoyancy recently observable; the transactions in Wheat, of any kind, are but of moderate extent, and the value of this day week merely maintained. Flour is offered more freely; the amount of business is more restricted, and any advance made at the close of the week has been conceded to-day. Grinding Barley and Beans command an advance of about 1s. per qr. Fine Oats realise rather more money. **FRIDAY, June 10.**—The arrivals from Ireland and coastwise since Monday last have been perfectly insignificant, and those of foreign small. At this day's market there was but a slender attendance, and the sales of Wheat to-day are to a moderate amount only, at the extreme currency of Tuesday. Flour continues to be taken freely, and 3d. advance is paid for choice lots. Egyptian Beans are again 1s. per qr. dearer; several cargoes have been sold to arrive at 30s. c. f. and i. In Oats a fair business is doing, at an improvement of 4d. per 45 lbs. on fine, but ordinary sorts cannot be quoted higher, and Oatmeal is dull at previous rates.

### TO MARKET GARDENERS, FRUIT GROWERS ETC.

**THE BRIDGEWATER PAINT.**—In one of the Bridgewater mountains of New Jersey, in the United States, is found a mineral substance of a dark-red colour, which is successfully used as a paint, and denominated BRIDGEWATER PAINT. Its properties are durability, adhesiveness, and flexibility; it is also impervious to rain or sea-water. After it has been applied and exposed to the weather a few months, it becomes fire-proof, and as durable as stone.

It is used on buildings of wood, brick, or stucco; on the funnels, decks, sides, and bottoms of ships, on barges and boats; on gasometers, iron bridges, iron railings, park fences, gates, waggons, railway trucks, and agricultural implements; on tents and marquees; on calico, linen, and canvas, and also to fruit trees of every kind. When it is applied to the latter above and below the ground, where the borer generally enters, it will prevent the attack of that destructive grub, or insects of any kind; a new bark will be formed under the paint, and the trees will be kept in a healthy condition. It is extensively used in the United States for this purpose.

Sold by LIVERY FRANK, Oil and Colour Merchant, 14, Wellington Street, London Bridge, of whom may be obtained directions for use.—Price 24s. per cwt.

### BENTALL'S BOTANICAL DRYING PAPER is

manufactured expressly for Drying Specimens of Plants for the Herbarium, and has been found to surpass every other article hitherto employed for that purpose. With a peculiar adaptation for preserving form and colour, it combines the requisite qualities of strength and great absorbent power; and may be said to be indispensable to every Botanist who is desirous of having his specimens well preserved. It has received the most unqualified approbation of many eminent Botanists, who have tested its merits, among whom may be mentioned Sir W. J. Hooker, Royal Botanic Gardens, Kew; Professor Lindley, of the Royal Institution; Professor Balfour, of the University of Edinburgh; C. C. Babington, Esq., Cambridge, &c.

May be obtained through any stationer, or of Messrs. ACKERMAN and Co., London.

NOTICE.—Every half-quire is stamped with the maker's name.

### THE MECHANICAL DRESSING-CASE.—The most

portable ever invented, being only the size of a pocket-book, containing one pair of Mechi's Ivory-handled Peculiar Steel Razors, his Magic Strap, Comb, Badger Hair Shaving Brush, and Nail and Tooth Brush, price only 25s.; the same with Hair Brush and Soap Dish, 35s. To military men, and as a steam-boat or travelling companion, this invention is an invaluable acquisition. An immense variety of other Dressing-Cases for ladies and gentlemen, either in fancy wood or leather, at all prices, to suit either the economical or luxurious. An extensive stock of Writing-Desks, Writing-Cases, Work-boxes, Bagatelle Tables, Razor Strops, Table Cutlery, Superb Papier Maché Articles, &c.

Manufactory, 4, LEADENHALL STREET, four doors from Cornhill, London.

### HEAL AND SON'S ILLUSTRATED CATALOGUE

OF BEDSTEADS, sent free by post. It contains designs and prices of upwards of One Hundred different Bedsteads, also of every description of Bedding, Blankets, and Quilts. And their new warehouses enable them to keep one Bedstead of each design fixed for inspection, as well as an extensive assortment of Bedroom Furniture, Furniture Chintzes, Damasks, and Dimities, so as to render their Establishment complete for the general furnishing of Bedrooms.—HEAL & SON, Bedstead and Bedding Manufacturers, 186, Tottenham Court Road, London.

### BERDOE'S SUPERIOR LIGHT SUMMER

COATS, MORNING COATS, &c., of every description, upon the best terms. An extensive assortment for selection, also of the well-known VENTILATING WATERPROOF LIGHT OVER-COATS, Shooting Jackets, &c., guaranteed to resist any amount of rain, without confining perspiration, the fatal objection to all other waterproofs; air-tight materials being utterly unfit and dangerous, for clothing, as too many have proved to their cost.—W. BERDOE, tailor, &c., 96, New Bond Street and 69, Cornhill (only).

### SHIRTS.—FORD'S EUREKA SHIRTS are not

sold by any hosiers or drapers, and can therefore be obtained only at 35, Poultry. Gentlemen in the country or abroad, ordering through their agents, are requested to observe on the interior of the collar-band the stamp—“Ford's Eureka Shirts, 35, Poultry”—without which none are genuine. They are made in two qualities, the first of which is 40s. the half-dozen, and the second quality 30s. the half-dozen. Gentlemen who are desirous of purchasing shirts in the very best manner in which they can be made, are solicited to inspect these, the most unique and only perfect fitting shirts. List of prices, and instructions for measurement, post free.—RICHARD FORD, 35, Poultry, London.

### CUTLERY WARRANTED.—The most varied

assortment of Table Cutlery in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales.

Three and a half inch Ivory-handled Table Knives, with high shoulders, 10s. per dozen; Desserts, to match, 9s.; if to balance, 1s. per dozen extra; Carvers, 3s. 6d. per pair; larger sizes, in exact proportion to the pattern, &c., if extra fine, with silver ferrules, from 36s. White Bone Table Knives, 6s. per dozen. Desserts, 4s.; Carvers, 2s. per pair; Black horn Table Knives, 7s. 4d. per dozen; Desserts, 6s.; Carvers, 2s. 6d.; Black wood-handled Table Knives and Forks, 6s. per dozen; Table Steels, from 1s. each.

The largest stock of Plated Dessert Knives and Forks, in cases and otherwise, and of the new Plated Fish Carvers in existence. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

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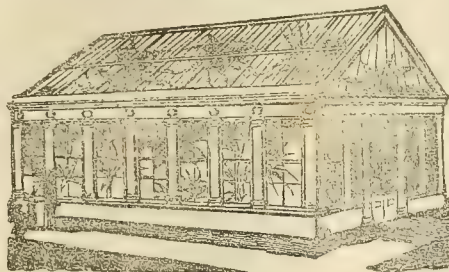
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14 by 10 " 1 1/2 ft. sup. (if the length does not exceed 50 inches).....	0	5 1/2	0	7	0	8 1/2
1 1/2 ft. sup. " 3 ft. sup. or if above 20 inches long .....	0	6	0	7 1/2	0	9
3 " " 4 " 20 " 30 "	0	6 1/2	0	8	0	9 1/2
4 " " 5 " 30 " 40 "	0	7	0	8 1/2	0	10
5 " " 6 " 40 " 50 "	0	7 1/2	0	9	0	10 1/2
6 " " 8 " 40 " 50 "	0	8	0	9 1/2	0	10 1/2
8 " " 10 " 45 " 55 "	0	8	0	9	0	10 1/2
10 " " 12 " 55 " 65 "	0	8 1/2	0	10	0	11
12 " " 15 " 65 " 75 "	0	9	0	10 1/2	0	11 1/2
15 " " 20 " 75 " 90 "	0	10	0	11	0	12
20 " " 25 " 90 " 100 "	...	1	0	1	0	13
25 " " 30 " 100 " 120 "	...	1	0	1 1/2	0	14
Quarries .....	...	1	0	1 1/2	0	14

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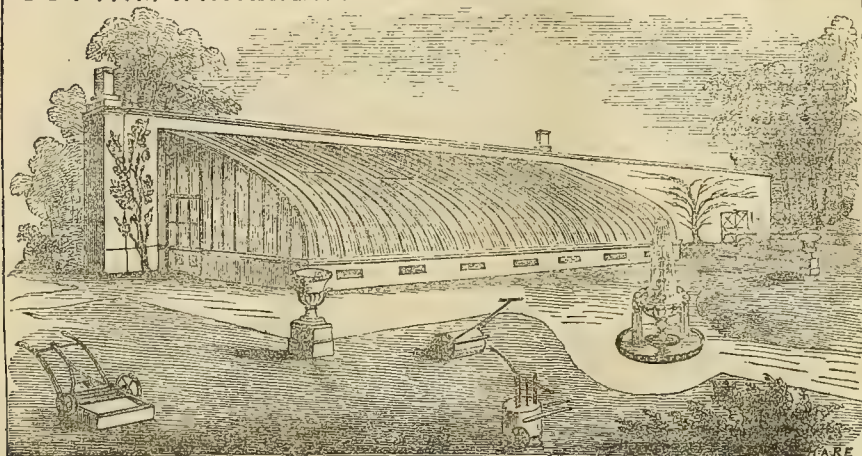
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Just published, price 2s., post free 2s. 6d.,

**AN ESSAY ON SPERMATORRHOEA**: its Nature and Treatment. With an Exposition of the Frauds that are practised by persons who advertise the speedy, safe, and effectual cure of this disease. By a MEMBER of the ROYAL COLLEGE OF PHYSICIANS.

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**TO BE LET**, from Michaelmas next, a **FARM**, in first-rate condition, consisting of 400 Acres, well drained, New Buildings now erecting, according to the best modern construction, with standing for 40 Head of Cattle, in the neighbourhood of Glastonbury, Somerset. Railway to Market Town. None need apply without being able to produce testimonials of respectability. Address, post-paid, to L. C., Post-office, Bridgewater.

**BUFF COCHIN CHINA CHICKENS.**

**A. HORNCASTLE** is prepared to send out a few pairs of good pure bred Birds, from the Stock of Messrs. Sturgeon, Andrews, and other celebrated Breeders. All communications to enclose a stamped directed envelope.  
Grays, Essex, June 18.

**COCHIN CHINA FOWLS' EGGS** may be had of Mr. THOMAS GILBERT, King's Arms Hotel, Grays, Essex, at 16s. per dozen, from Birds bred by Thomas Sturgeon, Esq. All light buff, of great weight, and extremely well feathered, sent to any part of England on receipt of a Post Office Order.  
N.B. Ten Pullets for Sale. Persons making inquiries to enclose a stamped envelope.

**TO GENTLEMEN FARMERS, COW-KEEPERS, ETC.**

**TO BE DISPOSED OF**, about 40,000 **DRUMHEAD YORKSHIRE CATTLE CABBAGE PLANTS**, at 3s. per 1000, now ready to plant out.—Orders addressed JOHN SHILLING, Kingston-on-Rail, Surrey, will meet with immediate attention.—June 18.

**FOR SALE**, a lean-to **CONSERVATORY** or **GREENHOUSE**, made from the very best yellow timber, glazed with thick sheet glass, and well painted; size, 14 ft. 6 in. by 10 ft. 6 in. (of clear height), with an entrance-door at each end. Price if fixed, 40l., including all necessary brickwork, weights, lines, &c.; or it will be sold as it now stands, temporarily erected.—Apply to GEORGE NICHOLLS & Co., Horticultural Builders, &c., City Road, (corner of Plumber Street), London. Hot Water Apparatus erected, removed, or repaired, in any part of the country.

**FOR SALE**, Cheap, two strong-built **GREEN-HOUSES**, 32 ft. long, 15 ft. wide, and one 16 ft. by 10 ft. Plans and particulars sent on receipt of a Postage Stamp, to Mr. SMITH, Greenhouse Builder, &c., 1, Lower Street, Islington. Greenhouse, Garden Lights, and Window Sashes made from 4d. per foot; Glazed, 6d.

**FOR PUBLIC SALE**, at the New Corn Exchange Tavern, Mark Lane, on MONDAY, June 20th, at 2 o'clock precisely (By order of Messrs. Antony Gibbs & Sons, the Importers), about 400 Tons of (damaged) **PERUVIAN GUANO**. Catalogues and further particulars in due time from J. A. RUTHER & BENCROFT, Brokers, 26, Commercial Sale Rooms, Mincing Lane, London.

**TO GENTLEMEN, FLORISTS, AND OTHERS.**

WINDING-UP SALES FOR THE SEASON.

**MESRS. PROTHOROE AND MORRIS** will sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, the 23d., and FRIDAY, 24th June, at 12 o'clock, a first-rate collection of Dahlias, Fuchsias, Verbenas, Climbing and other Roses, Calceolarias, Geraniums, Cactuses, and other plants in bloom, with a large assortment of Plants for Bedding.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLERS FRANK, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, by their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 4, Charles Street, in St. Paul's Churchyard, in the said County, where all Advertisements and Communications are to be addressed to the Editor.—SATURDAY, JUNE 18, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 26.—1853.]

SATURDAY, JUNE 25.

[Price 6d.]

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**HORTICULTURAL SOCIETY OF LONDON.**—His Grace the President has kindly directed the Grounds of Chiswick House to be opened for the reception of the Visitors to the Society's Gardens at the NEXT EXHIBITION, on SATURDAY, the 9th JULY. Tickets are issued at this Office, price 5s.; or at the Garden, in the afternoon of the 9th July, at 7s. 6d. each. 21, Regent Street, London.

**ROYAL BOTANICAL SOCIETY, REGENT'S PARK.**—The LAST EXHIBITION this season of PLANTS, FLOWERS, and FRUIT, will be held on WEDNESDAY next, JUNE 29th. Tickets of admission to be obtained at the Gardens only, by orders from Fellows of the Society, price 5s.; or on the day of the Exhibition, 7s. 6d. each. N.B. The Gates open at Two o'clock.

**ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.** Under the patronage of her Most Gracious Majesty the Queen. The Third Exhibition of the season will take place at the Royal Surrey Zoological Gardens, on THURSDAY, the 30th of June (open to all Exhibitors), when prizes will be awarded for the following productions:—Stove and Greenhouse Plants, Cape Heaths, Pelargoniums, Pansy Pelargoniums, Orchidaceous Plants, Specimen Plants, Roses, Pinks, Ranunculuses, and Fruit. Exhibitions will also take place on TUESDAY, July 28th, and September 6th. Lists of prizes and the rules of the Exhibitions may be obtained of Ebenezer House, Peckham. J. T. NEVILLE, Secretary.

**GRAND FLORICULTURAL AND HORTICULTURAL EXHIBITION.** to be held at the Royal Pavilion, Brighton, on TUESDAY & WEDNESDAY, July 5th and 6th. The surplus to be given in aid of the Funds of the Sussex County Hospital. Patrons: His Grace the Duke of Richmond, Lord-Lieutenant of the County; his Grace the Duke of Devonshire; the Most Noble the Marquis of Bristol; the Right Hon. the Earl of Chichester; Lord Alfred Hervey, M.P.; Admiral Sir G. B. Pecheil, Bart., M.P.; the Hon. A. McDonald, &c. The Band of the Coldstream Guards will be in attendance. Upwards of 2000 will be offered as Prizes to Exhibitors. Schedules can be had of E. SPARY, General Superintendent of the Exhibition; and of EDWARD CARPENTER, Secretary. JUNE 25.

**GRAND HORTICULTURAL EXHIBITION AT YORK** (Open to the United Kingdom), on WEDNESDAY and THURSDAY, the 3d and 4th days of AUGUST, 1853, during the Show of the Yorkshire Agricultural Society.

The YORK HORTICULTURAL SOCIETY have the honour to announce a Grand Horticultural Exhibition, upon a most extensive scale, to be held in a magnificent suite of tents, on a site adjoining the Yorkshire Agricultural Society's Show Ground, on Wednesday and Thursday, the 3d and 4th days of August, 1853, on which occasion they are favoured with the co-operation of the Yorkshire Horticultural Society, the Ancient Society of York Florists, and the National Carnation and Pictotee Society. The Exhibition is under the distinguished patronage of the Noblemen and principal Gentry of Yorkshire, and Prizes are offered for FLOWERS, PLANTS, FRUITS, and VEGETABLES, to the value of 1200.

The Schedule of Prizes for Carnations and Pictotees amounts to above 450, and is in connexion with the National Carnation and Pictotee Society, whose Annual Exhibition is to be incorporated with this Great Horticultural Fete in York. Copies of the Schedules may be obtained gratis on application to Mr. DEMPSEY, Secretary to the York Horticultural Society, or to Mr. HERRICK, Local Secretary to the National Society. The Committee will use their utmost exertions to restore the different specimens sent for exhibition without injury. Specimens sent from a distance, addressed to the Secretary, will receive every attention.

**BLISWORTH GARDENS.** NORTHAMPTON AND NORTHAMPTONSHIRE FLORAL AND HORTICULTURAL SOCIETY.

The Committee of the above Society beg to announce that their next Exhibition will take place on THURSDAY, the 14th July, 1853, in extensive and beautiful Gardens adjoining the Blisworth Station of the London and North-Western Railway, when the following extra prizes (open to all England) will be given:—Seven Guineas for the best 18 (Stove or Greenhouse) Plants; not less than 12 distinct species; Pelargoniums, Petunias, Verbenas, Calceolarias, and all annuals excepted. Three Guineas for the second best. The first prize will not be awarded unless there are three competitors, except especially recommended by the Judges.

Also will be given, Two Guineas for the best 12 Carnations and 12 Pictotees, distinct varieties. One Guinea for second prize. All exhibitors must send a statement in writing to me on or before Thursday, the 7th July, of their intention to show, in order that arrangements may be made for exhibiting.

By special permission the Band of the Royal Horse Guards (Blue) will attend during the day.

Dr. J. M. GARDNER, Honorary Secretary. Drapery, Northampton, June 25, 1853.

**WARWICKSHIRE AND MIDLAND COUNTIES HORTICULTURAL & FLORICULTURAL SOCIETY.**—The Second Exhibition of the above Society will be held (by permission of the Jephson Gardens Committee) in the Jephson Gardens, Royal Leamington Spa, on FRIDAY, July 1, when liberal prizes will be awarded for Stove and Greenhouse Plants, Fruits and Vegetables, Models of Flower and Ornamental Gardens, &c. Rules and regulations, with schedules, may be had on application. WILLIAM WILLS, Secretary. 69, Regent Street.

**WESTON-SUPER-MARE HORTICULTURAL & FLORICULTURAL SOCIETY.**—The Annual SHOW will take place on FRIDAY, JULY 2nd, 1853; Schedules may be obtained on application to the Assistant Secretary, Mr. J. DARR. There will be Special Prizes for Nurserymen. By kind permission of the Officers, the Band of her Majesty's 1st Royals will be in attendance.—J. STRINGFIELD, Honorary Secretary.

**NEW AND SELECT PLANTS AT REDUCED PRICES.** BASS AND BROWN beg to refer to their advertisement of the above in the *Gardeners' Chronicle* of May 28th and June 4th, 11th, and 18th; also to their advertisements of the BEST NEW GERANIUMS of October last. Strong Plants at reduced prices. See *Gardeners' Chronicle* of May 7th, 14th, 21st, and 28th. Seed and Horticultural Establishment, Sudbury, Suffolk.

**SPLENDID NEW RHUBARB.** "SALT'S CRIMSON PERFECTION." ROBERT SALT, NURSERYMAN, Longton, Staffordshire, will have Roots of this delicious, early, and productive Rhubarb, ready for sending out in the autumn of 1854. See *Gardeners' Chronicle*, June 11th, page 373:—"Very good, a most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains." Eo. Orders now forwarded to ROBERT SALT, on to HURST and M'ULLEN, 6, Leadenhall Street, London, will have the earliest attention.—Longton, Staffordshire, June 25, 1853.

**ROSES.** H. LANE AND SON, Great Berkhamstead, have the pleasure to inform their patrons that their extensive Collection will be in bloom on and after the 1st July. Their Confetti, Rhododendrons, and a General Collection of Trees and Shrubs, also Fruit Trees, are remarkably fine and well worthy the attention of planters. The Nursery is within a few minutes' walk of the Railway Station on the London and North-Western Railway.

**WAITE'S KING OF THE CABBAGES.**—This is the earliest and best Cabbage in cultivation, and quite distinct from the Enfield.

J. G. WAITE feels inclined to think many parties have been deceived in having had Enfield sent them for his Cabbage, they therefore condemn the merits of it without having had the REAL KING, which is quite distinct from all other varieties. To be had in any quantities of not less than 1 lb. at 4s. per lb. J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

**DRUMHEADS, EARLY BATTERSEA, EARLY YORK, EARLY LARGE IMPERIAL SAVOYS, KALE, &c.** at 6s. 6d. per 1000. BROCCOLIES and CELERY, 7d. per 100. Packed and delivered at Godalming Station by THOMAS WELAND, Surrey Gardens, near Godalming, Surrey.

**COCHINS AND ROSES.** MRS. STEDMAN, Linkfield Place, Isleworth, respectfully calls the attention of the nobility, gentry, and amateurs generally, to her superb COLLECTION of ROSES, amongst which are running some of the best Cochins in the kingdom. Cochins China Eggs, 12s. to 30s. per dozen; Andalusian, 30s.; Black Spanish, 10s. 6d. Standard Roses from 18s. per dozen. One cock and three hens of J. Taylor's celebrated breed of Blue Andalusians, price 10l. 10s.—Catalogues gratis on application.

**NOTICE.** WM. HAMILTON, SEEDSMAN and FLORIST, begs to intimate that he has now removed from Cheapside to No. 41, Margaret Street, Cavendish Square (first door from Regent Street). He respectfully solicits the kind support of his friends at his new premises, assuring them that nothing shall be wanting on his part to merit their approbation. His Catalogue of Bulbous Roots, of which he is importing a fine Collection, will be ready the last week in August, and will be forwarded on application.—Address 41, Margaret Street, Cavendish Square, London.

**BEEES AND BEEHIVES.** MARRIOTT'S HUMANE COTTAGE BEEHIVE is best for obtaining Honey without killing the Bees; its finished workmanship and practical utility for assisting nature speaks for itself. Exhibition of the Honey Bee in numerous Glass and other Hives in the Royal Surrey Zoological Gardens. New Catalogues, with descriptive Engravings, forwarded. MARRIOTT'S Humane Beehive Manufactory, 72, Gracechurch Street, London.

**CARSON'S ORIGINAL ANTI-CORROSION PAINT.** specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

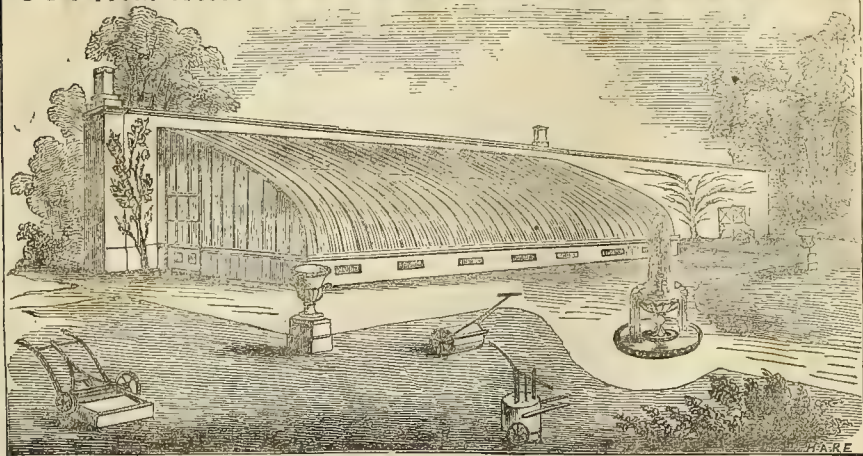
Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

**ESTABLISHED MORE THAN 100 YEARS.** THOMAS MILLINGTON, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.

WAREHOUSE, 87, BISHOPSGATE STREET WITHOUT, LONDON. Cut to any size squares, Squares in boxes, 100 feet each. not above 40 inches long. Under 6 by 4 ... 12s. 6 by 4, 6 by 4 1/2 ... 13s. 7 by 5, 7 1/2 by 5 1/2 ... 14s. 8 by 6, 8 1/2 by 6 1/2 ... 15s. 9 by 7, 9 1/2 by 7 1/2 ... 16s. 10 by 8, 10 1/2 by 8 1/2 ... 17s. 11 by 9, 11 1/2 by 9 1/2 ... 18s. 12 by 10, 12 1/2 by 10 1/2 ... 19s. 13 by 11, 13 1/2 by 11 1/2 ... 20s. 14 by 12, 14 1/2 by 12 1/2 ... 21s. 15 by 13, 15 1/2 by 13 1/2 ... 22s. 16 by 14, 16 1/2 by 14 1/2 ... 23s. 17 by 15, 17 1/2 by 15 1/2 ... 24s. 18 by 16, 18 1/2 by 16 1/2 ... 25s. 19 by 17, 19 1/2 by 17 1/2 ... 26s. 20 by 18, 20 1/2 by 18 1/2 ... 27s. 21 by 19, 21 1/2 by 19 1/2 ... 28s. 22 by 20, 22 1/2 by 20 1/2 ... 29s. 23 by 21, 23 1/2 by 21 1/2 ... 30s. 24 by 22, 24 1/2 by 22 1/2 ... 31s. 25 by 23, 25 1/2 by 23 1/2 ... 32s. 26 by 24, 26 1/2 by 24 1/2 ... 33s. 27 by 25, 27 1/2 by 25 1/2 ... 34s. 28 by 26, 28 1/2 by 26 1/2 ... 35s. 29 by 27, 29 1/2 by 27 1/2 ... 36s. 30 by 28, 30 1/2 by 28 1/2 ... 37s. 31 by 29, 31 1/2 by 29 1/2 ... 38s. 32 by 30, 32 1/2 by 30 1/2 ... 39s. 33 by 31, 33 1/2 by 31 1/2 ... 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ILLUSTRATED CATALOGUES UPON APPLICATION.Conservatories  
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Garden ChairsGarden Engines  
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EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

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Pamphlet on Feeding, 1s. List, with 240 Illustrations, 1s.; per post, 1s. 4d.

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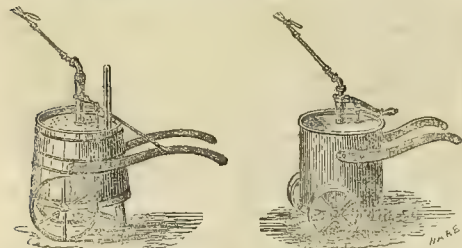
ING AND MOWING MACHINE.—The attention of Agriculturists is called to this Machine, which has for the last 14 years been in operation in America, during which period upwards of 10,000 have been sold. Since its introduction into England, at the Great Exhibition of 1851 (where it obtained the Council Medal), Mr. M'Cormick has made alterations to adapt it to the requirements of the English Farmer; and the Royal Agricultural College Authorities, in their report of a trial on their farm, which took place at the latter end of last harvest, and which lasted nine days, say,—"It is evident that a reaping machine, before it can be entirely depended upon for a harvest implement, should be such as would work when a farmer would send his men into the field with a scythe. No other machine but M'Cormick's has been found equal to this task." Since that trial, Mr. M'Cormick has made still further improvements (which he has recently Patented), and which, owing to the harvest in America being earlier than that of England, he has been enabled to test, and he is now prepared to supply a limited number of Machines for this harvest, and it is desirable to have them well distributed, consequently a few only can be sold for each district.—Parties desirous to purchase are requested to make early application to Messrs. BURGESS & KEY, 103, Newgate Street; and to D. C. M'KENZIE, 373, Strand, London, Agents for Patentee.

JOHN WARNER AND SONS,  
CRESCENT, JEWIN STREET, LONDON.  
GALVANISED IRON TUB GARDEN  
ENGINE,

With Warner's Registered Spreader,

Is strongly recommended, for durability and low price, viz., £3.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power.



J. TYLOR AND SONS' IMPROVED GARDEN ENGINES.—These Garden Engines are of a very superior manufacture, and of the best quality and material. The Pumps are so arranged that they do not get out of order. In best Oak Tubs, well painted, No. 1, 10 gals.; No. 2, 15 gals.; No. 3, 25 gals. In strong tinted Iron Tubs, well japanned, No. 10, 8 gals.; No. 12, 12 gals.; No. 14, 24 gals.; No. 14, 30 gals. Prices and engravings to be obtained of any Ironmonger in Town or Country. Manufacturers and Patentees, J. TYLOR & SONS, Warwick Lane, Newgate Street London.

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RICK CLOTHS, MARQUEES, TENTS, &amp;c.,

NEW OR SECOND-HAND, FOR SALE OR HIRE.

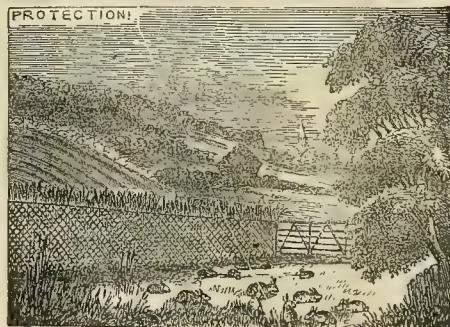
BENJAMIN EDGINGTON has prepared for the ensuing season an extensive assortment of Marquees, &c., for Horticultural Societies, Fêtes, Cricket Clubs, &c. Rick Cloths, with Poles, Pulleys, and Lines complete. A great variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. A Warehouse, 208, Piccadilly, London.

Address, by post, No. 2, Duke Street, Southwark, London.

## TANNED NETTING, for the protection of Fruit

Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas, for Wall Fruit.

At EDGINGTON & Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark; and at Brunswick Street, near the East India Export Dock, Poplar, where may also be seen erected Emigrant Tents in great varieties, on their latest improved principles.



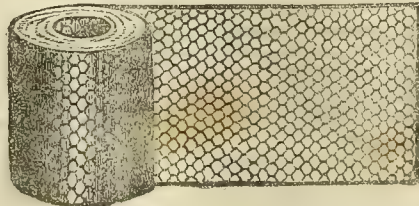
## CHEAP AND EFFECTIVE WIRE FENCING.—

Every variety of pattern, both for garden and field purposes, made to order at very reasonable prices. The wire is of first-rate quality, being selected from the most celebrated manufactory and regardless of cost. Not less than two coats of anti-corrosive mixture applied to the Net as soon as made and included in the cost price. An experience of 15 years fully warrants the Advertiser in claiming for the Whittington Net a large share of public favour.

Apply to Mr. S. TAYLOR, 2, Wotton Parade, Gloucester; or to R. WOODCOCK, Whittington, near Stokeferry, Norfolk.

## GALVANISED WIRE GAME NETTING.—

7d. PER YARD, 2 FEET WIDE.



	Galvan- ised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong	9 "	6 1/2 "
2-inch " extra strong "	12 "	9 "
1 1/2-inch " light	8 "	6 "
1 1/2-inch " strong	10 "	8 "
1 1/2-inch " extra strong "	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## BAKER'S FOUNTAINS.

THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.

MESSRS. BAKER can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily fixed, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

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THE BRIDGEWATER PAINT.—In one of the Bridgewater mountains of New Jersey, in the United States, is found a mineral substance of a dark-red colour, which is successfully used as a paint, and denominated BRIDGEWATER PAINT. Its properties are durability, adhesiveness, and flexibility; it is also impervious to rain or sea-water. After it has been applied and exposed to the weather a few months, it becomes fire-proof, and as durable as stone.

It is used on buildings of wood, brick, or stucco; on the funnels, decks, sides, and bottoms of ships, on barges and boats; on gasometers, iron bridges, iron railings, park fences, gates, wagons, railway trucks, and agricultural implements; on tents and marquees; on calico, linen, and canvas, and also to fruit trees of every kind. When it is applied to the latter above and below the ground, where the borer generally enters, it will prevent the attack of that destructive grub, or insects of any kind; a new bark will be formed under the paint, and the trees will be kept in a healthy condition. It is extensively used in the United States for this purpose.

Sold by LIVETT FRANK, Oil and Colour Merchant, 14, Wellington Street, London Bridge, of whom may be obtained directions for use.—Price 24s. per cwt.

## RIPE FRUIT, STRAWBERRIES, AND SEED

BEDS.—NEW TWINE NETTING (Tanned if required).—1 yard wide, 1 1/2d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard; half-inch mesh ditto, 2 yards wide, 6d. per yard. THE ELASTIC HEXAGON GARDEN NETTING, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 4 1/2d. per square yard. Tanned Netting, 2 or 3 yards wide, 1 1/2d. per yard; 4 or 6 yards wide, 3d. per yard—exactly the same as advertised by others at double the above prices. Coir or Hemp Sheep-folding Net, of superior quality, 4 feet high, 4d. to 6d. per yard. Lamb Net, 6d. per yard. Fishing Nets, Poultry Fencing. A 20-yard Drag Net, with Purse complete, 2l. 10s. A Single Walled Drag Net, any length and depth, 1s. per square yard. Casting Nets complete, 1s. per yard, measured round the Lead Line. Flue Nets, any size, 1s. per square yard complete. Minnow Nets, Eel Nets, Landing Nets, equally cheap, all warranted first-rate quality and workmanship. Rabbit Net, 4 feet wide, 1 1/2d.; 6 feet wide, 2 1/2d.; 8 feet wide, 3d. per yard. Each Edge Corded, 4d. per yard extra, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing, against Fowls, Cats, &c., at Wm. CULLINGFORD'S, No. 1, Strathmore Terrace, Shadwell, London. Orders by Post, with Post-office order or Town reference, punctually attended to.

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THOMAS PERRY AND SONS, Manufacturers of Wrought Iron Plain and Ornamental Hurdles, improved continuous Fencing, Gates, &c., Highfield Iron Works, Bilston, Staffordshire, and 463, Oxford Street, London. From the extent of their works (situated in the centre of the iron district), and other advantages, THOMAS PERRY & SONS are enabled to execute all orders in the promptest manner, and on the lowest possible terms.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOLLERS, and Conservatory and Moorhouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

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A MARRIED CLERGYMAN, receiving six Pupils under 14, has Vacancies for two. To sound instruction in all the essentials and accomplishments of a first-rate Education, are added peculiar home comforts and advantages; and all the domestic arrangements being of a superior description, are suited especially to those who require unusual care and attention; the highest references given.—Address, Rev. S. H., 324, Strand.

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OVER-COATS possess every quality essential to a really respectable and gentlemanly garment, and, if desired, the well-known additional recommendation of resisting any amount of rain, without confining perspiration (the fatal objection to all other waterproofs); and being entirely free from vulgar singularity, are adapted for general use at all times equally as for rainy weather. Price TWO GUINEAS; or, waterproof, 45s. and 50s. Every size kept; also, one of the largest stocks in London of every description of over, summer, morning, and shooting coats, capes, &c.

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OF BEDSTEADS, sent free by post. It contains designs and prices of upwards of One Hundred different Bedsteads, also of every description of Bedding, Blankets, and Quilts. And their new warehouses enable them to keep one bedstead of each design fixed for inspection, as well as an extensive assortment of Bedroom Furniture, Furniture Chintzes, Damasks, and Dimities, so as to render their Establishment complete for the general furnishing of Bed-rooms.—HEAL & SON, Bedstead and Bedding Manufacturers, 198, Tottenham Court Road, London.

## SHIRTS.—FORD'S EUREKA SHIRTS are not

sold by any hosiers or drapers, and can therefore be obtained only at 38, Poultry. Gentlemen in the country or abroad, ordering through their agents, are requested to observe on the interior of the collar-band the stamp—"Ford's Eureka Shirts, 38, Poultry"—without which none are genuine. They are made in two qualities, the first of which is 40s. the half-dozen, and the second quality 30s. the half-dozen. Gentlemen who are desirous of purchasing shirts in the very best manner in which they can be made are solicited to inspect these, the most unique and only perfect fitting shirts. List of prices, and instructions for measurement, post free.—RICHARD FORD, 38, Poultry, London.

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TELESCOPES.—A new and most important invention in Telescopes, possessing such extraordinary powers that some-34 inches, with an extra eye-piece—will show distinctly Jupiter's Moon, Saturn's Ring, and the Double Stars. They supersede every other kind, and are of all sizes for the waistcoat-pocket, Shooting, Military purposes, &c. Opera and Race-course Glasses with wonderful powers; a minute object can be clearly seen from 10 to 12 miles distant.—Invaluable Acoustic Instruments for relief of extreme Deafness.

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HEATING BY HOT WATER.  
EFFICIENCY GUARANTEED.

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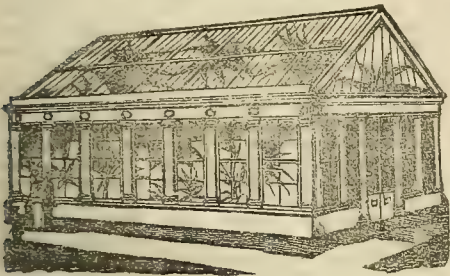
**HORTICULTURAL BUILDING AND HEATING BY HOT WATER.**

**EDWARD AND A. WEEKS** (late with **J. WEEKS & Co.**), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.

\* \* Shades for Greenhouses, &c. One, two, and three-light Boxes always on hand.

**HORTICULTURAL BUILDING AND HEATING BY HOT WATER.**

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

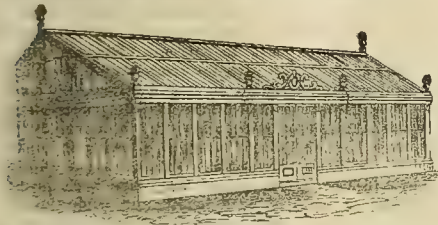


**GRAY AND ORMSON**, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

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**JAMES WATTS**, Hothouse Builder, Claremont Place, Old Kent Road, has 200 CUCUMBER and MELON BOXES and LIGHTS of all sizes, ready for immediate use, made of well-seasoned materials, packed and sent to all parts of the Kingdom.

HOTHOUSES, CONSERVATORIES, &c., made and fixed complete at a considerable reduction, and Garden Lights of every description. References may be had to the Nobility, Gentry, and the Trade, in most of the counties of England.

**HORTICULTURE IN ALL ITS BRANCHES.**



**J. WEEKS & Co., King's Road, Chelsea,**



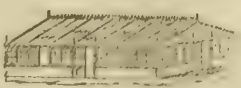
**HOTHOUSE BUILDERS.**

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

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The splendid collections of stove and Greenhouse Plants, such as the highest class of Camellia, and for the purpose of forcing, are at our disposal. Also a collection of strong, Green Vases in pots, from 6 inches to 24 inches in diameter.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, &c., &c. forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.



**EXHIBITION OF AMERICAN PLANTS.**

ROYAL BOTANIC GARDENS, REGENT'S PARK. **JOHN WATERER** begs to announce that his unrivalled Collection of RHODODENDRONS, AZALEAS, &c., is now in bloom, and may be viewed by orders from Fellows of the Society.

The Plants at the Nursery are now in great beauty, and will continue in perfection throughout the month of June. The Military Encampment on Chobham Common is but two miles distant.

American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway.

**EXHIBITION OF AMERICAN PLANTS.**

Knap Hill Nursery, Woking, Surrey.

THE AMERICAN PLANTS at this Nursery are just now in great beauty, and may be seen daily. The Nursery is within an hour's ride of London, being near the Woking Station of the South-Western Railway, where all trains stop, and from whence capital conveyances may be obtained.

\* \* The Military Encampment on Chobham Common is within a short distance of the Nursery.

HOSEA WATERER, Knap Hill Nursery.—June 25, 1853.

**EXHIBITION OF AMERICAN PLANTS.**

WINDLEHAM NURSERY, BAGSHOT, SURREY, NEAR THE MILITARY CAMP, VIRGINIA WATER, AND STAINES STATION.

**GEORGE BAKER** begs to announce his extensive collection of AMERICAN PLANTS is now in flower and may be seen gratis.

G. B. is a large contributor to the American Exhibition in the Royal Botanic Gardens, Regent's Park; they are now in perfection, and will continue during the month of June.

**EXHIBITION OF IRIS GERMANICA.**

**JOHN SALTER**, NURSERYMAN, William Street, Hammersmith Turnpike, begs to inform the Public that his magnificent COLLECTION of IRIS is now in flower, comprising more than 200 varieties, and far surpassing anything yet seen in England.—June 25, 1853.

**LEUCOCUM AUTUMNALE.**

**MESSRS. WILLMOTT AND CHAUDY**, SEED-GROWERS and NURSERYMEN, Lewisham, near London, beg to offer Bulbs of this rare and elegant little flower, at 2s. 6d. per dozen. They can be sent by post, and a remittance in postage stamps to the amount of the order given will be expected from unknown correspondents.

**CRIMSON-FLOWERED IVY-LEAVED GERANIUM.**

**STANDISH AND NOBLE** have now to offer the above, which they can recommend as a BEDDING PLANT of the first class. It has the habit and foliage of the well known old variety, but the flowers are of the brightest crimson. They are produced in the greatest profusion, and are raised well above the leaves upon stout foot-stalks. Plants, in June, 10s. 6d. each.

\* \* \* The usual discount to the trade when three or more are taken.—Bagshot, Surrey, June 25.

**CINERARIA SEED.**

WITH DIRECTIONS FOR SOWING, &c.

**EDWARD GEORGE HENDERSON AND SON**, Wellington Road, St. John's Wood, London, are now prepared to send out their newly-saved Seed of the above useful winter Flower, gathered from fine named varieties, at 2s. 6d. per packet; also a few packets at 5s., amongst which is Seed from C. PRINCE ARTHUR, ROSALIND, and other leading varieties.

E. G. H. & Son beg to give notice that their Calceolarias from which the Seed is saved can now be seen in flower at the Nursery, packets of which will be booked at 5s. each, to be sent out the end of July.

**The Gardeners' Chronicle.**

SATURDAY, JUNE 25, 1853.

**MEETINGS FOR THE ENSUING WEEK.**

MONDAY, June 27	British Architects .....	8 P.M.
TUESDAY, "	Horticultural .....	3 P.M.
WEDNESDAY, "	Medical and Chirurgical .....	8 P.M.
THURSDAY, "	Zoological .....	8 P.M.
FRIDAY, "	Royal Botanic Gardens .....	2 P.M.
SATURDAY, "	Royal South London .....	1 P.M.
SUNDAY, "	National Horticultural .....	3 P.M.
SUNDAY, "	Botanical .....	8 P.M.
SUNDAY, "	Asiatic .....	2 P.M.

COUNTRY SHOWS FOR THE PRESENT MONTH.—28th: Meath, and Hands-worth.—30th: Isleworth, Liverpool, Thame, and Ireland Royal Horticultural.

THE public will learn with no small satisfaction that our criticisms upon the management of the ROYAL FORESTS, after being adopted by Mr. CAIRD and re-echoed in the *Times*, have found another advocate in the columns of the grave *Economist*. Our powerful contemporary, in his issue of June 11 (p. 652), assures us that the "forests under the care of Government, according to numerous inquiries, investigations, and reports, are wastefully mismanaged." Considering how high the *Economist* stands in the estimation of the Treasury, this is a declaration of no small significance; it, however, possesses the fault, which we feel that our own remarks have also had, of being too sweeping to produce much effect upon the minds of those who must find a remedy for such abuses. It seems incredible that such a state of things as the *Gardeners' Chronicle*, the *Times*, and the *Economist* describe can be universal; and every forest officer may say "possibly the complaints are just as concerns the others, but they don't apply to the forest under my charge." We admit therefore that it is unfair to bring forward serious general allegations involving the innocent and guilty in one common condemnation; and for that reason we propose to devote some space for a few weeks to a concise description of what each forest has done and is doing, so far as we can discover the truth in the ponderous blue books that have appeared upon the subject. The subject possesses the highest interest, especially with a large part of the readers of this Paper.

For the convenience of reference hereafter we shall examine these establishments alphabetically.

On the 30th June, 1852, the following forests were returned as being at that time under the

direction of the Commissioners of her Majesty's Woods and Royal Forests:

Name of Forest.	Name of Officer in Charge, called Deputy-Surveyor or Sub-tenant.
1. Bere Forest ... ..	Sir James Campbell, Bart.
2. Chopwell Wood ... ..	Nathaniel Prettejohn.
3. Dean Forest, and High Meadow Wood ... ..	Edward Machen.
4. Delamere Forest ... ..	William Lipscomb.
5. Holt Forest ... ..	Newburgh Higinbotham.
6. New Forest, and New Park Farm ... ..	L. H. Cumberbatch.
7. Parkhurst Forest ... ..	Sir James Campbell, Bart.
8. Salcey Forest ... ..	Thomas Linnell.
9. Whittlewood Forest ... ..	Thomas Linnell.
10. Woolmer Forest ... ..	Newburgh Higinbotham.
11. Wyehood Forest ... ..	Robert Morris.

In addition there was Hainault, now we believe disafforested, and therefore beyond the range of this inquiry; and there is Windsor, a domain from which profit is not to be expected, but rather a vast park forming a portion of the residence of the Sovereign. We therefore limit our investigation to the 11 forests above enumerated.

BERE FOREST is a district in Hampshire, consisting of 1462 acres, in the neighbourhood of the South-Western Railway. It is worth, on an average, according to Mr. CLUTTON, land and timber surveyor, in one of his statements, 14s. or 15s. an acre, if rendered fit for arable purposes; in another worth 789l. a year, which ought to have been realised by thinnings in 1849 and afterwards, or nearly so. The forest if sold would have produced in 1849, 21,303l., independently of timber and plantations. In 1849, the oldest plantations were on an average from 30 to 35 years old; some indeed were very young, but the greater part had been planted many years. Mr. CLUTTON reported that in his opinion the young plantations were very thriving, but that they must have been of late years left rather too thick; and that, as to the old timber, the greater part ought to be cut. The prospective value of the timber he set at 375,000l., to be realised in the year 1919. These statements were elicited by Lord DUNCAN's committee, in the course of Mr. CLUTTON's examination.

Upon turning to his formal report, dated May 12, 1849, we find Mr. CLUTTON stating that "for the future, with good management, I have no doubt a very considerable income will be derived, in addition to repaying the already accumulated and accumulating value to be received when the ultimate crop arrives at maturity." He also informs the Treasury that, having during all his business life practised in a timber-growing district, and having had very great experience elsewhere, he is satisfied that waste land suited to the growth of timber (in its unimproved condition worth from 6s. to 10s. per acre), well and judiciously managed, will produce a larger profit in the growth of timber than by conversion into tillage, the thinnings in the meantime producing a rental. In conclusion, he adds, the state of the plantations in Bere and the other forests shows that they have been well planted and judiciously managed.

It must be owned that this would have been a pleasant account of the state of things in the Forest of Bere up to May 1849, so far as Mr. CLUTTON's view extended, if it had not been for the hint given by him when adverting to what future management might do. Let us now turn to money-matters, by which alone the true value of reports of this nature can be measured.

The ostensible object for which these forests have been maintained is a supply of timber for the use of the navy. We cannot find that Bere has supplied any since the year 1823.

Irrespective of this, it appears that between 1803 and 1848, the forest cost the country 15,564l. 2s. 11d. beyond its income. No part of this loss is, however, ascribable to the present deputy-surveyor, who up to 1848 had obtained a clear average income of 150l. a year, during the six years he had charge. The profit upon his 1462 acres had been in 1847, 127l. and in 1848, 110l. It is, however, to be remarked that the average profit for the six years preceding his appointment had been 270l., so that the immediate result of his taking charge had been an average loss of 120l. a-year. In other words, the miserable rental of 3s. 8d. per acre which his predecessor had realised, instead of 10s., the new superintendent succeeded in cutting down to 2s.; and this in face of the notorious fact that, after a time, the returns from forest property ought to be continually on the increase, as Mr. CLUTTON himself told the committee. We thus learn what Mr. CLUTTON means by judicious management.

In 1848-9, when, according to Mr. CLUTTON, a very considerable income ought to have been realised, the profit upon the 1462 acres fell to one shilling an acre, or 77l., a further instance of the judicious management to which Mr. CLUTTON



officially testified. In 1849-50, after Lord DUNCAN'S Parliamentary investigation, the net income advanced to 466*l.*; and in 1850-51 it rose further, the sum of 681*l.* having been realised. At this time the new Commissioner of the Woods and Forests began to be felt, and no reaction occurred, but 683*l.* were still returned. What may have been received for 1852-3 we do not know, the Parliamentary report for that year not having been yet published.

These figures show either that Mr. CLUTTON'S estimate of the annual value of Bere Forest was egregiously wrong, or that the property must have been, till within the last year or two, seriously mismanaged. We have on the one hand an experienced land-agent informing Parliament that the property is worth 789*l.* a year, and we have the agents of the crown returning in one period of six years 270*l.* a year; in a later period of the same duration, 150*l.* a year; and at last, only 77*l.* For ourselves, we believe Mr. CLUTTON'S estimate to be near the truth. Let us, however, allow a wide margin for error, and reduce his calculation of 789*l.* to 700*l.*, and the returns of the last two years sustain the latter estimate. Then, in this view of the case, the predecessor of the present deputy surveyor in six years made less of the property than he ought to have done by the sum of 2580*l.*, and the existing officer, in the first eight years of his charge, contrived to lose 4157*l.*

It appears from Lord DUNCAN'S report, that the gentleman who then held the office of deputy surveyor was Sir JAMES CAMPBELL, Bart., appointed in September 1842, with a salary and emoluments of the estimated value of 202*l.* 5*s.* The "Baronetage" tells us further that he was about 25 years old when put in charge, and that two years before he had married a daughter of Vice-Admiral Sir ROBERT BROMLEY, of Stoke Hall, near Newark, a near neighbour of the then Earl of LINCOLN, who gave him the appointment. Sir JAMES CAMPBELL still, as far as we know, remains deputy surveyor.

If any one wishes for a large crop of opinions, let him sow one single inquiry respecting the POTATO DISEASE; but, if he wishes to reap any facts, he must trust to other seed. This has long been evident, and explains why the subject had disappeared from our columns until the new process proposed by Prof. BOLLMAN was reported. We have no room for crude speculations, and we can find no novelty among the few facts which reach us. As usual, however, the revival of the subject reanimates the zeal of our untiring correspondents, and we learn from one gentleman that he is ready to risk his life upon his opinion that, in all cases, the disease "proceeds down the stem when growing, and in an advanced state;" another thinks that the disease is ascribable to the Potato having been treated "as an underground tuber, which it is not." And all this *apropos* of Mr. BOLLMAN'S high-drying scheme! Surely, our eager friends who would favour the world with such lucubrations hardly expect us to inflict them upon our readers.

In another part of to-day's impression will be found a series of Tables explaining the equivalents of various French and English WEIGHTS and MEASURES. The constant intercourse between France and England, and the universal acquaintance with French writings which now exists among us, render such an aid to the reader indispensable; and although the information may be found elsewhere, yet it is generally to be met with in books either little known or inconvenient for reference; or, if in common popular books, is too slight and inaccurate to be of much use.

The tables have been prepared by Mr. THOMPSON with very great care, as may be supposed from the number to which the decimal figures are carried. "They are not mere copies," he informs us, "of any existing ones. Care has been taken to obtain correct bases for the respective calculations, by referring to the best English and French authorities on the subject; and, where discrepancies were found, a strict investigation was made. For example, the fundamental unit of French weights, the *gramme*, has been usually set down as being equal to 15.444 grains; by some at 15.442; and by Dr. KELLY (*Universal Cambist*, i. p. 141), at 15.434 grains. But it is even less than this, according to French authors. Such being the case, calculations were made from the datum that the weight of a cubic centimetre of distilled water, at the greatest density of the latter, about 40° FAHR., is equal to a *gramme*, whilst a cubic foot of distilled water at 62° FAHR. is equal to 436247.424 grains. In working out this calculation, the density of the water at the different temperatures has been taken into account, and the *gramme* has been found to equal 15.4325 grains, which agrees with the weight as stated by the authors of the *Annuaire du*

*Bureau des Longitudes*, and of the *Annuaire Météorologique de la France*."

#### AGRI-HORTICULTURAL SOCIETY OF INDIA.

THE Agricultural and Horticultural Society of India is, next to the celebrated Asiatic Society of Bengal, the most known, and certainly the most popular among the scientific and practical institutions in British India. In numbers of members it exceeds them all. It was established at Calcutta on the 14th of September, 1820, by the late Rev. Dr. William Carey, one of the most extraordinary men who ever came to India, both as a Missionary, a profound oriental scholar, and author, and a botanist and agriculturist. In the prospectus which that pious and good man had printed and circulated five months previously, and to which he afterwards added a list of desiderata, the urgent necessity of such an institution being formed in a country where immemorial customs and habits had for ages past stood in the way of amelioration and progress in the arts of civilised life, were briefly but forcibly set forth. The successful labours of the Society during its 32 years of existence, and of the many branch societies which have emanated from it in different parts of India, amply attest the wisdom and soundness of the founder's views. Year after year has this flourishing institution been improving and enlarging its sphere of activity, until it has at present attained a position of much importance and influence, and become a real blessing to the country. No wonder, therefore, that it enjoys the substantial support and patronage of the Government of India, as well as the Court of Directors at home, evinced by annual pecuniary grants, and by frequent and large donations of agricultural and other seeds, and communications of papers possessing public interest, either scientific or practical; such as official reports and the like documents from Company's servants and others, having reference to the labours of the Society. It is in possession of some property of its own, and derives annually a considerable income from its members, who, as might be expected, are chiefly Europeans, but comprise also many respectable natives. Of the latter, there were last year two Vice-Presidents, besides two other members of the Society's council. The entire number of members, dispersed all over India, was, at the close of last year, 649, which is exceedingly remarkable, considering the constant fluctuation of the white population in the country; besides ten honorary members. An extensive correspondence is maintained with various parts of the world; and as many of the members are practical men—agriculturists, planters, &c., and a praiseworthy zeal moreover prevails among all classes of Europeans, to cultivate those pursuits which form the main purpose of the Society—a great variety of useful papers have from time to time been presented, which, together with the monthly proceedings, have been published in eight volumes of Transactions, and subsequently (since 1840) in as many volumes of the Society's Journal. It may be truly affirmed, that these 16 volumes contain, upon the whole, as great a mass of valuable practical information and useful reading as any other society has ever produced within the same time. It would far exceed the limits of a brief notice were I to give any detailed account of the topics treated of, and by whom, in those volumes; among the subjects, however, I may mention cotton, sugar, indigo, tea, coffee, tobacco, rice, silk, wool, vegetable fibre, paper, cochineal, caoutchouc, lac-dye, Indian fruits, manures, timber trees, topographical accounts of various districts, &c., many of which are treated very extensively and satisfactorily. Some of the addresses by the Presidents and others (W. Leicester, Esq., the first among the former, Sir E. Ryan, and Lord William Bentinck), are of deep interest and weight. Large and expensive importations are made yearly from abroad of agricultural and horticultural implements and seeds, the latter being distributed gratuitously among members, as well as among the humbler classes of natives, cultivators, market-gardeners, and others.

In addition, the Society maintains an experimental garden, on land lent to it for the express purpose a number of years ago, in the Company's Botanic Garden, but which it has been recently resolved to relinquish, in order to establish a garden on grounds to be purchased nearer Calcutta, and on the same side of the river, and therefore more readily accessible to the members. Periodical shows are held of agricultural and horticultural produce, which are always numerously and highly respectably attended, and on which occasions pecuniary and other prizes are awarded to successful cultivators, who, in the majority of instances, are natives. Its affairs are administered by a president, four vice-presidents, a treasurer, and a secretary, all of whom, together with twelve ordinary members, constitute the council; and by the following eleven standing committees, namely, 1, for Sugar; 2, Cotton; 3, Silk, Hemp, and Flax; 4, Coffee and Tobacco; 5, Oil and Oil-seed; 6, Grain; 7, Implements of Husbandry and Machinery; 8, Nursery Garden; 9, Fruit and Kitchen Gardens; 10, Floriculture; and 11, Translation.

I have already adverted to the distinguished and steady patronage of the Indian Government as well as the Honourable Court of Directors at home, which very substantially contributes to the Society's flourishing state and success. In conclusion, I may adduce, as a proof of the high estimation in which its labours are held by those who have it most in their power to watch over its operations and to promote its efforts, the fact, that from its very commencement each successive Governor-General has honoured the Society by readily assenting

to become its patron. The late Marquis and Marchioness of Hastings were its first patron and patroness. On their departure from India in 1823 they were succeeded by the Earl and the late Countess of Amherst; after whom came Lord William Bentinck, and Earl Auckland. Some of their addresses on the occasions are very interesting; especially a letter from Lord W. Bentinck, on his departure from India in 1835. Dr. Wallich, in *Hooker's Journal of Botany for May*.

#### SILENE LACINIATA.

ALTHOUGH now seldom met with in collections, and hardly ever in a condition indicative of its being a favourite, this is a very useful subject for autumn decoration, especially where there is little accommodation for the culture of plants that require a warm temperature; properly managed specimens are thickly studded from July till the middle of October with bright scarlet, singularly shaped blossoms, which contrast well with the dark green foliage and with most other plants, producing a striking and very pleasing effect.

The best time for taking cuttings is when the plants are in active growth; and short-jointed shoots, firm but not hard, should be chosen for the purpose. They should be inserted in light sandy soil, covered with a bell glass, and placed in a close shady pit for a fortnight, and if then afforded a very gentle bottom-heat they will soon emit roots and start into growth. Nothing is more injurious to this plant than a close moist warm atmosphere, and as soon as the cuttings show that they are rooted, remove the glasses. Inure them to light and air and get them somewhat hardened before potting singly in small pots; and when this is done place them in a shady corner of a cold frame, with a moist but not warm atmosphere. As soon as they have become established after potting, stop them, to induce compact bushy growth, and place them near the glass, merely screening them from the direct rays of the sun for a few hours on the forenoons of bright, hot days, and admit air freely by raising the sashes at the back; but avoid drying currents, which would be the case were the sashes raised back and front. With good management, plants propagated early will be ready for a shift early in August, which should be given as soon as necessary, and every means used to keep them in vigorous health during the growing season. On the occurrence of damp, cloudy weather in autumn, remove them to a situation in the greenhouse, where they may enjoy all the light possible, without being exposed to currents of cold drying, or damp, foggy air, and give no more water to the soil in winter than will suffice to keep it in a healthy state.

About the middle of March remove the plants to a light, rather moist pit or frame, where the temperature may average from 40° to 45° at night, allowing it to rise to 55° or 60° before giving air. This treatment will soon induce free growth in plants that have been properly wintered and are in good health, and such should be afforded a liberal shift before the roots become matted in the pots. In shifting, be careful to have the balls and soil to be used in a properly moist state, and apply water cautiously until the plants get established in their fresh pots, after which give air and water more freely, and treat them as recommended for last season. Attend to stopping the shoots as they advance in growth, and stake and tie them out, so as to induce compact bushy specimens; but plants intended to bloom in autumn must not be stopped later than the beginning or middle of June, and large specimens can hardly be produced to bloom the first year after propagation; but useful little plants may be grown in this time, and had in flower early in August. If it is decided to afford any of the plants another season's growth, before allowing them to bloom, those should be shifted in July or earlier, if the pots are full of roots, regulating the size of the pot by the season at which it is given and the health of the specimen, avoiding a large shift late in the season. Winter them as already directed, and be careful not to over-water at the root while the plants are in a dormant state. The same treatment as directed for last spring may be resorted to, if the specimens are not sufficiently large, but discontinue stopping by the middle of May, or beginning of June, and as soon as they start into growth after the last stopping, keep them in a rather airy and drier situation, exposing them to full sunshine, except for a short time about noon and very warm days, and then a thin shade only should be used, discontinuing it as soon as the plants are inured to bear the full force of the sun's rays. When in flower they should occupy a light part of a cool airy house.

After their beauty is over, the stronger shoots should be well cut back, and the plants removed to a light airy part of the greenhouse, and wintered with the same care as on previous seasons. When they commence growth in spring, the weaker shoots should be stopped or cut back, removing altogether as many of the weakly ones as can be spared, this will keep the specimens dwarf and compact; and, with care in watering, &c., and a small shift every other year, they will last for several seasons. If the plants are in good health, and the pots moderately filled with roots, they may be placed in a warm sheltered spot, out of doors, as soon as summer weather commences, when they may be allowed to remain until they begin to expand their blossoms.

For soil, use good fibry rich peat, light sandy turfy loam, and leaf soil, in about equal proportions, and add a liberal allowance of sharp silver sand and potsherds, or charcoal broken into small pieces. Break up the loam into small pieces before it is used. *Alpha*.



## OF

COMPARISON OF THE CENTIGRADE, FAHRENHEIT'S,  
AND REAUMUR'S SCALES.

[IX.]  
VARIOUS CONVERSION TABLES

Milli- metres.		Centi- metres.	Inches.	Deci- metres.	Inches.
1	0.03937079	1	0.3937079	1	3.937079
2	0.078741580	2	0.7874158	2	7.874158
3	0.11811237	3	1.1811237	3	11.811237
4	0.15748316	4	1.5748316	4	15.748316
5	0.19685395	5	1.9685395	5	19.685395
6	0.23622474	6	2.3622474	6	23.622474
7	0.27559553	7	2.7555955	7	27.559553
8	0.31496632	8	3.1496632	8	31.496632
9	0.35433711	9	3.5433711	9	35.433711
10	0.3937079	10	3.937079	10	39.37079

SQUARE MEASURE.—FRENCH AND ENGLISH.

Cent.	Fah.	Reaum.	Cent.	Fah.	Reaum.
-17.22°	1	-13.77°	41.66°	107	33.33°
-16.66	2	-13.33	42.22	108	33.77
-16.11	3	-12.88	42.77	109	34.22
-15.55	4	-12.44	43.33	110	34.66
-15.00	5	-12.00	43.88	111	35.11
-14.44	6	-11.55	44.44	112	35.55
-13.88	7	-11.11	45.00	113	36.00
-13.33	8	-10.66	45.55	114	36.44
-12.77	9	-10.22	46.11	115	36.88
-12.22	10	-9.77	46.66	116	37.33
-11.66	11	-9.33	47.22	117	37.77
-11.11	12	-8.88	47.77	118	38.22

CUBIC MEASURE.—FRENCH AND ENGLISH.

Metres Square.	Yards Square.	Hectares.	Acres.	Sters, or Club. Metres.	Cubic Yards.
1	1.196033	1	2.471143	1	1.308
2	2.392066	2	4.942286	2	2.616
3	3.588099	3	7.413429	3	3.924
4	4.784132	4	9.884572	4	5.232
5	5.980165	5	12.355715	5	6.540
6	7.176198	6	14.826858	6	7.848
7	8.372231	7	17.298001	7	9.156
8	9.568264	8	19.769144	8	10.464
9	10.764297	9	22.240287	9	11.772
10	11.960330	10	24.711430	10	13.080

MEASURES OF CAPACITY, FOR LIQUID AND DRY SUBSTANCES.

Mètres.	Feet.	Mètres.	Feet.	Mètres.	Feet.	Mètres.	Feet.
1	3.280899	26	85.303379	51	167.325859	76	249.248339
2	6.561798	27	88.584278	52	170.606758	77	252.629238
3	9.842697	28	91.865177	53	173.887657	78	255.910137
4	13.123596	29	95.146076	54	177.168556	79	259.191036
5	16.404496	30	98.426976	55	180.449456	80	262.471936
6	19.685395	31	101.707875	56	183.730355	81	265.752835
7	22.966294	32	104.988774	57	187.011254	82	269.033734
8	26.247193	33	108.269673	58	190.292153	83	272.314633
9	29.528092	34	111.550572	59	193.573052	84	275.595532
10	32.808992	35	114.831472	60	196.853952	85	278.876432
11	36.089891	36	118.112371	61	200.134851	86	282.157331
12	39.370790	37	121.393270	62	203.415750	87	285.438230
13	42.651689	38	124.674169	63	206.696649	88	288.719129
14	45.932588	39	127.955068	64	209.977548	89	292.000028
15	49.213488	40	131.235968	65	213.258447	90	295.280928
16	52.494387	41	134.516867	66	216.539346	91	298.561827
17	55.775286	42	137.797766	67	219.820246	92	301.842726
18	59.056185	43	141.078665	68	223.101145	93	305.123625
19	62.337084	44	144.359564	69	226.382044	94	308.404524
20	65.617984	45	147.640464	70	229.662944	95	311.685423
21	68.898883	46	150.921363	71	232.943843	96	314.966323
22	72.179782	47	154.202262	72	236.224742	97	318.247222
23	75.460681	48	157.483161	73	239.505641	98	321.528121
24	78.741580	49	160.764060	74	242.786540	99	324.809020
25	82.022480	50	164.044960	75	246.067440	100	328.089920

WEIGHTS.

Litres.	Gallons.	Litres.	Gallons.	Litres.	Gallons.	Litres.	Gallons.
1	0.220096	26	5.723518	51	11.224940	76	16.727362
2	0.440193	27	5.942615	52	11.445037	77	16.947458
3	0.660290	28	6.161712	53	11.665134	78	17.167555
4	0.880387	29	6.382809	54	11.885232	79	17.387652
5	1.100484	30	6.602906	55	12.105329	80	17.607749
6	1.320581	31	6.823003	56	12.325424	81	17.827846
7	1.540678	32	7.043100	57	12.545521	82	18.047943
8	1.760775	33	7.263197	58	12.765618	83	18.268040
9	1.980871	34	7.483294	59	12.985715	84	18.488137
10	2.200968	35	7.703391	60	13.205812	85	18.708234
11	2.421065	36	7.923487	61	13.425909	86	18.928331
12	2.641162	37	8.143584	62	13.646005	87	19.148427
13	2.861259	38	8.363681	63	13.866102	88	19.368524
14	3.081356	39	8.583778	64	14.086199	89	19.588621
15	3.301453	40	8.803874	65	14.306296	90	19.808718
16	3.521549	41	9.023971	66	14.526393	91	20.028815
17	3.741646	42	9.244068	67	14.746490	92	20.248912
18	3.961743	43	9.464165	68	14.966587	93	20.469008
19	4.181840	44	9.684262	69	15.186684	94	20.689105
20	4.401937	45	9.904359	70	15.406781	95	20.909202
21	4.622034	46	10.124455	71	15.626877	96	21.129299
22	4.842131	47	10.344552	72	15.846974	97	21.349396
23	5.062228	48	10.564649	73	16.067071	98	21.569493
24	5.282324	49	10.784746	74	16.287168	99	21.789590
25	5.502421	50	11.004843	75	16.507265	100	22.009687

OLD FRENCH MEASURES OF CAPACITY FOR LIQUIDS.

Kilo-grammes.	lbs. Avoirdupois.	Kilo-grammes.	lbs. Avoirdupois.	Kilo-grammes.	lbs. Avoirdupois.	Kilo-grammes.	lbs. Avoirdupois.
1	2.2046	26	57.3196	51	112.4346	76	167.5496
2	4.4092	27	59.5242	52	114.6393	77	169.7542
3	6.6138	28	61.7288	53	116.8439	78	171.9588
4	8.8184	29	63.9334	54	119.0484	79	174.1634
5	11.0230	30	66.1380	55	121.2530	80	176.3680
6	13.2276	31	68.3426	56	123.4576	81	178.5726
7	15.4322	32	70.5472	57	125.6622	82	180.7772
8	17.6368	33	72.7518	58	127.8668	83	182.9818
9	19.8414	34	74.9564	59	130.0714	84	185.1864
10	22.0460	35	77.1610	60	132.2760	85	187.3910
11	24.2506	36	79.3656	61	134.4806	86	189.5956
12	26.4552	37	81.5702	62	136.6852	87	191.8002
13	28.6598	38	83.7748	63	138.8898	88	194.0048
14	30.8644	39	85.9794	64	141.0944	89	196.2094
15	33.0690	40	88.1840	65	143.2990	90	198.4141
16	35.2736	41	90.3886	66	145.5036	91	200.6186
17	37.4782	42	92.5932	67	147.7082	92	202.8232
18	39.6828	43	94.7978	68	149.9128	93	205.0278
19	41.8874	44	97.0024	69	152.1174	94	207.2324
20	44.0920	45	99.2070	70	154.3220	95	209.4370
21	46.2966	46	101.4116	71	156.5266	96	211.6416
22	48.5012	47	103.6162	72	158.7312	97	213.8462
23	50.7058	48	105.8208	73	160.9358	98	216.0508
24	52.9104	49	108.0254	74	163.1404	99	218.2554
25	55.1150	50	110.2300	75	165.3450	100	220.4600

OLD FRENCH MEASURES OF CAPACITY FOR DRY SUBSTANCES



## Home Correspondence.

**Early Peas and Potatoes.**—Reading "S. U.'s" remarks upon early Peas, at p. 389, induced me to turn up my note-book, where I found the following entry: "June 2d, 1853—Dug new Potatoes from the bottom of a south wall, rather small; June 7th—Dug new Potatoes from the bottom of a south wall, very good; June 8th—Gathered a dish of good Peas." I sowed three kinds in the last week in November; viz., Prince Albert, Early Warwick, and Emperor. The last mentioned sort all rotted, as have also several of my sowings this season. The past spring has been the most severe that I have seen in Ireland for the last 10 years. Nevertheless we have a good crop of Peaches, Plums and Cherries are but middling. *A. M., Kildare.*

**Stocks.**—I have sent you a specimen of a rather successful bantling of mine. It is the offspring of the Red Giant Stock by the pollen of the Purple Queen Stock. The whole bed appears to be Purple Bromptons (simplicicaules), and a large proportion are double. The common Purple Brompton is a huge straggling affair, and seldom double. The (purple) colour of the seedlings is singular, the mother parent being scarlet. I thought at first I had made some label mistake, but they are all single-stemmed in habit, and unlike a bed of real Queens near them. The plants are small, as they were wintered in the large pot in which I sowed them, and the specimen sent was all but broken in two when I planted it out a few weeks since. I tied it up as you see, and it made a very tolerable plant. The affinity between purple and scarlet in some flowers is curious, they being apparently forms of the same colouring matter, witness the Zinnia. Geraniums crossed by fulgidum produce both purple and scarlet broods. *Micklewell, Northampton.* [Your cross is certainly extremely handsome, being large and fine, perfectly double, and a most beautiful purple.]

**Instinct of the Swallow.**—Five years ago, I noticed that a pair of these birds built their nest in an out-house attached to my premises, in which they reared two broods. I little expected when autumn came and they winged their flight to sunnier lands, that I should ever see them again; but the following spring they reappeared, repaired their old nest, and again produced two broods. The same has occurred every succeeding year, and they are at the present time in their old domicile. I confess that I am not very conversant with the branch of natural history to which these cheerful and active little twitterers belong, but it strikes me that this is an instance of remarkable instinct, if they are the same pair of birds, and which I should presume they are, by their coming each year to the same place. *F. W., Heath House, Hamwell, June 21.*

**Rhubarb Wine.**—As regards a recipe for making a sparkling wine from Rhubarb, I beg to direct attention to a treatise, entitled "Roberts' British Wine Maker and Domestic Brewer." It is published by A. and C. Black, Edinburgh; and Whittaker and Co., London. Your correspondents will find there the best instructions which can be given for the manufacture of sparkling Rhubarb wine, and every other wine which may be made from home produce. The directions about Rhubarb wine are to be found in an appendix. To carry out the instructions it is necessary to possess a saccharometer, and one instrument of this kind made by Roberts is sold by the Messrs. Black along with the Treatise. Book and saccharometer will cost about 12s. If your correspondent "A Reader," will make the purchase of these two articles and study the Treatise, he will then work by plain and infallible directions, and find in the end his produce to be a very different material from what could be obtained by following any of the recipes which have hitherto appeared in your columns. There is little difficulty in obtaining a sparkling wine, and very pleasant withal from Rhubarb. When well made it bears a very suspicious resemblance to what is often called champagne, the only difference being that it is better than a great deal of the champagne which is in use. I am not surprised at Mr. Cuthill's enthusiastic praises of it, for it is a most agreeable fermented liquor, and very wholesome. In regard to quantity, a great deal may be made from a very small piece of ground. I have a quantity in must which will be asked to-day: from 13 plants of Myatt's Victoria, I had 10½ gallons of pure juice; 21 gallons of water were put on the pulp after the juice was run through a sieve, and allowed to stand on it for 10 hours, and then strained, and the juice added to it; these 31½ gallons required about 100 lbs. of refined sugar, at 6d. a pound, and 7½ lbs. of fine honey, to bring them up to the proper degree of strength; the must measures about 37 gallons, two or three will be lost in lees and fermentation, but out of the whole I shall easily secure 16 dozen of wine. Instead of cutting the Rhubarb into pieces and straining, I had it grated down by hand; this was done by two women in a day and a half, the expense of this was 3s., and counting the price of sugar and honey, my whole outlay is 3l. The cost, therefore, is little, and notwithstanding your parenthetical insinuation, Mr. Editor, which savours somewhat of ancient reminiscences of a disagreeable old gentleman called Dr. Rhubarb, whose acquaintance was anything but palatable in our boyish days, Rhubarb wine is not to be sneezed at, and is infinitely preferable to those thin potations which it is wished to have introduced duty free from abroad, and to the great bulk of wine that is commonly used, by whatever named called. *Tweedside.*

—However good the wine made from Rhubarb may be, I take the liberty of advising your readers not to drink it. It is well known that the acidity of Rhubarb

stalks is owing to the presence of an acid salt—the binoxalate of potash—a combination of the poison oxalic acid and the alkali potash. This salt does not exist in sufficient quantity in the Rhubarb stalks to produce its poisonous effects, and the same may be said of the wine. But there is another danger attending its use in the form of wine which ought not to be overlooked. All hard water contains lime, and when mixed with the juice of the Rhubarb stalks, the binoxalate of potash is decomposed and an oxalate of lime is formed. Now, this oxalate of lime is the constituent principle of the Mulberry calculus, and there is a peculiar condition of the human body known to medical men as the Oxalic Diathesis, which depends upon the presence of this oxalate of lime in the blood (I use the word blood for obvious reasons). This Oxalic Diathesis has been proved by Dr. Golding Bird to be much more common than it was supposed before this gentleman brought the microscope to assist him in his pathological researches. Such being the case, it is obvious that any article of common use which contains this oxalate of lime, or even the oxalic acid or its salts, must be more or less injurious to health, more particularly to those in whom there exists a predisposition to assume the Oxalic Diathesis. It must be borne in mind that oxalic acid is formed in the human body by the decomposition of sugar, urea, &c., and the Diathesis is not uncommon from this cause. If it is thus easily produced indirectly, *à fortiori*, it is still more likely to arise from the direct means of Rhubarb wine. Therefore, I say to your readers, eschew the doubtless very agreeable beverage which has entered, through the medium of your columns, into competition with genuine "Sillery mousseaux." *C. R. Bree, Stowmarket.*

**Fumigating Plant-houses.**—Many plans have been given whereby plants in houses may be fumigated, but I think one of the simplest and least annoying to the gardener may be easily put in practice by means of the Polmaise system of heating. I have tried it, and found it successful. There is a sliding valve in one of the sides of the hot-air chamber, for the purpose of admitting external air when required; when it is desired to kill green-fly, we choose a dull day, as is commonly done; light a fire in the stove, which soon sets the air in motion; a flower-pot with a hole in the side, near the bottom, with some hot cinders in it, is placed inside the hot-air chamber, opposite the opening when the valve is lifted; the tobacco is then placed in the pot, and the inward flow of air carries the smoke along with it, and the house is soon filled, without the smell of it being found upon those engaged in the operation. *P. Mackenzie.*

**Mushrooms.**—Owing to the uncertainty of obtaining good crops of Mushrooms in the open air, I give the preference to shed culture, and as I have been successful with every bed I have made, my mode of proceeding may perhaps interest beginners. Stable droppings were prepared for the purpose by frequent turnings, which permit the steam to escape, too wet a condition or a burning heat being carefully avoided. An open shed is the best place to prepare the dung in. In making the bed the droppings were beaten down as firmly as possible, and when, after a few days, the temperature had settled, spawn was put in, cased with dry road scrapings, after which the bed was beaten down and covered with 2 inches of maiden mould, struck down with a spade as firmly as possible. I had a small bed spawned September 30th, 1852, and another about 6 feet long on the 15th of October; from the first bed I had Mushrooms about the middle of November, and since then up to the present date I have never been without them. The bed is in an open shed, and is producing plenty of Mushrooms now. My opinion is that by strict attention and proper treatment Mushrooms can be produced any month in the year without the aid of heated houses. The spawn is often complained of, but in many instances I imagine the fault lays with the gardener, who frequently trusts the making and management of the bed to his men. *William Moyland, Kilburn House.*

**The Potato Crop.**—We have as yet seen only one case of Potato disease; here all are looking remarkably healthy. Two entire roots of Ash-leaved Kidneys from a healthy looking bed, composed of rubbish, sweepings, &c., have been shown us, unmistakably diseased, being in a putrid state, soft and black. There appears to be two kinds of this disease, and this in former seasons has appeared previous to the general outbreak of spotted leaves, &c. *Hardy & Son, Maldon.*

**Stewed Rhubarb.**—This is excellent and easily made. Simply simmer it for an hour, with sugar to the palate, and with very little water; it is then fit for use with plain bread, which is preferable to pastry for children and invalids. *Hardy & Son, Maldon.*

## Foreign Correspondence.

**THE RECENT FLOWER SHOW AT PARIS.**—The Société d'Horticulture de la Seine held its show in the Champs Elysées, on the 9th inst., and four following days. To give more *éclat* to this exhibition, England, Germany, and Belgium were each invited to send a judge: Mr. Rivers, of Sawbridgeworth; Mr. Booth, of Hamburgh; and M. Millez, of Lisle, were the three representatives chosen. The show, as compared with those held in England, was a small affair; but the way they manage these matters in France may be of some interest to your readers, and it will therefore be as well if I give the words of one of the "jurors" (the judges are here called a jury), as follows:—Our letter of invitation told us that we must meet at the house of M. Drouart, Rue Faubourg St. Honoré, at 10 o'clock precisely on

the 8th inst. I accordingly made my way there, and found a room full of amateurs, with a few gardeners and nurserymen; by 12 o'clock all had assembled, and we then proceeded to the Champs Elysées, to the tent erected so as to enclose one of the fountains on the left-hand of the avenue, about 200 yards from the Place de la Concorde. After some discussion, and after each of us signing our names in a book, 24 judges, or as they say here a "jury," of that number were selected; to each was given a silver medal, a free card of admission, and a note of invitation to a "grand banquet" at the Trois Frères Provençaux, at seven in the evening; we then proceeded to business. The show of flowers and plants was as near as I could judge about one-third the extent of those held at Chiswick and the Botanic Garden; the tent was about 80 yards long, and 50 wide, and well filled with plants in groups, on raised beds of earth, turfed at the sides; no specimens were to be seen, but all, or nearly all, were such plants as we see in our nurseries for sale; so that, although the show was pretty enough, there was nothing individually interesting, as in our grand specimens of Orchids, Indian Azaleas, and others. The jury of 24, after some discussion, was divided into two parties of 12 each, one headed by the Marquis de Barthélemy, the other by the Abbé Berlièze. From 12 o'clock till 6 how we did talk and hold up our hands, and put them down again, and then more talk, and then the prize was awarded or withheld according to the show of hands; our work, compared to our talk, was something like Falstaff's bread and sack, but at 6 p.m. we had finished; yes, after six hours' talk, we 24 had awarded all the prizes, and the abbé, in an eloquent speech, thanked us. The banquet at 7 was attended by perhaps 150, Comte de Cazes in the chair; there was again an immensity of talk, much heat, a very few Strawberries for the dessert (about five for each person), and some champagne. Our chairman (I suppose it is not the fashion here) did not give either a toast or a speech, nor any one else. At 9 all rose from table, and the proceedings of the day terminated. I visited the show the next day, the 9th; this was a select day; the price of admission five francs; The attendance was, however, very thin, for not more than 300 or 400 visitors were present. There were two or three stands of cut Roses in glass bottles; the blooms were inferior, for the season here is very late, and but few Roses are in flower. At the entrance was a nice group of Chinese Pæonies, in large pots; these were, perhaps, the most showy plants of the whole exhibition. Two or three collections of Roses in pots, standards and dwarfs, were pretty, but as compared with the pot Roses of the shows in England they were nothing; they were mostly in 8-inch pots, and it was surprising to see them so healthy in pots of such small dimensions. Mr. Standish exhibited a box of bloom of his new Mount Pæonies, which obtained a prize; he was also awarded two other prizes, one for Viburnum macrocephalum, and for Sikkim Rhododendrons. A group of hardy Azaleas, small plants in small pots, was gay, as was also a group of Indian Azaleas; there were three or four collections of Coniferous trees and shrubs, but no large specimens; these included young plants of some of our newly-introduced species. A large collection of hardy shrubs, deciduous and evergreen, in pots, was rather interesting, and perhaps worthy of imitation, as it brought under the eye many species but little known, yet worthy the attention of those forming a garden. The Pelargoniums were principally fancy varieties; as groups they were pretty, but I did not see one worthy a second look. The Rhododendrons, in two or three collections, were not worth a thought or a word—the plants were small, and the sorts of a very common description. The Calceolarias were very inferior. The fruit consisted of three or four plates of Strawberries, sorts from seed, and a dozen or so in pots; some Apples, two or three bunches of poor Grapes, a few Melons and Nectarines, the latter I understood came from England. This part of the show was badly arranged, and not at all attractive. On Friday, Saturday, Sunday, and Monday, the price of admittance was reduced to one franc, the attendance was still thin, for I should think there was never more than from 300 to 400 at one time in the tent; it was singular to find persons belonging to the Society hawking and calling your attention loudly to the catalogues (1½ franc each), giving the names of the plants, and to whom the prizes were awarded. I paid the exhibition a parting visit just before it closed on Monday; the weather had been cool, and the plants were still quite fresh, except the cut flowers, and the whole, with the large fountain playing in the centre, had a pretty effect. I had nearly forgotten the vegetables; there were Cabbages and Lettuces pretty good, but it is in winter vegetables that the French excel; in summer Lettuces, Cauliflowers, &c., we beat them hollow. A bunch of Asparagus from Auteuil was, however, remarkable; many of the sticks measured from 4 to 5 inches round, and from 12 to 14 inches long. A tent and yard attached to the show was filled with garden implements, garden chairs, fountains, models of fruits in composition, very well executed, &c. As far as I could judge, these flower shows are not the fashion, neither do they appear to suit the taste of the Parisians; they are too quiet; there is no music, no eating and drinking, and, above all, no noise, which seems an absolute necessary with the French. *An English Looker-on.*

## Societies.

**LINNEAN, June 7.**—The President in the chair. The chairman, on taking his seat for the first time,



delivered a short address, referring to the retirement of Mr. Brown and the position of the Society. The Rev. T. Hugo was elected a Fellow. Mr. W. Thomson exhibited two photographic portraits of two natives of Cape York, Australia. Mr. J. Hogg exhibited specimens of Sir J. E. Smith's varieties of the common Primrose (*Primula vulgaris*), gathered in a wood near Stockton-upon-Tees. The President nominated R. Brown, Esq., W. Spence, Esq., N. Wallich, Esq., M.D., and W. Yarrell, Esq., vice-presidents of the Society. Mr. Westwood exhibited a volume of autograph letters addressed to Philip Miller, Esq., by various naturalists. Mr. Newport read a note on the Dipterous parasites which attack the earwig and emperor moth, and on the habits of the *Dynastes tytus*. Mr. Yarrell exhibited a specimen of the dusky petrel (*Puffinus obscurus*). This bird flew on board a sloop off the island of Valentia, on the S.W. coast of Ireland, on the evening of the 11th of May last, and is often confounded with the Manx Petrel (*Puffinus anglorum*). Specimens of both birds were exhibited. This dusky petrel, though very numerous in the Azores, the Canary Islands, the Cape of Good Hope, and the Gulf of Mexico, New Zealand, Norfolk Island, and King George's Sound in Australia, had been recorded to have been taken only four times in Europe. —A paper was read by Mr. J. Hogg on the artificial breeding of salmon and trout, with remarks on the modes of fecundating their ova. This paper gave a further account of the artificial breeding of salmon as practised by Isaac Fisher, Esq., in the river Swale, in Yorkshire. Mr. Hogg alluded to an opinion which had been published by Dr. Robertson, and from which it appeared that he had observed facts which led him to the conclusion that the ova of the female were impregnated previous to their extrusion. Mr. Hogg suggested that experiments might be performed to decide this point, in an arrangement like that of the Aqua-vivarium, in the gardens of the Zoological Society, Regent's Park

## Reviews.

*The Principles of the Law of Real and Personal Property; being the Second Book of Blackstone's Commentaries.* Fourth edition. By James Stewart, Esq., London. Stevens and Norton. 1853. 8vo. Pp. 677.

If any person of intelligence, not being a lawyer, were for the first time to examine the laws of England which have so long governed the relations of landlord and tenant, if he were to reflect a little on the extraordinary powers landlords have of levying a distress, and on their right of claiming, without compensation, fixtures and improvements erected and made by tenants, the conclusion to which he would probably come would be, that such laws originated at times when the distinction between might and right was fine, and were preserved by the power of the class so directly benefited by them. The history of the law of fixtures would not be likely to remove this impression; for although it is very true that that law has improved, and that in consequence of the increase of commerce, it has been greatly modified for the benefit of trade, yet this has been rather in spite than with the assistance of landlords, as may be clearly seen from the actual state of the law respecting agricultural fixtures. We are, however, told that in one respect, at any rate, landlords have been actuated by the most disinterested benevolence towards their tenants, even of the very lowest class; we are assured that the gradual passage of villain into copyhold tenure was effected by the "kindness and indulgence of successive lords of manors," and that the great variety of manorial customs is the result of the difference in the humour and temper of the respective ancient lords. This assurance was given us by Blackstone some 70 or 80 years ago, and has been handed down to posterity in every succeeding edition of his celebrated work. We were, however, surprised to see such a statement without observation or comment in the edition now before us. The well known character of the editor as a law reformer, and the pains he has taken to improve copyhold law, would certainly have led one to suppose that such passages in his author would at least have received marked attention, and our surprise was the greater, as the editor does not pretend to have left the text unaltered, but has in several instances, and in every case with advantage, made considerable changes in the original work. The chapters on customary tenure, on alienation by act of Parliament, and on bankruptcy, bring the work down to the present time; and we have no hesitation in saying that the second volume of *Blackstone*, as edited by Mr. Stewart, is as satisfactory an outcome of the law of real and personal property as any edition of *Blackstone* is ever likely to be. We think, however, that both the legal profession and the public in general would have derived much more advantage from an entirely new work on the subject; and we hope that Mr. Stewart will, the next time he has occasion to write on such matters, not merely content himself with improving a work which, possessing great merits and great demerits, is confessedly ill adapted to the wants of the present age, but will state the law in his own way, unhampered by authority and an unscientific arrangement.

## Garden Memoranda.

MEARES, OSBORN'S NURSERY, FULHAM.—Among the more important nurseries near London, this is one of the most interesting to lovers of general gardening, not only on account of the great variety of subjects it con-

tains, old and new, but also on account of its possessing good specimens of certain trees and shrubs which are only to be found in long established places such as this is. As an example of what has just been stated, we may mention that close to Mr. Osborn's cottage stands the original Fulham Oak, a noble tree of fair proportions, and, though upwards of 100 years of age, as hale and vigorous as could possibly be desired in a specimen of its size. We also remarked a very fine example of the Cork tree (*Quercus suber*) in excellent condition, though doubtless very old. Of Weeping Elms, Cedars of Lebanon, and Purple Beech, there are some fine examples; the latter appeared to be a deeper coloured variety than the common kind. *Arbutus procera*, one of the oldest and best trees of the kind we have seen, except perhaps that in the Horticultural Society's Garden at Chiswick, has been covered all over this season with blossoms; indeed, notwithstanding the miserable spring we have just experienced, flowering shrubs and trees generally are blossoming well this year, a remark which also applies to American plants. The compartment appropriated to the latter here has been extremely gay, but they are now nearly all out of flower, with the exception of some *Kalmias*, and a plant or two of *Rhododendron Goweri*, a Highclere hybrid, bearing compact heads of small sweet-scented lilac flowers, that are not only very gay on the bush, but have a charming effect in bouquets. Of weeping trees there is a fine collection here; among them we observed fine specimens of weeping Cherry, *Sophora japonica pendula*, weeping Holly, Larch, and variegated Elms. The latter worked on tall stems of the common Elm have a striking effect among dark-foliaged trees. Among *Magnolias*, which have been very gay, Thomson's was still in bloom, and very fragrant; and close beside it was the graceful *Genista virgata*, covered with flowers just in perfection. Few of the *Genistas* are more showy than this one. *Pink*, *crimson*, and other *Thorns*, and *Horse-Chestnuts* of various colours have been magnificently in blossom, but their beauty is now all but over. Among the *Thorns*, one called *Layi* deserves notice, on account of its fine foliage. It is of Chinese origin, and was first raised and sent out by the Horticultural Society. Plants of the purple-leaved Nut were also striking, on account of their colour.

In the show house was a fine batch of *Calceolarias*; they are cultivated here for their seeds, which, if sown in August, produce nice blooming plants about this time. There was also a collection of between 30 and 40 sorts of the still much neglected Cape Pelargoniums; an *Azalea* called *Osborni*, a pretty kind in the way of *latteria*; some *Fuchsias*, *Lilies*, and other plants, among which was a good specimen of the Californian evergreen *Plum*, the variety of *Berberis Nepalensis* called *Leschenaulti*, a fine plant, with foliage upwards of 2 feet 6 ins. in length; and an example of *Libocedrus Doniana*. Several of the glass houses are being greatly altered and repaired, and on that account the plants, being out of their usual arrangement, were not seen to the best advantage. Among them we remarked *Clerodendron fallax* very fine, having been fed with liquid manure; various *Gardenias*, *Eschynanthus*, *Dipladenias*, *Gloxinias*, and the pretty *Hoya bella*, the new *Oxylobe*, which gained the first prize for new plants at the last Chiswick show; and *Lysimachia Leschenaulti*, a kind with compact heads of rosy flowers. This looked as if it would make a good bedding plant, its flowers promising to be sufficiently numerous and bright to make it effective. While speaking of bedding plants, we may as well direct attention to a very pretty crimson-scarlet *Geranium* called *Brilliant*, which will doubtless become a favourite. It is exceedingly dwarf, a profuse bloomer, and has good foliage narrowly margined with white. Of *Irises*, a fine collection is grown here, comprising all the best continental and other kinds; and there are also large quantities of herbaceous *Pæonies*; among the latter, the best white is *La Festive*, double and fine; but *Whitley* is also a very good one, and sweet scented; the best pink is *Reevesi*, which is also very double; and the best deep purple, *Pottsi*: we also remarked a great many single kinds not usually met with in cultivation. Herbaceous, bulbous, and Alpine plants are largely cultivated here, and very attractive they are, furnishing as they do a continuous supply of flowers from early spring nearly up to Christmas. Of *Conifers* we remarked all the newer and better kinds, both in pots and planted out; and of fruit trees this nursery possesses one of the best collections in the country. They looked exceedingly healthy; indeed we have seldom seen *Peaches* and other stone fruit cleaner, or growing away more freely. *Roses*, too, are cultivated, though not in such quantities as in the *Rose* nurseries in Hertfordshire; in a long border of them, all placed under the same circumstances, the only sort in bloom was *Géant des Batailles*, which was brilliant and striking. This is not only the earliest but also the latest *Rose* of the season. We may state that *Acer liliifolium* and *Pavia californica* have proved perfectly hardy here, not a shoot belonging to them having been injured last winter. The *Sikkim* Larch has also escaped unhurt, as have some plants of the *Funeval* Cypress. Of *Sikkim* *Rhododendrons* we saw some strong plants, but none of them have flowered yet except *ciliatum*.

## FLORICULTURE.

BEDDING-OUT PELARGONIUMS.—It has been a source of regret that the finest varieties of Pelargonium have hitherto not been found available for the decoration of

our flower-gardens. Who can contemplate the splendid display of this beautiful tribe of plants at our metropolitan exhibitions, and not feel desirous that the same masterpieces of floral beauty could be made to assimilate with the *Verbena*, the *Petunia*, and other half-hardy plants, which throw so great a share of gaiety into our parterres during the summer months? But no; plant them out, and they literally run wild. Well, what must be done? are we to despair of ever possessing those gems of the greenhouse in our gardens? No; try again. Bring all your energies to bear upon an object, and you must succeed. Well, I have tried and tried again, and have at last been successful; and I will give your readers the benefit of my experience. About this time a year or two ago, I took about 100 plants of the best varieties, such as *Aurora*, *Mustee*, *Hebe's Lip*, *Mount Etna*, *Orion*, *Duke of Cornwall*, *Duchess of Leinster*, *Fire King*, &c., all nicely coming into bloom, and planted them in three beds in the following manner:—Having got my plants well hardened off, that is to say, having fully exposed them to the influence of the sun and wind for a few days, I took a garden trowel, and dug a hole in the bed where I wished them to be placed of exactly the size of the pot, but nearly double the depth of it: the plant, pot and all, was then inserted in the hole in such a manner that the rim of the pot was level with the surface of the bed, thus leaving a vacancy of several inches in depth at the bottom of the pot. In this way I proceeded with the whole of my plants; and no Pelargoniums could possibly produce a better display of flowers than they did throughout the whole of the season. The roots being confined within the pot, are as much under command as though the plants were in a greenhouse; and if any of them should show the least disposition to ramble, they can be taken up and examined at any time; besides, under the conditions I have just mentioned, a fresh arrangement of the plants might be made with nearly as much ease as if they were on a stage in the greenhouse, and without the least injury to them. It is true Pelargoniums planted in this way require a little more attention as regards watering than plants do turned out of pots; but then the cultivator is amply repaid for all extra trouble by abundance of blossom. Hoping that others may be as successful as I have been with the above method, my recommendation to all is, to try my plan. A. K., Stoke Newington.

NATIONAL FLORICULTURAL SOCIETY, June 16.—The President in the chair. Sixty-four seedling plants were staged on this occasion, the greater portion consisting of Pelargoniums; but there were also *Azaleas*, *Gloxinias*, *Lupins*, *Petunias*, *Thunbergias*, *Verbenas*, *Mimuluses*, *Fuchsias*, *Pinks*, and *Calceolarias*. First-class Certificates were awarded to Pelargoniums *Virginia* (Hoyle), and to *Rosa* (Foster) for the former for its general good properties, being a light flower, with purple maroon top petals; and to the latter for its form, texture, and smoothness of petal. An *Azalea* named *Striata Formosissima*, sent by Mr. Taylor, gr. to J. Coster, Esq., of Streatham, received a Certificate of Merit. It is a white sort, flaked and spiced with light purple. Similar certificates were granted to Pelargonium *Carlos* (Hoyle), for its bold and showy character, being light rose with dark top petals and medium margin; flowers large and truss bold. To Pelargonium *Lucy* (Foster), for its general good properties; to Pelargonium *Pearl of England* (Dobson), being a decided improvement on *Pearl*, and as a white flower, highly valuable. Among other meritorious Pelargoniums staged, *Autocrat* (Foster), possessed many good properties; *Brilliant* (Foster), is remarkable for the dazzling scarlet of its ground colour; *Cloth of Gold* (Foster) is very showy; others of less note were staged by Major Fouguet, Rev. T. Trimmer, T. White, Esq., and Mr. Hooken; several fine varieties were contributed. A label of commendation was awarded to Lady Mary Labouchere (Brang), being an excellent variety for vases, baskets, and other out-door purposes; as a bedding sort, *Pretty Polly* (Keynes) well deserved the award granted it at the previous meeting; *Verbena Beauty* (Banks) received a Label of Commendation, it is in the way of *Madame Buenod*, but larger; *Calceolaria Amazon* received a similar award for its good bedding properties. *Fuchsias*: *Charmar* (Banks), has a good habit and desirable colours (white and purple); *Pink Napoleon* (Norman), evidently possesses many first-rate properties; it was requested to be shown again. Mr. Salter sent a collection of *Irish* blooms, which were much admired. Some *Calceolaria* flowers arrived too late for the inspection of the judges; they came from Hull; two or three of them were evidently first-class kinds.

HOLLYHOCKS: *G*. The spikes usually exhibited vary in height from 1 to 2 feet. The flowers near the base of the spike are generally the finest (although this depends in some measure on the state of the weather in which they are formed and expanded), and consequently the aim should be to preserve them. To this end all lateral flower-spikes are destroyed, and the top is cut off the main stem about 2 feet from the lowest bud, at the time the latter expands, that the flowers may close over the top, and the spike look complete. By shading, the greater part, if not the whole of the spike may be kept in a showable condition for 8 or 10 days. — *Z*. Propagation by division is best carried out in autumn, after the flowering is over. A large, well-rooted plant may sometimes be divided into several, but in general three or four is a more advantageous number. Nothing, certainly, is gained by breaking the old plants into too many pieces; every separate part should carry with it a good share of roots. Seedlings and others that may bloom late cannot be divided till the spring. March is, perhaps, the best time, and the fragments, if not broken too fine, will flower well during the first autumn.

PROPAGATING CAMELIAS: *J. H.* They are increased by inarching, grafting, and budding on the single red and Middlemud rods, cuttings of both of which strike readily. These latter should be taken off in August or September, as soon as the young shoots are ripe. They are prepared by being cut through horizontally at a joint, or better taken off with a "heel," divesting them of a few leaves at the base, and potting them in sand. They should then be well watered, and the pots placed in a cold-frame for a month or six weeks. They may then be introduced into a gentle bottom heat, and potted off into small pots next spring; still keeping them in heat until they have made their growth, then gradually hardening them off. In the succeeding season they will be ready to be inarched, budded, or grafted. The best time for inarching is in spring, just before the plant begins to grow; and for grafting, in August or September.

## SEEDLING FLOWERS.

CACTI: *C. K.* They were bruised and spoiled so much when they reached us that it would be unsafe to offer any opinion on them



They should have been sent direct to our office, where they would have been examined as soon as they had arrived.  
**CALCEOLARIAS:** *O. K.* Bright and striking in colours, but all very deficient in shape.

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

**CHINESE Azaleas and Camellias**, intended to bloom early next season, and which have by this time nearly completed their growth, should be exposed to more light and air, to harden their wood before setting them out of doors. As soon as the wood becomes somewhat firm, and the buds for next season make their appearance, is a favourable time for repotting such as require it; and, if caution is used to prevent exciting them into a second growth, the blooms will be finer than when the plants are potted before the year's growth commences. Plants intended for forcing should, on no account, be over-potted at any time, and both Camellias and Azaleas are often shy of bloom when forced after a large shift; another advantage in keeping plants for forcing rather under-potted is, that they are often required to be turned out of their pots, to fill vases, tazas, &c., in the drawing-room when in bloom, which can be done without much injury to the plants when they have completely filled their pots with roots.

#### FORCING DEPARTMENT.

It is a general complaint in some establishments where Pines are grown, that they are ripened at one season (generally the present and next two months) in over abundance, and during the remainder of the season a scarcity prevails. The very habit of the plant induces this, for the larger portion of a stock of fruiting plants will show fruit in the spring, earlier, or later, as they may have been grown under the influence of a larger or smaller proportion of light; hence, to keep up a continuous supply of fruit requires considerable forethought and management. Queens and Providences are generally grown for the summer supply, as they usually show during the first months of the year; our own practice for obtaining a supply of autumn and winter fruit, is to depend principally on the black Jamaica and the Cayennes, which are grown in deep succession pits through the winter and spring, with much less light than what is allowed to the early fruiting plants, and consequently they do not begin to show fruit before the present and next two months, when they are removed to the fruiting house to perfect their crop. Succession Pines are now growing very fast, and will require air in liberal quantities from both back and front; water as they require it, using liquid manure occasionally, clarified, to prevent its choking up the drainage properties of the soil by its application. Maintain a steady bottom heat; and pot the suckers from the plants of which the fruit is cut, as the stools are removed to make way for other plants. **MELONS**, while ripening their fruit, are very liable to crack when exposed to moisture, or when water is applied too freely to their roots. This drawback is more likely to happen when the higher-flavoured kinds are grown, from the thinness of their skin. In common frames some difficulty will be found in keeping the air sufficiently dry to prevent this in wet weather. Air must be left on by night, at front and back, to admit of a slight circulation; and a little extra heat should be thrown into the bed, to keep up the temperature, by turning over the linings. Where, however, Melons are grown by the assistance of hot water, an atmosphere can be maintained which will fully carry out the ripening process with this delicious fruit, even in unfavourable weather. In watering Melons, great caution must be used in supplying only the exact quantity wanted, as an excess of water at the roots only tends to increase the size and deteriorate the quality of the fruit. The kind of structure the plants are grown in will have some effect on the quantity of water they will require; in lofty pits or houses, where the foliage attains a large size, and where a much drier atmosphere is obtained than in frames or low pits, more water will be necessary, and the surface of the soil should be frequently sprinkled. Watch daily for red spider, which is troublesome to keep down when once established on Melons, owing to the extreme tenderness of their foliage, preventing very active measures for destroying them being adopted.

#### FLOWER GARDEN AND SHRUBBERIES.

The pegging down and otherwise arranging the growth of the plants recently bedded-out, should be proceeded with as they advance; make up failures, and pay every attention to their well-doing. The last of the spring-flowering bulbs will now be ripe enough to take up, and if the plants intended to occupy their places were not some time ago introduced between them, they should at once be planted, altering or improving the soil of the beds, to suit the habits of the fresh plants, as circumstances may require. Propagate double Wall-flowers, Rockets, and the best kinds of Sweet-Williams, by cuttings or layers. Many kinds of perennial plants may now be propagated, by forming cuttings of the weaker side shoots. The American garden will be in full beauty, and every means should be taken to keep the adjacent turf and gravel in the best order. Remove decayed blooms, and where time is not an object, the seed-pods should likewise be picked off the choicest kinds (unless wanted for sowing), as the plants will grow much faster than when allowed to ripen their seed. Roses, to obtain fine and perfect blooms, must have close attention, to keep them free from insects; tie up the shoots of such kinds as are growing against pales

or walls; the same remarks apply to creepers generally, which at this season will require a deal of time to keep them neatly tied in and arranged.

#### FLORISTS' FLOWERS.

**PINKS.**—The main crop of cuttings or pipings should now be got in. The most preferable way, perhaps, is to make a dung-bed, not too hot, with a covering of 6 inches of sandy soil; in this the cuttings may be planted, covering with small hand-glasses. They may also be successfully "struck" on a shady border. Attend to fertilisation as the flowers expand; this is the only true way of getting first-class seedlings. **TULIPS.**—Cover the seed-pods of those which it is desirable to save with a piece of glass placed in a notched stick; this will preserve the crown from retaining moisture, and prevent decay, which is sometimes the case. Remove the seed-vessels of all others, as the bulbs become ready to take up sooner than if they were allowed to remain on. **DAHLIAS.**—These plants, if not already staked, should be attended to forthwith, giving a careful tie; should dry weather occur, watering should not be neglected. **PANSIES.**—Propagate from side slips, and cut down strong straggling plants; these will afford a good supply of rooted cuttings for making up the autumnal bed. **RANUNCULUSES.**—Attend to the directions given last week.

#### HARDY FRUIT GARDEN.

In this department the management and tying of the young wood will be the principal thing in hand, in addition to keeping down insects; Cherries should be examined often, to prevent the black-fly from attacking the present year's wood, as previously noticed. Peaches, Apricots, Plums, and Cherries should have their wood required for next season's crop, or to fill up vacancies, tied or nailed into the wall, as the shoots advance; stop all except the leading shoots of Figs, when they have made three or four joints. Vines will require going over; thin out what wood is not wanted for bearing, and stop the bearing shoots at a joint above the fruit; nail in the leading shoots close to the wall. Where the long-rod system of pruning is adopted, a shoot must be selected and carried up from the bottom of each stem, to furnish bearing wood for next year. Remove useless suckers from Raspberry plantations, to admit more sun and air to the fruit. The crop of both Gooseberries and Currants would be benefited by thinning out or stopping the extra summer shoots. Begin to layer Strawberries in 60 pots, directly runners can be obtained for next season's forcing; let the soil used be rich and rather light, to encourage the runners to root freely; when layered do not let them suffer for want of water.

#### KITCHEN GARDEN.

Take every opportunity, where vacant ground occurs, to plant successive crops of the various Broccoli, and winter Greens, Celery, and other things in demand; a good breadth of Turnips should be sown, for which the ground cleared of the early Pea crop will be favourable. Carrots, Parsnips, Onions, Beets, &c., should now be finally thinned out, if not done. Late Broccoli, &c., should be transplanted, to keep them stocky for filling up future plots, now occupied with growing crops; finish earthing-up Potatoes, if not already done; sow Chicory in deep moist soil for winter salading; making a sowing of Hairs' Dwarf Mammoth and Bishop's Dwarf Long-pod Peas for a late crop, as they can easily be protected from tom-tits, white-throats, and sparrows, which are often troublesome to late Peas. The dwarf habit of these kinds, and their good properties as late bearers, render them valuable for the purpose. Sow successive crops of dwarf Beans. Frequently stir the soil between growing crops, and let the kitchen garden present the appearance of order and good cultivation even at this busy season. Box edgings should be clipped in showery weather, and the gravel walks kept clean and frequently rolled.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending June 23, 1853, as observed at the Horticultural Gardens, Chiswick.

JUNE.										
June.	Moon's Age.	BAROMETER.		TEMPERATURE.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot 2 feet deep.			
Friday..	17	30.052	30.006	75	49	62.0	61	57	W.	.00
Saturday	18	30.011	29.860	71	53	62.0	60.5	57.5	S.W.	.00
Sunday	19	29.798	29.553	64	41	52.5	60.0	57	S.W.	.32
Monday	20	29.555	29.531	68	44	56.0	58.5	57	N.E.	.02
Tuesday	21	29.677	29.586	60	42	51.5	59	57	N.	.04
Wednesday	22	29.780	29.691	64	47	57.0	57.5	56	N.	.01
Thursday	23	29.790	29.745	73	47	60.0	57.5	56	N.	.00
Average ..		29.797	29.712	67.8	46.7	57.2	59.2	56.8		0.39
June 17—Very fine; cloudy; clear at night.										
18—Cloudy; fine; slightly overcast at night.										
19—Densely overcast; rain.										
20—Very fine; cloudy; rain at night.										
21—Very fine; rain; clear.										
22—Cloudy; rain at 1 p.m.; cloudy.										
23—Cloudy; fine; clear at night.										
Mean temperature of the week 5 deg. below the average.										

June 17—Very fine; cloudy; clear at night.  
 18—Cloudy; fine; slightly overcast at night.  
 19—Densely overcast; rain.  
 20—Very fine; cloudy; rain at night.  
 21—Very fine; rain; clear.  
 22—Cloudy; rain at 1 p.m.; cloudy.  
 23—Cloudy; fine; clear at night.  
 Mean temperature of the week 3 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending July 2, 1853.

June and July.	Average highest temp.	Average lowest temp.	Mean temp.	No. of years in which it rained.	Greatest quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 26	72.7	50.6	61.7	13	1.00 in.	1	1	1	1	1	1	1	1
Mon. 27	73.3	51.3	62.3	13	0.30	1	1	1	1	1	1	1	1
Tues. 28	72.4	50.7	61.6	10	0.65	1	1	1	1	1	1	1	1
Wed. 29	72.6	49.6	61.1	7	0.19	1	1	1	1	1	1	1	1
Thurs. 30	72.7	50.2	61.5	9	0.80	1	1	1	1	1	1	1	1
Friday 1	71.2	52.5	61.8	10	1.18	1	1	1	1	1	1	1	1
Satur. 2	73.4	52.6	63.0	12	0.38	1	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 27th, 1856—therm. 93 deg.; and the lowest on the 30th June, 1848, and 1st of July, 1837—therm. 37 deg.

#### Notices to Correspondents.

**BLANCHING CELERY:** *T. P.* will thank some of our readers to inform him of the best method of blanching Celery. He is growing a few plants of it for exhibition, and is desirous of having it as fine as possible.

**CALYCANTHUS:** *Z.* You probably mean *Chimonanthus*. The latter should be trained to a south wall, and allowed, during summer, to produce as much breastwood as it likes, unless some of the bottom shoots should prove very strong; in that case they may be stopped in July. The flowers come on the new breastwood. After flowering is over, cut the breastwood half way back, and then leave the bush to grow as it pleases for the succeeding year. By degrees the old wood will wear out, when it must be gradually removed, and replaced by new wood from the bottom.

**CANARIES:** *J. A. B.* has a hen canary which has an enlargement of the aperture of the right nostril; it has now reached nearly  $\frac{1}{2}$  of an inch in diameter. He will be obliged by some of our correspondents informing him if it is dangerous, or if anything can be done to prevent further enlargement.

**CAPT. NORTON'S CARTRIDGE.** If *Stamp* will apply to Capt. N., Victoria Hotel, Cork, he will obtain the desired information.

**CUCUMBERS:** *T. P.* We cannot possibly tell what the "spotting" on your Cucumber leaves may be, without a specimen of it for inspection.

**DISEASES:** *J. A.* We cannot discover anything like disease in your Orange leaves.

**GLASS:** *J. S.* No glass will at all times prevent plants being injured by excessive light, but Hartley's rough plate is a better safeguard than any other, and if accompanied with such agitation of the air inside a greenhouse as will keep leaves in motion, there is nothing to fear. If the last is impossible a screen of "Frigi Dore" or the best of protecting material is sufficient to moderate the sun's action on the very few occasions when it becomes inconvenient.

**GUTTA PERCHA LABELS.** When we formerly received some samples of these from the makers, we did not form a favourable opinion of them, because, supposing them to be durable, they were difficult to read. A different specimen has now reached us, having the name stamped with a broad-faced bold letter, and we are bound to say that it is a very great improvement upon the first. What is wanted in a garden label is durability, legibility, and cheapness, and this seems to approach such requisites nearer than any we have yet seen. Durability, however, is a quality that can only be ascertained by experience.

**MANURES:** *J. Abell.* The dressing you purpose giving your Asparagus beds is excellent. We should apply it at twice. Of the two manures for your late planted Onions, we should prefer the malt dust.

**MOWING MACHINE:** *A.* Samuelson's improved Budding's mower will possibly answer your purpose best.

**NAMES OF PLANTS:** *Mary M. C.* 1, Indeterminate; 2, *Lantana aculeata*; 3, *Spirea ulmifolia*; 4, *Pyrus arbutifolia*; 5, *Prunus Padus*; 6, *Spirea bella*; 7, *Eunonymus europaeus*; 8, *Lonicera xylosteum*; 9, *Caprifolium hirsutum*; 10, *Double Ranunculus acrifolius*; 11, *Valeriana officinalis* (?); 12, *Rhodolia rosea*; 13 (?). All these were in a most miserable state, shrivelled and broken. *Lower of Flowers.* 1, *Diplacis glutinosus*; 2, *Osmunda cinnamomea*; 3, *Scilla sibirica*; 4, *W. H. T. Blechnum versicolor*, var. *atropurpureum*; 5, *Dido*, *Lonicera involucrata*; 6, *Mary*, *Thalictrum aquilegifolium*; 7, *A. S. Dunder*, *Oncidium crispum*; 8, *Polypodium crassifolium*, Linn., now *Drynaria crassifolia*, J. Sm.; common in the West Indies and tropical America; 9, *Como*, *Capparis spinosa*, the common Caper Bush; 10, *Hesperocaulis*. It is *Phytolacca spicata*.—*A. Journeyman.* It is impossible to answer your inquiry about the Stanhopea; as to the other, it is some miserable *Acanthad* not in fruit.—*J. H. I.* *Lastrea spinulosa*; 2, *Pteris serrulata*; 3, *Asplenium Adiantum-nigrum*; 4, *Adiantum ethiopicum*, S.—*G. J. C.* 1, *Poa nemoralis*; 2, *Briza minor*; 3, *Aira caryophylla*.—*B. C. D.* *Panacratium maritimum*, and *Trifolium ornatifolium*.

**PEACH-TREES:** *D. P.* The condition of the Peach leaves received has not been caused by the roots traversing an ungenial soil; nor is it the result of bad training. The leaves exhibit distorted swollen masses, from the effects of cold on the newly-formed tissue. They may be picked off as useless, as the evil arises from no constitutional disease in the trees; the latter will soon produce abundance of healthy foliage when the weather proves favourable. It is inferred, from the vigour of the portion of shoot made previously to its being chilled, that there is plenty of vigour in the trees; but, from what you state of their management, or rather mismanagement, we should suppose that some parts of the same tree are excessively vigorous, whilst others exhibit extreme weakness. If so, the trees are on the way to ruin, and you can only save them by gradually but incessantly checking the growth of the over-vigorous shoots; and, on the contrary, encouraging that of the weak.

**PEAR-TREES:** *W. B.* It is very well to try with a dozen plants, on your low wall, the zig-zag training as you propose. The plan may succeed tolerably well with great attention. But with regard to the 240 feet of new wall, we advise you to adopt the horizontal mode of training. It is good in principle, and easily managed, more especially so if well looked to. The shoots of your standard trees planted last autumn, and not then shortened, should not be cut before the end of autumn, when their leaves shall have fallen.

**PRESERVING STRAWBERRIES:** *J. K.* Try Mr. Lovejoy's plan, given at page 244 of our present year's volume.

**STRAWBERRIES:** *C. J. B.* enquires if any of our correspondents can furnish "any information relating to Knevet's Pine, or its merits."

**TADPOLES:** *A. E.* Ducks will soon rid you of these gentry, if you have not patience to wait till they become frogs, and move off of their own accord.

**VINES:** *A. Novice.* The out-of-doors Vine, which, on coming to your new residence, you found had not been winter pruned, may now be cut without danger of bleeding. You may, therefore, regulate it, commencing where confusion most prevails, but avoid making great havoc at any one time. Stop, or shorten, the young shoots a joint above the bunches. Leading shoots should not, however, be yet shortened.

**WEEDS:** *A. H. V.* We fear there are no means of eradicating aquatic weeds except by constantly mowing them as low down below the level of the water as they can be reached, or by tearing them up by "creepers." The mud and weeds, if carted upon land, will not produce such weeds again. But we should first throw them in a heap for a few months.

**MISC:** *Querist.* It is certainly improper to water Pine plants in the middle of the day, under a hot sun, without shade, if care be not taken at the same time to keep the leaves dry. It is bad to allow Vines, or other fruit trees, to get into a mass of young shoots, and then make an onslaught, so as to deprive the tree of probably more than half its foliage in one day, or hour, or, it may be, almost instantaneously. The few sap dependents on the foliage, then it follows that, if we reduce the one, we reduce the other. But it may be said, if the shoots and foliage, for want of space, must be reduced, why not at once? Briefly, because the vegetation of the tree would be wholly deranged by the shock; the portion left would be injuriously affected. Plants require most water when their vegetation is in the greatest activity. Peach trees should be disbudded at several times. — *C. J. P.* You may prune your American plants as soon as they are out of flower.

\* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

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AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO.**—The guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.  
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**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

**PERUVIAN GUANO**, guaranteed the genuine importation of Messrs. A. GIBBS & SONS. A constant supply of LINSEED and RAPE CAKE. EDWARD PRINCE, Secretary.  
LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. Lawes's Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0  
Office, 69, King William Street, City, London.  
N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## MANURES.

**WILLIAM DODDS & Co.** have on Sale, of guaranteed quality, the following Manures:—  
Superphosphate of Lime, ... .. £5 10 0 per ton.  
Patent Manure ... .. 5 10 0  
Delivered at any Railway Station in London, in quantities of 10 cwt. and upwards.—Apply to WILLIAM DODDS & Co., 102, Leadenhall Street, London.

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**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

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Every information will be given at the Offices of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter.  
THOMAS MAY, Secretary.

## THE DERBYSHIRE AND MIDLAND COUNTIES EXHIBITION OF POULTRY

will be held at DERBY, on the 17th and 18th of NOVEMBER next. Open to all competitors. Schedules of prizes and regulations may be had on application to the Honorary Secretary, enclosing a stamped directed envelope.

Subscribers of 10s. 6d. will receive five tickets of admission to the private view on Thursday, the 17th. Parties wishing to become subscribers are requested to forward their names as early as possible.  
ALFRED MADELEY, Hon. Sec.

Derby, June 25th, 1853.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, JUNE 25, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, June 29—Agricultural Society of England.

Thursday, — 30—Agricultural Imp. Society of Ireland.

Wednesday, July 6—Agricultural Society of England.

Thursday, — 7—Agricultural Imp. Society of Ireland.

It has been a subject of regret for many years past, and more particularly since the Royal Agricultural Society of England have held their annual shows for BREEDING STOCK, that very many of the animals exhibited have been in such a state of fatness as not only to hide certain faults (the principal object with the exhibitors), but also to unfit the animals in a great degree for the purpose for which they are intended, viz., the propagation of their species. It is a fact well known to physiologists that the procreative powers are very much impaired by excessive fatness. Indeed, this state has been regarded, and not without propriety, as a state of disease—an embargo is, as it were, laid on the vital powers, and their uses are rendered subservient to the laying on of fat. The process of fattening, therefore, however essential to the production of animal food, is altogether inconsistent with the long duration of life or the propagation of the species. At the same time, however, whilst it is undesirable that breeding animals should be in a state of fatness, it is requisite that the form and predisposition to lay on fat should be reproduced. It is now very well understood that the same elements in food which produce fat will not produce flesh. In the latter, nitrogen is present, whilst fat is a compound of oxygen, carbon, and hydrogen, and is thus similar in composition, though not in the relative proportion of its elements, to starch, gum, and sugar, the principal use of which appears to be to provide the means of keeping up the temperature of the body, the excess being deposited in the form of fat.

However great the evil was felt to be in fattening up breeding animals for the purpose of exhibition,

it was long regarded as a sort of necessary evil. If one exhibitor abstained from so doing, his stock was put, as it were, into unfair competition, and credit was not awarded to him, but rather discredit was attached to his stock in consequence of the injurious comparison. Again, if the judges at the exhibition refused a prize to an animal simply because he was too fat, their judgment was sure to be impugned by the public, which we know has been the case with regard to prize horses. It was therefore a very necessary thing that a remedy should be provided for this great and increasing evil. The remedy consists in having juries of condition, whose office it is to decide on the fact of an animal being too fat for the purpose of breeding, irrespective of other considerations, and thus to remove from the judges a very unpleasant duty, and from honest exhibitors the fear of unfair competition. The plan has hitherto worked very well, and it is likely, when more generally known, to operate still more favourably in deterring exhibitors from overstepping the bounds of moderation in preparing their animals for exhibition. Purchasers, too, will be enabled to make their selection without the great risk they previously incurred of obtaining an animal perfect to the eye, but unable to transmit his good qualities to posterity.

It is to the late Lord DUCIE that we are indebted for the practical carrying out of what all thought to be extremely desirable, but for the attainment of which no one had previously suggested a method.  
W. C. S.

THE TRANSFER OF LAND question is making some progress. The Bill for the Registration of Assurances has been referred to a select committee, and a similar course has been taken with Mr. DRUMMOND'S Bill for the Sale and Purchase of Land. Among the members of the committee are to be found those best acquainted with the subject, and we are quite content to abide by their decision. A Bill for the Registration of Deeds will not now satisfy either the public or the landowner; we are beginning to find out, thanks to the law reformers, that it is no more necessary to carry the title of land back 60 years than the title to anything else. We are every day stripping away the mystery connected with the dealings in land, and we must have a machinery which will enable persons to buy, sell, exchange, charge, settle, convert, chop, change, devolve, and improve the soil, just as readily and easily as we can its produce. We have, indeed, been told with learned gravity that this is impossible; but Parliament is no longer able to believe it, and the select committee are going to try whether Queen, Lords, and Commons, who can do everything but turn a man into a woman, cannot make land as transferable a commodity as stock in the Funds.

The first thing necessary, under present circumstances, is to dispose of the bill, which has passed the House of Lords, which proposes to enact that the present practice of conveyancing should remain as it is, but that all deeds should be taken to a central office, there to be copied verbatim, and be deposited, and open to public inspection—a process, it may be conceded, not without its advantages, but utterly inadequate to the present requirements of the landowner. The measure which is now demanded must deal with titles (and when we say this, we propose nothing more than the modern practice under railway and other acts has enacted); it must put an end to that endless examination and enormous expense which goes on, on every transaction with land, and must settle for all purposes the ownership in every acre of land. This, under proper precautions, is quite safe and practicable, and recent legislation in enclosures and copyholds has much facilitated it. This being done, the transfer will be comparatively simple; and we are informed that the committee is considering how far it is possible to transfer land by book—that is, by simple registry of ownership and the signature of such registered owner. To the good, cheap, and useful working of this system it is indispensable that it should be local as well as central; and that at a time when justice is carried home to every man's door, no man should be obliged to travel far to effect any dealing with his land. A complete territorial map is necessary for the perfection of this scheme, and this subject, we are assured, is now before the Treasury, who have decided on completing a map, as we hope, on a scale sufficiently large. To the select committee we look, then, for obtaining what is wanted, and giving us that great boon, cheap transfer of land and security of title.

A CORRESPONDENT who has kindly furnished us with valuable information, derived from personal experience, on the subject of Dairy Farming, asks in another page for advice on the general subject of the STATISTICS OF DAIRYING. And by way of answer we would here refer to a little work lately published by Messrs. BLACKIE, entitled "How to Choose a



GOOD MILK COW.\* The work consists of two parts. The first, translated from the French, gives the physiological and other indications of quality in cattle, with especial reference to the Dairy; the second, by Mr. HAXTON, a gentleman who, some years ago, edited the *Dublin Farmers' Gazette*, and who has long farmed in one of the dairy districts of Scotland, contains a great deal of information descriptive of our different dairy breeds in England and Scotland, and of the produce obtained from them under different circumstances. M. MAGNE, the author of the former division of the work, refers at considerable length to the criterion indicated, and as many think established, by M. GUENON,† by which he maintains "that it is easy to determine beforehand, and to a perfect nicety, what the properties of cows are with reference both to the quantity and the quality of their milk, and the time during which they can continue to give it." The criterion itself consists in the particular development of the hair covering the udder and perineum of most cows, and to which the term *scutcheon* (*écusson*) has been applied. Both M. MAGNE and Mr. HAXTON affirm the general connection between the extension and vigour of the scutcheon, and the excellence of the cow for the dairy; but neither of them give that exclusive attention to this point which M. GUENON had asserted it deserved. M. MAGNE refers in the first place among the indications by which our selection of a good milk cow is to be guided, to the breed and descent, the digestive and respiratory organs, the shape, constitution, features, temperament, colour, the hygienic conditions to which cows have been subjected, their age and the number of calves they have had, the diseases by which they have been affected; and it is only among the local marks of quality that these tufts, fringes, figures, or scutcheons are referred to. Although, however, they are thus placed among the subordinate characteristics of dairy qualities in a cow, that they may to a certain extent serve as trustworthy indications of such qualities, seems to be admitted. Mr. HAXTON says:—

"The conclusion arrived at, in regard to M. GUENON's test of judging of the milking properties of a cow by the development of the *écusson*, is that, in a very large majority of cases, it is borne out by facts. In a London dairy belonging to Mr. Biggs, 31, Edgeware Road, where about 400 cows are kept, and where nine-tenths of them are far above average milkers, the development or upward growth of the hair on the posterior part of the udder, thighs, and perineum, was too remarkable to be accounted for by accidental causes."

Again—

"In Mr. LEONARD's stock of 40 dairy cows, on his farm of Water-end, in the vale of Berkeley, Gloucestershire—probably the finest pack in the county—the uniform development of the upward growth of hair on the udder and perineum is very remarkable on all the best cows, and indeed there are only a very few of them that can be called inferior. Mr. LEONARD's son, who accompanied the writer, and gave the necessary information regarding the milking powers of the different animals, but who had never heard of M. GUENON's test, admitted its general correctness in most of the cases to which it was applied. Two cows very like each other, of the same age, and both bred from the same bull, were pointed out as having something peculiar in their relative powers of milking. Upon examination, one of them was found to have a very superior scutcheon, while that of the other was as much inferior. The former was a first-rate milker, while the other was one of the worst in the whole pack."

Having ourselves accompanied Mr. HAXTON in his examination of this herd of cows, we can fully bear out what he says on this point. For a full description of this "*écusson*," and the various modes in which it is developed in different animals, we must refer to the book itself, especially the first part of it, which is fully illustrated with drawings and detailed descriptions.

It is not, however, in this so much as in the latter portion of the work that our correspondent will find the information of which he is in search. The account given of the particular breed which he keeps on his farm is indeed somewhat meagre—but of the average annual produce of the others full detail is given; and as most of the information is derived from personal inquiry in the different dairy districts during the past year, it is of great value. For both a very high maximum produce, and a very high average produce, it seems that we must go to Gloucestershire, of which the following account is given:—

"The cost and profit of an average cow of Mr. LEONARD's stock may be stated as follows:—

\* How to Choose a Good Milk Cow; or a description of all the marks by which the milking qualities of cows may be ascertained. By J. H. MAGNE, Professor of the Veterinary School, Alfort; with a supplement on the Dairy Cattle of Britain; their qualities, management, and productive results; with hints for selecting by John HAXTON. Illustrated with engravings. BLACKIE & SON, Queen Street, Glasgow.

† See *Traité des Vaches Laitières*, par FRANÇOIS GUENON. Bordeaux, 1839.

Produce.		£	s.	d.
600 lbs. of cheese, at 6d. ...	...	15	0	0
15 lbs. of cream butter, at 11d. ...	...	0	13	9
35 lbs. of whey butter, at 9d. ...	...	1	6	3
Whey to pigs ...	...	1	10	0
Calf at a week old ...	...	0	15	0
		£19	5	0
Expense.				
Pasture, hay, and hay-making ...	...	9	0	0
Attendance, milking, and cheese-making ...	...	1	10	0
Interest on 16l. capital, at 5 per cent. ...	...	0	16	0
Insurance, 2l. per cent. ...	...	0	8	0
		£11	14	0
Profit ...	...	7	11	0
		£19	5	0

"This is very considerably above the average profits in Gloucestershire; but Mr. LEONARD's land is what is termed *cheesy*, and also far above an average in point of quality. Add to these a very fine pack of cows, and very superior management in the details of cheese-making, and it is not surprising that the result is far above the average of the county, both as regards the annual quantity produced and the price realised per lb. The average produce and expense may be pretty correctly stated thus:—

Produce.		£	s.	d.
500 lbs. of cheese, at 5½d. ...	...	11	9	2
20 lbs. of cream butter, at 11d. ...	...	0	18	4
30 lbs. of whey butter, at 9d. ...	...	1	2	6
Whey given to pigs ...	...	1	5	0
Calf at a week old ...	...	0	10	0
		£15	5	0
Deduct cost, as before ...	...	11	14	0
Profit ...	...	3	11	0

The latter statement will, we believe, be considered generally by Gloucester Vale farmers as above the average return.

A great deal of useful information is given in other parts of the work on the produce of cows in butter, cheese, and milk respectively: some of Mr. HAXTON's descriptions we may hereafter extract for publication in another section of this journal; in the meantime we conclude with recommending this little book to the attention of our readers as a very instructive addition to a somewhat meagre literature on this particular branch of agriculture.

#### THE PROGRESS OF AGRICULTURE.

WE extract the following from a very interesting lecture lately delivered before the Diss Farmers' Club, by Mr. Baker, of Writtle:—

It was in the beginning of the 18th century that farming was begun to be carried out upon principles then becoming general—rotation of crops following at various intervals, manuring with lime, marl, chalk, ashes, pigeons' dung, soot, &c., became general; but still the practice, although improved, was carried out upon the rules laid down and transmitted from father to son. Science had not then been brought to bear upon agriculture; the practice and management of districts was derived from long experience found best adapted to the soil, or circumstances of the situation. The American war took place in this century, and the depression that followed the war was greater than that of any subsequent period. Wheat fell as low as 22s. per quarter, and the prices were generally so low, that large portions of land were thrown out of tillage and converted to Grass or wood. Many of our old pastures have the furrows still apparent, and, in the remembrance of persons who lived 50 years ago, many pieces of woodland were remembered by them as being tillage lands.

About the year 1774 Marshall wrote his elaborate treatise entitled "*Minutes of Farming*." He appears to have been a person similar in origin and habits to Mr. Mechi, and his works certainly stamp him as a man of profound judgment. He commences his book by stating, "Yesterday I discharged George Black, my farming bailiff. I employed him to assist me to manage my men, but I find he has assisted my men to manage me; he was a crazy crutch to lean upon, and I therefore have determined in future to be my own manager, and, by noting down each day's miscarriages, to learn to avoid them in future." He then proceeds with his minutes for three years, and which afford a great deal of information relating to the price of grain, meat, labour, &c., through that period. The progress of agriculture went on steadily to the commencement of the French Revolution, after which time, from the advance that took place in the prices of farming produce, a rapid improvement followed in agriculture; waste lands were enclosed, forests cleared, land from the sea reclaimed, machinery invented and applied, and the utmost energy was exhibited; the application of bones to the production of Turnips, and the great demand for meat, gave great stimulus to the production of that root.

The further introduction of the Swedish Turnips from Sweden, and Mangold Wurzel, added still further to that advancement. The foundation of good management was therefore laid. Turnips produced manure, manure produced corn, and this, with the rapid dissemination of information by the press and the Board of Agriculture, through the writings of Young, Sinclair, and others, elevated agriculture to a degree of perfection unknown at any former period. The Holkham sheep shearings and the spirited conduct of Mr. Coke also advanced the practice, and through his instrumentality Norfolk was looked up to as the county pre-eminent in its mode of cultivation.

The prices quoted at this period for grain must not

be assumed as the correct prices obtained; the larger issue of paper, especially one-pound notes, had depreciated the currency at least 50 to 33 per cent., consequently whenever we find Wheat quoted at 90s. per quarter, we must assume that 60s. was the price actually obtained in money of the present day. In the year 1812 a re-action took place, and the war ending in 1814, so great a depression followed as to be ruinous to landowners, tenants, and persons in possession of entailed estates, or charged with annual fixed payments. But this was no sooner overcome than another infliction followed. The famous currency measure of Sir Robert Peel, passed in 1819, and which came into operation in 1822, had the effect of bringing down prices to an extent little contemplated by the Government upon passing that measure; Wheat fell to 32s., Barley to 20s., Beans and Peas to 18s. and 20s. per quarter, and, in addition, meat and live stock fell proportionately. Sheep at that time fell to a ruinous price to the breeder, good lambs averaging 10s., and ewes from 14s. to 18s. each; this fall, however, is not attributable entirely to the alteration in the value of money, but to the circumstance of all the manufacturing interests being prostrated at that time.

From 1832 to 1852 great changes have taken place. The New Poor-law, the Tithe Commutation Act, and Free-trade measures have been introduced. The two former of these measures have given a stimulus to agriculture. The application of superphosphate of lime for the growth of Turnips, and the discovery of guano, have added still further to the development of farming. We all recollect the period that poor clay farms, lying in remote districts, could hardly be improved; manure could not be obtained, whereby green crops could be produced, and consequently farms remained in the same state, as regards improvement, for generations. Now, with sufficient capital and ordinary skill, a greater degree of improvement can easily be effected. The mode formerly pursued was to farm well the first portion of a lease, to maintain it during the middle portion, and then to exhaust the soil until the farm was again reduced to its original state. This state of things should be ended, and confidence ensured between landlord and tenant, to facilitate gradual and certain improvement. According to Liebig and others, if the nourishment taken out of the soil by one crop be restored before another crop is taken, no injury will be sustained; but this would be impossible if the land received no fertilising substances other than those returned to it by the animals maintained upon it. All soils, more or less, have an affinity for the ammonia contained in the common atmospheric air, and fix it as it comes into contact with them. It thus becomes food for the plants that are afterwards grown upon it. Calcareous clay soils especially have this affinity. In some districts in Essex, especially that known as the Roothing district, the soil consists of chalky clay, containing greater or less proportions of chalk in admixture. This land is farmed by following it in alternate years—fallow Barley, fallow Wheat, the fallows made by 3½ ploughings, and the crops of bearded Wheat and Barley, each averaging about 4½ quarters per acre. This system has been carried out for years together, and some fields are well known as not having been manured for 20 years together, which clearly demonstrates the principle, and shows that vegetation may be supported for years together with no other support than is obtained by continuous exposure of the soil, by ploughings, to the action of the air. This burning of the soil in those districts is resorted to with considerable benefit; the vegetable matter thereby forms potash, the chalk is converted into hydrate of lime, and the iron is transmuted into food for the most delicate plants.

Mr. Baker then proceeded to the last portion of his lecture, as to the prospects of farming. He was not sufficiently sanguine in expecting great improvements from new discoveries, but rather by the better and more general application of those already discovered. The further and more extended use of machinery, the judicious and further application of manures, and the extension of cattle and sheep feeding, would constitute the main resources to which they must look, for the progress so generally calculated would be the result of the stimulating agents now so liberally applied to land. It will be more difficult, he stated, to force land to produce beyond a certain limit that nature appeared to have assigned, than to bring other land, not already improved, up to that point. By way of illustration he would suppose that any one had determined to produce 5 quarters of Wheat per acre upon a given quantity of land in any year, could it be by any means ensured? And if betting was to be the criterion of opinion, what odds might be obtained against, rather than in favour of, the undertaking? The risk of high farming was greater than that of ordinary farming; and, however men might assume the contrary, it was undeniably true. The application of power to a machine was analogous to the application of capital to farming; the higher you required to raise a weight, the greater power you must employ. Three quarters of Wheat per acre may be grown at less per quarter than four quarters, and four quarters at less cost than five quarters, and so on progressively. A distribution of capital over a large surface would effect more than an equal distribution over a smaller surface, and the risk would be also infinitely less. Another most important subject, and to which public attention is now becoming directed, is the increasing demand for labour, and the advance of wages which has taken place and is still going on. That of itself is an element that materially affects the future



prospects of farming. Hitherto it has been the only portion of expenses of cultivation that the farmer had any power of controlling, and just as that power becomes extinguished, the reduction of expenses consequent must be made in another direction. Rent of land is absolutely that surplus which is left after all expenses are discharged; and as a consequence, as other expenses become increased, so will rent and profit become diminished. But if such advance take place so as materially to interfere with the profit of farming, machinery must be brought to bear more extensively, and to supersede manual labour; this has been the case to a considerable extent hitherto, and the prejudice of labourers having now become altered, the employment of it may be still further extended.

The use of the threshing machine, and especially of the corn drill, has economised farming expenses. The increased production of cattle food, and consequently of corn, added to the increasing demand for wool and meat, opens a wider and clearer channel towards the improvement of farming. The main object should be to surmount and counteract difficulties as they arise, and to further counteract the depression by increased energy and exertion.

Mr. Baker then concluded by stating that his object in attending these meetings arose from sheer love of the pursuit in which he was engaged. Every one was bound to effect as much good as he could in his station, and it would always be his endeavour to promote the interest of his class to the best of his ability.

### THE LONDON DAIRIES.

The Yorkshire cow is the great favourite with the London dairyman, as she answers all the purposes of his trade, being a good milker, and when accident or old age renders it necessary to discard her, she is soon ready for the shambles. In Mr. Biggs' dairy, 31, Edge-ware Road, London, there are about 400 cows constantly kept; of these, the greater proportion is composed of the Yorkshire breed, of various degrees of affinity between the old Holderness and Durham breeds. There are also some of his cows which are longer in the horn than those already mentioned, and which are no doubt more allied to the original Holderness, or perhaps have long-horn blood in them; while there are others whose horns and general appearance indicate their close alliance with the improved short-horn or Durham breed. Of these, the most valuable is the cross between the Holderness and Durham, as being good, both for the pail and the butcher; on the other hand, the Holderness and long-horns give the richest milk, run soon dry, and are more difficult to fatten, while the pure short-horn gives least milk, but makes most beef in a given time. With these properties to choose amongst, it is not difficult to decide which of these breeds is most profitable to the London dairyman, whose trade is to sell as much milk as he can, and only to fatten his cows for the butcher when necessity compels him.

A Yorkshire cow in a London dairy establishment is seldom calculated to give less than 20 quarts of milk daily, for the first four months after dropping her calf, and many of this breed have been known to give from 30 to 40 quarts of milk daily for a few weeks after calving. In Mr. Biggs' dairy 20 quarts a day is the average quantity of a great proportion of his best cows, and many of them would continue in milk all the year round; but as this would be injurious to the animals, and would diminish the yield in the succeeding year, they are intentionally run dry about six weeks before the time of calving.

The whole quantity of milk produced in 12 months, by one of these Yorkshire cows, when fed as in the London dairies, cannot be less than 4000 quarts or 1000 gallons. The retail price of new milk is 16d. per gallon, and when sold wholesale to the milkman, the price realised by the dairyman is not less than 1s. per gallon; so that from this data it appears that a cow, giving 1000 gallons per annum, produces 50l. worth of milk during that period. Of course, the feeding is very liberal, and from the high price of green food in the metropolis, is necessarily very expensive. The milking and feeding in Mr. Biggs' dairy is as follows:—

1. A.M. Milked. A good milk can milk 16 cows in 24 hours.
2. 1 bushel of brewers' grains to every two cows.
3. 3 " of 2 sedge or Mangold Wurzel to every two cows.
4. 1 " of hay to every 12 cows.
5. Water: which is the only time they are allowed to drink during the 24 hours in winter, and each cow drinks about 24 quarts. In summer, water is given twice.
6. 1 " of hay of grain to two cows.
7. 1 " of milk again.
8. 3 " of roots to two cows.
9. 1 " of hay to every eight cows.
10. The green food consists of Clover, Italian Rye-grass, or Vetches.

The cows are milked twice a day, which occupies but 2½ hours each time. The cow-houses are cleaned five times every day, and the gutters kept sweet by flowing water to flow through them. The cows are thoroughly cleaned and combed once a week.

From the foregoing data, the following calculation of the annual expense of house-feeding a London dairy cow may be deduced:—

Interest from 1st Oct. to 1st May (212 days):—	
212 hundred grains, at 4s.	£5 6 0
14 hundred sedge and Mangold, at 2s.	13 5 0
14 hundred hay, at 10s.	4 10 0
Interest from 1st May to 1st Oct. 1853 (212 days):—	
114 hundred grains, Clover, or Vetches, at 2s.	11 10 0
133 hundred of grains, or an equivalent, at 6d.	3 16 6
Total expense of food	£38 7 6

Brought forward	£38 7 6
Interest on capital, 10l., at 5 per cent.	0 16 0
Hazardous insurance or annual loss	0 16 0
Attendance, milking, &c.	1 5 0
Total expense	£41 4 6
Produce per Cow.	
1000 gallons of milk, at 1s.	£50 0 0
Calf	1 0 0
Manure	4 0 0
	£55 0 0
Deduct expense	41 4 6
Profit	£13 15 6

The daily expense is nearly 2s. 3d. per cow, and the daily yield of milk throughout the year nearly 2½ gallons; and no London dairyman will long keep a cow that does not give 2½ gallons per day. In the above calculation no charge has been made for rent of premises; but even although 1l. per cow be struck off for this item, the profit is still abundant.

In speaking thus highly of the Yorkshire, as in every way well adapted to the purposes of the metropolitan dairyman, it must be admitted that she is neither so good for a cheese or butter dairy as some of the smaller breeds. In the former case, quantity of milk is the desideratum, while in the two latter it is quality or richness. Were the Yorkshire cow employed either for the production of cheese or butter, the refuse—whey and butter milk, or skimmed milk—would be much greater than that yielded by milk of a richer quality; and, in consequence of this, the profits would be considerably diminished. In a milk dairy there is no refuse; and should the consumers in large towns complain of the inferior quality of the milk sold to them, they should remember that they cannot enjoy the luxuries of the country and those of the town at one and the same time. The consumer is entitled to be served with the milk as it comes from the cow; but when he insists on having Grass milk in the middle of winter, he has no reason to complain should his importunity force the milk-seller to adopt the harmless device of counterfeiting an article to please his customer's eye, by the infusion of a drop of burnt sugar, to give the milk the rich yellow appearance which it usually possesses when the cows are fed on Grass. Mr. Haxton, in "How to Choose a Good Milk Cow."

### Home Correspondence.

*Appearance of Crops at Rotherfield.*—Thinking that some account of our appearance and the prospects of our crops may not be unacceptable, I send you the following brief description:—Wheat very indifferent; much ground, never sown, is cropped with Oats, supposed not to average above three sacks. Oats came up well, and the warmth and showery weather that we now have will no doubt produce plenty of straw. The "seeds" sown with them came up badly, and I am afraid will be a failure. Our little Barley looks well. Hops very backward, and show a poor prospect—a little fly. Grass and seeds backward, the latter very indifferent. We have been much in want of rain to work the Hops and prepare for roots; but last night it rained gently for 10 or 12 hours, which no doubt will be of great help to our pastures and meadows, as the weather is very warm. Thermometer 64° in the shade this morning at 8 o'clock. W. B., June 14.

*Dairy Statistics.*—As a gentleman keeping a dairy, I wish to ask your opinion on the most equitable mode of keeping an account of the value of the produce. My habit has hitherto been to estimate the value of each cow's produce at 10l., but as this is almost an arbitrary and certainly a very rough calculation, I should prefer a more accurate method. I have understood that in the dairy counties it is customary to pay from 12l. to 14l. for the produce of a good cow. Mine are Alderneys, and very small; I put them therefore at 10l. The statistics of the subject in my possession are meagre. I believe a good cow (not an Alderney), will yield about 3000 quarts yearly; and taking 16 quarts to the 1 lb. of butter, this would give 187½ lbs. of butter in a year. This, at 1s. per lb., is 9l. 7½d. as the total value of the produce, which can scarcely yield any profit at all, for, I think, it is not possible at the present price of fodder to keep a cow in this part of the country at less than 4s. 6d. in summer and 6s. 6d. in the winter—say 5s. per week on the average, which gives 13l. per annum exactly. Four small Alderney cows are producing here about 45 quarts of milk per diem; a fifth is on the point of calving. These five cows, besides supplying my establishment, which varies from 15 to 20 persons through the spring and summer (eight months) with milk and cream, gave 437 lbs. of the best butter in ten months last year. Of the other two months I have no account; but supposing the quantity to average the same, and putting the butter at 1s. 2d. per lb., which, considering its very superior quality, I do not consider high, it would come to some 30l. in value. It is obvious, then, that in every gentleman's dairy, the milk and cream must form a very considerable portion of the profit derived. In the neighbouring market town I have every reason to think that the milk for which I should pay 4d. per quart, is very inferior to my own; and once I paid for an invalid as much as 6d. per quart to a friend near London, who kept an Alderney dairy. The superior quality of the article, in my mind, quite justified such an exceptional price. The quality, indeed, is a main element in such calculations; at least it ought to be so. Those, for instance, who look to profit alone by keeping the milk standing, say 36 hours, produce a large quantity of butter, but an inferior article, in point of freshness, to those who skim every night and morning.

Is nothing, in a calculation, to be allowed for such a difference? I now propose to take an accurate account of the quantity of milk given in the year, and after deducting the value of the milk made into butter, which butter I put at 1s. 2d. per lb., to estimate the milk at 3d. per quart. I find that 17 quarts of milk will yield 1½ lb. of butter. I should be glad to know your opinion of the fairness of these prices. The drawback to a gentleman's dairy is, that sometimes we have a plethora of produce—sometimes a scarcity, which, with the best management, it is scarcely possible to avoid; I conceive, therefore, that we ought to put (in my calculation) our prices rather below those of the market. If there is any information in this letter at all interesting to your readers, pray insert it. I wish to add that we have found Drummond's churn a failure; it was sold by Charles Young & Co. W. C., Bettschanger, Sandwich, June 17.

*Protecting Young Hedges with Rough Fencing* is one of the most expensive but essential concomitants of planting them, for unless they are carefully and completely secured, extensive failure will be the certain consequence; and, as Mr. Cobbett observes, "a hedge with a gap in it is, in fact, no fence at all, any more than a wall with an open door in it is a protection to the house." In general the materials for constructing fencing for the protection of hedges may be found near the spot, in the shape of Fir, &c. plantation thinning, but all close fencing, such as the faggot and wattle fence, is objectionable, as it prevents the free circulation of air, and costs nearly 8s. a rod, and lasts but for three years, at the expiration of which time it would want fresh "staking and binding" to strengthen it and make it last the remaining years the plants might require protecting, and which they will do for at least six years from the day of their being planted; but this period will vary a little according to the nature of the soil and situation, and the attention which has been paid to them during their growth. These various protecting fences for hedges are expensive, and seem really to be put up by many persons as if to defeat the original intention of raising an effective live fence, by either placing them so close as to destroy the plants, or by making them so low as to allow cattle to reach over and crop them. Where Larch is to be had, or any strong sort of stake, either of Chestnut or Oak, the cheapest fencing is formed by driving these stakes down (cut to the length of 5 feet, and sharpened to a point), into the ground, at the distance of 4 feet apart, and running three or four wires through them, and having stronger posts at the distance of every 30 rods to fasten the ends to; but the common paling fence is formed of horizontal rails nailed to posts or stakes placed vertically, and driven into the ground, the posts being placed 10 feet apart, and the three or four rails nailed on according to the wants of the line of defence. The fencing should be placed at least 2½ feet on each side of the plants; this will necessarily occupy 5 feet of ground; and if there be a ditch on both sides, and the ditch be 2 feet wide, and there be a foot or more along the ditch where the plough cannot work, there will be a great loss of land; the only thing is that the hedge planted on the level surface has sufficient space between it and the rails on either side to allow of some Potatoes to be grown for the first two or three years after planted, and thus help to keep the ground clean near it, which is one of the most essential things next to the fencing; for the after management consists entirely in weeding and clearing, loosening and laying up fresh earth to the roots of the plants for the first five years after it has been planted; and, with regard to the trimming or pruning, this will not be required for the first two or three years of its growth, unless, however, any branches should grow so luxuriantly as to overtop their neighbours, when they should be pruned off to a uniform height. When the hedge becomes a little older, it should be trimmed with the switching-bill or hook. *Reverend.*

### Societies.

#### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House in Hanover Square, on Wednesday, the 22d of June: present, Lord ASHBURTON, President, in the chair; Lord Bridport, Hon. R. H. Clive, M.P., Sir John Villiers Shelley, Bart., M.P., Sir M. White Ridley, Bart., Mr. Raymond Barker, Mr. Burke, Dr. Calvert, Mr. Gadesden, Mr. Baskerville Glegg, Prof. Henfrey, Mr. Fisher Hobbs, Mr. Cuthbert Johnson, Mr. C. Lawrence, Mr. Majendie, Mr. Orlebar, Mr. Parkins, Mr. Chandos Pole, Prof. Simonds, Mr. Aug. Smith, Mr. Spencer Stanhope, Capt. Vyner, Prof. Way, and Mr. Wilson (Stowlangtoft).

Communications were received—1, from Mr. Shepherd, of the Imperial Russian agency, on the trial of sewage manure; 2, from Mr. Kirkwood, requesting information on model farms, implement manufactures, and standard works on agriculture published previously to 1840; and 3, from Mr. Woodcroft, requesting information on reaping-machines.

Reports were received by the Council to the following effect:—1, that the Chairman of the Journal Committee had communicated the final arrangements made for the new number of the Journal of the Society, and its immediate publication and distribution; 2, that the lists of Judges for Live Stock and Implements at the Gloucester Meeting had been satisfactorily completed; 3, that all the railway companies to which the Council had made application in favour of the Society's exhibitors, at its



ensuing country meeting, had granted the usual liberal concessions of a free transit of live stock, and a reduction of half charges on implements to and from all parts of England and Wales to Gloucester; 4, that the show of live stock at the Gloucester Meeting would be unusually large and interesting; the space required for the exhibition of agricultural implements and machinery (as already reported) amounting to an area  $6\frac{1}{2}$  yards in width and one mile in length; 5, that Professor Way's statement on town sewage and its agricultural applications would be delivered before the members at the Weekly Council to be held on Wednesday, the 29th of June, at 12 o'clock.

The Council then adjourned to their next Weekly Meeting.

## Reviews.

*Remarks and Suggestions on the System of Farming adapted to the Character and Soil of the County of Carmarthen.* J. Ridgway, Piccadilly.

This pamphlet is prefaced by a paragraph by Viscount Emslyn, in which it is stated that these remarks, written by a practical farmer, had accidentally come into his lordship's hands; and that he had had them printed in the hope that they might afford useful hints to such farmers as might wish for information on the more modern system of agriculture which it is the object of the writer to explain and to recommend. The pamphlet is a useful statement on the rotations of crops proper for the district, which are actually prevalent under similar circumstances elsewhere, but which are in marked contrast to the existing state of things in Carmarthen-shire. The rotation prevalent in that county at present is as follows:—

"1st, Fallow; 2d, Wheat; 3d, Barley; 4th, Oats; 5th, Barley; 6th, Grass; 7th, ditto; 8th, ditto; 9th, ditto; 10th, ditto. This is certainly very different from the order of the rotations already enumerated, and if Stephens condemned the practice of taking two corn crops in succession, even on the fine land of the Carse of Gowrie, he would not much approve of this; and, indeed, he would have good cause to condemn it, as it is not possible to give any good reason for following such an one. Could we suppose any farmer foolish enough to work his horses day after day, without giving them proper food, till he at last reduced them to such a state that they could no longer work, if he had then to turn them out to grass and keep them there for many months almost idle; there can be little doubt that all his neighbours would condemn him, and consider that he had acted in a very foolish and short-sighted manner. If, then, it is bad policy to treat a small part of the stock on the farm in such a manner, it must surely be a much more serious matter to treat the farm itself in the same way, as taking four white crops in succession, and then leaving the land to rest (as it is called) full of Couch Grass, and all sorts of weeds, can be compared to nothing else. And in many instances, to make the case worse, nothing in the shape of manure is applied during the whole course, with the exception, perhaps, of a little lime."

All this is contrasted with management such as the following, described in Caird's British Agriculture:—

"The farm of Moresby Hall, within three miles of Whitehaven, on the estate of Lord Lonsdale, containing 340 acres of land, in the occupation of Mr. Turner. He has no lease, no prescribed rotation, and is never interfered with by his landlord as to the management he thinks it right to adopt. The lea is broken up and sown with Oats, which yield 45 to 48 bushels an acre. The Oats are followed by Swedes and yellow Turnips in about equal proportions, the land receiving 20 loads of good dung and 2 cwt. of guano per acre. The Swedes yield from 20 to 30 tons, the yellow about 25 tons per acre. The Swedes are all stored early in November, and the land sown with Wheat. On the high land not suitable for Wheat half the Turnip crop is drawn off to be consumed by the sheep on the adjoining Grass land in wet weather, and the other half is fed off on the land during periods of dry weather. This prevents the soil, which, though drained, is a moist clay, from being poached by the trampling of the sheep. The great object on this farm being to provide rich food for a large head of stock, there follows a peculiarity in the management at this stage, the benefits of which are daily becoming more generally appreciated. Instead of taking a corn crop after the Turnips, and laying it down with seeds in the usual fashion, the land is laid down to seeds without a crop. It is ploughed when dry, well harrowed and rendered smooth on the surface, and then sown with the following mixture of Grass, Clover, and Rape, 2 cwt. of guano having been previously scattered over each acre, and slightly covered by the harrows, 2 pecks of Italian Rye-grass, 2 pecks of perennial Rye-grass, 4 lbs. of Rib-grass, 5 lbs. of white Clover, and 3 lbs. of Rape. The seeds are covered by the roller; they grow rapidly, and are ready to be stocked with sheep in July. A 10-acre field of poor land sown last April in this manner, kept and fed 100 clipped hogsheads from the 20th July to the beginning of November. It is now (January) a rich deep green, and will be ready for a heavy stock during the present season. This lies two years in pasture, and is then ploughed for Oats, which from the high condition of the land cannot fail to be bulky and productive. The Wheat on the better land yields about 30 bushels an acre of the old English variety, which from having been long grown in the district, has become acclimated, and is found to stand a

moist season best. The Wheat is sown with the usual mixture of Grasses, part of which is mown and part depastured. Whatever has been mown is uniformly ploughed up the next spring for Oats, as it does not afterwards yield good pasture, and the best farmers in this district find it their interest to have nothing in pasture that cannot keep a full and well-fed stock. The management of Hay next deserves attention: Mr. Turner every year mows 32 acres of old land of fine quality, the same fields being mown every year. One half of this is top-dressed annually with 20 loads of good manure per acre, which is laid on either immediately after the hay is got, or in the months of October and November, at all events while the Grass is growing. The after-math yields an abundant pasture for a large herd of short-horn cows. The crop of hay weighs about  $2\frac{1}{2}$  tons per acre. Great attention is paid to managing it with the utmost expedition; and by the fourth day, if the weather be favourable, it is carted to the hay barn, where it is at once stored as it is got for winter use. The hay barn is a large loft over the cow-house, and contains the whole of the hay given to the cows during the winter. Over the stable for the farm horses is a similar large loft, in which their winter supply of Rye-grass hay is stored in the same manner. The hay secured in this manner is of the finest quality, and proves the advantage of careful management. During the summer this farm feeds 80 cattle, 40 of which are large short-horn dairy cows, and 300 sheep, in winter it keeps 40 cows, 20 cattle, and 150 sheep. The sheep are principally Cheviot lambs, bought in September, which are fed as already noticed during the winter, and after being shorn are sent off to the fat market during the summer and autumn, as they become ready; between wool and carcase they leave an increase of between 20s. and 25s. each. The dairy cows, 40 in number, are kept for supplying Whitehaven with milk and butter, this number is regularly maintained in milk throughout the year; those which have become dry being either fed off or sent to another farm and more moderate feeding, till they are ready again to take their place among the milking stock. The best heifer calves are reared to keep the stock good. The mode of feeding the cows is as follows: on the 1st of November the winter management begins. The cows are then kept constantly housed, except being turned out two or three at a time, for a few minutes daily, to the drinking pond. They get Turnips twice a day, 2 stones weight at each time. They receive likewise a cooked mixture of Oats and Tares, grown together for that purpose, and cut by the chaff-cutter, then boiled with chaff, and given twice a day a bucketful to each cow at a time; the boiled mixture is placed in a stone trough 12 hours to cook before being given to the cows. They also receive a small handful of the best old land hay four times a day, the 40 cows consuming nearly a ton each during the winter; the hay is conveniently let down through a trap-door from the hay-barn into the cow-house as it is needed. The cows receive a little Oat straw the last thing at night. By the 1st of May they go to Grass; they are milked at 5 A.M., a portion of them again at 1 P.M., and the whole of them at 5 P.M. They are then all turned out into a pasture-field near the house till 9, when they are brought in and kept in the house all night; they are thus protected from the chills of damp cold nights, and require no food till again turned out to their pasture after being milked in the morning; the morning and mid-day milk is sent to Whitehaven for sale, the evening milk is made into butter. Milk sells at 2d. per quart for new, and 1d. for skim, and butter from 9d. to 14d. per lb. The annual produce of each cow is very considerable; and the farmer finds it his interest to give his cows throughout the year the best and most nutritious food. What a contrast does the winter feeding of this stock present to the starving system of the dairy farmers of Gloucestershire, and how different the quality and quantity of the rich manure produced as compared with the little dried heaps of miserable droppings which they scatter sparingly over the land; the horse work is done on this farm by four horses in winter and seven in summer."

The whole essay is well calculated to induce its reader, if he have hitherto been guided merely by custom in the management of his occupation, to think of the evidences on which the policy of the alterations recommended is based—the miserable result, whether to himself or others, of the old-fashioned system—the successful practice of others under very similar natural circumstances—and the unerring and inevitable natural laws against which he is vainly fighting in poverty, which, if understood and acted on, would tend both to wealth and to success.

The county of Carmarthen and agriculture generally are indebted to Viscount Emslyn for the issue of this simple, unpretending little publication.

*Three Essays on Grass Lands.* By William Barratt. Being Papers read before the Wakefield Farmers' Club, and originally printed at their expense. Journal Office, Wakefield.

We have referred before to one of the Essays here reprinted, and notice this pamphlet, in which it, with other papers on similar subjects, has re-appeared, for the purpose of extracting one or two passages relating to the improvement of old pasture. The whole publication is well worth purchase, as containing within narrow limits a great deal of information useful to the tenants of grazing and meadow grounds; and the last Essay, which is devoted to the especial consideration of such grounds, is particularly full of instruction. The management of meadow land is considered under six

heads—Draining, Fencing, Destruction of Weeds, Sowing fresh Seeds, Rolling, and Tillage. In Yorkshire, it should be remembered, that tilling refers especially to manuring, and as it bears out our own remarks on this subject at p. 361, we make the following extract from this part of the book.

"Composts consisting of rotted weeds, burnt clay or rubbish, ditchings, road-scrappings, and such like, mixed with bones, or lime, or salt, or guano, or nitrate of soda, &c., make excellent tillage for Grass land. I need scarcely add that fold and stable manure (when it can be had), is decidedly one of the best, if not the best, tillage that can be applied, where neither compost nor manure is at hand; then a dressing of hand tillages, such as bone dust, guano, salt, rock coombs, nitrate of soda, singings from manufactories, and many other artificial manures (so called), when they can be obtained good. Irrigation, even with pure water, vastly increases the produce in Grass, but where water can be had that is impregnated with the refuse flowing from the sewers of a town or village, its productive properties are almost beyond calculation, the cost of this is the original outlay in preparing the conduits, levelling the ground, and making drains to carry off the superfluous water. Thousands of acres might be easily irrigated in England, at a very moderate cost, as we cannot travel far without seeing large quantities of richly impregnated water passing away through our main ditches and sewers, into our canals and rivers, thereby losing what might have been used to advantage, in increasing the produce of our land to an amount we have never yet thought of. But there yet remains an easy, economical, and a very effectual way of tilling Grass land—by depasturing it with cattle and sheep. A judicious mixing of cattle and sheep is the most economical method, as where both graze in the same field the herbage is eaten up more closely, whereas, if one kind only are grazed in the field, much of the herbage is left, and grows into rough hillocks, which are in a great measure waste, for, although they may be partially eaten up during the winter season, they contain very little nutrition; let the plan of giving cake, at the rate of 3 or 4 lbs. per day to each head of cattle, and half a pound to a pound to each sheep per day for one season; and whether the beef or mutton repays the expense of the cake or not, the improved crops in future years is sure to do so. In fact, one of the greatest remunerative principles of farming is the system of manuring land, by means of eating as much of the produce on the ground as possible; and by adding cake to it, we improve many succeeding crops, without the enormous outlay of carting and spreading manure of other kinds. Where the plan is practicable of changing the sheep and cattle from field to field, it gives time for the growth and sweetening of the Grass in the field they have left, and prevents great loss in unnecessarily treading down the Grass, by having the whole time to rove over the one field. I need scarcely add that amongst the various tillages liquid manure deserves serious thought, a prominent place, and a very widely extended application. Indeed, this subject is engrossing the attention of a large proportion of agriculturists, as the belief is fast gaining ground that for want of collecting and applying the liquid from our stables, cow-houses, piggeries, and other conveniences, 40 to 50 per cent. of the manure of our country is lost.

"There is yet another mode of tilling Grass land, viz., by carting on to it Scotch and Thousand-headed Cabbages, Turnip-tops, and, when there is an abundant crop of Turnips, they may admit of one-half being drawn to feed cattle and sheep, on bare and barren pastures. Let these be applied in the proper localities of a field, such as the knoll of a hill, or where the soil is shallow, and the Grass subject to burn up in summer, and the effects will be very visible for two or three years to come."

We can recommend this pamphlet as containing three excellent Essays on improving and renovating old pastures; on the best Grasses for alternate husbandry; and on the best method of laying down lands to permanent Grass.

## Farm Memoranda.

**WALLS COURT FARM.**—Walls Court farm lies about four miles from the town of Bristol, and consists of 550 acres, of which there are 110 arable; the rest are kept in meadow and pasture. Part of the farm is retentive, resting upon lias limestone—part is friable resting on the new red sandstone. The rent, including rates, the per centage for draining, and per centage upon the permanent outlay, is about 40s. per acre. When Mr. Proctor [who is also a Bristol merchant, manure dealer, &c.] entered, the lands were out of condition the standing in ruins; and from the injurious practice of continually moving the meadows for hay, they were also quite out of condition. A new standing on an extensive, and upon the whole a most superior plan, in the course of being finished, and, for a dairy or feeding farm, is excellently adapted for economical labour as well as food. A very considerable proportion of the farm was extremely wet at Mr. Proctor's entry arrangements were made with the landlord, by which it was drained under the Government grant. The tenant pays the interest,  $6\frac{1}{2}$  per cent.; in addition, he performed part of the carriage, carting the pipes and collars about four miles. There have been drained 25 acres, at distances varying from 30 to 60 feet, depth 4 feet;  $1\frac{1}{2}$  inch pipes were used, principally with collars; 2 inch pipes without collars. For the main drains 3 inch pipes. The distance between the drain may appear extreme, but from sand beds, and also from



the limestone rock, approaching occasionally within one or more feet from the surface; these, after being cut through, act in the same manner as cross drains. The whole drainage appears to be very effective and every way complete. After drainage the quantity of Grass was observed to fall off. This arose from the aquatic plants dying out. After a time these were succeeded by white and perennial red Clover. The herbage is now quite altered in its character. This deficiency of Grass after drainage is not an uncommon occurrence; hence, many object to draining meadow lands, believing that the quantity of Grass is diminished, and that, although the quality is improved, it does not more than cover the want of bulk. In the present case, however, both the quantity and quality have improved, and the drainage has been eminently successful. At first Mr. Proctor intended to follow out the breeding of high bred short-horns, but finding a considerable demand for milk in Bristol, he was persuaded at first to supply one or two of his friends; the demand increasing still further, induced him to send more milk to town. At present the system is in a sort of transition state, and will most probably end in a large dairy establishment. There are at present 70 cows kept for the dairy and breeding. The cows are chiefly what in Gloucestershire are termed short-horns; part of the cows came from the county of Durham. Mr. Proctor intends to obtain some Ayrshires, to test their milking qualities against his present herd. The present number of cows, 70, with the one and two-year cattle reared on the farm, is 120 head of cattle, part of which are depastured and part kept in boxes on dry food. At the time of our visit, 9th May, the cows in milk were principally at Grass, the others were confined in the boxes. During winter the system of feeding is as follows: Two pecks of brewers' grains, at 3d. per bushel; 4 lbs. of bran, price per ton, 4l. 10s.; Swedes, about 20 to 30 lbs. per day, given cut and raw, but Mr. P. intends to steam the food, &c. At present everything is given raw. Hay with Oats upon the straw is cut into chaff; the Oats are unthreshed, and, from being full of Trefoil, make excellent fodder. About 20 lbs. weight per day, half Oats and half hay, are allowed. The whole food is mixed together, and the cows are fed at 5 and 11 a.m., and at 2 and 6 p.m. Six men milk and attend the cows. The average quantity of milk has not been ascertained. The milk is driven into town, and sold warm at 2d. per quart, wholesale. The milk which is not taken off by the demand to the town, is employed in rearing calves. At present a considerable number of these are being reared; they are fed after they are two weeks old, chiefly on Linseed meal made into gruel. There have been no deaths from pleuro-pneumonia nor murrain. The stock in general has been extremely healthy. They are all kept in boxes during winter; the size of each is 14 feet by 6 feet 6 inches, and part of the boxes are only 10 feet by 8 feet 6 inches. There is a space at the head of the boxes 5 feet wide, for feeding, &c. A supply of water is always kept in each box. The chief difficulty experienced is to find a sufficiency of straw for litter, so as to keep the stock comfortable. Possibly sawdust may partially meet the evil. The number of sheep kept is not considerable, although, with the present prices of wool and mutton, they are so remunerative, it is very probable that they would pay more than the dairy stock; but the present state of matters cannot be regarded as likely to be permanent, and Mr. Proctor therefore acts wisely in not changing precipitately. The Grass intended for cutting, meadow, is top-dressed. On one field the labourers were busy collecting the rough straw of farm-yard manure, which had been applied some time previously, by rolling and harrowing the field, and the horse-rake collecting it. The most remarkable circumstance connected with the management of this farm, is the large quantities of bone-dust which have been applied. In one field, about three quarters per acre are used, with a decided advantage; cost 54s. In another field there was applied "Grass manure" at the rate of 21s. to 24s. per acre. This latter application was upon the red sandstone, the heavier dressing on the lia formation. The effects of the bone-dust were very visible; not only was the herbage green and succulent, but the bottom was full of white Clover, a blade of which was stated to be scarcely discernible the season previous. All his meadows intended for cutting are rolled either with the Cambridge or Crosskill's roller. Mr. Proctor appears to give the preference to the Cambridge for Grass land. We were never so fully impressed with the value of bones as a top dressing for Grass lands. For meadows we would venture to rate them higher than either nitrate of soda or guano. Tares with winter Oats are grown for cutting green. The roots, Mangold and Swede, appear to have been, last year, very heavy crops. The sowing of these was being completed at the time of our visit (the 9th of May). Mr. Proctor is an advocate for early sowing, and the success which attends his practice is the best proof that he is correct as regards his soil and locality; and, what is very remarkable, he is the only practical advocate we met with during our tour, for early sowing. To those of our readers who have never experimented with bones, as a top-dressing for pasture lands, we would strongly advise them to make a trial on a small scale, feeling confident that the result would induce them to extend the experiment. The value of bones in the dairy districts, in the neighbourhood of Chester, has been known for nearly 50 years, but, like most other improvements, the practice has been confined to a comparatively limited district. Those visiting the English Agricultural Exhibition at Gloucester in July, will

perhaps find it convenient to inspect this farm. To such as do so, we would recommend them to examine the effects of bones on pastures and meadow land. *Abridged from the North British Agriculturist.*

## POULTRY.

**TRADE MEMORANDA.**—Who is Mr. Job Wild, who writes from Wirksworth, Greenhill, &c.? Do any of our poultry friends know him?

**Poultry Literature.**—Agreeing generally with what your correspondent on poultry, "Maria," has written, I venture to take up my pen, as it grieves me to think that she should be made cross by her pets, or rather by those who treat of them. Cochins China fowls are bad mothers, and should never be entrusted with a brood of chickens in Britain, where the climate is inferior to that of China, particularly with an early brood, our spring season being very cold; they do not provide for themselves, so the feeding of them is expensive. The best layers of this variety of fowls have feathers on their legs, which, instead of being a protection, hurts the legs when the fowl goes into long Grass, or has to walk through snow or amongst frozen vegetables; moreover, they are not good-looking on the table or palatable when cooked, having very little flesh on the breast. In addition to these faults, they do not perch when young, so are easily destroyed by vermin; and even when old cannot reach a perch of moderate height. In faithfulness I must mention one circumstance in their favour, viz., they are confined by a low fence, so may be easily kept out of a garden or shrubbery. Dorkings, on the contrary, are excellent for table, being to my taste superior to pheasants or any other birds; they are also in the yard (to my eye) the most beautiful poultry we have in England, and may be had with a great variety of plumage; they give a considerable number of eggs (having proper food and other good management), but are inferior in this respect to other breeds, viz., to Spaniards with white faces and Hamburgs. I therefore recommend these to the attention of "Maria," and if she has not accommodation for keeping two or more distinct breeds, let her have a Dorking cock of two years of age, and another one year old (brought up together in the same yard); let half the number of her hens be for furnishing chickens, and half Hamburgs or Spaniards for giving eggs for consumption. According to this plan it will be necessary to purchase a few pure young Hamburg pullets (say four or six) every year; but they cost only about 7s. each, while Spaniards cost double that sum; the former give nice small eggs, which most ladies of my acquaintance prefer to breakfast. By the way, I may mention, that although we have had the Spaniards for half a century in this country, they sell at nearly as high price (on an average) as the Cochins, which are of recent importation. To have eggs at all times, the chickens to be kept as hens should be hatched not only in different years, but in different months, so as to moult at different times, say a half of them in spring, a fourth in summer, and a fourth in autumn. I do not doubt that "Maria" will in due time be a good housewife; and if she considers these plain, practical remarks worth reading, or you that they are worthy of insertion, I may offer a few hints on feeding. *W. S.*

**West Kent Poultry Show.**—In your report of the above show, you say "Mr. Bartlett took a prize for six beautiful Cochins China chickens." As Mrs. E. George, of the Rookery, Chaldon, took a first prize for such a lot, and Mr. Bartlett did not take a prize, there must be some mistake, which you will greatly oblige me by correcting in your next number. *Edward George.* [There was considerable liability to err, owing to the non-publication of a prize list, and the non-correspondence, in some instances, of the numbers on the pens to those in the catalogue.]

**Baker's Fountain.**—We are writing with ink taken from a bottle so arranged as that only a small portion of its surface is exposed to the air. A large store of the liquid is retained within the vessel connected with this narrow opening, kept within it at a higher level by the pressure of the atmosphere. The advantages we gain are that this large body of fluid is kept clean and free from dust, &c., owing to the small portion of its surface exposed to such impurities. Now, it is on precisely this principle that Mr. Baker's fountain is constructed. A large body of water is preserved clean and pure, flowing out just as it is used by the poultry which have access to it all round the cylindrical vessel in which it is kept. The little circular groove from which they drink is protected by an overhanging eave; and, as it is emptied, air, making its way through the opening within, displaces an additional supply of the unadulterated liquid in reserve. We have no doubt that, in practice, it will serve the ends for which it appears, on examination, to be so admirably adapted.

**POULTRY: Utilitarian.** Your question is worthy of your name; it is indeed useful in the present day, when it is necessary to give two descriptions of every fowl, each portraying a pure bird; one possessing qualities essential to successful competition, the other describing those of useful homely every-day birds. In answer I must say, that, for laying, a white face is not indispensable to a Spanish fowl; it is doubtful whether those possessing that appendage lay as many eggs, or are as hardy as those that have it in a less degree, but they are far more valuable to sell or to exhibit. The reason why the produce of perfect birds is so often defective is, that those who have perfect birds find much difficulty in getting others good enough to infuse fresh blood, and consequently breed too long from the same stock that degeneracy begins and the white becomes invaded by red spots. All amateurs of poultry will bear me out in saying that excellence such as is required in the present day is the exception, and although from capital parents, you may safely depend on

some perfect produce, yet the greater part will be faulty in some respects. A customer of mine who has given up race-horses to keep fowls, says there is no such thing as breeding all winners, and that it is almost as easy to breed the winner of the Derby as the prize Spanish cock at Birmingham.—*G. S.* I only state my opinion, subject to correction. I believe chickens hatched early in May, well done from the first, and never suffering a check, may compete successfully with those hatched in January; but you must recollect I stated the competition should take place in December. I could not for a moment mean it should be in July.—*E. B.* Your question is almost answered in the first reply. Very high bred fowls do not breed so well as those of lower degree, and I think Sobright bantams are especial illustrations of the rule. From 45 eggs I lately had 11 chickens, and consider that pretty fortunate; last year I did not hatch one from 130 eggs.—*J. D.* Spanish fowls moult with difficulty, and are more naked for a long time than any others. In your case it cannot be moulting, and must therefore arise from fever and disease. Too much stimulating food would cause it, or meat feeding, or close confinement, where Grass or other green food was not within reach. I do not anticipate you will have much trouble in curing them; give to each bird a table-spoonful of castor oil every other day for six days; feed on coarse Oatmeal mixed with milk, and let them have a good Grass-run. It will do good to rub the naked spots with fresh grease, but it must not have salt or flour with it. Gorse grease or fowls' fat is good. If you cannot give them a Grass-run, have some large sods cut daily, well covered with growing Grass, and sufficiently heavy to resist the pull requisite to tear it off; let these be thrown into their pen every morning. *J. Bailey, 113, Mount Street.*

## Miscellaneous.

**Progress of Agricultural Machine Makers.**—In former reports the important influence exercised by the shows of the Royal Agricultural Society in improving the construction of agricultural implements has been duly pointed out, but no attempt has hitherto been made to furnish any data illustrative of the rapidly extending application of machinery to agriculture; no doubt can, however, be entertained that, notwithstanding all the efforts of agricultural societies, the current of invention and improvement would soon have been checked, and must ultimately have ceased altogether, had it not been closely followed up by a largely increased demand for the machines when improved. It will now be briefly shown from returns furnished by the principal implement makers that the increased demand has fully kept pace with the improvements which have been made. It would be obviously unadvisable to publish the names of those who have been obliging enough to furnish the following information, and it must be understood that the letters A, B, C, &c., are used solely for the sake of distinction, and have no reference to the initials of the respective makers.

**STEAM ENGINES.**—A's "manufacture of steam-engines has within the last three years increased fourfold." B. "In the last two years has made five times as many as he did four or five years ago." C. "Within three years his manufacture of engines has increased eightfold, and still continues to increase." D. "Made in 1845, 15; in 1851, and nine months of 1852, 294."

From his own farming experience the writer feels that a considerable "screwing up of the courage" is required before giving an order for so considerable a purchase as that of a steam-engine, and he confesses, therefore, to no small surprise at the indication afforded by the above returns of the rapidly with which steam is taking the place of every other motive power for driving agricultural machinery.

**THRESHING MACHINES.**—E. "Sold in 1849 and 1850, 56; 1851 and nine months of 1852, 192." F. "In 1852 made as many as in the whole of the three preceding years, and could have sold four times that number had it been possible for him to have executed the orders he received." G. "Turns out at least five per week, and has done this for some years. The demand now is for a more complete machine, which can shake and dress the corn as well as thresh it."

**DRILLS.**—H. "Has turned out 30 per cent. more for the last two years than four or five years ago." I. "Six years ago made seven or eight per week; now makes 25 per cent. more; but, from the introduction of lower-priced drills, does not receive more money than heretofore."

It would be tedious to follow this inquiry through the smaller implements; suffice it to say, that the writer is in possession of numerous interesting letters from the manufacturers, and regrets that want of space compels him to give a very brief selection from the facts they contain. One of the most noted makers of ploughs and harrows dates the introduction of iron into their manufacture from about the year 1840, since which time it has rapidly increased, and at present has almost entirely superseded wood. His own make has increased from 150 ploughs and 120 sets of harrows in 1843, to 1400 ploughs and 520 sets of harrows in 1852. An eminent manufacturer of carts, wheels, and axles, &c., states that he sold 727 sets of wheels in the three years 1843—45, and 2334 in 1850-51 and nine months of 1852. A maker of a very popular scarifier in the three years 1846—48 sold 451 of these implements, and in 1850-51 and nine months of 1852 sold 2470! One large firm says that their orders for first-class implements of all kinds have in the last three years increased at least fourfold, and that their foreign orders also have been very considerable since the opening of the Great Exhibition. In short, the nearly unanimous feeling of the writers of the letters in question is, that the demand for improved implements is rapidly increasing; and, as they have the best possible means of ascertaining the fact, their agreement on the point may be considered conclusive. They do not, however, stop here. Some of them directly trace the increase of their sales to their success at the Society's trials of implements—others treat the subject more generally; but all who give an opinion at all agree in attributing the undeniable development that has taken place in the manufacture of agricultural machinery, more or less directly, to the opportunities and encouragement afforded by the Royal Agricultural Society. *Journal of the Royal Agricultural Society.*

**Temporary Summer Meadows: Cost and Return.**—











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# THE GARDENERS' CHRONIC. AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 27.—1853.]

SATURDAY, JULY 2.

[PRICE 6d.

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## GARDENERS' ROYAL BENEVOLENT INSTITUTION.

At a General Meeting of the Members of this Institution, held at the Horticultural Society's Rooms, No. 21, Regent Street, on WEDNESDAY, the 29th June, for the purpose of electing Three Pensioners, the following was the result of the ballot.

Name	Age	12th Application	Votes
EDWARD MARSHALL	73	12th do.	429
JOHN APPLEBY	61	8th do.	195
CORNELIUS ROBINSON	76	6th do.	163
JOHN SNOW	70	6th do.	685
JOHN HOPKINS	67	5th do.	29
HENRY SCHNEIDER	88	5th do.	186
WILLIAM CARTER	73	4th do.	22
JAMES GREEN	63	4th do.	674
JOHN MEARNS	74	3rd do.	16
JOHN BLACK	79	2d do.	245
SARAH LAWRENCE	65	2d do.	127
ROBERT OLIVER	71	2d do.	18
WILLIAM THACKER	66	2d do.	19
CHARLES CHARLTON	68	1st do.	106
ELIZABETH CURTIS	69	1st do.	226
ELIZABETH HEATH	71	1st do.	8
JOSEPH JEFFERY	61	1st do.	6
JOHN KENT	71	1st do.	33
GEORGE KIDD	68	1st do.	

## EXHIBITION OF AMERICAN PLANTS.

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## ROSES.

A. PAUL and SON beg to announce that their unrivalled Collection is now in full bloom. Admirers of this flower are respectfully invited to inspect them. The Nurseries are one mile from the Cheshunt and two miles from the Waltham Stations of Eastern Counties Railway.  
Nurseries, Cheshunt, Herts, July 2.

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## NOTICE.

WM. HAMILTON, SEEDSMAN and FLORIST, begs to intimate that he has now removed from Cheapside to No. 41, Margaret Street, Cavendish Square (first door from Regent Street). He respectfully solicits the kind support of his friends at his new premises, assuring them that nothing shall be wanting on his part to merit their approbation. His Catalogue of Bulbous Roots, of which he is importing a fine Collection, will be ready the last week in August, and will be forwarded on application.—Address 41, Margaret Street, Cavendish Square, London.

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Botanical Boxes	Greenhouse Doors &	"	"
Brown's Patent Furni-	Hammers	"	"
gator	Hand-glass Frames	"	"
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struments	Horticultural Ham-	"	"
Daisy Rakes	mers and Hatchets	"	"
Dibbles	Hoes of every pattern	"	"
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Draining Tools	Ladies' Set of Tools	"	"
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Flower Scissors	celain, &c.	"	"
"	Stands in Wires	"	"
"	and Iron	"	"
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Marking Ink	Mattresses	"	"
Galvanic Borders and	Monographs	"	"
Plant Protectors	Metallic Wire	"	"
Garden Chairs and	Milton Hatchets	"	"
Seats	Mole Traps	"	"
"	Mowing Machines	"	"
"	Pick Axes	"	"
"	Scrapers	"	"

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DEANE, DRAY, & Co. (Opening to the Monument), London Bridge.

The Meeting then declared JOHN SNOW, JAMES GREEN, and JOHN MEARNS, as having the greatest number of votes, duly elected Pensioners of this Society.  
E. R. CUTLER, Sec.  
97, Farringdon Street.—July 2.

## GARDENERS' BENEVOLENT INSTITUTION.

JOHN SNOW, of Farnborough, Kent, begs to return his kind thanks to his numerous friends for their liberal support in enabling him to become a Pensioner on the Funds of the above Society, at the Election on Wednesday last.

## THE ADMISSION FOR ARTIZANS, &c. ON

MONDAYS is reduced to 3d. each person, to the Exhibition at Gore House, Kensington, consisting of Cabinet Work, lent by her Majesty the Queen, and several noblemen and gentlemen; the works of the School of Art, and the studies of Mr. Mulready, R.A. Admission on other days 6d. each person, except Saturdays is—Open from nine to seven.

## CRIMSON-FLOWERED IVY-LEAVED GERANIUM.

STANDISH and NOBLE have now to offer the above, which they can recommend as a BEDDING PLANT of the first class. It has the habit and foliage of the well known old variety, but the flowers are of the brightest crimson. They are produced in the greatest profusion, and are raised well above the leaves upon stout foot-stalks. Plants, 10s. 6d. each.  
\* \* \* The usual discount to the trade when three or more are taken.—Bagshot, Surrey, July 2.

## NEW AND SELECT PLANTS AT REDUCED PRICES.

BASS and BROWN beg to refer to their advertisement of the above in the *Gardeners' Chronicle* of May 28th and June 4th, 11th, and 18th; also to their advertisements of the BEST NEW GERANIUMS of October last. Strong Plants at reduced prices. See *Gardeners' Chronicle* of May 7th, 14th, 21st, and 28th.  
Seed and Horticultural Establishment, Sudbury, Suffolk.

## NORMAN'S COLCHESTER CARDINAL.

For sale, about 300 pipings of this splendid PINK, which received a First Class Certificate from the National Floricultural Society, July 1, 1852, and was designated as "purple, fine leaf, large and full; fine pod, and best of its class;" and figured in the October number of the "Florist."  
Two pairs 5s., or 10 pairs 20s., including package and postage, on receipt of Post-office order or stamps.  
Address Mr. ROBERT HALLS, High Street, Colchester, Essex.

## WAITE'S KING OF THE CABBAGES.

This is the earliest and best Cabbage in cultivation, and quite distinct from the Enfield.  
J. G. WAITE feels inclined to think many parties have been deceived in having had Enfield sent them for this Cabbage, they therefore condemn the merits of it without having had the REAL THING, which is quite distinct from all other varieties. To be had in any quantities of not less than 1 lb. at 4s. per lb.  
J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

## TURNIP SEEDS FOR JULY SOWING.

all of which are of quick growth and hardy enough to stand the winter.

A Gallon of Turnip Seed weighs about 64 lbs.	Gall.	lb.
SUTTON'S PURPLE-TOPPED YELLOW HYBRID, the hardiest, largest, and most nutritious of all Hybrid Turnips (similar to a fine yellow Swede)	5	6 1 0
SUTTON'S GREEN-TOPPED YELLOW HYBRID, particularly adapted for poor soils and for late sowing. It will produce a heavier crop than any other under such circumstances...	5	6 1 0
LINCOLNSHIRE RED GLOBE, a superior variety, presented to us by Philip Pusey, Esq., M.P. Thrives well after WHEAT...	5	6 1 0
YELLOW TANKARD (or Tankard Swede)	5	0 0 10
SUTTON'S EARLY SIX WEEKS, very early and large. (See Mr. Hickman's and other Letters.)	5	0 0 10

Mr. K. HICKMAN, of Brompton House, near Newbury, in a letter, dated February 1st, 1853, says—"I must mention the SIX WEEKS TURNIP as the best sort I have ever seen for earliest and latest sowing. I have grown them several years, and have invariably found them to produce more feed in less time than any other Turnip. I have had them after Wheat, of a good size, within six weeks from the time of sowing."  
JOHN SUTTON & SONS having grown nearly 40 sorts of Turnips last year, in their sample ground, can strongly recommend the above as best for late sowing. See remarks on our sample ground by the Editor of the *Agricultural Gazette*, Nov. 27, 1852.  
Seeds delivered carriage free, to all parts, except parcels under 20s. value.  
JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

## HORTICULTURAL SOCIETY OF LONDON.

—His GRACE THE PRESIDENT has kindly directed the Grounds of Chiswick House to be opened for the reception of the Visitors to the Society's Gardens at the NEXT EXHIBITION, on SATURDAY, the 9th JULY. Tickets are issued at this Office, price 5s.; or at the Garden, in the afternoon of the 9th July, at 7s. 6d. each.  
21, Regent Street, London.



## COUNTY OF GLOUCESTER & CHELTENHAM

HORTICULTURAL SOCIETY.—Horticultural Exhibition of All Nations, under the immediate patronage of

Her Most Gracious Majesty THE QUEEN,  
His Royal Highness PRINCE ALBERT,  
His Imperial Majesty the EMPEROR of the FRENCH,  
His Majesty the KING of the BELGIANS,  
His Royal Highness the DUKE of CAMBRIDGE,  
The Rt. Hon. EARL FITZGERALD, Lord-Lieutenant of the County,  
His Grace the Duke of Beaufort,  
The Right Hon. Earl of Ellenborough,  
The Rt. Hon. Lord Northwick,  
The Rt. Hon. Lord de Salazar,  
Sir W. Coddington, Bart., M.P.,  
The Hon. C. F. Berkeley, M.P.

Will be held in the PITVILLE GARDENS, CHELTENHAM, on JULY 12th, the Tuesday in the week of the Meeting of the Royal Agricultural Society of England at the neighbouring City of Gloucester. Tickets 3s. 6d. each, if taken before the 5th of July; after that date and on the day of Exhibition, 5s.  
Special Trains will run on the Great Western and South Wales Railways.

The ANNUAL DINNER of the Society will take place at the QUEEN HOTEL after the Exhibition. The Tickets are limited, and therefore early application must be made.

Schedules and every information may be obtained of J. H. WILLIAMS, Hon. Sec. Committee Rooms, 382, High Street, Cheltenham.

## GRAND FLORICULTURAL AND HORTICULTURAL EXHIBITION.

to be held at the Royal Pavilion, Brighton, on TUESDAY & WEDNESDAY, July 5th and 6th. The surplus to be given in aid of the Funds of the Sussex County Hospital. Patrons: His Grace the Duke of Richmond, Lord-Lieutenant of the County; His Grace the Duke of Devonshire; the Most Noble the Marquis of Bristol; the Right Hon. the Earl of Chichester; Lord Alfred Hervey, M.P.; Admiral Sir G. B. Pechell, Bart., M.P.; the Hon. A. McDonald, &c. The Band of the Coldstream Guards will be in attendance. Upwards of 2000 will be offered as Prizes to Exhibitors. Schedules can be had of E. SPARY, General Superintendent of the Exhibition; and of EDWARD CARPENTER, Secretary.

N.B. As it is not in the Schedule, it may be stated here that VERBENAS will be shown in bunches.—July 2.

## WESTON-SUPER-MARE HORTICULTURAL

and FLORICULTURAL SOCIETY.—The Annual SHOW will take place on FRIDAY, JULY 8th, 1853; Schedules may be obtained on application to the Assistant Secretary, Mr. J. DARR. There will be Special Prizes for Nurserymen. By kind permission of the Officers, the Band of her Majesty's 1st Royals will be in attendance.—J. STRINGFIELD, Honorary Secretary.

## BLISWORTH GARDENS.

NORTHAMPTON and NORTHAMPTONSHIRE FLORAL and HORTICULTURAL SOCIETY.

The Committee of the above Society beg to announce that their next Exhibition will take place on THURSDAY, the 14th JULY, 1853, in extensive and beautiful Gardens adjoining the Blisworth Station of the London and North-Western Railway, when the following extra prizes (open to all England) will be given:—  
Seven Guineas for the best 18 (Sieve or Greenhouse) Plants; not less than 12 distinct species; Pelargoniums, Potulinas, Verbena, Calceolarias, and all annuals excepted. Three Guineas for the second best. The first prize will not be awarded unless there are three competitors, except especially recommended by the Judges.

Also will be given, Two Guineas for the best 12 Carnations and 12 Pinks, distinct varieties. One Guinea for second prize.  
All exhibitors must send a statement in writing to mo on or before Thursday, the 7th JULY, of their intention to show, in order that arrangements may be made for exhibiting.  
By special permission of the Band of the Royal Horse Guards (Blue), will attend during the day.  
JOHN MACQUEEN, Honorary Secretary.  
Drapery, Northampton, July 2, 1853.



## AGRICULTURAL SOCIETY OF ENGLAND.

GLOUCESTER MEETING.—STALL 121.

TESTIMONIALS RECEIVED FROM GROWERS LAST YEAR OF

CHIVAS' CHESTER ORANGE-JELLY TURNIP,  
FOR AUGUST AND SEPTEMBER SOWING.

**G**EORGE CHIVAS, SEEDSMAN, Chester, the introducer and only holder of the improved stock of this unrivalled Turnip, has received many hundred Testimonials of the value of the "Orange Jelly." The subjoined will show with what success it has been grown in various parts of England:—

Mr. JAMES SHARPE, *Farm Bailiff to the Most Noble the Marquis of Exeter, Burghley Park, Northamptonshire, Nov. 22, 1852.*  
I sowed your Turnip on August 2, and am perfectly satisfied that it is superior to any other sort grown in this part of the country. Sheep eat them greedily, in preference to other sorts put before them at the same time.

The Hon. and Rev. W. C. TALBOT, *Ombersley, Droitwich, Worcestershire, Nov. 25, 1852.*  
I shall have pleasure in sending some bulbs of the Orange-jelly to your address at the Birmingham Show; they are a very pretty variety.—[The Hon. Mr. Talbot has since communicated that the Orange-jelly stood the winter frost well, and further suggests that I should have some of the bulbs analysed by a competent chemist, and compared with Swedes, as it is his belief, from the taste, colour, &c., of the Turnip, that they would be found nearly, if not quite, equal to Swedes of average quality, in feeding properties.]

Mr. ANDERSON, *Bailiff to the Right Hon. Lord Clinton, Huish Minton, Crediton, Devonshire.*  
I have the fullest confidence in your Turnip; I sowed it on August 2, and at the same time half an acre of White Six-weeks or Stubble, but the Orange-jelly far exceeds them in weight and quality; and for late sowing, they will yield a much greater weight than any other sort.

Mr. HARDY, *Bailiff to the Hon. W. H. Yelverton, Whitland Abbey, St. Clears, Carmarthenshire, Nov. 30, 1852.*  
Your Orange-jelly Turnip is certainly a very fine sort, not only beautiful in its growth, but possesses a decided advantage over all others, from the preference both cattle and sheep show for it. The early stage at which it forms its bulb, the rapidity with which it comes to maturity, and small space it comparatively occupies with its leaves, are also material points in its favour; as to its feeding or keeping qualities I am unable to judge. The seed was sown on August 2, on part of a 15-acre field of other kinds of Turnip, Dale's Hybrid and Yellow Scotch, sown early in July. The Orange Jelly came up on the fifth day, and made such rapid progress afterwards, that in a very short period it was impossible, except on close inspection, to distinguish them from the others sown several weeks before. I also sowed some Orange Jelly on August 28; these, too, have come on well, and will, I expect, be valuable sheep food in February.—[The Hon. Mr. Yelverton has himself since kindly communicated that the Turnip has stood the winter, is yet quite sound, and much relished by man and beast; he further adds as his opinion, that from the smallness of the tap root, it will not prove an exhausting crop.]

J. B. GLEGG, Esq., *Withington Hall, Cheshire, Nov. 29, 1852.*  
I have enclosed the return of the weight and number of bulbs of the Orange-jelly Turnip per acre, grown here after a crop of Vetches. It is hardly a fair return of the crop, for we have been pulling them for the use of the family for the last two months, to say nothing of those sent to various Agricultural and Horticultural Societies, thinking it desirable to make known their merits as widely as possible. Dr. LINDLEY's remarks on those exhibited in Regent Street, and which I requested him to try at his own table, was uncommonly good.

Rev. C. P. PETERS, *Pitchford Rectory, Shrewsbury, Nov. 22, 1852.*  
I should say that my crop of your Turnip is more than twice as heavy as the crop of stone that I grew last year, sown at the same time—treated similarly.

JOHN DAWSON, Esq., *Gronant, Flintshire, Agent to Sir Piers Mostyn, Bart., Nov. 25, 1852.*  
I am very much pleased with the Orange-jelly Turnip. I have eaten the crop off with sheep, and have just planted the ground with winter Beans.

Mr. JOHN BRAKE, *Agent to Sir John Henry Palmer, Bart., Carlton, Rockingham, Jan. 10, 1853.*  
Instead of 20 lbs., I will thank you to send me 50 lbs. of your Orange-jelly Turnip. I certainly consider the quality very superior, for I perceive the sheep eat them in preference to other sorts given at the same time, and I also find they are more nutritious.

JOHN NAYLOR, Esq., *Leighton Hall, Montgomeryshire, April 19, 1853.*  
Mr. Naylor will thank Mr. CHIVAS to send him 20 lbs. of his Orange-jelly Turnip Seed. His crop of last year has proved so valuable to his lambing ewes, that he is inclined to give it not only another trial, but more care and attention than the wetness of last autumn would permit, and which they proved to deserve.

Mr. P. MARTIN, *Chilham, Kent, Nov. 21, 1852.*  
I like your Turnip very much for late sowing. I sowed very late with our quickest growing white sort, but the Orange-jelly went to bulb much the soonest. I hope you will be at Smithfield, that I may order some more; it only wants to be known to be extensively used.

THOMAS WISEN, Esq., *Martyn Lodge, Henfield, Nov. 30, 1852.*  
Agreeably to your request I send you what I consider six very superior Orange-jelly Turnips, grown from seed had from you, put in broadcast after a very heavy crop of Oats, on August 12; no better crop can grow.

Mr. CHARLES FIELDEN, Jun., *Sparsholt, Winchester, Sept. 18, 1852.*  
I am highly pleased with the appearance of my Orange-jelly Turnip, their growth is really surprising. I have some very good after winter Oats, sown July 28th, and some after Wheat, sown 4th August, very promising indeed.

Seed of the present year's growth will be ready for delivery about the 20th July; Orders received before that date will be delivered free, at every important Market Town in England. G. C. is the only holder of the Improved Variety, and he urges direct application to secure the Genuine Article.

## PRIZE OF FIVE GUINEAS.

GEORGE CHIVAS intends again offering this year a Prize of Five Guineas for the heaviest crop, of not less than four acres of the Orange-jelly Turnip; the weight of two statute perches (11 square yards), an average of the Crop will be required. Application for Forms for Competition must be made before the 15th Nov., and returned filled up before the 23d of that month.

GEORGE CHIVAS will exhibit Specimens of the Orange-jelly at the approaching SHOW of the ROYAL AGRICULTURAL SOCIETY, at GLOUCESTER (Stall 121), where Orders may be given for New Seed.

GEORGE CHIVAS has made arrangements for the FREE DELIVERY of all orders received before the 20th July, at several hundred of the principal market towns in England.

For further description of the above Turnip, see advertisements in *Bell's Weekly Messenger*, 13th and 20th June. Chester, July 2.

Price 2s. per lb.

**CHAMPAGNE, CHAMPAGNE!**—The acknowledged superiority of MITCHELL'S ROYAL ALBERT RHUBARB, attested by chemical analysis, must convince the most sceptical of its unrivalled efficacy over every production of the kind throughout England for the manufacture of British Wines; its saccharine qualities and excellence of flavour render it of invaluable adaptation for producing a luscious and sparkling champagne, equal to foreign importations, combining that luxurious richness and grateful piquancy the *sine qua non* of connoisseurs and admirers of this delightful beverage; it may be obtained during the next two months in the highest state of perfection at 2l. 10s. per ton, by forwarding a Post-office order to WILLIAM MITCHELL, Market Gardener, Enfield Highway, Middlesex. Other kinds, 2l. per ton.

**TANNED NETTING**, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas, for Wall Fruit.

At EDGINGTON & Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark; and at Brunswick Street, near the East India Export Dock, Poplar, where may also be seen erected Emigrant Tents in great varieties, on their latest improved principles.

**RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.**—NEW TWINE NETTING (Tanned if required).—1 yard wide, 13d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard; half-inch mesh ditto, 2 yards wide, 6d. per yard. THE ELASTIC HEXAGON GARDEN NETTING, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 43d. per square yard. Tanned Netting, 2 or 3 yards wide, 13d. per yard; 4 or 6 yards wide, 3d. per yard—exactly the same as advertised by others at double the above prices. Coir or Hemp Sheep-folding Net, of superior quality, 4 feet high, 4d. to 6d. per yard. Lamb Net, 6d. per yard. Fishing Nets, Poultry Fencing. A 20-yard Drag Net, with Purse complete, 2l. 10s. A Single Walled Drag Net, any length and depth, 1s. per square yard. Casting Nets complete, 1s. per yard, measured round the Lead Line. Flea Nets, any size, 1s. per square yard complete. Minnow Nets, Eel Nets, Landing Nets, equally cheap, all warranted first-rate quality and workmanship. Rabbit Net, 4 feet wide, 13d.; 6 feet wide, 23d.; 8 feet wide, 3d. per yard. Each Edge Corded, 6d. per yard extra, suitable for Poultry Fencing. Square Mesh Cricketer Net, 6 ft. wide, 10 ft. long, 10 ft. wide, 10 ft. long, 3d. to 4d. per square yard; this is the best article made for fencing, against Fowls, Cats, &c., at Wm. COLLINGSWOOD'S, No. 1, Strathmore Terrace, Shadwell, London. Orders by Post, with Post-office order or Town reference, punctually attended to.



**CHEAP AND EFFECTIVE WIRE FENCING.**—Every variety of pattern, both for garden and field purposes, made to order at very reasonable prices. The wire is of first-rate quality, being selected from the most celebrated manufactory and regardless of cost. Not less than two coats of anti-corrosive mixture applied to the Net as soon as made and included in the cost price. An experience of 15 years fully warrants the Advertiser in claiming for the Whittington-Net a large share of public favour.

Apply to Mr. S. TAYLOR, 2, Wotton Parade, Gloucester; or to R. WOODCOCK, Whittington, near Stokeferry, Norfolk.

**MR. SAMUELSON'S PATENT DIGGING MACHINE**, capable of digging 4 to 5 acres per day with four to six horses, price 27l. 10s., is now working at Banbury, and in Kent, Surrey, Middlesex, Cheshire, North Wales, &c. &c. For references apply to Mr. B. SAMUELSON, Britannia Works, Banbury. It will be exhibited at his Stand, No. 68, Royal Agricultural Society's Show at Gloucester.

**BUDDING'S LAWN MOWER** with SAMUELSON'S REGISTERED IMPROVEMENTS, lightening the draft by one-half, and enabling one unskilled labourer to work it unassisted, reviewed and commended in the "Practical Mechanic's Journal" of February 1. Price 5l. 10s. and 6l. Larger sizes for pony draught, 7l. 5s. and 10l.—Apply as above, or to any Ironmonger or Implement-dealer in town or country.

**PERUVIAN GUANO. CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

**ANTONY GIBBS AND SONS,** AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO.**—The guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.  
WILLIAM INGLIS CARRIE, 10, Mark Lane, London.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

**PERUVIAN GUANO**, guaranteed the genuine importation of Messrs. A. GIBBS & SONS. A EDWARD FUSLER of LINSEED and RAPE CAKE. EDWARD FUSLER, Secretary, LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton 27 0 0  
Superphosphate of Lime ... .. 7 0 0  
Sulphuric Acid and Coprolites ... .. 5 0 0  
Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**GUANO AND OTHER MANURES.**  
**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

**MANURES.**  
**WILLIAM DODDS & Co.** have on Sale, of guaranteed quality, the following Manures:—  
Superphosphate of Lime ... .. £5 10 0 per ton.  
Patent Manure ... .. 5 10 0  
Delivered at any Railway Station in London, in quantities of 10 cwt. and upwards.—Apply to WILLIAM DODDS & Co., 102, Leadenhall Street, London.

**ARTIFICIAL MANURES, &c.**—Manufacturers and others engaged in making ARTIFICIAL MANURES, may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBITT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kensington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.  
Gentlemen desirous of receiving instructions in chemical analysis and assaying, will find ample facility and accommodation at the College.

**SEWAGE CHARCOAL MANURE.**—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt., for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.  
It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

**JOHN WARNER AND SONS,** CRESCENT, JEWIN STREET, LONDON.

**GALVANISED IRON TUB GARDEN ENGINE,** With Warner's Registered Spreader,

Is strongly recommended for durability and low price, viz., £3.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power.

**WARNER'S PATENT FARM AND COTTAGE PUMPS.**

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.

Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required.

To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest Pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

**JOHN WARNER & SONS,** 8, CRESCENT, JEWIN STREET, LONDON.  
Every description of Machinery for Raising Water; Fire Engines, &c.



## CINERARIA SEED.

WITH DIRECTIONS FOR SOWING, &amp;c.

**EDWARD GEORGE HENDERSON AND SON,**  
Wellington Road, St. John's Wood, London, are now prepared to send out their newly-saved Seed of the above useful winter flower, gathered from fine named varieties, at 2s. 6d. per packet; also a few packets at 5s., amongst which is Seed from C. PRINCE ARTHUR, ROSALIND, and other leading varieties.

E. G. H. & Son beg to give notice that their Calceolarias from which the Seed is saved can now be seen in flower at the Nursery, packets of which will be booked at 5s. each, to be sent out the end of July.

## The Gardeners' Chronicle.

SATURDAY, JULY 2, 1853.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, July	4	Entomological	8 P.M.
TUESDAY, "	5	Law Amendment	8 P.M.
WEDNESDAY, "	7	Zoological	3 P.M.
THURSDAY, "	9	Horticultural Gardens	2 P.M.

COUNTRY SHOWS FOR THE PRESENT MONTH.—5th, Brighton, Hereford, Whitby, and Long Buckby.—6th, Norwich, Ashford, and Kelso.—7th, North Witle (Devizes).—10th, Weston-Super-Mare, and Thirsk.—12th, Cheltenham, and Wolverhampton.—14th, Northampton.—20th, Bervick.—21st, Aylesbury.—26th, Handsworth and Loddon.—27th, Isle of Wight, and Buckingham.—28th, Oxfordshire.—30th, Midland Horticultural (Derby).

We are continually being asked by our correspondents legal questions relative to the rights and duties of those who have gardens and pursue horticulture either for pleasure or profit. For reasons which will be apparent upon a little reflection, we as continually decline to give any specific answer to such questions; but when we have found that some one subject was more especially made the object of inquiry, we have given our readers such general information upon it as appeared likely to be acceptable to them. Few matters give rise to more questions than the LAW OF FIXTURES, and we therefore propose to state what that law is, so far as it relates to gardens, and as is possible in an article in a non-legal publication. Those who require further information may be referred once for all to "A Treatise on the Law of Fixtures," by A. AMOS, Esq., and J. FERARD, Esq. (2d edition; London, BENNING, 1847), in which everything that is known about the matter will be found clearly and accurately stated in a very readable form. To this work we must also acknowledge our own obligations.

The reader of the following remarks must carefully bear in mind that they are only intended to apply to cases of landlord and tenant, where no express provision either in the shape of a covenant to repair or otherwise is made concerning the fixtures.

In the absence, then, of any agreement to the contrary, the general rule is that whatever is affixed to the property of another belongs to that other, or, as the legal maxim runs, *quidquid plantatur solo, solo cedit*. This maxim is of great antiquity, and to it in early times there were few, if any, exceptions; but certain departures from it have been gradually established, and thereby the application of the principle has become less harsh, and more in accordance with modern notions of justice. It must, however, always be remembered that, with respect to any particular case, the rule applies, unless the contrary can be shown; or, in other words, that unless the particular case can be clearly brought within one of the established exceptions, it falls within the rule. It is, therefore, necessary to ascertain first the true meaning of the general rule; and, secondly, what exceptions to it, pertinent to gardens, have been engrafted upon it.

Nothing falls within the rule which is not fixed, either to the soil or to something itself fixed thereto; and everything which is so fixed does fall within the rule. But the difficulty occurs as to the exact meaning of the word fixed; cases may occur in which it is clear that a thing is fixed; others may occur in which the contrary is beyond dispute, and others again may occur in which whether a thing be fixed or not may be open to great doubt; to so much doubt, in fact, that in the absence of express authority, no positive opinion can be formed upon the subject. These doubts, however, chiefly arise when it is necessary to determine whether a given thing falls within the rule or one of the exceptions to it; for, neglecting the exceptions and attending only to the rule, the word fixed may be considered as used in its popular and ordinary meaning. The signification of the word, so far as is necessary to understand the rule without the exceptions, may, perhaps, be rendered clearer by examples. On the one hand, a thing is said to be fixed, when so let in to the soil as to occasion its disturbance, either when let in or when taken out; as, for example, houses, posts, and walls, erected in the usual way. So again, things by being built into, screwed or nailed, plastered, pasted, or glued to houses, posts, or walls so erected, are fixed. On the other hand, nothing is fixed, the difficulty in removing which arises solely from its own weight; an erection simply built on, not in any degree in the ground is not fixed; a machine, however

ponderous, merely resting on the ground, is not fixed; a hothouse or greenhouse, with its walls constructed in such a manner as only to rest upon the ground, or upon a prepared flooring, would not be fixed, although the flooring upon which it stood might be so; posts simply dropped into sockets, themselves fastened into the ground, would not be fixed. To none of these last cases would the general rule ever apply; to all the former, were it not for certain exceptions, it always would.

Those exceptions, so far as they relate to gardens, may be reduced to two classes, viz., exceptions made in favour of articles used simply for ornament, and exceptions made in favour of articles of trade. With respect to the first, it seems to be clearly established that pictures, pier-glasses, looking-glasses, hangings, tapestry, marble chimney pieces, and such like things, if put up by a tenant and fastened to walls so as to be removable without causing any appreciable injury to them, may be taken away by him, and do not by simply being put up and slightly fixed become the property of the landlord. Whether a conservatory attached to a house by a tenant would or not be removable by him upon the principle now under discussion seems to depend upon the mode in which it is built. If built so that by its removal no damage worth mentioning be done to the house, then a conservatory erected for purely ornamental purposes ought to fall within the present exception and be removable. But a conservatory not so built is clearly not removable, as is shown by a case cited in the work above referred to. Another instance, and one which would have been thought clearly to fall within the present exception, is furnished by flowers; if anything can be said to be fixed, purely for purposes of ornament, and to be for that reason removable, one would certainly have supposed a flowering plant to have been that thing. In a case, however, where the right of a tenant to remove a Box-edging was denied, one of the judges, on being asked whether a tenant could not remove flowers which he had planted in the ground, answered, *no*; and another learned judge thought there was no difference between removing a Box-edging and a hedge. This example shows how difficult it is, even when the principles by which to be guided are ascertained, to state positively whether a given thing be or not removable; for our own parts, we doubt extremely whether the right of a tenant to remove flowers would be denied at the present time.

The other exception above adverted to, namely, that in favour of articles of trade, is more liberally construed than the other. For the benefit of trade, manufacturers have long been allowed to remove furnaces, engines, vats, coppers, &c.; and upon the same principle it seems to be quite clear that a nurseryman has a right to remove trees, shrubs, bushes, and plants which *bona fide* compose his nursery stock, and are planted and kept by him with a *bona fide* view to sale. The removal, moreover, must be in the ordinary course of business; for if a nurseryman at the expiration of his tenancy does not choose to take his plants away he must leave them; he is not at liberty wilfully to destroy them. It would also seem to be the better opinion, although two learned judges have differed about the matter, that a nurseryman is at liberty to remove hothouses and greenhouses put up by him at his own expense, *bona fide* for the purposes of his trade. We say this seems to be the better opinion, because there being nothing decided either one way or the other, it appears most in accordance with the principle of the exception now under discussion, and which principle there is apparently a tendency rather to extend than to contract; the same reason has led us to express a similar opinion with respect to flowers.

We hope that the above remarks will, in some measure, supply the want of information which seems so generally to exist upon the law of fixtures. It will be seen how difficult it is, without knowing all the facts of each particular case, for anybody to form a trustworthy opinion; and that in the present unsatisfactory state of the law upon the subject, and in the absence of an express authority precisely in point, the only rule which can be acted upon without risk is, in cases of doubt, not to remove, or at least to consult an experienced solicitor.

The second Royal forest on our list is CHOPWELL WOOD. This is a freehold estate in the county of Durham, containing 896 acres, appropriated to the growth of Oak timber.

According to the evidence given to Lord DUNCAN's committee by Mr. ROBERT SMITH SURTEES, a magistrate of the counties of Northumberland and Durham, described as an extensive grower of wood, in the neighbourhood of the Royal forest, the land is extremely well adapted for growing timber; and there is a capital market (an immense demand) for

forest produce. He stated himself to be a personal friend of the then deputy surveyor, and desirous of speaking well of Chopwell Wood, if he could; but he declared that the place had been mismanaged from the beginning, and that this had been repeatedly represented to the Board of Works by his father. The plantations had grown very badly from the beginning; they still looked very badly; the Larches and Oaks were so crowded that neither had had room to grow, and all were consequently stunted; more than double the proper number of trees had been put in, and four times the number of Oaks. All sorts of wood, much quite unsuitable, had been planted; Wych Elms and Beech, either useless or of very little value, still remained, although they ought to be cut out. The land of Chopwell, before it was planted, was worth 10s. an acre at the least.

Mr. CUTHBERT SURTEES, an extensive valuer of timber in the neighbourhood, confirmed the material part of the foregoing statement. He considered that the plantations at Chopwell had been neglected.

Mr. CLUTTON deposed that he had found the woods presenting "a very uncomfortable appearance," some in fact in "a most pitiable condition." He understood this to have been caused by a severe hurricane which had blown down a large quantity of Larch. He thought the ground had been injudiciously planted and managed, the trees had been kept much too thick, and he advised "all the rubbish" upon 400 acres to be cleared out. The hurricane referred to had happened 10 years before Mr. CLUTTON visited the wood, but no measures had been taken to replant the land; "it was supposed the trees would recover." If converted into farm land, Chopwell would produce 17s. 6d. an acre, after incurring an expense of 12,544*l.*, which would be equal to 26*l.* a year; but Mr. CLUTTON could not speak to the accuracy of such a calculation made at the moment. He did not believe that such an income could be realised at Chopwell while a forest, the quantity of land being too small for a separate establishment.

At the time when this evidence was taken Mr. GEORGE SAVAGE JAMES was deputy surveyor. The following is the account this gentleman gave of himself to Lord DUNCAN's committee. He had been a Lieutenant in the 1st West Yorkshire Militia for some few years; he was employed "occasionally for three or four years superintending the works in Richmond Park;" he had been recommended to the Commissioners by Mr. EDWARD JESSE, and the Commissioners sent him down to the New Forest to learn his business. He was appointed in August, 1826, by Mr. ARBUTHNOT, the then Chief Commissioner, received no instructions as to what his duties were, and entered into no sureties. Earl FITZWILLIAM commanded the West Yorkshire militia when he was in it. He received 150*l.* for salary, and other emoluments were estimated at 26*l.* He further stated that half the forest had been planted in 1813 and 1814, and half in 1820-21, that in 1839 40,000 trees had been blown down, that in his judgment some parts of the wood were too thin, that the greater part of the Oak was flourishing; that he had done nothing to the trees left after the hurricane, because he thought they would recover, that he did not know how it happened that there had been in 1835 and 1836 a most unusual disproportionately large expenditure, and that if he was to manage the forest properly he could not cut down more timber than would pay the expenses of management. So that, according to Mr. JAMES, the only use of Chopwell Wood was to maintain himself and his foreman, with a few labourers. In reality, in the year 1849, when this evidence was given, the receipts from Chopwell had been 398*l.*, and the expenses 323*l.*, leaving the Crown a profit of 75*l.* upon the 896 acres.

Up to this period the total loss to the country from the management of Chopwell had been 2008*l.* In the 13 years before Mr. JAMES took charge there had been received, on account of this domain, an average gross sum of 687*l.* per annum—we beg that this may be understood as the gross return from 896 acres. This average, in the first five years of his management, fell to 343*l.*; in the next five years it rose to 764*l.*; in the next five years, during which the hurricane forced 40,000 poles into the market, it amounted to 1282*l.*; and in the six years preceding the appointment of Lord DUNCAN's commission, it had fallen to 512*l.*, or 175*l.* a year less than had been obtained 13 years earlier; a striking result, considering that when woods once become capable of yielding anything, they yield more and more every year. The net income in 1848-9 was 75*l.*; in 1849-50, 105*l.*; in 1850-51, 237*l.*; and in 1851-2, 300*l.* The fear of removal seems, therefore to have had a salutary effect; for instead of obtaining just enough for himself and his men to live upon, he at last discovered that he could contrive to realise rather more than 6s. 8d. an acre. One of the most curious facts elicited on this occasion



was that while 43 tons of bark had been sold in 1838, none had been prepared in 1841, 1842, and 1843, nor in 1845, nor in 1847. No timber for either naval or other purposes had ever been obtained from Chopwell.

And what better could have been anticipated from the appointment of a lieutenant in a militia regiment, totally unacquainted with the management of woodland property, to the charge of a royal forest?

But too much space has been already occupied with this property. We shall only add, in conclusion, that the deputy surveyor, whose management has been thus recorded, no longer holds his office, and that the estimated net income for the year ending March 31 last is 687*l.*, concerning which we expect to hear more in the next report of the Commissioners.

The new deputy surveyor is Mr. NATHANIEL PRETTEJOHN, formerly foreman in Woolmer Forest, with 24*s.* a-week and a cottage. He was originally a farmer, in Devonshire, having been a farmer's son. He was engaged in Holt Forest on the 6th May, 1816, and was transferred to Woolmer, in October, 1821. He has therefore had very long experience, the value of which we shall learn hereafter.

FREQUENT inquiries have been made at this season of the year respecting a diseased appearance which is extremely common on Pear leaves, but we have never seen so aggravated a case as one very recently communicated from the neighbourhood of Coventry. Not only are the leaves blotched and deformed with pale discoloured rugged spots, which eventually become black, but the fruit itself, as in the accompanying figure, is covered with irregular warts, which in some cases, where impregnation has been perfectly accomplished, gradually soften down, so as to present a somewhat less unpleasant aspect when the fruit has arrived at maturity; but where the ovules prove to a greater or less extent abortive, either rendering the produce utterly useless, or, after a time, causing it to fall prematurely. If the under side of the leaves is carefully examined, one or more regular, minute, circular orifices will be detected in the centre of each little prominence, and in bright sunny days a minute acarus may be seen in rapid motion, to the presence of which we believe the affection to be due. In those fruits which are most affected, the same orifices may be seen on the prominences, though from the more compact tissue the appearance of the pustules is somewhat different. On the leaves the pustules are clearly due to an unnatural development of the spongy cells between whose large intercellular passages the air has a free passage. In very extreme cases in the fruit the tissue beneath the orifice is brown, and more or less disunited and decomposed, while in the generality of instances but little alteration is observable in its condition.

Trees when once affected are extremely subject to a recurrence of this disease; and as the fruit as well as the foliage is liable to be attacked, it is highly desirable, if possible, to find some remedy. In more ordinary cases, the check to the luxuriance of the leaves, where it does not go too far, may, like root-pruning, even be beneficial. If we are correct in supposing the malady due to the presence of an acarus, the same methods may be used towards its repression as in attacks of red spider; and nothing perhaps may be more likely to give relief than frequent syringing, either with pure water or with Gaisson's solution properly diluted. Another disease is at present affecting our Pear trees, characterised by far larger and more swollen pustules, which are lined underneath with a stratum of white spores, covered frequently with the cuticle. As soon as these are matured the whole part of the leaf which is affected turns of a deep black, and sometimes falls out. We have in vain inquired after a similar affection in other parts of the country.

It may be remarked, in conclusion, that as autumn advances, the blackened leaves which had been infested by the acarus, are often covered with a minute white mould belonging to the genus *Dactylium*. This is, however, a mere after-growth, and has nothing to do with the malady itself. *M. J. B.*

#### LISIANTHUS RUSSELLIANUS.

WHEN I saw my first specimen of *Pteroma elegans* in full beauty I considered that it would form more than a substitute for the well-known *Lisianthus*; but the beauty of the *Pteroma* is short-lived compared with that of the *Lisianthus*, and its colour, although good, is not that of the latter; nor do I know of any plant that can compare with the *Lisianthus* as regards the decoration of the conservatory or the flower house from the beginning

of July to the end of September. Indeed the only fault this plant has is that it requires a very strong moist heat to grow it in perfection, and it is also somewhat liable to damp off during winter; care, however, will prevent this, but unless a moist high temperature can be afforded, while it is growing, it is useless to attempt its culture. The plant may be increased either by means of seeds or cuttings; the latter root freely, and if firm bits of young wood are selected about April, planted in sandy peat, covered with a bell-glass, and placed in a bottom heat of about 80° or 85°, and guarded from damp, they will be ready to pot singly in about six weeks, and will form nice little plants previous to winter. The usual method, however, of obtaining a stock of young plants is from seed, and probably seedlings are more vigorous than plants obtained from cuttings. The seeds should be sown as early in February as a temperature of 70° is at command. But unless some care is exercised as to the method of sowing the seeds, plants need hardly be looked for. Fit a pot nicely to a bell-glass, then half fill the pot with crocks, and fill up nearly to the surface with rather fine peaty soil, and press it rather firmly, making the surface level, and cover the latter with a thin stratum of silver sand, and give a moderate watering through a fine rose, to firm the surface, and prevent the seeds being buried too deeply. Sprinkle the seeds upon the surface thus prepared, and drop a little silver sand over them. Place the pot in a saucer of water, and never apply water to the surface of the soil until the plants are up and well established, but keep the saucer regularly supplied. A Cucumber frame, or any warm situation will answer for raising the plants in, but if in a position where water from the syringe will be liable to fall on the pot, this will be dangerous in carrying the seeds beyond the depth at which they vegetate, and in this case the bell-glass should be large enough to throw off whatever water may fall on it. When the seedlings are fairly up, remove the glass, and inure them to the air of the house, or pit, giving plenty of water in the saucer, and also over-head. When sufficiently strong to bear handling pot them singly in 4-inch pots, and place them in a moist strong heat, affording them a shady situation until they get established in their pots, with a liberal supply of water. During summer let them occupy a position near the glass, but screened from the direct rays of the sun; top them as may be necessary to induce compact bushy specimens, and maintain a moist warm temperature. If the plants were sown early and go on properly, they will probably have well filled their pots with roots by the beginning or middle of August, and such should be shifted into the next size larger pot, but only a small shift should be given at this period, as the growing season should be considered at an end by the middle of September. After this the temperature should be cooler and drier, and the plants should be gradually accustomed to a circulation of air and full exposure to the sun's rays, giving no more water to the soil than is sufficient to keep the plants from flagging.

The *Lisianthus* is a somewhat precarious subject to winter, being very liable to damp off at the neck, and beginners will act wisely in providing against all losses, by growing a few spare plants. I have wintered my plants in a close part of the greenhouse with little or no loss, and also in a cool part of the stove, but I have occasionally lost severely in both situations. Whether in the stove or greenhouse, the soil should be very sparingly supplied with water, and the pots should be placed in flats, and the water given in those, never wetting the foliage nor surface soil; and it will be unnecessary as well as dangerous to water oftener than may be absolutely required. Maintain a night temperature of from 45° to 50°, which will be sufficiently high for the winter. Early in February remove the plants to a sharp, moist heat of from 70° to 75°, or 85° will do no injury, provided a humid atmosphere is maintained. As soon as they start into growth, shift into pots a good size larger than those in which they have been wintered, clearing away as much of the sodden soil as can be done without injury to the roots. Keep them near the glass, and as warm and moist as is convenient, sprinkling over-head frequently with the syringe. Stop and peg down, or tie out the branches, to secure handsome bushy specimens.

When well established after this shift, remove them to their flowering pots, which may be 10, 12, or 15-inch ones, according to the season at which they are ready for their final shift, and the convenience for obtaining vigorous growth. Persons who cannot command a sufficiently high temperature early in spring to induce active growth should give the plants a very moderate shift when they start into growth, and at the final potting put three in a pot. When established in their flowering pots, they will be greatly benefited by a liberal supply of manure water, and the shoots must be tied out and stopped until the desired size of specimen is obtained. When in flower, they may be removed to the conservatory, greenhouse, or wherever their blossoms will be most valued; but in the removal care must be taken to prevent the plants getting injured. They should be gradually accustomed to the change by moving them to the coolest part of the pit or house previous to shifting them to a cool house; and they should then be placed where they will not be exposed to the direct rays of the sun, or drying currents of air. The flowers remain long in perfection, and well grown specimens will last in full beauty from the middle of July to the middle of September, if properly tended with water, and placed in a situation where the blossoms will not be injured by damp.

Good fibry peat and loam in about equal proportions form a suitable compost for the growth of the *Lisianthus*. The soil should be rendered rather fine for small plants, adding a liberal proportion of sharp silver sand, but for the final shift it should be used in a rather rough state and well intermixed with rough pieces of charcoal, with a moderate proportion of sand. *Alpha.*

#### Home Correspondence.

*Grapes.*—Considering the unusual backwardness of the present season, and the small allowance which we have had of sunshine, I agree with you in pronouncing the display of Grapes at our late Chiswick Exhibition to have been highly creditable to the skill and industry of the growers. At the same time, I continue of opinion that the judges are still rather profuse in their awards, and, probably, from a desire to please all parties, are apt to be satisfied with a lower standard of excellence than it ought to be the aim of our gardeners to attain. One essential qualification of good fruit is, that it shall be well-coloured; but surely this character was wanting in the motley sample of Muscat Grapes, half green and half yellow, for which, if I mistake not, a large medal was given at our last show; and the three small bunches of Muscadines, with the berries of a dull sea-green hue, and altogether devoid of that transparency of the skin which indicates ripeness, seemed scarcely to merit any mark of distinction. Perhaps they may both have been deemed "sufficiently ripe for market;" but I cannot help wishing that the Exhibition Committee would adopt some more satisfactory criterion of perfection in our fruits; for, in the article of Grapes, at least, I know, to my cost, that market-ripeness does not always imply sweetness or fullness of flavour. With respect to the external characters to which I have alluded, I think you will do a service to our gardeners by inculcating the necessity of attending to the several indications, as enumerated by old Olivier de Serres:—"Grapes are fully ripe when their skin has become thin, fine, and transparent; when the colour of the berry becomes dull, white changing to grey, red to violet, from black to a more intense hue; when the pips come out black, naked, and void of glutinous matter, nothing whatever adhering to them." (*Théâtre d'Agriculture*, Liv. 3, cap. 7.) *H.*

*Grasses for Lawns.*—I have a little lawn which I am anxious to make as perfect as possible. It was laid down with turf from an adjoining meadow last year, in the spring. I have constantly kept it cut and weeded—and, once last year and also this spring, I sowed some bare places with a mixture of *Festuca ovina* and *Festuca duriuscula*, and then gave a sprinkling of these over the whole; but the lawn is rather of a yellow hue, and the lower extremities of the blades of Grass seem sheathed in a kind of straw, or dead Grass, which very much spoils its appearance; the Grass also seems to run along the ground, and not to stand up erect and thick, like that of Kensington Gardens, through which I pass every morning with feelings of jealousy. Have I chosen the right sorts?—or would some of the Poas do if sprinkled over it?—if so, which Poa would you recommend? *N. A. P. B.* [Your choice of sorts was judicious; but did they grow? or were the seeds what they professed to be? We doubt it much; for no part of the trade is more in want of reformation than that which relates to Grasses. We have seen very fine *Poa pratensis*, &c., produce nothing but *Poa annua*!]

*Watering Aloes.*—I notice in your Paper (p. 360) an extract copied from the "Pharmaceutical Journal," in which a statement is made which I do not consider to be substantially correct. It runs thus: "In the Aloe tribe, when the flower-stem is thrown up, it is at the expense of the outer leaves, the elaborated juices of which it appropriates, the roots at this time not being in action, because it is towards the close of a long period of dryness. If, when the flower-stem is beginning to rise, the roots are watered, all further development of the stem is arrested, the leaves only being developed," &c. Now, I have grown succulents for the last nine years, and I do not consider the leaves dying off to be the result of the flower-stems absorbing the juices from them only, for I find that the outer leaves from time to time decay, whether the plant flowers or not. In my opinion, the outer leaves dying off must be attributed mainly to the fact that the new leaves are larger than the previous ones, and consequently the old leaves give way, to enable a larger growth to develop itself. The other statement, "If, when the flower-stem is beginning to rise, the roots are watered," &c., I am certain is quite incorrect; for as soon as I find my Aloes begin to move (about Christmas time it is generally with me), I give them water; and when they show signs that they are about to send up a flower-stem (in February and March), I give them plenty of water, and continue to do so all the time they are in flower. I have never noticed, even in one instance, the flower-stem checked by the application of water; and I have no doubt on my mind at all as to the result, if the writer of the article in question will try the experiment for himself. I should state that my remarks apply to the Aloe tribe generally. The *Agave americana*, while in a small, growing state, loses its outer leaves every year; this cannot be attributed to its flowering, as all know it is the kind which only blooms once in its lifetime, and then dies. *N. Burgess, Hackney.*

*Grape Mildew.*—I am afraid that the uncommon wet and unseasonable weather we have had this spring will be a fruitful cause of mildew upon Vines. I called upon a friend of mine in Yorkshire the other day who



for many years has grown enormous crops of excellent Grapes. He informed me that his Vines never looked so promising as they did this year, with a splendid show for fruit, until the mildew attacked them in some of the houses, seizing the bunches before flowering, causing them to become "deaf" and to shrivel up, whilst in other Vineries it did not commence before the berries were half-grown, speedily covering the bunches as completely as though they had been dipped in a barrel of flour; in some instances I saw the berries cracking in that state. He informed me that every remedy had been tried which could be devised, including sulphur in every form, but without any good effect. *Junius*. [We never yet saw sulphur fail.]

**Black Ants.**—Can any of your correspondents assist me with advice in removing the nuisance described as follows:—A house situated on a sandy soil has now for some years, in the course of every summer, been infested in a particular quarter by the black ant. All ordinary means of expelling them, such as keeping a door leading to the garden (by which they enter) always closed, with the addition of close fitting mats at the threshold, seem useless. Nothing will turn them from their line of march. If the crevices of the doorway are packed, however closely, with paper, they are sure before long to work their way in. Their line of march is said to extend more than a mile along a vein of white sand, and the only very successful effort I have yet made against them was by tracking this line some 50 or 60 yards in my own kitchen garden in the early spring and pouring boiling water along it. This certainly reduced their numbers considerably, and probably a vast number of their eggs was destroyed, but towards the end of that summer they were, I think, very plentiful. Those acquainted at all with the subject will be aware that the habits of this insect are quite different from those of the small red ant, which throws up unsightly hillocks so annoying to the farmer of Grass land. There are several modes of destroying these last, such as turning up the hillock before the wet season, or frost. But in no work have I met with a recipe for getting rid of the black ant. *G. H. B.* [Will not rags steeped in turpentine turn them away?]

**Rhubarb and Strawberry Wine.**—Observing a receipt for Rhubarb Wine in your Paper of the 18th, may I request that your correspondent will kindly answer the following queries:—What is the exact difference of process which makes the wine brisk like champagne or flat like sherry? Is it that, in the former case, the bung is put in sooner, while the fermenting process is still going on, instead of waiting till it is over? Will the same receipt do for Strawberry wine? The best imitation champagne is made from Strawberries, the flavour of the fruit being very like that of the wine, but I have not myself been able to succeed in producing, or rather retaining, the brisk effervescent condition. Perhaps some of your correspondents may be able to furnish a proper receipt for Strawberry champagne. *Q. Q.*—I had resolved to try and make some Rhubarb wine, but Mr. Bree's remarks on oxalate of lime have, I confess, rather alarmed me. Would you be so good either to tell me, or ask him (Mr. Bree) if there be the same dangers to incur with Gooseberry champagne? *N. A. P. B.* [No.]

**Lycoperdon Proteus.**—In your notice of my pamphlet on the Anæsthetic Properties of this Lycoperdon, you lodge a complaint against me, for having neglected to indicate clearly the plant, the properties of which I have described. I not only acknowledge the justice of your critical remarks, but thank you for them. The fungus that has been used in all my experiments is the *Lycoperdon giganteum*, and you will greatly oblige me if you will allow this fact to be stated in your next number. *Benjamin W. Richardson, Mortlake, near London, June 27.*

**Blanching Celery for Exhibition** (see p. 408).—If "T. P." will procure some half tiles, similar to draining tiles, and enclose the plant in them, leaving, of course, the top fully exposed, he need not fear the result. The tiles should be let into the ground, so that they may be drawn up as the Celery advances in growth, or additional tiles may be added; they should never be neglected for a day, or some injury may occur; and frequently raising the tiles greatly encourages the growth of the Celery. This method prevents worm-eating; the heads will be well blanched, long and clean. I have seen the best of Celery grown upon this plan, on good manured ground. *E. Bennett, Perdiswell.*

**Black Beetles.**—I would advise "Alpha" (see p. 392), to take a stone of lime, pour a little water thereon, and after it becomes pulverised to place the powdered lime within reach of the black beetles; it will effectually destroy them. *H. B.*

**Humboldt on the Productiveness of the Banana.**—I have frequently read statements, said to be made on the authority of this great philosopher, as to the incredible productiveness of the Banana or Plantain. Living, as I do, at the end of the world, I am unable to refer to the passage in Humboldt's works, so as to see what he really did say on the subject, but the last place where I saw it referred to, was in the "Household Words," where it is said, "Humboldt tells us that they spread over the same given extent of ground, 44 times more nutritive matter than the Potato, &c." Now one feels extreme diffidence in presuming to doubt any statement made by so great an observer, yet I have often thought that some error, causing an enormous exaggeration, had falsified the observations of the naturalist in this instance. Suppose we take the extreme crop of Potatoes as 20

tons per acre, produced in nine months. One Banana plant may produce 70 lbs. of fruit in 18 months after the first planting; but because the succeeding crops will be ripened in shorter time, I will call it one year on the average. Less than 6 by 6 feet of space cannot be allowed for each plant—in fact I doubt if 7 by 7 feet is enough. Allowing the smallest estimate of space, the produce will be less than 40 tons, and I doubt if in practice 20 tons could be produced off 1 acre of ground, even by careful cultivation and manuring in a very favourable situation. I would plant or measure a half acre for actual experiment, but that the climate of this place is not sufficiently tropical to allow of the plant reaching absolute perfection. I wish some scientific resident in the West Indies would try the experiment for two years, or rather for 27 months (equal to the time required for three crops of Potatoes); or might it not be a proper subject of investigation by the superintendent of some tropical botanic garden? *J. C. Bidwell, Wide Bay, New South Wales.*

**Miniature Scotch Fir Tree.**—A fairy-like Scotch Fir-tree grows in an oblique position out of a "slack-joint," of a keystone that closes an architrave which runs up one of the colonnades on the south side of Castle Semple in Scotland. The joint which gave birth to and nourishes this tree is 13 feet from the ground, making it pretty certain that the roots have no better food than stone and lime, and the only possible way in which it can receive water is by a few drops in time of rain trickling along its trunk to the root. Notwithstanding its hard circumstances, however, it is covered with short green foliage indicating good health, but its yearly growth is scarcely perceptible. Its length is 6 feet, and it measures 5 feet across the branches. The thickest part of the trunk is 8 inches in circumference. To behold with close inspection this shaggy wrinkled dwarf, who has taken all the forms of an old full-grown tree, has the effect of making one (even an ordinary-sized person) feel as if he were transformed to twice his real bulk. I have made several inquiries of very old people in this neighbourhood regarding the history of this curiosity, but they fail in giving any clear account of it; one and all of them, however, corroborate the fact that it has been nearly the same size and in the same health ever since they can recollect. I find that Semple, in his history of Renfrewshire, published in the year 1783, takes notice of this tree at page 153, where he says that it was "considered a great curiosity;" it was probably then nearly its present size, which it would perhaps take 70 years to acquire; this, therefore, would make the age of our esteemed little tree 140 years. *J. McPherson.*

## Societies.

**HORTICULTURAL, June 28.**—**DR. HENDERSON** in the chair. Sir T. Duckworth, Bart., M.P., J. Tollenmache, Esq., M.P., W. F. Cook, Esq., G. U. Skinner, Esq., A. Druce, Esq., W. R. Sandbach, Esq., C. D. Alexander, Esq., H. N. Fisher, Esq., C. Holt, Esq., and Mrs. Lawson were elected Fellows. Of vegetables, which again formed the subject of special competition, four extremely interesting collections were produced, besides one from the Society's garden. Mr. Burns, gr. to Lord Stanhope, at Chevening, again stood first, with the following large and finely varied exhibition of kitchen garden produce, viz.:—Early Frame Potatoes, Early Horn Carrots, Early Dutch Turnips, very fine Celeriac, Horse-Radish; Victoria, Giant, and Linnaeus Rhubarb; Red Beet, Tripoli Onion; Early York, Vanack and Wellington Cabbages; Early Cauliflower, Mushrooms, large, and in the button state; Early Frame Peas, Sword Long-pod Beans, apparently a good variety; Fulmer's Early Dwarf, and Speckled Kidney Beans; Asparagus, Round Spinach, Jerusalem Kale, Celery, Shallots, White Spine Cucumber; Bath and White Cos, Drumhead and Union Lettuces; Normandy, Water, American, Curled and Golden Cress; White Mustard, Italian Corn Salad, Garden Sorrel, Spanish Onions, Red and White Orach, Curled and Giant Parsley; Salmon, and White and Red Turnip Radishes; Taragon, Burnet, Chervil, Sweet Basil, Knotted Marjoram, Summer Savory, Pot Marjoram, common and Lemon Thyme, common and variegated Sage, Fennel, Sweet Bay, Tansy, Chicory, Pennyroyal, and Spearmint. These were all excellent of their kind, and well deserved the Knightian Medal which was awarded them. The second best collection was furnished by Mr. Smith, gr. to Mrs. Reay, of Little Blake Hall, Wanstead. It contained Red and White Turnip and short-topped Radishes; White Spine and Victory of Bath Cucumbers; Early American, Globe, and Hanges Kidney Potatoes; Brown Cos and Victoria Cabbage Lettuces; Globe and Jerusalem Artichokes, the former very small; Early Mazagan Bean, Asparagus, Dwarf Dun French Beans, Curled Parsley, Early Horn Carrot, Globe Onion, Early Dutch Turnip, Early Kent Peas, West Ham Cabbage, Asiatic Cauliflower, Horse-radish, Mustard and Cress, common and Lemon Thyme, Garden Sorrel, Mint, and Sage.—Mr. Spivey, gr. to J. A. Houlton, Esq., of Hallingbury, was placed third on this occasion; he had a larger but not near so good a collection as that from Mr. Smith; it comprised Potatoes, Peas, Broad Beans, Early Mousetail Turnips, Early Horn Carrots, Cauliflowers, Atkins' Matchless Cabbage, Asparagus, Spinach, Mushrooms (large and small), Jerusalem and Globe Artichokes, Old and Spring Leeks, Spring and Autumn-sown Onions,

Rhubarb, Horse-radish, Spivey's White Spine Cucumber, Brown Cos Lettuce, Red and White Turnip Radish, Chervil, Taragon, Burnet, Balm, Peppermint, Spearmint and other Mints, Red and Green Sage, Parsley, Horehound, Wormwood, Lemon and Common Thyme, Borage, Winter Savory, Sorrel, and Rue; of these, the Burnet, Rhubarb, Horse-radish, Cucumbers, Beet, Lettuces, Turnips, Carrots, and a few other things, were scarcely so good as they might have been. A fourth collection from Mr. Todman, gr. to Mrs. Buckmaster, of Clapham Park, contained Onions, Cauliflowers, Early Horn Carrots, Hunter's Prolific Cucumber, Barnes's Early and Early Oxford Cabbages, Brown and Wellington Cos Lettuce, Spinach, Asparagus, Shilling's Grotto, Sangster's No. 1, and Early Dancroft New Royal Peas, and Potatoes.—Mr. Chapman, gardener to J. B. Glegg, Esq., sent wonderfully fine Neapolitan Cabbage Lettuces from Cheshire; they were certainly far the largest in the room. The same grower also contributed some excellent Belle-garde Peaches and Violette Hative Nectarines, for which a Knightian medal was awarded; and a Providence Pine-apple, weighing 7 lbs. 13 oz.—Mr. Dodds, gardener to Colonel Baker, at Salisbury, likewise produced an extremely well-grown Providence Pine, weighing 9 lbs. 10 oz., for which a Banksian Medal was awarded.—Mr. Keynes, of Salisbury, showed a pretty lilac Lobelia, for which a certificate of merit was awarded. It was stated that it might be found useful for bedding. A similar award was also made to Messrs. Osborn for the *Lysimachia Leschenaulti* mentioned in our report of their nursery last week.—Messrs. Hurst and McMullen, of Leadenhall Street, received a Certificate of Merit for examples of what was called Salt's Crimson Perfection Rhubarb, an excellent kind, red throughout the interior, as well as outside the stalks. It was stated to be of the same breed as Buck's Rhubarb (*Rheum undulatum*), a Russian kind, not so large as some sorts, nor so acid, and very attractive, on account of its fine dark-red colour. The Hon. W. F. Strangways sent Eucalyptus bark, from trees that have grown large enough in the open ground, at Abbotshury, in Dorsetshire, to bear stripping; and wild Madder-roots (*Rubia peregrina*), which, not being very particular as to soil, might possibly be grown with advantage on otherwise unproductive land. A fumigator was exhibited by Mr. Geach; it is on the principle of Brown's, but the fire-box is fixed on the side, and the power which works the fanners is wound-up with a key, so that when charged, and placed inside a house, it will go on working without any attention whatever, until the house is filled with smoke, and it has run down. The advantage is, that the operation can be effected without there being any occasion for subjecting oneself to the, to most people, disagreeable fumes of Tobacco smoke. From the Garden of the Society came the new *Diplazium grandiflorum*, *Rhynchospermum jasminoides*, the sweet-scented *Philadelphus mexicanus*, an excellent plant for forcing; *Achimenes longiflora*, *Justicia carnea superba*, Barnes' variety of *Phenocoma proliferum*, a good dark sort; *Pelargonium lateripes*, a very showy white species; *Tetratheca verticillata*, *Sedum Kamchaticum*, a deep yellow kind, with good foliage; several seedling *Calceolarias*, and the following new Annuals: *Silene pendula alba*, *Ceniza turbinata* (white), ditto *formosa* (yellow), *Tropæolum Shuurmannianum*, *Chryseis californica alba*, *Linaria macroura* (Vilmorin), a pretty species; and *Nemophila aurita alba*. Along with the above, also came Cuthill's Black Prince, Keens' Seedling, Vicomtesse Hericart de Thury, and Princess Alice Maud Strawberries, and the following vegetables: large Asiatic and Walcheren Cauliflowers; Early Frame (Early Kent), Bishop's New Long-pod, and Nain très hâif extra Peas; Sutton's Cornish and Early Battersea Vanack, or Cock's Cabbage; Round Summer Spinach, Early Mazagan Bean, Red and White Orach; Radis Rose demi-long, and the following Lettuces, Laitue Romaine blonde Maraichère, Laitue Romaine verte Maraichère, and Laitue Chou de Naples; Victory of Bath Cucumber, Early Red Strap-leaf, and Early White Strap-leaf Turnips; Rheum Emodi, *Sarracha viscosa* from Mexico, *Physalis Peruviana* and *Oca*. Of these, Bishop's New Long-pod Pea is a valuable dwarf sort, the pods being much larger than those of any other of the very dwarf sorts; Pois Nain très hâif extra is an extraordinary bearer, and so dwarf that it may be sown in rows 15 inches apart; the true Early Battersea, Vanack, or Cock's Cabbage is the best for a general crop. When the seed is saved true, and well grown, the leaf-stalks come out so closely above each other, that no interval of stem can be seen. The whole of the heart, even the ribs, boil very tender; Laitue Romaine blonde Maraichère is considered the best summer Cos Lettuce, although some prefer the Laitue Romaine verte Maraichère—both are excellent; Laitue Chou de Naples Cabbages firm and very crisp; the Victory of Bath Cucumber is a good bearing sort—on the whole, one of the very best; the Early Red Strap-leaf and Early White Strap-leaf Turnips are excellent early kinds, seeds of which were received from M. Vilmorin, of Paris. The leaves are upright and narrow, jagged, however, to the base of the petiole, in general, Rheum Emodi is a Rhubarb not much cultivated; it does not make its appearance above-ground till late, and consequently when it is not so much wanted. Its leaves are extremely large, and it was suggested that it might be usefully grown in gardens for wrappers for protecting fruit and vegetables when conveyed in baskets. It is the sort which furnishes the Rhubarb of the hospitals in India, and is a very orna-



mental autumn plant in plantations and other rough places.

ROYAL BOTANIC, REGENT'S PARK, June 29.—Her Majesty, H.R.H. Prince Albert, and other Royal personages honoured the Society with their presence, on this occasion, just before the gates were opened to the visitors. As regards the exhibition, Pelargoniums were contributed in considerable abundance, and Orchids were also well supplied; but there appeared to be some scarcity of stove and greenhouse plants, and Cape Heaths were certainly inferior to those brought forward at either of the two previous shows. Of fruit there was an excellent display.

In large collections of STOVE and GREENHOUSE PLANTS, Mr. May, gr. to Mrs. Lawrence, was first, with a magnificent group in the best possible condition. It contained a *Kalosanthes coccinea*, large and brilliant; an immense bush of the small red-flowered *Erica Parmentieri*; the glowing rich orange-red *Ixora javanica*, in admirable order; *Dipladenia splendens* and *crassinoda*, such specimens as it would be difficult to find elsewhere; a magnificent *Stephanotis*, and other plants equally fine. Mr. Cole, gr. to H. Colyer, Esq., of Dartford, who was second, sent beautiful examples of *Allamandas* and *Stephanotis*; a charmingly-flowered *Dipladenia crassinoda*; a very fine white *Ixora*, which was scarcely enough in bloom; a large specimen of *Erica metuliflora* bicolor, well bloomed, but not so high coloured as it should have been; a very good *Ixora javanica*, the seldom-seen *Siebold Medinilla*, and other plants, all displaying great skill in cultivation. Twenty plants were also furnished by Mr. Speed, of Edmonton. The most conspicuous among them were the different species of *Allamanda*, *Dipladenia*, *Stephanotis*, and *Clerodendron*.

Collections of 12 STOVE and GREENHOUSE PLANTS were contributed by Messrs. Green, Taylor, Williams, and Over. Among these, Mr. Green's *Gardenia Fortuni* appeared to be much prized for its delicious fragrance; the various *Kalosanthes* in the different groups were also brilliant and effective, and an *Azalea* or two, still in perfection, added to the gaiety of the scene. *Allamandas* and *Dipladenias* were, however, the most conspicuous plants, possessing as they do fine flowers with striking colours. We remarked *Echites atro-purpurea*, a velvety deep chocolate-flowered species, which seldom makes its appearance at flower shows. *Sollya linearis*, and *Leschenaultia biloba* major, furnished bright blue flowers, of which there is some scarcity.

Messrs. Fraser, Rolleston, and Pamplin, had each good collections of 16 STOVE and GREENHOUSE PLANTS. Messrs. Fraser sent an *Allamanda Schottii*, whose flowers must have measured nearly 6 inches across. They had also a capital *Ixora javanica*, together with *Stephanotis*, *Allamandas*, *Everlastings*, and *Heaths*. Messrs. Rolleston communicated the singular-looking *Dictyanthus Pavoni*, *Mitrisia coccinea*, a brilliant plant when well bloomed; *Clerodendron affine*, the high-coloured *Erica Westphalica*, and other plants. Messrs. Pamplin produced *Tetratheca verticillata*, and plants of similar size. Mr. May and Mr. Cole each showed a collection of *Ixoras*.

ORCHIDS were not altogether quite so plentiful as at the previous shows. The best collection of 25 varieties was produced by Mr. Blake, gr. to J. H. Schröder, Esq. It contained various kinds of *Aerides*, *Cycnoches ventricosum*, *Dendrobium Chrysanthum*, *Saccolabium guttatum*, two good *Phalenopsis*, *Epidendrum cinnabarinum*, a finely blossomed *Galeandra Baueri*, and the *Clowes Anguloa*, with five large yellow Tulip-like flowers on it. Mr. Franklin, gr. to Mrs. Lawrence, was second. He showed two fine *Aerides*; *Vanda Batemanni*, in good condition; *Phaius albus* and *Walliichi*, *Phalenopsis*, and *Saccolabiums*. The third prize was awarded to Mr. Williams, gr. to C. B. Warner, Esq., who had five kinds of *Aerides*; the Loddige *Cattleya*; *Lælia cinnabarina*; *Calanthe masuca* still in flower; *Phalenopsis*; and *Saccolabium guttatum*, the same plant exhibited at the last Chiswick show, still in good condition.

Mr. Woolley sent 16 good plants, among which were *Barkeria spectabilis*; *Cattleya Forbesi*; a well-flowered *Sobralia macrantha*; *Saccolabium guttatum*; *Peristeria cerina*, with a cluster of yellow flowers resting on the rim of the pot which it was in; and the singular *Coclogyne speciosa*.

Groups of 8 plants were shown by Messrs. Hume, Ivison, and Green. Among these we remarked *Saccolabium Blumei*; the charming little *Dendrobium aduncum*, *Miltonia spectabilis*, *Odontoglossum hastilabium*, *Stanhopea tigrina*, *Acropera Loddigesi*, *Dendrobium nobile*, and other plants.

Messrs. Rolleston had a group of 18 plants, among which were *Oncidium Lanceanum*, several fine *Dendrobies*, *Phalenopsis*, *Vanda tricolor* with a very high coloured lip, and *Sobralia Galeottii*. Mr. Williams produced a collection of variegated Orchids.

CAPE HEATHS.—The best were contributed by Mr. Smith, gr. to W. Quilter, Esq., of Norwood; among these were beautiful examples of tricolor *Leanea*, *t. rosea*, *Parmentieri*, *Cavendishi*, *Massoni*, *Savilleana*, and *Jubata* major. Mr. Cole also showed good plants, and so did Mr. Williams, gr. to Miss Traill. Messrs. Rolleston, Fairbairn, and others, also produced collections of this interesting tribe.

ROSES.—Large exhibitions of these, in a cut state, were contributed by Messrs. Paul, Francis, Terry, and others. Among them we remarked some beautiful blooms of the Cloth of Gold, indeed it is seldom one sees this fine Rose in such good condition. As a whole,

however, Roses were not first-rate; the season being so late and backward, a large quantity of good blooms could not be obtained.

Of novelty there was little. Messrs. Veitch sent *Philæa buxifolia*, in better condition than it was shown at Chiswick; *Ixora Lobbi*, a *Rhododendron* called *Duc de Brabant*, a white sort, tinged with pink, and spotted in the upper petals with brown and yellow; Mr. Keynes showed the little *Lobelia* mentioned in another column; Mr. Hume had a handsome *Blandfordia*, with great heads of drooping, yellow, bell-shaped flowers, slightly tinged with red; Messrs. Henderson, *Viburnum macrocephalum*, *Begonia cinnabarina*, *Stylidium scandens*, and other plants, among which were *Jacaranda Clauseniana*, and *Araucaria Cookii*.

Mr. Ivison sent the Arrow-root plant, *Maranta arundinacea*; and the Lace-bark tree of Jamaica (*Lagetta linearis*). Messrs. Lee exhibited a large collection of variegated plants; Mr. Woolley had *Saurum punctatum*; and Messrs. Rolleston some *Philodendrons*.

HOTHOUSE FERNS (whose names we have given before) were shown by Messrs. Williams, Smith, and Woolley, and there were one or two groups of pretty Alpine plants.

PELARGONIUMS.—Mr. Turner obtained the first prize in the Nurserymen's class, with *Electra*, *Cynthia*, *Magnet*, *Beatrice*, *Ajax*, *Star*, *Exactum*, *Optimum*, *Astrea*, *Dobsoni*, *Corinne*, and *Rowena*. Mr. Westwood and Mr. Dobson also showed in this class. Among amateurs, Mr. Robinson was first with *Star*, *Rowena*, *Mochanna*, *Prince of Orange*, *Magnet*, *Old Story*, *Pearl*, *Salamander*, *Virgin Queen*, *Loveliness*, *Ganymede*, and *Alonzo*. Mr. Bonham, and others, showed in this class. Of Pelargoniums of 1851 and 1852, Mr. Beck sent *Pasha*, *Vulcan*, *Flying Dutchman*, *Enchantress*, *Ariadne*, and *Arethusa*. Mr. Turner had *Lavinia*, *Novelty*, *Elise*, *Optimum*, *Magnet*, and *Arethusa*. Fancies—1st, Mr. Turner with *Electra*, *Perfection*, *Caliban*, *Delicatum*, *Burns*, and *Jenny Lind*. Mr. Ambrose and Mr. Westwood also had Fancies. Among amateurs, Mr. Robinson was 1st with *Princess Maria Galitzin*, *Madame Rosatte*, *Fairy Queen*, *Statiski*, *Erubescens*, and *Delicatum*. Exhibitions of this kind also came from Mr. Miller and Mr. Bray. A seedling named *Cloth of Gold* (Foster's) received a Silver Medal, for being the nearest approach to scarlet. Mr. Parker showed some well-grown Cape species.

PINES were exhibited in very good condition by Mr. Turner and Mr. Bragg, and so were Pansies. Some good *Calceolarias* were produced by Mr. Constantine; and we also noticed some promising seedlings for bedding purposes. Collections of *Verbenas* and *Fuchsias* were shown, but among them we did not notice anything very remarkable.

FRUIT, as we have already stated, was abundant. There were nearly 50 Pine-apples, some 54 dishes of Grapes, 29 exhibitions of Peaches and Nectarines, 23 of Strawberries, some Cherries, and about 50 Melons. Mr. Fleming, gr. to the Duke of Sutherland at Trentham, exhibited a miscellaneous collection of fruit, consisting of Muscat and Black Hamburgh Grapes (fine bunches), Royal George Peaches, Murray Nectarines, Reine Hortense Cherry, and two Melons. The same establishment also furnished a Grape called *Gromier du Cantal*, a sort something like a Grizzly Frontignan.

OF QUEEN PINE-APPLES Mr. Fleming had some well-ripened fruit, and so had Mr. Turnbull, Mr. Bray, and others. Among Providences, Mr. Dodds showed the fruit mentioned in to-day's report of the Horticultural Society's meeting. Mr. Robertson, gr. to Lady Emily Foley, had also a good fruit of this kind, but it had no crown; and Mr. Chapman had a Providence 9 lbs., but it was deformed. Mr. Davis also sent a Providence. Mr. Bailey, of Shardeoles, had a Prickly Cayenne, a good fruit, weighing 5 lbs. 13 oz. Mr. Turnbull, an Enville.

Mr. Boyd, of Dycheley, sent some beautifully-ripened Black Hamburgh Grapes, large in the berry, perfectly black, finely bloomed, and every way excellent.—Mr. Frost, gr. to E. L. Betts, Esq., also had some Black Hamburgh, large in the bunch, and altogether extremely fine; but they were scarcely so perfect as those we have just named. Very good Grizzly Frontignan, Muscat, and Black Hamburgh, came from Mr. Henderson, gr. to Sir Geo. Beaumont, Bart; White Muscadine from Mr. Bailey; and Mr. Lushey and Mr. Hill, gr. to R. Sneyd, Esq., sent some excellent examples of Black Prince. Messrs. Slowe, Spivey, Forbes, Munro, Tillyard, Turnbull, and McEwen, also showed good Black Hamburgh, as did Messrs. Head, Davis, Spary, Mitchell, and Harrison. Mr. Tillyard and Mr. Williams produced Muscadine, and excellent examples of the same variety came from Mr. Aldborough, Upton Hall, Essex. Mr. Turnbull had very good Muscats, but they wanted colour, some of the berries just beginning to change. Of Grapes in pots, there were two good exhibitions. The best Peaches by far came from Mr. Snow, gr. to Earl de Grey; they were Violet Hative and Noblesse. Mr. Fleming, Mr. Munro, and Mr. Turnbull also had very good Peaches and Nectarines. The best white-fleshed Melon was the Victory of Bath, and the best red-fleshed, Lord Montague. Excellent Strawberries came from Mr. Lidyard, Mr. McEwen, Mr. Munro, and others; and there were a few white and black Cherries. Of tropical fruits, Mr. Ivison contributed Gamboe, Allspice, Nutmeg, Vanilla, Rose-apple, and Carica Papaya.

NEWBURY HORTICULTURAL.—This Society held its June exhibition on the 24th ult., in the grounds of R. F. Graham, Esq., when, for a local show in a strictly agricultural district, great credit is due both to the committee of management and the

exhibitors. The band of the 1st Life Guards, under Mr. Waddle, delighted with enchanting music several thousand visitors. The Pelargoniums and Fuchsias were abundant and fine. There was considerable competition for the Silver Cup presented by Mr. Staff, of Lawson Street, Great Dover Road, for the best 12 dissimilar blooms of *Rauunculus*; it was carried off by Mr. Deller. The cottagers did themselves great credit with their very fine and plentiful display of vegetables; the Potatoes were especially good, and free from disease.

## Notices of Books, &c.

*Popular Economic Botany, or Description of the Botanical and Commercial Characters of the principal articles of Vegetable Origin, &c., &c.* By T. C. Archer, Esq. Reeve and Co. Square 12mo. Pp 359, with 20 coloured plates.

It was Mr. Archer whom the public had to thank for that very interesting and well arranged collection of vegetable substances imported at Liverpool, which stood in one of the Transept Galleries of the Great Exhibition in 1851. We were then struck with the variety of objects which he had brought together, and for his familiarity with their history and uses. Had the work now before us been then in existence, the crowds who visited the Crystal Palace for information as well as amusement, would have derived great advantage from the examination of substances of which they knew nothing, and the uses of which there was no one to explain.

In a very nicely got up volume, with small but accurate and skilfully-executed figures of more than 100 exotic plants, Mr. Archer has concisely but sufficiently described the history of all the principal vegetable substances which come to us from beyond sea. Their scientific and commercial names, their origin and uses, and a few short additional memoranda, are given in every case; so that the reader has only to refer to a good index at the end of the volume, to find whatever information of this kind he is in search of.

If put in a cheaper form it would make a good school book; while in its present state it forms an ornament to the library shelves.

Mr. Archer's statements are, in general, founded upon exact information, and may be safely relied upon. It was not, however, to be expected that in what is often a difficult subject, errors should have been wholly avoided. We, therefore, are not surprised to find a few occasions on which criticism may be offered. Thus, it is a mistake to say that *Levant Salep* is collected from a *Eulophia*; what Dr. Royle says is, that a sort of *Salap*, used in Cashmere, has that origin. All the Oriental Salep that has been imported consists of the oval (or lobed) roots of different species of *Orchis*. Again in the *Sassafras* nuts the mark at the end of the cotyledons is not that of an embryo, but of the plumula and radicle. *Vanilla* is, we believe, wholly produced by *V. planifolia*, and not by *V. aromatica*. We are not aware that trenails are made from *Hymenaea*—a West Indian tree, called *Locust*; it is generally understood that they come from *Robinia Pseud-acacia*, called *Locust* in the States. There must be some error about *Cocus* wood; if it comes from Cuba it cannot belong to *Lepidostachys*, which is an East Indian tree. We believe, too, that the "Blue Gum" wood of Van Diemen's Land, of which Sir Wm. Denison sent such remarkable specimens to the Crystal Palace, is *Eucalyptus globulus*, and not *E. piperita*. These little matters do not, however, detract from the general merit of Mr. Archer's work. They were, indeed, inevitable in such an undertaking, and can be easily put right in a future edition, of which we hope there will be many.

*Annales de Pomologie; publiées par la Commission Royale, instituée en vertu de l'arrêté de S. M. le Roi des Belges, du 16 Juin, 1852.*

THE above is the title of a work concerning which various enquiries have been made. The "Annales de Pomologie" are to appear occasionally, without any fixed date, in parts containing four large quarto plates each, besides letter-press; each plate contains an engraving of one or more fruits, carefully coloured. The subscription, payable in advance, is 24 francs per annum, or volume, consisting of 12 parts. Subscriptions not taken for less than a year. There will be a few copies on superfine paper, with plates coloured with extra care; The subscription for these is 36 francs per volume. The secretaries are M. F. Parent, No. 17, Montagne de Sion, Brussels; and M. L. de Bavay, Vilvorde, near Brussels.

The Parts 1—3 contain coloured plates and descriptions of the following fruits:—Bon Chrétien d'Hiver, Victoria Raspberry, Conseiller de la Cour Pear, Pomme d'Api étoilé, Marie Parent Pear; Strawberries Princesse Royale, Reine des Belges, Royal Pine, Goliath, and Mammoth; Duchesse d'Angoulême Pear, Duchesse d'Angoulême panachée do., Reine Hortense Cherry, Bigarreau Napoléon, Muscat blanc hâtif de Jura Grape, Beurré Gris.

The following is an abstract of the description of the Pear "Marie Parent." This new variety was raised in 1844 from seeds taken from fruit produced by the last sowing of Professor Van Mons. It ranks in the family of the Colmar; the general aspect of the tree and the form of its fruit justify this classification. It fruited for the first time in 1851. Its season is from the beginning to the end of October. Tasted at this period by several competent persons, it was pronounced first-rate and one of the best of its season. Our editor has permitted it to be named after his wife, Marie Parent.

The fruit is large, pyramidal pyriform, or short-



pyriform, and sometimes calebasse-shaped. Skin bright green, changing to golden yellow at the period of maturity, with some spots of yellowish russet and sprinkled with brown dots; the side next the sun becomes of an orange yellow. The stalk is nearly an inch in length, moderately thick, and obliquely inserted. The eye is deep, in a widely-formed, somewhat irregular cavity. The flesh is white, very fine, melting, half-buttery, with a very abundant, sugary, deliciously perfumed juice.

The work may be procured from any foreign bookseller.

### Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN. —Although the early flowering trees and shrubs scattered here and there throughout the garden, but more particularly in the arboretum, are now for the most part out of bloom, yet the beauty of the ornamental grounds is every day becoming greater, arising not only from the improved summer dress in which every thing now appears, but from the beds and borders of flowering plants daily becoming handsomer and more effective, as well as from the multitude of Rose trees, which are already, even in this late season, nearly in "full bearing." The conservative wall, too, is at present in admirable condition; it is true few plants are in flower on it, if we except the yellow *Jasminum revolutum*, the white *Cratægus crenulata*, and a few others; but the various wall shrubs and climbing plants with which it is covered are now so vigorous and clean, and in such "good leaf," that it affords one pleasure to see them. *Philadelphus mexicanus* is growing away luxuriantly in this wall; a singular circumstance connected with this plant is that on a wall it becomes a climber, while in a pot it is a woody shrub, as indeed it is at present in one of the greenhouses here, where its large white sweet-scented blossoms quite load the atmosphere around them with a most delicious perfume. As regards Roses, it may be mentioned that the three-legged, round trellis-headed iron support (figured at p. 671, 1845), over which the shoots are tied down, does not answer for all kinds of Roses. Sorts like the old Cabbage, and varieties of that description, succeed very well on it and look very handsome; but kinds of upright growth, like the Chinas, some Bourbons, &c., do not thrive at all on it; the branches that get up, carrying the whole strength of the tree with them, and killing those tied down. Those who may be desirous of employing this description of support, therefore, must select proper Roses to put on it, and, when that is done, and the plants are neatly trained, nothing can possibly look better, or be more secure from wind and other casualties to which standard Roses are liable. Amongst Berberies in the arboretum, we noticed that *B. aristata* was just coming into bloom now, when the blossoming of all the others is past. *Swammerdamia antennaria*, in another part of the grounds, also deserves mention; it is a sweet-smelling New Holland evergreen shrub, which should be better known than it is, its numerous small heads of white flowers furnishing, as they do, a considerable amount of gaiety for a long time during the summer months. In the American garden, which is becoming well furnished with beautiful shrubs, the broad-leaved *Kalmias* are perhaps at present most conspicuous, being now finely in flower. *Rhododendron ferrugineum* is also flowering and thriving admirably here, although, from its position, its roots must have been under water for several weeks together last winter. *Antirrhinum* are now gay here, and by and-by, they will be succeeded by Belgian *Alstroemerias*, which, by planting a little deeper than usual, have survived the winter in the open border, where they are now growing. *Deutzia crenata* Sieboldi is also in bloom, its flowers being larger than those of any other species of the genus. On rock-work the common *Sedum acre* is very gay, and *S. kametaticum* makes a good rock-plant, being a deep golden yellow, a profuse bloomer, and lasting a long while in beauty.

Of new Annuals, of which, and of the older kinds, the Society has formed a new collection, the following have flowered, and are really very good, viz.:—*Collinsia* multicolor, *Silene pendula* alba, a profuse flowerer, dwarf, and very handsome; *Venidium eximium*, with large Marigold-like flowers; a white variety of *Nolana grandiflora*; *Cenia turbinata*, a white sort, and *C. t. formosa*, a yellow kind, which offer fair to be very useful plants, producing, when grown in tufts like Chamomile, a very good effect, and continuing on in blossom until the plants have become so exhausted as to be unable to throw up more. *Perilla nankinensis* has not flowered yet; it looks as if it would be worth growing for the colour of its foliage alone, which somewhat resembles that of purple Orach, but darker. The scarlet or rather brilliant crimson *Linum* is certainly a charming flower; but the plants appear to be very delicate, and difficult to manage well. Only one or two have as yet been planted out, and therefore little can be said of its out-door appearance, but its great beauty makes it well worth attention as a pot plant. *Tropæolum Shurmanianum*, a straw-coloured kind streaked with red, is pretty, as is also the white *Escholtzia*, a sort with bold flowers, which are very showy.

The glass houses, as might be expected, are now very gay with flowering plants. M. Ville's experiment, re-appearing feeling plants with ammonia set free in the atmosphere of the house in which they are growing, has been abandoned, in consequence of the frequent breakage of the glass apparatus employed.

In the propagating-house we remarked a good stock

of *Acacia mæsta*; also *Hedychium coccineum*, which is expected to be a very fine species, worthy of companionship with the noble *H. Gardnerianum*. In this house, *Allamanda cathartica*, allowed to ramble over the roof, was flowering most abundantly, and the charming *Echites suberecta* was also in bloom; the fault of the latter, however, is that its flowers soon drop, while those of the *Allamanda* last a very long time in beauty.

With respect to Conifers, plants of Dr. Royle's new Cypress, from the "hills of India," have been raised, as has also *Pinus Royleana*. Mr. Jeffrey's seeds, which have been looked forward to with much interest, have been sown, and it may be expected something good will result from them.

In Mr. Ewing's glass walls Tea Roses are blooming beautifully; and, indeed, all the flowering plants that have been placed in them appear to like their situation. It has been found, however, that the galvanised iron-wire trellises employed in them do not suit some kinds of fruit trees, as the Peach for instance, the branches of which, in contact with the wire, are apt to become brown and cankered. This has also happened with some of the other trees as well as the Peach.

In the great conservatory, *Brugmansia Knighti* is still beautifully in flower, and being very sweet scented, it attracts much attention. The Tea Roses in the bed of this house have just done blooming, and have been cut back, to prepare them for a crop of late blossoms. Several of the larger growing kinds of Orchids, as *Cyrtopodium punctatum*, have been planted out in the bed of this conservatory, with the view of ascertaining whether or not they will live and flower under such circumstances. The result of the trial is at present satisfactory; but they have not been planted out long. The shelves of this house are at this time extremely gay with *Calceolarias* raised from seed sown last autumn, *Pelargoniums*, noble bushes of *Calceolaria integrifolia*, obtained by cutting in and wintering the old plants, something after the manner in which scarlet *Geraniums* are managed, and then growing them on in spring. Treated in this way they make the gayest ornaments imaginable for conservatory or greenhouse decoration all through the summer.

Of Grapes there is promise of a good crop in a Vinery to which no fire heat has yet been applied. Some of the young bunches, in flower, measure a foot in length. Of Pears, there is, with some exceptions, a fair crop on walls, and standard fruits are equally promising. We may state that in divesting walls of their breast-wood, it is removed from the upper half of the wall first, leaving the lower portion to be pruned off at a future time. This does not disturb the tree so much as if it was all removed at once. Peaches are swelling satisfactorily; those under Cottam and Hallen's frame are not much, if any, larger than those on the open wall. A row of young Currant plants has been planted along both sides of the main road through the kitchen garden; these are at present secured to upright stakes on which they are bearing some good fruit; but it is ultimately intended to form them into standards, with clean stems 4 feet or so in height. Strawberries are bearing well, the British Queen, which suffered so much last winter, scarcely being an exception. The earliest was, perhaps, Cuthill's Black Prince, but Keens' Seedling is stated to have been but a very little later. Of new kinds, *Vicomtesse Hericart de Thury* deserves notice: it is medium sized, a most abundant bearer, and has a brisk rich flavour when ripened in favourable weather; but this season, as yet, it is more acid than usual, owing to the sunless and wet weather we have had.

Vegetables in the garden are generally good this year, more especially Lettuces, Spinach, and Cabbages. A kind of prepared manure called Trix's has been tried on Potatoes, Peas, Onions, and Carrots, but it has been found to injure rather than accelerate vegetation. The value of M. Bollman's mode of preventing the Potato disease is about to be tested here. The sets were dried in an oven over a coke fire till they acquired the condition mentioned by him; they have been planted, and the result will be carefully noted as they progress.

In conclusion, we must not forget to mention Mr. Pilkington's improved cloches, which are at present under trial. They are made of white glass, more dome-shaped than the French cloche, and with a neck for the purpose of admitting air, while the French cloche has no opening at the top, and has to be ventilated from below. Mr. Pilkington's is, therefore, apparently a great improvement on the Paris cloche. A small bell-glass fits over the neck, so that wet can be excluded, or air given or not, as may be convenient. They are said to be cheap, and, being of various sizes, they can be packed so as to travel readily.

### FLORICULTURE.

BEDDING OUT PELARGONIUMS.—Permit me to say that I practise bedding-out the finer varieties of *Pelargoniums* on "A. K.'s" plan with success, indeed no other method which I have ever seen or tried can be compared with it. There are a few varieties, such as Gauntlet, Vesuvius, Ariel, Duke of Cornwall, and a few seedlings, that I have carefully selected, which I verily believe would continue blooming up to Christmas, if the weather would permit. If greenhouse plants in general were treated in the same way when turned out for the summer, it would save a great deal of trouble in watering, to say nothing of their being secure against being blown over and broken by the winds;

this hint is worth the consideration of amateurs and gardeners who have little time to spare, yet cannot bear to see their pets famishing for want of water, or lying prostrate and broken on the ground. *Alfred*.—The plan recommended by "A. K." for bedding-out choice *Pelargoniums* has been practised by me for some length of time with perfect success. I generally plunge in the open border the specimens which I intend to discard, as soon as they have done flowering in the greenhouse. This greatly increases the gaiety of my flower garden during autumn. I must add, however, that should the weather prove very wet, they are generally injured more than most bedding-out plants. I have also taken them up from the borders just before frost has set in, placed them again in the greenhouse, and they have produced a magnificent display of bloom until after Christmas. I have forced them, likewise, early in the spring, for cut flowers; but for general display, profusion of bloom, and dwarfness of habit, no *Pelargoniums* equal the Fancies for the purpose of bedding. *E. B.*

WINDOW PELARGONIUMS.—I have a window having a south aspect, in which I have cultivated several plants of *Pelargonium* with great success. I raised them from cuttings made of strong short-jointed wood, and struck under a glass shade; to those who possess this convenience it is an excellent assistance, but, with the *Pelargonium*, by no means necessary for striking cuttings. When well-rooted they were potted off in a mixture of sandy loam, with one table-spoonful of charcoal added, and, after some time, when I thought they were well established, they were watered once a week with a solution of guano water, formed by putting one tea-spoonful of guano in a quart bottle of water, which was refilled three or four times before fresh guano was added; they wintered safely with me, and in the latter part of February they were reported; the shoots, which were several inches long and the wood pretty well ripened, were shortened, leaving about three joints on each shoot. From these, new shoots grew vigorously and flowered well during the summer—guano water being given twice a week. When the blooms had withered, the plants were cut down to about six inches in height, the soil was changed, the roots well examined, and all decayed pieces cut out. After remaining five or six days in the shade, well watered, they were exposed all the rest of the season; by this means the young shoots got thoroughly ripened, and were rendered thick, short, and stumpy—that is, with joints very close to each other. The wood being hard and firm they again wintered well with me. In the latter end of February the shoots were shortened a little, the plants repotted, and, after a lapse of about three weeks, they were watered twice a week with guano-water. They grew vigorously, and became quite a mass of bloom, extending nearly 2 feet in width and not much more high, forming a magnificent sight. In this kind of culture the complete drainage of the pots with potsherds is essential, occasional smoking with tobacco is also necessary to keep the plants free from aphides. Whenever the weather permitted, that is, on bright days in spring, I took them into the yard and syringed thoroughly with water of a temperature of about 45°; this seemed to refresh them and to vivify the green colour of the leaves. I believe that the use of guano-water and charcoal will exceedingly assist the cultivation of all plants in rooms, for two of the greatest impediments, the want of green colour in the leaves, and the spindling up of the branches, are very much counteracted by these two ingredients in the soil. *G. R.*

AURICULA: S. You had better wait till August, they may be reported with safety then.

HOLLYHOCKS: *Junius*. Take cuttings from the side shoots as often as you can get them, until you have secured as many as you require. They strike readily enough; the difficulty is to get them.

PELARGONIUM CONTACTUM: *Omego*. It produces clusters of the most lively peach-coloured blossoms, tinted with rose or pink. Of all the varieties hitherto raised, it is by far the most difficult to portray its excellent interest when well bloomed. Amateurs the least inclined to favour the culture of the self-coloured varieties, will esteem this for its peculiar chaste tint and softened contrast, as it appears in a drawing-room bouquet, or portable flower-basket. Every small conservatory and greenhouse should possess it as a relief to the gorgeous colouring of other kinds.

WATERING CARNATIONS: A. Carnations, under the circumstances you mention, only require to be refreshed; too much moisture is fatal to them, as it engenders rot; but they should have proper refreshment, and at right times. It should be done with care; river water is the best, provided it is clear; pond water is equally good, under the same conditions. Water from wells or springs is too cold, too raw, it strikes them, and they perish unless it is exposed to the sun, before being used.

### Miscellaneous.

Botanic Gardens, Glasnevin.—A grand fête took place here the other day, which was attended by his Excellency the Lord Lieutenant, the Mayor of Dublin, and all the nobility and gentry in and around that city. Six military bands were in attendance, and the day being fine, and the gardens in the best possible condition, everything passed off pleasantly. The *Freeman's Journal* states the number of visitors present to have been about 4000.

*Begonia Prestonensis*.—In the whole assemblage of stove vegetation, what have we to compare in point of usefulness or general display with the genus *Begonia*—all of whose species, with very few exceptions, flower profusely, and their multitudes of delicate pink or scarlet blossoms come in at a time when flowers are a real acquisition, viz., during the dark dull months of winter and spring? But although all the species of



Begonia are ornamental, as a matter of course some are more so than others, and therefore advantage has been taken by the skilful hybridist to cross certain sorts having many good qualities, but which have yet some bad ones, with other kinds, with a view to unite all the good properties of the two parents without any of their imperfections. That this practice has been carried on successfully during the past few years, the many fine hybrids which we now possess are a sufficient guarantee, and of these we think few will deny that this variety is one of the very finest. It was raised in the garden of E. L. Betts, Esq., of Preston Hall, near Aylesford; and Mr. T. Frost, Mr. Betts' gardener, states that it was obtained by crossing *B. cinnabarina* with *B. nitida*, the former being the female parent. It will be seen that it resembles *cinnabarina* in foliage and flowers, but that it differs from both parents somewhat in habit, which is of a neat branching character. The flowers are brighter than those of *cinnabarina*, and they are produced freely all along the branches in axillary trichotomous cymes, elevated on long red footstalks above the beautiful dark green obliquely-ovate acuminate foliage. The male flowers are four-petalled, the female ones varying from five to seven. Like its parent, *B. cinnabarina*, this *Begonia* luxuriates better in an intermediate house than in the stove, and it is exceedingly impatient of syringing or drip: this is, however, the case with all *Begonias*; they enjoy a humid atmosphere, but by no means wet them over the head. The drainage, too, is a very essential point; for no plants are sooner injured by stagnation than *Begonias*, especially the tuberous rooted kinds, and it is found that the varieties raised from the tuberous-rooted kinds are equally delicate in constitution. Mr. Frost states that, although he has raised many seedlings from *B. nitida* crossed with *cinnabarina*, there has been no variety amongst them—they have always retained the character of *nitida*; but he is of opinion that the cross is to be effected. It will be found that *B. prestoniensis* seeds freer than any other kind, therefore there is a good opening for those who take an interest in hybridisation; it also flowers nine months in the year, and doubtless therefore a hybrid between this and *Fuchsioidea* might be kept in blossom the whole year round; and should this desideratum be obtained, it would certainly be a step in the right direction; for what class of plants could then equal the *Begonia*, especially those with cinnabar-coloured flowers and dark-green glaucous foliage? With them the conservatory might be made gay in the dark months of winter. *B. prestoniensis* is a most desirable plant where cut flowers are in request, because the blossoms are carried on long peduncles, and there can be any quantity gathered without injuring the growth of the plant; and combined with its brilliancy of colour, it is said to have a scent almost equal to that of the Tea Rose. Messrs. Lucombe & Pince, in whose hands the stock is, speak in the highest terms of it. The following compost has been found the most suitable for the growth of the *Begonia*:—one-sixth cow or horse-dung, turfy loam, peat in equal proportions, and a moderate proportion of sand, and say one-sixth of well-decomposed or charred moss. *Turner's Florist, Fruitist, and Garden Miscellany.*

### Calendar of Operations.

(For the ensuing week.)

#### FORCING DEPARTMENT.

**VINERY.**—The present wet weather will render fires still necessary, especially to Muscats, Frontignans, and other delicate kinds, which, to grow them in perfection, require fire-heat more or less through the entire stages of their growth. The last house will scarcely be out of bloom, and fires to such will be quite necessary, especially if the West's St. Peter's are grown, for they are indifferent settlers without a high, and at the same time a dry atmosphere; continue to stop such laterals on the succession Vines as are formed from time to time, either stopping them close back or leaving a single joint as circumstances require; the later Vines will require the same management of the young wood as has been laid down in former Calendars; admit plenty of air to Vineries containing ripe fruit, or where the crop is colouring. A high temperature is generally recommended to Grapes during the colouring process, and such to a degree is certainly necessary with Muscats, and other kinds requiring a high temperature; but our experience informs us that the more slowly the ripening process, in forced fruits, is carried on, the finer the colour, flavour, and size of such will be. Figs now swelling-off their second crop should be assisted with liquid manure freely, more especially if growing in pots or tubs. As the fruit ripens, some care will be required to preserve them from damp, which the frequent syringing to keep down insects induces; it should, therefore, be a rule to look over and pick the ripe fruit every morning, and syringe immediately afterwards; admit air freely, and pinch out the points of the young wood when grown sufficiently long. This will assist the swelling of the fruit, and produce useful spurs for bearing next year. It should be a rule to manage Figs during the summer that nothing further than a slight thinning-out should be wanted at the winter pruning.

#### FLOWER GARDEN AND SHRUBBERY.

As we may presume the principal planting out for the season is over, and for which the late rains will be of much service in promoting a free start, the usual routine of pegging down plants intended to be kept

dwarf, tying others up, and keeping the surface of the beds free from weeds until it is covered by the growing plants, will comprise most of what is required for the next few weeks; in the meantime some attention can now be paid to propagating various kinds of perennial plants, of which a stock is required. Pinks should now be propagated, for which see last week. Cuttings may likewise be put in of Tea and China Roses, selecting wood of the present year, when it becomes a little firm at the base. Roots, bulbs, &c., of Anemones, Tulips, Crocus, Scillas, Fritillarias, &c., which have been out of ground for some time to dry, should be properly labelled and put by till the autumn, when they will be required to fill up their respective beds for spring flowering. Where a nursery or reserve garden exists, for supplying the more common kinds of plants; the propagation of various things can now be proceeded with. Keep the smaller and seedling plants free from weeds, and lose no time in sowing perennial and biennial flower seeds for blooming next season. Quick and Privet hedges should be closely cut in with the shears; let them bend off a little towards the top, which will give them a better appearance; but hedges of large leaved plants, as Laurel, Turkey, and Lucombe Oak, and Sweet Bay, must have the young wood cut back with the knife, as the shears would destroy the beauty of their leaves, by cutting them. Shrubs grown to embellish Italian and geometric flower gardens, terraces, &c., should now likewise be cut into the figure they are to assume; in many cases, wires will be necessary, to keep the branches in their proper places at first, when afterwards the knife and shears will suffice to keep them in proper form. Portugal Laurels, Cyresses, Arbor-vitae, Yews, Bays, and Tree Box are the plants most commonly employed for this purpose, and when cut into architectural figures are fine accompaniments of the above style of gardening. They should, however, be clipped in two or three times during the season, to preserve correctly the required outline.

#### FLORISTS' FLOWERS.

Take up Tulip bulbs whenever the weather will permit. We do not imagine that the late excessive rain has been of any service to them. When lifted do not separate the offsets from the parent bulb, or remove the roots or skin; these had better remain till a later period. In taking up seedlings great care must be used, as their bulbs will often strike down from 4 to 6 inches. If possible keep the stock of each separately; this will save an immense deal of trouble, as well as confusion hereafter. Tie carefully the spindling shoots of Carnations and Picotees—not too tightly; keep the pots free from weeds, and in dry weather do not let them suffer from drought. Attend to the fertilisation of Pinks; a very little attention to this interesting operation will ensure a good crop of seed, and by selecting only excellent varieties, instead of trusting to chance, and gathering promiscuously, a much more abundant success will be the result.

#### HARDY FRUIT GARDEN.

Continue our former directions as to wall-trees; and complete as quickly as possible the laying of Strawberries for forcing next season, bearing in mind that one week now is worth two at the end of the month, and that strong well matured plants are only to be obtained by early laying and good after culture; and that no amount of care next spring will compensate for late and consequently badly rooted plants. The favourite kinds for forcing are Keens', Alice Maude, and British Queen; but there are others well worthy of attention. Mr. Ingram has a seedling (Prince of Wales) which, for productiveness and certainty of setting, beats all we have seen; and Trollope's Victoria is a good bearer under heat; where very early fruit is required, Cuthill's Black Prince and the scarlets should be grown.

#### KITCHEN GARDEN.

In this department the principal work will consist in planting out, as vacant ground occurs, the main supply of autumn, winter, and spring Broccoli, Kales, or Winter Greens, Brussels Sprouts, &c. A plot may now be planted with any kind of close-headed Cabbage for Coleworts; continue to stick advancing crops of Peas and Scarlet-runners, topping one-half of each crop of the former, to prolong their season. Sow Lettuce, Radishes, and small salad frequently, as before advised. Keep the growing crops clean by frequently hoeing between them when the ground is dry. Cut Mint and other herbs sufficiently advanced for drying.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending June 30, 1883, as observed at the Horticultural Gardens, Chiswick.

June.	Moon's Age.	TEMPERATURE.									Wind.	Rain.
		BAROMETER.		Of the Air.			Of the Earth.					
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.				
Friday .. 24	18	29.820	29.751	81	56	68.5	59.4	57	S.W.	.06		
Saturday 25	19	29.748	29.663	69	55	62.0	61.4	58	S.W.	.18		
Sunday 26	20	29.686	29.528	67	53	60.0	61.1	58	W.	.36		
Monday 27	21	29.616	29.573	69	59	64.0	60.4	58	S.W.	.01		
Tuesday 28	22	29.677	29.576	71	53	62.0	61	58	S.W.	.00		
Wednesday 29	23	29.715	29.654	71	50	60.5	60.8	58	S.W.	.00		
Thursday 30	24	29.728	29.664	70	47	58.5	60.1	58	S.W.	.04		
Average ..		29.712	29.621	71.1	53.3	62.2	60.6	57.9		0.65		

June 24—Clear, very fine; clear at night; rain.  
25—Rain; cloudy; heavy showers occasionally.  
26—Cloudy; overcast; sunshine at intervals; overcast; rain.  
27—Densely overcast; cloudy; slight rain.  
28—Densely overcast; frequently boisterous; cloudy.  
29—Fine, but windy; cloudy and boisterous.  
30—Fine; windy; cloudy; showery.  
Mean temperature of the week  $\frac{1}{2}$  deg. above the average.

#### STATE OF THE WEATHER AT CHISWICK, During the last 27 years, for the ensuing week, ending July 9, 1883.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.					
						N.	N.E.	E.	S.E.	S.	S.W.
Sunday 3	75.0	67.3	63.6	12	0.78 in.	1	1	1	1	1	1
Mon. 4	74.8	62.2	64.3	11	0.73	1	1	1	1	1	1
Tues. 5	78.6	62.1	65.3	5	0.24	1	1	1	1	1	1
Wed. 6	77.0	62.8	64.9	10	0.59	1	1	1	1	1	1
Thurs. 7	74.0	53.0	63.5	10	0.51	1	1	1	1	1	1
Friday 8	74.3	61.1	62.7	9	0.46	1	1	1	1	1	1
Satur. 9	73.9	50.6	62.2	4	0.4	3	1	1	1	1	1

The highest temperature during the above period occurred on the 5th 1852—therm. 79 deg.; and the lowest on the 4th, 1851—therm. 57 deg.

#### Notices to Correspondents.

**ASPARAGUS:** *Sub.* In cutting Asparagus from old beds, the small heads, that are too small to use, should be cut with the others, and not left to go to seed. As soon as you have done cutting allow all the heads to spring up, and encourage them by manure to make all the growth possible in the course of the summer.

**BOOKS:** *J. S. B.* There is no "Herbalist" worth a farthing. Several books have been written on Medical Botany, any of which you may consult with advantage.

**BOTTOM HEAT:** *X.* Why cannot you use leaves for the heat wanted by the roots, and 4-inch hot-water pipes for air-heat? If the former is impossible, then two rows, flow and return, of 4-inch pipes are amply sufficient, and there is nothing objectionable in the other part of your plan, if you intend to grow your plants in pots instead of the open soil.

**DARNEL:** *P. J.* asks for some information respecting this Grass, the *Lolium temulentum*. He says that he doubts greatly its possessing any poisonous quality, as is alleged, and that he has in vain sought for some personal knowledge of its nature among his parishioners and acquaintances.

**FERN-HOUSE:** *Sub.* Hartley's rough plate will answer perfectly for your house with a north aspect. Ferns do not require much heat. A 3-inch flow and return pipe will be ample.

**GRAPE:** *G. N. and Y. X.* The disease affecting your Grapes is sometimes termed *bl-tting*, for which there is no specific remedy. A portion of the tissue gives way under the skin, a depression is formed, and ultimately a blotch. All you can do is to keep the house well aired, and use means to maintain a healthy foliage. By so doing, although the disease cannot be remedied in the present season, its occurrence may be prevented in future. *Sub.* Send them to 21, Regent Street. The Society will pay the carriage.

**GREENHOUSE PLANTS:** *Alba.* What you may grow without fire is uncertain. Camellias, certainly; Oranges, perhaps; Indian Rhododendrons, Chinese Azaleas, plants generally from Van Diemen's Land, Chili, and Patagonia, with Liliums of all kinds.

**INSECTS:** *C. T.* The leaves of your fruit trees are infested with the species of mite commonly called the red spider. Careful fumigation with sulphur and tobacco, and syringing the leaves alternately with gas-tar water and clear water will prove beneficial in checking their ravages. A free circulation of air is also requisite. *J. A. T.* The Cabbages on the Rhine are attacked by *Haltica consobrina*, a species allied to the Turnip flea-beetle (*H. nemorum*), which we suppose is the species to which you allude, with buff longitudinal streaks down the wing cases. *W.*

**LATE PEAS:** *Amateur.* So much depends on the weather with regard to late Peas, to come in in September and October, that no particular time can be stated; nor can any one sort be altogether depended on. You may now sow the New Long-pod, and some of Knights' Dwarf Marrow; also Bishop's New Long-pod. Make successive sowings of the *Auvergne* till the end of July.

**MAGNOLIA FUSCATA:** *A Constant Reader.* The evil is, no doubt, to be found in the roots; but what its nature may be, we cannot tell; possibly dryness, possibly pot-binding, possibly exhausted soil.

**NAMES OF PLANTS:** *Willmiersii.* *Calycanthus floridus.*—*Clara.* 1, *Alchemilla argentea*; 2, *Tiarella*?—*H.* We do not know what *Genethyllis tulipoides* is. *Genethyllis* is a genus of dotted-leaved shrubs, of the Myrtal alliance, with a strong scent; it comes from New Zealand. What species of *Genethyllis*, if any, has come into cultivation we are unable to say.—*E. S.* *Helianthemum vulgare*, the variety with dark red flowers.—*H. & W.* 1, *Bromus sterilis*; 2, *Bromus murinus*; 3, *Bromus mollis*; 4, *Foa pratensis*; 5, *Cynosurus cristatus*.—*J. L.* *Salix Helix*, *Centaurea Cineraria*, *Lycoris aurea*.—*Wheatfield.* *Salisburia adiantifolia*.—*Sub.* It is a small-flowered variety of *Saccolabium guttatum*.

**PACKING FRUIT:** *M. H.* Peaches for travelling by railway or otherwise should be packed in a box divided into compartments adapted for a single fruit with packing. These compartments should be deep enough to admit of an inch or so of cotton in the bottom without raising the Peach quite to the level of the top. Wrap the Peach in tissue paper and place it on its base in the compartment. Then pack in as much cotton about it as possibly can be done without danger of squeezing the fruit. When supposed to be finished, take the box and shake it, to see if all forms one compact mass; if it does appear so, you may conclude that under ordinary circumstances the fruit will travel safely hundreds of miles. With regard to Grapes you must give them a good thick bed of cotton wadding, and on this, by means of ties from the bottom and sides of the box, let the bunches be well secured by the stalk and shoulders. In doing this, great care is necessary, otherwise the bloom would get rubbed. Put nothing on the bunches, merely the lid over them. If you allow tissue paper or anything smooth to touch the berries, the bloom will certainly be wiped off. It may be as well to observe that Grapes and other fruits which have a bloom to be preserved, should not be put into a cool place previous to being packed; and if they should have to travel in cold weather, the box should be enclosed amongst warm substances. On a warm exhibition day, Grapes that had been much colder than the air with which they become surrounded appeared as if they had been dragged through a river. Any one may convince himself by placing a bunch for a night in a temperature of 40° to 50°, and then in a calm atmosphere of 75° or 80°. The berries will soon be regularly dewed over; if you wish to see the water condensed in patches, introduce occasionally a draught of cold air.

**STRAWBERRIES:** *W. N.* We are unable to discover any merit in your seedling. As to the Black Prince, we have had it as ripe a week ago. Yours is very acid.

**TUBING:** *Falcon.* Since you have found that prepared linen does not wear well, that lead is too heavy and expensive, and that gutta percha becomes hard and difficult to move from place to place we would advise you to try vulcanised India-rubber lined with webbing.

**VINES:** *Enquirer.* We cannot find any Oidium on your leaf. The latter seems to be affected by something, but by what we cannot say.

**WASPS:** *A Dundee Correspondent* adverts to the very great abundance of these insects in his neighbourhood this year, and wishes to know whether this is a general fact. It is probable that the different sorts of wasps which he finds round him are different sexes; though he may also have more species than he is in his orchard.

\* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



# ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

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Students are admitted either as Boarders or as Out-Students. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as for agricultural education.

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THE GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM FOR 1853, by the FARM MANAGER, may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester.

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## ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—GLOUCESTER MEETING.

WEDNESDAY, JULY 13.—The Implement Yard open to the public from 7 in the morning till 6 in the evening; admission 2s. 6d. each person.—The Dinner of the Society in the Pavilion in the Spa Gardens, at 4 o'clock; doors open at 3. The Judges' Awards of Prizes for Live Stock will be read.

THURSDAY, JULY 14.—The Cattle and Implement Yards open to the public from 6 o'clock in the morning till 6 in the evening; admission 2s. 6d. each person.

FRIDAY, JULY 15.—The Cattle and Implement Yards open to the public from 6 o'clock in the morning till 6 o'clock in the evening; admission 1s. each person.

## THE DERBYSHIRE AND MIDLAND COUNTIES EXHIBITION OF POULTRY will be held at DERBY, on the 17th and 18th of NOVEMBER next. Open to all competitors. Schedules of prizes and regulations may be had on application to the Honorary Secretary, enclosing a stamped directed envelope.

Subscribers of 10s. 6d. will receive five tickets of admission to the private view on Thursday, the 17th. Parties wishing to become subscribers are requested to forward their names as early as possible. ALFRED MADELEY, Hon. Sec. Derby, July 2, 1853.

## HERTS AGRICULTURAL SOCIETY.—Open to all England.—The DRAINING MATCH is fixed for FRIDAY, the 22nd day of July inst., to take place on the Chisfield Estate, Stevenage.

THREE PRIZES will be given to Labourers (three in a gang or company), for the digging of Trenches, four feet deep, in the best and most expert manner.—First prize, 2l.; second prize, 1l. 10s.; third prize, 1l.

Competitors may commence work, which will be set out for them, at Six o'clock A.M. To such as do not gain prizes, the Judges will award fair compensation for the actual labour performed.

Parties intending to compete for the Prizes must send notice to the Secretary, on or before Saturday the 16th July.

GEORGE PASSAGHAM, Hon. Secretary.

The Holt, Welwyn, July 2, 1853.

## POULTRY SHOW.—The First Annual London Great SUMMER POULTRY SHOW will be held at the Baker Street Bazaar, on WEDNESDAY the 27th, THURSDAY the 28th, and FRIDAY the 29th of JULY, 1853. All Entries must be made on or before Saturday, the 9th of July. The Prize Lists and Rules can be had upon application to JAMES HENRY CATLING, Secretary.—Offices at the Bazaar.

### IRELAND.

AN OFFICER, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, JULY 2, 1853.

### MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, July 6	—Agricultural Society of England.
THURSDAY, — 7	—Agricultural Imp. Society of Ireland.
FRIDAY, — 12	—Meeting of the Royal Agricultural Society of England at Gloucester.
SATURDAY, — 14	—Agricultural Imp. Society of Ireland.

A very interesting report of Harley Thorn Farm, in Staffordshire, was given some weeks ago in this Journal, concluding with the following sentence:—"Mr. ETCHES seemed to pride himself on the size of his Turnips, and notwithstanding the rapid strides he has made in agricultural knowledge, in other respects it appears he has got to learn the value of a moderate sized root compared with a large one; and I do believe that were he starving to-morrow, and was told that he should have only three Potatoes for his dinner, he would be so blind to his own interest, and so regardless of either theory or analysis, that he would choose the three largest in the dish." Now this, though putting the case of the large roots amusingly enough, is not altogether fair towards the advocates of a moderate size. It never was pretended, that we are aware, that a certain number of small roots was preferable to an equal number of large ones, but only that a given weight of the

former contained more nutriment than an equal weight of the latter. And those who contended very strongly for the soundness of the latter proposition, were sometimes induced to assert that this superiority was so great that it might even extend to a given extent of moderate sized roots as compared with an equal extent of extravagantly large ones. The two propositions are far from being identical, for while in the case of equidistant plants the bulk may be supposed to diminish with the square of the interval, it increases with the cube of that interval, supposing the full use of it be made by increased growth on the part of the plant. To put the thing in another form: the bulk and weight of the crop increases with the cube of the diameter of the roots, while it diminishes only directly with their number. Though by doubling the diameter of the roots, you halve their number,\* yet as, supposing the number to have remained equal, you get eight times the quantity, the advantage is on the whole much in favour of the larger roots. Of course no such increase of diameter is in general obtained by such increase of interval, yet the advantage increasing so much more rapidly with the size than it does with the number leads to the conclusion that the fewer large roots are preferable to the more numerous small ones. Those who are inclined to dispute this conclusion contend that when a root, a Beet-root for instance, arrives at an excessive size, it does so only by such rapid watery growth as diminishes the quality as fast as it increases the quantity of the article; and till lately it has been believed by scientific men, on the ground of certain published analyses, that this might be the case. We do not think that the experience of practical men has led them to this conclusion; and we are happy to observe that more recent researches of chemists have led them to the conclusion at which farmers generally had arrived—that a crop of large roots contains more nutriment than one of small ones.

As this is the season when farmers are thinning their root crops—singling out their young Turnip and Mangold plants, and determining the interval which shall obtain between adjacent roots of the future crop, it may not be uninteresting to notice the paper on this subject, read some weeks ago by Dr. ARJOHN before the Royal Agricultural Improvement Society of Ireland. The practical conclusions of this essay, including correspondence on this subject with a number of successful farmers in some of the border counties, we have given in another column; they are selections from the correspondence of Mr. F. F. HAMILTON, who read them at the same meeting of the above-named society. The results of Dr. ARJOHN's analyses relate, it will be remembered, to composition, and indicate per centages—not acreable quantities; if therefore they indicate, as they generally do, the superiority of large over small roots, that superiority will, of course, be, *à fortiori*, greater when equal extents, instead of equal weights come to be compared, as an acre of large roots is generally productive of more tons than an acre of small ones.

The following is Dr. ARJOHN's table:—

	Nitrogen, per cent., in dry roots.	Nitrogen, per cent., in raw roots.	Azotised constituents, per cent., in dry roots.	Azotised constituents, per cent., in raw roots.	Per cent- age of total ash in dry root.	Per cent- age of total ash in raw root.	Per cent- age of phosphoric acid in dried roots.	Per cent- age of phosphoric acid in raw roots.
4. Large sugar Beet	1.980	1.971	12.592	1.254	11.44	1.1372	.5865	.05861
4. Small do.	.652	1.054	4.146	.670	7.43	1.2089	.3529	.05107
11. Large do.	1.778	2.333	11.308	1.484	7.32	1.6013	1.754	.02400
11. Small do.	1.625	2.535	10.335	1.612	5.88	.9172	...	...
5. Large Red Globe Beet	2.484	2.844	15.798	1.809	11.98	1.3717	.4245	.05400
5. Small do.	1.874	2.386	11.918	1.517	9.85	1.2539	.2076	.02377
6. Large Yellow Globe	2.281	2.647	14.507	1.683	14.57	1.6901	.4641	.05386
6. Small do.	1.670	2.324	10.621	1.478	7.97	1.1086	.1645	.02289
7. Large Long Red	2.416	2.747	15.365	1.747	12.36	1.4053	.3792	.04709
7. Small do.	2.008	2.440	12.770	1.552	12.24	1.4371	...	...
12. Large do.	1.888	1.968	12.007	1.251	13.62	1.4192	.5388	.06614
13. Large Red Globe	1.567	1.760	9.966	1.119	8.96	1.0062	.5275	.06926
14. Large Yellow Globe	1.803	2.058	11.467	1.309	6.29	9.458	.3513	.04011
1. Large Red Globe Mangold Wurzel	2.169	1.589	13.794	1.010	15.58	1.1404	.4449	.03859
1. Small do.	1.371	2.413	11.889	1.535	11.23	1.4475	.3772	.04864
2. Large Long Red Mangold Wurzel	1.749	2.443	11.123	1.553	10.24	1.4305	.3019	.04211
2. Small do.	1.777	2.300	11.301	1.463	9.80	1.3239	.1573	.02125
3. Large Yellow Globe Mangold Wurzel	1.026	1.211	6.625	.770	9.55	1.1269	.3106	.0366
3. Small do.	1.362	1.828	8.662	1.162	8.03	10.776	.4885	.06588
10. Large Long Red	2.375	2.199	15.105	1.398	11.99	1.1102	.2299	.02119
10. Small do.	1.929	2.301	12.268	1.463	9.24	1.1023	.2379	.02333
8. Large Swedes	1.698	1.580	10.799	1.005	5.96	.5542	.2955	.02750
8. Small do.	1.442	1.757	9.171	1.117	5.19	.6321	.2664	.03246
9. Large do.	2.081	1.876	13.235	1.193	6.46	.5820	.2750	.02479
9. Small do.	2.291	2.069	14.570	1.316	6.40	.5779	.3612	.03263
15. Large do.	2.031	1.604	12.917	1.020	8.18	.6462	.3620	.02850

We conclude with a condensed statement of the conclusions to which this table leads:—

1. In the case of the dried matter of the Beets, the albuminous compounds are greater in quantity in the large than in the small specimens. This relation, however, would seem to be constant only in the Beet, for the Mangold Wurzel and Swedes are sometimes not

\* You would indeed "quarter" their number supposing the interval between plants to be doubled; but the question now is, what distance shall our already obtained rows of young plants be singled out to, so that by doubling this interval the number is in reality only halved.

in accordance with it. The relation in question, though generally true, will probably be found subject to exceptions. It may, however, be observed, that the nature of the manure employed, which is well known to affect the amount of nitrogen in the crop, is, in these experiments, without any disturbing influence, as the larger and smaller specimens, compared with each other, have been grown on the same soil, and cultivated in every respect in the same manner.

2. The total ash of the larger is greater than that of the smaller roots. This is strikingly true of the Beets. It is also true of the Mangold Wurzel, though the differences are smaller, and of the Swedes too, though, in the latter case, the numbers approach to equality.

3. In the Beets and Mangold Wurzel the soluble ash, composed of alkaline salts, is much more abundant than the insoluble or earthy ash—the disproportion, however, between the two being greater in the former than in the latter variety of roots. In the case of the Swedes this difference is no longer observable, as the two varieties of ash do not deviate much from a ratio of equality.

4. If we confine our attention to the Beets, the phosphoric acid appears to follow the law of the nitrogen, or to be more abundant in the larger than the smaller specimens, and this is the result, which, from *a priori* considerations, I should have anticipated.

Let us add, in conclusion, that the object of the farmer may continue, as hitherto, to be—to obtain the largest possible crop undeterred by any fear of loss of quality. The interval to which he will thin out his crop must be such as he believes, under an average season, his plants will be able to make use of. On a comparatively poor soil, and in a dry season, these plants of course cannot grow so large as they would under other circumstances: never let their nearness to their neighbours be the limit to their size, however. On rich soils we have seen Mangold Wurzels thinned to 2 feet, and a crop averaging 8 to 10 lbs. has been the result, with many cart-loads in the field whose average would exceed 20 lbs. a-piece; and on suitable soils in good condition we would single Mangold Wurzels to 15 inches, and Swedes to 12, preferring the chance of a good crop from 16,000 and 20,000 roots, with an average weight of perhaps 5 and 2½ or 3 lbs. respectively, to that derived from a larger number with a smaller size.

It is true, as we stated the other day, that the only operating cause in land drainage is the weight of the water; and it is also true that the principal obstacle in its way is the attraction existing between the water and the soil containing it, to which the name of CAPILLARY ATTRACTION has been given. This capillary attraction, owing to the way in which tubes of various diameter dipped in liquid have been used in experiments upon it, has, we think, been generally conceived of exclusively as *lifting* water from below and holding it in the soil at a certain level above that at which by the drains it can escape. The fact is, that it operates in spreading water throughout the soil, in every direction from the supply. If we suppose the case of a given extent of level land, thoroughly dry to a considerable depth, the water which falls upon it not only sinks

in, owing to its weight, but spreads downwards and in every other direction, owing to this capillary attraction, which seizes hold of the water wherever it is, and draws it into the hitherto empty interstices in and between the particles of soil. The force with which this attraction operates depends upon two things—(1) the character of the substance between which these interstitial channels exist; but (2) mainly upon the dimension of these channels—being in a certain ratio inversely as their diameter. That there is a difference according to the material is



known from certain facts, such as that of the entire absence of any phenomena, corresponding to those of capillary attraction, between wax and water, or between glass and quicksilver; the result in these cases leading one to the idea that something equivalent to repulsion is in operation here: and the same truth is indicated in the extraordinary amount of that force in the case of vegetable substances, such as peat, mould, &c. And that the force varies inversely with the dimension of the channels in which its effects are studied, is known from direct experiments with glass tubes. We believe, then, that both these facts are in operation throughout the relations of soil and water, and that while the direct effect of this force is greatly increased by the former cause in the case of vegetable soils, it is greatly increased by the latter in the case of clay soils.

Our correspondent "Falcon" has, we believe, for once made a mistake; he states in page 364 that clay does not contain water; it certainly does contain water, and it retains it with greater force than any other description of soil, and though it may not be able to hold so much as sand or peat would do, yet that water is in it any well-digger, much more any analyst, will inform him.

Take, then, two cases of sand and clay, both full to the surface, and suppose a drain to be dug as deep as you like through each, we believe that on the sides of that drain the water will begin to trickle, or, as the phrase is, *weep* out of the soil at the depth of 1 to 2 feet from the surface in the case of the sand, and perhaps not till double that depth in the case of the clay; a column of water 2 feet high being able to "overcome" the capillary attraction in the case of water and sand, while the pressure of a column of water 4 feet high is needed to overcome the similar force in the case of water and clay. Hence we explain the success of deep drains on clay soils.

There are, no doubt, particles at every variety of distance from one another, even in the case of a clay soil—cracks visible to the naked eye, channels observable under the microscope, and probably interstices even in particles large enough for the ingress of water. If we suppose such a medium after drainage—a depth of 4 feet of it—lying upon a wet foundation, the water there will rise in it to various heights according to the dimensions of these channels. Or taking the case of such land after rain, the water in it will be retained at various levels above that of the channels by which it escapes, according, as we have said, to the dimensions of these channels. Out of the cracks it will at once run, unhindered, to the drains; in the microscopic channels it will remain at a certain height above the level of the drains, the water in such tubes being, however, *not* stagnant, for it runs out below as fast as it is added to above, and besides it spreads upwards into the smaller interstitial spaces yet, as these are emptied by evaporation from the outer surface of the land. We think that the three cases figured in page 330 are perfectly illustrative of the relations of water and soil under the combined influence of gravitation, capillary attraction, and evaporation.

#### OPINIONS OF PRACTICAL FARMERS ON THE BEST SIZE OF ROOTS.

I HAVE taken a great interest in the comparative value of large and small roots—not that I have any doubt on my own part of the utter impossibility of its ever being advisable to grow root crops in any other way than by cleaning the ground in spring, having the drills sufficiently apart to admit of tillage, and the plants in the drills at sufficient distances to hoe between them properly; and then growing the roots to the largest size that manures, industry, and soil will admit, but that I fear much injury would ensue from the contrary principles emanating from this society; and if the system of autumn tillage, narrow drills, and moderate-sized roots was generally adopted throughout the country, that, notwithstanding all that can be brought forward as to the chemical properties of the roots themselves, you will find no good follow from such a change of the systems. Foul land, short crops, and consequent starvation will be the result. Since our last meeting I have communicated with some of the best farmers in Berwickshire and Roxburghshire, and have obtained their opinion on autumn tillage, and the size of roots which experience points out as most remunerative; and as the men may be held as the first practical farmers in Scotland (and when I say Scotland, I think you must agree with me when I say the world), it may not be amiss to trespass on your time for a few minutes, and lay before you the experience of those who have spent their lives in a country where industry, and intelligence, and science, and practice have hitherto gone hand in hand. I merely wish to let you know the opinion of these men, and make what use you may of them in the further discussion on this subject. I shall therefore, in the first instance, read to you an extract from a letter from Mr. Dudgeon, of Spylaw, the President of the Kelso Agri-

cultural Society, and the author of many interesting articles in the Highland Society's Journal:—

"I think it is pretty generally admitted that roots of a moderate size are superior, in feeding properties, to large bulbs, which, besides, are more apt to be affected by frost, and thus have their quality deteriorated in the latter part of the season. An important part of the inquiry comes to be, of which can you grow the greatest weight on a given quantity of ground? for if the large roots were in the gross heavier, though individually inferior, they may be found to yield the larger amount of saccharine matters per acre. I send you the result of an experiment I instituted this season, as to this point, in the growth of Swede Turnips, which I shall be glad if it prove of any use. The season is the great impediment to autumn tillage, and in your climate probably still more difficult than here; but where it can be adopted, it no doubt serves a good purpose, especially on lea soils; but here, again, the risk is great, of entering on the task without being able to finish it satisfactorily.

Result of Experiment on Swede Turnips, singled respectively in lots of an acre each, at 8, 11, and 14 inches, one-fourth of each lot weighed gave—

		Tons	cwt.	qrs.
No. 1, at 14 inches apart	...	5	4	3
" 2, at 11 inches apart	...	5	13	0
" 3, at 8 inches apart	...	5	1	1½

This being at the rate of—

		Tons	cwt.	qrs.
No. 1	...	20	19	0
" 2	...	22	12	0
" 3	...	20	4	2

The number of roots in a cartload of the same weight was respectively—No. 1, 347; No. 2, 370; No. 3, 570.

My next extract is from Mr. Geo. Robertson, of Harperstown, near Kelso, a very extensive grower of root crops:—

"I should never advise any one to attempt to till or clean land in autumn for an ensuing Turnip crop, to be sown in May or June. I would recommend the land to have a deep autumn furrow, and, when exposed to the winter frosts, it becomes easily cleaned and prepared for root crops; and by working the land well, and a generous application of manure—I would say, from my own experience of farm-yard manure, bones, and guano combined—with the land well prepared, the drills 27 inches apart, and the plants hoed to 10 inches, there would be no doubt of raising the most successful crop. The larger the roots and the greater weight per acre will always yield the greatest profit; and that produced by the liberal application of manure must carry on that land successfully for future cereals. Autumn tillage I decidedly condemn in this climate, as quite out of season, while the land is left with a close surface and impenetrable to frost, which is the life of it, and half manure. A small root has no feeding qualities, wiry and unnutritious, indicative of the want of mutual kindness, or the fundamental want of the means afforded to produce a large and more healthy weight of crop, in point of quality as well as profit. I have had this year 220 acres of Turnips on my two farms, and a most abundant crop. Perhaps I ought to have remarked that we always consider a root crop a restorative to land; and by making the drills 27 inches apart, you are enabled to horse and hand-hoe between the drills during the summer, until the tops close, when the land becomes enriched by its exclusion from atmospheric heat or drying wind, the surface being closely covered by the green tops."

Mr. Roberts encloses me a very valuable table of results of experiments made in guano and other artificial manures by the Kelso Farmers' Club, which I intend giving to Mr. Harkness, in case he should think it worth while publishing in the Journal.

The next extract is from John Elliott, Esq., of Primrose Hill, Danse, a very extensive Berwickshire farmer:—

"We have two classes of soil on which we can successfully grow root crops. The light friable and the middling stiff clay, in the management of which I give you my practice. The clay portion is ploughed first to the depth of from 10 to 14 inches, after the grain crop is removed, that it may be fully pulverised by the winter frosts. Should there be any weeds in this portion, I should rather they remained all winter, than disturb the first furrow by ploughing or otherwise, in order to remove weeds. We always find land lying more open on the first stubble furrow than if ploughed a second time. Moreover, the weeds will come easier out in spring than during autumn. I put the drills 28 inches apart, 18 tons of farm-yard manure, and 2 cwt. of Peruvian guano on top of the dung, and single 12 inches apart. My opinion is, the longer you can possibly grow roots on clay soil the better the quality, and *vice versa* on light land. I made an experiment in singling Turnips this season; and found Turnips singled 13 inches, gave me 2 tons 17 cwt. more than those singled at about 9 inches. The former were larger and more equal, having less top. This season I shall single my Swedes 12 inches, and white Turnips 9 to 10 inches."

My next opinion is from Mr. Etches, the successful sheep-feeder, in Staffordshire:—

"You ask me which I prefer, large or moderate-sized roots? In the Smithfield Cattle Show, a few years ago, I bought two beasts, to be killed at Ashbourne at Christmas. Wanting to give them something to eat before I put them into the horse-box, I went to Skirving's stand, and brought away, one under each arm, two Swede Turnips, and, with my pocket-knife, got a good sweating by cutting up these two Turnips, 28 lbs. each. One to each bullock was a pretty good feed. Where is the gentleman that, in my presence, dare

venture to advocate the quality of small roots compared with large ones! For instance, measure the rind of seven 4 lb. roots, and one 28 lb.; whichever produces the most inches of rind is of the worst quality—the solidity of the root gives the weight."

The next extract is from a letter received from Mr. George Henderson, East Gordon, by Kelso:—

"I am quite against autumn tillage, as I consider that the land is often so much poached that it does a great deal more harm than good, and can never be made perfectly clean. Mr. Wilson, of Edington Mains, has been trying the grubbing system this autumn, and it is considered by many quite a failure. Another objection to the system is, that I think the land ought all to be thoroughly well ploughed up at that season, with three or four horses, if it could be accomplished, and in that case cleaning is out of the question.

"In regard to the growing of roots in drills, from 18 to 20 inches, I consider it madness, as I have always found that I have grown the best crops of Turnips in drills from 27 to 28 inches. In the narrow drills there is not sufficient room for working and cleaning the land with the small ploughs, and I consider you never can plough too much between them, as long as the tops will allow you. In narrow drills you would only grow tops instead of roots, as all plants require air, and I know of an instance of one of the best farmers in East Lothian cutting off a part of the tops, to allow more air. You speak of growing roots in the narrow drills, from 18 to 20 inches wide, and the roots from 9 to 10 inches apart. I at all times prefer large roots to small ones, over the land, as they naturally take 'far more eating.' I can say nothing of Beet-root, having only tried it once, when it did not succeed."

The next is from a very extensive farmer on his own property, Frederick Roger, Esq., of Nenthorn House, near Kelso:—

"In answer to your inquiries, I beg to say I made my drills 28 inches apart, which I consider close enough; the distance between the plants from 10 to 12 inches separate. I think the wider distance to be preferable; if allowed to be closer, the leaves are so close as to prevent sufficient air getting to the roots, and consequently there is less nutritious bulk per acre by the plants being close than when they have sufficient room and air to grow. Were I to make any alteration, I would be disposed to make the width of the drills 30 inches, and the distance of the plants fully 12. I have never found the Turnips grow too large on wide planting; but there is one advantage, that they average a good size, whereas, in close planting, I have frequently seen that they grow unequal—that is, some of the plants come to a large size, whilst the weaker are overtopped and smothered. In thinning with the hand-hoe, the farmers here are now generally adopting larger ones than they used, so as to prevent the possibility of the workers leaving them close. As to preparing the land in autumn for next year's crop, it is difficult, after the corn crop is housed, from the advanced season of the year, to do more than give it a very deep furrow, and leave it exposed to the frost until the spring corn is sown, when we commence working it. I have this year 150 acres of Turnips."

The next extract is from Mr. Gilbert Steward, of Runningbourn, Roxburghshire, also a very extensive Turnip farmer.

"I unhesitatingly condemn the doctrines of the Sugar Beet Company. In the first place, as regards the tilling and cleaning of the ground in autumn, I consider it quite impracticable; for if tilled for a crop in autumn, the land will become consolidated, consequently the operation will have to be repeated in spring; the land should be deeply ploughed and subjected to the winter's frost, and cleaned in the spring. In the second place, I think it folly to have the drills less than 28 inches asunder; the more air the root crops have the better; for if you made the drills but 20 inches asunder, they could never be properly cleaned with horse labour. I would therefore say, make the drills 28 inches asunder, and thin the roots from 9 to 11 inches, according to the quantity of soil; and I think you will agree with me that the larger you can grow them the better, and the heavier the crop the more profitable will it be for the producer. There is another important thing to consider with regard to the narrow drills, that much more labour is required, both in forming the drills and in thinning the crop."

My next extract is from William Bosq, Esq., of Sweethope, Roxburghshire, a considerably larger root-crop grower, factor to Sir James Colquhoun; and the person to whom I am indebted for the little I do know of root culture, having spent a long time on his farm:—

"My anxiety has always been to grow large roots, and I never yet had to complain of my Turnips being too big, nor do I think they ever can be so, under proper management and a judicious use of manure. I defy the advocates of narrow drills and moderate-sized roots, or any other man, to clean his land sufficiently with having his drills less than 27 inches asunder, so as to admit of the free use of the small ploughs and scuffle. You say it is recommended to clean the land in autumn; I say, first remove original sin, and the curse denounced against the ground at the Fall. Your friend should have farmed the garden of Eden. I never had the luck to farm land which I could clean in autumn, and if I had, I never could find time to do it; they must forget that, clean land in autumn as you will, there exists a certain class of weeds which are then invisible, and the deeper you trench or plough, the greater the amount of weeds you rescue from oblivion and bring into vegetation. If your friends



ust have moderate-sized roots, let them pull them when they arrive at the size they fancy. To this they say, 'They won't keep.' I say they will keep after when pulled quicker than when allowed to become pe; but, as I said before, no roots are too big, so long as you can grow them sound." *F. F. Hamilton, at a cent meeting of the Irish Agricultural Improvement society.*

### THIN SEEDING.

In discussing the question of thick and thin sowing, the advocates of both practices have too generally condescended for standard quantities, thus overlooking the different circumstances in which plants are placed, and the innumerable enemies with which they are surrounded. For example, do soils of all kinds require an equal quantity of seed? While soils are so diversified in quality, so differently situated as to climate and season, and still more diversified as to fertility, from a greater diversity of practice, have we just to measure out so many pecks and half pecks, pints and half pints to the acre, in order to get the greatest amount of produce? Theory is certainly not more nice in questions of this kind than practice, but we are afraid that in theorising on the subject, theorists have elevated their practice to a standard very different from what the facts of the case, generally speaking, will admit; for, granting that the geological formation of soils is the same, and that climate and season are also upon a footing of equality, practice is so diversified that it will be found no easy matter to select two examples approaching to any common standard of fertility, requiring equal quantities of seed, for so easily is the balance affected, that farmers find it next to an impossibility to keep up the different yields of their farms to a uniform degree of fertility in one rotation; seldom, indeed, do we see even single fields of a uniform degree of fertility, so that individual experiments are of little value on the class of soils in question; and when we take into account diversity of soil, climate, and season, it becomes a still more difficult question to deal faithfully with experiments, so as to establish practical rules. There is perhaps no science so dependent upon experiment as that of agriculture, and none where experiments are surrounded with such a host of perplexing difficulties, rendering a considerable period of years necessary to give efficacy to a single theorem—a conclusion, the soundness of which will appear still more obvious after we have glanced at the enemies already referred to, with which plants are surrounded, as Wheat for example; for, the life of the Wheat plant may justly be said to be one of probation, from the moment it is set apart for seed, up to the time its produce is measured from the new mowing machine, it is surrounded with enemies not less in magnitude than diversified in character, so that after experiments have been performed, extending over a series of some 10 years, the utmost that we can deduce is a vague sort of generality liable to many objections, for periods of 10 years are as diversified in character as the produce of different seasons, and hence may be wholly insufficient for the establishment of practical rules. Indeed, experience has long ago certified that a lifetime is not more than sufficient to lay the foundation for any theory upon a solid foundation; and a very cursory glance at the life of the Wheat plant will show that the theory in question is not an exception from the generality of examples.

The first ordeal which seed Wheat has to endure is "pickling," to destroy the fungi with which it may be infested, and this is seldom performed without impairing to a certain extent the vitality of the seed. It is difficult to kill the parasite without inflicting an injury, and its injury not infrequently covers the pints and half-pints of our infinitesimal theorist. That unnecessary damage is sometimes done in this respect, which ought to be avoided, will readily be granted, and that the benefits which the young plant may derive from the lime and other substances used in the process of pickling, may afterwards, under favourable or proper management, counterbalance any losses unavoidably sustained, may be equally plain; still data of this kind, considering the difference which exists between old and new Wheats of different soils and seasons, and the almost uniform leading rule preserved in the process by servants, are by no means easily estimated in the reporting of experiments. Next we have a difference in the seed bed and methods of sowing, productive of very different results. That science points to a specific degree of moisture, season of sowing, and depth at which seed should be deposited, and readily be granted, but her theorems in this respect are by no means easily reduced to practice with our most improved machinery on drained lands; while in undrained lands much of the seed perishes during the most favourable seasons. If the season be dry, the machine, whether drill or dibble, may sweep along, depositing the seed regularly at a uniform depth; but if it be the reverse is experienced, and between the two extremes of good and bad seasons we have a great variety to notice in recording experiments. Climate exercises a very peculiar influence, and the climate of the British Isles subjects the Wheat plant to a greater variety of circumstances affecting its health and productivity than is, perhaps, experienced in any other part of the world. Again, bad seasons give rise to a host of weeds ruinous to the Wheat plant, and in cases of this kind the thinner the plants, the easier the conquest. Then we have wet and dry springs and summers, with the twofold class of enemies ready to prey upon

plants the moment the influence of spring calls their vital energies into action, viz. *fungi and insects*. With the havoc which these play, and the diversity of results which they give rise to in the harvest field, farmers are familiar. And after crops have arrived at maturity, they are far from safe, being at the mercy of wind and rain, growth in the shock, heating in the stackyard, and being consumed by rats, mice, weevils, &c., before being threshed and sent to market. Now such being the state of the Wheat plant it is very obvious that a series of years is necessary to settle the question of extra thin sowing, during which its advocates may expect to experience many reverses; for farmers have always been guided by experience in the question of seeding the ground, and before drilling and dibbling were introduced experience had satisfactorily established the rule under the broadcast system, that the sower in sowing fertile hollows had to lengthen his pace and fill his hand less fully, while going over hungry hillocks the practice had to be reversed, and that generally speaking, thick sowing was preferable to thin in ordinary seasons. Now the only difference between the practice of our forefathers and the new-fangled systems of modern times is a certain waste of seed against the former. *Ergo*—deduct a given waste from the practice of our forefathers, and the balance is the rule for modern times. *B.*

### Home Correspondence.

*Extent of Land occupied by Fences.*—I think it will be useless for me to give more than the average extent of hedging, or rather the sizes and numbers of them, which I have found from examining a district of a very highly cultivated part of Kent, extending from the foot of Boughton Hill to Stockbury Valley, east and west, and from the Swale, on the north, to a mile south of the London and Dover Road, portions of which I have measured with a pedometer, without any regard to parishes, but only as forming boundaries of the various farms; but with merely these facts of this one district, no conclusions of the actual extent of damage or injury done to the farmers in the kingdom by the size of the hedges, or their excess in number, or the abundance of the timber they may contain can be arrived at; but my result, so far as the district and fences alone are concerned, is that about 5 per cent. of the land is occupied by fences. *Faversham.*

*Samuelson's Digger.*—You kindly replied, a few weeks ago, to my inquiries as to the merits of the above-named instrument, by publishing a report of its operation, witnessed by yourself at Banbury, on the comparatively light soil of that district. It will interest the owners and occupiers of heavy land to be told what it can perform in breaking up and pulverising the stiff clays of Surrey. I saw it at work a few days ago on the estate of my next neighbour, Mr. Cardus, of Boswell Court, near Kingston, and was struck by the ease with which it "walked into" a field of fed-off Tares, the ground being well solidified by a flock of sheep folded on it; the first passage of the instrument cut the soil into cubes averaging about 3 inches on the face, and drew out the Couch Grass by the roots without breaking them, leaving the whole plant on the surface of the ground, which is now ready for the harrow, or another turn of the digger a few days hence, to complete its preparation for a seed bed 8 to 10 inches deep. It performed its work also very well on some stiff land of my own, which, owing to a winter and spring most unfavourable to clay soils, was in a very rough condition. Mr. Cardus is using the machine daily, and will gladly allow those who feel an interest in the subject to witness its operation. His farm is but a short distance from the Kingston station, on the Leatherhead Road. *W. B.*

*Scufflers or Grubbers.*—Agricultural correspondents have been full of complaints lately of the difficulty of breaking up their fallows to a "tilt" sufficiently fine for root crops; clod-crushers have not done their work well, ring-rollers and Norwegian harrows have been equally powerless to subdue the tenacity of baked clay, therefore it may not be out of season to suggest one or two essential points that may help the distressed farmers to a solution of the problem as to what are the requisites of a good scuffler; and these, I imagine, are comprised in an implement as broad as the common roller, with sufficient weight of timber in the frame to hold firmly curved tines of from 14 to 18 inches in length, and yet not too clumsy for four horses to draw over rough or heavy land. The point here indicated as deserving investigation at the ensuing agricultural shows, particularly that at Gloucester, is the weight and framework of the article—now whilst some cultivators or grubbers, or by whatever name they may be called, are a mere dead drag to pull through a "whole furrow," and so pull a good team all to pieces. Where the soil is tenacious, or the land very foul with twich, cross ploughing ought to precede the scuffler, which should be light enough to ride easily, and yet heavy enough to turn a fresh surface of each clod to the iron roll every time the field is traversed—first, in the track of the last ploughing, and then across or at right angles to it. The scuffler should be heavy enough to bottom the furrow, but not so heavy as to mark a fresh track below the bed cut by the plough; and the width is important, as, although a triangular-shaped implement, 4 or 5 feet wide, looks very handy and is convenient for a small farmer, working only a pair of horses or so; yet in a large field, where a roll or pair of harrows are working simultaneously, it will be found to save much time and simplify the process, if the several implements took the same breadth

of land at a bout. If the scuffler fulfil these conditions, the less complicated the parts for regulating and tackling the better; it will then be kept in order at little expense, more readily carried about, and easier to manage in action. *J. W., Peterborough.*

### Societies.

#### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House in Hanover Square, on Wednesday, the 29th of June: present, Lord ASHBURTON, President, in the chair; Lord Camoys, Lord Kinnaird, Lord Walsingham, Right Hon. James Grattan, Sir Matthew White Ridley, Bart., Sir John V. B. Johnstone, Bart., M.P., Sir John Croft, Bart., Mr. Alcock, M.P., Mr. H. Austin, Mr. Buller (Dilhorne), Dr. Calvert, Mr. Cavendish, Mr. Chadwick, Mr. Commerell, Mr. Dyer, Mr. Farquharson (Langton), Mr. Brandreth Gibbs, Mr. Baskerville Glegg, Mr. Fisher Hobbs, Rev. C. T. James, Mr. Cuthbert Johnson, Mr. Livesey (High Sheriff of Lincoln), Mr. Manning, Mr. Mechi (Tiptree), Mr. Orlebar, Mr. Paine, Mr. Parkins, Mr. Phelps, Mr. Puller, Mr. Severa, Mr. Aug. Smith, Mr. R. Trench, Mr. Trimmer, Mr. J. E. Thomas, and Prof. Way. The following visitors were also present: The Hon Stephen Salisbury and Prof. Nash, from the United States of America; Mr. Wilson, Farm-Bailiff at Windsor to H. R. H. Prince Albert; and Mr. Rammell and Mr. Ranger, from the General Board of Health.

The names of 56 candidates were announced for election into the Society at the next meeting of the Council.

**TURNIP HOEING.**—Mr. Hudson of Castleacre called the attention of the Council, in the following passage, to a revolving horse-hoe for Turnips, made by Mr. Martin, of Barmer, near Fakenham, in Norfolk:—

"This newly-invented implement is intended to set out the Turnips in the drills. I saw it in operation a few days since; it does the work exceedingly well, and will prove a great saving of labour. I have myself ordered two of these implements, and expect that they will save the cost-price the first year, as I shall have 200 acres of Swedes all ready to set out in one day, and without these machines it would be impossible to get them done in time."

The advantages which Mr. Martin claims for his new hoe are the following:—1. To cut or hoe out, fit for being singled, Turnips, &c., as now done by hand-hoeing on either flat or ridge; 2, to do two or more drills at one time at any width; 3, to leave the plants at any distance apart; 4, to cut the land to any depth required, and with one man, one horse, and a boy, to do from 10 to 12 acres a day upon the 27-inch work.

The Council ordered their best thanks to Mr. Hudson, for the statement he had transmitted to them, and for the drawing by which it was accompanied.

**SEWERAGE MATTER.**—Professor Way, the consulting chemist to the Society, favoured the Council with his views on the management of the sewerage matter of towns, and its agricultural application, reserving for the paper he was preparing on the subject, for the Society's Journal, the full details intended by him to illustrate and confirm the views in question. He first referred to the fallacious pretensions of many plans proposed for the extraction and concentration of manuring matter; and then explained the sanitary management of excrementitious matter in Belgium and in France, particularly noticing the recent valuable report made to the Board of Health by Mr. Rammell, on the arrangements on this subject in Paris, and to the Poudrette manufacture in that capital. He then proceeded to explain the difference in reference to the London sewerage, on account of the large amount of water which entered into its composition. He estimated this supply of water at 44½ millions of gallons a day, and considered that all excrementitious matter, sooner or later, found its way in a comminuted state into this large mass of sewerage. He regarded rain-water, too, as being highly charged with manuring matter; and detailed some interesting results of experiments made on street-water as it rushed to the gully-holes of the sewers, which showed it to contain a much larger amount of soluble salts, especially salts of potash, than sewerage water, and proved that such washings from the streets improved rather than impaired the manuring quality of the sewerage water generally. The sewerage matter was in two states:—1. In solution; 2. In suspension. He explained that the solid matter in sewage was only the woody or fibrous refuse of solid excrement, while ammonia and the more valuable substances were retained in the liquid form. At present he was aware of no method to convert sewage into solid manure that would pay. It had been said that the liquid left after the removal of the insoluble portion of sewage, was "inodorous, tasteless," and might be thrown into the river; such a result might fulfil sanitary but not agricultural conditions. The question, however, was a double sanitary and agricultural one; and the two interests combined would greatly facilitate their general and special objects, which were much retarded, while each party stood aloof. Professor Way then detailed the various substances proposed for the filtration of sewage, and the various precipitants to effect the subsidence of its grosser matters; he referred to the plans of Higgs, Moffat, Stothert, Wickstead, Herapath, and Dover; to the peat-charcoal filter of the sewage manufactory company at Fulham; and to gypsum, sulphates of iron, magnesia, and zinc; the alum salts, burnt clay, and peat and animal charcoal, as precipitants and filtering substances respectively. But no plan was efficient that does not include, in the solid



matter obtained, the various salts dissolved in the original liquid. The milk of lime employed in Higgs' process clears the sewage from colour, but leaves in it nearly all the organic matter. London water, too, was hard, already holding carbonate of lime in solution; when quicklime was added a large precipitate, consisting of double the quantity of chalk, was thrown down, and thus increased, by so much comparatively inert substance, the solid matter obtained, 30 grains of chalk being obtained in this manner from every gallon of sewage liquor. He would prefer separating the sewage matter by itself; but even that would only contain from 2½ to 3 per cent. of ammonia, and would not pay. He recommended farmers to avail themselves of the strongest and best manures, as occasioning less expense in the original cost, carriage, storing, and application. Many methods had been proposed to facilitate the mechanical separation of sewerage matter and to deodorise it; but in all these, the valuable salts were left behind. Peat and other charcoal did not arrest ammonia, as had been supposed, but absorbed it as gas by a peculiar power of surface which the charcoal exercised; but water, having a tendency to unite with ammonia, washed this gas out again; charcoal, however, retained the solid matter, and deodorised it, but did not separate the soluble salts. He then referred to the application of burnt clay on soils to the purpose of absorbing manuring matter; but showed that the effect of carrying out manure to the field was very different from that of bringing a portion of soil to the manure, the relative proportion in this case deciding the result. Soil, in fact, could not be used as a filter; it could not economically be taken into the town and then out again into the fields. No plan, he believed, was at present known by which the whole of the sewerage matter could be obtained in a solid state, excepting by evaporation; and that of course was out of the question. Prof. Way was aware that every one who took a deep interest in any subject, looked with particular favour on views which he himself entertained and had originated; and accordingly he felt a natural interest in the successful application of the silicates, to which he had often made reference in that room: he really believed, however, that these substances, or something analogous to them, were the only likely means by which the potash and the other saline matters could be removed from the sewage liquor in a solid state. But he considered it unwise for farmers to make manures, while they could purchase them at a cheaper rate than they could themselves manufacture them. Unfortunately those low lands that could most easily be reached by water, were the very kinds that least required manure. Liquid sewerage, as a whole, he thought offered the largest prospect of success, as the whole of the manuring matter was, in that case, utilised. A disagreeable odour was occasioned by its sulphuretted hydrogen, but there was no great loss of manuring value. The usual outlets of sewers naturally occurred in those lower levels which, as he had just remarked, least required manuring, being beds of river alluvial deposits, consisting of clay nicely tempered with sand. The poor thin high grounds, particularly in sandy districts, were those which most required the aid of manure. Pumping the sewage up again was the only plan; but half-way measures would be a failure. The farmer should have the power of using it on levels as high as the towns. In some of these, as Exeter, situated on a circuit of hilly ground, it would be waste of power to bring the sewage down from them to the lower outfall, and then to pump it up again; but it might, he thought, be economically employed in contour lines around such towns. But generally speaking, the distribution of liquid manure, to be fully available, should be effected on an extensive system; it was ridiculous for a place like Edinburgh, with its large amount of inhabitants, to supply liquid manure for only a few thousand acres; such excrementitious matter ought to yield manuring elements for hundreds of thousands of acres, if applied at once to the land.

Mr. Chadwick begged leave to say for his colleagues of the General Board of Health, that however strongly convinced they were of the superiority of the principle of applying the refuse of towns for cultivation, in the form of liquid manure, they would, nevertheless, have been glad if there had been better results from the various trials with precipitates of sewerage, and better promise than Professor Way's very important investigations into the patented and chief methods hitherto tried, yet gave them. He (Mr. Chadwick) had done what he could to facilitate experimental trial works for precipitates, as experiments, for there were many cases of towns so situated, as a small town near the sea-side, with the sea for the out-fall, with high cliffs behind, and with no land on the cliffs on which to apply it, even if the quantity were sufficient to pay for engine-power to lift it; where, unless the manure in the sewerage could be precipitated and rendered portable, there appeared to be as yet no alternative at present but to throw it away. Where, however, there were means for its application in the liquid form, it was mere waste of expense in labour and material—of the materials used in the process, as well as of the manure itself—to reduce it to the solid form from which it must again be liquified; for, unless it were liquified for application, half its effect would be lost. This result had been exemplified by Mr. Pusey in the trial of the comparative merits of the water drill and the dust drill. It had been elsewhere shown that the risks of loss were diminished, and the efficiency of guano was doubled by applying it in water. Mr. Herapath had told him (Mr. C.) in relation to a plan of precipitating town sewerage, with which it was to be

hoped he might succeed, that the raw materials alone requisite for the production of a ton of solidified manure would cost about 7s. In other instances the cost was greater; but supposing it to be so, and supposing the distribution of the sewerage to be from such points as the reservoirs, to which it was proposed to bring it for precipitation from that point, and for that 7s. 300 tons of liquid manure might be at once distributed directly on to the land, there to be safely held, not merely in mechanical suspension, but, as experience had shown, in chemical combination, and to be safely stored or prepared for the plant in Nature's own laboratory, the soil. When he first recommended this mode of application only single dressings were thought of, and it was supposed that the storage room required during the long intervals of the applications would be so enormous as to render the plan impracticable; but one most important point of successful experience for farms as well as for towns was that they might go on pumping the manure into the land, on fallows, all the year round, except during the frost. From the filling of his tanks to overflow, with the liquid as well as the solidified manure, Mr. Kennedy, of Myer Mill, had been compelled to do so, and the permanence of the absorption, the complete and satisfactory storage in the land, was shown on the crop, on which, as in steps, every extra dressing with liquid manure was distinguishable. Experience was accumulating also as to the superior quality, as well as the quantity of the produce from the sewerage of towns. In the course of the drainage works carried on under the Public Health Act, it was often necessary to change the outfalls and the courses of old sewers, when up started claimants to compensation on the ground of prescriptive uses and rights, and for the loss of a manure yielding produce unequalled in quality. In one case some surprise was created by the pains taken by a farmer to get himself appointed surveyor to a town under the Public Health Act. It was found that he had done so, in order to prevent the diversion of an outfall, of which he had long made quiet and unobserved use, for the production of a superior Grass. When he was assured of the continuance of his supply for a term of years, at a moderate rental, he resigned his surveyorship. In another case, a market-gardener came forth and objected to the diversion of an old sewer from which he had grown the best produce, and amongst other things, the finest Mignonette of the richest scent that during many years had been sent to Covent Garden market. The difficulties in the extension of the system, were not upon any doubt as to the certainty and economy of the means, or as to the value of the produce, on the part of all disinterested persons who had been able to examine the various working examples. In agriculture, however, as they were too well aware, adoption did not as yet invariably follow proved success. There were, moreover, the usual obstacles: the tenant had no capital to lay down apparatus, and wanted the owner to do it, commonly gratis. Then there were not sufficient powers under the Public Health Act to enable the local boards to lay down apparatus on farms; and give the use of the apparatus, as well as the supply of sewerage, for a rent. Often the most suitable lands for the application of the sewerage were the common and the waste lands. Thus, at Coventry, where drainage works, under the Public Health Act, were in the course of execution, was belted with Lammas lands; but the General Board had no means of settling equitable terms of compensation to the several parties, as in the case of enclosures, otherwise the proper course would be to take the wastes, to enclose and drain them, and put down the distributory apparatus, and then relet them, with the right of the free use of the liquid manure. They had as yet no legal rights of easement for carrying liquid manure pipes beyond the districts of the local boards; otherwise there was no monopoly of the sewerage by the occupiers or owners of the land at the immediate outfall, as was commonly assumed; and where the quantities were sufficient they might expect to see sewerage pipes radiating for many miles from towns. Neither was it necessary, as supposed, that the sewer manure should be distributed only in the direction of the flow naturally by gravitation. Wheresoever it was necessary to lift solid manure, there, in large quantities, liquid manure could be lifted at a cheaper rate. In the metropolis there were large Cornish engines doing duty by lifting 87,000 gallons of water 100 feet high for a shilling; the expense of the lift by the smaller engines was greater, but still the expense was, even with the highly-diluted manure, much less than lifting the solid manure by carting; and it was important to observe that to whatsoever height liquid manure was lifted, there was the benefit available of power of a return distribution by falls, by shedding. In one instance there were reliable estimates for lifting the sewerage, by two or three lifts, over the high grounds to the north of London, and delivering it as far as 20 miles off, at an expense of twopence per ton for the delivery. From two towns under the Public Health Act, distributory works were expected to be in operation this season; from about ten others at the commencement of the next season. As the legislative facilities for which they had applied from year to year were yielded, and the administrative reductions were removed, other towns would rapidly follow. In the meantime, the number of the farms upon the new principle were increasing, and with such important examples and expositions founded upon it as were given by Mr. Mechi, the towns, and the farmers resident near them, would be led to appreciate the advantages within their power.—In answer to some questions, addressed to him by Mr. Alcock, M.P., as to the

cost of distribution, Mr. C. stated that the estimates conveyance of sewerage to long distances were found on the experience of the conveyance of water to long distances for the supply of towns, which put all conveyance or lifts by carts out of competition. On some trials of the distribution of solid and liquid manure from farms, it was shown that the cost of removing equivalent quantities of manure was—of 15 loads of solid manure by cart, 1l. 7s.; of 15 loads of liquid manure by water-cart, 18s. 9d.; of 15 loads of liquid manure by 800 yards of hose and jet, 1s. 9d.; of loads of manure distributed by means of a short hose from a stand pipe by a fixed steam-engine, 6d.—answer to some questions of Mr. Livesey as to the expense of pipeage, Mr. Chadwick stated that the expense on the farm referred to as a leading instance, that of Mr. Kennedy, the expense was 2l. 10s. an acre. The hydrants were there placed about 10 to more than 40 acres. Mr. Mechi's pipeage was closer, and his hydrants about one to 11 acres. The expense, 4l. an acre, it was to be observed included the expense of all his failures. The pipeage of the hi sheriff of Lincolnshire was closer still, and he appeared to have one hydrant to every 3 acres; but taking the maximum expense of 7l. per acre, and let it be compared with the average expense of forming water meadows, 15l. per acre as in Wiltshire, or as 40l. per acre, the expense of the Duke of Portland's water meadows at Clipstone.—Lord Kinnaird, who said was adopting the system himself, considered the maximum outlay low as compared with outlays which they were accustomed for less return. He considered the outlay as a means to a large economy.—Sir John Johnstone asked Mr. Chadwick whether he considered the want of success of the London Sewerage Manure Company was due to financial or other causes.—Mr. Chadwick stated, to financial causes, the late Mr. Smith, of Deanston, who had taken shares in the company, had protested against the arrangements, and declared that they must end in failure. In respect of the effect of the sewerage distribution, the success might be seen on French Beans and Cabbages, as well as on Currant trees and Strawberries, and the limits of the distributing jet was perceptible, in the increase of size and superior appearance of the produce.

Mr. Livesey ventured to allude to the valuable illustrations of liquid manuring on Mr. Kennedy's and Mr. Telfer's farms in Ayrshire. Mr. L. witnessed, on the 24th of May, in the present year (a period of such unusual drought, that, on the Sunday previously, he heard the prayer for rain read at Fort William, serious were the losses amongst the lambs in the locality), the second cutting of Italian Rye-grass on Mr. Telfer's farm, where 48 cows are kept on 50 acres of land, 25 of which are under the pipe-distribution system. So valuable does the system of distributing manure appear, that it is beyond the question of comparison between solid and liquid; is in such instances as that alluded to a question whether farmers have a crop or go without it altogether, for by no other means, under similar circumstances, could they bring about a crop at all. He had laid down 52 acres under this system and looked forward with much pleasure to being in a condition next year, at Lincoln, to offer in inspection to any of the members of the Royal Agricultural Society, who might be pleased to honour him with a visit; and as his residence is within a few miles of that city, where the meeting was to be held, he trusted that gentlemen would do so. Mr. L. not having yet heard of any other person in that county, where its introduction will be canvassed by much intelligence, sought to show that its results may be satisfactory in a commercial point of view; but could scarcely agree with Mr. Mechi that 4l. per acre would cover the pipeage and working power, tanks, &c., per acre. Mr. Livesey would more disposed to say 7l. per acre to carry a such pipeage alone, as would be conveniently disposed of distribution with short lengths of hose, where, as Mr. Mechi states, the wear and tear, and he might add the cost of labour also, is the main item of account. Mr. Livesey had for every 3½ acres one hydrant, so that yards of hose would cover the whole circle; 45 would do it easily, with 60 feet of jet. He would be glad to see an efficient distributor offered to the public in lieu of the jet, so that the fluid might be regularly spread, as not in strokes, as noticed by him on Mr. Kennedy's Rye-grass, where the application expressed itself in segments on the crop. He would observe that to implement which Messrs. Carrett and Marshall, Leeds, have kindly undertaken to construct for him, and to be shown at Gloucester, is intended to be subservient to irrigation as well as other machinery; and if such an implement shall be successful in its operations, the same may be instances where considerable benefits could be derived, and this reminded him of a position at which he suited to its application, and if Mr. L. might take such liberty without being personally acquainted with the proprietor, but whose valuable services to this Society are so well esteemed, he would mention Colonel Challoner's park, through which, whilst riding on Saturday last, he saw a most beautiful and luxuriant crop of cultivated Grasses; and it occurred to Mr. Livesey that when this magnificent crop, so different from the usual stunted growth of park Grass, was stacked at an abundant aftermath was desired, that 3 cwt. of guano to the acre followed by water from the reservoir below, under the agency of the Portable Steam Engine Pump to which he had alluded, would be a very like means of effecting it. He was desirous of expressing his thanks to Mr. Mechi for the valuable assistance



red by him during the arrangement of his pumps their necessary apparatus.

Mechi considered there was no practical difficulty conveying town sewerage to agricultural districts, that farmers and landlords must first be convinced that town sewerage is the best guano in a liquid

He had found practically that no amount of solid manure would effect, in a given time, equal results with manure, especially on pasture. He considered allowing six individuals as amply manuring one 350,000 acres would, if necessary, absorb all town sewerage of London with its 2,000,000 of inhabitants. Its cartage in the country cost at least 6d. per ton per mile; and as liquified manure could be carted at a twelfth or less of that cost, that was the most desirable condition for transmission; solid manures might be fluidised and sink immediately to the roots of plants, as at his farm, consequently the new fibres of growing plants, deep in soil, receive their food in an available condition. Mechi then referred to Professor Way's papers on the power of soils to fix ammonia, and stated that in the clay soils he had, whilst irrigating, caused the manure, at 5 feet depth, to discharge manure-water both colour, smell, and fertilising properties, though he had hoped all these might have been absorbed by the soil. Mr. M. concluded his remarks by referring largely into the details of pipeage, gutta percha piping, and the general management of irrigation with manure. He invited the members to inspect his arrangements in their present improved state; and he would feel gratified in finding that any expenditure of money, made by way of trial and experiment, should be eventually led to sound practical experience, of which others might so freely avail themselves. He opened on the 20th of next month to meet many whom he then saw present at his "gathering" at Tiptree, where the whole of his operations would be laid open to their inspection and friendly discussion. In the course of his remarks, Mr. Mechi gave to the members a most graphic account of the manner in which, by means of his great pipes, and the incessant action of currents of air, animal matter of every form and degree of solidity, was rapidly assimilated into liquid manure, and hurried off daily with the resistless force of steam-power through his system of pipeage over his land. The discussion closed with an interesting detail of facts connected with steam-power; price, number, material, and coating of pipes; fresh or ripe manure; and action of silicates on strengthening Rye-grass and other siliceous plants.

On the motion of Lord Kinnaird, seconded by Mr. Chadwick, the Council passed a vote of thanks to Prof. Way, for his most able and instructive statement; his lordship remarking, that Prof. Way's views on the value of manure in a liquid state fully agreed with those expressed in Scotland by Prof. Johnson and Prof. Anderson, the successive consulting-chemists of the Highland Society; and suggested a system of liquid manure distribution, from tanks in towns along the lines of railway, through a ramification of small pipes in different localities. The President, in conclusion, alluded to the great liberality of Mr. Chadwick, in allowing the Society to reap the advantage of his great experience on the use and application of town sewerage; and to the offer of the High Sheriff of Lincoln to submit his arrangements next year to the inspection of the Society. His lordship thought it unnecessary for Prof. Way to apologise for any incompleteness he might suppose to have been left in his statement. The Society had applied tests to agricultural machines, for the purpose of ascertaining when they failed and when they succeeded in the object of their construction; and by these criteria they had rendered invaluable aid to the progress of agricultural mechanism, and gradually educated the implement-makers in the perfection of their manufacture. The farmers were in like manner obliged to Prof. Way, who, by the test of science, determined the truth and economy of those plans which were connected with the cultivation and the application of chemistry to their details, and taught them to improve their lands by the most economical means, and to feed such lands, as well as their bullocks, to the greatest advantage.

The Council then adjourned to their monthly meeting, July 6.

### Farm Memoranda.

**FARMING ON DARTMOOR.**—We had the pleasure of paying a visit to Hedge Barton, belonging to James Bryant, Esq., of Prospect, in the autumn. The farm is situated at a great altitude on the eastern side of the moor, at Widcombe on-the-Moor. It was a farm of nearly 600 acres of moor land. The old farm-house had barns had, on the farm passing into the hands of the present proprietor, been pulled down, and good and substantial buildings erected in their stead—so substantial in their masonry, and so well appointed and neat in their appearance, that they might have stood alongside the best of our local works, and been to them no discredit. The house is a good one, and it forms one side of a square, on two sides of which are cattle houses for in-door feeding, the fourth having a building for carriages, &c. In the centre of this square is a large granite building covered with Delabole slate and pointed with the first of the sheet lead that was manufactured at the Plymouth Lead Works. This large building was entirely devoted to the saving of the manure, all the liquid that escapes from the cattle houses passing in underground drains into the large pit that is formed there. The saving of this manure, and its application on the

soil to the growth of green crops is one great cause of that success in cultivation to which we shall presently have to refer. As we ascended the hill to the Barton we saw a large field—some 60 acres—covered with a crop of Swedes which for size and quantity we have rarely if ever seen equalled, certainly never surpassed—especially if we take into consideration the position of the land and its character where they were growing. On going into the feeding houses we saw a number of North Devons all in beautiful condition, all being fed off the Swedes and a few other roots. There were more stock in these two houses, and on the fields adjacent, than in perhaps half a dozen of the surrounding parishes; while as regards the character of the stock of bullocks, nothing could well be finer or more satisfactory. Having visited the cattle houses, we proceeded to the hills—the farm-houses having been erected in a kind of dell, to afford to them as much protection as possible. We found on the hills that the work of clearing had been carried on on an extensive scale. The 60 acres to which we have referred was a fine black soil, entirely cleared of its granite rocks, which had been used for the building of good substantial stone hedges. There were large quantities of Swedes earthed up for future use, and others were being fed upon by sheep, with which this farm is also well stocked. Taking another direction, we returned to the homestead, passing over well-cleared fields, some laid down for Grass, and others prepared, when the weather should have changed, for other agricultural uses. These fields were in excellent condition, arising from the large quantity of manure that had been used, and the systematic care with which they had been drained and cultivated. We found Mr. Ward, the manager of the estate, an intelligent and communicative person; and as the Protectionist farmers everywhere have always made a great outcry for the balance-sheets of Mr. Mechi, and every other person who has attempted to go ahead in their line, we asked him to give us an idea—to communicate, of course—of the cost of production and profit, if any, arising therefrom. There was no objection. Neither Mr. Ward nor his employer wished to hide his light under a bushel; and he very kindly gave us the following particulars:—Expense of breaking and produce of 59 acres of common land and preparation of other crops, and the state in which it will be left, as per acre: Peating and burning, 30s.; spreading the ashes, 1s. 8d.; lime, 28 bushels, 24s. 6d.; carriage for lime, 17s. 6d.; mixing the same, 2s. 4d.; spreading, 7s. 6d.; ploughing, 10s.; harrowing and rolling, 6s.; artificial manure from Messrs. Sparrow and Co., 15s.; sowing the seed, 2s.; seed, 1s. 6d.; hoeing twice, 7s.—Total, 51. 19s. per acre. 59 acres at 51. 19s. per acre, gives an expense of 3317. 1s. The land is now prepared for other crops, and will be brought to pasture with the same manure.

Now for the produce:—	£	s.	d.
40 acres Swedes, at 25 tons per acre, at 10s. per ton	500	0	0
15 acres yellow bullock Turnips, at 20 tons per acre, at 7s. 6d. per ton	112	15	0
1 acre Carrots, 16 tons, at 35s. per ton	28	0	0
1 acre Mangold Wurzel, 20 tons, at 11. per ton	20	0	0
2 acres Potatoes	20	0	0
Total	680	15	0

Stock of the farm now feeding on the Turnips—44 fat bullocks, 20 store bullocks, 140 ewes, 50 fat sheep, 100 hoggets, and 30 pigs. This is a pretty large stock to maintain; but besides selling some of the Turnips, Mr. Ward informed us that he should have a sufficient quantity to give 40 bullocks (which are to be bought after the fat bullocks are sold) their keep, so as to prepare them to take Grass. Our sketch, though imperfect, may not be without its interest. The moor-men have regarded with astonishment the progress of affairs at Hedge Barton, and the example of the enterprise of a townsman, who has invaded their rude territory, is already having its effect. They see what may be done by draining and manuring, and the lessons we trust will not be thrown away. As for the public, they, of course, have an interest in the success of such enterprises, and any capitalist who will carry them out deserves the respect, the countenance, and esteem of his countrymen.—*Plymouth Journal*. [We give the above abridged account in illustration of the energy still brought to bear on agricultural pursuits, without, of course, desiring to sanction the above estimates of expense and return.]

### POULTRY.

**Poultry Literature.**—As it may be some time before the "coming man" appears, I beg to recommend your correspondent "Maria" to consult any of the game-keepers in her neighbourhood as to their practice in rearing pheasants, or their wives being generally successful in this department of their business; and the treatment which is good for these birds must on the whole be good for domestic fowls. I believe maggots are considered the sheet anchor in feeding young pheasants; then hard boiled eggs, crumbs of bread, or some meal slightly moistened with milk, having some finely chopped green cress mixed with the food. The water given to them ought to have a little saffron in it occasionally; as a motherly woman (in her homely way) once told me, it warms their hearts. Of the value of saffron canary bird fanciers are well aware, when their "pets" are changing their feathers; so why should we not give it to poultry when moulting. I further recommend, when fowls are in that delicate state, to give them some pepper. An East Indian friend of mine gives the Cayenne; but this should be given whole, as, when finely ground, it warms the tongue as well as the

stomach, and induces the fowl to drink more water than is good for it; preference, therefore, should be given to black pepper, slightly bruised, or ground very rough—say a dessert spoonful to two dozen of fowls, mixed in their morning food, just before it is given to them. All fowls are fond of warming spices, as I have witnessed in the West Indies, where they soon strip the bushes of their peppers, if they can get at them; indeed, the bird pepper is the name of a small variety. In feeding all fowls that economy should be attended to which is praiseworthy in every one, and I believe there are sufficient scraps from the table of most families to feed a goodly flock of poultry; but if "Maria" wishes to know how to give the refuse with advantage to laying hens or fattening poultry, she must consult Liebig or some other good chemist; the food which forms flesh or bones is good for the former, and that which forms fat or gives heat is good for the latter; but when fowls are sitting or moulting they require both these descriptions of food, it having been well said (I think by old Cobbett) that although a fowl does not give milk like a cow to her young, she requires to give them heat. As "Maria" may not have "Liebig's Chemistry" in her library, I would mention food which gives flesh to fowls, and is best for laying hens, viz., scraps of flesh, skim or buttermilk, Wheat, flour, bread, and oatmeal; for fattening fowls give the fat of meat, barley, rice, Indian corn, and Potatoes. Of some of these there is generally a considerable quantity left at dinner or luncheon in many families, to say nothing of puddings, pastry, and soup; but a fowl feeder should always have at hand (to add to the mess) some oatmeal or thirds, which is named sharps in some districts, being a refuse of Wheat; the latter should be mixed with hot water, it being much harder than the former. I ought to remark that all fowls should have some lime rubbish in their yard, it being particularly required by moulting fowls, to aid in forming new feathers, and by laying hens to form the shells of their eggs; burnt lime may also be put into the water fountains, or finely ground bones should be mixed with the food, particularly if many Potatoes or green vegetables are given, these having much less phosphate of lime than Oats and other grain. The guano bird digests the bones of the fish it lives on, and domestic fowls can do the same; I therefore strongly recommend a few well ground bones for laying hens, which (when good) are the most profitable of all poultry, and as they may be attended to by any other old "Maria," are much less expensive than keeping a set of dogs, and half a dozen men as keepers and feeders of pheasants, &c., paying damage done to crops, and food purchased for the birds. The poultry mania is paving the way for the abolition of the Game-laws. *W. S., June 21.*

### Calendar of Operations.

#### JUNE.

**SOUTH LANCASHIRE.**—The recent gentle rain has done incalculable good. Barley and Oats are growing fast, and look luxuriantly. Beans are thriving, whilst our Wheat is fast coming into ear; it is very thin and light, with not more than one-half usually sown. The main topic seems to be the Turnip "fly," for there appears many more than usual; indeed, our drills seem to be alive. We have sown salt, soot, and lime upon the young Turnip; although we allowed and sowed double quantity, still these pests are committing great ravages. Hay-making: first crop of Clover is now pretty general, and exceedingly thin and light; if there be 21 tons to the Cheshire acre, that will be all; the long-continued drought has been very detrimental to this indispensable crop. Mowers and labourers are demanding and obtaining additional prices and wages. We thought, at one time, that Irish labourers would have been scarce. We are thankful to say that such is not the case, for there appears to be a superabundance of men, women, and children, who are exceedingly anxious for work. Our fears are now awakened lest storms should devastate our water-meadows, which are already damaged and poisoned enough by chemical waste and sediments flowing in our once-crystal brooks, but which now contain great quantities of sulphuric acid, muriatic acid, arsenic, soda, and lime, caused by the numerous St. Helen's Chemical Works, whose vapours never cease, night or day, pouring forth in volumes, and thus continually ruining our crops. Our teams are kept hard at work in scarifying our Potatoes, Beans, Turnip, and Mangold drills, and checking all weeds by the drill-harrow. Carrots, Cabbages, Vetches, &c., are looking well. The winter-sown Vetches were a failure, and had to be ploughed up. Our cattle and sheep, on the whole, are doing well. Young cattle are selling well, as are good horses in great demand, at reasonable prices.

**DORSET FARM, June 25.**—We have now got into hay-making, and not yet with very encouraging weather; there is not a prospect of making the Clover hay well. There is a great quantity of it lying down now which has been cut for eight or 10 days, so that it is at that stage when it is most liable to be damaged by the wet. It is not much injured by rain until after it is cut a week, but then the leaf falls off, so that nothing is left but the rough stalk, and it gets filled with moisture; and though it may appear dry, yet, when put in rick, it is sure to get fusty, in which case it is very hurtful to cattle, especially horses. The crop is hardly an average, and there is not so much cut as usual, because the spring growth was late, and some that otherwise would have been cut had to be fed. There is not much of the second crop yet, as it was fed up to a late period. The third crop will be fair, the fine growing weather that we have lately had, having brought it up very thick, and if well made the quality will be very good. The corn crops look fair, especially Barley. Wheat is thinner than usual on moist soils, and on heavy land it is certainly below an average, but on lighter land which did not suffer so much from the wet winter it looks fair. Barley was not in very good order, and came up well, and we feared at one time that it would be too heavy and fall down, but it is now beginning to come out in ear, and does not look so soft; at present it promises to be a good crop. Oats look very well. Turnip-hoeing is now our chief employment, and will not be finished yet for some time: the first sowings are up, and look well, except where the fly has attacked them, which it has done in one case with us very severely, but not as to destroy the crop; yet there is every prospect that it will be very annoying crop this season. But it proves how far good cultivation may prevent its ravages when we compare the present destruction caused by the fly to that of some 10 or 12 years ago, then it was nothing uncommon to have to sow the ground two or three times over, when it could not be expected that the crop could come to much;



and often it was thought imprudent to sow at all before mid-summer, when the crop is thought to be safe. But since the use of artificial manure, especially superphosphate, has become so common, blanks in a field are rarer. I have observed that the fly is more vigorous where dung has been applied for the Turnips, but whether it is because of the dung, or that the Turnips to which it is generally applied are sown earlier, I cannot say; but on light lands adapted for growing good Barley, I do not think that it is best to apply much on any dung for Turnips, because it can be all applied to the land the sheep will leave enough dung to produce a crop of Barley, and then the dung much danger of over-doing; and so by a liberal use of artificial manure for Turnips, the Wheat crop will be improved by having a greater supply of dung. Mangold Wurzel is growing well, but does not come up regularly. We find a great many plants coming up six or eight weeks after the first appear. It is sometimes said to be from the seed being of different ages, but I hardly think that we can always get old and new seed together. I rather think that it must be owing to its being of different degrees of ripeness, which will be the case with it, although grown on the same stalk; and I do not see how we can get over the evil, except by the application of more seed per acre. I find that they do not come so well on land newly chalked, nor do they thrive well for the season after it. I am sorry to say that there are again signs of the Potatoes being hurt by the disease. I have not seen it to any extent, but from what I have heard I have no doubt we shall have it more or less. A week more will probably show to what extent it is likely to prevail. They have hitherto looked well. G. S.

### Notices to Correspondents.

To CORRESPONDENTS.—Some answers are delayed for a week, owing to the absence of the Editor from town.

BONES: *Tyro.* The best work on the subject is an article by Mr. Hannam, in the "Cyclopedia of Agriculture," published by Messrs. Blackie of Glasgow. Apply bone-dust, not "4-inch," in compost with earth, over Grass land in autumn; 16 bushels per acre would be a fair dressing.

CAPILLARY ATTRACTION: *S. C. U.* We have, for the present, closed our case.

CHURNS: *F. A. Young.* Prices will vary according to size—and the makers you name sell churns of various kinds. Will you specify more particularly? We do not know Lavoisier's churn. *Small Farm: Tyro.* Will you be kind enough to wait a week or two?

STRAW AS MANURE: Will "Y." kindly give us his address?

TITHE: *Constant Reader.* The practice depends altogether upon custom. If the outgoing tenant was treated as it is proposed to treat you, then no injustice is done.

TO ERADICATE DOCKES: *R. C. B.* You have tried digging them up and failed! Then no other plan will succeed. Persevere, and by-and-by success is certain.

## Markets.

### COVENT GARDEN, JULY 2.

All kinds of produce are now supplied in abundance, and trade is brisk. Forced Peaches and Nectarines are abundant. Strawberries from the open ground are well supplied. Imports from the Continent of Potatoes, Carrots, and Artichokes are still well kept up; and there are some good French Cherries and Apricots in the market. Rhubarb is abundant. Young Carrots and Turnips fetch from 6d. to 1s. per bunch. Green Peas are coming in in very good condition, at from 1s. to 1s. 3d. per quart shelled, and from 3s. to 4s. 6d. per bushel sieve. Old Potatoes may still be obtained. Good Ash-leaved Kidneys from Cornwall are plentiful. Mushrooms are scarce. Cut flowers consist of Pelandrums, Fuchsias, Roses, Cyclamens, Mignonette, Cinerarias, Tulips, and Azaleas.

### FRUIT.

Pine-apples, per lb, 4s to 8s  
Grapes, hothouse, p. lb, 3s to 6s  
Peaches, per doz., 8s to 20s  
Nectarines, per doz., 8s to 20s  
Melons, each, 3s to 8s  
Cherries, per lb, 6d to 4s  
Gooseberries, green, p. bush, 2s to 3s 6d

### VEGETABLES.

Cabbages, per doz., 6d to 1s  
Cauliflowers, each, 2d to 4d  
Greens, per bunch, 2s 6d to 4s  
French Beans, p. 100, 9d to 1s 6d  
Asparagus, per bundle, 1s to 4s  
Rhubarb, p. bundle, 3d to 6d  
Potatoes, per ton, 80s to 120s  
— per cwt., 4s to 8s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 2d to 1s  
Celery, per bundle, 3d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 1s to 2s  
Onions, per bushel, 8s to 12s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb, 6d to 8d  
Tomatoes (foreign), p. doz, 6s to 8s

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 30.  
Prime Meadow Hay 80s to 85s  
Inferior do. ... 70 75  
Ryeen ... 40 50  
New Hay ... 50 70

### CUMBERLAND MARKET, June 30.

Prime Meadow Hay 95s to 101s  
Inferior do. ... 78 88  
New Hay ... 45 72  
Old Clover ... 100 110

### POTATOES.—SOUTH-WARK, June 27.

During the past week the demand for old Potatoes has been daily declining, there being a good supply of new ones from France and Germany, and a few from the neighbourhood of London. This will be the last report from the waterside market for the season, as a few days will clear all out. The following are this day's quotations:—Yorkshire Regents, 40s. to 60s.; Lancashire do., 40s. to 50s.; Scotch reds, 20s. to 40s.; Rhensish, 20s. to 40s.

### WOOL.

BRADFORD, THURSDAY, June 30.—There is very little doing in any kind of combing wools. The spinners are disinclined to buy at the prices quoted. The supply coming to market is very limited, and the quantity of old wool here in some of the staples' hands is greater than at one period was expected.

LEICESTER WOOL FAIR.—This fair took place yesterday, and was well attended by buyers from Yorkshire and other wool-consuming districts. A large quantity of wool was shown, and good lots sold at 40s.

EDINBURGH WOOL SALES.—An experiment is about to be made to establish public wool-sales in Edinburgh, as in London and Liverpool. It is believed that this plan is more agreeable to buyers, and less expensive, than going among the farmers buying a lot here and a lot there, and oft-times not being able to deal at all. The project is in the hands of respectable parties, and great exertions are being made to get together an extensive show of Scotch-grown wool at the first sale, which is announced to take place on this day fortnight.

### SMITHFIELD.—MONDAY, June 27.

We have a short supply of Beasts, and consequently, although trade is by no means brisk, prices are quite as good as of late, and in a few instances rather better. There are more Sheep and Lambs, but the demand is quite equal to the supply, and prices are not on the average lower. Calves are not selling quite as well as of late, but there is very little reduction. From Germany and Holland there are 796 Beasts, 3210 Sheep, and 303 Calves from Scotland, 230 Beasts; and 2200 from Norfolk and Suffolk.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. ... 4 6 to 4 8  
Best Short-horns ... 4 4 to 4 6  
2d quality Beasts ... 3 8 to 4 0  
Best Downs and Half-breeds ... 0 0 to 0 4  
Do. Shorn ... 4 6 to 4 8  
Beasts, 3830; Sheep and Lambs, 26,910; Calves, 388; Pigs, 305.

### FRIDAY, July 1.

The supply of Beasts is about an average, but choice qualities are rather scarce, and are still sold dear. Trade is dull for inferior descriptions, and some remain unsold. Sheep are not plentiful; trade is, however, no better, and quotations remain unaltered. We have a large supply of midding Lambs, which are sold at low rates; but choice ones, being scarce, fully maintain late rates. Although the number of Calves is very large, they are readily disposed of. Our top quotation has been exceeded in a few instances. Our foreign supply consists of 331 Beasts, 1270 Sheep, and 380 Calves; from Norfolk and Suffolk, 400 Beasts; and 57 Miltch Cows from the home counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c. ... 4 6 to 4 8  
Best Short-horns ... 4 4 to 4 6  
2d quality Beasts ... 3 8 to 4 0  
Best Downs and Half-breeds ... 0 0 to 0 4  
Do. Shorn ... 4 6 to 4 8  
Per st. of 8 lbs.—s d s d  
Best Long-wools ... 0 0 to 0 4  
Do. Shorn ... 4 2 to 4 6  
Ewes & 2d quality ... 0 0 to 0 4  
Do. Shorn ... 3 8 to 4 0  
Lambs ... 5 0 to 6 4  
Calves ... 3 6 to 4 0  
Pigs ... 4 0 to 5 0

### COAL MARKET.—FRIDAY, July 1.

Hollywell, 16s.; Eden Main, 15s. 9d.; Wallsend Gosforth, 15s.; Wallsend Hetton, 16s. 6d.; Wallsend Lambton, 16s. 3d.—Ships at market, 24.

### HOPS.—BOROUGH MARKET, July 1.

Messrs. Pattenden and Smith report that the market for Hops continues about the same as last week. The duty is estimated at 140,000.

### MARK LANE.

MONDAY, June 27.—The supply of English Wheat to this morning's market was small, and sold partly to foreign speculators at rather over the prices of this day se'night. Foreign was in better demand at the extreme rates of last week, and in some instances commanded an advance of 1s. per qr. In floating and f. o. b. cargoes some business was done with French buyers, but chiefly in red qualities at 1s. to 2s. per qr. Improvement in transactions were less extensive than they otherwise would have been, owing to the exalted ideas of holders. The top price of town-made Flour is unaltered, but barrels were taken to some extent for French account, at prices hitherto unobtainable. For Barley there is a good trade at the extreme rates of this day week. Beans and Peas are fully as dear. Oats bring an advance of 6d. to 1s. per qr.

PER IMPERIAL QUARTER. s. s. s. s.  
Wheat, Essex, Kent, & Suffolk ... 42-55 Red ... 40-48  
— fine selected runs ... 44-61 Red ... 46-53  
— Talavera ... 56-61 Red ... —  
— Norfolk ... — Red ... —  
— Foreign ... 35-60  
Barley, grind. & distill., 23s to 26s. Chevi. 24-30 Malting 25-29  
— Foreign grinding and distilling 24-30 Malting 29-32  
Oats, Essex and Suffolk ... 18-25  
— Scotch and Lincolnshire ... 23-25  
— Foreign Poland and Brew 19-24 Feed 15-23  
Rye ... 29-32 Foreign ... —  
Rye-meal, foreign ... —  
Beans, Mazagan ... 33s to 37s Tick 35-39 Harrow. 35-39  
— Pigeon ... 36s to 41s Winds. — Longpod. —  
— Foreign ... Small 34-40 Egyptian 32-34  
Peas, white, Essex and Kent ... 40-43 Suffolk 40-44  
— Maple ... 32s to 37s Grey 31-35 Foreign 32-44  
Maize ... — White ... — Yellow ... —  
Flour, best marks delivered ... per sack 37-44  
— 2d ditto ... ditto 21-37 Country 21-37  
— Foreign ... per barrel 22-25 Per sack 35-38

FRIDAY, July 1.—The arrivals of foreign Wheat have been good, but of other articles small. This morning's market was tolerably well attended, and the little Wheat offering from the stands held for an advance of 2s. to 3s. per qr., but upon the business done, which was limited, a rise of 2s. per qr. upon Monday's rates could not be exceeded. Flour is required for to-day, and meets a ready sale at 1s. per barrel improvement. The top price of town-made is advanced 3s. per sack. Barley, Beans, and Peas bring fully late rates. There is a good trade for Oats at the prices of last Monday.

### IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
May 21	43 11	30 11	19 11	35 8	36 0	32 1
June 4	43 9	30 6	18 5	33 2	36 7	32 7
— 11	43 11	29 10	18 10	34 9	35 1	34 9
— 18	45 0	29 11	18 11	30 11	38 11	34 6
— 25	46 11	29 3	20 1	32 8	35 9	34 9
Aggr. Avar.	44 6	29 10	19 1	33 6	37 8	33 9

### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	May 21	May 28	June 4	June 11	June 18	June 25
46s 1d	...	...	...	...	...	...
45 0	...	...	...	...	...	...
43 11	...	...	...	...	...	...
43 11	...	...	...	...	...	...
43 9	...	...	...	...	...	...
43 3	...	...	...	...	...	...

LIVERPOOL, TUESDAY, June 28.—The arrivals since Tuesday from Ireland and coastwise are moderate of Wheat and Oats, but light of other articles. The supplies from abroad are liberal. At this morning's market there was a good attendance of town and country dealers, and an extensive demand was experienced for Wheat and Flour, at an advance of fully 2d. per 70 lbs. and 6d. per sack and barrel. Oats and Oatmeal met a moderate inquiry at previous rates. Barley and Peas were without change in value, but Egyptian Beans must be quoted 6d. per qr. lower. Indian Corn was rather more inquired for; white brought fully last week's prices, but yellow reduced fully 6d. per 40 lbs. No sales of floating cargoes reported to-day.—FRIDAY, June 24.—Of English and Irish produce received into this port since Monday last the supplies are limited, and those of foreign small. There is again a limited attendance at our market to-day, and the aggregate amount of business has been unimportant. The transactions in Wheats have been quite restricted in extent, and only for the finest descriptions is the value of Tuesday fully supported. Prices of Flour are scarcely so good as on that day, yet some tolerable lots have changed hands. In Barley, Malt, and Peas no change worth notice. Egyptian Beans a retail trade, at barely previous quotations. Oats and Oatmeal little inquired for on the terms last noted. Indian Corn almost without demand.

SHIRTS.—FORD'S EUREKA SHIRTS are sold by any hosiers or drapers, and can therefore be obtained only at 3s. Poultry Gentlemen in the country or abroad ordering through their agents, are requested to observe on the interior of the collar-band the stamp—"Ford's Eureka Shirts, 3 Poultry"—without which none are genuine. They are made in two qualities, the first of which is 40s. the half-dozen, and the second quality 30s. the half-dozen. Gentlemen who are desirous of purchasing shirts in the very best manner in which they can be made are solicited to inspect these, the most unique and one perfect fitting shirts. List of prices, and instructions for measurement, post free.—RICHARD FORD, 35, Poultry, London.

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly important office of searching thoroughly into the divisions an cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like prepared hair. Improved Clothes Brush, that cleans harmlessly in one third the usual time. The new Velvet Brush; and immense stock of genuine unbleached Smyrna Sponges, with every description of British and Foreign Linen, at METCALFE, BINGELI & Co's only Establishment, 129 s and 131, Oxford Street, second and third doors west from Holles Street. Caution.—Beware of the word "d" from "Metcalfe's," adopted by some houses.

Metcalfe's Alkaline Tooth Powder, 2s. per box.

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GODFREY'S EXTRACT OF ELDER FLOWERS is strongly recommended for Softening, Improving, Beautifying, and Preserving the SKIN, and giving it a blooming and charming appearance, being at once a most fragrant perfume and a delicate cosmetic. It will completely remove Tan, Sunburn, Redness, &c., and by its balsamic and healing qualities, renders the skin soft, pliable, and free from dryness, scurf, &c., clear it from every humour, pimple, or eruption; and by continuing its use only a short time, the Skin will become and continue soft and smooth, and the complexion perfectly clear and beautiful. Sold in bottles, price 2s. 9d., with directions for using it, by all Medicine Vendors and Perfumers.

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ALL Sufferers from this complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free, with full instructions, on receipt of 7s. 6d. in postage stamps, or Post Office order, payable at the General Post Office, to Dr. HERBERT LESLIE, 37A, Manchester Street, Gray's Inn Road, London, where it may be consulted daily, Sundays excepted, from 11 till 1 morning, and 5 till 7 evening only. "My rupture is quite cured."—R. LONG, Chester. "I have felt no pain, nor has it come down since I used it!"—H. HARRY.

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WHISKERS, &c.?—EMILY DEAN'S CRINILENE has been many years established as the only preparation that can be relied upon for the Restoration of the Hair in Baldness from any cause, preventing the Hair falling out, strengthening weak Hair, and checking Greyness, and for the production of Whiskers, Moustachios, Eyebrows, &c., in three or four weeks with certainty. It is an elegantly scented compound, price 2s., and will be sent post free, on receipt of 24 postage stamps, by Miss DEAN, 37A, Manchester Street, Gray's Inn Road, London. At home daily from 11 till 7, Sundays excepted. "I have used your Crinilene, and have now a good pair of Whiskers." J. L. HIGGS, Dudley. "I found your Crinilene efficacious in stopping my Hair from falling out!"—Miss FORBES, Chirbury.

### HOLLOWAY'S OINTMENT AND PILLS,

CERTAIN AND EFFICACIOUS REMEDIES FOR THE CURE OF WOUNDS AND ABSCESSSES.—The following case has just been forwarded to Professor HOLLOWAY for publication:—Mrs. Robert Harris, of Staplehurst, Kent, some time since caught a severe cold, which brought on a long and painful illness. She was attended by several eminent medical men with little or no benefit, and ultimately an abscess formed under the chin. All the usual remedies having failed to give her the slightest relief, she determined on using HOLLOWAY'S Ointment and Pills, and these surprising Medicines entirely cured the Abscess, and restored her to better health than she ever before enjoyed.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

### PARR'S LIFE PILLS

ARE ACKNOWLEDGED TO BE THE BEST MEDICINE IN THE WORLD.

The following facts have been mentioned to Mr. J. F. WINKS, Leicester, who has preserved the names and residence of each of the parties, which he is ready to produce:—

A person in Oxford Street, Leicester, aged 44, had been ill two years, of influenza. The club surgeon said he was in a consumption, and would never recover. He began to take Parr's Life Pills three months ago, previous to which he had been confined to his bed six months: The Pills first brought away a great deal of offensive matter, and then he gradually recovered; can now walk about without a stick, and thought it his duty to make it known. He called again afterwards, and begged his name might not be published, as it might offend the club doctor.

The wife of Mr. BROWN, in Fleet Street, has been in a low way for some time; she took Parr's Pills regularly, and soon found her spirits more cheerful, and her sight and hearing, which had been affected, were improved. She said they were pleasant to take, not causing a sickly feeling, nor giving the least pain.

Miss EVANS, Chatham Street, is a mender in a warehouse; has been much afflicted for several years, and not able to do more than two hours' work in a day; she took Parr's Pills, and soon was improved in health, and could see much better. She now works her regular hours.

Mr. LINESHAW, of Bagworth, has been long subject to palpitation of the heart, and could not walk up hill. Had the advice of an eminent physician in Leicester, but was no better till he took Parr's Pills; but now he is quite recovered.

The wife of Mr. J. FROST, at the same place, was so tormented with a cough that she could not sleep. She had taken Parr's Pills, which had done her, her husband said, "a world of good."

Mr. E. VANN, of Belgrave, had been ill five years of palpitation of the heart. Had been in the infirmary, and under several physicians and surgeons. Has been gradually improving since he took Parr's Pills, and is now able to work.

Mrs. TURNER, of Whetstone, found Parr's Pills very beneficial for the scrofula.

Many other cases have been mentioned by persons who have purchased the Pills. Indeed, the very extensive and increasing sale of this useful Medicine is the best proof that can be desired how highly it is appreciated.

I shall be happy to answer any inquiries.

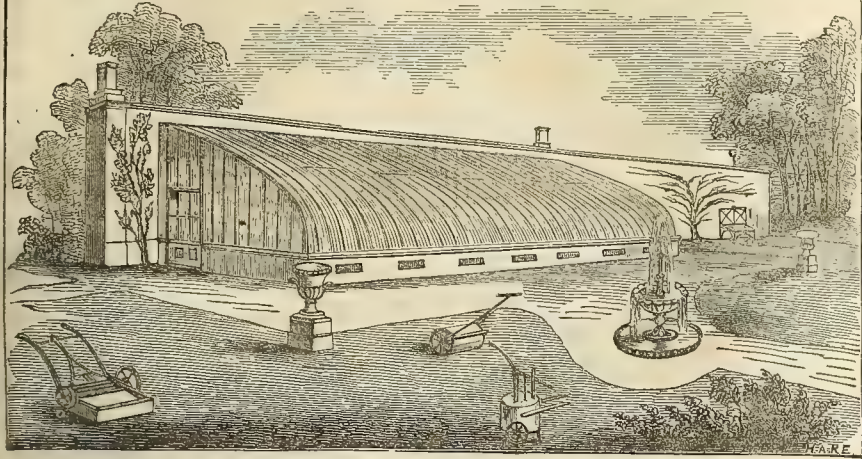
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20 " " " 50 " 70 "	0 6 0	0 7 1	0 9 8			
20 " " " above 70 "	0 6 0	0 7 1	0 9 8			
In Squares cut to the sizes ordered.						
Under 8 by 6	0 4 0	0 5 0	0 6 0			
by 6 and under 10 by 8	0 4 0	0 6 0	0 7 0			
by 8 " 14 by 10	0 5 0	0 6 0	0 8 0			
by 10 " 12 ft. sup., if the length does not exceed 20 inches	0 5 1	0 7 0	0 8 1			
3 ft. sup., if above 20 and not above 30 inches long	0 6 0	0 7 1	0 9 9			
4 " 20 " 30 "	0 6 0	0 8 0	0 9 1			
5 " 30 " 35 "	0 7 0	0 8 1	0 10 0			
6 " 35 " 40 "	0 7 1	0 9 0	0 10 1			
8 " 40 " 45 "	0 8 0	0 9 1	0 10 1			
10 " 45 " 50 "	0 8 0	0 9 1	0 10 1			
12 " 50 " 55 "	0 9 0	0 10 0	0 11 0			
1 " 65 " 70 "	0 9 0	0 10 0	0 11 0			
20 " 70 " 75 "	0 10 0	0 11 0	0 12 0			
25 " 75 " 80 "	0 11 0	0 12 0	0 13 0			
30 " 80 " 100 "	0 12 0	0 13 0	0 14 0			
30 " 100 " 120 "	0 13 0	0 14 0	0 15 0			
30 " 120 " 150 "	0 14 0	0 15 0	0 16 0			

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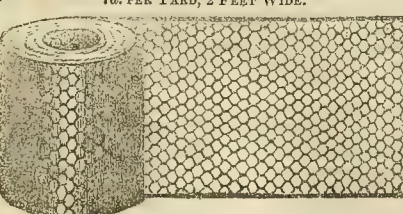
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2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong	9 " "	6 1/2 " "
2-inch " extra strong	12 " "	9 " "
1 1/2-inch " light	8 " "	6 " "
1 1/2-inch " strong	10 " "	8 " "
1 1/2-inch " extra strong	14 " "	11 " "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

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# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 28.—1853.]

SATURDAY, JULY 9.

[PRICE 6d.

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Parties intending to compete for the above prizes are requested  
to give three days' notice to the secretaries.

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Further particulars may be obtained on application to the  
Secretaries.

HENRY THORPE, } Secretaries and Treasurers.  
WILLIAM MARTIN, }  
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Exeter Nursery, Exeter.—July 9.

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TO BE SOLD, by Private Contract, about Seventy  
PINE-APPLE PLANTS, warranted clean, and in good  
health, the property of a gentleman declining to grow them.—  
Apply to T. APPELBY, Nurseryman, Uxbridge, Middlesex.

FOR SALE, a large American ALOE, above Fifty  
years' growth, on carriage, with four iron wheels.—May be  
seen at Mr. BARNES, Camden Nursery Grounds, Camberwell,  
London.

## CHOICE CARNATIONS AND PICOTEEES.

TO BE SOLD by Private Contract, a unique collec-  
tion of these beautiful flowers, numbering about 100 pots,  
including the best Standard varieties in cultivation; together  
with an entire stock of a superb Scarlet Flake Seedling (Silas  
Smith), which gained two First Class Certificates at the Royal  
South London Society's show last season. Likewise, an excel-  
lent 2-light Pit, two 1-light Frames, six 20-inch Iron Hand-  
Glasses, ten 10-inch ditto, and four Show Boxes, with metal tubes  
complete. Also Six Volumes of the *Gardeners' and Farmers' Journal*.

This plants are in vigorous health, and just coming into bloom,  
and may be viewed on application to Mr. FOWLE, Nurseryman,  
opposite the "Whitfield," South Lambeth.

A favourable opportunity here presents itself to amateurs  
desirous of cultivating this beautiful race of plants success-  
fully, as they are all true to name, and have been grown with  
much care.

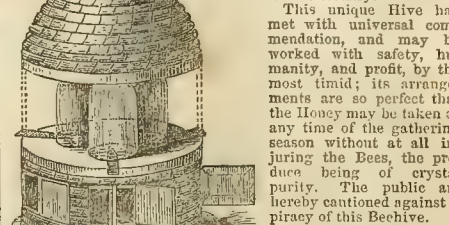
## BAKER'S FOUNTAINS.

THE PHEASANTRY, DEAFORT STREET, KING'S ROAD, CHELSEA.

MESSRS. BAKER can confidently recommend the  
FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the  
most simple, efficient, and economical; they are easily filled, and  
screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts,  
8s. And at 3, Half-moon Passage, Gracechurch Street.

## BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-  
HIVE, as originally introduced by GEORGE NEIGHBOUR  
& SONS, complete, with all  
the recent improvements,  
glasses, thermometer, &c.,  
price 35s., securely packed  
for the country.



This unique Hive has  
met with universal com-  
mendation, and may be  
worked with safety, hu-  
manity, and profit, by the  
most timid; its arrange-  
ments are so perfect that  
the Honey may be taken at  
any time of the gathering  
season without at all in-  
juring the Bees, the pro-  
duce being of crystal  
purity. The public are  
hereby cautioned against a  
piracy of this Beehive.

Early applications ad-  
dressed to GEO. NEIGHBOUR  
& SONS, 127, High Holborn,  
or 149, Regent Street, Lon-  
don, will receive prompt attention.

Catalogue of other improved Hives, with drawings and prices,  
sent on receipt of two stamps.  
AGENTS.—Liverpool: JAMES CUTHBERT, 12, Clancy Square.  
Manchester: HALL & WILSON, 50, King Street. Glasgow: ARSTIN  
& MACLEAN, 108, Trongate. Dublin: J. EDMONDSON & Co.,  
61, Dame Street.

## WATERPROOF PATHS.—Those who would enjoy

their Gardens during the winter months should construct  
their walks of PORTLAND CEMENT CONCRETE, which  
are formed thus:—Screen the gravel of which the path is at  
present made from the loam which is mixed with it, and to every  
part of clean gravel add one of sharp river sand. To five parts  
of such mixture add one of Portland Cement, and incorpo-  
rate the whole well in the dry state before applying the water.  
It may then be laid on 3 inches thick. Any labourer can mix  
and spread it. No tool is required beyond the spade, and in 48  
hours it becomes as hard as a rock. Vegetation cannot grow  
through or upon it, and it resists the action of the severest frost.  
It is necessary, as water is laid on, to walk through it, to give a fall  
from the middle of the path towards the sides.

Manufacturers of Portland Cement, J. B. WHITE & BROTHERS,  
Millbank Street, Westminster.

## CARSON'S ORIGINAL ANTI-CORROSION

PAINT, specially patronised by the British and other  
Governments, the Hon. East India Company, the principal Dock  
Companies, most public bodies, and by the nobility, gentry, and  
clergy, for out-door work at their country seats. The Anti-  
Corrosion is particularly recommended as the most durable out-  
door Paint ever invented, for the preservation of every description  
of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has  
been proved by the practical test of upwards of 60 years, and by  
the numerous (between 500 and 600) testimonials in its favour,  
and which, from the rank and station in society of those who  
have given them, have never yet been equalled by anything of  
the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testi-  
monials, will be sent on application to WALTER CARSON & SONS,  
9, Great Winchester Street, Old Broad Street, Royal Exchange,  
London. No Agents. All orders are particularly requested to  
be sent direct.

## CHAMPAGNE, CHAMPAGNE!—The acknow-

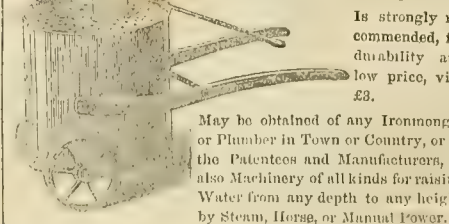
ledged superiority of MITCHELL'S ROYAL ALBERT  
RHUBARB, attested by chemical analysis, must convince the  
most sceptical of its unrivalled efficacy over every production of  
the kind throughout England for the manufacture of British  
Wines; its saccharine qualities and excellence of flavour render  
it of invaluable adaptation for producing a luscious and sparkling  
champagne, equal to foreign importations, combining that  
luxurious richness and grateful piquancy the *sine qua non* of con-  
noisseurs and admirers of this delightful beverage; it may be  
obtained during the next two months in the highest state of per-  
fection at 2l. 10s. per ton, by forwarding a Post-office order to  
WILLIAM MITCHELL, Market Gardener, Enfield Highway, Mid-  
dlesex. Other kinds, 2l. per ton.

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CRESCENT, JEWIN STREET, LONDON.

GALVANISED IRON TUB GARDEN  
ENGINE,

With Warner's Registered Spreader,



Is strongly re-  
commended, for  
durability and  
low price, viz.,  
£3.

May be obtained of any Ironmonger  
or Plumber in Town or Country, or of  
the Patentees and Manufacturers, as  
also Machinery of all kinds for raising  
Water from any depth to any height  
by Steam, Horse, or Manual Power.



# ROYAL BOTANIC GARDENS, REGENCY PARK.

## LIST OF PRIZES AWARDED AT THE EXHIBITION, HELD ON WEDNESDAY, JUNE 29. PLANTS AND FRUIT.

### EXTRA GOLD MEDAL.

To Mr. May, Gardener to Mrs. Lawrence, Ealing Park, for 20 Stove and Greenhouse Plants.  
To Mr. Blake, Gardener to J. H. Schröder, Esq., Stratford Green, Essex, for 25 Exotic Orchids.

### LARGE GOLD MEDAL.

To Mr. Cole, Gardener to H. Colyer, Esq., Dartford, Kent, for 20 Stove and Greenhouse Plants.

### MEDIUM GOLD MEDAL.

To Mr. Franklin, Gardener to Mrs. Lawrence, Ealing Park, for 25 Exotic Orchids.  
To Messrs. Rolleston, Nurserymen, Tooting, Surrey, for 18 Exotic Orchids.  
To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, Herts, for 16 Exotic Orchids.  
To Mr. Speed, Gardener, Edmonton, for 20 Stove and Greenhouse Plants.  
To Messrs. Fraser, Nurserymen, Lea Bridge Road, Leyton, Essex, for 16 Stove and Greenhouse Plants.  
To Mr. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 12 Stove and Greenhouse Plants.

### GOLD MEDAL.

To Messrs. Rolleston, Nurserymen, for 16 Stove and Greenhouse Plants.  
To Mr. Williams, Gardener to Miss Traill, Hayes Place, Bromley, Kent, for 12 Stove and Greenhouse Plants.  
To Messrs. Rolleston, for 10 Cape Heaths.  
To Mr. Smith, Gardener to W. Quilter, Esq., Crown Hill, Norwood, for 10 Cape Heaths.  
To Mr. Turner, Nurseryman, Slough, for 12 Pelargoniums, in 8-inch pots.  
To Mr. Robinson, Gardener to J. Simpson, Esq., Thames Bank, Pimlico, for 12 Pelargoniums, in 8-inch pots.

### LARGE SILVER GILT MEDAL.

To Mr. Williams, Gardener to C. B. Warner, Esq., Hoddesden, Herts, for 25 Exotic Orchids.  
To Mr. Hume, Gardener to R. Hanbury, Esq., Poles, near Ware, Herts, for 8 Exotic Orchids.  
To Messrs. Pamplin, Nurserymen, Lea Bridge Road, Leyton, Essex, for 16 Stove and Greenhouse Plants.  
To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, Surrey, for 12 Stove and Greenhouse Plants.  
To Mr. Davis, Market Gardener, Oak Hill, East Barnet, for a Miscellaneous Collection of Fruit.  
To Mr. Fleming, Gardener to the Duchess of Sutherland, Trentham Hall, Stafford, for a collection of Fine Apples.

### LARGE SILVER MEDAL.

To Messrs. Fraser, Nurserymen, for 10 Cape Heaths.  
To Mr. Cole, Gardener to H. Colyer, Esq., for 10 Cape Heaths.  
To Mr. Smith, Gardener to W. Quilter, Esq., for 9 Cape Heaths.  
To Mr. Constantine, Gardener to C. Mills, Esq., Hillingdon, for 6 Calceolarias.  
To Mr. Westwood, Nurseryman, Turnham Green, for 12 Pelargoniums, in 8-inch pots.  
To Mr. Bonham, Gardener to Mrs. Maddaford, Staines, for 12 Pelargoniums in 8-inch pots.  
To Mr. Turner, Slough, for 6 Fancy Pelargoniums, in 8-inch pots.  
To Mr. Robinson, Gardener to J. Simpson, Esq., for 6 Fancy Pelargoniums, in 8-inch pots.  
To Mr. Wiggins, Gardener to E. Beck, Esq., Isleworth, for 6 Pelargoniums of 1851.  
To Mr. Fleming, Gardener, Trentham, for a Miscellaneous Collection of Fruit.  
To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., Coleorton Hall, Ashby de la Zouch, for 3 dishes of Grapes.  
To Mr. Ivison, Gardener to the Duke of Northumberland, Sion House, for a collection of Tropical Fruit.

### SILVER GILT MEDAL.

To Mr. Ivison, for 8 Exotic Orchids.  
To Messrs. J. & J. Lee, Nurserymen, Hammersmith, for a collection of Variegated Stove and Greenhouse Plants.  
To Mr. Over, Gardener to W. M. Mullen, Esq., Clapham, for 12 Stove and Greenhouse Plants.  
To Mr. May, Gardener to Mrs. Lawrence, for 4 Ixoras.  
To Messrs. Fairbairn, Nurserymen, Clapham, for 10 Cape Heaths.  
To Mr. Williams, Gardener to Miss Traill, for 10 Cape Heaths.  
To Mr. Watson, Gardener to Mrs. Tredwell, St. John's Lodge, Norwood, for 9 Cape Heaths.  
To Messrs. Paul, Nurserymen, Cheshunt, Herts, for 100 Cut Roses.  
To Mr. Parker, Gardener, Stanmore, for 6 Pelargoniums of superior growth.  
To Mr. Ambrose, Nurseryman, Battersea, for 6 Pelargoniums.  
To Mr. Miller, Gardener to R. Mosely, Esq., Maida Hill, Edgware Road, for 6 Fancy Pelargoniums.  
To Mr. Turner, of Slough, for 6 Pelargoniums of 1851.  
To Mr. Head, Nurseryman, Woking, Surrey, for 12 lbs. of Grapes.  
To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for 1 dish of Black Hamburg Grapes.  
To Mr. Boyd, Gardener to L. H. Hazlewood, Esq., Dytchley, for 1 dish of Black Hamburg Grapes.  
To Mr. Frost, Gardener to G. L. Betts, Esq., Preston Hall, Kent, for 1 dish of Black Hamburg Grapes.  
To Mr. Lushy, Gardener to J. Hill, Esq., Streatham, Surrey, for 1 dish of Black Prince Grapes.  
To Mr. Aldborough, Gardener to S. Gurney, Esq., Upton Park, for 1 dish of White Muscadine Grapes.  
To Mr. Turnbull, Blenheim, Oxon, for 1 dish of Muscat Grapes.  
To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for 1 dish of Frontignan Grapes.

### SILVER GILT MEDAL.

To Mr. Turnbull, Gardener to the Duke of Marlborough, Blenheim, Oxon, for 4 dishes of Peaches and Nectarines.  
To Mr. Munro, Gardener to Mrs. Oddie, Colney House, St. Alban's, for 3 dishes of Grapes.

### SILVER MEDAL.

To Mr. Williams, Gardener to C. B. Warner, Esq., for a Collection of Variegated Plants.  
To Mr. Munro, Gardener to Mrs. Oddie, Colney House, St. Alban's, Herts, for a remarkably fine box of Nectarines.  
To Messrs. Henderson, Nurserymen, Pine Apple Place, Edgware Road, for 7 miscellaneous Stove and Greenhouse Plants.  
To Mr. Cole, Gardener to H. Colyer, Esq., for 4 plants of Ixoras.  
To Mr. Roser, Gardener to J. Bradbury, Esq., Streatham, Surrey, for 9 Cape Heaths.  
To Mr. Ivison, Gardener, Sion House, for Lagetta linearis, or Lace Bark Tree.  
To Mr. Terry, Gardener to Lady Pullen, Youngsbury, Herts, for 50 cut Roses.  
To Mr. Dobson, Nurseryman, Woodlands, Isleworth, for 12 Pelargoniums in 8-inch pots.  
To Mr. Gray, Gardener to J. W. Taylor, Esq., Croft Lodge, Highgate Rise, for 12 Pelargoniums in 8-inch pots.  
To Mr. Westwood, Turnham Green, for 6 fancy Pelargoniums.  
To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for a dish of Muscat Grapes.  
To Mr. Constantine, Gardener to C. Mills, Esq., Hillingdon, for 3 Vines in pots.  
To Mr. Fleming, Gardener, Trentham, for 4 dishes of Peaches and Nectarines.  
To Mr. Snow, Gardener to the Earl de Grey, Wrest Park, Selsoe, for 2 dishes of Peaches and Nectarines.  
To Mr. Tillyard, Gardener to the Right Hon. C. Shaw Lefevre, M.P., Heckfield Place, Hants, for a dish of White Grapes.  
To Mr. Bray, Gardener to Sir I. L. Goldsmid, St. John's Lodge, Regent's Park, for 6 Fancy Pelargoniums in 8-inch pots.

### SILVER MEDAL.

To Mr. Dodds, Gardener to Colonel Baker, Salisbury, for 1 fruit of the Pine-apple.  
To Mr. Fleming, Gardener, Trentham, for 1 fruit of the Queen Pine-apple.  
To Mr. Bailey, Gardener to T. Drake, Esq., Shardeloes, Amersham, for 1 Prickly Cayenne Pine-apple.  
To Mr. M'Ewen, Gardener to his Grace the Duke of Norfolk, Arundel Castle, for 1 fruit of the Prickly Cayenne Pine-apple.  
To Mr. Davey, Gardener to Mrs. Smith, Colney Hatch, for 3 dishes of Grapes.  
To Mr. Lushy, Gardener to J. Hill, Esq., Streatham, Surrey, for 1 dish of Black Hamburg Grapes.  
To Mr. Turnbull, Gardener, Blenheim, Oxon, for 1 dish of the Black Prince Grapes.

### SMALL SILVER MEDAL.

To Mr. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 8 Exotic Orchids.  
To Mr. Watson, Gardener to Mrs. Tredwell, Norwood, for 6 Stove and Greenhouse Plants.  
To Messrs. Vetch, Nurserymen, Exeter, and Exotic Nursery, Chelsea, for a Plant of Philisia buxifolia.  
To Mr. Wood, Nurseryman, Norwood, for 6 Hardy Alpine Plants.  
To Mr. Woolley, Gardener to H. B. Ker, Esq., for 12 Exotic Ferns.  
To Mr. Williams, Gardener to C. B. Warner, Esq., for 30 British Ferns.  
To Mr. Francis, Nurseryman, Hertford, for 100 Cut Roses.  
To Mr. Hume, Gardener to R. Hanbury, Esq., for 50 Cut Roses.  
To Messrs. Paul & Son, for 12 single blooms of Roses.  
To Mr. Bray, Gardener to I. L. Goldsmid, Bart., for 6 Fuchsias.  
To Mr. Nye, Gardener to E. Foster, Esq., Clewer Manor, for 6 Pelargoniums of 1852, second year of blooming.  
To Mr. Jackson, Gardener to G. Beaufoy, Esq., South Lambeth, for 3 Vines in pots.  
To Mr. Davis, Market Gardener, Oak Hill, for a Dish of Nectarines.  
To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for 2 dishes of Peaches and Nectarines.  
To Mr. Munro, Gardener to the Earl of Clarendon, Grove Park, Watford, for 2 dishes of Strawberries.  
To Mr. Turner, Slough, for 24 Pinks.  
To the same, for 36 Pansies.  
To Mr. Holder, Gardener to the Rev. G. Coleridge, Eton College, for 24 Pansies.  
To Mr. Robertson, Gardener to Lady E. Foley, Stoke Edith Park, Ledbury, for a fruit of the Providence Pine Apple.  
To Mr. Chapman, Gardener to J. B. Glegg, Esq., Whittington Hall, Cheshire, for a fruit of the Providence Pine-apple.  
To Mr. Fleming, Gardener, Trentham, for a fruit of the Providence Pine-apple.  
To Mr. Martin, Gardener to Sir H. Fleetwood, Bart., Windsor Forest, for a fruit of the Queen Pine-apple.  
To Mr. Bayley, Gardener to T. T. Drake, Esq., for an Enville Pine-apple.  
To Mr. Grant, Gardener to G. H. Sims, Esq., Bathwick Hill, Bath, for a green-fleshed Melon.  
To Mr. Coe, Gardener to Mrs. Fitzgerald, Manor House, Surrey, for a green-fleshed Melon.  
To Mr. M'Ewen, for a scarlet-fleshed Melon, "Lord Montague."  
To Mr. Bayley, Gardener to T. T. Drake, Esq., for 12 lbs. of Grapes.  
To Mr. Harrison, Market Gardener, Otlands Palace Gardens, Weybridge, Surrey, for 12 lbs. of Grapes.  
To Mr. Smith, Gardener to J. Anderson, Esq., The Holme, Regent's Park, for Correct Labels.  
To Mr. Slow, Gardener to W. R. Baker, Esq., Bayfordbury, Herts, for a dish of Black Hamburg Grapes.

To Mr. Spary, Gardener to J. A. Houlton, Esq., Hallingdon Place, Bishop's Stortford, for a dish of Black Hamburg Grapes.  
To Mr. M'Ewen, for a dish of Black Hamburg Grapes.  
To Mr. Hill, Gardener to R. Sneyd, Esq., Keel Hall, Stafford, for a dish of Black Prince Grapes.  
To Mr. Williams, Gardener to C. B. Warner, Esq., for a dish of white Grapes.  
To Mr. M'Ewen, Arundel, for 4 dishes of Strawberries.  
To Mr. Forbes, Gardener, Woburn Abbey, for one dish of Black Hamburg Grapes.

### BRONZE MEDAL.

To Mr. Mitchell, Nurseryman, Maresfield, for a very distinct coloured Verbena, "Elegantissima."  
To Mr. Wood, Nurseryman, Norwood, for 35 Variegated Plants.  
To Mr. M'Ewen, Gardener, Arundel, for 1 dish of Myatt's Surprise Strawberries.  
To Messrs. Henderson, Nurserymen, Pine-apple Place, for a Pelargonium, "Miss Emily Field."  
To the same, for a Pelargonium, "Kingsbury-Pet."  
To the same, for a Pelargonium, "Skeltoni."  
To Mr. Hume, Gardener to R. Hanbury, Esq., for Blandfordia sp.  
To Mr. Smith, Gardener to J. Anderson, Esq., the Holme Villa, Regent's Park, for 6 Hardy Alpine Plants.  
To Mr. Ivison, Gardener, Sion House, for Maranta arundinacea.  
To Mr. Smith, Gardener to J. Anderson, Esq., for 30 British Ferns.  
To Mr. Francis, Hertford, for 12 blooms of Roses.  
To Mr. Bragg, Slough, for 24 Pinks.  
To the same, for 36 Pansies.  
To Mr. Davis, Market Gardener, Barnet, for 1 Providence Pine-apple.  
To Mr. Bray, Gardener to E. Lousada, Esq., Peak House, Sidmouth, for 1 fruit of the Queen Pine-apple.  
To Mr. Bray, Gardener to E. Lousada, Esq., for 1 Pine-apple.  
To Mr. Turnbull, Blenheim, for 1 Pine-apple, "Sierra Leone."  
To the same, for 1 Queen Pine-apple.  
To the same, for 1 fruit of the Enville Pine-apple.  
To Mr. Chapman, Gardener to J. B. Glegg, Esq., for a hybrid Green-fleshed Melon.  
To Mr. Bundy, Gardener to — Goodlack, Esq., Wadley, Faringdon, Berks, for 1 green-fleshed Melon.  
To Mr. M'Ewen, Gardener, Arundel, for 1 Scarlet-fleshed Melon.  
To Mr. Harrison, Market Gardener, Weybridge, for 1 dish of Black Hamburg Grapes.  
To Mr. Munro, Gardener to Mrs. Oddie, for 1 dish of Black Hamburg Grapes.  
To Mr. Basset, Gardener to F. B. Hering, Esq., East End, Finchley, for 1 dish of Black Hamburg Grapes.  
To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for 1 dish of Elvage Nectarines.  
To Mr. Munro, Gardener to Mrs. Oddie, for 2 dishes of Peaches and Nectarines.  
To Mr. Constantine, Gardener to C. Mills, Esq., for 1 dish of Figs.  
To Mr. Eastham, Gardener to A. Joy, Esq., East Acton, for 1 dish of Black Cherries.  
To Mr. Eastham, for 1 dish of White Cherries.  
To Mr. Lydiard, Market Gardener, Batheaston, Bath, for 4 dishes of Strawberries.  
To Messrs. Fraser, for Correct Labels.  
To Mr. Taylor, Gardener to J. Coster, Esq., for Correct Labels.

### CERTIFICATE OF MERIT.

To Mr. Atkinson, Gardener to Lady Molineux, for 1 dish of Myatt's Surprise Strawberries.  
To Mr. Munro, Gardener to Mrs. Oddie, for 1 dish of Strawberries.  
To Mr. Woolley, Gardener to H. B. Ker, Esq., for Sauromatum punctatum.  
To Messrs. Rolleston, for Philodendron pertusum.  
To Mr. Robertson, Gardener to Lady Emily Foley, Stoke Edith Park, Ledbury, for a Hybrid Persian Green-fleshed Melon.  
To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for a Trentham Hybrid Melon.  
To the same, for a Green-fleshed Melon.  
To Mr. Bailey, Gardener to T. T. Drake, Esq., for a Green-fleshed Melon.  
To Mr. Smith, Gardener to Lord Southampton, Whittlebury Lodge, for a Green-fleshed Melon.  
To Mr. Kuttley, Gardener to J. M. Thorn, Esq., South Lambeth, for a Green-fleshed Melon.  
To Mr. M'Ewen, Gardener, Arundel, for a Bromham Hall Green-fleshed Melon.  
To the same, for a Green-fleshed Melon.  
To the same, for a Scarlet-fleshed Melon, "Arundel Hybrid."  
To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for 12 lbs. of Grapes.  
To Messrs. Mitchell & Co., Kemp Town, Brighton, for 12 lbs. of Grapes.  
To Mr. Davis, East Barnet, for 12 lbs. of Grapes.  
To Mr. Munro, Gardener to Mrs. Oddie, for 12 lbs. of Grapes.  
To Mr. Martin, Gardener to Sir H. Fleetwood, for 12 lbs. of Grapes.  
To Mr. Spary, Nurseryman, Brighton, for 12 lbs. of Grapes.  
To Mr. Chapman, Gardener to Y. B. Glegg, Esq., for 1 dish of Nectarines.  
To Mr. Constantine, Gardener to E. Mills, Esq., for 2 dishes of Peaches and Nectarines.  
To Mr. Tillyard, Gardener to the Right Hon. C. Shaw Lefevre, Heckfield Place, Hants, for 12 lbs. of Grapes.  
To Mr. Hume, Gardener to R. Hanbury, Esq., for 1 dish of May Duke Cherries.  
To Mr. Snow, Gardener to the Earl de Grey, for 1 dish of Black Cherries.  
To Mr. Hume, Gardener to R. Hanbury, Esq., for 1 dish of Cherries.  
To Mr. Tillyard, Heckfield, for 1 dish of Figs.  
To Messrs. Rolleston, for Correct Labels.  
To Mr. Cole, Gardener to H. Colyer, Esq., for Correct Labels.

**EDUCATION, DEVON.—SEA-BATHING.**—A young Lady can be received into a respectable establishment as Articled Pupil for three or four years, on moderate terms, which will include a first-class English education with two accomplishments from Masters. Parents having daughters whom they may wish to be prepared for the Profession, and whose health may require a prolonged residence in a mild and healthy climate, or sea-bathing, would find this worthy of special attention. Pupils may remain during the Christmas vacation free.

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**BAKER'S PHEASANTRY.** Beaufort Street, King's Road, Chelsea, by special appointment to her Majesty and H.R.H. PRINCE ALBERT.—ORNAMENTAL WATER FOWLS, consisting of Black and White Swans, Egyptian, Canada, China, Barnacle, Brent, and Laughing Geese, Shieldkrans, Pintail, Widgeon, Summer and Winter Teal, Gadwall, Labrador, Shovelers, Gold-eyed and Dun Divers, Carolina Ducks, &c., domesticated and pinioned; also Spanish, Cochon China, Malay, Poland, Surrey, and Dorking Fowls; White, Japan, Pied, and Common Pea-fowl, and Pure China Pigs; and at 3, Half-moon Passage, Gracechurch Street, London.

**THE COMFORT OF A FIXED WATER-CLOSET**  
FOR £1.—Places in gardens converted into comfortable Water-closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Indispensable for the health and comfort of a family in this hot weather. Any carpenter can fix it in two hours. Price 12. Hermetically Sealed Inodorous Chamber Commodes, 12. 4s., 22. 6s., and 32. 6s.; also Improved Portable Water-closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.  
At FIVE & CO'S, 26, Tavistock Street, Covent Garden, London.



## EXHIBITION OF AMERICAN PLANTS.

WINDHAM NURSERY, BAGSHOT, SURREY, NEAR THE MILITARY CAMP, VIRGINIA WATER, AND STAINES STATION.

**GEORGE BAKER** begs to announce his extensive collection of AMERICAN PLANTS is now in flower and may be seen gratis.

G. B. is a large contributor to the American Exhibition in the Royal Botanic Gardens, Regent's Park.

## ROSES.

**A. PAUL and SON** beg to announce that their unrivalled Collection is now in full Bloom. Admirers of this flower are respectfully invited to inspect them. The Nurseries are one mile from the Cheshunt and two miles from the Waltham Stations of Eastern Counties Railway. Nurseries, Cheshunt, Herts, July 9.

## ROSES.

**H. LANE and SON**, Great Berkhamstead have the pleasure to inform their Patrons that their extensive collection is now in full bloom. Their Conifers, Rhododendrons, and a general collection of Trees and Shrubs, also Fruit Trees, are remarkably fine, and well worthy the attention of Planters. The Nurseries are within a few minutes' walk of the railway station on the London and North-Western Railway.

## ROSES.

**EDWARD DENYER, NURSERYMAN**, Loughborough Road, Brixton, within three miles of London, informs his kind patrons in general, that his unrivalled COLLECTION OF ROSES, reaching to nearly one thousand varieties, are now in Bloom, and free to the inspection of all Visitors, Sundays excepted. Orders taken at this time and executed in November next.

## CINERARIA SEED.

WITH DIRECTIONS FOR SOWING, &c.

**EDWARD GEORGE HENDERSON and SON**, Wellington Road, St. John's Wood, London, are now prepared to send out their newly-saved Seed of the above useful winter Flower, gathered from fine named varieties, at 2s. 6d. per packet; also a few packets of 5s., amongst which is Seed from PRINCE ARTHUR, ROSALIND, and other leading varieties. E. G. H. & SON beg to give notice that their Calceolarias from which the Seed is saved can now be seen in flower at the Nursery, packets of which will be booked at 5s. each, to be sent at the end of July.

## THE BLACK BARBAROSSA.

"A GRAPE THAT DON'T KNOW HOW TO SHANK."

**JOHN BUTCHER** respectfully begs to inform the Public he is now sending out fine Plants of the above magnificent late Grape. The Plants are in excellent condition, and are sent to any part of the kingdom with safety. Also, other leading varieties of Vines, in fine condition for immediate planting.

Nursery, Stratford-on-Avon.—July 9, 1853.

## CRIMSON-FLOWERED IVY-LEAVED GERANIUM.

**STANDISH and NOBLE** have now to offer the above, which they can recommend as a BEDDING PLANT the first class. It has the habit and foliage of the well known variety, but the flowers are of the brightest crimson. They are produced in the greatest profusion, and are raised well above leaves upon stout foot-stalks. Plants 10s. 6d. each. \*—The usual discount to the trade when three or more are sent.—Bagshot, Surrey, July 9.

## NEW AND SELECT PLANTS AT REDUCED PRICES.

**MASS and BROWN** beg to refer to their advertisement of the above in the *Gardeners' Chronicle* of May 25th, 1st June 4th, 11th, and 18th; also to their advertisements of the ST. JOHN GERANIUMS of October last. Strong Plants at reduced prices. See *Gardeners' Chronicle* of May 7th, 14th, 21st, and 28th.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## WAITE'S KING OF THE CABBAGES.—This is the earliest and best Cabbage in cultivation, and quite distinct from the Enfield.

G. WAITE feels inclined to think many parties have been led into having had Enfield sent them for this Cabbage, they therefore condemn the merits of it without having had the REAL one, which is quite distinct from all other varieties. To be had in any quantities of not less than 1 lb. at 4s. per lb. G. WAITE'S Seed Establishment, 181, High Holborn, London.

## SPLENDID NEW RHUBARB.

SALT'S CRIMSON PERFECTION.

**ROBERT SALT, NURSERYMAN**, Longton, Staffordshire, will send out roots of this early, productive, and delicious variety of Rhubarb in the Autumn of 1854. See *Gardeners' Chronicle*, June 11th, 1-53: "Very good, and most beautiful crimson compared with others, it is remarkable for the small amount of acidity it contains."—Ed.

Certificate of Merit was awarded for specimens exhibited at last meeting of the Horticultural Society. Single roots, 1s. 3d. three or 1 guinea, and six for 2l. Orders forwarded now to ROBERT SALT, or to HURST & MCMILLAN, 6, Leadenhall Street, London, will have the earliest attention.

## TURNIP SEEDS FOR JULY SOWING,

all of which are of quick growth and hardly enough to and the winter.

A Gallon of Turnip Seed weighs about 64 lbs.		
	Gall.	lb.
	d.	s. d.
<b>TON'S PURPLE TOPPED YELLOW</b>		
BRID, the hardiest, largest, and most nutritious of all Hybrid Turnips (similar to a fine Swedish).		
<b>TON'S GREEN TOPPED YELLOW</b>	5	6 1 0
BRID, very early adapted for poor soils and late sowing. It will produce a heavier crop than any other under such circumstances.		
<b>OLSHIRE R.D. GLOBE</b> , a superior variety presented to us by Philip Pusey, Esq., of Thoresby, after Wheat.	5	6 1 0
<b>LOW FANKARD</b> or Tankard Swede.	5	6 1 0
<b>TON'S LARLY SIX WEEKS</b> , very early and large. (See Mr. Hickman's and other letters.)	5	0 0 10
<b>R. HUGHES</b> , of Brimpton House, near Newbury, in a letter dated January 1st, 1853, says—"I must mention the above Turnip as the best sort I have ever seen for earliest and best sowing. I have grown them several years, and have only found them to produce more food in less time than any other Turnip. I have had them after Wheat, of a good size, and as good as from the time of sowing."	5	0 0 10

R. HUGHES & SONS having grown nearly 40 acres of Turnips at their ample ground, can strongly recommend the above for sowing. See *Chronicle* in our ample ground at 1, Victoria Road, Ag. 27, 1852.

1s. delivered carriage free, to all parts, except parcels.

J. N. BUTTON & SONS, SEED GROWERS, Reading, Berks.

## GRAPE VINES FROM EYES.—The Undersigned

has now to dispose of a large stock of GRAPE VINES, raised from Eyes this season; strong, and in vigorous health, now exposed to greenhouse temperature, and hardened so that they can be sent safely to any part of the kingdom without check or injury. By planting now a whole season will be saved. They comprise all the leading kinds, and an inspection of them is respectfully solicited.

R. GLENDINNING, Chiswick Nursery, near London.

**ROSES.**—The Collection at Sawbridgeworth is now on Bloom. The most convenient trains are per Eastern Counties Railway to the Harlow station.

THOS. RIVERS, the Nurseries; Sawbridgeworth, Herts.

## The Gardeners' Chronicle.

SATURDAY, JULY 9, 1853.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	July 12—Zoological.....	9 P.M.
WEDNESDAY,	13—Literary Fund.....	3 P.M.
THURSDAY,	14—National Horticultural.....	3 P.M.

COUNTRY SHOWS FOR THE PRESENT MONTH.—12th: Cheltenham, and Wolverhampton.—14th: Northampton.—20th: Berrick.—21st: Aylesbury.—26th: Handsworth and Loxells.—27th: Isle of Wight, and Buckingham.—28th: Oxfordshire.—30th: Midland Horticultural (Derby).

THE finest of the race of Silver Firs is probably ABIES BRACEATA, a tree originally found in California, by Dr. COULTER, and afterwards in the same country by the unfortunate DOUGLAS. The first met with it on the mountainous range of Santa Lucia, running parallel with the coast, and at about 1000 feet less elevation than Pinus Coulteri, or macrocarpa, forming a very slender tree, 120 feet high, and as straight as an arrow. DOUGLAS speaks of it as a most beautiful object, attaining a great size and height, and never seen at a lower elevation than 6000 feet above the sea, on the Californian mountains, in latitude 36° N.

The leaves of a specimen before us are arranged in two rows, 2 inches long, slightly but very distinctly curved, sharp pointed, green above but silvery beneath. The cones are oblong, 3—4 inches long by 2—3 inches broad, guarded in a most remarkable manner by stiff, incurved, flat spines, very narrow, which, according to DOUGLAS, are 3 to 4 inches long, but do not exceed 1½ inch in the only cone in our possession. These spines are bracts, and have given rise to the name *bracteata*; they are in fact of the same nature as the narrow appendages in *Pinus Douglasi*, from which, however, this is totally different, being more nearly related to *Abies nobilis*. DOUGLAS says that when on the tree, growing in clusters and at a great height, these cones seem to resemble those of a *Banksia*.

Mr. JEFFERY, the Scotch collector in Oregon, does not appear to have found this tree—HARTWEG sent none home from California; so that this charming species has long been one of the greatest desiderata among unintroducted Coniferous trees. We are therefore peculiarly happy to announce to all eager coniferomaniaes that Messrs. VEITCH & Co. are about to send it into the market, as announced in an advertisement in another column. Their industrious collector, Mr. WILLIAM LOBB, transmitted seeds some years ago, from which a crop of fine healthy plants has been obtained.

Mr. VEITCH has been so good as to furnish us with the following extract from one of Mr. W. LOBB'S letters:—

"This beautiful and singular tree forms here the most conspicuous ornament of the arborescent vegetation. On the western slopes, towards the sea, it occupies the deepest ravines, and attains the height of 120 to 150 feet, and from 1 to 2 feet in diameter; the trunk is as straight as an arrow, the lower branches decumbent; the branches of the upper part are numerous, short, and thickly set, forming a long tapered pyramid or spire, which gives to the tree that peculiar appearance which is not seen in any other kinds of the Pinus tribe. When standing far apart, and clear from the surrounding trees, the lower branches frequently reach the ground, and not a portion of the trunk is seen from the base to the top.

"Along the summit of the central ridges, and about the highest peaks, in the most exposed and coldest places imaginable, where no other Pine makes its appearance, it stands the severity of the climate without the slightest perceptible injury, growing in slaty rubbish which, to all appearance, is incapable of supporting vegetation. In such situations it becomes stunted and bushy, but even then the foliage maintains the same beautiful dark green colour, and when seen at a distance it appears more like a handsomely grown Cedar than a Pine. No doubt it is one of the hardiest trees of the Californian vegetation, and is equally well adapted for clothing the mountain tops as the sheltered valley.

"The cones, too, are quite as singular as the growth of the tree is beautiful; when fully developed, the scales, as well as the long leaf-like bracts, are covered with globules of thin transparent resin, presenting to the eye a curious and striking object.

"DOUGLAS was mistaken in saying that this Fir does

not occur below 6000 feet of elevation. On the contrary, it is found as low as 3000 feet, where it meets *Taxodium sempervirens*."

LET us now turn to the FOREST OF DEAN, concerning which we have formerly made some observations not more unpalatable to those in charge than unpleasant to ourselves.

The forest of Dean and High-meadow Woods (the latter purchased in the year 1817 for 154,000*l.*) occupy about 25,000 acres in the western part of the county of Gloucester, between the Wye and the Severn. It abounds in minerals of very great value. Some of the land is described as being very fine, and, generally speaking, good and well adapted for growing timber; Mr. W. DOWNES, an experienced land-agent, stated to Lord DUNCAN'S committee that there are probably few woods in England superior to those in Dean Forest. Mr. JOHN LANGHAM, one of the assistant surveyors, produced an account in which it was shown how, in the 20 years preceding 1848, there had been a clear profit upon the thinnings of plantations of 66,184*l.*, or above 3300*l.* a year. Mr. CLUTTON reported the plantations to have been very well managed; he never saw plantations better thinned; wherever it is necessary, the land is thoroughly drained; and it would be presumption in him to suggest anything likely to improve the woods, or add to their value. Lord DUNCAN'S committee, relying upon these statements, reported to the House that all the plantations were growing luxuriantly, had been well thinned, and did credit to all concerned in their management.

We regret very much to say that the evidence before the public by no means justifies this flattering statement. In the first place, although up to the year 1833 small quantities of timber had been supplied to the navy, yet from that year up to 1848 they had wholly ceased. When, in 1851, under an order of the then Commissioners, the deputy surveyor felled timber once more for the use of the navy, the navy purveyor was compelled to reject 441 trees out of 692, which the managers of Dean and High-meadow had provided. We formerly mentioned this startling fact, and the yet more striking result of a reference to an experienced officer of LLOYD'S, who reported that 90 other trees ought to have been rejected, or 530 out of 690. Instead of the flourishing and most judiciously-managed trees spoken of by the witnesses before Lord DUNCAN'S committee, Mr. MARTIN (LLOYD'S officer) condemned the state of the timber, in the strongest possible terms. He declared that the trees had been allowed to stand too long, that some thousands of the same age and dimensions are now standing, stag-headed, or loaded with rotten limbs decayed to the very trunk; that they are getting worse and worse, and injuring the young trees around them. Many of the standing trees are described as having their branches damaged and broken by the falling of other trees, which branches had never been removed, but allowed to remain, to convey serious defect into the body of the tree. He also found that instead of the timber being sawn to suitable sizes, it was chopped to no given size, and when felled was left to rot upon the wet ground, instead of being blocked up, so as to allow air to pass under it, in order to dry and season it. No wonder that the dockyards ceased to be supplied for 15 or 16 years. How could the officers there permit such rubbish to be delivered?

A very large source of income in these forests is bark. The quantity accounted for between 1838 and 1847, in the 13,000 acres of Dean forest, fluctuated between 373 and 1271 tons annually; while the 3500 acres of High-meadow yielded, in round numbers, from 2 tons to 309 tons annually. This appears from the official returns; to which a correspondent adds that the quality of the bark cured in Dean is so inferior as to fetch the lowest price in the market.

In March, 1849, Mr. CLUTTON was of opinion that in the forest of Dean 11,000 acres of plantations alone ought at that time to have yielded a NET profit of 10*s.* an acre, and would produce 1*l.* an acre at some future time, and that from High-meadow 2500*l.* a year NET income ought to have been obtained. The official accounts show that, as regards High-meadow, this estimate was realised; for the net income in the preceding five years is returned as averaging 2593*l.* But in Dean it is just the reverse. The plantations there should have yielded 5500*l.* a year, exclusive of the produce of 3000 acres of other forest land, which may be taken at 10*s.* an acre more, making in all 7000*l.* a year; but the net income from Dean on the average of the previous five years was only 1586*l.*, or 5414*l.* less than it ought to have been. Nor is this all, for we learn from Lord DUNCAN himself that in the last year of this term no less than 4000*l.* was received for minerals, which did not enter into Mr. CLUTTON'S calculation. He was of opinion that







of London: but in the soil of Hampstead Heath all the finer forms of vegetation may be expected to thrive; masses of American plants may blend with groves of Deodars and all our glorious new Conifers, while the trees of the United States, with their autumnal drapery of crimson and green and gold, would create an "Indian Summer" at the gates of London.

But our limited space will not permit us to dwell upon what is now possible. All who are familiar with park scenery can readily fill in the details of the picture. We would only observe that if some strong and decided measure is not now taken, the opportunity of securing at least one scene of great natural beauty for the recreation of London is lost for ever. In our judgment the plan of Prof. COCKERELL deserves the warmest support; and the great metropolitan parishes, if they are wise, will proceed instantly to press upon Parliament the necessity of its adoption. London increases like a rolling ball of snow; no longer ago than June, 1736, the then Duke of GRAFTON proceeded at law against one HILLIARD, for burning bricks upon some building ground at the back of New Bond Street. Where would the west of London have been by this time if the mass of houses had not been stayed by the impassable barrier of Hyde Park. Thirty, nay twenty years since, all that prodigious district consisting of Hyde Park Gardens, or Tyburnia, Bayswater, and Notting Hill consisted of green fields; fortunately it is stopped to the south by Kensington Gardens, Hyde Park, and Lord Holland's ground, but the tide of buildings rolls resistlessly onwards to the west, and we shall soon find Oxford Street ending at Acton. So will it be with the north. The inevitable fate of the most beautiful, nay the only really beautiful spot near London, is to be covered with bricks and mortar, unless its doom is arrested by the speedy interposition of a public park.

#### MANAGEMENT OF YOUNG PEACH TREES.

To secure a handsome wall Peach tree it is exceedingly desirable that, during the earlier stages of its growth, the sap should be encouraged to circulate as evenly as possible through all the shoots, *i.e.*, through those trained in a lateral or horizontal direction, as well as those that are more upright. Indeed, the securing a proper development of underwood is a desideratum with every scientific gardener. Now, it is well known by every one conversant with the management of Peach trees, that during the first two or three years of their growth a rapid accumulation of central wood takes place, while, on the other hand, there is a proportionately slow growth of the side shoots, caused by the sap being chiefly concentrated in the upright branches. Now the question is, how is the sap to be diverted into the desired channel? The only effectual mode of doing this seems to be by shortening in the central shoots, and stopping all the laterals which these may send out, except the terminal ones, which are trained as leaders. Many trees are spoiled in appearance because this practice is not followed out; and not only so, but they never become so productive as they would otherwise be.

I can see no good reason why the lower shoots of a fan-trained Peach tree should not be as strong and productive as any of the others. An objection has been raised to my mode of treatment, which is, that it tends to weaken the remaining eyes of those shoots which have been stopped. But if such is the result, I should say that it is rather an advantage than otherwise, because it is precisely the effect which is desired. There is no danger of the central wood of a Peach tree ever becoming too weak. The production of a few laterals can never injure the tree, if they are properly attended to and stopped in time; if they did, what would become of the Vine?

To nurserymen and others who have the management of large quantities of young trees, this subject is an important one; and as I am fully aware that there are some gardeners who hold in this matter an opinion contrary to that which I have advanced, it would be well if they would come forward and furnish us with the *rationale* of their practice.

I should have stated that the proper time for pinching the shoots is about the month of June. *J. Burnett.*

#### THE BALSAM.

Few plants are more generally cultivated or more useful for the decoration of the greenhouse during the season when its ordinary inmates are placed out of doors than the Balsam, but in the hands of amateurs it is seldom well grown. It is a plant of exceedingly vigorous habit, and unless its energies are properly directed from the commencement it speedily assumes a lanky naked appearance, which no after care can correct.

Seed may be sown any time from the beginning of March to the middle of May, according to the season when the plants may be wanted to be in flower, and the convenience for treating them properly after they are up. Sow thinly in well drained pots filled with light sandy soil, covering the seeds lightly with the same material, and place them in a moist warm house or pit to vegetate. As soon as the plants appear, the pots should be placed close to the glass in the lightest part of

the house, and air admitted on every favourable occasion; for the aim from the first should be to induce stocky robust growth, and this cannot be effected without the aid of light and air. When the first pair of leaves expand, pot singly, in 4-inch pots, retaining the plants in a moist gentle heat; and, if necessary, afford them a slight shade for a few hours in the forenoon, and maintain a moist atmosphere until they get established in their pots, which, with ordinary care, will soon be the case; afterwards, they must be freely exposed to light and sunshine, and be afforded a free circulation of air by day whenever the weather will admit, shutting up early in the afternoon after syringing. Very little time will elapse before the pots will be filled with roots, which should not be allowed to become matted before shifting, otherwise it will be difficult to keep the soil properly moist, and prevent the appearance of red spider. Use 7-inch pots for this shift, keeping rather close, and watering less freely for a few days after potting, while the roots are laying hold of the fresh soil, but use the syringe freely, sprinkling the plants over-head morning and evening. When established after this shift, give a liberal supply of water, and to do this will probably require more than the ordinary daily application, but this will greatly depend upon the state of the weather, &c., and manure water may be given frequently with advantage, particularly when the pots are rather full of roots. Never allow the plants to suffer through want of pot room, at least until they are in their flowering pots, but shift into those as soon as it is requisite to afford space for the roots. The pots for the final shift should not be less than 10-inch ones, and with liberal treatment 12-inch pots will not be too large. Maintain a moist atmosphere by frequent syringing, &c., and keep the plants close to the glass, affording them a thin screen for two or three hours during the forenoons of very bright days, but this should not be used except the days are very hot, and then only for a short time. Give a liberal supply of manure water when the pots get full of roots, and syringe frequently, so as to have the plants in vigorous health, and perfectly clean when they commence flowering. Any airy light cool situation will suit them while they are in bloom, and all the attention they will then require will be to remove the seed pods as they appear, leaving a few on the most esteemed varieties, to afford a supply of seeds, keeping them clear of decaying flowers, and giving a liberal supply of clear weak manure water.

Plants for late flowering should be grown in a pit or frame, where they can be treated almost as if in the open air, merely using the lights to protect them from heavy storms, or to slightly screen them when newly potted. Persons, however, who cannot afford space in a frame or pit, will find the following treatment to produce first-rate specimens. Supposing the plants to be well established in 5-inch pots about the end of May, prepare a gentle hotbed, large enough to place them upon after shifting into the flowering pots. Remove them to this, and inure them to the open air, by sheltering them from the direct rays of the sun, &c., for a time, then shift into flowering pots, and replace them on the open air hot-bed, and if this is covered with old tan, sifted coal ashes, or any material that will permit the pots to be plunged about half their depth, or more, according to the temperature of the bed, it will be of great service in preventing rapid evaporation, and affording a regular temperature to the roots. If the pots are plunged, the roots will be apt to strike down into the bed, but this must be prevented by frequently turning the pots round; so circumstanced, the plants will be found to grow very rapidly, producing short-jointed robust shoots, and they will grow to any reasonable size in a comparatively short time. The bed should, of course, be put up in a sheltered corner, where they will not be liable to be blown about by wind, and it may be advisable to afford them the support of a stake.

The soil for the Balsam can hardly be too rich; it should consist of about two parts nice friable turfy loam, and one of two-year-old cow-dung, with a sprinkling of sharp sand, well incorporated with it before using. *Alpha.*

#### Home Correspondence.

*Timber Seasoned in Lime Water.*—As the publication of the following memoranda, drawn up by my gardener, and stating to me the results of experiments in seasoning young timber by immersion in lime-water may be interesting and useful to many of my brother landowners, I send them, together with the specimens referred to by him. I should add that timber intended for roofing, gates, &c., should first be shaped and fitted, and then taken to pieces and placed in the lime-water, as the wood, when taken out of the pit and dried, becomes so hard and the grain so gritty that it cannot well be cut or planed, and if placed when tenoned and framed together in the pit, would swell and burst the joints. My gardener says, "the specimens of timber now submitted for inspection are the result of some experiments carried out in 1843 and 1849. Pieces of the wood, as labelled, were soaked for 14 days in strong lime-water, and after being taken out and allowed to dry, were placed with other pieces not soaked upon a grub-eaten floor, and the results are what the specimens now exhibit. While the piece of young Larch, No. 1 is perfectly sound, No. 2, a piece of the same tree, but not soaked, is completely perforated by grubs. No. 3 is a piece of Sycamore plank, soaked in lime-water; and No. 4 a piece of the same plank, not soaked. No. 5 is a specimen of Lime tree plank, soaked; the wood quite green when

put to soak; No. 6 is a specimen of Lime tree, the wood quite dry when put to soak; the grub has not attacked either of them, and it appears that the lime-water penetrates the green wood as deeply as it does the dry. No. 7 is a specimen of peeled Larch, soaked in 1843; and No. 8 is a specimen of the same tree, not soaked in lime-water. No. 9 is a specimen of unpeeled Larch, soaked in lime-water in 1843; and No. 10 is a specimen of the same tree, not soaked. Moreover, I may remark, that the timber which is soaked is harder than that not soaked. The tank for soaking timber here is 26 feet long, 5 wide, and 4 deep; dug out of the clay, and the sides and bottom lined with wood, at an expense of about 70s., exclusive of the value of the timber in the rough. *J. Wilson, J. L., Leaton Knolls.* [The specimens to which our obliging correspondent refers entirely confirm the accuracy of his description of them.]

*Botany of "the Camp."*—To those who go to see the camp at Chobham, it may not be uninteresting to know that the following plants are to be met with, in tolerable plenty, on the common: *Erica tetralix*, *Polytrichum commune*, *Narthecium ossifraga*, *Ranunculus Lingua*, *Blechnum boreale*, male and female, *Galium palustre*, *Orchis bifolia* and *maculata*, *Cnicus heterophyllus*, *Triglochin palustre*, *Eriophorum angustifolium*, and *Lycopodium clavatum*. There is no doubt that a stricter search would discover many other plants; but neither time nor the state of the weather would permit any but a cursory examination. The bog in question lies at the back of the cavalry quarters, and can be easily known by the great abundance of the white spikes of the Cotton Grass which may be seen for a considerable distance. *Wm. Hott, Bromley, Kent.*

*Chopwell Wood, Durham.*—I have read, with much pleasure, your able analysis of the evidence taken before Lord Duncan's committee on the subject of the Chopwell Woods, which is perfectly correct, with the exception of Mr. Prettejohn being the deputy surveyor. He has been supplanted by, I understand, a *protégé* of Mr. Brown of Arncliffe's. Mr. Prettejohn, however, left his mark behind him, for he nearly denuded the forest of Larch, and his successor was paying a similar compliment to the Oak walking-sticks which they dignify with the title of "naval timber" when I left home. I addressed a letter to the *Times* on the 16th ult., urging the Government to stop the work of demolition going on; and as they cannot grow naval timber upon this land, the only legitimate excuse they can have for holding it, to apportion the estate into villa sites for the inhabitants of Newcastle-upon-Tyne, of which large town it is within an hour's drive. There is no species of woodland management so bad as that of pen, ink, and paper management; and the trifling patronage that has accrued to each Government during the last 40 years, when this estate was begun to be planted, is a mere drop in the ocean, compared to the loss to the nation by successive mismanagement. *R. S. Surtees, Conservative Club.*

*The Horticultural Society's Garden Exhibitions.*—To the general visitor there must of necessity be a want of novelty and variety at these great shows. Nearly the same plants are brought forward year after year; they may be increased in size and in larger pots, but still they are the same. How desirable is it, therefore, that the interest of these delightful meetings should be kept up by the introduction of as much novelty as possible. It is in vain to expect that exhibitors themselves will alter the character of the shows much. No: this will depend more upon rules drawn by or with the sanction of the Council of the Society; these rules ought to be definite, and should guide the judges as much in their decision as inform exhibitors of what is wanted. Exhibitors ought not to be exposed to the whims and conceits of judges; however high the situation they may fill may be, confidence can only be secured in their decision by a reference to the rules by which plants exhibited in pots are to be judged. In the training of their plants exhibitors ought to avoid as much as possible that uniformity of outline now so prevalent; each species or variety should be allowed to develop its natural habit, as far as is consistent with its artificial treatment, and with a due regard to the facility with which it may be removed to the place of exhibition. What gives the never-failing attraction to Orchids but the variety of form and colour which their flowers possess, setting the definitions of the florist at defiance, and glowing in beauty, free from the restraints of the formulist? Let us repeatedly visit the Pelargonium tent; and what is the attraction there—a variety of resplendent colours certainly, but all the rest mere unvarying uniformity, both in the outline of the plant and form of the flower, as if nature had given up the contest, and had submitted to the notions of the florist and the artist; the same also holds good with all collections of florist flowers whatever. I am not, however, insensible to the patient and persevering merit of the florist; I merely affirm that his labour tends to a uniformity at variance with that diversity which gives the great charm to nature's handiworks. Fruit always forms an attractive feature at the exhibitions in question. If any one doubts this, let him visit the tent in which it is placed, and the difficulty he will experience to obtain a view will convince him of the interest taken by the general visitor in its exhibition; and it is gratifying to see it, for to bring exotic fruits to perfection in this country requires the highest effort of horticultural skill. There is one point in the judging of fruits which I never could rightly understand, *viz.*, the giving a prize to a Melon for its flavour, and to a Pine-apple for its weight. Now the mere size or weight of any fruit is



but a secondary recommendation, it may excite wonder or admiration, but we would hesitate before we sent fruit to the dessert with no higher recommendation. I will now revert to the plant department of the exhibition, and I would here observe that any alteration that may be deemed necessary should be cautiously and progressively made. It is very annoying to exhibitors, after two or three years' unremitting attention in bringing forward their plants for exhibition, to find their endeavours frustrated by a sudden alteration in the schedule of prizes. The Society very judiciously give prizes for newly-introduced plants; this we call letter A. Now I would advise when any new plant is deemed worthy of cultivation for its "exhibition properties," that 1st, 2d, and 3d prizes for the best specimens of it for one or two years following be given, with a view to induce exhibitors to purchase and ultimately to show it in their collections. This would be letter B; letter C should contain the best specimens of old neglected plants, which the Council of the Society might deem worthy of a place on the exhibition-table. Medals of small value would be sufficient at first, as the plants would necessarily be small. I would withdraw all prizes from single specimens whatever, with the exception of those contained in the above three letters. It has been considered advisable to exclude Orchids from the collections of stove and greenhouse plants; upon the same principle, Azaleas, Heaths, Helichrysms, and all other plants that are exhibited in separate letters, should also be excluded from the above collections. The specimens that form the collections of stove and greenhouse plants have now become of such size that much difficulty is experienced and great expense incurred in their conveyance to the exhibitions, I would therefore propose that the large collection be reduced to 12 plants, the next to 9 plants, and a third to 6 plants; the prizes for these should be:—For 12 plants, 1st prize, 12*l.*; 2d do., 10*l.*; 3d do., 8*l.*; 4th do., 6*l.*; for 9 plants, 1st prize, 8*l.*; 2d do., 6*l.*; 3d do., 4*l.*; 4th do., 2*l.*; and for 6 plants, 1st prize, 5*l.*; 2d do., 3*l.* 10*s.*; 3d do., 2*l.*; 4th do., 1*l.* The Azaleas are equally large; therefore, in making any alteration in the value of the prizes, due regard ought to be paid to the labour and expense of conveyance; I would propose to exhibit them in tens and sixes, if the prizes should be of less value, as they may be kept at less expense during winter than stove plants. I shall not intrude further observation on the other classes of the exhibition; but, in closing these strictures, I would remark that liberality on the part of the Society will do much to encourage competition, and at the same time it (the Society) should firmly discourage the grasping monopoly which is sometimes displayed by exhibitors themselves. *Tassel.*

*The late Mr. Bidwill.*—We announce with great concern, in another column, the death, in New Holland, of Mr. Bidwill, the talented son of Mr. J. G. Bidwill, of Exeter, and a valued correspondent of our own. We learn that two years since, in marking out a new road from his district of Wide Bay to the adjoining one of Moreton Bay, he was accidentally separated from his party, and lost himself, without his compass, in the Bush, in which he remained eight days without food; in cutting his way with a pocket hook through the parasitical web of the scrub, he brought on internal inflammation, of which he eventually died, after protracted and most acutely painful suffering. As an ardent botanist, his death demands a record in these pages. He was a young man of singularly acute perception, as well as of indomitable energy. His visit to New Zealand, of which a Journal was afterwards published, proved that no danger could deter him from the prosecution of science. Our own columns contain many an interesting statement from him upon horticultural subjects, especially hybridising, in which he was an adept. To him it is that we owe the discovery of the famous Bunyn-Bunya tree, afterwards named after him *Araucaria Bidwilli*, and of the *Nymphaea gigantea*, that Australian rival of Victoria. By his friends, of whom he had more than most men, his loss will be found to be irreparable, and the colony in which he died could ill afford to lose him. *J. L.*

*How to Get Rid of Black Ants.*—Your correspondent will be glad to know that my gardener succeeded in preventing some from getting into my Grape-house by pouring chloride of lime mixed with water on the ants and their track for about the length of 12 feet on three different days. *C. Molesworth, Cobham, Surrey.*

*Lawn Grasses.*—Your correspondent "N. A. P. B." complains that his lawn, which he has top-dressed (if I may use the expression) with the seeds of *Festuca ovina* and *Festuca duriuscula*, "is rather of a yellow hue." This colour is to be expected from these Grasses, particularly from the former; the only recommendation it has for a lawn is being diminutive. On examining Hyde Park it will be found that *Poa annua* is the prevailing Grass there, which astonished me when I made the discovery about a year ago. The truth is, this Grass vegetates at a lower temperature than any other Grass in Britain, and sheds seeds for several months of the year, thus assuming in a park the appearance of a perennial. For a pleasure lawn, or sheep pasture, I recommend to your correspondent *Millefolium* (yarrow), which has a beautiful green colour, and he may add white Clover, *Poa annua*, and sweet-scented vernal. Gardeners do not like the *Festuca duriuscula* in their Grass-plots, as it does not meet the scythe. *W. S.*

*Dr. Prout's Opinion of Rhubarb Wine.*—The subject of champagne, made from Rhubarb stalks, having been lately discussed in your pages, and much having

been said in its praise, I take the liberty of sending you the opinion of the late eminent chemist, Dr. Prout, upon the merits of this beverage. Alluding to the presence of oxalic acid in Rhubarb stalks, he mentioned having found a sufficient quantity of that poison to render Rhubarb in many cases a dangerous food. Dr. Prout then went on to state, that having analysed champagne made of Rhubarb stalks, he considered it a most pernicious drink, and that its frequent use was likely to produce stone in the bladder; and I well remember that he concluded by saying, that an act of Parliament ought to be passed, if necessary, to prevent the sale of so dangerous a poison. *W. J.*

*Cutting Bottles.*—Any of your readers who can give an easy mode of cutting off the bottoms of old wine bottles would be conferring a favour on horticulturists, for many of whose purposes they would thus be rendered very useful. *W. C. T., Wallington.*

*Blanching Celery.*—In Cornwall sea-sand is used very successfully for this purpose, blanching perfectly and preserving the Celery from worms. River-sand will doubtless answer equally well, and probably sandwust will blanch. I should like to know what plan "T. P." (see p. 408) will adopt and the result. *P. V. R., Helston.*

*Autumn-planted Potatoes.*—Early Peas, Onions, and Lettuces in Cornwall.—I planted about 12 perches of Potatoes (Axbridge and Fairy Queen Kidney) about the middle of November. The mildness and damp of the winter brought them on too quickly; they were banked about the end of January, and totally destroyed by the February frosts. Others, planted about Christmas, were a good crop, which was drawn on the 31st of May and during the succeeding fortnight. I planted my first crop of Peas (Early Emperor) on the 1st of February, and gathered on the 7th of June. Underground Onions were planted on the 16th of December, and picked from the 4th to the 18th of June; they were high in leaf when the snow and frost came, but, though injured, they recovered, and were a fine crop. Winter Lettuces suffered much, and soon ran to seed. Henceforth I shall not set Potatoes until near Christmas; and I think Peas, in our mild climate, come as early when planted about the middle of January or beginning of February, and are a better crop, than when planted in November or December. *P. V. R., The Lizard.*

## Societies.

ENTOMOLOGICAL, June 6.—The President in the Chair. Donations to the library, from the Royal and Zoological Societies of London, the Entomological Society of Stettin, Mons. Guérin-Méneville, &c., were announced. The President announced that a new part of the "Transactions," containing the completion of Mr. S. Saunders' Memoir on Strepsiptera, and of the Annual Address of the President, as well as the Prize Essay on the Duration of Life in the Different Kinds of Individuals of the Hive Bee, by Mr. Desborough, &c., was ready for distribution, and that the Prize Essay was also printed separately for sale to the public, price 1*s.* Mr. Waring exhibited specimens of both sexes of the very rare *Notodonta trepida*, bred from the Oak, by Mr. Standish; Mr. F. Bond, specimens of *Anticlea berberata*, reared from larvae exhibited at the Society's meeting last October; Mr. Wilkinson, specimens of *Lithocolletis Stettinensis*, Nicelli, bred from Alder leaves; Mr. Douglas, specimens of *Catoptria Albersana*, from larvae which fold up the leaves of the Honey-suckle; and Mr. S. Stevens, specimens of *Notodonta Carmelita*, from Black Park, on the 8th May, one of which had laid eggs which had already produced caterpillars which feed on the Birch; also *Retinea Turionella*, from Wickham, and *Ceophora angustella*, from Tooting. Mr. Boyd brought for distribution a number of specimens of the rare *Tephrosia Consonaria*. Mr. Westwood mentioned two instances of irregularities in the swarming of bees; in one of which the swarm had settled at the mouth of an adjacent hive, and on being disturbed and removed the queen settled close to the mouth of a third hive, from which she had to be also removed; in the other instance, a swarm having been hived close to the spot where it had alighted, a second swarm, which took place half an hour subsequently from another hive, also entered the newly tenanted hive, which was thus quite filled; on being removed to the stand in the bee house considerable fighting took place in this hive. Mr. Waring mentioned an instance in which no less than four swarms had successively entered into one hive in the course of a day, all of which lived amicably, and produced an extraordinary crop of honey. Mr. Wallace read a paper on the different kinds of insects used as food by the Indians of the Amazon district of South America. They are—1, the unwieldy females of the travelling ant, *Atta cephalotes*; 2, the large-headed workers of the white ant, *Termes flavicollis*; 3, the *Cercopis spinosa*; 4, the larva of the *Calandra palmarum* (or Palm worm); 5, a species of *Pediculus*, which the natives catch and eat in the same manner, and with as much gusto as monkeys may be constantly observed to do; and 6, a flat kind of earthworm which, in the rainy seasons, when the lands are flooded, is carried by the current and lodged in low trees. Mr. Douglas continued his contributions to the knowledge of the natural history and transformations of the Micro-Lepidoptera. In this memoir the habits and preparatory states of the singular genus *Bedellia*, and of several species of *Elachista*, were described. The Annual

Excursion of the Society was fixed for the 25th June, at Mickleham.

CALEDONIAN HORTICULTURAL, June 4.—The following prizes were awarded:—The Society's Silver Medal to Mr. Ritchie, gr. to G. M. Innes, Esq., for the best two Cape Heaths, the kinds being *E. ventricosa rosea* and *perspicua nana*; 2d, Mr. Reid, gr. to Prof. Syme, with *ventricosa tumida* and *florida*. Best three Stage Pelargoniums: 1st, Mr. Cameron, gr. to S. Hay, Esq., with Emily (Beck's), Negress, and Conspicuum; 2d, Mr. Henderson, gr. to C. K. Sivewright, Esq., with *Gulielma* (Beck's), Chieftain (Hoyle's), and a Seedling. Fancy Pelargoniums: Honorary award to Mr. Cameron for Annette, Minos, and Fairy Queen. Cineraria in 8-inch pots: 1st, Mr. Reid, gr. to the Hon. H. Coventry, with Bessy, Lady Gertrude, Lady Hum Campbell, and Angeliq; 2d, Mr. Walker, gr. to J. Mood, Esq., with Carlotta Grisi, Angeliq, Sylph, and Lady Araminta; 3d, Mr. Forrest, gr. to W. Anderson, Esq., with Rosy Morn, Rosalind, Lady Gertrude, and Resplendens. Pansies in pots: 1st, Mr. Henderson, with Duke of Perth (Handasyde's), Gliff (Dickson & Co.'s), Queen of England (Fellowes'), and Ophir (Widnall's). Blooms of Pansies: 1st, Mr. Henderson, with Duke of Perth (Handasyde's), Miss Talbot (Dickson & Co.'s), Flower of the Day, Elegant (Thomson's), Queen of England (Fellowes'), Duke of Norfolk (Bell's), Royal Visit (Dickson & Co.'s), St. Andrew (Downie & Laird's), Favourite (Hooper's), Euphemia (Turner's), and Yellow Climax; 2d, Mr. Young, gr. to Mrs. H. N. Ferguson, with Lady McKenzie, Royal Visit, Royal Standard, Euphemia, Pandora, Post Captain, Lady Emily, Jubilee, St. Andrew, Richard Cobden, Sovereign, and Mrs. Masson. Red Stocks: 1st, Mr. Dun, gr. to J. Bridges, Esq.; 2d, Mr. Reid. The prize for Purple Stocks was also awarded to Mr. Dun. Tulips: 1st, Mr. Stenhouse, gr. to Sir P. A. Halkett, Bart. A very superior stand was received from G. B. Simpson, Esq., too late for competition. Alpine Plants: 1st, Mr. Pender, gr. to D. Anderson, Esq., with *Saxifraga ciliosa*, *S. pentadactyla*, *Veronica saxatilis*, and *Aubrietia purpurea*; 2d, Mr. Mitchell, gr. to Lady Keith, with *Silene quadridentata*, *Stachys corsica*, *Astragalus hypoglottis albus*, and *Arenaria ciliata*; 3d, Mr. J. Falconer, gr. to Mrs. Fraser, with *Ramonda pyrenaica*, *Trientalis europæa*, *Saxifraga cristata*, and *S. serrata*. Hardy Herbaceous Perennial Plant: 1st, Mr. Mitchell, with *Dielisya spectabilis*; 2d, Mr. Combie, gr. to A. F. Adam, Esq., with *Saxifraga pyramidalis*; an honorary award was assigned to Mr. Addison, for a pot of *Dodecatheon elegans*, which was not eligible for competition, only one plant being required by the prize-list. Vegetables: 1st, Mr. Whytock, Tulliallan Castle; 2d, Mr. Thomson, gr. to R. S. Wilson, Esq. Messrs. Dickson & Co. contributed a collection of Exotic Plants, including Heaths, Azaleas, *Mitrisia coccinea*, *Eschynanthus grandiflorus*, &c., with Seedling Calceolarias and blooms of Tulips and Pansies. Messrs. P. J. Lawson & Son sent Greenhouse Plants, including *Lechenaultia formosa* and a truss of *Rhododendron Lawsoni*. Messrs. J. Dickson & Sons exhibited *Bossiaea Hendersoni*, *Boronia tetrandra*, with Heaths and Azaleas; and Mr. Stark flowering plants of *Primula Sikkimensis*, Ferns, rare Alpine Plants, and blooms of Tulips. From Messrs. Cunningham, Fraser, & Co. were *Eriostemon amenum*, *Amaryllyis vittata*, and *formosissima*, *Stylidium saxifragoides*, *Bossiaea linophylla*, Heaths, &c. Messrs. Downie & Laird exhibited a selection of Greenhouse plants, stands of Pansies, and a Seedling named Beauty. Mr. Handasyde showed a box of Pansies; and Messrs. Young & Mackay large stands of *Ranunculuses* and Tulips, and eight Seedling Calceolarias. Mr. Methven contributed *Rhododendrons*, Heaths, and Geraniums; and Messrs. Ballantyne & Son four boxes of Pansies, a basket of Daisies, &c. An honorary award was voted to Messrs. J. Grigor & Co., Forres, for beautifully flowered specimens of *Aquilegia glandulosa*. From the garden of Mrs. Captain Galloway were Greenhouse Plants and Seedling Cinerarias; from Mrs. Fraser, Alpine plants and a flowering specimen of *Arum Dracunculæ*, for which an honorary award was voted; and from Mr. Stirling, a fine plant of *Pentstemon Cobaea*. From the garden of S. Hay, Esq., were *Roses Souvenir de la Malmaison*, yellow China, &c., Azalea *præstantissima*, and Pelargoniums. From R. Girdwood, Esq., a fine plant of *Veronica*, allied to *V. formosa*; from D. Anderson, Esq., ripe Peaches and Nectarines, and a stand of Pansies; from G. B. Simpson, Esq., two Seedling Tulips; from W. Anderson, Esq., *Statice Holfordi*; from Dr. Paterson, *Allamanda nerifolia*; from J. Kaines, Esq., Greenhouse Plants; from G. M. Innes, Esq., *Pimelea spectabilis*; from A. F. Adam, Esq., a large plant of *Dielisya spectabilis*; from W. Wilson, Esq., Pansies; from Mr. Lang, Dysart House, a plant of *Rhododendron javanicum*, with three trusses of flowers, Seedling Calceolaria, Thane of Fife, and *Fuchsia syriacifolia*; from Mr. Dun, eight varieties of Stocks; from Mr. Stirling, Alpine plants; from Mr. R. Grieve, Pansies; and from Mr. A. Paxton, blooms of Seedling Pansies.

BOTANICAL OF EDINBURGH, June 9.—The President in the chair. Dr. Balfour made remarks on the Palms in the Botanic Garden, and stated that some of them had sent their fronds through the roof of the Palm house, and that unless measures were taken immediately for making an addition to the house, he would be under the necessity of destroying some of the finest Palms in Britain, a calamity which he hoped would be averted by



the timorous interference of the Commissioners for Public Buildings, to whom he had made a strong representation on the subject. He showed that the public of Edinburgh were deeply interested in the matter, and he had no doubt that he would be aided by them in his efforts to secure for the metropolis of Scotland, and for the Botanical School of Edinburgh, a suitable Palm house, as well as a Victoria house. The following are the measurements made by Mr. M'Nab of some of the Palms in the Edinburgh Botanic Garden. In giving the height the leafy part of the top of the caudex is included, along with the tub in which the plant is growing:—*Acrocomia aculeata*, 38 feet; *Areca triandra*, 19 feet; *Caryota urens*, 43 feet; the frond is 4 feet 9 inches beyond the roof. *Chamærops humilis* var. *elata*, 20 feet; *Cocos nucifera*, 18 feet; *Euterpe montana*, 38 feet; frond about 2 feet beyond the roof. *Livistona chinensis*, 40 feet; fronds bent down by the roof of the house. *Sagus Rumphii*, 43 feet; fronds about 10 inches beyond the roof. *Scaforthia elegans*, 22 feet. Some of these Palms, he stated, were between 50 and 60 years old. Dr. Balfour stated that two boxes had been received from Mr. Jeffrey, the botanical collector in Oregon, containing numerous seeds; among the rest, seeds and cones of *Pinus flexilis*, *P. lasiocarpa*, *Picea nobilis*, *Abies Pattoni*, *Pinus monticola*, *P. ponderosa*, some of the kinds being in considerable quantity. Dr. B. also gave an account of a botanical trip to Ireland in August, 1852, with some of his pupils.

## Notices of Books, &c.

*The Landlords' and Tenants' Guide.* By Alfred Cox, Estate Agent. Published by the Author, 68, New Bond Street. 8vo, 400 pp.

This showy volume is intended to furnish information wanted by those in search of a house, by those already in possession of one as tenants, and by those who, having houses and no tenants, are desirous of obtaining the latter. There is a considerable quantity of matter collected together which may be of use to the persons whose wants the author has attempted to supply, but looking at what is said of those suburbs of London with which we happen to be peculiarly acquainted, we should hesitate before we adopted all the author's statements.

*Stöckhardt's Chemical Field Lectures for Agriculturists* (8vo, Trübner) is an American translation, by Mr. Teschemacher, of a work which may be advantageously added to the many already on the shelves of an intelligent cultivator's library. What is said about malt dust as a manure may be taken as a fair example of the manner in which Dr. Stöckhardt deals with his subject:—

"Malt-grains possess, in point of composition, the greatest analogy with oilcake, but are far more speedy in their operation; because, in consequence of their tender and delicate structure, they decompose with exceeding facility in the soil. To the farmer they are of much less importance, because they are not to be obtained in large quantities, since in breweries, which form the only source whence they can be procured, only 3, or at most 4 lbs. of dry grains are derived from 100 lbs. of Barley. In analysing some Barley and malt-grains, which latter were produced from the same sample of Barley, I found the following differences in their chemical constitution.

"1000 lbs. (perfectly dry) contained:—

CONSTITUENTS.	Barley.	Malt-Grains.
Organic substances	975	915 lbs.
Nitrogen therein	24	40 "
Inorganic substances	25	85 "
Potash and soda therein	6	20 "
Lime and magnesia	3	9 "
Phosphoric acid	8	14 "
Silica	7	36 "

"Malt consists partly of the rootlets of the young Barley plant; they are the first parts of plants which appear in the awakening of the vital force which slumbers in the seed, because it is their destiny to purvey nourishment for the other vegetable organs; and it is for this reason, also, that they are, as is shown by comparing the preceding analyses, so very much richer both in nitrogen and mineral substances than the grains of Barley. Hence it may be very clearly perceived how necessary abundant food is to plants in their very earliest youth, and how important it is, therefore, to take due care that they may at this period find it in the soil.

"When employed as manure, malt very promptly develops—as might be concluded from its abundant contents of nitrogen and potash, as also from its great facility of decomposition—a strongly forcing operation. Whoever is still unacquainted with its action has only to sprinkle it over a Grass-plot, and he will soon be able very clearly to perceive it. That its principal operation takes place during the first year, and that its persistent effects are very inconsiderable, it is now scarcely necessary to mention, and just as little the testimony of experience, that a strong manuring with it may easily induce the lodgment of the corn. The manuring value of malt, as met with in commerce, must be regarded as about equal to that of oilcake. In Saxony it is now purchased at from 2s. 6d. to 3s. 4d. per cwt., and is more particularly used as a dressing for meadows and garden-grass, or as an addition to stable-manure; more rarely as the only manure, in which case from 10 to 12 cwt. are allowed to the (Saxon) acre.

When employed as fodder, the strength of stable-manure is increased by its means in no insignificant degree."

*The English Cyclopædia*, Part II. (Bradbury & Co.), is occupied with Natural History and Geography. The effect of skilful printing is here more than ever apparent; for the Natural History cuts would scarcely be recognised in their present improved condition. It appears that Dr. Lankester has undertaken to bring the botanical articles up to the present state of knowledge.

*Murray's Railway Reading.* The two last parts consist of Lockhart's Spanish Ballads, a beautiful little edition; and a Month in Norway, by Mr. Hollway—an acceptable accompaniment to Laing's well-known account of that primitive country.

*French Railway Reading* is of quite another stamp. We have now before us a part of *Hachette's Bibliothèque des Chemins de Fer*, occupied by a very serious and scientific account of the disease which has attacked Potatoes and other crops. The author is no less distinguished a person than M. Payen. It is beautifully got up, consists of 196 pages, with four excellent coloured plates, and is sold at the price of two francs and a half!

BOOKS RECEIVED.—*Explosions in Coal Mines*, by J. Kenyon Blackwell, Esq.; a pamphlet.—*The Stepping Stone to Music*, by Miss Parkhurst; a catechism for children.—*The National Miscellany*, No. 3, for July; a well written monthly collection of literary matter.—*Dr. Turnbull on Consumption*; a pamphlet.—*Remarks on the Pictures in the National Gallery*, by W. J. H. Rodd, restorer. "The picture cleaner and restorer should stand in the same relation to the picture as the physician to his patient." This passage shows the tendency of Mr. Rodd's pamphlet.

## Garden Memoranda.

NORTH END HOUSE, TWICKENHAM.—Mr. Bohn, the eminent bookseller of York Street, Covent Garden, held a grand Rose fête at his residence here on Thursday last, when between 200 and 300 of nobility and gentry, chiefly of the neighbourhood, attended. On the lawn was a marquee amply supplied with all kinds of refreshments, and a band of music was added to the other attractions of the day. The garden was in the very best of order, and the Roses, some thousands in number, were magnificently in bloom, with foliage broad, healthy, and unusually clean. Within the last nine months, Mr. Bohn has added six more acres to his garden, making it now in all 8 acres. The new ground was market-garden land, and notwithstanding the short time it has been in Mr. Bohn's possession it is already traversed in various directions with well-made broad gravel walks, margined with choice standard Roses, Conifers, shrubs, and herbaceous plants, that look as if they had been established there for years, showing what ample means, coupled with great energy, can effect. Broad-leaved *Kalmias*, 4 feet high and as much through, were still finely in blossom here, as were also a few of the late-flowering *Rhododendrons*, as *maculatum* and *pictum*; and among other shrubs we remarked *Andromeda pulcherrima*, covered with multitudes of drooping white bells, that are extremely delicate and attractive. In beds on the side of the lawn, near the house, the charming *Lilium japonicum* was in bloom, and near it a young plant of the new Giant Lily (*L. giganteum*), which has excited so much attention at our great exhibitions this year, was thriving satisfactorily; these were associated with various specimens of *L. lancifolium rubrum* and other lance-leaved kinds. A bed filled with Lee's variegated-leaved *Persea* (especially the Mountain of Light) formed quite a feature on the lawn, on which we observed an example of the beautiful new Rose, Paul's Queen Victoria. Among older Roses, none were more conspicuous or brilliant than *Géant des Batailles*, *Coupe d'Hébé*, *Duchess of Sutherland*, *La Dauphine*, *Baronne Prévost*, *La Reine*, and other well-known sorts. Of yellows, we noticed *Cloth of Gold*, *Persian Yellow*, and the old Double Yellow, which opens freely on the warm soil and dry gravelly bottom of Mr. Bohn's garden. *Magna rosea*, on a pillar, had a fine effect, and for this kind of training few are more brilliant than fulgens. The collection was carefully labelled with the glass labels minutely described in a former volume.

## FLORICULTURE.

POT CULTURE OF THE SCARLET PELARGONIUM.—This, though so common in all collections, from the window of the poor man to the conservatory of the wealthy, and withal so brilliant and showy an ornament, is rarely seen in the perfection to which, by judicious culture, it may be brought. I have produced most excellent specimens of it by the following mode of management. About the middle of July I select healthy plants, having from two to six shoots of young wood as close to the pot as can be obtained, and set them in a sunny situation. I give them little water for a fortnight; at the expiration of that period, I cut them down, leaving about two eyes of the old wood; I then set them in the shade, and water sparingly until they have broken well, which they will have done in about three weeks. I cease watering them then for two or three days, and when thoroughly dry I shake them out of their pots, trim in any straggling roots, and repot into as small pots as the roots will admit of, shaking the mould well in among the fibres. When potted I set them in the

shade, and give them a good watering, to make the soil firm; afterwards I water sparingly until they have begun to grow freely, when they require a more liberal supply, especially in dry hot weather, when they may be watered twice a day all over their leaves from a fine roset pot. In about a week or 10 days' time I remove them to a situation where they are exposed to the full influence of the sun during the greater part of the day. When they have well filled their pots with roots, they are shifted into others two sizes larger than those they occupied, and in these they are flowered. About this stage of their growth care is especially taken to rub off all young shoots, except one or two on each main branch, and these should be as equal in size and strength as possible all over the plant, in order that they may all flower at the same period, which they will do or nearly so, provided too many be not left on the plants; and, as large trusses of flowers are more attractive than small ones, though there may be double the number of the latter, it is necessary to encourage the strongest and healthiest shoots only. I should say that for a plant in a 6-inch pot two shoots would be sufficient to leave; for one in an 8-inch pot, three or four; and for one in a 11-inch pot, from four to six, the grand point being, as before stated, to get all the shoots left on the plants to bloom at the same time: the trusses will keep in perfection for a month or six weeks. A strong one-year-old plant, with a single stem, flowered *Hydrangea*-fashion, presents a brilliant appearance. In staging the plants for the winter I place them as near the glass as possible, and give no more water than merely keeps them from flagging. About the beginning of February they are introduced to the forcing-house, and placed where they can receive the greatest amount of sun. They there require an increased supply of water; and when they have commenced growing vigorously, and while throwing up their flower trusses, they like a copious supply, in bright dry weather sometimes twice a day, gently syringing the foliage and flower trusses with a fine-roset syringe, morning and evening. Liquid manure made from sheep's droppings, applied two or three times a week, adds much to the strength of the truss and to the beauty of the foliage, but this should not be applied till the trusses have made their appearance. As soon as these can be plainly distinguished from the points of the shoots, the latter must be carefully nipped off immediately before them, the flower-stalk will then take the lead and grow most vigorously. A stick will be required for each shoot, but it should not show above the foliage; the flower-stalk will be sufficiently strong to support the truss. Soon after the shoots are stopped they will send out laterals; these should be picked out with the point of a knife on their first appearance, in order that the whole energy of the plant may be directed to the main shoots and flower-trusses. By the middle or end of May, plants treated as above will be in excellent order for the conservatory, and when placed there it is absolutely necessary to avoid all extremes in regard to watering, or the consequence will be that the foliage will assume a sickly hue and prematurely drop off, and the flowers will not be so long-lived as if the soil was kept in a medium condition between wet and dry. When the beauty of the plants begins to fade they should be turned out to harden off previous to their being cut back in July, being intended for the first blooming in the following May, and the conservatory should be replenished by a batch cut down early in September. When the latter have broken, are shaken out and repotted, they should be kept as dormant as possible all winter. In April they must be shifted into large pots, and at once introduced into the forcing-house, where they should receive the same treatment as the former lot. The plants for the third succession must be selected from those cut down in September; they should be introduced into the forcing-house in April along with the others; they should not be shifted then, but stopped back, and when they have broken they should be shifted, and afterwards treated in all respects as the former lots. The soil which I use for my plants consists of equal portions of rich friable loam, leaf-mould, and well decomposed cow-dung, mixed with coarse silver sand and lime rubbish to the amount of about one-eighth of the whole; these should be well incorporated with a spade, but not sifted. For large plants especially ample drainage is essential—say a few oyster-shells, and over these an inch in thickness of the rough siftings of old lime rubbish, then a layer of flaky hot-bed manure. I would here remark that during their earlier stages of growth, the soil should not be of so forcing or heavy a character as for more advanced plants; I mean it should contain more sand and less dung. A. K.

## SEEDLING FLOWERS.

CALCEOLARIAS: *B. H. J.* A little withered, but apparently no improvement on *Kentish Hero*.—*G.* Not so good as many of similar colours already in cultivation.  
FUCHSIAS: *G.* Not near so valuable or showy as many like it already out.  
PANSIES: *R. C. R.* Second-rate flowers only, if we may judge from the specimens sent; but they should have been seen earlier in the season.—*H. H.* To much withered up for us to be able to offer any opinion on them.  
SWEET-WILLIAMS: *H. C.* Showy and worth propagating.  
VERBENAS: *H. R.* A very good white, large and showy, but rather too much notched.

## Miscellaneous.

Curing Diseased Potatoes.—At the last sitting of the Academy of Sciences, M. Baudouin communicated a mode of curing diseased Potatoes. The process is described as follows:—After the crop is dug up a large vat is prepared in which are thrown 100 litres of Potatoes; on them are strewed 30 litres of brase



(small coal), and the same quantity of wood ashes, over which is thrown water enough to rise to the top of the Potatoes. Into this must be then put a solution of 2 kilogrammes of alum, and from 150 to 180 grammes of sulphate of copper in 8 litres of boiling water. When there is no more liquid remaining on the surface of the ash, the vat is drawn off by means of a hole made at the bottom. When this is done the hole is stopped, and the liquid which has been drawn off is again thrown in and again drawn off, and this operation is repeated five or six times. Clear warm water is then thrown in, as in the common operation of washing with lye, making the water hotter for the last washings. On the third or fourth day the liquid is allowed to drain off, and the Potatoes are taken out and spread on a place without touching each other, and where they can be acted on by the current of air. If the process has been well performed, a strong, disagreeable smell will arise. The Potatoes are to be turned several times and dried, may be then put together, and the malady will have perfectly disappeared. M. Baudoin states that he made this experiment on a large quantity of Potatoes of the crop of 1851, and they have kept perfectly well. Those which were afterwards planted produced good fruit, without any disease. Some Potatoes which had not been prepared, and which were planted on the same day, were all diseased. The Potatoes thus operated on may be eaten or given to cattle without any danger, and M. Baudoin is of opinion that if this process were adopted for several years following, the Potato disease would entirely disappear. *Jonas's British and Foreign Advertiser.*

**Mexican Acorns.**—The period of ripening of the acorns is from September to November, during which season the Oak forests more than usually teem with life, on account of the many animals that are allured by the fruit. They resound with the screeching of numberless parrots, and the noise caused by the cracking of the nuts, which fall to the earth like dense showers of rain, and are eagerly devoured by the Nasua, Procyon, and Dicotyles, and by squirrels. Short, regular knocks are heard, which might be taken for those of people at work cutting timber, but which will be found to proceed from a handsome species of woodpecker, which the natives on that account call the carpenter (carpentero real), zealously occupied in picking symmetrical rows of holes in the bark of the Oaks, into which it inserts acorns picked up from the ground. In the acorns are lodged unhatched insect eggs; and it is only some time after their maggot has consumed the kernel, that the woodpecker returns to break the nut, and consume the well-fed worm. *Liebmann, in Hooker's Journal.*

**Right of Claiming Bees.**—A custom prevails in some places, to the effect that bees leaving the hive and being followed and not lost sight of, by the owner or some person on his behalf, a tin kettle, frying-pan, or other like instrument being beaten to "ring" the bees, may be claimed from the person on whose property they alight. A short time since a swarm belonging to Mr. Corbutt, at Appleton, left a hive in his garden, and Miss Corbutt immediately procured a "ringer" and followed the bees to a garden occupied by Mr. W. Spire of the above village. Mr. Spire attempted to make them his own, and accordingly proceeded to hive them, and having done so, set his neighbour at defiance. Mr. Corbutt procured a summons from the County Court to bring the question to a decision, and at the sitting at Abingdon, on the 14th inst., before J. B. Parry, Esq., Q.C., the plaintiff having proved, by the evidence of his daughter, that the bees had been followed and rung, and not lost sight of from the time of their leaving his garden to their settling in the garden of Mr. Spire, the judge decided in favour of the plaintiff. *Oxford Herald, June 25.*

**Dr. Walpers.**—It is reported, we hope in error, that this gentleman, well known as a botanical compiler, has committed suicide.

**Pelargonium Leaves a Cure for Wounds.**—It may not be generally known that the leaves of *Pelargonium* are an excellent application for cuts, where the skin is rubbed off, and other wounds of that kind. One or two leaves must be bruised and applied on linen to the part, and the wound will become cicatrised in a very short time. *Galignani's Messenger.*

## Calendar of Operations.

(For the ensuing week.)

### PLANT DEPARTMENT.

**HARD wooded plants,** including most of the genera from New Holland, which bloom early in the spring, and which after blooming received the necessary pruning, &c., will now be so far advanced in their new growth, that any requiring to be repotted should at once have a shift. After turning them out, loosen the outside roots before placing them in their new pots, to enable them to take to the fresh soil the more readily. Keep them close for a few days, especially if the roots have been much disturbed, and damp them once or twice daily overhead; water carefully at first, taking pains to ensure the old ball having its proper share, until the roots get established in the new soil. Attention at this season should be directed to the stock of plants intended to furnish the supply of bloom through the next winter, as it is requisite plants should complete their growth early for this purpose. Among Heaths, those which flower through the winter should also be encouraged to complete their growth; as they are great favourites in most places, a considerable number of such kinds as

*E. hiemalis*, *Willmoreana*, *gracilis*, *vernix*, *regerminans*, &c., should be grown. Continue *Epacris* under glass till their growth is complete, but more air and light should be allowed them, increasing it as the wood gets firmer; towards the end of the month they may be placed out of doors in an open situation, but where they can be protected from heavy rains. Besides the above, such stove plants as are intended to flower at the same time, including *Justicia*, *Eranthemum pulchellum*, *Euphorbias*, *Jasminums*, &c., should be looked to. Many of these things, for reasons formerly stated, require to be kept in small pots, and such should be watered with liquid manure to grow them on without getting into too large pots. Others may have a shift, but they will bloom freer by being kept rather under potted. Several kinds of *Gesneras* are valuable for the same use, and should be grown on for winter flowering. The last batch of *Achimenes* may now be potted, and kept in a close frame for a late show of bloom. *Fuchsias*, if not already in their blooming pots, should be shifted into them at once. Encourage plants now established by liquid manure. Young plants growing into specimens will require constant stopping and tying in, to get them into proper form. *Balsams*, *Thunbergias*, and other annuals intended to decorate the conservatory and show-house for the next two months, should be finally potted, using soil of a light and rich description; keep down red spider by the syringe, and maintain the plants in good health. *Thunbergias* and other creepers should be neatly trained to their respective trellises as they advance. *Kalanthes* and *Calceolarias* are now in full beauty. Watch for green-fly, and fumigate on its first appearance. A few of the more forward *Gladioli* and other Cape bulbs—*Lilium eximium* and *lanceifolium*, should be introduced, to supply the place of *Pelargoniums* now on the wane. *Brugmansias* and similar plants of vigorous habit should be frequently assisted with manure-water; as they are often troubled with the red spider, the engine or syringe must be constantly at work to keep them down, taking care, however, not to injure their fine foliage.

### FORCING DEPARTMENT.

**VINERY.**—We must refer to our previous directions, in respect to houses in which the fruit is gathered. Ripe Grapes requiring to be kept must be shaded during hot sun, to prevent their becoming shrivelled. The change from the cloudy sky and low temperature of June to the present extreme heat, will render the directions we have already given, under the head "Plant Department," in providing a supply of moisture, equally applicable to forcing houses of all descriptions, wherein fruit is swelling; a slight shading must be applied wherever indications of scorching or burning appears on the foliage. The Cannon Hall Muscat, Sweetwater, and the Frontignans, having tender leaves, are the most liable to burn, either from bad glass, or imperfect ventilation; and when either exists, should be watched, as the injury done to the foliage not only affects the present crop, but the succeeding one as well. Air must be given in abundance by night as well as day; and the necessary stopping of lateral growths and thinning of the fruit in the last house proceeded with. Cultivators must keep a watch for mildew, and try the plan adopted in France, and detailed in last week's Paper, to test its efficacy. **FINERY.**—Still continue to supply fruit swelling with water, and syringe frequently, but not in bright sunshine, unless the shading is immediately put on; the young plants should be growing fast, and will require liberal waterings, and, in addition to air in large quantities by day, the temperature will allow for them to have a good portion by night. And during hot weather, forced fruits of all descriptions will be benefited by the practice.

### FLOWER GARDEN AND SHRUBBERY.

The surface soils in some situations will have become baked and crusty after the late heavy rains, in which case the crust must be broken and neatly raked over when dry weather sets in. Proceed with pegging and otherwise training growing plants as they advance, till they occupy their allotted space, when more freedom of growth may be permitted; but in flower gardens laid out in the French or geometrical style the utmost symmetry should be preserved; if not in all the beds, yet in those which may be termed counterpart beds. Pay strict attention to neatness and order through the whole of the lawn and shrubberies, as they will be much frequented at this season. See that *Hollyhocks*, *Dahlias*, and the taller growing *Herbaceous* plants are properly secured to stakes, &c., as they grow. Cut back the perpetual blooming *Roses* as they go out of bloom, and well water with the richest manure-water, to encourage a second growth and bloom.

### HARDY FRUIT GARDEN.

Most kinds of fruits now ripe, or ripening, will require the protection of nets to preserve them from birds, which in most country places are troublesome neighbours, or a boy must be employed to keep them from the small fruit during the principal fruit season. As the early Cherries are gathered, shift the netting to other kinds yet to ripen. Peaches and Nectarines should have their final thinning when the stones in the fruit get firm and hard, as all the risk of their dropping during the stoning process will then be over. Vines against walls should be closely nailed to the wall, to obtain the benefit of what heat can be got this cloudy summer. Figs must be treated the same, pinching out the point of the current year's wood (except the leaders), when they have made five or six joints; the

breast-wood may now be removed from Pears and Plums against walls, cutting away a portion (say the upper part) only of the tree first; then after an interval of two or three weeks another portion, and finally finishing by a third cutting of the lower part; by this plan there will be less danger of the cut back shoots starting again, and the lower shoots, which are generally the weakest, will gain additional strength by being allowed a few weeks longer to grow.

### KITCHEN GARDEN.

Take advantage of dry weather to eradicate any weeds which may have sprung up during the late rains, and when the soil is not sufficiently dry for hoeing, hand weeding should be adopted. As the production of strong *Asparagus* next spring will depend mainly on the present summer culture, let the beds, after being cleaned, be mulched with short Grass or half-rotten manure. Liquid manure, in which a portion of salt has been dissolved, should then be applied freely for the next month or six weeks, or the salt may be spread over the beds, to wash in by the rains and waterings. *Seakale* and *Globe Artichokes* will be improved by similar treatment. Should the weather become suddenly dry, water freely *Cauliflowers*, *Lettuce*, *Radishes*, and other vegetables, which require being grown quickly to have them crisp and tender. We need scarcely add that, in all cases, vegetables will be improved in size by giving manure water, if it can be produced in sufficient quantities for all purposes. Endive should now be planted out, and another sowing made; continue planting out *Celery* as required, and the early crop may have a slight earthing up, having previously taken off any lateral buds and well-watered the rows. A crop of *Parsley* to stand over the winter should now be sown in a dry sheltered spot. Sow a good supply of the earlier *Cabbages*, or *Chappell's Colewort*, for autumn and winter supply.

STATE OF THE WEATHER NEAR LONDON,  
For the week ending July 7, 1853, as observed at the Horticultural Gardens, Chiswick.

July.	Moon's Age.	TEMPERATURE.								Wind.	Rain.
		BAROMETER.		Of the Air.			Of the Earth				
		Max.	Min.	Max.	Min.	Mean	1 foot 2 feet deep.	deep.			
Friday..	1 3/4	29.773	29.700	70	46	58.0	60	58	S.W.	.22	
Saturday	2 1/4	30.156	29.977	70	48	59.0	60	58	W.	.00	
Sunday	3 1/4	30.237	30.163	70	49	59.5	59 1/2	57	W.	.00	
Monday	4 1/4	30.153	30.040	73	53	62.0	60	57	S.W.	.00	
Tuesday	5 1/4	29.919	29.924	74	55	64.5	61	58	S.W.	.40	
Wednes.	6 1/4	29.940	29.886	77	58	67.5	62	59	S.W.	.00	
Thursday	7 1/4	29.919	29.809	84	63	73.5	63	60	S.E.	.14	
Average ..		30.028	29.928	74.0	53.1	63.5	60.6	58.3		0.36	

July 1—Cloudy; rain at night.  
2—Cloudy; fine; overcast at night.  
3—Fine; cloudy and fine; partially overcast.  
4—Very fine; cloudy and fine; overcast.  
5—Overcast and fine; cloudy; clear at night.  
6—Overcast; fine; densely overcast.  
7—Uniform haze; sultry; much lightning, with thunder and rain at night.  
Mean temperature of the week 2 deg. below the average.

STATE OF THE WEATHER AT CHISWICK,  
During the last 27 years, for the ensuing week, ending July 16, 1853.

July.	Average Hottest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 10	73.0	51.3	63.2	7	0.36 in.	1	2	1	1	3	12	3	4
Mon. 11	74.8	52.3	63.6	6	0.71	1	3	1	4	4	12	3	4
Tues. 12	74.5	51.9	63.2	11	1.10	1	2	2	4	1	15	4	1
Wed. 13	73.1	51.9	62.5	11	0.60	1	2	2	4	1	15	4	1
Thurs. 14	76.4	52.0	64.2	9	1.16	1	3	2	3	7	10	1	1
Friday 15	75.4	50.6	63.0	13	0.15	1	3	3	1	4	10	6	1
Satur. 16	75.6	51.1	63.4	7	1.50	1	3	3	1	2	10	6	1

The highest temperature during the above period occurred on the 14th, 1847—therm. 76.3 deg.; and the lowest on the 10th, 1851—therm. 38 deg.

### Notices to Correspondents.

**BONES IN WATER.** *F.R.B.* Your friend who has recommended you to make liquid manure by steeping bones in water, and who seems to think that his plants are thriving from being watered with it, should himself explain the nature of the action. If the effect said to be produced is not purely imaginary, it no doubt arises from the presence of putrifying animal matter left adhering to the bones, and not from the bones themselves.

**BOOKS.** *W.M.J.* The only British work containing a synopsis of the British genera of all the orders of insects is Westwood's "Introduction to Modern Classification." Stephens' great work contains the genera and species, but several orders were left untouched in it, which are intended to be supplied in the "Insects Britannica," now in course of publication. *W.—W.T.* Paxton's Botanical Dictionary.

**INSECTS.** *J.M.* The little black insect of the denuded Spruce twig was the young larva of a ladybird (*Coccinella* sp.); the defoliation was evidently caused by the larva of a sawfly or moth.—*L.M.* Your moth is the common buff-tip (*Pygmaea bucephala*). *W.*

**NAMES OF PLANTS.** *W.M. Jenner.* They are correctly named.—*C.C.* *Adiantum pedatum*, *L.S.*—*W.T.* *Lilanthemum vulgare*, with dark, copper-coloured flowers.

**STRAWBERRIES.** *Sub.* If you sow your Alpines now, there will be time to prick out your plants and have them established before winter, and you may possibly be able to pick a few fruit from them next spring.—*B.C.* Your flowers are all *monsters*. Change your stock, right throwing away all that you now have.

**WASPS.** *G.A.* Is happy to inform our Dundee correspondent that there is a total absence of wasps at his place (Finedon Hall) this season. He has not seen one, while in previous years there has been abundance by this time.

**WOODS AND FORESTS.** *W.D.* You are quite mistaken in supposing that we have nothing more to say about these establishments. We have very much more; but we wish for the present, and we hope for ever, to state their cases gently. As for Bere—Oh!!! Ask no questions about that place. We have very attentively read Mr. Downes's evidence, and marked the Old Bailey style in which he was cross-examined; but we decline to express, for the present, any opinion upon that subject.

**WORN-OUT GARDEN.** *A Victim.* If your garden is in the exhausted condition you describe, you had better, at every opportunity, dig into it plenty of stable manure, and also of water applied rubbish, if the soil is stiff. Ganno or other manure water applied now—not strong but often—between the rows of growing crops, will likewise prove of advantage to them.

ONE or TWO INQUIRIES necessarily stand over till next week.



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**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

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AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

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**ARTIFICIAL MANURES, &c.**—Manufacturers and others engaged in making ARTIFICIAL MANURES, may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

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It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

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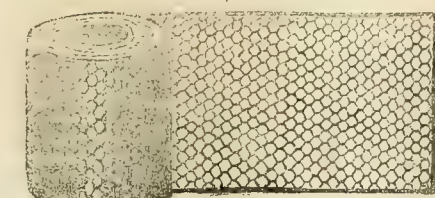
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1 1/2-inch " strong " ...	10 " "	8 " "
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Every information will be given at the Offices of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter. THOMAS MAY, Secretary.

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Manager of Farm—R. Vallentine. Assistant to Chemical Professor—A. Williams, M.R.C.S.

The ensuing MIDSUMMER VACATION will terminate on the 11th of AUGUST.

Students are admitted either as Boarders or as Out-Students. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40s. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as for agricultural education.

Prospectuses and information can be had on application to the Principal.

THE GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FAIRM, by the FAIRM MANAGER, may be obtained of HAMILTON, ADAMS & Co., Paternoster Row, London; and EDWIN BAILY, Gloucester. Price 1s.

## YORKSHIRE AGRICULTURAL SOCIETY.

Open to the United Kingdom. The 16th ANNUAL MEETING will be held at YORK, on the 3rd and 4th of August next (Two Days' Show).

The entry etc. on the 2nd of July. Free transit for Stock, and half-price for Implements are conceded by the Railways of this District from Norwich to Ely and Hitchin.

Prize Sheets and forms of Certificate are now ready, and may be had of M. M. MILES, Secretary. Sowerby, Thirsk, July, 1853.

## ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—GLOUCESTER MEETING.

WEDNESDAY, JULY 13.—The Implement Yard open to the public from 7 in the morning till 6 in the evening; admission 2s. 6d. each person.—The Dinner of the Society in the Pavilion in the Spa Gardens, at 4 o'clock; doors open at 3. The Judges' Awards of Prizes for Live Stock will be read.

THURSDAY, JULY 14.—The Cattle and Implement Yards open to the public from 6 o'clock in the morning till 6 in the evening; admission 2s. 6d. each person.

FRIDAY, JULY 15.—The Cattle and Implement Yards open to the public from 6 o'clock in the morning till 6 o'clock in the evening; admission 1s. each person.

## THE DERBYSHIRE AND MIDLAND COUNTIES

EXHIBITION OF POULTRY will be held at DERBY, on the 17th and 18th of NOVEMBER next. Open to all competitors. Schedules of prizes and regulations may be had on application to the Honorary Secretary, enclosing a stamped directed envelope.

Subscribers of 10s. 6d. will receive five tickets of admission to the private view on Thursday, the 17th. Parties wishing to become subscribers are requested to forward their names as early as possible.

ALFRED MADELEY, Hon. Sec. Derby, July 9, 1853.

## THE BIRMINGHAM CATTLE AND POULTRY

SHOW, 1853.—The Fifth Great Annual Exhibition of CATTLE, SHEEP, PIGS, and the various kinds of DOMESTIC POULTRY, will be held in BINGLEY HALL, Birmingham, on the 13th, 14th, 15th, and 16th of December next.

The PRIZE LISTS and any further information may be obtained from JOHN MORGAN, Jun., Secretary. Offices—2, Insurance Buildings, Union Passage, Birmingham.

## POULTRY SHOW.—The First Annual London

Great SUMMER POULTRY SHOW will be held at the Baker Street Bazaar, on WEDNESDAY the 27th, THURSDAY the 28th, and FRIDAY the 29th of JULY, 1853. In consequence of the Royal Agricultural Society's Show at Gloucester, the time for Exhibitors making their Entries is prolonged to the 15th inst.

JAMES HENRY CATLING, Secretary.

Offices at the Bazaar.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, JULY 9, 1853.

## MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY, July 11	11—Trial of Implements at Gloucester.
TUESDAY, " 12	12—Implement Yard opened.
WEDNESDAY, " 13	13—Cattle and Implement Yards open.
THURSDAY, " 14	14—Agricultural Imp. Society of Ireland.
FRIDAY, " 15	15—Agricultural Society of England.
WEDNESDAY, " 20	20—Agricultural Imp. Society of Ireland.
THURSDAY, " 21	21—Agricultural Imp. Society of Ireland.

So long ago as Feb. 12 we published a letter by Sir A. H. ELTON, Bart., of Clevedon Court, near Bristol, on the CONDITION OF THE AGRICULTURAL LABOURER. We have to apologise to that gentleman for the delay which has attended the publication of other letters from his pen on the same subject, which we have long had in type.

The subject is one which has excited considerable attention, both in this country and in Scotland: and we refer to it now for the purpose of noticing meetings which have been held in connection with it, resulting in the formation of a society for the improvement of the cottages of the labouring poor. The society has originated in Galloway, and is, we suppose, to confine its labours to that locality, where the labouring population is more Irish than Scotch; and where, accordingly, the people are satisfied with a state of things which, bad as it is in some districts in England, would, we believe, not be tolerated here. The following passage from Sir A. AGNEW's speech, at a meeting of this society, indicates how low the present state of things in the "cabins" of the labourers there must be:—

"A great deal could be done at a very small expense. A drain dug round a cottage, and a tile floor, would make many a wretched hovel habitable and dry. Tile works have sprung up in all parts of the country, so that now the very best of floors could be procured for 16d. a yard—which for one of these little cottages would cost but very little. They might be laid down for a trifle; and a great advantage of tile floorings was, that they answered perfectly when laid in sand, so that they might be immediately introduced into the most wretched shed to make it passably comfortable for a time, and be removed afterwards at no loss when a better building was provided." Ventilation was a most important thing. A grate or a little oven was a great comfort; and, above all, divisions were absolutely necessary for decency as well as comfort."

And another speaker, in reference to the improvement of cottages on a neighbouring estate, specifies the cost of this improvement as follows:—

"The items of expense were as follow. The area of a good cottage, such cottages he trusted to see everywhere ornamenting the country side, was about 45 square yards. Flooring tiles are 70s. per 1000; 16 of these cover a square yard; 720 will, therefore, at an expense of 2l. 10s., cover a floor of this sort. If cartage is added, it might be estimated at about 9s.; laying, about 8s.; total expenses, 3l. 7s. But unfortunately the cottages to which the resolution alluded have nothing like the above area. Galloway cottages had frequently as little as 20, seldom more than 30, square yards area. Taking the average at 25 square yards, we have then 400 tiles, at 1l. 6s.; cartage, 6s.; laying, 8s.; total, 2l. 2s., and for



this trifling sum a cottage improved from a pigsty to a human habitation—he would not say sufficient for comfort, but far removed from its former degradation.

It is plain from these extracts that there was great need of such a society as has thus been organised in Galloway. And that the condition of cottages there is not peculiar to that district is proved by the following extract from the *Inverness Courier*:—

"Let us ask our friends whether, as they read by their own snug firesides the painful revelations of the overcrowded lodging-houses in London, it ever occurred to them to look a little nearer home? How many farmers can justify the way in which their own servants are housed? It is not to the bothy system, with all its manifold abominations, we at present refer, but to the houses in which families live—those two comfortless little dens in which men, women, and children, often to the number of half-a-score, eat and sleep, sleep and eat, with less attention bestowed upon their habits of existence than is paid to those of the cattle in the folds."

We do not wish to be understood as asserting all this to be true of Scotland generally; if the worst districts as regards accommodation for agricultural labour are to be found in the north of the island, so also are the best. Hear a correspondent of the *North British Agriculturist* on this subject:—

"I have had the opportunity of seeing the condition of the agricultural labourers in most counties of England, in which they are paid in money wages at the end of each week, and have to purchase the food of their families at a dear rate, in retail shops, paying high rents for cottages, often at an inconvenient distance from their work, and having difficulty in procuring fuel; and I do not hesitate to pronounce, as I have done often before, that the hind on the Borders, with upstanding work and wages, his cottage and garden free, coals brought home, the possession of a cow and the means of fattening a pig, with a portion of his wages paid in grain to be made into meal for his family's use, without the reduction of the retail dealer's profits; together with the opportunity of getting the younger members of the family employed at light work and with adequate wages, is infinitely better off than the farm labourers of any other country, which is apparent to any observer by the good dress and respectable appearance of both men and women."

And that many a district in England is open to the charge of miserable accommodation for the labourer, is within the personal knowledge of very many of our readers. It is doubtless some such truth as regards the condition of Somersetshire, that has urged Sir A. H. ELTON to write on this subject. And though his letters are especially on the position of young unmarried men, yet they have an immediate connection with the subject of houses for labourers generally, for it is the deficiency of cottages as homes that occasions the evil to which these letters allude.

The object Sir A. H. ELTON has in view apparently is to replace or revive the lost influence of the clergyman over the grown boys and young men of his parish, by placing them as far as possible out of the sphere of public-house attractions, on which the blame of this lost influence has been laid. We do not believe that any general scheme or organised machinery of any kind will revive that personal influence, the loss of which is lamented. Personal influence must grow out of personal acquaintance and friendly intercourse, and that of a mutual and not of a patronising character. The friendship out of which alone it can arise must be sought as well as offered; and we should be inclined to doubt the ultimate success of a scheme such as was lately proposed, it appears, to the Chew decanal chapter—where a house, under the superintendence of the clergyman, was to be opened—the young men being strictly superintended, their attendance being required at morning and evening prayers, and at the parish church on Sundays.

A clergyman would be more likely to do good, we think, by encouraging some enterprising parishioner to open a lodging-house, to which young men should be attracted by cheapness, order, cleanliness, and the superiority of simple, social, and intellectual recreations, over those of the grosser kind offered by public-houses. Sir A. H. ELTON has well described the position of a young man in a country village (p. 106), and the many discomforts by which he is at length driven from his home. These discomforts on the one side, and the real economy of order and cleanliness on the other, are the source of that commercial success which has attended model lodging-houses in this city—and we believe that similar causes would produce similar results in many a populous country village. But we believe that men will be more lastingly and certainly won to the cause of morality and religion, by its advantages being offered to their free choice, than by any attempt at an enforced religiousness, or an exacted respect for its office bearers.

THERE is an advertisement in page 425 which deserves notice, from its introduction of skill in draining, among the objects properly deserving of

the patronage of an agricultural society. The Herts Agricultural Society has the credit of directing attention to this subject, and we have no doubt that other local and provincial societies will copy its example.

Certainly there is as much reason to desire the skill of our labourers in this point as in ploughing, which has hitherto been almost the only kind of farm labour hitherto patronised at these meetings. This draining match, open to all England, is fixed for Friday, the 22d day of July, to take place on the Chesfield estate, Stevenage.

#### ANBURY.

WITHOUT attempting to discuss the numerous supposed causes of, and the various remedies proposed to be applied to the disease, I will state some incidents of it which have occurred on a small plot of ground within the last 12 months, drawing some inferences from them, and submitting them to others, that they may, if they please, deduct more satisfactory and fuller ones.

Last summer on a plot of undrained gravelly-clay ground (but well laboured for the crop), which had for several years past been planted with the larger and coarser kinds of Cabbages—Flat Dutch, Drumheads and hybrids of them, and no one knows what, for our smaller farmers are not very choice of their seeds, generally buying the cheapest the market can afford—a thousand Savoy's were planted, manured with ashes of Couch Grass—a general product of our soils—the whole of which, without exception, suffered very severely from anbury, the clubs of what ought to have been the roots being in many cases as large as goose eggs. The plants in the seed-bed were pretty free from it, and such as showed it were rejected. For about a month after they were planted out (and this planting was carried on from the beginning of July to the 24th of August, through all the vicissitudes of weather), no Cabbages could have progressed more rapidly, when their leaves flagged and withered to such an extent that several of the plants died; most of them ceased to grow, and scarcely any of them produced hearts the size of a man's fist. In the midst of them a Rape plant had accidentally been introduced; the root of this plant was in no way affected, and the plant grew so well as to weigh in December, without the root, six pounds.

At both ends of the rows of Cabbages, and on both sides of them Turnips were sown, with the same and no other manure than Couch Grass ashes, not one of which suffered from anbury; beyond these, on one side, the ground well dunged, about 1200 Borecolees were planted, which also all escaped. In October, to nurse through the winter, Early Nonpareil Cabbage-plants were set out from the seed bed; on taking these up the following spring, at least three-fourths of them had anbury warts on them and the young larvae. It is to be remarked that the smaller farmers here seldom grow any but the coarser-hearing Cabbages, and so very rarely Borecole that it is probable this plot of ground had never borne open-hearted Cabbages.

Although it may militate against the conclusions I am disposed to draw from the above premises, it is only fair to state that in a part of this plot in which the Savoy's suffered so severely, after being well dunged and dug several inches deeper than it had ever been dug before, about 800 Nonpareil Cabbages were planted last autumn, not one of which has suffered from anbury, but all are producing fine hearts. I have examined several of the roots and do not find a single wart on them. The plants were from the same seed-beds from which the plants set out among the Borecolees were taken, and which were affected. The ground received the same treatment in both cases. This is really puzzling.

In the Cabbages, then, of last year the weevil strictly limited its ravages to the close-hearing Cabbages; the Borecole, the Rape, and the Turnips escaped. From this I was led to conclude that not only are there distinct species of these insects, which find their respective pabuli in the Turnip and Cabbage, but that those which affect the hearing kinds pass over the open sorts; and I was the more disposed to this conclusion, as this plot of ground had, in all probability, been solely appropriated to the production of hearing Cabbages for some years past, and had therefore become replenished with the peculiar insect which preys on these kinds, while other weevils had not found their support in it.

Although I cannot account for the Nonpareil of this year being exempt from the attacks of the weevil, yet from both experiences I would infer that the disease is an effect of insect depredation, and not a consequence of vitiated juice in the plant arising from any cause; and that the repeated cropping of the land, although it encourages the production of the insect by affording it an abundance of food, yet does not in any way predispose the plant to its attacks.

If I am correct in supposing that these insects confine their attacks each to a certain species of Brassica, it will shake our confidence in, I believe, one of the latest applications that have been recommended for the disease—dry hydrosulphuret of lime; for Mr. Johnson says, "I entertain this opinion of its efficacy in preventing the occurrence of anbury, from an instance when it was applied to some Broccoli, ignorantly grown upon a bed where Cabbages had as ignorantly been endeavoured to be produced in successive crops. These had invariably failed from the occurrence of anbury; but the Broccoli were uninfected. The only cause for this escape that I could trace was, that, just previously to planting,

a little of the hydrosulphuret of lime had been dug in." For we are not then to attribute the escape of the Broccoli to the sulphuret, but that the insect which had destroyed the Cabbages, not being of a species that preyed on Broccoli—this, in its flowering property, being more in the nature of an open Cabbage. J. M. Goodiff, Granard.

#### CARTS AND WAGGONS.

On a farm of 1000 acres of good land, cultivated on the four-course, or Norfolk system of cropping, there will be probably 200 tons of hay made per annum, which, we may suppose, will be carried, on an average, three-fourths of a mile to the rick; supposing one-half of the roots to be harvested and carried to the yards for consumption, there will probably be 2000 tons of roots carried three-fourths of a mile; there will be 1000 tons of grain in the straw carried three-fourths of a mile to the stack-yard; there will be probably nearly 400 tons of grain carried 10 miles to market; there will be some 40 or 50 tons of food or manure carried home that distance from market; and there will be nearly 4000 tons of manure every year carried three-fourths of a mile from the yards to the fields. The subject of agricultural carriages may thus well be considered of considerable importance to the business of such a farm. Adding up the above items, we have a total equal to nearly 10,000 tons, carried a distance of one mile; and if to the weight of the load there be added, in each case, that of the vehicle as well, which in the case of field carriage will be found equal to fully 60 per cent. on the load, we obtain the amount of 16,000 tons carried one mile, as the labour of this kind executed, per annum, on a farm of 1000 acres. But this amount must be still further increased, for an empty carriage\* returns for every full one that goes; and supposing our estimate of 60 per cent. on the load fairly to represent the weight of the conveyance, we must add to our former amount 6000 tons carried one mile on this account. Now, the labour of carriage on fields and farm roads may be assumed equal to a lift of one-eighth of the load.

To pull 22,000 tons one mile along the surface of the field or road, will be nearly the same as lifting 2750 tons one mile high. Now, the working year may be supposed equal to 250 days, of 10 hours each; but a horse in a cart is not continually moving; it is at rest during the operation of filling and emptying, and therefore the time, per annum, in which it could be engaged in actually shifting the material it has to convey cannot be put at more than three-fourths of the above, or 250 days of 7½ hours each; and a little calculation will show, that to lift 2750 tons one mile high, in 250 days of 7½ hours, requires a continual lifting of 290,000 lbs. per minute. This, according to Watt's estimate of a horse power, represents the constant labour of nearly 10 horses; and if we take the period during which there is most hauling, and ascertain the quantity of labour of this kind which must be done within a given time, in order that the ordinary routine processes of cultivation may be carried on, we shall find that the labour of carriage alone necessitates the employment of quite if not more than one-half of all the horse labour the farm employs.

Consider the matter in another light. On a farm of 1000 acres, cultivated as I have suggested, there will be every year 500 acres of grain crop, and 250 acres of root crop. Suppose the labour of horse cultivation, apart from the carriage of material, to be equal in the former case to two ploughings, and in the latter to four ploughings per acre; then the whole cultivation of the farm may be supposed equal in labour to the ploughing of about 2000 acres ploughed once. If the furrow slice be 10 inches wide, it will be as nearly as possible 10 miles long per acre; and as the labour of ploughing was found equal, on the average of a considerable number of experiments, to the lift of about 2½ cwt., we arrive at this conclusion—that the whole of the horse cultivation of 1000 acres of land, excluding carriage, is equal to the lifting of 280 lbs. 20,000 miles per annum. Now, in ploughing fields of ordinary size, involving an average number of turnings, a pair of horses is engaged in actual work only 7 hours per diem of the 10 during which it is out of the stable. And to lift 280 lbs. 20,000 miles during a year of 250 days of 7 hours apiece, is equal to lifting 270,000 lbs. 1 foot high per minute—a result less than was ascertained to represent the labour of carriage on the farm; thus bearing out the former conclusion, that quite one-half the horse labour on a farm is that of carriage. And if any one should object to the calculation that it leads to this result—that 19 horses are sufficient for the management of a farm of 1000 acres, I have to reply, that the calculation is not responsible for any such conclusion, but only for this, that the horse labour per annum of such a farm need not exceed 250 days, or rather 2500 hours of 19 horses; if the distribution of labour in the months renders any more than the average number absolutely necessary during any one month, then that greater number must be kept during the whole year; and certainly it is as true of the work of carriage as it is of the work of cultivation, that it accumulates in certain months to the comparative freedom of others, so that, while supposing it distributed, not more than 10 horses would suffice for its accomplishment, yet, in reality, a much larger number is often required. That the total of horse labour on a farm, though greater in some months than in others, and therefore involving the necessity of more stable room

\* The 40 or 50 tons of return carriage from market are not referred to here; but this small inaccuracy will not materially influence the result.



than the above calculation indicates, does not present that double inequality or irregularity of arrangement which the irregular distribution of each separate item of it through the months might lead us to expect, when those items are combined, arises simply from the fact that the increase of the one item happens pretty generally along with the decrease of the other; and the labour of carriage happening chiefly in the autumn and winter months, and that of cultivation chiefly during spring and early summer.

The apparent inconsistency of its results with the truth, it thus appears, does not discredit the calculation; and we may, therefore, confidently accept this conclusion from it—that carriage is at least one-half of the horse labour of a farm. The efficacy of the machines employed in this labour is thus a matter of great moment; their construction, so as to facilitate the accomplishment of their purposes, seems to be a matter of the very highest importance in agricultural mechanics.

Now the following descriptions, I have to premise, are not offered for the instruction of agricultural machinists; I shall enter into details such as would enable the reader not to construct, but merely to choose a cart or a waggon. His object is to get the whole work of carriage on, and from his farm, done with the least expenditure of cost and of force; and therefore, such machines for the purpose must be employed as unite cheapness, strength and efficiency, in the most economical proportions, with relation to the average character of the work to be done. As a general rule, farm carriage is field work; and the strength and make of the implement plainly ought to be accommodated to the circumstances of rough roads and soft ground, across which, in the case above alluded to, about 14,000 tons are hauled one mile per annum, rather than to those of the turnpike road, along which, from such a farm, not more than 8000 tons are hauled one mile per annum. The cost of the machine, per ton it carries, is too obviously a matter requiring the consideration of a purchaser, to need any argument about its importance here. Its strength, both as affecting its endurance and its weight, is a point which also deserves careful determination with relation to the work required from it; and its efficiency, as the necessarily principal feature of its character, will of course the longest require our attention. This last topic will include its adaptation to the ordinary circumstances of farm work, its structure as regards the avoidance of friction and waste of draught power, and the facilities it presents for use.

I propose to take these several points in the reverse order to that in which they are enumerated above. And, in the first place, as regards the fitness and convenience of the different forms of carriage for agricultural purposes I will endeavour to justify my preference of the cart to the waggon for ordinary farm work. There are at least three several grounds on which that preference may be justified. The first is, the greater convenience of the smaller machine: a one-horse cart may be used in cases where a waggon would be most disproportionate to the trifling nature of the work to be done, and in places where a waggon would be an awkward and cumbersome machine to employ, and for purposes where a boy could do the work as efficiently as a man, to whom alone a waggon could be intrusted. The second is, the greater efficiency of a horse when placed between shafts, and supporting part of the load. A horse in a cart carries part of the load, and so has only part of the load to draw; and not only so, but he is in a better position for drawing when he has a load on his back than when unloaded; for his footing is firmer. In order to the perfect efficiency of a draught animal, he must be placed so as to bring all his muscular power into work; and there is not only no interference with those muscles which enable him to pull horizontally—there is a positive advantage to them conferred—by loading him so as to give a firmer fulcrum over which his greater weight may more securely act. Compare two horses between the shafts of two separate carts, with a pair pulling tandem at a waggon; and the latter must appear to be placed most disadvantageously for the performance of work. The third ground on which carts appear preferable to waggons is, the greater facilities which belong to their use. Their "sheelboards" are not so high; the edge over which they have to be filled is not so far from the ground. Now, the height to which a load has to be delivered is a very material point connected with the expense of shifting it from one place to another.

A good labourer, digging a soil of ordinary consistency, will turn over more than 200 square yards, probably 2000 square feet, in a day, from 10 to 12 inches deep; he will thus turn over from 50 to 100 tons of earth per diem: the same man, if he had to fill a wheel-barrow, could not lift more than from 16 to 20 cubic yards, while, if he had to throw this earth over the side of a cart or a waggon, he could not manage more than one-fifth part of the weight he lifted in the first case; and, of course, the higher the edge over which the material has to be thrown—the higher the edge of the cart or the waggon that he is filling—the more will be the labour connected with the shifting of a given weight of material. To lower the edge and bed of the vehicle one foot would lessen the labour of filling it by a fifth or sixth part—a most important difference.

But there is yet another ground for the preference which I have to justify, and that is, the greater convenience of carts as regards unloading. Of the weight carried in the case of the 1000 acre farm alluded to above, at least 6000 tons—the roots and the manure—may be unloaded without labour, by the mere tilting up

of the carriage; a process which, though Messrs. Stratton & Hughes, of Bristol, have constructed a tilt-waggon, seems almost incompatible with the construction of any other than a two-wheeled vehicle.

As regards the other side of the question—the points in which a waggon seems superior to a cart for agricultural purposes—may deserve a short consideration. It presents a more steady platform, on which a heavy and bulky load may therefore be more safely erected; and for the conveyance of such goods as hay and straw to market, it is, perhaps, better adapted than a cart. It is also urged in its favour, that the four-wheeled conveyance may be "dragged" down hill; and that the horse is also saved, in such a case, the extra weight that comes upon its back when the load rests there, as well as on the wheels of the carriage, as it does in the case of a cart. But the answer to this latter allegation is, that a load admits of being perfectly balanced upon the wheels of a cart, so that it shall not press upon the back of the shaft horse at all; and if, by some such contrivances as are hereafter to be described, the front of the cart body be lifted whenever the downward inclination of the road gives it a pitch forward, there will not, on such occasions, be a larger than ordinary portion of the load in front of the cart axle. In practice, however, this is not found to be at all a serious inconvenience, and, except in the cases of very high loads, and of very steep acclivities, a horse able to pull a given weight up the one side of the hill, will take it down the other without inconvenience. In comparing a cart and waggon for all farm purposes, we have to claim this advantage for the former, that different bodies may be used for the same pair of wheels, and that thus a mere framework for the carriage of straw, or a shafted box for the conveyance of earth, manure, or roots, may be used at pleasure. The same wheels which carry an ordinary Scotch cart will carry the "harvest body" with which they are furnished in Robertson's harvest cart.

And probably no arrangement of circumstances better adapted for the general nature of farm carriage exists, than where one pair of wheels is used sometimes with the common Scotch "body," which will hold a ton weight of stones or of earth, level with the edge of its sides, or of roots or dung when heaped; and at others, when required for harvest work or the conveyance of straw, with framework "wings" or Robertson's "body," on which a ton weight may easily be built without requiring a very great height of load. From the article "Carriages," in *Blackie's Cyclopaedia of Agriculture*.

#### HOUSES FOR UNMARRIED LABOURERS.

IN commenting upon the prospectus for the above object appended to my letter of Feb. 12, I shall not examine the matter in a business point of view—that is, as to the possibility of the institution being self-supporting, but proceed to consider whether it would operate advantageously in a country village, or anywhere else. Would, then, such an institution—a sort of ecclesiastical college—do any good, permanently, to the class for whom it is intended, that is, for young unmarried labourers? and could they, as a general rule, be induced to enter or to remain in it? It would seem that the only means of inducing them to enter it would be by a species of benevolent bribery very much in contrast with the self-supporting principle. If you give young men who ordinarily live on bread and cheese and Potatoes, with an onion or slice of bacon for an occasional relish, a daily meal of savoury butcher's meat at the same cost to them as the aforesaid bread, cheese, Potatoes, &c., you may possibly fill your agricultural college; but if this advantage is only to be had by means of an increased outlay on their part they will not come to your college; or if they come, they will be soon turned out. Supposing, however, you collect subscriptions and donations, and board them at a nominal charge. I do not think the institution would be either permanent or beneficial. Not permanent, because subscriptions have an unfortunate habit of evaporating; and when they failed your college would be bankrupt. Not beneficial, because it would be a sort of juvenile poor-house, redeemed, we will hope, from vicious abuses and self-indulgent sloth by the vigilance of the clergyman (provided he be vigilant), but little calculated to teach young men to lean upon their own industry—to give them strength of character, or habits of fortitude and patience; the rough discipline of life may be staved off for a time, but come it will, and they will be found ill-fitted to encounter it successfully. Now, the great object to aim at would seem to be this: to leave young men to themselves as much as we conscientiously can, and to influence them without their being very well aware of it. I am not opposing judicious instruction at stated times, and friendly advice; far from it. But I am opposing the notion of visible authoritative oversight in the case of young men who are working for their daily bread, and are old enough, in a worldly point of view, to take care of themselves. Instead, then, of a college with the daily formal superintendence of a clergyman, a system of patron and dependent, I should prefer a plan more simple and more humble, but it is believed more efficacious in the end.

Let a house be built or rented capable of containing, by way of commencement, some 12 or 18 lodgers, each of whom should have a separate bedroom, however small, to himself. A good-sized hall or living room, a kitchen, and other offices would occupy the ground-floor, whilst the bedrooms would be above. A couple of rooms would be allotted to a steady man and his wife, who should have the charge of the whole establishment.

The inmates would simply pay for their lodging and washing. They would provide their own food, from bedsteads, with straw mattresses, would be fixed in each bedroom, and there would be a certain quantity of strong plain furniture required for the hall, besides kitchen utensils, &c. The regulations of the house (for some regulations there must be) should be few and simple. The whole establishment would be conducted ostensibly on a business principle. A young man would be able to get a clean, comfortable bedroom at as cheap a rate as he would have to pay elsewhere for one noisy and dirty. In the hall the lodgers would take their meals, which would be cooked by the woman of the house at a trifling charge. They might, if they pleased, contract for board with her, paying weekly what was agreed upon, or they might cater for themselves. Those in regular work would probably have their victuals together according to the same scale; but their meals would be in correspondence with their earnings, and they would, as it were, cut their coat according to their cloth. We will suppose the establishment to be set on foot by the influential residents in the parish; these would form a committee for the primary organisation and general management of the concern. It is my belief that if young men could be induced to enter the establishment, the rent paid, although but moderate, would amply furnish interest upon the capital invested. If requisite, a portion of the money might be raised by means of a mortgage on the building erected. The committee should exercise a business-like rather than a moral control over the lodgers. But habits of order and decency may fairly be exacted in any ordinary hotel or lodging-house, therefore the mere dry oversight of the committee would, to some extent, ensure tolerable regularity. The principal direct means I would rely upon for controlling and governing the lodgers would be these: they should be encouraged to maintain good order and propriety by rules of their own. One way of promoting this would be by making all responsible for the misbehaviour of any single lodger. But it is believed that the comfort and respectability of the house would alone induce a taste for order and regularity. The clean, quiet bedroom, the sociable living-room, the well-cooked meals, and the many advantages procured by several clubbing together would render the inmates very unwilling to receive notice to quit, and they would probably set their faces decidedly against any disorders which would render their stay insecure. A certain proportion of the lodgers might, I think, be grown men; it would lead to preserve steadiness amongst the others. The first point would be the superintendent and his wife. They should be sensible, steady people, with as much good-nature as is consistent with firmness. The wife would have plenty to do in the way of cooking, washing, housework, &c. The man's employment would depend upon circumstances; but at all events he would have to take the weekly rent, and keep all things as straight as he could. If any land was annexed to the lodging-house it might be turned to useful account; it might be given over to the superintendent to cultivate and make what profit of it he could, with the aid of the lodgers, who should either share the profit, or receive wages for their work. The simplest plan would be to let the land in small portions to the different lodgers for them to cultivate when and how they pleased. After having, then, appointed a competent person to act as superintendent, taking care that his wife was well able to discharge the duties that would devolve upon her, we should, as soon as the lodging-house was occupied, suggest to the inmates (as has been before stated) that they should draw up a sort of code of laws for their own guidance. They might elect officers among themselves to take care that these laws should be observed. In emigrant ships this plan has been found to work very successfully: and any one accustomed to the naval or military service knows the importance of inducing men to punish petty misdemeanours, and maintain decent regularity according to rules of their own, without any application to the higher authorities. A power of positively excluding an obnoxious comrade might be granted to the lodgers upon good reason shown. I should look much to this provision of self-government for the repression of disorder and immorality; such as drunkenness and late hours, oaths, and bad language. There would be three classes of lodgers: 1st, lads from 15 to 17; 2d, young men; 3d, unmarried men or widowers of any age. The 1st class, some might argue, would be better placed under the parental roof. I have in my first letter briefly described what sort of thing the parental roof of the labourer very often is. It is often not merely a cause of discomfort, but of gross indecency, to retain grown-up lads of the labouring class at home. Cottages seldom possess more than two bedrooms; if there is a third, it is probably let to a lodger. In the case of many families there must be, therefore, a most objectionable crowding together of the various inmates of the cottage. But even where there is sufficient space at home, it does not seem unnatural for a youth, when he can earn his own living to go forth and shift for himself. He will probably do so whether there be the inducement of a model lodging-house before him or not, and he will often fall into bad hands. The second and third classes live where they can; sometimes finding a respectable lodging, sometimes the reverse. Generally, in a large parish, there are half a dozen young men or more, who have no settled home at all: they are the black sheep of the flock, and usually at the bottom of any mischief or robbery that takes place. When they have cash they occupy their time in a round of edifying visits to all the



beershop in the neighbourhood in regular rotation. When food or money is scarce, they rob, poach, or beg, and occasionally astonish the villagers by doing a few days' work. In some parishes, when any theft has been committed, the injured proprietor backed by the parish constable, will rush frantically to the nearest magistrate, and solicit a warrant to apprehend one of these black sheep, or sometimes even seize him without a warrant, although there may not be a tithe of evidence against him. The black sheep lodge, as often as anywhere else, in outhouses, or behind hay-ricks. There is always a danger of their numbers being augmented by the accession of other young men in the village. It is not surprising that under this state of things beershops should flourish, and farmers grumble, ascribing all the blame to the village school, whilst early marriages lead the way to domestic misery, the union-workhouse, or worse. Now I believe very few of these three classes of youths and unmarried men would put their foot in any sort of institution where there was a lack of ease, freedom, and independence; and where there was a sense of being constantly watched by their betters, except there were such inducements held out as would be tantamount to mere almsgiving. And even in this case many would shrink back or would decamp, and those, perhaps, not the least deserving characters.

It is, therefore, of great importance to remove from the lodging-house all appearance of formal oversight and inquisitive interference. This is so difficult a matter that it would seem inexpedient at all events, at first starting, for the clergyman to take a prominent part in the establishment of the lodging-house. The poor would take alarm, and think they were going back to school. Supposing, however, the plan set on foot, and the lodging-house full, and everything in working order, it may be asked, do you then aim only at providing physical comfort, and preventing scandalous notorious excesses amongst the unmarried labouring class? In a future letter I will endeavour to point out some of the methods which may be adopted for turning this system to account in a moral and religious point of view, and for exercising a salutary influence over the lodgers both in heart and in mind. *Arthur Hallam Elton, Clevedon Court, Bristol.*

### Home Correspondence.

*Red Water, &c.*—I would suggest the following remedies:—Carbonate of ammonia,  $\frac{1}{2}$  oz.; powdered ginger,  $\frac{1}{2}$  oz.; and 1 lb. of Epsom salts. Dissolve in warm gruel (a common wine-bottle full once or twice is enough), till the bowels are acted on. It is a disease of the digestive organs. This receipt I think was taken from a *Gardener's Chronicle* in 1846 or '47, and answered completely in the cases of two cows, after the cow doctor, a graduate of the Veterinary College, London, had given them up and killed another.—For *Hovene* again: A dessert-spoonful of chloride of lime in half a pint of warm water, till the gas is thrown off. A never-failing and invaluable remedy for this painful and dangerous disorder. *R. H.*

*Progressive Agriculture.*—The age in which we live is pre-eminently one of inquiry and progress, of discovery and enlightenment, of social union and aggregate power. No dogma or theory is received until it undergoes a testing process in the crucible of public opinion; mind is constantly acting on mind, interchanging sentiment, diffusing ascertained conclusions; and enlightenment more than in any previous age is using its influence to elevate the ignorant, while a free and fearless press is guiding the car of knowledge in its onward journey. The world is panting for instruction: knowledge occupies the place of power; her subjects must be active in disseminating their opinions, never retrograding, but pressing onward and still onward, in accordance with the order of the day. In the course of events the obligation to progressive action is not to one, but to all; to the statesman and the merchant, to the wealthy and the poor, to the noble and the ignoble, all must proceed in the march of civilisation and improvement, or rest contented to stand aside useless and forgotten, like pillars of salt in Zohr's plains. The various departments of life being propelled on the wheels of enlightenment, that of agriculture ought not to be an exception. It has hitherto been lagging in the rear, and must therefore make an extra effort to attain its true position amongst the rest, as an art and a science which are now happily united in indissoluble bonds. Since science has been engrained on the practice of agriculture, the opinions which were formerly held, in reference to the limits of the soil's fertility, must be greatly enlarged, for they are altogether incompatible with the intelligence and demands of the era of Crystal Palaces and electric wonders. The time has arrived when improvements in agriculture are not only interesting and of importance to those who are engaged in prosecuting them for individual aggrandisement, but are also of the highest importance to the country at large. Self-interest must always be the safeguard in every business undertaking; but the times we live in, though exhibiting it in all its beneficial bearings, yet very properly call for a standard incomparably higher. No doubt, the renovation of our agricultural systems must, in a great measure, be effected by those who have an interest in land. An increase in the productive power of the soil can only be obtained by an application of means, and this engine of power must be guided by the hand of the practical farmer; but agricultural improvements resulting, as they ought to do, in the increased fertility of the

soil, are also thoroughly natural in their character. The prosperity of a mighty empire—the happiness and comfort of its teeming population—the increasing refinement of civilised society—and the progressive elevation, social and spiritual, of those who in common language are termed the masses—demand that agricultural development should be recognised in this relation. There was once a time when the humble labours of the improving farmer were looked upon by the great and the noble of the land, if not with contempt, at least with something akin to carelessness, as an undertaking altogether void of interest. If an enterprising tenant dared to step beyond the limits of his neighbour's creed of practices, and cut out a new and, to some, a seemingly uncalled-for track in the extensive field of untrodden systems, he was instantly met with opposition and envious spite. In the persons of his neighbours, old blind prejudice chased him late and early; passers-by sneered forth the contemptuous laugh, and prophesied approaching ruin. In this respect, how different is it in our day; now our noblemen are fully alive to the advantages of agricultural reform, and are busily employing their powerful influence to promote it. The improving agriculturist obtains on all hands the countenance and respect to which he is justly entitled; and, in these days, it is the prejudiced jog-trot farmer at whom is pointed the finger of scorn. His, indeed, is the case deserving of generous pity; poor man, he walks blindfolded on the brink of a mighty precipice, and ever and anon, as he hears the breakers of ruin rolling at a little distance, paralysis lays its rude hands upon him. Happily, this bitter prejudice resembles the coast-lines of a receding dark and troubled sea, and it must soon be swept away as a thing that mars the renewed and extended picture of agricultural life. The ruinous bigotry which blinds the eyes, cramps the energies, and chains the hands of the agriculturist ought no longer to be found on British ground. It belongs to a bygone age; and, with it, it ought to disappear. The extraordinary increase in the manufacture of agricultural machinery and implements, during the last few years, clearly demonstrates the fact that the tide of rural advancement has really commenced to flow; and flow it will in spite of every obstructing agency. If, however, obstructions can be safely removed, why not do so at once? Facilitate the transfer of land, increase the pecuniary appliances for effecting agricultural improvements, and give the landowner the same uncontrolled possession and right of doing with his property that which the trader and merchant have over theirs, and agriculture will speedily become what, at all events, it is destined one day to be—a field of enterprise for the capitalist, and a stage of practice for the man of great and varied acquirements. *J. Lockhart Morton, Edinburgh.*

### Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND. A MONTHLY COUNCIL was held at the Society's House in Hanover Square, on Wednesday, the 6th of July. The following members of Council and governors of the Society were present: Lord Ashburton, President, in the chair; Lord Bridport, Hon. R. H. Clive, M.P., Sir Matthew White Ridley, Bart., Sir Charles Lemon, Bart., M.P., Mr. Raymond Barker, Mr. Barnett, Mr. Hodgson Barrow, M.P., Mr. Blanshard, Mr. Bramston, M.P., Mr. Brandreth, Mr. Cavendish, Colonel Challoner, Mr. Commerell, Mr. Foley, M.P., Mr. Gadsden, Mr. Garrett, Mr. Grantham, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hornsby, Mr. Kinder, Mr. Paine, Mr. Chandos Pole, Mr. Pusey, Prof. Simonds, and Prof. Way.

The Marquis of Bath, of Longleat Park, Wiltshire, and Tilney Street, Park Lane, London, was elected one of the Governors of the Society.

The following new members were elected:—

Vassons, Sir Henry Mervyn, Bart., Spaldington, Yorkshire  
Gibbons, R. W., Abbot's Hill, Beaford, Crediton, Devonshire  
Dorchester, S. D., Penryn, Cornwall  
Ponsonby, Hon. Ashley Geo. John, M.P., Hatherop, Fairford, Gloucestershire  
Wainman, William Bradley, Carshed, Skipton, Yorkshire  
Price, William, Glan Turch, Swansea, Glamorganshire  
Risdon, William, Dolton, Crediton, Devonshire  
Smith, William, Whincheomb, Gloucestershire  
Breavington, William G. K., Sutton, Hounslow, Middlesex  
Mapplebeck, W. B., Birmingham  
Crosley, Luke T., Hanklow Hall, Nantwich, Cheshire  
Hitch, Samuel, M.D., Sandwell Park, Gloucestershire  
Ruck, Edmund, Castle Hill, Cricklade, Wiltshire  
Lewis, J. L. G. P., Henllan, Narberth, Pembrokeshire  
Blakey, John, Sleaford, Lincolnshire  
Beauchamp, The Earl, Madresfield Court, Worcester  
Carter, William, Bainton, Evesham, Kent  
Smith, David, Yniscedwyn, Iron Works, Swansea Vale  
Buyle, Thomas, Frolesworth, Lutterworth, Leicestershire  
Castree, Charles William, Gloucester  
Morgan, Morgan, Bodwigoed, Pontirfodd, Glamorganshire  
Thompson, Alexander, Kirknewton, Wooler, Northumberland  
Coke, H. S., Neath, Glamorganshire  
Wood, Miles Astman, Ledbury, Gloucestershire  
Melville, Rev. Edmund, St. David's, Pembrokeshire  
Parry, Thomas Gambier, Highnam Court, Gloucester  
Strick, Thomas, Swansea  
Dickenson, D. F. D., Ulverstone, Lancashire  
Wood, W. Bryan, Bainton, Chippenham, Wiltshire  
Leach, R. Valentine, Vernon House, Britton Ferry, Glamorgans.  
Willis, R. B., Elderbeck, Foleys Bridge, Penarth, Cumberland  
Horford, Summers, Clarbrough Grange, Narberth, Pembrokeshire.  
Sparkman, John, Little Marcle, Ledbury, Gloucestershire  
Lee, Thomas, 5, Somers Place, Hyde Park, London  
Wemyss, James Robert, Gloucester  
Williams, T. Playfair, Wessington Court, Townhope, Hereford  
Trinder, Edward, Cirencester, Gloucestershire  
Nunn, William Travers, Yeldham, Halstead, Essex  
Wicks, John, High Leaden Court, Gloucester  
Troyte, A. H. Dyke, Huntsham Court, Tiverton, Devonshire  
Butt, Henry, Kemerton, Tewkesbury, Gloucestershire

Barton, Charles, Holbrook House, Wincanton, Somersetshire  
Corbet, Henry, Farmers' Club, New Bridge Street, London  
Henderson, William, 96, Gloucester Place, Portman Sq., London  
Collinson, H., The Wood House, Kidderminster, Worcestershire  
Pearson, Charles, Berwick-on-Tees, Yarm, Yorkshire  
Washburn, George, Gloucester  
Kay, Richard, Forecote Valley, Aldborough, Durham  
Saunders, Samuel, Russell Mill, Market-Lavington, Wiltshire  
Deere, Richard Tack, Chestow-Terrace, Bayswater, London  
Rhodes, Christopher, Little Oat Hall, Burgess Hill, Sussex  
Eggar, James, Binsted, Alton, Hampshire  
Brogden, John Thomas Nathaniel, Lincoln  
Harkness, Thomas, Upper Sackville Street, Dublin  
Martin, John, Barmer, Fakenham, Norfolk  
Stothert, Henry, Bath, Somersetshire  
Lambert, Charles, Sunk Island, Otteringham, Hull

FINANCES.—Mr. Raymond Barker, Chairman of the Finance Committee, presented to the Council the report on the accounts of the Society to the end of the previous month, from which it appeared that the current cash-balance in the hands of the bankers was £2249. He also reported to the Council the final settlements of all claims on account of fines for non-exhibition at the Lewes meeting.

PRIZE ESSAYS.—Mr. Pusey, Chairman of the Journal Committee, reported the following awards made by the Judges of Essays and Reports, competing for the prizes of the Society:—

- I. TO JOHN HAXTON, of Drumrod, Fifeshire: the Society's Prize of Thirty Sovereigns, for the best Essay on the Management of Light Lands, consisting principally of very friable, dry, and loose sand, with some aluminous (or clayey), but no calcareous matter, such as those on sand of the plastic clay, iron-sand, millstone grit, old red sandstone, and granite.
- II. TO ROBERT VALENTINE, Farm-manager to the Royal Agricultural College, Cirencester: the Society's Prize of Ten Sovereigns, for the best Essay on the Cultivation of Beans and Peas.

GLoucester MEETING.—Mr. Raymond Barker, Vice-Chairman of the General Gloucester Committee, reported the satisfactory completion of the arrangements for the Society's ensuing Country Meeting in that city. The Council cordially greeted the announcement that the French Government had intimated, through their consul-general in London, their intention of sending a special deputation to attend the meeting. The General Gloucester Committee had given instructions that every mark of attention should be paid to these distinguished guests.

STEAM BOILER.—Colonel Challoner, chairman of the Implement Committee, laid before the Council the report of Mr. Amos, the consulting-engineer to the Society, on the result of his visit to the works of Mr. Batley, at Northampton, for the purpose of inspecting and testing the 10-horse steam boiler which had been constructed by Mr. Batley for the Society, and was intended to supply steam for working the fixed engines in the Society's trial yard, at its country meetings. Mr. Amos had the satisfaction of finding that Mr. Batley had made every effort to meet the wishes of the Implement Committee, and to complete the boiler in due time. It was found, on being subjected to high pressures of water and steam, to be fit for immediate use; and there was no doubt that it would reach Gloucester in proper time for the Society's steam-engine trials.

VACANCIES.—The Secretary having reported the vacancies occasioned in the Council by the lamented loss of the Earl of Ducie and Professor Sewell; the President announced that, agreeably with their standing regulation, these vacancies would be filled up by the Council at the ensuing monthly meeting, on the 3d of August.

SEASONING WOOD.—The Hon. R. H. Clive, M.P., sent to the Council the following communication from Mr. Lloyd, of Leaton Knolls, Salop:—

As the communication of the enclosed memorandum, drawn up by my gardener, and stating to me the results of various experiments in seasoning young timber, by immersion in lime-water, may be interesting and useful to many of our brother landowners, I enclose them, together with the specimens referred to in it, to be submitted (if you should think fit) to the attention of the Royal Agricultural Society at their next weekly meeting. I may add to the enclosed statement that the timber intended for roofing, gates, &c., should first be shaped and fitted, and then taken to pieces and placed in the lime-water; as the wood, when taken out of the pit and dried, becomes so hard, and the grain so gritty, that it cannot well be cut or planed; and, if placed, when tenoned and framed together in the pit, would swell, and burst the joints.

—J. A. LLOYD.  
“The accompanying specimens of timber, which I now submit for your inspection, are the results of some experiments, carried out in 1843 and 1849. Pieces of the woods, as labelled, were soaked for 14 days in strong lime-water; and, after being taken out, and allowed to dry, were placed, with other pieces not soaked, upon a grub-eaten floor, and the results are what the specimens now exhibit. While the pieces of young Larch, No. 1, is perfectly sound, No. 2, a piece of the same tree, but not soaked, is completely perforated by grubs; No. 3 is a piece of Sycamore plank soaked in lime-water, No. 4 a piece of the same plank not soaked. No. 5 is a specimen of Lime tree plank soaked, the wood quite green when put to soak. No. 6 is a specimen of Lime tree, the wood quite dry when put to soak. The grub has not attacked either of them, and it appears that the lime-water penetrates the green wood as deeply as the dry. No. 7 is a specimen of peeled Larch soaked in 1843, and No. 8 is a specimen of the same tree not soaked in lime-water. No. 9 is a specimen of unpeeled Larch soaked in lime-water in 1843, and No. 10 is a specimen of the same tree not soaked. Moreover, I may remark, that the timber which is soaked is harder than that not soaked. The tank for soaking timber here is 26 feet long, 5 feet wide, and 4 feet deep, dug out of the clay, and the sides and bottom lined with wood, at an expense of about 70s., exclusive of the value of the timber in the rough.” J. WILSON.

The President remarked that simple processes were too apt to be forgotten, although, in many cases, very adequate and efficient for required purposes; facts were first important, theories were afterwards valuable in extending their use.—Prof. Way referred to the advantages attending the circumstance of the wood being cut up in pieces before being soaked, and thus presented a greater amount of surface: there were many other modes of soaking wood, but they were all comparatively



expensive, and required a greater amount of preparation for the process.—Sir M. W. Ridley thought the action of the lime consisted in solidifying the albumen.—Mr. Brandreth thought it effected a change in the saccharine juices of the wood.—Mr. Hamond thought the subject a very interesting and important one, and hoped Prof. Way would give it his attention.—On the motion of Mr. Clive, seconded by Mr. Pusey, the thanks of the Council were ordered to Mr. Lloyd for the favour of these specimens, and the statement accompanying them.

COMMUNICATIONS were received: 1, from Mr. Thomas Martin, on the importance of taking measures to improve the moral, social, and physical condition of the rising generation of the agricultural labouring classes; 2, an invitation from Mr. Beckford, of Ruxley Lodge, near Esher, in Surrey, for the Council to inspect the daily working of Samuelson's digging-machine, at a farm in his neighbourhood, near Kingston-on-Thames; 3, an invitation from Mr. Bailey Denton, for the members to witness the labourers' draining match, intended to take place on the estate of Mr. Parkins, at Chesfield, near Stevenage, Hertfordshire, on the 23d of July; 4, an invitation from the Rev. Samuel Smith, of Lois Weedon, near Towcester, for the inspection of his growing crops, as results of his improved system of cultivation. The Council ordered their usual acknowledgments for the various communications submitted to them, and adjourned to their monthly meeting on the 3d of August.

**FRENCH INDUSTRIAL EXHIBITION.**—The Earl of Clarendon, her Majesty's Principal Secretary of State for the Foreign Department, has transmitted to the Society, through Mr. Addington, the following communications relating to the Great Industrial Exhibition of France, to be held at Paris in the year 1855.

Foreign Office, July 6, 1853.

Sir,—With reference to my letter of the 30th of April last, enclosing a copy of a letter from Count Walewski, the French Ambassador at this Court, announcing the intention of his Majesty the Emperor of the French to hold a Great Industrial Exhibition in Paris in May, 1855, I am directed by the Earl of Clarendon to transmit to you a copy of a further letter from Count Walewski, stating the decision which has been come to by the Government of his Imperial Majesty in regard to foreign prohibited goods which may be sent to the Exhibition; and I am to request that you will move the Royal Agricultural Society of England to give the greatest possible publicity to the liberal intentions of the French Government, as stated in Count Walewski's letter.

I am, Sir, your most obedient humble Servant,  
(Signed) H. U. ADDINGTON.

London, 29th June, 1853.

My Lord,—In reference to the Great Exhibition, intended to be held at Paris in 1855, many foreign manufacturers have inquired of the Minister of the Interior: 1, whether products, the importation of which into France, under general regulations, is prohibited, will be specially admitted into that exhibition; and 2, whether, at the conclusion of the exhibition, those products will be required to be re-exported, or may be sold off on the spot. These two questions, My Lord, have received a solution conformable with those enlightened views which led the Government of his Majesty the Emperor, in the first instance, to decree the Great Exhibition of 1855. It has accordingly been decided, not only that such prohibited merchandise shall be admitted into the Exhibition, but, further, that it may at the close of the Exhibition, and at the will of the exhibitors, be either re-exported, free of all duty, or sold in France for internal consumption, on payment of a duty of 30 per cent. on its value. These arrangements will be included in the general regulations at present in the course of preparation; but, on account of the general impression which appears to have been already made among foreigners, by the rule affecting prohibited merchandise intended for the Exhibition, I am instructed to have the honour of informing your Excellency of the special resolutions adopted in reference to this point by the Government of his Majesty the Emperor. Your Excellency will, perhaps, kindly consent at once to convey to the industrial and manufacturing subjects of her Britannic Majesty, a statement of the regulations which have thus been made.

I have, &c.,  
(Signed) A. WALEWSKI.

To his Excellency the Earl of Clarendon,  
&c. &c. &c.

## POULTRY.

**Poultry Literature.**—We look to you, sir, as the public censor of all the misdemeanours perpetrated in agricultural literature, and are, therefore, not surprised that "Maria" and a "Poultry-book Purchaser" should address to you their well-founded complaints. The "Poultry-book Purchaser" has informed you of the creatures which have been palmed upon him under the name of Captain Hornby's Spanish Fowls; but while he informed you of the ridiculous embryos which the wood engraver gave to us in the second number, he charitably withholds the fact that we have again in this, the third number, to meet with blunders and omissions, as explained in the following very cool and very grammatical sentence:—"Some additional facts respecting the Dorking fowl, which reached the editors after the sheets had been printed off, has rendered a further consideration, and probably the cancelling of them, necessary. The pages omitted will be given with Part IV." This I think unpardonable. Two numbers out of three requiring that parts of them should be thus cancelled! Haste, carelessness, and error, are the characteristics of the book, and the circumstance of one of its authors (ought I not to write, compilers?) being an amiable and excellent clergyman, ought not to shield it from the condemnation it merits. By-and-by we shall be told of a "New Edition, with extensive Additions and Emendations;" but will this be any reparation to those whose half-crowns, like my own, have been expended upon untruthful pictures and a hurried rehash of statements which had been previously paid for in the shape of "The Cottage Gardener?" Living in the country, we cannot see a book before we purchase it (by ordering it through our booksellers of the London

publisher), and hence it becomes necessary that a strict public censorship should be exerted over all such book-making speculations as is "The Poultry Book," which has so greatly disappointed not only your former correspondents, but also *A Poor Farmer*.

## Miscellaneous.

*Numerical Details connected with the Employment of Water for Irrigation in the Agriculture of Northern Italy.*

	Number of acres irrigated by cubic foot	Number of waterings.		Depths of strata of water.			Price of irrigation per acre.	Produce in Grass or Grain per acre.	Net value of produce per acre.
		During the month.	During the season.	Each watering.	Monthly.	For the season.			
SUMMER—				Inches.	Inches.	Inches.	s. d.	Cwt.	
Meadows ... ..	90	3	18	2.34	7.02	42.12	5 9	224	3l. 10s. to 4l.
WINTER—									
Meadows ... ..	3	30	150	7.92	237.6	11.88	21 0	450	7l. to 12l.
Rice ... ..	40	...	100	0.62	...	62	14 6	17.8	5l. to 7l.
Indian Corn, Flax, &c. ...	180	1	6	3.93	3.93	23.58	3 6	50	2l. to 3l.

*Italian Irrigation, by Captain Smith.*

## Calendar of Operations.

### JUNE.

**CHESHIRE, June 30.**—The sowing of Swedes having been very much retarded by the wet weather, has at intervals occupied the greater part of the month, and in some localities is only just brought to a close; but looking to the experience of the last few years, the farmers are more reconciled to late sowing than they would have been formerly, on account of the prevalence of mildew, which attacks early sown ones with greater severity than late ones, consequently they keep much better than the former, and, generally speaking, the late sown ones have escaped the fly, whereas the early sown ones are much injured. The autumnal sown Wheat is looking strong and healthy on the best Wheat soils, but upon the poor cold soils it is too thin on the ground to produce an average crop; and the same remark will also apply to many of the crops, even on the best soils, where the sowing was delayed until the spring. The Wheat is now shooting, and more than a usual quantity of blank or blighted ears is generally observable, especially in the white varieties. The rains have had a beneficial effect on pastures and mowing land, and we are now only waiting for fine weather to secure an abundant crop of hay. There is a busy scene among the early Potato growers, every one being anxious to clear the land, and to commence sowing the Green Melon Turnip, which is now so much in favour for both cattle and table use. Mangold Wurzel, which is so generally grown not only by the farmers, but by the labourers, in this neighbourhood, is looking very promising. *N. Cox, Stapleford Hall.*

**SOUTH OF DEVON.**—During the past three weeks we have had a constant succession of showers and sunshine, the result of which is, a large supply of Grass and the luxuriant growth of the corn crops; it is, however, retarding the sowing of green crops on heavy lands; those sown are well up, but troubled with the fly. The Potatoes look remarkably well, Mangold Wurzel irregular. Mowing Grass has commenced but very partially, the unsettled state of the weather causing parties to be cautious. The Wheat crops are thin in many places, but Barley and Oats on the whole look promising. Fat cattle of all sorts command strong prices and are not plentiful; store cattle are ridiculously high, leaving very little room for remuneration. The general farming operations now depend much on the weather, but comprise the preparation of ground for Turnips, hoeing Potatoes and Mangold, and attending to the hay. *June 25.*

**RAVENS (GLAUGWAY, June 25.**—Since our last report we have had some refreshing rains, though, as yet, they have been very slight; but there is now the prospect of more, which is still much needed, as the rain has not yet reached the roots of plants. Grain crops have improved considerably the last two or three weeks. Winter-sown Wheat is now fully into ear, and, with suitable weather, is likely to be a good crop; but that which was spring-sown, and predominates, will be but an indifferent crop, as the very dry weather prevented it from tillering. Oats on all light soils will be short in the straw, but they being generally thickly planted, with seasonable weather, may be productive in grain. Barley, of which there is not much sown in the district, looks rather indifferent. Pastures have very much improved, which has caused the price of lean cattle to rule high. Potatoes everywhere look well, but it is yet too soon to venture an opinion as to the result, as the period has not yet arrived when they have been usually attacked by the disease. Turnips have grown very slowly, and are much later than usual, very few having yet been singled. Mangold Wurzel is generally very irregularly planted, part of the seed not vegetating till the rain came. Carrots also are very patchy, and only where the seed was prepared before sowing did they come up till the rain came, which will cause them to be a late crop. Beans are in full flower, and promise well. Grain markets have been keeping steady. The demand for fat cattle and sheep still continues good, at high prices. There has been a good deal of speculation in buying up lambs for wintering; the advance in price above last year on the best kinds is from 5s. to 6s. per head, and on the inferior kinds from 2s. to 4s. Several sales of cheese, of this year's make, have been made at 9s., and in some cases a trifle more per 24lbs. The advance in the price of lean cattle from last year will be fully 25 per cent. Labourers are well employed, as there is a good deal of draining going on in the district, which operation is performed much more effectively than it was a few years ago, the minimum depth at which the drains are cut being 3 1/2 feet, the distance apart ranging according to the description of soil, from 21 to 27 feet. A great breadth of land has been drained within the last few years, which has very much improved the appearance of this district. Much attention is being paid to the improvement of the Ayshire breed of cattle and sheep in the district; and, as a proof of the success of the effort, I may mention that sheep from this district took the first prize in the class of black-faced ewe hogs; and the third prize for Ayshire bulls was taken by one from this district at the late Glasgow cattle show.

**WESTER ROSS, June 27.**—For the first seven days of this month we had a continuation of easterly winds and frosty nights, which were so prevalent last spring. During the space of four weeks scarcely a shower fell. The moisture was so completely evaporated in ordinarily dry land, that the Swedes where sown could not be raised; and Turnips sown earlier and before the ground was too dry, soon after they made their appearance, speedily disappeared again. On the morning of the 8th genial showers began to fall; and on the 10th and 11th we had nearly incessant rain; and throughout the month showers have been falling as they were needed. Swedes are now coming away, but more slowly than if they had had sufficient moisture to bridle them at first; and the danger is that, being now somewhat late, winter may overtake them before they be full grown. This month, as well as the greater part of the previous one, has been occupied with preparing for and sowing the Turnips; and now this very expensive and important part of the farmer's operations is all but concluded, it being generally admitted that Turnips sown after the end of June are too late. Within these few bygone years the amount of labour connected with Turnip sowing has been greatly lessened;

one pair of horses, with one furrow, accomplishing as much work as two pairs used to do. This is rendered all the more necessary as there is such a breadth of Turnips now-a-days sown. The manure most approved of for Turnips is from 14 to 20 loads of court-yard or town manure, with from 2 to 3 cwt. of guano per acre; and this, with one-half the Turnip crop eaten off with sheep, puts the soil into a fit state for growing a good crop of any kind. Such a supply of court-yard manure as this, however, cannot always be attained, and, consequently, we are often under the necessity of laying down part of the crop with foreign or artificial manure. Women, for out-door work, are abundant, and wages are consequently low. For 10 hours 6d. is the ordinary pay. Barley and Oats bid fair to be an average crop. Wheat is miserably deficient. Not only is there a smaller breadth than usual sown, but the growing crop is exceedingly thin, and the

	Each watering.	Monthly.	For the season.	s. d.	Cwt.	Bushels.	Net value of produce per acre.
...	...	...	...	...	...	...	...

head very diminutive—the severity of the spring left it thin, and the continued drought diminished the head. The complaint is general. Wheat, in the fine climate and suitable soil of Morayshire, looks thoroughly poverty-stricken. The only fields that bear a good crop are low-lying, deep-soiled, and well-cultivated ones. Unless the Continent can do wonders, farmers may look for a fair price for Wheat next season; but it will take a pretty high price per quarter to make up for the deficiency in the crop. Cattle continue to sell high. The demand is such that the country has been so thoroughly drained of its fat, that the butcher has the utmost difficulty in laying his hand upon a beast to supply the daily cravings of somewhat discontented customers. Sixpence per lb. is such an uncommon and such a comfort-yielding price for beef, that the farmer is getting quite delighted with the working of free trade in this direction. These years look like the sheep-farmers' harvest season. Sheep are in great demand at highly remunerative prices, young stock bringing nearly double the price they would have done only a few years ago. Our Inverness wool fair comes off on the second Thursday of July, in regard to which I will be able to say something in my next communication.

## Notices to Correspondents.

**SALT FOR HAY.** A *Sub.* Eight or ten pounds of salt to every ton of hay is as much as is generally strewed over it in making the rick.

## Markets.

### COVENT GARDEN, July 9.

All kinds of produce are now supplied in abundance, and trade is brisk. Forced Peaches and Nectarines are abundant. Strawberries from the open ground are well supplied. Imports from the Continent of Potatoes, Carrots, and Artichokes are still well kept up; and there are some good French Cherries and Apricots in the market. The latter are very fine at from 4s. to 6s. per doz. Greengages and Orleans Plum from the South of France fetch 4s. per basket. There is also a large quantity of foreign Peas in the market this week, and in fine condition. Rhubarb is abundant. Young Carrots and Turnips fetch from 4d. to 6d. per bunch. Green Peas are coming in in very good condition, at from 1s. to 1s. 3d. per quart shelled, and from 3s. to 6s. per bushel sieve. Old Potatoes may still be obtained. Good Ash-leaved Kidneys from Cornwall, Essex, and Kent are plentiful. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonette, Cinerarias, Tulips, and Azaleas.

### FRUIT.

Pine-apples, per lb., 4s to 8s  
Grapes, hothouse, p. lb., 3s to 6s  
Peaches, per doz., 8s to 20s  
Nectarines, per doz., 5s to 20s  
Melons, each, 3s to 8s  
Cherries, per lb., 6d to 3s  
Gooseberries, green, p. bush, 2s to 3s 6d

### VEGETABLES.

Cabbages, per doz., 6d to 1s  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 2s 6d to 4s  
French Beans, p. 100, 9d to 1s 6d  
Asparagus, per bundle, 1s to 4s  
Rhubarb, p. bundle, 3d to 6d  
Potatoes, per ton, 80s to 120s  
— per cwt., 4s to 8s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 2d to 1s  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 1s to 2s  
Onions, per bushel, 8s to 12s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d  
Tomatoes (foreign), p. doz., 6s to 8s

### HOPS.—BOROUGH MARKET, July 8.

Messrs. Pattenden and Smith report that the accounts continue to come more and more unfavourable from all the Hop districts; the market in consequence is very firm, at improving prices. Duty, 120,000.

### HAY.—Per Load of 36 Trusses.

		SMITHFIELD, July 7.	
		Prime Meadow Hay	90s to 100s
Inferior do. ...	...	...	...
Rowen do. ...	...	...	...
New Hay ...	...	...	...
Prime Meadow Hay	105s to 115s	Inferior Clover	90s to 100s
Inferior do. ...	...	New do. ...	...
New Hay ...	...	Straw ...	...
Old Clover ...	...	...	...

### WHITECHAPEL, July 7.

Fine old Hay	... 95s to 100s	Old Clover	... 110s to 115s
Inferior do.	... 84 90	Inferior do.	... 100 105
New Hay	... 40 50	Fine 2d cut	... 90 96
Straw...	... — —	Inferior do.	... — —

### WOOL.

**BRADFORD, THURSDAY, July 7.**—There is very little doing in any kinds of combing wools. The spinners are disinclined to buy at the present prices. The supply of wool to market is very limited, and the quantity of old wool here in some of the staplers' hands is greater than at one period was expected.

### SMITHFIELD.—MONDAY, July 4.

We have a few more fleeces on offer, but the quality of the supply is not at all improved, consequently choicest descriptions are fully as dear as of late. There is a pretty good clearance of all kinds. The number of Sheep continues small for the time of year; good ones being scarce are rather dearer. Other



**COAL MARKET.**—FRIDAY, July 8.  
Eden Main, 16s. 3d.; Wallsend Haswell, 17s.; Wallsend Hetton, 17s.; Wallsend Stewarts, 17s.; Wallsend Tees, 17s.—Ships at market. 57.

MONDAY, July 4.—The supply of English Wheat from Essex and Kent to this morning's market was small, and sold quickly at an advance of fully 4s. per qr. upon the prices of this day se'night. A similar improvement was generally asked upon foreign, which checked business, and the sales effected were 3s. to 4s. per qr. above last Monday's quotations. A few of the arrivals on the coast from Southern Europe have been disposed of on the terms of last Friday, Baltic Wheat, 100 lbs. to the bushel, at 3s. 6d. that's rate. Barley, Beans, and Peas bring an advance of fully 1s. per qr. The Oat trade is firm, and fine qualities are 1s. per qr. dearer. The top price of town-made Flour was advanced 3s. per sack on Friday, and barrels sell at 1s. per barrel more money.

PER IMPERIAL QUARTER.		s.	d.	s.
Wheat, Essex, Kent, & Suffolk...	White	48	—	44
—	fine selected runs ..ditto	46	—	46
—	Talavera	56	—	56
—	Norfolk	—	Red	—
—	Foreign	38	—	—
Barley, grind. & distil., 23s to 26s...	Chev.	24	—	25
—	Foreign...grinding and distilling	24	—	29
Oats, Essex and Suffolk	—	18	—	—
—	Scotch and Lincolnshire...Potato	23	—	18
—	Irish	22	—	20
—	Foreign	19	—	17
Rye	—	29	—	—
Rye-meal, foreign	—	—	—	—
Beans, Mazagan...33s to 38s...	Tick	35	—	35
—	Pigeon...36s — 42s...Winds.	—	—	—
—	Foreign	36	—	—
Peas, white, Essex and Kent...	Boilers	40	—	40
—	Maple...32s to 38s...	31	—	36
Maize	White	40	—	47
Flour	Yellow	—	—	—

The arrival of foreign Wheat has amounted during the week to 15,210 qrs.; of other corn the supplies were small. This morning's market was thinly attended, and holders being firm in their demands, but little business resulted; the same applies to Flour. Spring corn of all descriptions meet a good inquiry at the full rates of Monday. The arrival of cargoes of Wheat from Southern Europe has been very considerable; there is, however, but little left on sale, and purchases cannot be made at lower prices.—The rise in the value of the dollar has caused the foreign market for the past eight days generally averaged 3s. to 4s. per qr. and on barrel Flour 2s.; and the improvement in Wheat here on Monday over the prices of Friday was 1s. per qr.

ARRIVALS THIS WEEK.				
	Wheat.	Barley.	Oats.	Flour.
	Qrs.	Qrs.	Qrs.	
English ...	2160	140	3530	1270 sacks
Irish .....	—	—	1840	
Foreign ...	15210	2120	3030	5290 brls

		IMPERIAL AVERAGES.						
		Wheat	Barley.	Oats.	Rye.	Beans.	Peas.	
		<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	
May	28 .....	43 9	30 6	18 7	33 2	36 7	32 7	
June	4 .....	43 3	29 6	19 0	34 0	36 9	33 8	
	11 .....	43 11	29 10	18 10	34 9	38 1	34 8	
	19 .....	45 0	30 11	20 11	36 11	38 11	34 6	
	23 .....	46 11	29 3	20 1	32 8	39 5	34 9	
July	2 .....	47 3	29 10	20 6	32 6	40 1	35 10	
Aggr. Aver.		45 0	29 8	19 4	33 0	38 4	34 4	

FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.						
PRICES.	May 28.	June 4.	June 11.	June 18.	June 25.	July 2.
47s 3d	...	...	...	...	...	
46 11	...	...	...	...	...	...
45 0	...	...	...	...	...	...
43 11	...	...	...	...	...	...
43 9s	...	...	...	...	...	...
43 3	...	...	...	...	...	...

LIVERPOOL, THURSDAY, July 5.—At this morning's market there was a good attendance of town and country dealers, and several millers from Ireland. Wheat met an active demand at an improvement over the prices of last Tuesday of 3d. to 4d. on white, and 5d. to 6d. per 70 lbs. on red. Flour was eagerly bought up, and must be quoted at 2s. 6d. per sack and barrel dealers' price, and 2s. 4d. per cask, with a further 45s. per 45 lbs. per 48 lbs. per 240 lbs., which checked sales. Beans receded 6d. per 480 lbs., but Barley and Peas brought fully previous rates. Indian Corn on the spot was held for 1s. per 480 lbs. more money, but little business resulted. Floating cargoes were readily saleable at from 29s. to 30s. 6d. per qr. c. f. and l.—FRIDAY, July 1.—The receipts of grain into this port during the last three days were 10,000 bushels of wheat, 1,000 of barley, and 1,000 of peas, also of the following coarstia, the supplies are trivial. This morning the demand is not so general nor so urgent as before, yet the local and interior millers have purchased steadily of Wheat, at an advance of July 2d. per bushel over Tuesday's currency. The improvement in Flour is 1s. per barrel, and a fair amount of trade in the bulk place. Barley and Malt are fully as dear as Beans and Peas, and with a further 45s. per 45 lbs. One and a half bushels of Indian Corn on the spot is the best and most Oatmeal dull at previous rates. Indian Corn on the spot is in better request, at the full quotations of Tuesday.

**THOMAS PERRY AND SONS**, Manufacturers of  
Wrought Iron Plain and Ornamental Hurdles, improved  
continuous Fencing, Gates, &c., Highfield Iron Works, Bilston,  
Staffordshire, and 463, Oxford Street, London. From the extent  
of their works (situate in the centre of the iron district), and  
other advantages, **THOMAS PERRY & SONS** are enabled to execute  
all orders in the promptest manner, and on the lowest possible  
terms.

Obtained the Prize Medal Great Exhibition, 1851.

FRY'S HOMOEOPATHIC, DIETETIC, and GRANULATED COCOAS possess perfect solubility—light, nutritious, and delicate articles<sup>+</sup> to invalids invaluable.

J. S. FRY and Son's name on the label of their COCOA NIBS will warrant them perfectly genuine.

FRY'S PATENT COCOA possesses a full flavour.  
J. S. FRY & SONS, Bristol, manufacture all kinds of Chocolates  
and Cocoas.

Fry's Chocolate, or Cocoa Paste, Chocolate Powder, Broma, and Soluble Chocolate, require no boiling.  
Sold by Tea Dealers, Grocers, and Druggists in Great Britain and Ireland. Be careful to observe that the name of "Fry & Sons" is on the packet of each article. Enquire at all Grocers for Fry and Sons' Book on Cocoa—GRATIS.

**SHIRTS.**—**FORD'S EUREKA SHIRTS** are not sold by any hosiers or drapers, and can therefore be obtained only at 38, Poultry. Gentlemen in the country or abroad, ordering through their agents, are requested to observe on the interior of the collar and the stamp—**Ford's Eureka Shirts, 38, Poultry**—without which none are genuine. They are made in two qualities, the first of which is 40s. the half-dozen, and the second quality 30s. the half-dozen. Gentlemen who are desirous of purchasing shirts in the very best manner in which they can be made are solicited to inspect these, the most unique and only perfect fitting shirts. List of prices, and instructions for measurement, post free.—**RICHARD FORD, 38, Poultry, London.**

**ASHLEY'S ANTI-DEPLEATORY EXTRACT**, for strengthening and preventing the Hair falling off; prepared and sold in all parts of the Kingdom by **ASHLEY, Permacore, Brighton**, in bottles; half pints, 2s. 6d. pints, 4s. 6d. each. Also, **ASHLEY'S CLEANSING POMADE**, for freeing the head from scurf, and keeping it clean, in pots, 1s. and 2s. each. Also, **ASHLEY'S MEDICATED POMADE**, warranted to cure the ring worm, scald heads, and all kinds of scorbic eruptions; in pots, stamp included, 1s. 6d. and 2s. 6d. each. Reference of the highest respectability can be given. Wholesale Agents—**Barclay & Co., 59, Farringdon Street; Sutton & Co., 25, Church Lane, London; Edmondson & Co., 10, Abchurch Lane, London; and Messrs. Paul's Churchyard; Butler & Harding, 4, Cleapside; Sanger, 150, Oxford Street; and may be had retail from all respectable Chemists in town or country.**

THE SUMMER SUN AND DUST are sources of the serious inconvenience to persons of delicate complexion. On the drive, the promenade, the aquatic excursion, ladies will find the application of ROWLANDS' KALYDOR greatly refreshing to the complexion, dispelling the cloud of languor and relaxation, allaying all irritability and heat, and immediately affording the pleasing sensation attendant on restored elasticity and healthful state of the skin. Freckles, tan, spots, pimples, and discolorations are completely eradicated by the Kalydor, and give place to a delicately clear and fair complexion. In cases of sunburn or stings of insects its virtues have long been acknowledged.—Price 4s. 6d. and 8s. 6d. per bottle. As a protector and restorer of the fair, ROWLANDS' MACASSAR OIL will be found alike efficacious, guarding it from the injurious operation of the sun and dust. It is highly necessary, on purchasing, to see that the word "ROWLANDS" precedes the name of the article on the wrapper of each, as spurious imitations are abroad.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London; and by Chemists and Perfumers.

**HOLLOWAY'S PILLS THE MOST SUPERIOR**  
**REMEDY FOR DIARRHŒA, OR BOWEL COM-**  
**PLAINTS.**—At this season of the year derangement of the  
 Bowels is very prevalent, frequently arising from eating too much  
 Fruit or Vegetables. This disorder, if not checked at the com-  
 mencement, often leads to unpleasant consequences, therefore  
 those who suffer from it should take a few moderate doses of  
**HOLLOWAY'S PILLS**, which are the finest medicine known for  
 such complaints, as they quickly remove the cause, strengthen  
 the tone of the stomach, and permanently renovate the digestive  
 organs. As a Family Medicine these Pills stand pre-eminent,  
 and should be kept for use by all classes of Society.—Sold by all  
 Druggists, and at Professor **HOLLOWAY'S** Establishment, 244,  
 Strand, London.

### RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS

ALL Sufferers from this complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of male and female rupture, however bad or long standing, in male and female of any age, causing no confinement or inconvenience in its use whatever. Sent post free, with full instructions, on receipt of 7s. 6d. in postage stamps, or Post Office order, payable at the General Post Office, to Dr. HERBERT LESLIE, 374, Manchester Street, Gray's Inn Road, London, where he may be consulted daily, Sundays excepted, from 11 till 1, mornings, and 5 till 7 evenings only.—“My rupture is quite cured.”—R. LONG, Chester. “I have felt no pain, nor has it come down since I used it.”—H. HARRY.

**DO YOU WANT LUXURIANT HAIR?**  
WHISKERS, &c.?—EMILY DEAN'S GRINLENE has been many years established as the only preparation that can be relied upon for the Restoration of the Hair in Baldness from any cause, preventing the Hair falling off, strengthening weak Hair, and checking Greyness, and for the production of thick Moustachios, Eyebrows, &c., in three or four weeks with certainty. It is an elegantly compounded, pure, and, will be sent post free, on receipt of 24 postage stamps, by Miss DEAN, 37 A, Manchester Street, Gray's Inn Road, London. At home daily from 11 till 7, Sundays excepted.—"I have used your Grinlene, and have now a good pair of Whiskers," J. L. HIGGS Dudley.—"I found your Grinlene efficacious in stopping my Hair from falling out,"—Miss FORBES, Chirbury.

**OVER-COATS** possess every quality essential to a really respectable and gentlemanly garment, and, if desired, the well-known additional recommendation of resisting any amount of rain, without confining perspiration (the fatal objection to all other waterproofs); and being entirely free from vulgar singularity, are adapted for general use at all times equally as for rainy weather. Price **TWO GUINEAS**; or, waterproof, 45s. 6d. and 50s. Every size kept; also, one of the largest stocks in London of every description of over, summer, morning, and shooting coats, &c. &c.

W. BARDOE, 96, New Bond Street, and 69, Cornhill (only).

**WANTED**, at Michaelmas next, a **FARM**, of 100 to 150 acres of mixed soil, with a portion of Meadow Land, between 30 and 50 miles from London, with a Genteel Family Residence, and near to a town or village.—Address, with full particulars, to R. J., Post Office, Stoke Newington, London.

**SEVERAL GOOD FARMS TO BE LET,** with easy distances from London, situate in Surrey, Middlesex, and Herts, comprising from 70 to 550 acres, with good residences, &c.—For particulars apply to Messrs. DAVIS & VIGENS, Land and Estate Agents, &c., 3, Frederick's Place, Old Jewry.

**TO BE LET,** and may be entered upon immediately, is a **NURSERY**, with two Greenhouses, Lights, and Boxes, together with the Stock on nearly an Acre of Land, with a Cottage, within five miles of London. A very moderate sum for the Stock required. Rent 18*l.* per annum.—For particulars apply to Mr. EDWARD DENYER, Nurseries, Loughborough Road, Brixton, near London.

TO GROWERS OF MEDICAL PLANTS, FARMERS,  
NURSERYMEN, AND MARKET GARDENERS.

MERTON, SURREY, 8 MILES FROM LONDON.

**TO BE LET, by Tender or Lease, from Michaelmas**  
1853, 50 acres of excellent Arable Land, in a high state of cultivation, and now used for the growth of Medical Plants, and 15 acres of good Meadow Land. Tenders to be delivered on or before the 4th August, 1853, to Messrs. MILLARD and MACBELL, Solicitors, Cordwainers' Hall, Cannon Street West, London, of whom full particulars may be had.

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JULY 19

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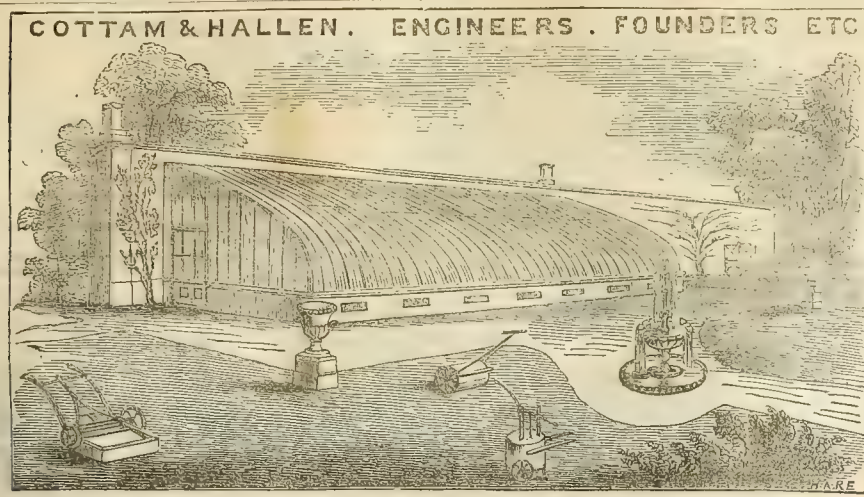
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**SPECIMEN STOVE and GREENHOUSE PLANTS**, the  
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attention of exhibitors. — May be viewed the day prior and  
morning of Sale, and Catalogues had.

**M**R. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on THURSDAY, 14th July, at 12 o'clock, IMPORTED AND ESTABLISHED ORCHIDS, including *Cattleyas* *Aucklandiae*, *superbæ* and *citrina*; *Barkeria elegans*, *Oncidium tigrinum*, *Barkeria Parkinsonianum*, a new species; *Odontoglossum nebulosum citreum*, and other choice sorts.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden.

**M**R. J. C. STEVENS will sell by Auction, at his  
Great Room, 38, King Street, Covent Garden, on THURS-  
DAY, 14th July, AN IMPORTATION FROM MEXICO  
comprising *Epidendrum vitellinum*, *Cattleya sulphurina* (new),  
*Laelia anceps* and *attumialis*, *Chysis bracteensis*, and other  
good species.—May be viewed on the morning of Sale and  
Catalogues had.

**M**ESSRS. PAGE AND CAMERON will sell by Auction, in the Cock Yard, Hitchin, on **TUESDAY**, July 12, at 11 o'clock, Thirty-four very superior pure bred **HAMPSHIRE** and **CRAWLEY** **TUPS** (practical beatings), the property of Mr. J. Crawley, of Stockwood Park, near Luton Beds.—May be viewed after 10 o'clock on the morning of sale, at the Cock Yard, Hitchin, and Catalogues had at the Ram Inn, Smithfield, and the Old Bell, Holborn, London; of Messrs. PAGE & CAMERON, Land Agents and Surveyors, St. Alban's and Earls Herts, and 30, Bucklersbury, London.





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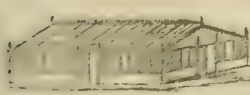
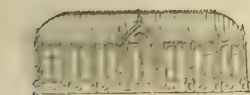
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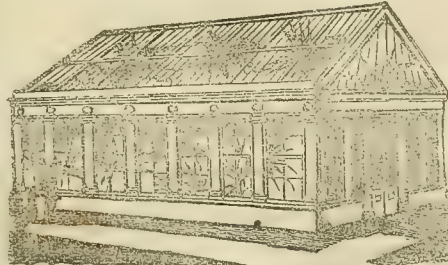
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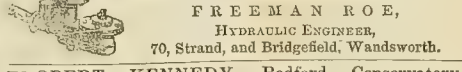
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THE FOLLOWING CORRESPONDENCE HAS TAKEN PLACE RELATIVE TO AN UNFOUNDED STATEMENT PUBLISHED IN THE "COTTAGE GARDENER:"—

MR. W. P. ALLCOCK TO THE GENERAL PURPOSES COMMITTEE OF THE COUNCIL.

Birmingham, June 15, 1853.

DEAR SIRS,—I beg leave to hand you herewith copies of correspondence with Mr. G. W. Johnson, the Conductor of the "Cottage Gardener," and Miss Watts, of Hampstead, London. As Mr. Johnson has declined to avail himself of the very considerable offer made in my communication of the 28th day of April last, I do not hesitate to recommend the immediate publication of the correspondence.

This step is the more necessary, as I am informed that certain persons are still making use of the falsehood, originally put forth in December last, for the purpose of creating an impression unfavourable to Mr. Bailly.

I am, dear Sir, yours obediently,

W. P. ALLCOCK.

To the General Purposes Committee of the Council.

MR. W. P. ALLCOCK TO MR. G. W. JOHNSON.

Birmingham, March 21, 1853.

THE BIRMINGHAM EXHIBITION OF STOCK AND POULTRY.

SIR,—I have been consulted in this matter with reference to a certain libellous charge made in the publication called the "Cottage Gardener." The article was published in the "Cottage Gardener," No. 232, December 30, 1852, pages 250 and 251, under the title of "Poultry Exhibitions," and appears to have been the production of two or more individuals. One portion of the article consists of a series of questions purporting to be written by a person under the signature of "Q in the Corner," and the rest of comments, either of yourself as the Editor of the paper, or of some one else assuming the editorial style.

In the letter of "Q in the Corner," it is, amongst other things, asked, "Is it true that one of the Judges was sending out Catalogues on the Sunday before the Show?" And in the remarks appended thereto it is said, "To one of these questions we can answer, that Mr. Bailly, one of the Judges, had a Catalogue before the Show, and sent it to one of our contributors." This question, and the answer thereto, form the libellous charge complained of.

The charge is totally and entirely untrue, and your contributor was aware of the fact before its appearance in print. I have in my hands a letter, addressed to the Secretary, written by your contributor, a lady who writes under the name of "Anster Bonin," and dated December 30, 1852, wherein she says, "I am much annoyed to notice an assertion made by the Editor of the 'Cottage Gardener' this week, that Mr. Bailly, one of the Judges, had a Catalogue before the Show, and sent it to one of our contributors." As I believe that I am the contributor referred to, I dare say you will recollect that I mentioned this subject to you at Birmingham, when you told me that you had kindly forwarded that Catalogue, and that Mr. Bailly had never seen it. I am sure you will think it advisable to contradict this assertion, so unfounded and so annoying to all parties."

Mr. Bailly never saw a Catalogue until after he had made his awards.

Under these circumstances, I am instructed to require from you the name of the writer of the questions signed "Q in the Corner," in order that he may be dealt with as Counsel shall advise; and to require from you also such a retraction of the charge against Mr. Bailly as shall be considered satisfactory by that gentleman and by my clients; such withdrawal of the libellous accusation to be published in the "Cottage Gardener."

In taking this step, my clients are simply performing a plain and positive duty towards a gentleman who possesses their entire confidence; and while they do not complain of fair criticism, they are determined to hold responsible those who venture to put forth malicious and unfounded charges against gentlemen who are invited by them to undertake important duties.

I am, Sir, yours, &c.,

W. P. ALLCOCK, Solicitor, Birmingham.

G. W. Johnson, Esq.

MR. G. W. JOHNSON TO MR. ALLCOCK.

Winchester, March 23, 1853.

SIR,—Upon my return from London I find your letter dated the 21st instant. In the first place, let me deny that the passages in the "Cottage Gardener" to which you allude are in any respect libellous, and then allow me to refer you to No. 226, page 317, and to No. 234, page 475, of that periodical. In the first of those, I state that I am glad to hear from Mr. Bailly himself that he did not send a Catalogue of the Birmingham Show, and that he did not see one until after he had given his decision as a Judge. In the second number to which I have referred, which number was printed last Saturday, I express my unreserved regret that any gentleman should feel himself aggrieved by the questions of "Q in the Corner," which had been founded on evidence that misled him and myself. Now, beyond this, I feel that I am not called upon to offer any apology.

The statement that Mr. Bailly had sent a Catalogue to one of our contributors was not lightly made, but because two gentlemen who travelled with that contributor to Birmingham from London understood her to say so. That lady, however, upon a subsequent occasion, stated that she only said that she believed at the time she received the Catalogue that she was indebted for it to Mr. Bailly, and that afterwards she found that she had been mistaken. That I am sorry those gentlemen misunderstood her, and that I deeply regret being led into the misstatement, I unqualifiedly admit; but, knowing that I have only acted up to what I considered my duty as editor of a public journal, and that I have been moved by no personal feeling, but solely by what I considered concerned the interests of the Birmingham Poultry Show, I can make no further concession. Believing that the gentleman who signed his communication "Q in the Corner" was actuated by a similar motive, I must also decline divesting his name.

I am, your obedient servant,

G. W. JOHNSON.

To W. P. Allcock, Esq.

MR. W. P. ALLCOCK TO MR. G. W. JOHNSON.

Birmingham, April 6, 1853.

BIRMINGHAM CATTLE AND POULTRY SHOW.

SIR,—I beg to acknowledge the receipt of your favour of the 23d ult., which I have communicated to my clients. I do not consider that it is necessary for me to discuss the question as to the libellous nature of the article complained of by my clients; for, if you are satisfied that it is not libellous, there is less reason for your withholding the name of the writer.

Your explanation with regard to what was said by your contributor in the railway carriage (confirming, as it does, what was previously known) is quite sufficient to show that the charge against Mr. Bailly was published on evidence altogether insufficient to warrant the attack. You are also, I do not doubt, well aware that soon after the arrival of Miss Watts at Birmingham she very properly made some inquiries, and was at once satisfied

that she had entertained an erroneous impression, and that she had done wrong in expressing her belief that the Catalogue was sent by Mr. Bailly.

The Exhibition was opened on the 14th of December; and the charges against Mr. Bailly were not made in the "Cottage Gardener" until the 30th of that month. There had thus been ample time to ascertain whether they were true or false; and what my clients are anxious for is to have an opportunity of proving that the charges are not only absolutely false, but that they were known to be absolutely false long before they were published. As a simple matter of justice, I consider that you are bound to give my clients what they now claim; and on their behalf I again request that you will furnish me with the name of the writer of the questions signed "Q in the Corner."

After what has come to my knowledge, and your own admissions, I must decline to characterise your assertion, "We know that Mr. Bailly had a Catalogue before the Show, and sent it to one of our contributors."

With reference to your withdrawal of the offensive charges, my clients consider that you have never done so in a proper and candid manner. The paragraph to which you especially draw my attention, published in the "Cottage Gardener" of the 24th ult., is intended to convey the impression that my clients had complained generally of what had been published by you, and not that they had merely required from you the name of a writer who had made a libellous charge against a gentleman officially connected with their Society. This impression, as you well know, is quite contrary to the fact; for I can assure you that my clients have never condescended to notice anonymous attacks upon themselves. There can, indeed, be no reason for their doing so; for there has, probably, never been a public undertaking more cordially supported by most of the influential portion of the public press than that in which they are engaged. It is at the same time a matter of no importance to my clients whether or not you determine to bring your publication into discredit, by the issue of malicious and libellous imputations, having, like the one now complained of, no real foundation whatever.

I am, Sir, yours obediently,

W. P. ALLCOCK.

To G. W. Johnson, Esq., Winchester.

MR. G. W. JOHNSON TO MR. W. P. ALLCOCK.

Winchester, April 16, 1853.

SIR,—In answer to your favour of the 6th instant, the withholding the name of "Q in the Corner" does not depend upon the libellous or non-libellous nature of his communication. It is sufficient to bind me in honour as Editor that he desires not to have his name revealed.

What was stated in the "Cottage Gardener" relative to Mr. Bailly was stated after hearing the evidence of two gentlemen on the point, and as soon as Mr. Bailly informed me that it was not true, which he did at the Metropolitan Exhibition, the contradiction was inserted in the same paper. Miss Watts wrote to me that my explanation to her was quite satisfactory.

Our correspondence must now cease. You, as advocate, are in the position to make insinuations which I, as principal, can in no fair way retort; I therefore decline answering any more letters from you. If your clients are the Committee of the Birmingham Poultry Exhibition, I beg to assure them that if they will state the terms of a paragraph which would be satisfactory to themselves, and to which I can honourably assent, it shall readily be inserted in the "Cottage Gardener;" but under no circumstances will I continue this correspondence.

I am, Sir, your obedient servant,

G. W. JOHNSON.

To W. P. Allcock, Esq.

MR. W. P. ALLCOCK TO MR. G. W. JOHNSON.

Birmingham, April 28, 1853.

THE BIRMINGHAM CATTLE AND POULTRY EXHIBITION.

SIR,—I have to acknowledge the receipt of your communication of the 16th instant, which is by no means satisfactory to my clients. Your letter of March 23 contained such admissions with regard to the origin of the charge complained of as led my clients to conclude that, on further consideration, you would feel yourself bound to give up the author, and thus make the only reparation in your power to Mr. Bailly. This simple act of justice you have, however, a second time refused; and as my clients have afforded you ample time to come to a decision, they appear now to have no alternative but to take such steps, either by the publication of this correspondence or other means as they may be advised, as shall be best calculated to show the disgraceful nature of the attacks which have been made upon one of the Judges at their Exhibitions.

At the same time, I can assure you that my clients have no wish to continue this correspondence further than is absolutely necessary. They did not desire, in the first instance, to come to any harsh or hasty decision; and for this reason they have given you the chance of showing that a libellous charge published by you was made on trustworthy evidence. But, even from your own statement, the whole fabrication is based upon a single remark made by Miss Watts in a railway carriage to two gentlemen, who were also proceeding to the Show. Do you intend it to be understood that these two gentlemen, who are both known to my clients, are the persons referred to in your last communication?

I must further remind you, that when you speak of my having put forth insinuations as an advocate, you do that which no part of my letters will justify. I said, and I now repeat it, that my clients are in a position to prove that the charge against Mr. Bailly was not only false, but that it was known to be false by the persons who made it, long before it was published in the "Cottage Gardener." If the evidence on which you put forth the charge were of a satisfactory nature, you would not hesitate to produce it. My clients feel that most improper attempts have been made by certain persons to injure Mr. Bailly; and if you refuse to bring the case to a fair issue, they are perfectly justified in denouncing the dishonesty of your informants, and will take all proper occasions for doing so.

I must, on behalf of my clients, decline to prepare any statement for publication in the "Cottage Gardener." You were invited to do this in my first letter, but your answer was that you could make no further concessions. To satisfy you, however, that all my clients require is that Mr. Bailly should be entirely relieved from the charge made against him, if you will prepare a retraction thereof, I will submit the same to that gentleman, and to my clients, and, if it is satisfactory, there shall be a termination of this unpleasant business.

I am, Sir, yours obediently,

W. P. ALLCOCK.

To G. W. Johnson, Esq., Winchester.

No answer having been received to this communication, the following letter was addressed to Miss Watts:—

MR. W. P. ALLCOCK TO MISS E. WATTS.

Birmingham, June 7, 1853.

THE BIRMINGHAM POULTRY EXHIBITION.

MADAM,—I have been requested by my clients to call your attention to a false and malicious charge against Mr. Bailly, of London, which was published in the "Cottage Gardener" of the 30th of December last. This charge had reference to a Catalogue of the Birmingham Exhibition, which was forwarded for your use, and was based, as you are aware, entirely upon an inadverted remark made by you in a railway carriage when proceeding to the Show on the 13th of December.

In order to place you in a proper position, I will at once explain that the Catalogue in question was sent to you by the direction of one of my clients, who was aware of your expressed intention of visiting the Show to prepare a full report, and who considered that the perusal of a Catalogue during the journey might facilitate your labours on the following days. This gentleman had no communication with Mr. Bailly on the subject, nor did he see him until Monday morning, the 13th of December, some time after Mr. Bailly had commenced his duties as one of the Judges. This, or a similar explanation, as you will recollect, was given to you in Bingley Hall; and the fact was further mentioned that the list of the Catalogues sent was preserved, and that none were posted until late on Sunday night, the 12th of December.

I have, at the request of my clients, communicated with Mr. G. W. Johnson, the Editor of the "Cottage Gardener," and I am informed by him that you told two gentlemen who were travelling in the same railway carriage with you, that you supposed the Catalogue had been forwarded to you by Mr. Bailly; and a note addressed by you to Mr. Morgan, the Secretary, confirms this statement. As, however, the erroneous impression was removed from your mind soon after your entrance into Bingley Hall, it appears to my clients to be a natural conclusion that you would also, during the Show, take an opportunity of explaining your mistake to the two persons who were your companions on the journey. Will you, in the first place, supply me with the names of the individuals referred to; and will you also be good enough to state explicitly whether or not you took any steps to correct the error into which you had fallen in the first instance?

From what I have stated, you will perceive that there was not the slightest ground for the imputation against Mr. Bailly that he had improperly obtained possession of a Catalogue before the opening of the Show; and my clients have strong reasons for believing that the assertion was known to be entirely false some time before it was published in the "Cottage Gardener."

My clients are reluctant to give you any unnecessary trouble, or to place you in a position which may be painful to you; but they cannot allow these unfounded and malicious charges to be made without exposing the real character of those who put them forth. Mr. Bailly, as you are well aware, has been officially connected with the Birmingham Exhibition since its commencement; and he has always possessed, and does now possess, the entire confidence of my clients. It is to him that the success, not only of the Birmingham but of all the other poultry shows of any importance is greatly to be attributed; and my clients are at all times prepared to acknowledge the advantages they have derived from his experience and judgment, no less than from the high respect in which he is held by all the influential poultry amateurs in the kingdom.

I am, Madam, your obedient servant,

W. P. ALLCOCK.

Miss E. Watts, Monk Barns, Hampstead, London.

MISS E. WATTS TO MR. W. P. ALLCOCK.

Monk Barns, Hampstead, June 9, 1853.

SIR,—In reply to your letter of the 7th, I beg to state that the only person in the railway carriage with whom I held any conversation about the Catalogue of the Birmingham Show to which you refer (on Monday, December 13, 1852), was Mr. Thomas Sturgeon, of Grays. The substance of my reply to his questions was, "that I believed myself indebted to Mr. Bailly's courtesy for receiving the Catalogue; but that it was not sent by him; as it was not addressed in his handwriting, and was posted at Birmingham." These particulars I repeated to Mr. Sturgeon, in Bingley Hall. I failed in an endeavour to meet him again after the explanation to which you refer from one of the gentlemen in Bingley Hall, but concluded that he was then satisfied. After reading the "Cottage Gardener" for December 30, I wrote a letter, of which I enclose a copy, to Mr. Morgan, considering that it rested with the authorities at Birmingham to have the affair explained. I subsequently (immediately after the Metropolitan Show) wrote to Mr. Johnson, requesting him to contradict the assertion, and received from him, in reply, a promise to do so, which I forwarded to Mr. Bailly, as I considered him the person most interested in its contents. I perfectly concur with you in believing this charge against Mr. Bailly quite unfounded, and never entertained any other opinion. I shall certainly not shrink from any co-operation with you which may be found necessary for the furtherance of truth, but trust to the courtesy of your clients to avoid for me, if possible, painful and unpleasant publicity. Believe me to remain, Sir, yours truly,

W. P. Allcock, Esq.

E. WATTS.

MISS WATTS TO MR. MORGAN.

Monk Barns, December 31, 1852.

SIR,—I am much annoyed to notice an assertion made by the Editor of the "Cottage Gardener" this week—"We know that Mr. Bailly had a Catalogue before the Show, and sent it to one of our contributors."

As I believe that I am the contributor referred to, I dare say you will recollect that I mentioned this subject to you at Birmingham, when you told me that you had so kindly forwarded me the Catalogue, which had not been seen by Mr. Bailly. I am sure you will think it well to contradict an assertion so annoying to all parties.—Yours, &c.,

To J. Morgan, jun., Esq.

E. WATTS.

MISS WATTS TO MR. G. W. JOHNSON.

Monk Barns, Hampstead,

DEAR SIR,—In a visit to our Metropolitan Poultry Show I met Mr. Bailly, and was astonished to hear from him that you had given me as your authority for an assertion about a Birmingham Catalogue (printed in the "Cottage Gardener," p. 251, December 30, 1852). As I have never had any communication with you upon this subject, I feel quite sure that you will contradict this very great mistake. The Catalogue referred to was sent to me by Mr. Morgan, with those which were sent to the Lady Patronesses of the Exhibition, and was posted at Birmingham on the evening of Sunday, December 12th. Persons who may take upon themselves to assert any account contrary to this have had no authority from me. Now that you hear that you have (quite unintentionally, no doubt) published an assertion which has no foundation whatever in truth, I am sure you will lose no time in contradicting it in your periodical.—Believe me, &c. &c.

To G. W. Johnson, Esq.

E. WATTS.

Birmingham, June 28, 1853.

By Order of the General Purposes Committee of the Council, JOHN MORGAN, Jun., Secretary.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLET EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to THE EDITOR.—SATURDAY, JULY 9, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 29.—1853.]

SATURDAY, JULY 16.

[Price 6d.

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## ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.

Under the Patronage of Her Most Gracious Majesty THE QUEEN. The FOURTH EXHIBITION of the season will take place at the ROYAL SURREY ZOOLOGICAL GARDENS, on TUESDAY, July 26 (Open to all Exhibitors), when Prizes will be awarded for the following productions:—Stove and Greenhouse Plants, Cape Heaths, Orchidaceous Plants, Fuchsias, Specimen Plants, Roses, Carnations, Pinks, Hollyhocks, Verbenas, Cut Flowers, Grapes, Fruit in collections, and Honey.

In addition to the above, the gift of J. Coppock, Esq. (Open to all Exhibitors), a Prize of Five Guineas for a collection of 15 Stove and Greenhouse Plants; also extra Prizes for Carnations and Pinks, by Mr. C. Turner. Lists of Prizes, with the Rules of the Exhibition, may be obtained of Ebenezer House, Peckham.

J. T. NEVILLE, Sec.

## BRIGHTON.

**ROYAL PAVILION FLORICULTURAL AND HORTICULTURAL EXHIBITION.**—E. SPARY, in conjunction with the Committee, embrace this early opportunity to return thanks to Exhibitors for their attendance at the late Show, held on the 5th and 6th inst., and beg to announce to the Floricultural and Horticultural world, that the SECOND GRAND EXHIBITION will take place on WEDNESDAY and THURSDAY, the 14th and 15th of September next, when Prizes to the amount of 200l. will be offered for Plants, Fruits, and Cut Flowers, &c., in which a magnificent display of Dahlias and Hollyhocks is anticipated, for which numerous and liberal Prizes will be offered. Schedules of which will be ready for circulation by the 1st week in August. Further particulars will appear in a future Advertisement.

Graperies and Nursery Ground, Park Street, and Bedford Street, Marine Parade, Brighton.—July 16.

## CHOICE FLOWER SEEDS.

**CHARLES TURNER** has to offer *Cineraria*, *Calceolaria*, *Pansy*, *Hollyhock*, and *Primula*, each 2s. 6d. per packet. The three first-named are from the varieties that obtained the first Prizes at the great Metropolitan Exhibitions.

Royal Nursery, Slough.

**JOHN HENCHMAN** is now sending out his choice *CINERARIA* and *CALCEOLARIA* SEED, at 2s. 6d. per packet.—Edmonton, July 9.

**W. M. WOOD AND SON** beg leave to announce that their unrivalled Collection of *ROSES* is now coming into fine bloom, and will continue in great perfection during the season. The Nursery is distant 12 miles from Hayward's, a station on the London and Brighton Railway, from whence conveyances may be obtained.

N.B. There is a Coach from Brighton to Tonbridge Wells, and vice versa, on each alternate day of the week (Sundays excepted), passing within a mile of the Nursery.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

## THE BEST STUBBLE TURNIP.

**SUTTON'S EARLY SIX WEEK** will be found the most certain cropper and best for the last sowing. It may be sown until the latter end of August with certainty of producing a bumper crop. Price 10s. per lb., or 5s. per gallon.

Mr. K. Hickman, of Brimpton House, near Newbury, in a letter, dated February 1st, 1853, says:—"I must mention the Six Weeks' Turnip as the best sort I have ever seen for earliest and latest sowing. I have grown them several years, and have invariably found them to produce more feed in less time than any other Turnip. I have had them out from Wheat, of a good size, within six weeks from the time of sowing."

N.B. Carriage free, except parcels under 20s. value.—John Sutton & Sons, Seed Growers, Reading, Berks.

**MESSRS. J. AND H. BROWN** offer the under-mentioned NEW AND CHOICE PLANTS, which they will forward to any part.

12 Orchidaceous Plants, choice species, and good plants, including Dendrobiums, Oncidiums, Stanleys, &c., 30s. to 40 0	
12 Choice discolored, Hoya picta, and Plectranthus picta, each 2 6	
10 Choice Greenhouse Plants, one of a sort, by name, 45 0	
24 Choice Ericas, one of a sort, by name, 16 0	
12 Oxleys and Achimenes, one of a sort, new, 10 0	
12 Potted Roses, one of a sort, by name, in pots, 9 0	
12 Bourbons, do. do., for planting in beds, 10 0	
12 Potted Roses, of sort, in pots, 6 0	
12 Camellias, Jasmintums, Clematis, &c., 10 0	
12 Centaureas, choice also, variegata, 8 0	
12 Sweet Peas, Chrysanthemums, new sorts, 8 0	
12 Violets and Primulas, fine new sorts, 6 0	
12 Seeds: Geraniums, very fine, distinct, one of a sort, 12 0	

For New Fancies and Show Geraniums, see List. Some Large Orange Trees, Camellias, and Azaleas for sale. *Cedrus Libani*, *Arceuthobium*, *Pinus*, and other choice Conifers, in pots. See our Catalogue.

Albion Nursery, Stoke Newington.—July 16.

## IMPROVEMENT OF PARKS & MEADOWS.

**SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES.**—Many Old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers, and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting at a small expense. Quantity of Seed required, 8 lbs. to 12 lbs. per Acre. Price 1s. per pound. Carriage Free.

\* August is a good time for sowing.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## SHORT GRASSES.

**FINE GRASS LAWNS IN FLOWER GARDENS,** &c.—The great expense of cutting and carting turves from a distance may be avoided, and a superior Turf produced in a few weeks, by sowing SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds.

Great improvement may be effected in old Lawns by sowing about 20 lbs. to the Acre of these Seeds; for the formation of new Lawns twice that quantity will be necessary.

Price 1s. 3d. per lb.; 3s. per gallon, or 21s. per bushel.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## NEW AND SELECT PLANTS AT REDUCED PRICES.

**BASS AND BROWN** beg to refer to their advertisement of the above in the *Gardeners' Chronicle* of May 28th and June 4th, 11th, and 18th; also to their advertisements of the BEST NEW GERANIUMS of October last. Strong Plants at reduced prices. See *Gardeners' Chronicle* of May 7th, 14th, 21st, and 28th.

Seed and Horticultural Establishment, Sudbury, Suffolk.

## CINERARIA SEED.

WITH DIRECTIONS FOR SOWING, &c.

**EDWARD GEORGE HENDERSON AND SON**, Wellington Road, St. John's Wood, London, are now prepared to send out their newly-saved Seed of the above useful winter Flower, gathered from fine named varieties, at 2s. 6d. per packet; also a few packets at 6s., amongst which is Seed from C. PRINCE ARTHUR, ROSALIND, and other leading varieties. E. G. H. & S. beg to give notice that their *Calceolarias* from which the Seed is saved can now be seen in flower at the Nursery, packets of which will be booked at 6s. each, to be sent out the end of July.

## PICEA BRACATEATA.

**MESSRS. VEITCH AND SON**, of Exeter, and the Exotic Nursery, Chelsea, have much pleasure in stating that they have been fortunate enough to raise a limited number of Seedling Plants of the above beautiful NEW CALIFORNIAN PINE; of which a full description was given by Dr. Lindley, in the leading article of the *Gardeners' Chronicle* of last week. The Plants are two years' Seedlings, established in small pots, price 6s. each. Specimens of the cone and foliage can be seen by visitors, at either of Messrs. VEITCH'S Nurseries.—July 16.

## TO LADIES AND GENTLEMEN.

**RARE and interesting British Plant, DWARF HONEYSUCKLE** (*Cornus suecica*); fine flowering specimens carefully dried; sent on receipt of 12 postage stamps. Also ADDER'S TONGUE (*Ophioglossum vulgatum*), and MOON WORT (*Botrychium lunaria*); in fruit, carefully dried; sent on receipt of seven postage stamps each, by CHRISTOPHER JOHNSON, Hutton Bushel, Pickering, Yorkshire.

**WAITE'S KING OF THE CABBAGES.**—This is the earliest and best Cabbage in cultivation, and quite distinct from the Enfield.

J. G. WAITE feels inclined to think many parties have been deceived in having had Enfield sent them for this Cabbage, they therefore condemn the merits of it without having had the REAL THING, which is quite distinct from all other varieties. To be had in any quantities of not less than 1 lb. at 4s. per lb.

J. G. WAITE'S Seed Establishment, 151, High Holborn, London.

## THE BLACK NORFOLK TURKEY, & NORFOLK GEES.

**THE SUBSCRIBER** begs to offer a few pairs of Early-hatched Birds of the above, warranted of the purest breed, for which the County of Norfolk is so well known.—Black Norfolk Turkeys, 21s. per couple; Norfolk Geese, 15s. per ditto; packages, 1s. extra.—Post-office orders addressed to ISAAC BRUNNEN, North End, Great Yarmouth, will meet with prompt attention.

## WANTED TO PURCHASE.

During the ensuing season, A FEW HOUSES GOOD GRAPES. " " " PINE APPLES, " " " PEACHES AND NECTARINES. A QUANTITY GOOD MELONS. Apply, stating the quantity, quality, and when ready for market, to GEORGE TAYLOR, JUN., FRUIT SALESMAN, St. John's Market, Liverpool.

## NOTICE.

**WM. HAMILTON, SEEDSMAN and FLORIST**, begs to intimate that he has now removed from Champside to No. 4, Margaret Street, Cavendish Square (first door from Regent Street). He respectfully solicits the kind support of his friends at his new premises, assuring them that nothing shall be wanting on his part to merit their approbation. His Catalogue of Bulbous Roots, of which he is importing a fine Collection, will be ready the last week in August, and will be forwarded on application.—Address 41, Margaret Street, Cavendish Square, London.

**GRAVES FOR PIG FEEDING.**—The Subscribers have a few tons of Lard Graves, of good quality, to dispose of. Price, only 7l. per ton, delivered at Fenning's Wharf, close to London Bridge.

RICHARDSON & STEPHENSON, Waterford.

## ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON**, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.

WAREHOUSE, 57, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long.		Squares in boxes, 100 feet each.	
16 ounces ... 3d. per foot.	21 ounces ... 4d. "	Under 6 by 4 ... 12s.	6 by 4, 6 by 4 1/2 ... 13s.
26 ounces ... 5 1/2d. "	32 ounces ... 7 1/2d. "	7 by 5, 7 1/2 by 5 1/2 ... 13s.	8 by 6, 8 1/2 by 6 1/2 ... under 9 by 7 15s.
		9 by 7, 8 by 8, 12 by 9, 12 by 10 ... 20s.	13 by 10, 14 by 10, 15 by 10 ... 20s.

Large Sheet of No. 16 very superior, packed in cases of 100, 200, and 300 feet, at 2 1/2d. to 2 3/4d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments, Fern Shades and Dishes.

## JAMES PHILLIPS & Co.,

116, BISHOPSGATE STREET WITHOUT.

PRICES OF

**HARTLEY'S PATENT ROUGH PLATE GLASS**, for CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTORIES, SKYLIGHTS, &c.

Packed in Crates, for Cutting-up of the sizes manufactured.		1 1/2 inch thick.	2 1/2 inch thick.	1 inch thick.
30 inches wide and from 40 to 50 long	s. d.	s. d.	s. d.	
Or 20 " " " " " " " "	0 5 1/2	0 7	0 9	
	0 6	0 7 1/2	0 9 1/2	

In Squares cut to the sizes ordered.		1 1/2 inch thick.	2 1/2 inch thick.	1 inch thick.
Under 8 by 6	0 4	0 5	0 6	
8 by 6 and under 10 by 8	0 4 1/2	0 6	0 7	
10 by 8 " " " " " " " "	0 5	0 6 1/2	0 8	
14 by 10 " " " " " " " "	0 5 1/2	0 7	0 8 1/2	
1 1/2 ft. sup. " " " " " " " "	0 6	0 7 1/2	0 9	
3 " " " " " " " "	0 6 1/2	0 8	0 9 1/2	
4 " " " " " " " "	0 7	0 8 1/2	0 10	
5 " " " " " " " "	0 7 1/2	0 9	0 10 1/2	
6 " " " " " " " "	0 8	0 9 1/2	0 10 1/2	
8 " " " " " " " "	0 8 1/2	0 10	0 11	
10 " " " " " " " "	0 9	0 10 1/2	0 11 1/2	
12 " " " " " " " "	0 10	0 11	0 12	
15 " " " " " " " "	0 10 1/2	0 11 1/2	0 13	
20 " " " " " " " "	0 11	0 12	0 14	
25 " " " " " " " "	0 12	0 13	0 15	
Quarries	0 6	0 7	0 8	

**JAMES PHILLIPS & Co.**, Horticultural Glass Merchants, 116, Bishopsgate Street Without, London.

"There can be no question now that Rough Plate Glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of sheet or transparent glass, and it has many advantages peculiar to itself, without a single disadvantage as a set-off."—*Gardeners' Chronicle*.

## GLASS FOR CONSERVATORIES, ETC.

**HETLEY AND CO.** supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

**CHAMPAGNE, CHAMPAGNE!**—The acknowledged superiority of MITCHELL'S ROYAL ALBERT RHUBARB, attested by chemical analysis, must convince the most sceptical of its unrivalled efficacy over every production of the kind throughout England for the manufacture of British Wines; its saccharine qualities and excellence of flavour render it of invaluable adaptation for producing a luscious and sparkling champagne, equal to foreign importations, combining that luxurious richness and grateful piquancy the *sine qua non* of connoisseurs and admirers of this delightful beverage; it may be obtained during the next two months in the highest state of perfection at 12d. 10s. per ton, by forwarding a Post-office order to WILLIAM MITCHELL, Market Gardener, Enfield Highway, Middlesex. Other kinds, 2l. per ton.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.



## HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, JULY 9, 1853.

## AWARD OF THE JUDGES.

## THE LARGE GOLD MEDAL.

1. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for 20 Stove and Greenhouse Plants.

## THE GOLD KNIGHTIAN MEDAL.

1. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 20 Stove and Greenhouse Plants.
2. To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for 20 species of Exotic Orchids.

## THE GOLD BANKSIAN MEDAL.

1. To Messrs. Fraser, of Lea Bridge Road, Essex, for 20 Stove and Greenhouse Plants.
2. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 15 Stove and Greenhouse Plants.
3. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for 6 Stove and Greenhouse Plants in 20-inch pots.
4. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids.
5. To Messrs. Rolleston, of Tooting, for 15 species of Exotic Orchids.
6. To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for 10 varieties of Cape Heaths.
7. To Mr. Bonham, Gardener to Mrs. Maddeford, of Staines, for Pelargoniums in 8-inch pots.
8. To Mr. Turner, of Slough, for the same.

## THE LARGE SILVER GILT MEDAL.

1. To Mr. Over, Gardener to W. McMullen, Esq., of Clapham, for 6 Stove and Greenhouse Plants in 13-inch pots.
2. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 Stove and Greenhouse Plants in 13-inch pots.
3. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 10 species of Exotic Orchids.
4. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for 10 varieties of Cape Heaths.
5. To Mr. Roser, Gardener to J. Bradbury, Esq., F.H.S., for 10 varieties of Cape Heaths in 11-inch pots.
6. To Mr. Robinson, Gardener to J. Simpson, Esq., of Thames Bank, Pimlico, for 12 Pelargoniums in 8-inch pots.
7. To the same for 6 Fancy Pelargoniums in 8-inch pots.
8. To Mr. Dobson, of Isleworth, for 12 Pelargoniums in 8-inch pots.
9. To Mr. Turner, of Slough, for 6 Fancy Pelargoniums in 8-inch pots.
10. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., for 6 Pine Apples.

## THE CERTIFICATE OF EXCELLENCE.

1. To Mr. Roser, Gardener to J. Bradbury, Esq., F.H.S., for 6 Stove and Greenhouse Plants in 13-inch pots.
2. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for 10 species of Exotic Orchids.
3. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 6 species of Exotic Orchids.
4. To Messrs. Fairbairn, of Clapham, for 10 varieties of Cape Heaths.
5. To Mr. Watson, Gardener to Mrs. Tredwell, of St. John's Lodge, Norwood, for 10 varieties of Cape Heaths in 11-inch pots.
6. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 varieties of Cape Heaths in 8-inch pots.
7. To Mr. Bousie, Gardener to the Right Hon. H. Labouchere, Stoke Park, Slough, for 6 varieties of Fuchsias.
8. To Messrs. Lane, for 50 varieties of cut Roses.
9. To Messrs. Rolleston, for a collection of Variegated Plants.
10. To Mr. Judd, Gardener to C. P. Lochner, Esq., for 12 Pelargoniums in 8-inch pots.
11. To Mr. Gaines, of Battersea, for the same.
12. To Mr. Miller, Gardener to R. Moseley, Esq., of Pine-apple Place, Maida Hill, for 6 Fancy Pelargoniums in 8-inch pots.
13. To Mr. Gaines, of Battersea, for the same.
14. To Mrs. Conway, of Earl's Court, Brompton, for 6 scarlet Pelargoniums.
15. To Messrs. Veitch, for *Ceratostema longiflorum*.
16. To Mr. Barron, Gardener to J. H. Vivian, Esq., F.H.S., for a Queen Pine-apple, weighing 4 lbs. 10 oz.
17. To Lady Bridport, F.H.S., for a Black Prince Pine-apple, weighing 6 lbs. 14 oz.
18. To Mr. Brown, Gardener to W. Ormsby Gore, Esq., for a Providence Pine-apple, weighing 8 lbs. 15 oz.
19. To Mr. Bousie, Gardener to the Right Hon. H. Labouchere, for Black Hamburg Grapes in pots.
20. To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., Cole-Orton Hall, Ashby-de-la-Zouch, for Black Hamburg Grapes.
21. To Mr. Lushy, Gardener to J. Hill, Esq., of Streatham, for Black Prince Grapes.
22. To Mr. Mitchell, of Brighton, for new Dutch Sweetwater Grapes.
23. To Mr. Frost, Gardener to Lady Grenville, F.H.S., for Muscat Grapes.
24. To Mr. Allport, Gardener to H. Akroyd, Esq., of Doddington Park, Nantwich, for Black Frontignan Grapes.

## THE LARGE SILVER MEDAL.

1. To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for 6 Stove and Greenhouse Plants in 13-inch pots.
2. To Mr. Ivson, Gardener to the Duke of Northumberland, F.H.S., for 6 species of Exotic Orchids.
3. To Mr. Wiggins, Gardener to E. Beck, Esq., F.H.S., for 6 varieties of Achimenes.
4. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of Helichrys.
5. To Mr. Taylor, Gardener to J. Coster, Esq., for a collection of Kalosanthus.
6. To Messrs. Fraser, for 10 varieties of Cape Heaths.
7. To Mr. Over, Gardener to W. McMullen, Esq., of Clapham, for 10 varieties of Cape Heaths in 11-inch pots.
8. To Mr. Clarke, of Streatham Place, Brixton Hill, for 6 varieties of Cape Heaths, in 8-inch pots.
9. To Mr. Salter, for a collection of Fuchsias.
10. To Messrs. Paul, of Cheshunt, for 50 varieties of cut Roses.
11. To Mr. Terry, Gardener to Lady Fuller, of Youngsbury, Herts, for 25 varieties of cut Roses.
12. To Mr. Ambrose, of Battersea, for 6 Fancy Pelargoniums.
13. To Mr. Selkirk, of Porters, near Barnet, for *Lapageria rosea*.
14. To Messrs. Veitch, for *Aerides quinquemvenerum*.
15. To Mr. Ivson, Gardener to the Duke of Northumberland, F.H.S., for a collection of Hothouse Ferns.
16. To Messrs. Lee, of Hammersmith, for a collection of variegated Stove and Greenhouse Plants.
17. To Mr. Jones, Gardener to the Lady Guest, of Dowlais, for a Queen Pine-apple, weighing 4 lbs. 10 oz.
18. To Mr. Bailey, Gardener to T. Drake, Esq., Sharnloes, Bucks, for an Eville Pine-apple, weighing 5 lbs. 9 oz.

19. To Mr. Ingram, Gardener to her Majesty, at Frogmore, for a Providence Pine-apple, weighing 8 lbs. 8 oz.
20. To Mr. Forbes, Gardener to the Duke of Bedford, F.H.S., for Black Hamburg Grapes.
21. To Mr. McQuilten, Gardener to Colonel Challoner, F.H.S., for Black Prince Grapes.
22. To Mr. Stanley, Gardener to J. J. Blandy, Esq., F.H.S., for Sweetwater Grapes.
23. To Mr. Bucktrout, Gardener to W. Leveson Gower, Esq., F.H.S., for Muscat Grapes.
24. To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., Cole-Orton Hall, for Grizzly Frontignan Grapes.
25. To Mr. Snow, Gardener to Earl de Grey, F.H.S., for Violette Hative Peaches.
26. To Mr. Brown, Gardener to W. Cartwright, Esq., Aynhoe Park, for Violette Hative Nectarines.

## THE SILVER KNIGHTIAN MEDAL.

1. To Mr. Over, Gardener to W. McMullen, Esq., for 6 Stove and Greenhouse Plants, in 13-inch pots.
2. To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for 6 species of Exotic Orchids.
3. To Mr. Uzzell, Gardener to the Duchess Dowager of Northumberland, F.H.S., for 6 varieties of Achimenes.
4. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of Helichrys.
5. To Messrs. Fraser, for 6 varieties of Kalosanthus.
6. To Mr. Wiggins, Gardener to E. Beck, Esq., F.H.S., for 6 varieties of Fuchsias.
7. To Mr. Francis, of Hertford, for 50 varieties of cut Roses.
8. To Mr. Evans, Gardener to C. N. Newdegate, Esq., of Arbury, Warwickshire, for 25 varieties of cut Roses.
9. To Mr. Hume, Gardener to R. Hanbury, Esq., F.H.S., for Disa grandiflora.
10. To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for Erica tricolor Alfordi.
11. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for a collection of Hothouse Ferns.
12. To Messrs. Rolleston, for a Nephentes called Hookeriana.
13. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for a collection of Variegated Plants.
14. To Mr. Floud, Gardener to C. Bailey, Esq., for a Black Jamaica Pine-apple, weighing 3 lbs. 13 oz.
15. To the same, for a Queen Pine-apple, weighing 4 lbs. 1 oz.
16. To Mr. Chapman, Gardener to J. B. Gregg, Esq., F.H.S., for a Providence Pine-apple, weighing 7 lbs. 12 oz.
17. To Mr. Frost, Gardener to Lady Grenville, F.H.S., for Black Hamburg Grapes.
18. To Mr. Hill, Gardener to R. Sneyd, Esq., F.H.S., for Black Prince Grapes.
19. To Mr. Wood, Gardener to C. R. S. Murray, Esq., F.H.S., for Muscadine Grapes.
20. To Mr. Turnbull, Gardener to the Duke of Marlborough, at Blenheim, for Muscat Grapes.
21. To the same, for 6 Early Purple Peaches.
22. To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., Cole-Orton Hall, for 6 Elrige Nectarines.
23. To Mr. H. Myers, of Brentford, for Black Circassian Cherries.
24. To Mr. Snow, Gardener to Earl de Grey, F.H.S., for Elton Cherries.
25. To Mr. T. Beach, jun., Isleworth, for 6 pots of British Queen Strawberries.
26. To Mr. Lydiard, of Bath, for Myatt's Surprise Strawberries.
27. To Mr. Grant, Gardener to G. H. Simms, Esq., Bathwick Hill, Bath, for Victory of Bath Melon.
28. To Mr. Atkinson, Gardener to the Ladies Molyneux, Slough, for Oldaker's scarlet-fleshed Melon.

## THE SILVER BANKSIAN MEDAL.

1. To Mr. Watson, Gardener to Mrs. Tredwell, of Norwood, for 6 Stove and Greenhouse Plants, in 13-inch pots.
2. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for 6 varieties of Achimenes.
3. To Mr. Godfrey, Gardener to R. Dawson, Esq., Tottenham, for 6 varieties of Fuchsias.
4. To Messrs. Fraser, for the same.
5. To Mr. Clarke, Streatham Place, Brixton Hill, for 50 varieties of cut Roses.
6. To A. Rowland, Esq., F.H.S., for 25 varieties of cut Roses.
7. To Mr. Bushy, Gardener to J. Crawley, Esq., F.H.S., for the same.
8. To Mr. Ivson, Gardener to the Duke of Northumberland, F.H.S., for Erica metuliflora bicolor.
9. To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for Saccolabium Blumei majus.
10. To Mr. Bragg, of Slough, for Cape Pelargoniums.
11. To Messrs. Veitch, F.H.S., for Veronica variegata.
12. To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for a species of Saccolabium.
13. To Mr. E. G. Henderson, for Gaylussacia plicata.
14. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for White Muscadine Grapes.
15. To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for Muscat Grapes.
16. To Mr. R. Davies, Gardener to J. Dixon, Esq., Astle Park, Knutsford, for 6 Peaches.
17. To Mr. Turnbull, Gardener to the Duke of Marlborough, for 6 Elrige Nectarines.
18. To Mr. Eastham, Gardener to A. Toy, Esq., East Acton, for Black Eagle Cherries.
19. To Mr. Jones, of Ealing, for Bigarreau Cherries.
20. To Mr. Jones, of Old Brentford, for British Queen Strawberries.
21. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., for Trencham Hybrid Melon.
22. To Mr. Daragon, Gardener to H. H. the Duc d'Anjou, Orleans House, Twickenham, for a Rock Cantaloupe Melon.

## THE CERTIFICATE OF MERIT.

1. To Mr. Godfrey, Gardener to R. Dawson, Esq., Tottenham, for 6 varieties of Achimenes.
2. To Mr. Marsh, Gardener to H. Lee, Esq., Clapham, for the same.
3. To Mr. Wilkinson, of Ealing, for 50 varieties of cut Roses.
4. To Mr. Sage, Gardener to W. R. Robinson, Esq., Hill House, Acton, for 25 varieties of cut Roses.
5. To Mr. Munro, Gardener to the Earl of Clarendon, Watford, for the same.
6. To Mr. Watson, Gardener to Mrs. Tredwell, Norwood, for Kalosanthus coccinea.
7. To Messrs. Lee, for Mitrasia coccinea.
8. To Mr. Ivson, Gardener to the Duke of Northumberland, F.H.S., for Mimosa pudica.
9. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., for Muscat de Jeu Grapes.
10. To Mr. S. Jones, of Ealing, for Black Circassian Cherries.
11. To Mr. Myers, of Brentford, for Bigarreau Cherries.
12. To Mr. May, Gardener to J. Watney, Esq., F.H.S., for British Queen Strawberries.
13. To Mr. Ivson, Gardener to the Duke of Northumberland, F.H.S., for ripe fruit of Vanilla and Allspice.

**PERUVIAN GUANO.**  
CAUTION TO AGRICULTURISTS.—It being notorious that extensive adulterations of this MANURE are still carried on,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9s. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO.**—The guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.

WILLIAM INGLIS CARNE, 10, Mark Lane, London.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6s. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrates of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

**PERUVIAN GUANO**, guaranteed the genuine importation of Messrs. A. GIBBS & SONS. A constant supply of LINSEED and RAPE CAKE. EDWARD PURSER, Secretary.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ..... per ton 7 0 0  
Superphosphate of Lime ..... " 7 0 0  
Sulphuric Acid and Coprolites ..... " 5 0 0

Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## GUANO AND OTHER MANURES.

**PERUVIAN GUANO** of the finest quality; Superphosphate of Lime, made from bone only; Nitrates of Soda and Potash, Gypsum, Salt, Soda Ash, Bones, Sulphuric Acid, Peat Charcoal, and all other manures of known value on Sale.—Apply to MARK FOTHERGILL, 204 A, Upper Thames Street.

**ARTIFICIAL MANURES, &c.**—Manufacturers and others engaged in making ARTIFICIAL MANURES, may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBITT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanoes, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

Gentlemen desirous of receiving instructions in chemical analysis and assaying, will find ample facility and accommodation at the College.

**SEWAGE CHARCOAL MANURE.**—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 6s. per ton, and in quantities less than half a ton at 4s. per cwt. for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.

It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly; Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

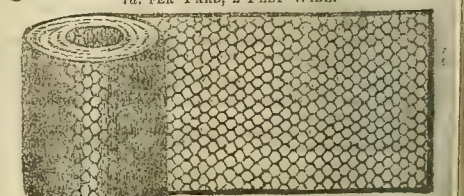
**MR. SAMUELSON'S PATENT DIGGING MACHINE**, capable of digging 4 to 5 acres per day with four to six horses, price 27l. 10s., is now working at Banbury, and in Kent, Surrey, Middlesex, Cheshire, Yorkshire, North Wales, &c. &c. For references apply to Mr. B. SAMUELSON, Britannia Works, Banbury. It will be exhibited at his Stand, No. 68, Royal Agricultural Society's Show at Gloucester.

**BUILDING'S LAWN MOWER** with SAMUELSON'S REGISTERED IMPROVEMENTS, lightening the draft by one-half, and enabling one unskilled labourer to work it unassisted, reviewed and commended in the "Practical Mechanics' Journal" of February 1. Price 5l. 10s. and 6l. Larger sizes for pony draught, 7l. 5s. and 10l.—Apply as above, or to any Ironmonger or Implement-dealer in town or country.

**TANNED NETTING**, for the protection of Fruit Trees from frost, blight, and birds; and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 60s. Scrims Canvas, for Wall Fruit.

At EDGEMORE & CO.'S, 17, Smithfield Bars, City, and Old Kent Road, Southwark; and at Brunswick Street, near the East India Export Dock, Poplar, where may also be seen erected Emigrant Tents in great varieties, on their latest improved principles.

**GALVANISED WIRE GAME NETTING.**—7d. PER YARD, 2 FEET WIDE.



	Galvan- ised.	Japaned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 " "	6½ " "
2-inch " extra strong "	12 " "	9 " "
1½-inch " light "	8 " "	6 " "
1½-inch " strong "	10 " "	8 " "
1½-inch " extra strong "	14 " "	11 " "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 2d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.



## CHIVAS'S CHESTER ORANGE JELLY TURNIP.

MESSRS. SUTTON, SEED-GROWERS, Reading, Berks, having been appointed by Mr. Chivas, agents for the sale of his ORANGE JELLY TURNIP SEED, will be furnished with a supply of new seed of Mr. Chivas's growth, in time for delivery to purchasers on the 20th of July. Price 2s. per lb. Carriage Free, except parcels under 7 lbs.

## CRIMSON-FLOWERED IVY-LEAVED GERANIUM.

STANDISH AND NOBLE have now to offer the above, which they can recommend as a BEDDING PLANT of the first class. It has the habit and foliage of the well known old variety, but the flowers are of the brightest crimson. They are produced in the greatest profusion, and are raised well above the leaves upon stout foot-stalks. Plants, 10s. 6d. each.

\* \* \* The usual discount to the trade when three or more are taken.—Bagshot, Surrey, July 9.

**GRAPE VINES FROM EYES.**—The Undersigned has now to dispose of a large stock of GRAPE VINES, raised from Eyes this season; strong, and in vigorous health, now exposed to greenhouse temptation, and hardened so that they can be sent safely to any part of the kingdom without check or injury. By planting now a whole season will be saved. They comprise all the leading kinds, and an inspection of them is respectfully solicited.

R. GLENDINNING, Chiswick Nursery, near London.

**VINES FROM EYES IN POTS.**—The following select varieties of GRAPES are offered, part of a stock of 4000, as being now nearly ripe, and in a fit state for planting; they are of extra fine quality, mostly two years old, stout, and 6 to 7 and 8 feet long, 3s. 6d. each, except those priced, carriage paid to London.

- |                                     |                                  |
|-------------------------------------|----------------------------------|
| 1. Barbarossa, 5s.                  | 10. Richmond Villa Hamburg, 5s.  |
| 2. Black Prince.                    | 11. Royal Mascadine.             |
| 3. Black Prince Hamburg (Williams). | 12. Muscat of Alexandria.*       |
| 4. Chasselas Musqué.                | 13. Cannon Hall Muscat.*         |
| 5. Grizzly Frontignan.              | 14. Purple Constantia (Welbeck). |
| 6. White ditto.                     | 15. St. Peter's (Oldaker's).     |
| 7. Black Hamburg.                   | 16. Sweet Water, Dutch.          |
| 8. Mill Hill Hamburg (late), 5s.    | 17. Sweet Water Profitic.        |
| 9. The Pope Hamburg (early).        |                                  |

No. 3 was raised from seed by John Williams, Esq., of Pitmanston; it is of first-rate quality, a most vigorous grower and great bearer. No. 14 is a Frontignan Grape, and one of the finest in favour.

\* Extra sized plants of these in No. 12 pots can be had at 5s. each.

THOMAS RIVERS, The Nurseries, Sawbridgeworth, Herts.

**WILLIAM BARNES** respectfully begs to acquaint his Friends and the Public generally that he has now ready to send out a small portion of his unrivalled CALCOLARIA SEED, saved from his collection so universally admired by those who purchased his seed last season. Also, CINEARIA and HOLLYHOCK SEED, saved by himself, from all the best kinds in cultivation, viz. B. but purchased from all the most eminent growers of the above two beautiful tribes of plants, and cannot fail to give the greatest satisfaction to all those who may think proper to purchase his Seed.

The above can be sent by post in 2s. 6d. and 5s. packets. A remittance is expected from unknown correspondents. Camden Nursery, Camberwell, London.—July 9, 1853.

**THE QUEEN OR CAULIFLOWER CABBAGE.**—The above Cabbage is of most delicate flavour, quite equal to the Cauliflower: very early and requires good ground. The stumps left in the spring after the Cabbages are cut will reproduce Cabbages all the summer, so that persons growing this kind need not make more than one good bed in the year. It should be sown the month of June, and put out in September.—2s. per doz. LONDON MARKET CABBAGE.—Saved from a very choice stock. This kind is of larger growth than the Queen, and will do well for exposed situations.—1s. per doz.

**HAMPSHIRE BROWN COS LETTUCE**, 1s. per packet.—A most excellent kind to stand the winter.

**NEW HARDY CAULIFLOWER**, 1s. per packet.—This kind will stand the winter without protection if pricked out early in the autumn, in unmaured ground and in a dry airy situation.

The above sent free by post on the receipt of postage stamps or a post-office order.—JOSEPH SHILLING, Nursery and Seedsmen, Winchester.

## BECK'S NEW SEEDLING PELARGONIUMS.

**JOHN DOBSON** begs to announce that he is in possession of the entire stock of the new and beautiful Seedling Pelargoniums raised by E. Beck, Esq., of Worton Cottage, which will be sent out the first week in October; good strong plants, well established in 4-inch pots, and carefully packed.—Empress, the finest variety ever offered, 42s.; Leah, 31s. 6d.; Neatness, 31s. 6d.; Picta, 15s.; Rebecca, 31s. 6d.; Eliza (Dobson's), 21s.; Margarina (Dobson's), 21s. The above are all distinct from anything out, and cannot fail to give satisfaction.

**PEARL OF ENGLAND**, which received a certificate of merit from the National Floricultural Society, will be sent out as soon as a sufficient stock can be obtained. It is sufficient to say that it is the best white yet raised.

All orders will be booked in strict rotation. Further particulars in a future advertisement.

A Catalogue, with full descriptions of the above new Seedlings, with all the best of other raisers, will be forwarded on receipt of one stamp.

J. D. has also a few packets of very choice Calceolaria Seed, saved with very great care, at 2s. 6d. per packet. Woodlands Nursery, Isleworth.

## GLOXINIA WILSONI.

**GEORGE DAVIES** begs respectfully to inform his Friends and the Public that he will send out the first week in August the above splendid Gloxinia, which is superior to anything yet before the public. It obtained the prize given by Charles Newman, Esq., for the best Seedling Gloxinia, at the Liverpool Horticultural Exhibition, June 30th, 1853. This magnificent Gloxinia, as the editor of the "Floricultural Cabinet" justly observes, "stands pre-eminently majestic above all others." To those who have not had the pleasure of seeing this splendid plant in bloom, G. D. would refer them to a figure in the July number of Harrison's "Floricultural Cabinet," where a faithful representation is given. Price 10s. 6d.

**AZALEA SPANLEYANA.**—This superb Azalea will be sent out the first week in August. It was exhibited at Chiswick in May 1852, and, notwithstanding the bruised condition of the flowers, was spoken of in the highest terms by many of the Nurserymen, some of whom ordered several plants. On account of its superior merits, it obtained a prize at the Liverpool Horticultural Exhibition in May last. The plant is a free grower, excellent habit, and a fine trusser. The flowers are of a deep bright colour, with dark brown spots on the upper petals, and is much superior to *Asymmetry* in size, form, and substance. Price 15s.

G. D. can confidently recommend the above plants as real gems, which will not disappoint purchasers. Orders will be applied in strict rotation: early orders will secure the best plants. The usual discount to the trade. A few extra sized plants can be supplied at 21s. each. G. D.'s Catalogue of Plants will be ready early in August, and will be forwarded on application. Stanley and Green Lane Nurseries, Old Swan, near Liverpool.

## ROSES.

**EDWARD DENYER**, NURSERYMAN, Loughborough Road, Brixton, within three miles of London, informs his kind patrons in general, that his unrivalled COLLECTION OF ROSES, reaching to nearly one thousand varieties, are now in bloom, and free to the inspection of all Visitors, Sundays excepted. Orders taken at this time and executed in November next.

## The Gardeners' Chronicle.

SATURDAY, JULY 16, 1853.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, July 18.—Law Amendment ..... 8 P.M.  
SATURDAY, 23.—Royal Botanic ..... 3 P.M.  
COUNTRY SHOWS FOR THE PRESENT MONTH.—20th: Berwick.—21st: Aylesbury.—26th: Handsworth and Loughborough.—27th: Isle of Wight, and Buckingham.—28th: Oxfordshire.—30th: Midland Horticultural (Derby).

Some years have elapsed since the first details on the VINE MILDW were published in this journal, when the minute parasite, by whose presence it is characterised, was named after an intelligent gardener, who not only made it his especial study, but whose efforts to discover a remedy were crowned, as far as garden culture is concerned, with complete success. Multitudes of pamphlets have since appeared on the subject, adding, in most cases, very little indeed to the knowledge which was then acquired; but the last which has reached us, though confessedly very imperfect as regards scientific accuracy, contains so much important matter, and promises so much more perfect observation at no distant period, that we hasten to demand for it the attention of our readers. Like Mr. TUCKER, the author is a practical gardener, employed originally in the cultivation, more especially, of Melons, in the rich marshy soil on the sea coast of Hérault, at the small town of Agde. M. ESPIRIT FABRE was not, however, altogether without education, but though brought up in the *Ecole Primaire* is described by M. AUGUSTE DE SAINT-HILAIRE, in his report to the French Academy, as more versed in the patois of Languedoc than in pure French. His talent was first displayed in his curious observations on the genus *Marsilea*, and he is now more generally known by his patient and well-directed observations on the transformation of *Agilops ovata* into Wheat, a report of which appeared in our pages last year. M. FABRE has described in his memoir, which had the advantage of the direction and supervision of M. DUNAL, four distinct diseases with which the vineyards have been devastated, with the promise of extending his observations further, and revising those already published—a matter of the greater necessity, as he was not well acquainted with the distinctive characters of *Oidium Tuckeri* when his examinations were commenced, but confounded that parasite with a form of *Erineum Vitis*, which is no fungal but a mere disease of the outer cells of the leaves.

It is asserted by M. DUNAL that the leaves of the Vines are seldom, if ever, attacked by the *Oidium* in the department of Hérault, but that its ravages are confined to the fruit; and if this be really the case, the remedies proposed by M. FABRE apply only to such plants as are affected by the *Erineum*. That great differences exist in the mode of attack is certain, as the under side of the leaves was more especially affected in England, while about Paris the *Oidium* was confined almost exclusively to the upper surface, and we can therefore readily conceive that so capricious a plant may, under certain conditions of climate, restrict itself to the smooth skin of the fruit. M. FABRE is, however, so doubtful about the matter that he places the remedial treatment of the plants, whether infested by *Oidium* or *Erineum*, under one and the same head. He observed that, in two neighbouring vineyards, consisting of the same variety of Vine, and with precisely similar soil and aspect, where the Vines were properly pruned, no parasite or diseased state of the leaves appeared, but that where an attempt was made to force the produce by leaving too many shoots, the ravages were very extensive. In certain districts, again, subject to late frosts, the Vines are not pruned till the buds have acquired a considerable size, and the sap consequently follows the knife abundantly. In such vineyards the disease is peculiarly prevalent, while those are perfectly safe in which liberal pruning takes place at an earlier period, especially where the fruit-bearing shoots are kept close to the ground. He observed, further, that those vineyards in which the refuse marc of the distillery, or other manure, was too freely applied, were almost without exception unhealthy. The first great desideratum appears to be to secure by early pruning a limited number of strong, vigorous, healthy shoots, without the use of forcing manures, which render the Vines peculiarly susceptible of injury. But, even where the plants were already attacked, the greatest benefit was derived from pinching off the portion of the shoots above the fruit, as soon as they showed the slightest appearance of the white mealy condition which is the

certain indicator of disease. The lower leaves are thus enabled to elaborate healthy sap, when the downward current of vitiated juices from the diseased tips is cut off; and being themselves, in consequence of their advanced stage of growth, less liable to be affected, the careful removal and destruction of the young diseased extremities prevent the diffusion of the malady.

There is confessedly, as stated above, some little uncertainty in the matter, from the original confusion of the *Oidium* with the *Erineum*, but the treatment is so promising that we should not, where circumstances might require, hesitate to adopt it, and should even be sanguine as to the result. In many instances where plants have been attacked and the shoots have in consequence died, bunches of roots, imperfect shoots, or warty excrescences of a very imperfect organisation, are formed below them, or the subjacent bark is deeply fissured; where this is the case, the only sure remedy is to cut the trees close off to the ground, and, provided the excision takes place in sufficient time, the vineyard will be in good bearing again in three years.

We purpose returning to the subject next week, when the general views of M. FABRE shall be stated as to the cause of the extensive disease now existing in the vineyards of the south of France. M. J. B.

WE proceed with the dismal history of mismanagement in the hands of the present officers entrusted with the Royal Woods and Forests.

The deputy-surveyor in charge of Delamere Forest is Mr. WM. LIPSCOMBE. His salary and allowances amount to 228*l.* 17*s.* 5*d.*, and he has a pension of 224*l.* a year as a retired clerk of the War Office, in addition to which he resides in a house valued at 35*l.* per annum, and he occupies rent free 12 acres of land. He is described as having the superintendence of the planting, and all other services connected with the forest. This gentleman informed Lord DUNCAN's committee that he was appointed in the year 1836 by the then Lord DUNCAN (afterwards Earl of Bessborough). For 23 years before that he had been a clerk in the War Office. He confessed to the committee that he had not had any experience in the management of wood "immediately" before his appointment, but when he was very young he knew how to plant trees.

Mr. LIPSCOMBE's forest consists of 4022 acres of plantations, which he described as being entirely young; it contains no old trees, having been disafforested for some 100 years. In 1812 it was a waste; in 1815 plantations were commenced, and they had been continued up to 1849 at the average rate of 100,000 trees a year, when the whole became planted. The oldest plantation was then 33 years old. In thinning them, Mr. LIPSCOMBE informed the commissioners that he acted *entirely on his own judgment*, which, considering the amount of knowledge of forest work with which he started as deputy-surveyor, was worth, as we shall see hereafter, just what might have been expected.

The 4000 acres in question are situated in the county of Chester, within about 10 miles of the Mersey, 6 miles of the Weaver river, and 10 miles of Chester. The nearest dockyard is Liverpool. About 1000 acres were represented by Mr. LIPSCOMBE to be good land, 2000 acres middling, and 1000 acres very poor indeed. The produce, he said, was generally sold by private contract, not auction; it was never advertised; he never attended the sales: "certainly not;" they were made by the woodman, over whom he could not say that he had any check, and were going on every day in different parts of the forest. He had heard of the timber dealers treating the men with drink, but he did not think he had heard of it more than a dozen times, which, considering that Mr. LIPSCOMBE never attended the sales, where of course the treating took place, does not appear to us very surprising.

Mr. L. further stated that for the four years preceding 1849 there had been an average net profit upon the plantations of 1300*l.* a-year, and he had reason to believe that that excess would continue to go on increasing year by year. There was a free market for the thinnings of the forest, and he had no difficulty in selling them. He valued the plantations at 78,340*l.* and the land at 51,237*l.*, in all 129,627*l.*; but he had never before been in the habit of making such valuations, and the whole was done by estimate, without actual measurement.

We confess our inability to reconcile this with the report of the Committee that "it is very doubtful whether this forest ought to have been planted at all; certainly not for the growth of navy timber," that the surplus income in 10 years up to 1847-8 had only been 2087*l.*, and that in 1848-9, at the very time when Mr. LIPSCOMBE was producing his flourishing statement that the net income was on an average 1300*l.* a year, there was an actual loss by the forest of 135*l.*

According to Mr. LIPSCOMBE's own account, his



forest ought to have produced a net income of, at least 1300*l.* a year in 1849, 1850, 1851, 1852, or 5200*l.* The official accounts show that it realised only 1713*l.*, and he formally reported that, for 1852-3, he could only realise about 680*l.*, although the plantations were five years older than when he professed his ability to obtain at least 1300*l.* The present Commissioner, being made directly responsible to Parliament for his management, seems to have thought this a point to be inquired into, and accordingly directed Mr. JAMES BROWN, of Arncliffe, a very experienced and successful forester, to examine Delamere and report upon it. His report, now before us, shows just what might have been expected from entrusting such a charge to a gentleman totally ignorant of all that he ought to have known, and in the habit of "acting solely upon his own judgment." One example shall suffice. Mr. BROWN states that upon Mosses in the forest planted with Scotch Pine, the trees have apparently never been thinned, although apparently of 20 years' growth; averaging 4 feet apart, instead of 7 feet, which their present age demands. Mr. BROWN further reported that the net income for 1852-3 should be 1726*l.*, instead of 680*l.* We also gather from his concluding paragraph that the present net income ought to be much greater, if it were not for "a very considerable amount of work which has to be executed in these plantations, in the thinning out of small and comparatively valueless trees;" in other words, if it were not for the large expense which has now to be incurred in remedying the mischief which the present deputy-surveyor has been doing for years.

The ninth of July witnessed the last HORTICULTURAL MEETING for the present year; on which occasion, as usual, His Grace the President of the Society gratified the visitors by opening to them his delightful grounds. The morning was wet, but the weather became fair at 11 and remained so, with slight interruption, for the remainder of the day.

The Exhibition was excellent for July, and more varied than we ever before saw it in that month. Variegated plants and Orchids in particular were in great force, and the fruit generally merited commendation. Of absolute novelty there was little beyond a beautiful *Ceratostema* from Messrs. VETTER, and a pretty red-flowered *Gaylussacia* from Messrs. HENDERSON, of the Wellington Road Nursery, St. John's Wood. There was, however, a charming new Hybrid *Veronica*, raised between *V. salicifolia* and *speciosa*, with a good deal of pink in one half its spike; this, which we understood to come from Mr. ANDERSON, of Edinburgh, was exhibited by Messrs. VETTER, and is likely to become as general a favourite as *V. Andersoni*.

Fuchsias were in abundance, but they are ill-suited for staging, and although individually pretty enough, produce a very monotonous appearance.

The number of visitors was 7225.

WE understand that the HORTICULTURAL MEETING at CHELTENHAM, this week, has been a successful operation, concerning which we hope to be able to say something in our next.

#### CULTURE OF THE VINE.

It is generally considered that little which is new can now be advanced on this subject. My desultory remarks may therefore appear to be superfluous; but I would ask to what causes are we to attribute the different results which are constantly being obtained by men of great skill and experience in their profession? That there are differences in their productions every one will admit who has had an opportunity of examining the Grapes exhibited at the Chiswick Shows. There we find large bunches with berries gorged with watery matter, but without bloom; there are also large and splendid bunches apparently well ripened but deficient in colour; and we often, too, find there beautiful bunches cut fully three weeks before their maturity. Grapes are not ripe because they are black or transparent, as the case may be. The formation of saccharine matter is the last process towards ripeness, which ought to be fully accomplished before Grapes are cut and sent to any table. A celebrated Grape grower, a quarter of a century ago, used to boast that his bunches were of medium size, and so compact that they retained their form in whatever position they were placed. The berries were large and had a bloom like the Sloe; the flesh was firm, juicy, and rich in sugar, and the berries retained the stamens of the blossom around their base. This he said was growing the *Hamburg Grape* in perfection; but if that be so, how rarely do we see it attained! To what cause, then, are we to attribute these different results? The most successful growers in one locality when removed to another have often not been more successful than their brethren of less reputation. One attributes his success to the formation of his Vine border; another to his system of pruning, whilst a third would persuade us that it consists in a careful attention to the routine of management in the interior of the house. Now I admit that these are important considerations in the culture of the Vine in this country; but

when all these are combined, do we always obtain successful results? My experience leads me to say, No.

Gardeners in general cannot be expected to have a chemical knowledge of the constituents of soil adapted to the growth of the Vine and consequent maturity of the fruit; but in all parts of the country, wherever a mansion is erected and gardens connected therewith for the growth of fruits, &c., the Vine will generally be found; and I need hardly remark that in those situations only where the soil is naturally adapted for its growth, and where skill and the practical routine of management are carefully applied, will the results be lasting or satisfactory. The Vine, it has been said, is a gross feeder, and well has its voracious appetite been supplied. Deep borders have been made for it and crammed with rich incongruous matter, fetid and disgusting; but what effect, after a few years' decomposition and consolidation, this unseemly compost has on its health and productiveness, the advocates of the system can best report. That the Vine requires a liberal and generous supply of nutritive food is certain; but the proper time to apply it is when the plant is in active growth. It is currently believed that the great Vine at Hampton Court derives its nourishment from a sewer in its neighbourhood; but whether this is the case or not it is evident that its roots have an unfailing supply of healthy and invigorating food. It is asserted, on the contrary, that the large Vine at Cumberland Lodge has no such source of supply; but that it derives its nourishment from the natural fertility of the soil. Some years ago I was in the habit of visiting the gardens of a gentleman in whose greenhouse (which was of no ordinary size) was planted a Black *Hamburg* or *Frankendale* Vine, which entirely covered the house. Having expressed my surprise to my friend at the fine crop it yearly produced, well knowing that the sub-soil was a strong clay and that no extra supply of nourishment was given to the surface, he said that from his stable-yard there passed within 20 feet of the front of the house a drain which he thought the roots of the Vine had entered, and which he considered was the cause of its productiveness.

Some years ago I gave a Vine to a neighbour who planted it at the south front of his dwelling-house. I can answer for it there was no preparation of soil in this case—in fact, it had many years before been paved with flints; some of these were taken up, a hole made, the Vine put in with a little fresh soil around the roots, and the flints replaced. The plant grew to the admiration of its possessor, and in four or five years it had filled the whole of the space available for it, producing abundant crops, and many of the branches were of such a size as would have done credit to any Vinery. Having my attention particularly directed to its luxuriant growth and fertility, I could discern no other apparent cause than that there had been a cesspool within 12 feet of where it was planted, but which had many years ago been filled up. I admit that in these two cases I can only draw an inference, as I had no positive proof that the roots had entered the one or the other. I will only notice another instance, which, although not confined to the Vine, will serve to show that the latter will flourish exceedingly when its roots are immersed in an intermitting flow of water. I was solicited by our village schoolmaster to supply him with a Vine to plant on the west front of his school-house. I gave him one, more with a view to his amusement than with any hope of successful culture. The soil was very stiff; at 10 inches deep it was a strong clay. However, the Vine was planted and carefully attended to; the first two years it made little progress, but after the fourth year it grew vigorously. My judgment was called in question—there could be no gainsaying the fact; it was producing shoots from 15 to 20 feet in length, and a good crop of fruit; but I was not long in suspense—the cause of its rapid growth was soon discovered. The drain from the sink in the wash-house ceased to flow; the Vine had been planted within five feet of it; the roots had entered the drain, and entirely filled it up. They were removed, and the hopes of the schoolmaster were blighted. We have abundant and sufficient proof that the Vine will grow strongly, and ripen its wood thoroughly, and produce fruit plentifully, when it is supplied with proper nutriment in a liquid state. I have propagated Vines from eyes, and placed them in pots containing about a peck of soil; they have produced rods in the same season from 12 to 18 feet in length; they bore the following season in the same soil an abundant crop. The health of the Vine, then, is promoted and sustained by a free passage of liquids in contact with its roots. I have frequently observed the facility with which it extends its roots along brickwork or other rough gritty material.

Were I about to make a Vine-border in a situation not naturally adapted for the Vine, I would proceed as follows:—It should be 15 feet wide; the soil should be removed to the depth of 18 inches in front of the house, with a gentle slope outwards until the depth was 30 inches at the outside of the border, where a drain 3½ feet deep by 2 feet wide should run the whole length of the border, the bottom having a gradual fall to a well at the lower end 4 feet in diameter and 3 feet deeper than the drain, the upper end to have an opening level with the soil of the border. The drain should be of brickwork, and covered with loose tiles or oak-slabs, that could be easily removed to furnish means of examining the state of the drain when occasion might require. The side of the drain next the border should be pigeon-holed to admit the roots when they shall have extended across the border. The use of the drain is to supply

the roots with liquid manure slowly flowing along the bottom into the well, which should be occasionally emptied, and the contents again applied at the upper end. The liquid should only be applied when the Vines were in active growth, and if possible at such a temperature as was best conducive to their healthy growth; it should be entirely withheld when the Grapes begin to colour. To each plant I would allow a separate compartment. If a Vine was to be planted under each rafter of the house, then at the centre of each light a rough brick-on-edge wall should be built across the border to the drain. In the bottom of each compartment I would have a layer of stones or brickbats, or other rough material, from 8 to 10 inches deep; on this I would lay the soil 2 feet deep, which should have been well prepared many months before. Tassel.

#### Home Correspondence.

*The Lycopodium rosea*, exhibited by W. J. Myers, Esq., at Chiswick, on Saturday last, has been grown in the plant stove, where for the last three years it has never failed to flower beautifully; and when 15 or 16 blooms are in perfection at one time (as we have had it) the effect is very striking. One planted out in the border of a Camellia house has not grown any, in fact it has not grown small by degrees and "beautifully less." Another planted in the border of the plant stove last year has made a shoot 20 feet long, and is now in flower, trained up the rafter. We find that it grows best in pure leaf-mould, with plenty of pieces of wood in a state of decay mixed with the soil, and the plant kept well up in the pot or border in which it is planted. J. Selkirk, gr. to W. J. Myers, Esq., Porters, Barnes, Herts.

*The late Professor Adrien de Jussieu.*—Advice from Paris mention the decease of this distinguished botanist, upon whom the mantle of his great ancestors may be said to have fallen. Among the most conscientious and exact of systematical writers he also ranked high as a physiologist, as his well known elementary work has shown the world. For many years his health had been delicate, and of late had become deplorable. By his decease a vacancy occurs in the President's chair of the French Institute, in that of Professor of Rural Botany in the Jardin des Plantes (which, it is said, will not be filled up), and among the 20 foreign members of the Horticultural Society of London. J. L. Wolfe, Esq.

*Dried Potato Sets.*—I have put Professor Bollman's roasted Potatoes to the test; alternate rows stewed and double stewed are put in, with precaution. Cauliflowers for a crop if a failure should ensue. Now, mind his plan will give new Potatoes almost all the year round. I have just ascertained from my gardener that the whole are now appearing, having been planted about 14 days. C. P. York.

*Potato Disease.*—This unwelcome but long expected malady has again made its appearance. Several unmistakable instances of it have lately come under my notice. As yet, it appears to have affected the haulm only, the tuber being of good size and quality. It is a strange fact, that of three gardens, at Reston, near Mylor, adjoining each other, the middle one only has been diseased in it. They were all planted about the same time, and under precisely similar circumstances. F. Symons, Carleton, July 7.

*Galvanised Iron Tanks for Heating.*—Your quotation from the "Mechanics" Magazine" (see p. 199), respecting incrustated boilers, reminds me of galvanised iron. A more useful article than this, for making tanks or troughs for horticultural purposes, it would be difficult to find, if some method could be invented to prevent hot water affecting it injuriously. The advantages which galvanised iron would have over brick and cement, slate, or cast-iron tanks, or troughs, would be great. It could be made to furnish top as well as bottom-heat at the same time, with much greater facility than the first, and it is much less expensive, than any of the three materials. Through the kindness of a gentleman in Essex, whom I had the pleasure of serving some three years ago, I had an opportunity of testing the merits of galvanised iron. A glass house was erected on this gentleman's estate, 50 feet long by 12 feet wide, having a span-roof. The path ran along the middle of it. On each side of this path a flow and a return tank of galvanised iron 18 inches wide by 6 inches deep were fixed, resting on 4½ inch dwarf walls, placed at intermediate distances. These tanks were covered with half-inch slate slabs, bedded on with cement; forming a basis for sand or other material to plunge pots in. The slates constituted an excellent shelf for plants when the plunging material was unnecessary, and, therefore, taken away. A partition was made in the centre of this house, and the part nearest the boiler was treated as a stove; the apparatus being so arranged that the circulation of heated water could be confined to this part of the house, or extended to the other, at will. The entire arrangement answered so well that my employer was tempted to use galvanised iron in another house, in which a system of heating had failed. This was a conservatory which was kept gay with plants in flower the whole year round; and as great numbers of them were inhabitants of the stove, it was necessary to maintain a temperature suited to their requirements. One tank only in this case was employed, and its being comparatively small, rendered it absolutely necessary to have the water heated to rather a high temperature. When the water became so warm that the hand could only be held on the trough, or rather tank, for a period not exceeding a minute or so, without inconvenience, with a little attention, slight



continuous reports might be heard, something similar to those made by the bursting of the ripe seed-pods of the common Furze on a hot day in summer, but not quite so loud. Observing more closely, I found that these reports were caused by the chipping off of small pieces of the galvanised outer coat of the iron; and by watching attentively, I could perceive flying, in all directions, small pieces of this part, generally about the 16th of an inch in diameter. This tank had been in use not more than six months, when it leaked. The man who constructed and fixed it was sent for. Immediately on handling it, in his attempt to repair it, it became literally riddled with holes in a great many places, about the size of those made by the prick of a pin, and they were sufficiently numerous to render the tank incapable of further service. It was, therefore, removed. As these evil effects were attributed to the doubtful quality of the iron, it was deemed advisable to give it another trial; another tank of the same material was therefore put up, but in this case the ironmonger was directed to provide a better sample of the iron in question. How this answered I know not, for I left the situation shortly afterwards. The tanks used in the house mentioned first answered well. But these were formed so as to hold a larger quantity of water, and therefore they did not require to be heated intensely, in order to keep up the desired temperature. Success, however, in this case, possibly might be the result of the superior quality of the material. The question is not fairly settled in my own mind; but I feel disposed to think that galvanised iron, in its present state, is not capable of bearing, uninjured, water near its boiling point. Probably some of your readers who may have had experience in heating horticultural structures with this material, will be kind enough to make known their views on the subject. As I have already stated, if by any means galvanised iron could be made to stand water intensely heated uninjured, it will become one of the most useful of horticultural articles, and will cause a great revolution in heating. Of this I am quite sure. Chas. Lucas, Brentwood.

**Soaking Timber.**—On perusal of your Paper of the 3th instant, I find a former communication of mine on the soaking of timber in lime further noticed in two places from Leaton Knolls; and its usefulness more fully set forth by the exhibition of specimens of wood so treated. Allow me now to repeat that it has been long followed here, and that formerly we dug trenches in the clay and soaked in lime-water; but we soon abandoned that method for a far more practical one of covering the wood with the mortar. I have at this present moment, again this year, the roof of a barn, ribs, laths, and all, covered with the quick-lime mortar, and which we shall allow to remain as long as may be convenient. C. P., York.

**Rhubarb and Strawberry Preserve.**—To one pound of Rhubarb put a quarter of a pound of Strawberries (Black Prince is best, on account of its high colour); but the Strawberries and sugar ought not to be added to the Rhubarb until the latter has been boiled for half an hour; the hot Rhubarb should then be taken out and weighed, adding the sugar and Strawberries; then let it boil for another half hour. The Strawberries furnish a nice sharp aromatic flavour, with a fine cherry colour; and I am I think perfectly satisfied that this is altogether a cheap and decided improvement in the preserving of Rhubarb. James Cuthill, Denmark Hill, Camberwell.

## Societies.

**HORTICULTURAL, July 9.**—On this occasion fruit, as might be expected, was abundant and excellent, and formed, as it always does in July, the most attractive feature of the show. Pine-apples were very numerous, and generally handsome. Black Grapes were ripe and well coloured, but white sorts were scarcely so perfect, more especially the Muscats, which were all more or less deficient in ripeness. Peaches and Nectarines were very good, and there were some beautiful exhibitions of Cherries and Strawberries. Melons were also plentiful, and generally well flavoured.

**PINE-APPLES.**—Mr. Fleming, gr. to the Duke of Sutherland at Trentham, sent an excellent collection, in which were Providence, old Queen, Ripley Queen, and Moscow Queen. Mr. Barron, gr. to J. H. Vivian, Esq., had four Queens, weighing respectively 4 lbs. 10 oz., 4 lbs. 9 oz., 4 lbs. 6 oz., and 4 lbs. 4 oz. These were all fine fruit, with very small crowns.—Mr. Jones, gr. to Lady Guest, produced Queens of first-rate quality, four of the best of them weighing respectively 4 lbs. 10 oz., 4 lbs. 9 oz., 4 lbs. 4½ oz., and 4 lbs. 2½ oz. Mr. Floud, gr. to C. Bailey, Esq., M.P., contributed a Queen, weighing 4 lbs. 1 oz., and the same exhibitor had also a Black Jamaica, weighing 3 lbs. 13 oz. In addition to these, Queen Pines were shown by Mr. Taylor, gr. to J. Coster, Esq.; Mr. Watson, gr. to Mrs. Tredwell; Mr. Forbes, gr. to the Duke of Bedford, at Woburn; Mr. Turnbull, gr. to the Duke of Marlborough, at Blenheim; and Mr. Harrison, of Outlands Palace Gardens, Weybridge. From Lady Bridport's gardener came two fruit of the Black Prince variety, one of them weighing 6 lbs. 14 oz. Mr. Bailey, gr. to T. Drake, Esq., had an Eveville, weighing 5 lbs. 9 oz.; Mr. Turnbull, the same variety, weighing 4 lbs. 8 oz.; Mr. Dodds, gr. to Colonel Baker, a prickly Cayenne, 3 lbs. 10 oz.; and Mr. Chapman, gr. to J. B. Glegg, Esq., a Montserrat, 2 lbs. 8 oz. Some good Providences were exhibited. The best one came from Mr. Brown, gr. to W. O. Gore, Esq., M.P.; it weighed 8 lbs. 15 oz. Mr. Ingram, gr. to

her Majesty at Frogmore, had a handsome fruit of the same kind, weighing 8 lbs. 8 oz., and Mr. Chapman one 7 lbs. 12 oz. The last-named exhibitor sent a Providence weighing 8 lbs. 14 oz., but it had begun to decay at the base. Mr. Dodds also had a Providence weighing 8 lbs. 15 oz., but it was a little deformed. Other fruit of this kind came from Mr. Fleming, Mr. Robertson, gr. to Lady Emily Foley, and Mr. Watson.

**GRAPE.**—Excellent Black Hamburgs were furnished by Mr. Henderson, gr. to Sir G. Beaumont, Bart., and beautiful fruit of the same variety, very large in the berry, but a little rubbed in travelling, was sent from Woburn, by Mr. Forbes. Mr. Frost also showed very good bunches of this sort. Other Black Hamburgs came from Messrs. Umpleby, Robertson, Wood, Williamson, Allport, Pike, Heywood, Mitchell, Harrison, and Stent. These were all fair specimens of good Grape growing. The best bunches of Black Prince were furnished by Mr. Lusley, gr. to J. Hill, Esq., Mr. Macquater, gr. to Colonel Challoner, and Mr. Hill, gr. to R. Sneyd, Esq.; these were all very fine examples of this Grape, fruit of which was also produced by Mr. Bain, gr. to T. Blackwell, Esq.; Mr. Turnbull had West's St. Peters. Of Sweetwater, Mr. Mitchell, of Brighton, had capital fruit, and so had Mr. Stanly, gr. to J. J. Blandy, Esq. Beautiful Muscadines came from Messrs. Wood, Williams, Tillyard, and Alborough. Muscats were not so ripe or well-coloured as the same sort was in June. The best were contributed by Mr. Frost; and Mr. Bucktrout, Mr. Turnbull, and Mr. Henderson had good bunches of this Grape. Other exhibitions of this fruit came from Mr. Taylor, gr. to J. Coster, Esq., Mr. Tillery, gr. to the Duke of Portland, at Welbeck, Mr. Mitchell, and Mr. Harrison. Mr. Allport, gr. to H. Akroyd, Esq., furnished excellent Black Frontignans and very fine specimens of the Grizzly variety came from Mr. Henderson, gr. to Sir Geo. Beaumont, Bart. Mr. Leonard, gr. to J. Cox, Esq., sent beautiful specimens of Chasselas Musqué. Mr. Ivison had Josling's St. Alban's, Mr. Smith, gr. to Captain Elliott, sent White Frontignan, as did also Mr. Bain, Mr. Tillery, and Mr. Mitchell; Mr. Munro, gr. to Mrs. Oddie, had Syrian.

**GRAPE IN POTS** came from Mr. Bousie, gr. to the Right Hon. H. Labouchere, of Stoke Park, near Slough. Each Vine (Black Hamburg) had from four to eight bunches of fruit on it almost as large and fine as if they had been produced by Vines planted out in a Vinery.

Mr. Fleming sent specimens of the Muscat de Jesu, a sort resembling the White Niece; the bunches were large and showy, and the berries small; it was said to have a slight Muscat flavour when perfectly ripe.

**PEACHES.**—The best were Violette Hative, sent by Mr. Snow, gr. to Earl de Grey. These were large and finely ripened and coloured. Mr. Turnbull produced fruit of the Early Purple, scarcely inferior in beauty to those just mentioned, and very good fruit came from Mr. Davies, gr. to J. Dixon, Esq., of Astle Park, Knutsford. Noblesse were communicated by Mr. Henderson and Mr. Busby. Royal George by Mr. Perkins, gr. to Viscount Combermere; Mr. Munro, gr. to Mrs. Oddie; and Mr. Brown, gr. to W. Cartwright, Esq. Mr. Turnbull sent Violette Hative.

**NECTARINES.**—Mr. Brown furnished beautiful specimens of Violette Hative. Mr. Henderson, Mr. Turnbull, Mr. Busby, and Mr. Tillery, Elruge. Mr. Munro, Red and White Roman and Violette Hative.

**FIGS.**—Among these we remarked Brown and White Ischia, Brown Howick, White Brunswick, and Lee's Perpetual; but none of them were considered by the Judges worthy of reward.

**CHERRIES.**—Large and finely ripened May Dukes and Circassians were shown by Messrs. Meyers; Black Eagle by Mr. Eastham, gr. to A. Toy, Esq.; Circassian by Mr. Jones, of Ealing; Mr. Gainsford and Mr. Marcham, gr. to J. Smith, Esq., of Hanwell; Knight's Early Black by Mr. Snow, and May Duke by Mr. Wood. Of white sorts, Mr. Snow sent very fine Eltons, Mr. Jones and Mr. Eastham, Bigarreau; Messrs. Myers had Bigarreau and Florence.

**STRAWBERRIES.**—Myatt's Surprise, a large showy fruit, and other handsome sorts were contributed in first-rate condition by Mr. Lydiard, of Bath. Mr. Jones, of Brentford, had excellent British Queens, as had likewise Mr. May, gr. to J. Watney, Esq. Mr. Beach, jun., of Isleworth, also showed this variety. Mr. Atkinson, gr. to the Ladies Molyneux, and Mr. Marcham contributed British Queen, and Mr. Munro British Queen and Myatt's Eliza. Of other well known kinds we noticed Keen's Seedling, Downton Pine, Elton, Victoria, Kitley's Goliath, Hooper's Seedling, and Princess Alice Maude. Some well-fruited British Queens in pots were shown by Mr. Beach, of Isleworth; Mr. Ingram furnished some promising seedlings, more especially Prince Alfred, a large and handsome sort.

**MELONS.**—The best green-fleshed kinds were Victory of Bath, from Mr. Grant, gr. to G. H. Simms, Esq., of Bath; and the Trentham Hybrid, from Mr. Fleming. Oldaker's Scarlet-fleshed, from Mr. Atkinson, gr. to the Ladies Molyneux, was the best of that class; and the second best Rock Cantaloupe, from Mr. Daragon, gr. to H.R.H. the Duke d'Aumale. Other sorts of Melons were Persian Hybrid, Greengage, Chapman's Green-fleshed, Hybrid Damphsa, Seymour's Green-fleshed and Golden Perfection, Golden Queen, Netted Green-fleshed, Beechwood, Bromham Hall, Palestine, Egyptian Green-fleshed, Bailey's Green-fleshed, Juniper Hall, Holly Lodge, Hybrid Green-fleshed, Hybrid Scarlet, Cuthill's Scarlet-fleshed, Lady Sefton, Brown's Superb, and the "Delicious Melon."

Other kinds of fruit consisted of ripe pods of Vanilla, Rose-apples, Gamboe, Allspice as black as Sloes; and a ripe fruit of Momordica Balsamina, split open, and showing the red seeds. These came from Mr. Ivison, gr. to the Duke of Northumberland at Syon. Mr. Napier, of Corehouse, sent a boxful of the fruit of Passiflora edulis.

In collections of 20 STOVE and GREENHOUSE PLANTS, the first prize was awarded to Mr. May, gr. to Mrs. Lawrence, of Ealing Park, for the following, viz.:

Allamanda Schottii	Ixora coccinea
Azalea magniflora	" javanica
Clerodendron Kempferi	Kalosanthes coccinea
Dipladenia crassinoda	" miniata
Dracophyllum gracile	Phenocoma proliferum
Echites atropurpurea	Roelia ciliata
Epacris miniata	Rondeletia speciosa
Erica tricolor speciosa	Stephanotis floribunda
" Parmentieri rosea	Vinca rosea
" inflata alba	" rosea alba

The most brilliant plant in this in all respects fine collection was undoubtedly the salmon pink Azalea magniflora, which was still flowering in the greatest possible perfection. It had, we understand, been kept back in a cool house having a north aspect, and it was well worth the trouble, for certainly no plant at the whole show was more strikingly gay. Next to this Azalea in point of brilliancy were the two Kalosanthes, which were both well flowered and very effective. The Ixoras, too, were very gay, their great heads of salmon and scarlet flowers being much admired. The Stephanotis was a very large plant, and when we state that it was beautifully covered with bloom and well furnished with broad and healthy foliage, some idea of its fine appearance may be conceived. The Allamanda, though a noble example of the kind, was scarcely so well flowered as could have been wished, but what blooms were on it were unusually large. To make up for the deficiency, however, the Dipladenia was all that could be desired, being covered with bright rosy Convolvulus-like flowers from bottom to top; indeed it is seldom that this charming plant is seen in such fine condition. The Epacris miniata was well bloomed, and being a large plant it formed one of the most conspicuous objects of the group. The Phenocoma was not only one of the best grown plants of the kind we have seen, but it was well flowered. It was not, however, Barnes' variety, which is the best, being deepest coloured. The Roelia might be a charming plant if its foliage was not so rusty, but that greatly mars the beauty of its handsome blue bell-shaped blossoms.

Mr. Green, gr. to Sir E. Antrobus, Bart., of Cheam, was placed second. His plants were:

Allamanda cathartica	Ixora coccinea
Aphelexis macrantha purpurea	Kalosanthos miniata
Dracophyllum gracile	Leschenaultia formosa
Echites atropurpurea	" Baxteri major
Erica Massoni	Pleroma elegans
" Savilleana	Polygala cordifolia
" tricolor rosea	" acuminata
Gardenia Fortunei	Rondeletia speciosa
Hoya Bidwillii	Stephanotis floribunda
" bella	Tetratheca verticillata

The greatest favourites in this collection appeared to be the Hoyas, both of which were charming species; the Fortune Gardenia, with its large ivory white, deliciously-fragrant flowers, and the Elegant Pleroma. The latter, indeed, was but partially flowered, but what blossoms were on it served to show what a handsome and valuable plant it is. Its round, violet-purple blooms, measuring upwards of 2 inches across, remain long in beauty, being far more persistent than the flowers of most Melastomads. The Masson Heath and Stephanotis were both fine plants, as were also the Ixora and Aphelexis, but owing to the unfavourableness of the day the flowers of the latter did not open; more than half their beauty was therefore lost. The Saville Heath is a charming small-flowered kind, and being easily cultivated, and not growing so large as some kinds, it is very suitable for amateurs.

A third group of 20 plants was furnished by Messrs. Fraser, of Lea Bridge Road. It consisted of:

Allamanda cathartica	Kalosanthos miniata
" Schottii	Leschenaultia intermedia
Clerodendron fallax	Phenocoma proliferum
Dipladenia crassinoda	Pimelea diosmifolia
Dracophyllum gracile	Relbania squarrosa
Erica Bothwelliana	Sollya linearis
" Juliana	Stephanotis floribunda
" rubens	Vinca rosea
Ixora coccinea	" alba
Kalosanthos coccinea	" oculata alba

The most striking feature of this collection was the Kalosanthes, which were large and well bloomed. Vincas make good exhibition plants, but their appearance is too common, which is also the fault of the well known but not very often seen Relbania squarrosa, whose bright yellow flowers have a cheerful effect. The Dipladenia, Allamanda, and Stephanotis were in very good condition, and the Clerodendron was well flowered and showy. Sollya linearis is useful for its colour, good blues being scarce among stove and greenhouse plants.

Only one collection of 15 plants was shown. It came from Mr. Carson, gr. to W. F. G. Farmer, Esq., of Nonesuch Park, near Cheam; it consisted of:

Allamanda cathartica	Franciscia acuminata
" Schottii	Lloya bella
Clerodendron splendens	Leschenaultia formosa
Crocea aaligna	Mussaenda frondosa
Apholotia nuerantha purpurea	Polygala oppositifolia
Dipladenia crassinoda	" cordifolia
" atropurpurea	Rondeletia speciosa
Epacris miniata	

The Allamandas in this group were well flowered, fresh, and beautiful. The chocolate-blossomed Echites atropurpurea, though not considered handsome by some, is, nevertheless, well worth attention, on account of its



uncommon appearance and the variety which it makes in a collection; and when "well done," as Mr. Carson's plant was, few will deny that it does not possess a considerable amount of beauty. *Clerodendron splendens* was finely flowered, and there was a brilliant bush of *Epacris miniata*. The *Aphelexes* were both well grown and flowered. The plant, however, which excited the greatest amount of interest in this group was *Mussaenda frondosa*, with its great white bracts, which, like the scarlet leafy appendages of the same nature in *Poinsettia pulcherrima*, constitute its chief ornament.

Collections of 6 STOVE and GREENHOUSE PLANTS, in "pots or tubs not less than 20 inches in diameter," were furnished by Mr. May, and Mr. Over, gr. to W. M. Mullen, Esq., of Clapham. The former had a very fine *Ixora javanica*, *Erica retorta* major, *Polygala acuminata*, *Leschenaultia formosa*, *Aphelexis purpurea grandiflora*, and *Ixora coccinea*, all large and finely flowered. Mr. Over sent *Erica tricolor elegans*, *Dipladenia crassinoda*, *Allamanda cathartica*, *Hoya carnosa*, *Dipladenia splendens*, and an extremely well-bloomed *Allamanda grandiflora*.—Groups of 6 in 12-inch pots came from Messrs. Taylor, Roser, Kinghorn, and Watson. Among these were good plants of *Kalosanthes miniata*, *Everlastings*, *Clerodendron fallax*, *Franciscea angusta*, *Rondeletia speciosa*, *Polygalas*, *Dipladenia crassinoda*, *Cape Heaths*, the double-flowered variety of *Tabernaemontana coronaria*, *Tetradlea verticillata*, *Epacris miniata*, *Ixora coccinea*, *javanica*, and *crocata*, *Vincas*, *Allamanda grandiflora*, small but very nicely flowered; *Stephanotis floribunda*, and *Sollya linearis*.

HELICHRYSUMS were exhibited by Mr. Green and Mr. Taylor. The varieties consisted of *Aphelexis humilis superba*, *A. purpurea grandiflora*, *A. sesamoides*, *A. s. superba*, *A. macrantha rosea*, *A. m. purpurea*, and *A. spectabilis grandiflora*.

KALOSANTHES.—The following were shown by Mr. Taylor and Messrs. Fraser, viz., *nitida*, *coccinea superba*, *Louis Napoleon Bonaparte*, *Beauty of Charonne* (a fine variety), *versicolor miniata*, *Angeline*, and *Phoebe*.

ORCHIDS.—These, as may be expected, were not near so good as they were in May and June. Mr. Franklin, gr. to Mrs. Lawrence, had the following:—

<i>Aerides affine</i>	<i>Oncidium Lanceanum</i>
" <i>odoratum</i>	" <i>papilio</i>
<i>Anguloa Glowesi</i>	<i>Phaius albus</i>
<i>Brassia Wrayana</i>	<i>Phalenopsis amabilis</i>
<i>Calanthe Masuca</i>	<i>Phalenopsis grandiflora</i>
<i>Cycnoches Egertonianum</i>	<i>Saccolabium Blumei</i>
<i>Epidendrum cinnabarinum</i>	<i>Sobralia macrantha</i>
" <i>radiatum</i>	<i>Vanda Batemanii</i>
<i>Odontoglossum hastatum</i>	" <i>Roxburghii</i>
" <i>Lawrenceanum</i>	

The flowers of the *Sobralia* in this group were extremely well coloured, large and handsome. *Epidendrum cinnabarinum* was in good condition, *Aerides odoratum* was large and beautifully flowered, with the exception of one or two spikes which were rather past their best. *Odontoglossum Lawrenceanum* is well known to be a mere variety of *O. Inseayi*. The White *Phaius* was well bloomed, but the flowers appeared to be suffering very much from exposure. *Saccolabium Blumei* had one long raceme of beautiful blossoms just in perfection, and another one was coming forward.

Mr. Williams, gr. to C. B. Warner, Esq., produced:—

<i>Aerides affine</i>	<i>Cypripedium barbatum</i>
" <i>maculosum</i>	<i>Lelia cinnabarina</i>
" <i>odoratum</i>	<i>Lycaste tetragona</i>
<i>Anacochilus xanthophyllus</i>	<i>Oncidium Bani</i>
<i>Anguloa Glowesi</i>	" <i>guttatum</i>
<i>Brassia Lancana</i>	" <i>leucociliatum</i>
<i>Calanthe Masuca</i>	<i>Phalenopsis grandiflora</i>
" <i>veratrifolia</i>	<i>Promenaea stapelioides</i>
<i>Cattleya Harrisonii</i>	<i>Saccolabium guttatum</i>
" <i>Loddigesii</i>	<i>Zygopetalum crinitum</i>

*Calanthe Masuca* was still in bloom and tolerably fresh, although it has been shown in this collection on several previous occasions. The *Loddige Cattleya* is a beautiful species, which is not so common as it deserves to be; and *Lelia cinnabarina* was much admired for the singularly beautiful colour of its flowers; and not the least attractive object in this group was the *Anacochilus*, whose handsome foliage was covered with a large bell-glass. The different species of *Aerides* were all good, more especially *A. maculosum*, which is rather a scarce kind.

A collection of 15 ORCHIDS was shown by Messrs. Rollisson, of Tooting. It contained:—

<i>Aerides odoratum</i>	<i>Dendrochilum filiforme</i>
" <i>affine</i>	<i>Oncidium guttatum</i>
<i>Bolbophyllum Henshalli</i>	" <i>Lanceanum</i>
<i>Cattleya Aclandiae</i>	<i>Phalenopsis grandiflora</i>
<i>Cymbidium aloefolium</i>	<i>Saccolabium guttatum</i>
<i>Dendrobium Wallichii</i>	<i>Sobralia Galeottii</i>
	<i>Vanda tricolor</i>

What is called *Bolbophyllum Henshalli* in this collection is the well known *Sarcopodium Lobbi*, introduced many years ago by Messrs. Veitch. Nurserymen at least, we think, ought to take some pains to name their plants correctly. The brown and yellow-flowered *Oncidium guttatum* was a fine plant and well bloomed, and the *Phalenopsis* was by far the best example of the kind at the whole Show, being beautifully flowered and altogether in first-rate condition.

Groups of 10 ORCHIDS were furnished by Mr. Carson and Mr. Woolley. Mr. Carson produced:—

<i>Angraecum caudatum</i>	<i>Odontoglossum hastatum</i>
<i>Brassia bracteata</i>	<i>Oncidium Lanceanum</i>
<i>Cecologya speciosa</i>	<i>Phaius albus</i>
<i>Dendrobium aduncum</i>	<i>Saccolabium Blumei</i>
<i>Dendrochilum filiforme</i>	<i>Stanhopea tigrina</i>

Of these, the *Stanhopea* was well flowered; it was one of those varieties with a great deal of brown in it. The White *Phaius* was scarcely sufficiently advanced in bloom; *Dendrochilum filiforme*, with its long green

tails, was an object of considerable interest. *Oncidium Lanceanum* was a handsome plant, and the delicate pink *Dendrobium aduncum*, though not showy, is nevertheless very beautiful in its way.

Mr. Woolley sent:—

<i>Aerides affine</i>	<i>Lycaste aromatica</i>
" <i>odoratum</i>	<i>Phaius albus</i>
<i>Cattleya citrina</i>	<i>Saccolabium guttatum</i>
<i>Forbesii</i>	<i>Sobralia macrantha</i>
<i>Epidendrum cinnabarinum</i>	<i>Vanda Roxburghii</i>

The *Phaius albus* in this group was extremely well bloomed, the whole of the blossoms being in the greatest possible perfection, a condition in which this fine species is seldom found. None of the plants of White *Phaius* in the other collections were half so fine as this was. *Cattleya citrina* was margined at the points of the flowers with white, a circumstance which we have not before remarked. The *Saccolabium guttatum* was a good plant with five racemes; but they were scarcely so long or so fine as we have seen them. The two species of *Aerides* were also well flowered.

Collections of six ORCHIDS were produced by Messrs. Green, Ivison, and Kinghorn. Among them were *Oncidium Lanceanum*, *rosum*, and *luridum*; *Stanhopea tigrina*, *Dendrobium nobile*, *Gongora maculata*, *Aerides odoratum*, *Miltonia spectabilis*, *Epidendrum crassifolium*, *Calanthe veratrifolia*, *Sobralia macrantha*, *Saccolabium guttatum*, *Phalenopsis grandiflora*, *Lacæna bicolor* misnamed *Acineta Barkeri*, *Vanda tricolor*, and *Aeropora Loddigesii*.

SPECIMEN ORCHIDS consisted of a fine plant of the still somewhat scarce *Aerides quinquevulnera*, a beautiful species, but in this instance hardly sufficiently advanced in bloom, from Messrs. Veitch; and *Saccolabium Blumei* from Mr. Franklin, gr. to Mrs. Lawrence.

Of new or rare ORCHIDS, Mr. Franklin had a rather pretty *Saccolabium*, and a *Galeandra* which did not appear to be different from *G. Funkiana*, which is itself only *G. Baueri*, with a trifling variation in colour. Under this head Mr. Carson showed *Brassavola acaulis*, and Messrs. Jackson, of Kingston, *Epidendrum verrucosum*. The handsomest rarity of all, however, was a flowering plant of the magnificent *Disa grandiflora*, a terrestrial Cape species, which few in this country have been able to keep alive, much less flower. Nevertheless it was exhibited on Saturday last in very good condition by Mr. Hume, gr. to R. Hanbury, Esq., of the Poles, Hertfordshire.

CAPE HEATHS were well flowered and in fair condition, considering the season. Collections of 10 were shown by Mr. Smith, gr. to W. Quilter, Esq., of Norwood; Mr. May, gr. to Mr. Lawrence; and Messrs. Fairbairn and Fraser. Plants in 11-inch pots came from Messrs. Roser, Watson, and Over, and small groups were also furnished by Mr. Taylor, gr. to J. Coster, Esq.; and Mr. Clarke, of Streatham Nursery, Brixton Hill. In the different groups were examples of *mutabilis*, *Cavendishi*, *Parmentieri rosea*, *Massoni*, *tricolor depressa*, *t. Leeana*, *t. speciosa*, *ferruginea*, *jubata*, *inflata alba*, *obovata*, *Juliana*, *metulifera bicolor*, *Irbyana*, *Aitonii turrida*, *retorta major*, *infundibuliformis*, *ampullacea*, *gemmaifera*, *jasminiflora alba*, *Savileana*, *eximia*, *depressa*, and other well known sorts.

Specimen HEATHS consisted of a very fine example of *tricolor* Holfordi, not large, but altogether in admirable condition, from Mr. Smith, gr. to W. Quilter, Esq.; and a charming bush of the beautiful *metulifera bicolor*, from Mr. Ivison, gr. to the Duke of Northumberland at Syon. There were also one or two others; but they were inferior to these.

ROSES (cut) were shown in abundance, and maintaining as they did their freshness and fragrance well, they formed, as they generally do in July, a highly attractive feature of the show. Collections of 50 varieties were produced by Messrs. Lane, Paul, Francis, Clarke, and Wilkinson, and of 25 varieties by Messrs. Terry, Evans, Rowland, Busby, Sage, Munro, Bucktrout, and Gair. Among the different exhibitions we remarked excellent blooms of *Provins* or *Cabbage*: *Madame Henriette*, large rosy pink; *Cristata*, bright rose. *Gallica*: *Bizarre* Marbré, mottled crimson; *Boule de Nanteuil*, reddish crimson; *Kean*, brilliant carmine; *grandissima*, bright crimson; *Lattie*, mottled crimson; *Shakespeare*, shaded deep crimson; *Triomphe de Janssens*, bright crimson. *Alba*: *Duc de Luxembourg*, white, with a blush centre. *Hybrid China*: *Brennus*, bright carmine; *General Jacquemot*, large shaded lake; *Lady Stuart*, blush. *Hybrid Bourbon*: *Chénédol*, dark crimson; *Comtesse Molé*, pink; *Comtesse de Lacépède*, blush; *Coupe de Hébé*, pink; *Great Western*, red; *Paul Perras*, pink; *Paul Ricaut*, deep carmine. *Damask*: *Isémé*, white; *Madame Zoutman*, creamy white. *Hybrid Perpetual*: *Aman-dine*, pink; *Baronne Halez*, fine crimson; *Baronne Prevost*, very large pink; *Dr. Marx*, rosy carmine; *Caroline de Sausal*, beautiful blush; *Clementine Seringe*, large shaded blush; *Corbet*, bright pink; *Duchess of Sutherland*, beautiful blush; *Earl Talbot*, deep rosy pink; *Géant des Batailles*; *General Negrier*, blush; *Jacques Lafitte*, pale carmine; *Comte de Paris*, pale carmine; *Madame Trudeaux*, beautiful carmine; *Miss Pepin*, large delicate pink; *Queen*, rose; *Robin Hood*, rosy pink; *Soleil d'Austerlitz*, carmine; *William Jesse*, crimson, tinged with lilac; *Comte Robinsky*, bright crimson. *Bourbon*: *Souvenir de la Malmaison*, creamy white, with a blush centre; *Acaïde*, French white; *Bouquet de Flore*, rose; *Souhait*, deep crimson; *Dupetit Thouars*, ditto; *Leveson Gower*, carmine; *Paul Joseph*, purplish crimson. *Tea*: *Devoniensis*, creamy white; *Niphotos*, pale lemon; *Bougère*, rose; *Elise Sauvage*, yellow; *Saffraot*, fawn. *Noisette*:

*Lamarque*, pale lemon; *Aimée Vibert*; and *Solfaterre*, sulphur.

Messrs. Lane showed boxfuls of *Géant des Batailles* and *Paul Ricaut*, both in beautiful condition, more especially the latter, which is one of the best *Roses* we have; Messrs. Paul had a seedling Moss which is distinct and promises to be an acquisition.

SINGLE SPECIMENS.—In addition to those named under the head of Orchids, *Cape Heaths*, &c., we have to mention an admirably managed *Kalosanthes coccinea* from Mr. Watson, gr. to Mrs. Tredwell; and a magnificent plant of *Ixora javanica* from Mr. May, gr. to Mrs. Lawrence. This could not have been less than 5 feet high and 4 feet through, and it was most beautifully flowered. It appears, however, to have been entirely overlooked by the judges, for it received no award. The so-called *Nepenthes Hookeriana* came from Messrs. Rollisson; *Mitrisia coccinea*, one of the best flowered plants we have seen of this species, from Messrs. Lee; and a huge bush of the Sensitive Plant (*Mimosa pudica*), from Mr. Ivison.

NEW PLANTS.—The most important of these was the beautiful *Ceratostema longiflorum*, from Messrs. Veitch, mentioned in another page. The same nurserymen also sent *Philesia buxifolia* and a pretty hybrid *Veronica* called *variegata*. It was in the way of *V. Andersoni*, but the flower-spikes were tipped with pink instead of violet. Messrs. Lee sent *Begonia Prestonensis*; Mr. Selkirk, of Porters, near Barnet, furnished a large specimen of the handsome *Lapageria rosea*, producing some dozen flowers; and Messrs. Henderson sent *Gaylussacia pulchra*, a promising plant from their nursery in Wellington Road, along with a variegated *Ananassa*, *Hoya Sieboldi*, and one or two other plants; Mr. Taylor showed the common *Arum Dracunculoides* in this class, and Mr. Green, an *Ixora* called *neriifolia*.

MISCELLANEOUS COLLECTIONS OF VARIEGATED PLANTS were contributed by Messrs. Rollisson, Lee, and Williams, whose groups, owing to the variety and different habits of the plants of which they were composed, were extremely interesting. Among them we remarked the various kinds of variegated Orchids, fine specimens of *Cissus discolor* and *Coleus Blumei*; *Chroststylis marmorea*, *Marantas*, *Caladiums*, *Dracænas*, *Crotons*, the variegated *Pandanus* or *Screw Pine*, *Hydrangea japonica variegata*, *Pavetta borbonica*, *Eleoedendron venosum*, *Diocorea discolor*, and other plants, most of which are described at p. 435 of our volume for last year. Other miscellaneous subjects consisted of cut blooms of *Iris*es and *Gladioli* from Messrs. Bass and Brown, *Petunias* and *Lobelias* from Mr. Salter and others; some *Verbenas* from Messrs. Mitchell, of Brighton, and *Tropæolum Shurmanianum* and other plants from Messrs. Jackson, of Kingston.

HOthouse FERNS were shown, intermixed with Orchids, by Messrs. Ivison and Woolley. The sorts, with perhaps one or two exceptions, did not appear to be different from those mentioned by us in previous reports.

Collections of *ACHIMENES* were produced by Mr. Wiggins, gr. to E. Beck, Esq., of Isleworth; Mr. Uzzell, gr. to the Duchess Dowager of Northumberland; Mr. Woolley, gr. to H. B. Ker, Esq.; Mr. Godfrey, gr. to R. Dawson, Esq.; and Mr. Marsh, gr. to H. Lee, Esq. The different varieties in these groups were *grandiflora*, *longiflora major*, *l. alba*, *coccinea major*, *patens major*, *Escheri*, *picta*, *rossa major*, *Tugwelliana*, *Mountfordi*, *Liebmanni*, and the white blossomed *Margaretæ*. Mr. Beck showed a very fine plant in a slate pot of *A. Baumannii hirsuta*, as a single specimen.

PELARGONIUMS.—These were mostly small plants, which is usually the case at the third meeting. They were, however, generally fresh, and tolerably numerous, there being six collections of ordinary kinds, and five groups of *fancies*. Private growers: 1st, Mr. Borham, gr. to Mrs. Maddford, of Staines, with large well-bloomed plants of the following varieties: *Ajax*, *Pearl*, *Alonzo*, *Norah*, *Constance*, *Mont Blanc*, *Magnificent*, *Star*, *Rowena*, *Centurion*, *Conspicuum*, *Rosamond*; 2d, Mr. Robinson, gr. to J. Simpson, Esq., *Pimlico*, with *Ariadne*, *Old Story*, *Pulchrum*, *Ophelia*, *Novelty*, *Butterfly*, *Lord Mayor*, *Rosamond*, *Mochanna*, *Constance*, *Salamander*, *Rowena*; 3d, C. P. Lochner, Esq., *Paddington*. Nurserymen: 1st, Mr. C. Turner, with *Optimum*, *Old Story*, *Exactum*, *Monteith*, *Alonzo*, *Plantagenet*, *Esther*, *Dobsoni*, *Rosa*, *Cristine*, *Elise*; 2d, Mr. Dobson, Isleworth, with *Ganymede*, *Ajax*, *Star*, *Magnificent*, *Commander*, *Rosa*, *Jupiter*, *Loveliness*, *Marginalum*, *Ambassador*, *Exhibitor*, *Mont Blanc*; 3d, Mr. Gaines, Battersea. *Fancies*: 1st, Mr. C. Turner, with R. Cobden, *Madame Rosati*, *Electra*, *Delicatum*, *Mirandum*, *Jenny Lind*; 2d, Mr. Gaines, Battersea, with Hero of Surrey, *Vandyke*, *Lucy*, *Multiflorum*, *Advancer*, *Celestial*; 3d, Mr. Ambrose, of Battersea, with *Madame Sontag*, *Defiance*, *Delicatum*, *Perfection*, *Erbescens*, *Barbette*. Private Growers: 1st, Mr. Robinson, with R. Cobden, *Fairy Queen*, *Celestial*, *Delicatum*, *Princess Galitzin*, *Perfection*; 2d, Mr. Miller, Edgeware Road, with *Orestes*, *Formosissimum*, *Queen*, *R. Cobden*, *Caliban*, and *Princess Galitzin*.

OF SCARLET PELARGONIUMS, Mrs. Conway, of Earl's Court, Brompton, had a collection consisting of the following kinds:—*Symmetry*, *Commander-in-Chief*, *Cerise Unique*, *Tom Thumb*, *Royalist*, and *Beauty of the Parterre*.

CAPE PELARGONIUMS were furnished by Mr. Bragg, of Slough. Among them were *Ardens*, *glaucum*, *Blandfordianum*, *bipinnatifidum*, and *fulgidum*.

FUCHSIAS.—Of these there was a fine bank, and most



of them were well grown and flowered, more especially those from Mr. Bousie, gr. to the Right Hon. H. Labouchere, whose plants were pyramids of bloom from bottom to top. The sorts were Expansion, Voltigeur, Azax, Beauty of Deal, Verio, and Cartoni. Mr. Salter, of the Versailles Nursery, Hammersmith, had the next best group. His plants were mostly standards, with their heads trained down, parasol fashion, over wire trellises; one of them was elevated on a tree stump, the pot being completely hid by the branches falling thickly over it. His sorts were Rosa Quintal, Scarlatta reflexa, Corallina, Exoniensis, Comte de Beaulieu, and Beauty of Dalston. Mr. Wiggins, gr. to E. Beck, Esq., sent Orion, Pearl of England, Fair Rosamond, Don Giovanni, Rosa Quintal, and Psyche. Mr. Godfrey, gr. to R. Dawson, Esq., bad Voltigeur, Pearl of England, Miranda, Nil Desperandum, Princes, and Conspicua. Messrs. Fraser contributed Alpha, Pearl of England, Voltigeur, Orion, Miranda, and Prince Arthur.

PINKS were produced by Mr. Bragg, of Slough, and Mr. Parker, of Dalston. Mr. Bragg also showed some Ranunculuses; but they were not in very good condition.

Of SEEDLINGS, Messrs. E. G. Henderson sent several, the principal being fancy Pelargoniums; Morning Star is a very attractive kind, of good form, purple and pure white; Cloth of Silver is a very free-flowering, light variety, white with light lilac spot on top petals. Mr. Ambrose, Battersea, sent Eminent, a smooth round flower of full size, rich crimson purple, marked with white, and white throat; the same exhibitor also showed several Petunias, which were round, flat, and rich in colours. Of Fuchsias there were several; Banks's Vanguard is a rich dark variety, with crimson tube and sepals, the corolla being deep purple; it is free, of good close habit, and opens well; Clio, white with deep crimson corolla, is large; Magnifica is crimson, with rosy purple corolla, fine in form and habit; Omega is crimson, with lilac corolla, new in colour; and Miss Hawtreay is a large, showy, light variety, handsomely reflexed; Macbeth is a large, bold, dark flower. These were raised by E. Banks, Esq., and exhibited by Mr. Turner.

## Reviews.

*Popular Physical Geology.* By J. B. Jukes, M.A. Reeve & Co. Square 12mo. Pp. 359. With coloured plates.

For those who are unacquainted with geological science this volume appears to us remarkably well adapted. Its language is clear; its matter selected with judgment; and the illustrations by which it is accompanied are such as could only have been prepared by an artist who, like Mr. Dunoyer, combines much skill as a draftsman with a perfect familiarity with practical geology.

The author having been long employed on the Irish Survey, his examples of structure are naturally taken more from Ireland than any other country; and on this account his volume will be most especially welcome to tourists in the sister island, to all whom we strongly recommend it. They will find it not only instructive but pleasant reading; and as it has a good index, whatever of importance it contains will be readily found.

The following able remarks upon practical geology have so much interest, independently of the subject matter to which they belong, that they afford a favourable opportunity of illustrating the style of the author of the very useful volume before us.

"The scientific geologist, eager in the search after his own grand generalisations, has hitherto hardly deigned to afford that amount of practical assistance to the arts and uses of life which the science is capable of rendering. The science of geology must be practised as a profession, must become the means of subsistence and the road to wealth, as well as distinction, before it can give all the use it is capable of, to society. It is alike idle and absurd to lament this necessity—it is a law of our nature. Advice on practical matters, when given gratuitously, is acted on solely at the risk and on the responsibility of him that takes it; when afforded professionally and paid for, it is both more carefully and scrupulously given, and is put into practice on the responsibility of him that gives it. If it be bad, the giver suffers in his professional prospects at all events, if in no other way. Sound geological advice and opinion on practical points, therefore, will only begin to have a general existence when a body of professional geologists shall have been some time in existence. Viewed in this light, the general mistrust of geologists among practical men is warranted.

"There is, however, another perfectly unwarranted and ignorant reason, both for the general mistrust of, and for occasional instances of blind confidence in, the practical value of geological investigation, and this is a total misconception of the methods of geological research. People often fancy that the geologist either does or ought to possess some mysterious faculty of piercing with his mind's eye deep into the bowels of the earth, and of telling at once, from a glance at the surface of any particular spot, the nature and position of the materials below it. Take a geologist to any district he has never seen before, of which he has never heard or read a description, never seen a map, and which is quite removed and at a distance from any place he does know, and he would, 10 to 1, be able to say or to know just as little about what lay below the surface as any other man. The only difference between him and another person would be, that he would at once know how to set about

obtaining the requisite information. Practical geology is entirely experience: almost every farmer, every brick-maker, every stone-mason, quarryman, collier, and miner is a practical geologist so far as his experience goes. Within that limit each of those classes of men are commonly better practical geologists than the most scientific and learned of the race. The difference between them and the real geologist is that his experience is greatly wider and more varied than theirs.

"The value of a really scientific and practical geologist is, that he has been able to correct the errors that naturally arise from local and partial observation,—that he is acquainted with the real nature and the method of the production of the things with which he has to deal,—and that, besides the probabilities, he is acquainted with the possibilities of any particular case (after adequate investigation), and that he will be able to give an authoritative and trustworthy opinion both as to what probably will be found, and as to what certainly will not be found in any particular locality."

"Geological knowledge, like every other kind that is worth having, is of slow growth, and can only be acquired by hard labour. Any one who chooses, in commencing any practical operation below the surface of the ground, to rely on his own judgment and experience, must run the risk of finding that he has not worked hard enough to acquire a sufficient stock of those valuable articles; and to find, to his cost, that had he purchased the advice of those who had, he might have saved money in the end. This conviction will gradually gain strength and extension in the public mind, until a set of practical geologists gradually come to rely on it for their subsistence in life. A certain degree of unskillfulness and incapacity may characterise this class of men at first, but it will gradually disappear with more extended experience, and they will ultimately acquire, and become worthy of, the confidence of the public. When that time arrives, no prudent man will even venture to open a gravel-pit or a clay-pit, or to dig a foundation for his house, or to lay out the drains on his land, or even perhaps to select the manure for his farm, without first paying for geological advice. In the majority of instances he will find his advantage in it. Even at the present day the opinion is gaining ground among all mining men, that no mining operations should be tried on unexplored ground without geological advice. I have elsewhere remarked, that even within the last 20 years I have known, within my own experience, as much money expended or thrown away in abortive searches after coal, in places where geologists could at once have declared the impossibility of finding it, as would have paid the cost of the entire geological survey of the United Kingdom."

BOOKS & C. RECEIVED.—*Lucas's History as a Condition of Social Progress* (Murray's Railway Reading), a clever lecture, well worth reading.—*Samuel Johnson by Thomas Carlyle* (Chapman and Hall's Reading for Travellers), a reprint from Fraser's Magazine. We are glad to see that it is to be followed by other biographical essays from the pen of the same original thinker.—*Mercantile and Maritime College in the City of London* (Smith and Elder), a pamphlet.—*The Botany and Geology of Malvern* (Bogue), a new and much improved edition of Mr. Lees' useful guide to the natural history of the Malvern Hills.—*Table Turning and Table Talking* (Vizetelly), a collection of letters, tales, reports, and opinions upon the mania of to-day. One chapter is devoted to the accidents and dangers that are said to have been experienced by zealous operators. It is a pity that Faraday's letter to the *Times* has not been added as an appendix to the marvels described in this book.

## Garden Memoranda.

LAUDERDALE HOUSE, HIGHGATE, THE RESIDENCE OF J. YATES, ESQ.—This delightful villa is said to have been built very many years ago by one of the late Earls of Lauderdale. It is in the Italian style, with an open covered colonnade on the west side, looking on to a small but beautifully kept lawn, cut off from the rest of the garden by a broad terrace-walk and wall, which extend all along the south front of the house. On the north side of this lawn is a small greenhouse, with Vines up the rafters, a walk covered with Roses trained over wire arches, and in the centre of the Grass plat we remarked a good specimen, in a tub, of *Fourcroya gigantea*, set out there during the summer months. A flight of steps, about the centre of the terrace wall just mentioned, which is ornamented at short intervals with marble vases, leads to a lower garden, in which are some fine specimens of deciduous and evergreen trees and shrubs, and two small pieces of lawn with a series of flower beds in their centres. Proceeding down the main walk, which here takes a turn round a fountain and a basin, we arrive at a second flight of steps, which land the visitor at the top of the kitchen-garden, the whole of which, as well as the ornamental grounds just passed through, slope considerably to the south.

Being extremely fond of Cycads, Mr. Yates has built in this part of the grounds a round or rather octagonal house, which is set apart almost exclusively for their cultivation. It has wooden rafters and uprights, but the sashes have galvanised iron stragulas, in which the glass was at first fixed with marine glue; but that not being found to answer, they are now for the most part glazed with putty in the common way. The chief ornament of this collection at present is a fine *Cycas revoluta*, now bearing fruit. The appearance which it presents, being of somewhat rare occurrence in Europe, is best known to

botanists from Sir J. E. Smith's description, in the sixth volume of the *Transactions of the Linnean Society* of one which seeded at Farnham Palace, in 1799. The fruit-bearing head, in Mr. Yates' specimen, consists of more than 150 fronds, or spadices, covered with a fawn-coloured tomentum, and still closely folded over one another, so that the whole has the form of a flattened spheroid. These fronds have already, at certain times, opened partially under the influence of the sun's rays. When they are mature, they will be fully expanded and will show the ripe orange-coloured drupes which grow upon them, and are the seeds of the plant. This seed-bearing head is surrounded by a circle, 8 feet in diameter, of 50 bright-green leaves, the growth of the last year. Immediately below this is a similar expansion of 53 leaves, produced in 1850, and no less vivid in their aspect. Then comes a succession of dead yellow leaves of still older date, hanging perpendicularly around the stem, and preparing to separate by their natural articulation. The period of the life of one of these leaves appears to be five years, at the end of which term the last act of life is the closing of the vessels and separation from the stem. Beneath the bases of these successive circles of leaves may be observed the remains of a seed-bearing head, which was developed in 1845. The trunk of this plant is about 4 feet in height. Besides *Cycas revoluta*, Mr. Yates has in the same house *Cycas inermis* and *C. circinalis*, and the following genera and species, belonging to the same order, some of them being very rare in Europe; viz., *Dion edule*, *Macrozamia spiralis*, *M. Preissi*, and *M. eriolepis*; *Encephalartos Lehmanni*, *E. brachyphyllus*, *E. caffer*, *E. lanuginosus*, *E. horridus*, and *E. horridus* var. *latifrons*; *Zamia Skinneri*, *Z. muricata* var. *pieta*, *Z. Fischeri*, *Z. furfuracea*, *Z. integrifolia* (male and female), *Z. premorsa*, *Z. Loddigesii*, *Z. pumila*, *Z. calocoma*, *Z. Yatesi* (male and female), *Z. angustissima*, and *Ceratozamia Mexicana*.

The seed of *Cycas circinalis* is said to be eaten in the Moluccas. This species has as fine foliage as any in the genus, and it is one of very rapid growth. Among *Encephalartos*, was a remarkably fine plant of *horrida*, which fruited here two years ago. *Macrozamia spiralis* is just lately imported from New Holland, where it is said to attain the height of 30 feet. There were some fine plants of *Dion edule*, whose great seeds are stated to furnish a kind of arrow-root in Mexico; the above, with the Coffee tree, Screw Pine, some Musas, and other plants, made altogether an extremely interesting houseful of plants very rarely met with, except in great establishments.

The kitchen garden was well stocked with vegetables, among which there were plenty of Potatoes without any signs of disease. A border of Strawberries was just coming into bearing. It was planted with Myatt's Victoria and Keens' Seedling. The former suffered greatly last winter, while the latter escaped unhurt. Other fruits, with the exception of Currants and Gooseberries, are stated to be a failure in this neighbourhood.

## FLORICULTURE.

ROSES FOR WINTER-BLOOMING.—A selection for this purpose should be made from the Tea and Bourbon families, on their own roots or budded very low. Presuming the plants bought from the nursery are in the small pots they are generally grown in for sale, they should at once be placed into those a size larger, carefully and freely watered, during this and next month, cutting off all the flower-buds they may show before September. About the middle of the latter month shorten the strongest shoots, and thin out the slender ones, turn the plants out of the pots, depriving them of some of the soil, and replot in those a good size larger, using a compost of turfy loam, sand, and manure in about equal proportions; they also like a little leaf-mould; put several pieces of broken crock in the bottom of the pot, then a portion of soil; place the plant so that its surface roots shall just be covered, and then filling with the soil; put them in a situation partially shaded—water sparingly, till they begin to grow—then expose them fully to the sun, and water freely every day. There they may remain till the middle or end of October, when they should be removed to a pit to prepare them for flowering. Previous to their removal, the pots should be washed, and the plants neatly tied up. Where charcoal can be had, it will be found of great utility in the pot culture of Roses, broken to the size of nuts and about one-fifth mixed with the soil; the roots delight to ramble through it, and the foliage becomes of a richer and darker green; the surface of the soil must have frequent stirrings. The plants must be carefully examined, and whenever infested by green-fly, the latter should be destroyed by tobacco smoke. Roses in pots are wonderfully benefited by a watering of manure-water now and then. This water is very easily prepared. Let droppings from the stable or cow-house be put into a large tub or barrel, with water kept over them for a week or two, occasionally stirring it up; the water may then be poured or drawn off for use. Gumbo water also makes a good manure. A quarter of a pound of gumbo in three gallons of water, frequently stirred before using, will be found very nourishing; indeed, one pound to 16 gallons will be strong enough to use by the inexperienced, for if used much stronger than I have stated, it would injure plants in pots. In the open ground any



of these liquids may be used stronger and rather more frequently. *J. H.*

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY, June 30.—There was a good show on this occasion, and it was well attended. The usual miscellaneous stove and greenhouse collections were supplied, as were also a few Orchids, and some well grown Heaths. Roses were very fine. Exhibitions were sent by Messrs. Paul, Francis, and Ponsford; and there were seven stands of them from private growers, A. Rowland, Esq., being first, and J. Edwards, Esq., second. Pinks were in splendid order from Messrs. Turner, Bragg, Ward, Baker, Hardstone, Ellis, &c. Some pretty stands of Ranunculuses were staged. Pelargoniums were middling. Mr. Turner was first, Mr. Dobson second. For Fancies, Mr. Turner was first, and Mr. Ambrose second. Some seedling Pinks and Verbenas were rewarded with First Class Certificates. Two good Antirrhinums in a cut state were sent by Mr. Dobson. They were named Sulphureum and Beatrice.

SCOTTISH PANSY SOCIETY.—The ninth annual competition of this Society was lately held in Dunfermline, when the following principal prizes were awarded:—Nurserymen's Class for the best 24 Blooms: 1st, Messrs. Downie & Laird, with Beauty, Robert Burns, Flower of the Day, Lady Emily, Yellow Climax, Elegant, Marchioness of Lothian, Duke of Perth, Great Britain, Royal Visit, Supreme, Lady McKenzie, Mrs. H. B. Douglas, Sir Philip Sidney, Queen of England, Zebdi, Mirror, Round Table, Sir J. Cathcart, France Cycote, St. Andrew, British Queen, Duke of Norfolk, and Sovereign; 2d, Mr. Rutherford. For the best 12 Blooms classed, viz., four yellow ground flowers, four white ground, and four self (open to nurserymen and gardeners alike), there was a good competition. The first prize was awarded to Mr. Stenhouse, gr., Pitfirrane, for Juventa, Sir J. Paxton, Thibbe, Lady Emily, Royal Visit, British Queen, France Cycote, Mrs. Beck, Flower of the Day, Duke of Perth, St. Andrew, and Yellow Climax; 2d, Mr. Henderson, gr. to G. K. Sturwidge, Esq., with Gliff, Sir J. Cathcart, Juventa, Supreme, Royal Visit, Miriam, Miss Talbot, Euphemia, Duke of Perth, Flower of the Day, Sambo, and St. Andrew. In the Gardeners' and Amateurs' Class for the best 18 blooms, the 1st prize was voted to Mr. Henderson, for Duke of Perth, Gliff, Royal Visit, Juventa, Queen of England, Flower of the Day, Miss Talbot, Sambo, Blanche, Duke of Norfolk, Mirror, Polyphemus, Pompey, Supreme, St. Andrew, Lord Jeffrey, Yellow Climax, and a Seedling. 2d, Mr. Shearer, gr. to the Marquis of Tweeddale. For the best 12 Blooms (Gardeners' and Amateurs' Class): 1st, Mr. Martin, with Duke of Perth, Miss Talbot, Royal Visit, Marchioness of Lothian, Miriam, Robert Burns, Lady Emily, Juventa, Sovereign, France Cycote, Lady Mackenzie, and Magnificent. For the best 6 Blooms (Gardeners' and Amateurs' Class): 1st, Mr. Whamond, with exceedingly well grown flowers of Royal Visit, Gliff, Flower of the Day, Juventa, Countess of Strathmore, and Duke of Perth. Seedlings: A Certificate was awarded to a white ground flower named "Beauty," from Messrs. Downie & Laird; there was also a white ground flower produced by Messrs. Paton & Small, which was recommended to be brought forward again. Mr. Gowanlock contributed a tray of seedlings.

PELARGONIUMS: *R.* Your plants shed their bloom because you do not allow them to make their growth sufficiently early; they should not be growing during the time they are in bloom. The wood should be well ripened, and the pots full of root, before the first flowers open. When the first trusses expand, shade carefully, and keep bees out of the house, giving plenty of air. If the plants can be removed to a north house it will prolong their bloom considerably.—*J. H.* Nonesuch is not a Fancy.

#### SEEDLING FLOWERS.

ACHIMENES: *N.E.D.* Very pretty; but too like sorts we already possess.

CALCEOLARIAS: *Z.Z.* Too much withered up for us to be able to offer any opinion on them.—*X.Y.Z.* Not worth keeping, as there are better coloured sorts in the same way already in cultivation.

PANSY: *Z.Z.* Uncommonly dark, but, being packed with a few bits of dry moss, its other characteristics are indeterminate.

PELARGONIUMS: *W.J.S.* A beautiful rosy pink variety, which we should like to see again.—*R.S.* Your flower had dropped to pieces before it reached us.—*R.A.* A curiosity, certainly; but that is all.

PINKS: *X.Y.Z.* 55 may do; 35 but so-so. First package, 25, 36, 30, 16, 19 not in good condition; 24, 21, 18 have some promise; 55 is by far the best. 69, very smooth and stout in the petal, with purple lacing, which is broken, the guard petals being devoid of it altogether; it will therefore not make a show flower. 71, small dark flower; centre petals too numerous and confused. 67, rough on the edge, and otherwise second-rate. 70, smooth neat flower, but under-sized. 72 is the best; flower full, but there are too many small petals in the centre, which is confused. It should be tried again.

POTENTILLAS: *R. & B.* We see no reason to alter the opinion formerly given on your seedlings. They are certainly all very fine, more especially 21, which measures about 2 inches in diameter.—*B. & B.* Scarcely so fine as those just noticed; 38 is, however, a large clear yellow, and 25 a good orange yellow, tipped with brown.

ROSE: *J.J.* A deliciously fragrant flower, full, many shades darker than Boule de Nantuel, and of the richest hue.

#### Miscellaneous.

*Chloroforming Bees.*—The quantity of chloroform required for an ordinary hive is the sixth part of an ounce; a very large hive may take nearly a quarter of an ounce. My mode of operation is as follows:—I set down a table opposite to, and about 4 feet distant from the hive; on the table I spread a thick linen cloth; in the centre of the table I place a small, shallow, break-fast plate, which I cover with a piece of wire gauze, to prevent the bees from coming in immediate contact with the chloroform; and into this plate I pour the chloroform. I now quickly and cautiously lift the hive from the board on which it is standing, set it down on the top of the table, keeping the plate in the centre; cover the hive closely up with cloths, and in 20 minutes or so, the bees are not only sound asleep, but, contrary to what I have seen when they are suffocated with sulphur, not one is left among the combs; the whole of them are lying helpless on the table. You now remove what honey you think fit, replacing the hive in its old stance, and the bees, as they recover, will return to their domicile. A bright, calm, sunny day is the best; and you should commence your operations in the morning before many of them are abroad. *D. Smith, in Edinburgh Evening Courant.*

#### Calendar of Operations.

(For the ensuing week.)

##### PLANT DEPARTMENT.

ALTHOUGH we do not recommend the propagation of plants in private gardens requiring much care to bring up, as such can be more cheaply purchased at the

nurseries, yet there are some things of which a stock of home-raised plants should yearly be made. Among these, the propagation of Pelargoniums and other soft-wooded plants will claim attention at the present time. As soon, therefore, as the kinds of Pelargoniums desired to be propagated are out of bloom, cuttings should be taken off, inserted singly in thumb pots, and plunged in a cold frame; shade them slightly by day, and draw the sashes down each night, except it rain heavily. The old plants, after having their shoots cut back to two or three eyes each, should be placed in an open place, to break before they are potted. Cuttings of other soft-wooded plants will require to be kept somewhat closer until they commence growing; but it will be found that cuttings of the above description make much stronger and healthier plants when struck in as cool a temperature as is consistent with the development of roots. Remove from the conservatory or show house those plants which show by their faded blooms that they are past their best; their presence longer would detract from the freshness essential to beauty and good order.

Achimenes, Gloxinias, &c., out of bloom, may be removed to a pit to ripen their bulbs; but only sufficient for a stock next season need be kept. Clerodendrons, &c., in the same way, may be transferred to Vineries, or any where to obtain a dry cool temperature for the same purpose. At no period of the year do Heaths and hard-wooded plants in general require more care than at the present time, more particularly such as have only recently been potted; to keep the old ball sufficiently moist to preserve the plant in health under the present high temperature, without getting the new soil in a sour state, requires great nicety in watering, supposing the plants to be under glass; and those placed out of doors should be narrowly watched, to preserve the same ends. At this season all the air possible should be given to greenhouse and most stove plants, keeping it on all night.

##### FORCING DEPARTMENT.

PINERY.—The plants selected in the spring, for autumn and winter fruiting, will be now showing fruit, and if they are provided with a pit to themselves will require (supposing the bottom heat steady), but little attention for some time, except slight shading, plenty of air, and a liberal allowance of water. As the syringe is plied pretty freely at this season, confine its use to the surface of the bed and walls of the house; and on no account let the plants while in bloom be wetted; some Pines, having large flowers, as the Jamaica, &c., frequently cut up with black spots in their middle, although they are apparently sound outside; this arises from a small quantity of water passing through the bloom to the fruit cells, and causing the latter to decay. Let succession plants have abundance of air day and night, to encourage a stocky growth; where it is intended to plant out the fruiting stock for next year, a sufficient quantity of loam, peat, and sand, if the loam is heavy, should be in readiness for use, as directly the present crop is cut the stumps should be cleared out, and either all or part of the soil removed, according as it may appear exhausted.

VINERY.—Finish off the thinning of late Grapes, keeping former directions in view respecting the bunches being well tied out and thinned. In hot weather the red spider will at times increase so fast as to be kept down with difficulty, especially if the Grapes are ripe, or nearly so; recourse must be had to sulphur on the walls, hot-water pipes, &c., as before advised; and the sulphurator will be found effective in bad cases by throwing a cloud of fine dust over the infested foliage, for which purpose the sulphur should be previously well dried. Proceed to pot Strawberries for forcing, as the runners fill their pots with roots; pot them in 6 or 7 inch pots, using rich loam of medium texture, and well rotten dung; drain well.

##### FLOWER GARDEN AND SHRUBBERY.

Baskets, vases, &c., will require an occasional regulating; those having plants in them requiring to be tied out should be examined for the purpose, afterwards they may be allowed to grow in a free style. Convolvulus, Maurandias, Lophospermums, &c., after being pegged over the surface of the soil, should be left to grow over the sides of the vase, or to ramble through the more formal plants which fill up the centre. Baskets, cases, or other contrivances containing plants in bloom, will require frequent attention to keep them gay; remove everything in the shape of decayed blooms or leaves, and take advantage, when a number of fresh plants is wanted, to effect a change in the arrangement, which will be found more pleasing than adhering to one plan; for the same reason, plants under verandahs, or arranged for effect near the house, when undergoing revision for the purpose of adding fresh plants, will be more interesting when variety in arrangement, or in the kind of plants, is introduced as often as they are changed. Continue to tie up and train plants still advancing in growth, as Hollyhocks, Dahlias, &c., or high winds will disfigure them. Remove the decayed bloom from Roses, as they fade; the Perpetuals should, at the same time, be slightly cut back; and manure-water given in dry weather, to encourage them to a second bloom. Propagation must now be commenced in earnest, taking those things first which require the longest time to become established plants—as Pelargoniums, Lantanas, and the like; and the rest in due time.

##### KITCHEN GARDEN.

Follow up the planting-out of winter Broccoli, &c., as ground can be got in readiness. Should the Potato

disease fairly set in (which we trust it will not), an extra stock of the above should be planted in every vacant space, to act as a substitute. Swedes are a valuable vegetable in the spring when blanched, and an increased breadth of Turnips should be sown, as likewise a crop of horn Carrots to draw young. Gardeners should impress the necessity of cottiers and others providing themselves with any description of winter greens which may be procurable, and planting every nook they have with them, interlining the Potatoes, if need be, as well. Attend to advancing crops as previously directed.

#### STATE OF THE WEATHER NEAR LONDON.

For the week ending July 14, 1853, as observed at the Horticultural Gardens Chiswick.

July.	Barometer.	TEMPERATURE.					Wind.	Rain.
		Max.	Min.	Of the Air.	Of the Earth.	1 foot deep.		
Friday.. 8	29.980	29.866	79	59	69.0	65	60	N.E. .14
Saturday 9	29.925	29.866	81	57	69.0	64	60	S. .05
Sunday 10	29.906	29.435	70	47	58.5	63	60	N.W. .01
Monday 11	30.125	29.979	72	45	55.0	63	60	S.W. .00
Tuesday 12	30.017	29.944	76	47	54.5	62	60	S.W. .00
Wednesday 13	29.861	29.423	72	55	62.5	63	60	E. .92
Thursday 14	29.297	29.176	61	49	55.0	61	58	S.W. .54
Average ..	29.873	29.673	73.0	51.4	62.2	63.0	59.8	1.76

July 8—Cloudy; overcast; lightning at night; rain.

9—Heavy rain; cloudy; rain in afternoon; cloudy and fine.

10—Cloudy throughout.

11—Densely overcast; cloudy and fine; partially overcast.

12—Very fine; cloudy and clear; clear.

13—Very fine; slight haze; heavy and constant rain at night.

14—Constant rain till afternoon; overcast.

Mean temperature of the week 1 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending July 23, 1853.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 17	76.3	53.7	64.9	9	1.22 in.	2	1	1	2	4	8	6	3
Monday 18	72.8	51.7	62.7	12	0.60	1	1	1	1	6	9	8	4
Tues. 19	71.8	51.7	61.8	15	0.60	1	1	1	1	6	9	8	4
Wed. 20	71.3	51.4	61.3	16	1.47	1	1	1	1	10	8	9	4
Thurs. 21	71.0	51.0	61.0	10	0.54 in.	2	2	2	1	1	3	9	6
Friday 22	72.4	52.7	62.5	19	1.37	2	2	2	1	3	9	6	1
Satur. 23	72.7	52.7	62.2	12	0.70	1	3	5	1	2	5	9	5

The highest temperature during the above period occurred on the 17th 1854—therm. 94 deg.; and the lowest on the 18th, 1851—therm. 39 deg.

#### Notices to Correspondents.

CLAIMING BEES: *Reader.* If you will refer to p. 440 of our last week's Number, you will see how the judge of a county court decides the matter. How can you prove legally that the bees in question are your swarm?

HORTICULTURAL EXHIBITIONS. We have received several letters upon this subject, and have transmitted them to the Committee of the Horticultural Society deputed to settle the Schedule of next year.

INSECTS: *T.B.* The small white objects on slender footstalks excised at the underside of leaves are the eggs of the lace-winged fly (*Homobius perla*), the larvæ hatched from which feed upon plant lice.—*M.* The ants are the common *Myrmica rubra*, and have nothing to do with the injury to the leading shoot of the *Abies morinda* which has been cut off by some other insect.—*Fernoy.* Your young Carrots are infested with the larvæ of *Psila rosea*, a small two-winged fly. Dust the plants well with soot, and water them with gas-tar-water. *W.*

MELONS: *S.M.P.* It is impossible to say with any certainty what ails your Melons. The leaf sent, however, looks as if the evil was connected with dryness in some way or other.

MILDEW: *G.B.* Sulphur the parts affected the moment you observe them; but you must syringe well before applying the sulphur. You will find an account of the French cure you mention at p. 419 of our volume for 1852.

NAMES OF PLANTS: *J.M.* We are unacquainted with your plant, but will examine it, and report further next week.—*B.H.* We do not see how the Pink differs from the dark crimson varieties of *Dianthus barbatus*.—*F.H. & Co.* *Urtica bernardina*.—*G.W.* Some Ribes neither in flower nor fruit, *Campanula Erinus*, and *Inula hirta*; very bad specimens.—*G.P.* *Saxifraga sarmatosa*, and *Sparganium*, probably a bit of *Rumex*.

PLUMS: *W.G.H.* For a west aspect wall, plant the Green-gage, Purple-gage, Royal Hâtive, and Kirke's. Pears: *Glout Morceau*, *Beurré Rance*, *Passe Colmar*, and *Easter Beurré*.

RHUBARB WINE: *A Correspondent at Enfield* has favoured us with what is called an analysis of Rhubarb wine made by Mr. Herepath, of Bristol, in 1851; but as it does not meet the objections raised by Mr. Bree or Dr. Froul, and is very like an advertisement of a British wine-making firm, we cannot insert it. Stage: *Sub.* Powder them well with unslaked lime in the evenings of damp days. Burying lime in the ground will be of little service.

VINCAS: *C.P.* I will thank some of our correspondents to inform him if there is a double white Vinca minor.

VINES: *A Yorkshireman.* For an early house you may plant five Black Hamburgh, two White Sweetwater, two Royal Muscat dune. For a late house, three White Muscat of Alexandria, and four Oldaker's St. Peter's. It is of little importance whether the Vines are trained under the rafter or under the middle of the sash. The former is generally preferred. It is now late better defer planting the Vines till autumn.

VINE BORDER: *J.B.* You will find directions for making one in another column of to-day's paper.

Misc: *J.T.* You can have both the Numbers.—*A Lady Reader* will be obliged by some of our correspondents answering the following questions for her; 1st, What would be the best creeping plant or sown runner the pillars of a rustic play, as to secure the most rapid growth, combined with beauty and utility to the bees; 2d, Whether cocks and hens do more good than harm to a garden? Her gardener, who keeps a batch of his own constantly in her garden, maintains the former, while she is much inclined to the latter opinion; 3d, Is it true that Ivy be once torn from a wall it will never grow there again? In her neighbourhood there have been two curious corroborations of this notion, namely, a dwelling-house, and an old ruin; both were completely clothed with the plant; from the former it was torn away by a storm, from the latter by the rude hands of a Utilitarian; each occurred about 12 years ago and efforts have been made by replanting to repair the damage but in vain; the Ivy will not grow.

ERRATUM: In the list of Awards of the Royal Botanic Society inserted last week, p. 454, under Silver Gilt Medal, for Mr. Isaac Nurseryman, "Woking, Surrey" read "Worthing, Sussex." As usual, many communications have been received too late and others are unavoidably detained till the necessary inquiry can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



## JUST HARVESTED.

**SUTTON'S LINCOLNSHIRE RED GLOBE TURNIP.**—Fine New Seed, 1s. per lb. **SUTTON'S EARLY SIX WEEKS,** 10s. per lb. **CHIVAS'S ORANGE JELLY,** 2s. per lb. *or for sale in large quantities.* Carriage free to all parts, except parcels under 20s. value.  
Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## FOR PRESENT SOWING.

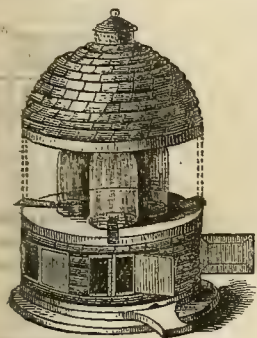
## GRASS SEEDS—SEPARATE OR MIXED.

**SUTTON AND SONS** having made it their special business to collect Natural Grass Seed, and mixing them in proper sorts and proportions to suit the various soils of Great Britain, can supply them either separate or mixed, of the very best quality, at moderate prices.

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## BEEHIVES.

**NEIGHBOUR'S IMPROVED COTTAGE BEEHIVE,** as originally introduced by **GEORGE NEIGHBOUR & SONS,** complete, with all the recent improvements, glasses, thermometer, &c. price 35s., securely packed for the country.



This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees, the produce being of crystal purity. The public are hereby cautioned against a piracy of this Beehive.

Early applications addressed to **GEORGE NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London.**

don, will receive prompt attention. Their newly arranged Catalogue of other improved Hives, with drawings and prices, sent on receipt of two stamps.

**AGENTS.**—Liverpool: JAMES CUTBERT, 12, Clayton Square. Manchester: HALL & WILSON, 50, King Street. Glasgow: AUSTIN & M'ASLAN, 168, Trongate. Dublin: J. EDMONDSON & Co., 61, Dame Street.

**HERTS AGRICULTURAL SOCIETY.—OPEN TO ALL ENGLAND.**

The **DRAINING MATCH** is fixed for Friday, July 22, to take place on the Chisfield Estate, Stevenage.

**THREE PRIZES** will be given to labourers (three in a gang or company), for the digging of trenches, 4 feet deep, in the best and most expert manner.

**FIRST PRIZE, £2. | SECOND DO., £1 10s. | THIRD DO., £1.**  
Two Prizes of 1l. 10s. each will be given to Foremen of Drainage Works for the best and most expert method of Laying Pipes.

Competitors may commence work, which will be set out for them, at 6 o'clock A.M. To such as do not gain Prizes, the Judges will award fair compensation for the actual labour performed.

Parties intending to compete for the Prizes must send notice to the Secretary, on or before Tuesday, July 19.

**GEORGE PASSINGHAM, Honorary Secretary.**

The Holt, Welwyn, July 16.

**YORKSHIRE AGRICULTURAL SOCIETY.—**  
(Open to the United Kingdom). The 16th ANNUAL MEETING will be held at YORK, on the 3rd and 4th of August next (Two Days' Show).

The entry closes on the 21st of July. Free transit for Stock, and half rates for Implements—are conceded by the Railways of this District, from Berwick to Rugby and Hitchin.

Prize Sheets and forms of Certificate are now ready, and may be had of **M. M. MILBURN, Secretary.**  
Sowerby, Thirsk, July, 1853.

## EXHIBITION OF POULTRY.

**THE ANNUAL EXHIBITION OF THE GREAT YARMOUTH AND EASTERN COUNTIES ASSOCIATION** will be held at Great Yarmouth on August 16th, 17th, and 18th, 1853; under the Patronage of the Duke of Norfolk, the Duke of Rutland, the Lord Sondes, the Lord Stafford, Sir F. Kelly, M.P., S. M. Peto, Esq., M.P., D. Waddington, Esq., M.P., B. B. Cabell, Esq., M.P., the Worshipful the Mayor of Yarmouth, and other Noblemen and Gentlemen. Entries close August 1st.

Prize Lists, &c., may be had by enclosing two postage stamps to Mr. J. S. BRAND, Hon. Sec., Great Yarmouth.

**REIGATE ASSOCIATION FOR THE IMPROVEMENT OF DOMESTIC POULTRY,** open to the three counties of Surrey, Kent, and Sussex. The Annual Show of the above Society will be held at Reigate, on TUESDAY and WEDNESDAY, the 1st and 2d of November next; the lists of Prizes, Regulations, and Certificates of Entry, will be ready by the 8th of August, and can be had on application to the Secretary, enclosing a stamped directed envelope.

Reigate. **GEORGE GIBSON RICHARDSON, Hon. Sec.**

**POULTRY SHOW.**—The First Annual London Great SUMMER POULTRY SHOW will be held at the Baker Street Bazaar, on WEDNESDAY the 27th, THURSDAY the 28th, and FRIDAY the 29th of July. Admission, Wednesday, 2s. 6d.; Thursday and Friday, 1s. Open from 8 in the morning till 9 at night.

## IRELAND.

**AN OFFICER,** lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

**The Agricultural Gazette.**

**SATURDAY, JULY 16, 1853.**

## MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, July 20—Agricultural Society of England.  
THURSDAY, — 21—Agricultural Imp. Society of Ireland.  
WEDNESDAY, — 27—Agricultural Society of England.  
THURSDAY, — 28—Agricultural Imp. Society of Ireland.

Our readers will find in another page a report of the great meeting of the **ENGLISH AGRICULTURAL SOCIETY** at Gloucester. The growing influence of the Society—the fortunate choice of a locality for this year's meeting—combined with the general attraction of its annual gatherings, must, in ordinary circumstances, have rendered the Gloucester exhibition the most successful of those which have now

been held during the many years of its existence. And in some respects, and notwithstanding the weather, this may be said of it. The show of implements has been unprecedentedly large and good, and reports of the cattle, horses, and other live stock, in this and next week's numbers, will attest the quality of those departments, respectively. As regards the character of the exhibition, Gloucester has beaten even York; and as regards the heartiness with which the city has exerted herself to welcome her visitors, she has beaten even Exeter. Never have we seen a place so profusely decorated; it is a pity that colours so brilliant and gorgeous were not brightened up by more sunshine than during the past week has fallen upon them, and that a show-yard, so deserving of examination, could not be more comfortably studied in detail, owing to the wet and even plashy condition in which it lay during the greater part of the time that it was open.

ALL seeds liable to degenerate should be annually selected with the greatest care, the purest to be had only being sown. The soundness of this simple theory is universally admitted, and there are few instances where it requires to be more carefully reduced to practice than in that of Turnips, Cabbage, &c., whose seeds are not only liable to degenerate from constitutional causes, but to be hybridised by bees, and other insects.

In practice, two plans are followed in carrying it out. In the first, a field, or part of a field, is sown with Turnips, or planted with Cabbages, purposely for growing seed. In this case the seed and plants are selected with the greatest care from the choicest stocks; the lands laboured and manured, and young plants hoed and set out in the usual manner. In spring, when they are beginning to run to seed, the field is carefully gone over, and all the plants showing symptoms of degeneracy are removed. A horse and cart is run up between every 12 drills or so, steady hands pulling the bad plants, and throwing them into the cart for food to cattle; the moulding-plough follows, and in this way the field is very soon gone over, leaving it clean and in a workmanlike condition. In some instances it may be necessary to precede the process of moulding up, by the hand and horse hoe. Sometimes a man goes up one drill and down another, carefully mowing off the tops close to the bulbs of Turnips with a scythe, purposely to make them throw out a larger bunch of seed stems more equally.

In the second case, only the best plants are selected from the field when grown, and transplanted into some corner, small paddock, or garden set apart for the purpose, taking care that some other kind of crop shall intervene between different species of Turnips, so as to prevent hybridising. In this case the cart goes up between so many drills as formerly, but instead of the bad the very best are now only chosen, particular attention being paid to the tops and tails of Turnips as well as to their bulbs, and the roots and stems of Cabbages, as well as to the shape and quality of their heads, so that the whole of each species shall preserve a uniformity of character or family likeness in every respect. If a plant, for instance, turns out to have bad roots, a fact which could not have been observed until pulled, it is dropped in its place again and left. It not unfrequently occurs, where the farmer is selecting for his own use only, that he superintends the pulling in the field himself, if not doing the work with his own hand, or if he sells so many loads to a seedsman who grows his own seeds, that the latter does the same; but in either case, where people cannot attend themselves, a trustworthy person fills their places. The plants undergo a second examination while being planted; any imperfect one possessing a blemish not previously discovered being thrown aside.

The work of planting may be performed by the plough or spade, but the latter is generally preferred, the horses' feet in the former case being apt to turn the plants—especially Turnips—out of their places, trampling and destroying them. In either case, the land should be deep, fertile, and well cultivated previous to planting. Where the plough is used the Turnips are placed in every third furrow, about a foot between them along the rows, and in the trenches where the spade is used about the same distances are maintained. In both cases the bulbs of Turnips are entirely covered, the earth being well trampled about the roots by the feet of the planter.

When nearly ripe, there is no crop has more enemies than Turnip seed, for a host of birds devour it wholesale. To scare these, various expedients are adopted. Where the plot is small, for instance, an old net is thrown over. Threads, with feathers tied at every yard or so, are stretched across; stuffed hawks and owls are hung up. In the case of large fields, boys with pistols and spring rattles watch them, shooting and making all the noise they can,

but whatever expedient may be adopted, this little enemy of the farmer seldom fails in having its tithe before harvest.

In harvest the crop is carefully cut with a sickle, and is either laid into small parcels for being threshed immediately; or tied up in sheaves and stacked for being threshed in the autumn or ensuing spring. Where the crop is grown for the London market the farmer generally prefers turning it into money as fast as he can, and therefore adopts the former course, but where he only grows for his own use the latter is as often adopted. The details of practice are simple in both cases, requiring little notice. When the crop is intended to be threshed out immediately, the small parcels are exposed as equally as possible to the influence of the sun, care being had at the same time when laid down as to how they are to be taken up again and carried to the threshing floor without shaking or losing the seed. Threshing in this case is generally done with the flail, and when ready for threshing a cloth is spread on the field, and upon it is placed the threshing floor. So many women carry, one feeds the floor to two threshers, and another removes the straw, the farmer or his bailiff attending to one or more floors, separating the chaff from the seed with a riddle, and bagging up the latter for being afterwards properly dressed at home. In large fields, when one part is threshed the floors are removed to another until the whole is gone over. When the crop is stacked the work is performed as fast as the sheaves are cut, or while the straw is in a comparatively juicy and pliant state, so as to prevent the opening of the seed-pods. The sheaves are built in the same manner as Flax, the bottom course standing perpendicularly on their butts, the upper ones resting on it. Inequalities of the roof are made up with Wheat or other straw, and the whole thatched to nearly the bottom immediately. Small quantities are saved in various ways. When threshed at harvest, or before winter, it is sometimes hung in the smoke of the kitchen chimney in a small bag, to prevent its being attacked by mould or mites, to which it is subject—the former, when placed in the granary in too damp a state; and the latter, when too dry. When Cabbage seed is not threshed out immediately, and the seed stored by itself, the whole seed upon the stalk is hung up in bunches in the granary or seed shed, and there preserved until the period of sowing, but the quantity of Cabbage seed is small compared to that of Turnips, and the practice of proportionably less magnitude.

Such are the two plans of growing Turnip and other small seeds of this kind. Each has its advantages and disadvantages. The non-transplanted examples, for instance, derive more advantage or nourishment from the soil than the transplanted, and hence produce a better seed, other things being equal. But, on the contrary, other things are not equal; for it is impossible to examine the roots of plants properly when growing, more especially Turnips, while the work of examination in nine cases out of ten is too hurriedly and imperfectly performed—turning the scales entirely in favour of the other practice. Transplanting, however, on the other hand, is seldom well performed, entailing upon it many disadvantages also, for the common mode of pulling by the hand injures both the roots and stem, not unfrequently breaking both. Such plants may put out a bunch of fresh rootlets, but they can never derive equal benefit from the soil as they would have done had they not been transplanted, for in the latter case they have both the bulb and soil to look to; whereas, in the former, they have only the bulb—which is too little, more especially in dry years—for the large branching tops necessary for seed. In moist climates or with damp bottoms the loss may be less; but even in these cases difficulties are experienced, for before the Turnips are placed at sufficient distances to ensure the seed ripening properly, they suffer in extra dry seasons, yielding a deficiency of both stem and seed—a result, to guard against which, the opposite error is perhaps more commonly experienced, too thick planting, too long stem, and improperly filled seed. In the one case the bulb degenerates, in the other the seed. In practice the latter is too often lost sight of. One great error is too late transplanting into too poor soils; a Turnip will seed anywhere, and it is just placed anywhere! but what is the difference in the quality and produce of seed? The Turnips should be removed before the spring growth commences; and they should be lifted with a spade, and not pulled by the hand, so as to preserve as entire as possible their roots. When lifted in the field they should be carefully placed in Turnip Cabbage, or Potato baskets, and in these removed to their final destination, instead of throwing them at random into the cart. This would not only save



them from injury, but greatly facilitate the work of transplanting.

#### HOMES FOR UNMARRIED LABOURERS.

My last letter on the above subject dealt with matters of a practical and economical nature. A plan for a lodging-house was proposed, which ostensibly only aimed at offering unmarried labourers of any age the benefits of a comfortable, orderly home at a reasonable rent, and where there should at least be no obstacle to habits of sobriety and self-improvement. It now remains to be shown how the lodging-house may be turned to a higher account than that which has as yet been implied.

In the first place, then, the lodgers should have facilities at hand for instructing themselves usefully, and for amusing themselves innocently. The house should contain a reading-room and a library, the privilege of entrance into the former and of borrowing books from the latter being granted to each lodger upon payment of a small weekly sum. The committee, who are supposed to superintend the lodging-house, should have this library under their immediate control. Evening schools might be opened with advantage under such favourable circumstances, where, instead of the scholars after a hard day's work going to the master, the master would go to the scholars. But the silent attractions of a good library close at hand, and the convenience of an evening class assembling under the scholars' own roof—these might not, in the present stage of education amongst English labourers, prove sufficient stimulants to mental activity; the influence of the better-informed would here come into action. In the present day, now that the principles of political economy are better understood, it is not so much alms-giving, nor so much pecuniary risk, even, that is required, in order to benefit the poorer class, as earnest personal exertion and the dedication of mental attainments to the work of guiding and assisting those who are in inferior circumstances to our own. It is not too much to expect that, in many large parishes, a few of the influential inhabitants would be willing to act upon this principle either as a component part of the committee or as auxiliaries to the same.

If once or twice a week a sort of reading party were held, at which one or two such gentlemen as I have described should attend, and read aloud some book combining amusement with instruction, or deliver, perhaps, a lecture on some interesting subject—such meetings, it is believed, would prove acceptable to the lodgers; and, if acceptable, then certainly wholesome and improving. It would seem of some importance to induce men of the labouring class even to relish books merely entertaining. Once, as it were, catch their ear, and you can provide for them better things than mere entertainment. As it is, they listen willingly enough to some newspaper narration of a startling murder, or a fight with poachers; some description of a monstrous Gooseberry, or an extraordinary litter of pigs, droned out at the fireside of the beer-shop by some countryman more learned than his fellows, and partially in liquor. They would listen to something better, with still greater alacrity, so they felt at their ease, and were not made uncomfortable by solemn patronage or too officious benevolence.

In a clever and instructive pamphlet, entitled "Local Evils and their Remedies," by the Rev. Julian Young (published by Fotherpe, Brighton), the reader will find this question of the capacity of the labouring class for rational and harmless recreation ably discussed and pleasantly illustrated. Amongst other instances given, there are two I may briefly quote:—"It is stated that the proprietors of gin-palaces in London find that in the summer months their trade is seriously reduced by the prevalence of street music. Men, for instance, go out for the purpose of drinking; they fall in with some itinerant band of music; stop to listen, follow it from place to place, and, at last finding it to be late, turn their steps homewards instead of to the gin-shops. Again, there is an anecdote attributed to Sir John Herschell, who observed every evening a group of working-men collected round the blacksmith's forge listening to a story read aloud by one of their number. The story was Richardson's novel of 'Pamela,' and so absorbed were they night after night in the progress of the tale that at its termination the men ran to the neighbouring church, and rung a hearty peal of bells in honour of the triumph of the heroine's virtue." The capability of understanding and enjoying images and ideas imparted from without is present in all, but it has in many cases to be cultivated and gradually drawn out. The transition from works of fiction to voyages, travels, biographies, and matters requiring a little more thought, and furnishing a little more direct instruction, is not difficult; and when once this faculty in the working-man is awakened, and his taste enlightened, we shall have established some counterpoise to the grosser temptations that beset the poor. It may be said that the rich also encounter their temptations, and that not always victoriously; but it must be remembered that these temptations offer to the poor almost the only pleasurable excitement within their reach; and excitement within due limits, so it be not sinful, is a natural want of human nature.

Let us admit, however, that, train and humanise and enlighten the working-classes as we may, much remains to be done, both for their own temporal and eternal benefit, and for the security and welfare of the society of which they form a part. We must here look to the ministers of religion, not exclusively, but mainly; and great will be their responsibility if such an opportunity

of succouring human souls, and leading them into the way of peace and truth, be thrown away. It is my belief that, in a large proportion of our parishes, the clergymen of the Church of England would be found equal to the task. Great, however, as the advantage seems of having a number of labouring men brought together at a time and place most convenient to themselves—many of them disinclined, indeed, to go in search of religious teaching themselves, but yet rather ignorant or indifferent than hostile—a clergyman might do as much harm as good if he set about his work in the wrong way. It may, perhaps, be allowable for even a layman to suggest to the clergy—among whom are some, especially among the younger portion, better acquainted with Greek and Latin classics than with common-place English labourers—that one great aim, under present religious circumstances, should be to get a little hold upon the good-will of those they wish to instruct; not, of course, by any sacrifice of just and reasonable authority, but by melting, if I may so say, the ice of reserve, common among the uneducated, by the warmth of a friendly, unconstrained sympathy.

In the next place it may be suggested that direct exhortations to outward acts of public worship may be in some cases premature. When the conscience is awakened, these acts of devotion ought, of course, to be urged; but they will mostly follow as a matter of course. In a model lodging-house in London prayers are read daily. No one is constrained to attend—the lodgers may do as they like; yet it so happens that almost all do attend. Again, it may be observed that the most effective method of gaining and holding fast the attention of men of this class would seem to be by means of familiar discourses and extempore addresses, expositions of scripture, and remarks on matters of natural history, geography, &c., alluded to in the same. It is my impression that most clergymen, with a little pains, would acquire tolerable facility in this style of address, and that the generality of hearers would be interested and benefited by it.

The secular instruction, and the general mental improvement derived from continued residence in the lodging-house, would render the labourers more open to good impressions, more able to understand the meaning of what was said to them, than is the case with those usually met with in a country parish. A clergyman who should succeed in gaining the confidence and esteem of the inmates of such a lodging-house, would be in a different position to most of his brethren. He would re-assert a salutary influence over the lads who had just left school. He would reach, and touch, and possibly bring to a better mind, the older lads who were perhaps settling down into a dogged and selfish profligacy. He would have a fair opening for putting religious truth plainly and forcibly before the unmarried men of the village—a class very commonly beyond the sphere of his influence. Whilst, on the other hand, the lodgers themselves would find a friend able to give them advice in temporal matters, and to assist them in present and future difficulties of whatever kind; and, what is more, a friend who would put them in the way of obtaining more and more of that spiritual light and succour without which earthly comforts only ensnare and stupefy, and human learning deceives and leads astray. *Arthur H. Elton, Clevedon Court, Bristol.*

#### Home Correspondence.

*A Lusitana Naturæ* of a very extraordinary kind came under my notice the other day as I chanced to enter where our shepherd and his men were engaged in sheep shearing; and, from not having found anything of a similar description mentioned in the various agricultural works that I have consulted, I am inclined to regard it as being of rare occurrence, and deserving of being placed on record. The case I allude to was that of a two-year-old Southdown wether sheep, which a casual observer would have readily mistaken for a ewe, from its having on each side of the supposed udder a large, round, and somewhat pointed teat, measuring nearly 4½ inches in circumference at its base. On being drawn by the shepherd, he was greatly surprised, as well as every one present, to find that each teat yielded a perfect stream of milk, which, in appearance and peculiar sweetness, did not differ in any respect from that of a ewe. More than a quarter of a pint was taken off; and after it had stood for 10 hours in a cup, a rich cream was found to have formed on its surface. A second milking was made the following day with the same result; so that, however incredible it may appear, the fact is certain of this wether sheep being furnished with mammary glands of an unusual size, and a power of secretion rarely ever met with, excepting in a ewe after it has had lamb. The animal is now in perfect health, and is, in my opinion, a remarkable curiosity of its kind. *W. Beattie Booth, Carlew, July 1.*

*Waste Manure.*—Your correspondent "G. S.," at p. 395, adopts a peculiar system of reasoning to show that it is injudicious to collect the undergrowth of plantations for fertilising purposes. I fancy, however, that, under a singular garb, he is a thorough supporter of the system I recommended in a previous article. I can certainly believe that landed proprietors are conservative enough of their own interests to protect them when they see a way to do so, but that they will be so conservative of ancient practices as not to suffer an infringement of them, even to promote self-advantage, is what I can scarcely admit. Now, in the collecting of plantation rubbish, there are many advantages to be obtained

without the infliction of almost any disadvantages either on the landowner or his tenants. If proper care be taken in the gathering of the herbage, the game need not be injured; and so far as the quadruped section of the forest denizens is concerned, the abundant production of young and tender Grasses, after the mowing operations, will do far more than make up for any temporary deficiency in their bed or shelter. As referred to by "G. S.," and known to every one who will choose to give the subject the least consideration, woods are too frequently the harvest-fields from which the winds collect the farmer's pests, and scatter them over his fields in the form of feathered seeds. Why should this be so?—and is the landlord really conservative of his own interests in lowering the value of his farms?—surely not. Increased expenditure in cleaning the soil is equivalent to reduced intrinsic annual value. Whether, then, is the loss of a few game birds—granting the possibility of such a thing—or the annual improvement in value of his cultivated land, added to the worth of the manure which may be obtained, to be of most importance in the landlord's estimation? In this utilitarian age it would be almost preposterous to answer the question, for pounds, shillings, and pence are weighty arguments. *J. Lockhart Morton.*

*Capillary Attraction.*—I have not the *Chronicle* by me in which my remarks relative to clay appeared; but I conclude, from the observations made in the *Chronicle* of the 2d July, that I cannot have expressed my meaning clearly. The impression I intended to convey was this: that Gloucestershire clay, and other descriptions not mixed with anything to render them porous, do not contain water. I am quite aware that water may be found in clay, but it is generally caused either by roots having penetrated, a vein of gravel being present, or some geological formation, apart from natural clay, commonly so called. Some years ago a neighbour of mine bored 40 feet in clay for water, and did not obtain any, though within 100 yards of the spot there was abundance in a sand-bed belonging to another person. Last year I had occasion to dig a drain 11 feet deep in clay; no water rose from below, it merely weeped through the sides, at the extreme point of cultivation. With my comparatively small experience, I may be wrong in asserting that clay itself does not contain water, and where it appears it may be traced to the aid of some foreign ingredient, loosening the clay. I shall be glad to be set right in this matter; we learn something every day, if we keep our eyes and ears open. *Falcon.*

*Superphosphate of Lime.*—This valuable manure is advertised for sale at 6*l.* 10*s.*, 7*l.*, and 8*l.* per ton. Now I think there must be something rotten in these different prices. As a proof, a friend of mine, as well as myself, went to a Hampshire mill, and on examining the bags, one contained a third of refuse, such as pieces of shingle or gravel, heads and tails of iron nails, and lumps or pieces of broken stone jars; and this is the stuff sold to raise a fine Turnip crop! It is a gross imposition, and deserves to be publicly exposed—name and place; and I deem your most valuable and instructive *Gazette* should record these impostures. For farmers who in Hants complain of low prices and hard times, what can be a more cruel and unjust system towards them than that of sending such rubbish by railway, and then threatening to summon a farmer to the county court if he refuse to pay for this adulterated compound? *X. Y. Z., Hants.*

*Size of Roots.*—In the extract given in your Paper of last week from an address delivered by F. F. Hamilton, Esq., at a recent meeting of the Irish Agricultural Improvement Society, I observe that that gentleman has elicited from several eminent farmers in this district opinions unfavourable to the expediency or practicability of cleaning in autumn lands which are to bear a Turnip crop in the following summer; and in particular that he has been informed by one of them that "Mr. Wilson, Edington Mains, has been trying the grubbing system this autumn, and it is considered by many quite a failure." If the gentleman who communicated this information to Mr. Hamilton will do me the favour to inspect my Turnip fields now, and report to him again, he will, I am confident, be able to tell him that my grubbing has proved anything but a failure. My only regret in connection with it is, that I did not practise it to a greater extent. *J. Wilson, Edington Mains, Berwickshire, July 6.*

*Hurwood's Steel Mill.*—At the last great meeting of the Royal Agricultural Society of England a prize was awarded to this mill. I purchased one, and was so satisfied with it that I gave the inventor a certificate of its utility. The only question was as to the durability and cheapness of the cutting rings, on both which points I received comfortable assurances. I have long since worn out two sets of rings, and received only yesterday, after many applications, a bill for 8*l.* from Messrs. Ransome and Sons for the last set. Now, the greatest advantage to me of this mill was its small demand for power as compared with heavy millstones; but, with such a heavy charge for renovation, it appears to me quite unavailable as compared with millstones. A pair of well-dressed stones will always grind 50 quarters of corn, which, at the charge of 7*s.* 6*d.* for dressing, is about 2*d.* per quarter. I fear the charge with Hurwood's mill will be more than 1*s.* per quarter. I hope, out of respect to its able inventor, that some satisfactory explanation may be given; but it is highly important that the judges of implements at the forthcoming show should take into account, in awarding their prizes, the comparative cost of wear and tear between stone and iron; for the whole question hinges on that point. On



public grounds I think it my duty to make this statement. I also find that this mill will not grind corn that is at all soft, although millstones readily pulverise it. *J. J. Mechi, July 2.* [We regret that this letter did not reach us in time for last week's paper.]

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND. MEETING AT GLOUCESTER.

WEDNESDAY, July 13.—The Implement-yard was opened this morning at 7 A.M., and towards noon became crowded with visitors. It seems scarcely so large as those of previous years; but the sheds sheltering the implements being closer together, there is quite as extensive a show of agricultural machinery, and the competition in some of the more important machines is unprecedented. There does not appear to be much novelty; and it is not at all necessary or even desirable for the purposes of this annual meeting that there should. There is variety enough to confuse the judgment and puzzle the choice as it is; and one is tempted to wish that, as in the other department of the show, so in this there were some preliminary examination which implements must pass, as the live stock are required to do, before obtaining entrance to the yard at all.

Probably the most interesting trials were those of steam-engines and reaping-machines. The merits of the latter could not be satisfactorily determined at so early a period of the season; and the results of the preliminary trials to which they were subjected—cutting both Rye and Clover—were of use only in enabling the selection of a few for further trial. These results were creditable to the machines employed, and there can be no doubt that a larger extent of land will this harvest be reaped by machinery. The Rye on which they were employed last Tuesday was a thin crop, and thus there was no difficulty in removing the corn, as it was cut, by either McCormick's or Hussey's machine. It is in the case of a thick crop that this difficulty arises, and that the alleged superiority of Bell's reaper appears: the relative merits of these different forms of the reaping-machine have therefore yet to be tested. As regards the steam-engines, the trial to which they were subjected was much more satisfactory, and the differences in the performances of the several engines was perfectly astonishing. No doubt some of the differences brought out must have been owing in a measure to varying skill on the part of those who set them to work; but when we find the consumption of coal in one instance (Clayton & Co.'s 4-horse portable engine) to be only  $4\frac{1}{2}$  lbs. per hour per horse power, and in another (Hornsby's 6-horse power portable engine)  $4\frac{1}{2}$  lbs. per hour per horse power, while in a third (W. Batley's 6-horse power portable engine) it was 13 lbs. per hour per horse power, and in a fourth no less than 19 lbs. for the maintenance of the same power during the same time, it is impossible to explain such discrepancies except upon the ground of good and bad construction respectively. And it is the great advantage of the trials to which machines are subjected before the award of the Society's prizes, that everything is thus brought to the test of numerical result. We have no doubt that the wonderful success of the Society in this department of its annual show has arisen from the confidence of both exhibitors and the public in the awards of dynamometers and enumerators, and the other mechanical contrivances to whose measurements the various machines are submitted—a confidence which would not be warranted by any awards or judgments, however able and honest, founded on mere inspection. Farmers owe a great deal to the valuable reports which have from time to time appeared in the *Journal of the Society*, recording the results of the implement trial at the different annual meetings; and we have no doubt that the report of the present year will be as instructive and useful as any of the series.

We will now walk round the yard in the order in which the stands are numbered; or rather go through the catalogue, and make extracts from it and comments upon it as we proceed.

Mr. Hussey, of Manchester, exhibited his reaping machine. It received a silver medal at Lewes. The following improvements have been added, to adapt the machine to the English culture and growth of crops. The frame in which the cog-gearing is situated is of iron, instead of wood as formerly. The main driving-wheel, which once occupied a place within the frame, is now placed on the outside of it; so that the soil thrown up by it in wet weather can be kept out of the cog-wheels, which are by this arrangement more securely protected. This provision of the main wheel permits the platform to be placed in a position to bring the blades in a line with the main axle, so that in crossing ridge and furrow the blades and the main driving-wheel will both sink into and rise out of a furrow at the same time. The rod on which the blades are riveted is removed from the under side to the upper side of the blades, so that the choking matter, which is forced into guards on the under side of the blades, finds an easy escape into the space once occupied by the rod. A hole or holes are now made through each blade, whose square edges will chaffer out the choking matter, which a blade with a smooth surface would not disturb, although the pressure might be so great as to stop its motion. An offset in the platform downwards brings the blades below the level of the frame, so that in cutting low, the frame will not drag the ground. By the present position of the blades, in a line with the main axle, the platform will extend so

far back as to allow the sheaves to be delivered at the side. The platform may be removed to cut Grass. Price 25*l*.

Mr. Stanley, of Peterborough, is highly commended for his roller-mill for crushing Linseed, Barley, and other grain, which is remarkable for the small power it requires and the efficiency of its performance. Price, with two handles for manual power, 12*l*. 10*s*. Mr. Stanley also exhibited his well-known steaming apparatus.

Mr. J. W. Sparman, of Wellingborough, Northamptonshire, submitted some very excellent and cheap rakes, made with wrought-iron tubular frames and steel or iron teeth. They are as light and much stronger and more durable than the kind hitherto made with wood frames. Price, with 24 steel teeth, 15*s*. 6*d*.

Messrs. Humphries, of Pershore, exhibited a very compact and complete arrangement for threshing straw, shaking, riddling, and winnowing. It is intended for steam-power only; diameter of drum 20 inches, length of ditto 4 feet 7 inches; number of revolutions per minute 900; driven by a strap over a pulley 8 inches in diameter, fixed upon the drum spindle. A most important improvement has been made in this machine by dividing the vibrating trough so as to balance itself, rendering the machine quite steady when at work, also taking nearly the whole of the strain of the crank shaft and bearings. The machine requires no blocking or staying to the engine. Price 60*l*.

At stand 7, Messrs. McNeill exhibit specimens of their well-known asphalted felt. We extract their report of the comparative statement of the cost of covering a roof 40 feet long by 24 feet wide:—

WITH SLATES.			
	ft. in.	in.	£ s. d.
3 tie-beams ..... each 24	6	4	by 6
6 principal backs	16	6	4
3 rugg posts	11	6	4
6 nuts or spurs	8	0	4
8 pulins	10	0	3
60 rafters	17	6	4
Ridge-piece	40	0	7
Battening for slates	40	0	7
15 square of slating, with metal nails, 2 <i>s</i> .			
			2 10 0
			£39 2 0

WITH THE ASPHALTED FELT.			
	ft. in.	in.	£ s. d.
6 principal backs ..... each 15	3	by 5	40 cubic feet,
3 ties	18	3	including
24 pulins	10	2	labour and
Ridge-piece	40	1	fixing
1160 square feet of $\frac{3}{4}$ or $\frac{1}{2}$ boarding, including fixing			7 5 0
The necessary felt, including everything			6 10 0
			£21 2 0

Making a difference of expence of nearly one-half in favour of the felt; the felt making a lighter and more effective roof against all weathers. Price 1*d*. per square foot, or 8*d*. the yard of 32 inches wide.

An ingenious mincing machine, the principle of which might be adapted to the cutting up of roots, was exhibited by Messrs. Nye and Gilbert, of 79, Wardour Street, Soho, London. It was highly commended by the Judges.

At stand 13, Mr. Crosskill exhibits an extensive collection of clod-crushers, cultivators, reapers (including Bell's), carts, waggons, &c. The clod-crusher has received an alteration and probably an improvement. Each alternate ring is made larger in the eye, and in revolving causes an up-and-down motion along the entire surface of the roller, thereby increasing its power, and effecting the best means for self-cleaning. Of course, the roller is only to be used when the land is so dry as not to stick.

Bell's reaper was exhibited at this stand. This reaper, by means of a self-acting side delivery, does its work without a man to rake; whereas Hussey's American reaper requires one man to rake off the corn behind, and McCormick's takes one man to rake off on one side. Bell's reaper is propelled by the horses pushing behind, while the man steering guides the machine and horses, in the same way that a Bedford drill is managed, so that its direction is completely under his command; thus the machine charges into the standing crop in any direction, cutting and delivering the corn in a swathe as straight as a plough furrow. This machine consists of a perfect set of scissor cutting apparatus, driven by a serpentine wheel motion, without any cog wheels, and a reel for bringing the corn to the cutters and laying it when cut upon the endless web. The endless web, revolving upon rollers, delivers the cut corn on either side of the machine; while a turnswathe turns the corn after it has left the web into a swathe at right angles to the machine, in the same way that the hind half of a plough mould-board turns the furrow after it has been turned on an edge by the fore half of the mould-board; thus the web leaves the swathe standing on its root ends, and then the turnswathe pushes it off at right angles to the line of progression. Mr. Bell, after 14 years' experience, employs on the average eight women to gather, make bands, and lay the corn in the bands, four men to bind, and two men to stook or shock, completing 12 acres per day, in cutting heavy crops of Wheat, Barley, Oats, &c. Price 42*l*.

A number of carts, waggons, threshing machines, corn dressers, flour mills, liquid manure carts, root washers, &c., are exhibited at this stand, which is one of the most interesting in the yard.

At stand 15, Whitehead, of Preston, exhibits a new patent grubber, resembling somewhat Samuelson's digger, already described in this journal; but having, in addition to the acting rowels on a lower axis, a set of clearing teeth on a higher axis parallel to the former; the whole affair being described thus:—It is formed

with a framework somewhat like that of a land roller, in which is a horizontal axle or shaft, carrying a series of digging teeth set at regular intervals asunder. These teeth are curved at right angles to the shaft, and in the direction of revolution; and they are arranged so as to cut into the earth as the machine travels forward. Alongside this shaft is a second parallel clearer shaft, set in bearings higher up and made to revolve in a direction the reverse of the shaft. On this secondary shaft are a number of forked teeth, bent in the direction of their rotation like the diggers; *i. e.*, the two sets of teeth work into each other, each fork of the clearers embracing a corresponding digging arm. When drawn over the soil the digging teeth or arms penetrate the soil to the necessary depth, and carry up the weeds and roots, which are thence carried away by the action of the secondary or "dofters;" the ground being thus broken up and cleaned at the same time. Price 18*l*.

At stand 19 Hurwood of Ipswich exhibits his patent mills, invented by the exhibitor, and manufactured by Ransome and Sims of Ipswich. The grinding surfaces of the mills are each fitted with a series of cutting rings for grinding Barley, Wheat, Oats, and other grain, Linseed, Indian Corn, Lentils, Peas, or Beans. This invention gives the facility of grinding various products to any degree of fineness, from merely splitting the article to reducing it to fine meal, without injury to its properties, or its being necessary to change any of its parts. These mills may be worked by manual, animal, or steam power, and are recommended for agricultural purposes; and will grind, if driven by the ordinary horse machine, the following quantities:—

	Barley, into fine Meal.	Oats, for feeding.	Beans, split.	Beans, fine.
One horse per hour, from	3 to 4	4 to 5	4 to 5	2 to 3
Two-horse work, per hour	5 to 6	5 to 6	5 to 6	3 to 4
If driven by steam or other adequate uniform power, per hour, upwards of	12	10	15	5

Cash price, £23 16*s*.

Stand 20 is occupied with the implements of Messrs. Ransome and Sims of Ipswich. A very large assortment of ploughs, wheel and swing, common and turnwrest, single and double mould-board, with trussed and solid beams; Biddle's scarifier, which has received the prize as the best implement of its class; steam-engines, one of which is marked as having maintained 6-horse power per hour by the consumption of 33 lbs. of coal; threshing-machines, dressing-machines, chaff-cutters, Turnip-cutters, flour-mills, Bean-crushers, cake-breakers, &c., are exhibited at this stand. Atkin's patent automaton, or self-acting reaper, is also shown here. As its name implies, it is self-raking; thus dispensing with the man required to take off in most reaping-machines. It cuts in the same manner as others. It is fitted with a reel, for the purpose both of inclining the grain towards the platform preparatory to being cut, and bringing it when cut on to the platform. The knife-bar is on the upper side, instead of being placed, as usual, flush with the back edges, is in the middle of the blade, and as far forward as the angle of the cutting will allow. The back side, instead of being left straight, is cut zig-zag, and each alternate edge is levelled the other way and serrated. By this arrangement it is scarcely possible to choke, as the knife-blade, resting on the fingers, and the edges front and rear being in close contact with them, any matter accumulating upon the fingers will be picked off by the sharp points of either the front or rear edge of the knife. Sufficient corn for a sheaf having fallen on the board, round comes the long arm carrying the rake, and, pulling across the entire bed of the machine, collects the grain into a compact bundle against a sheet-iron plate; and then, with the sheaf in the grasp, the rake and iron plate immediately make a quarter turn round the back of the machine, the rake-arm is caused to stretch out behind, relaxing its grasp, and the sheaf falls in the line of the horse-walk (out of the way of the horses) the next round, and the rake-arm takes a sweep round back to its work. With reference to the motion of the rake, it is the quickest at those points where a quick motion is most needed, *viz.*, in sweeping the platform and while opening in the rear of the machine for delivering the bundle. The main driving-wheel is large, being 4 feet in diameter, with a 4-inch felloe, giving steadiness of movement in passing over rough ground, and good support in soft. The grain-wheel, too, is 2 feet in diameter, and may be increased if desired. The framework is well braced and stiff, supported and strengthened with iron wherever necessary. The gearing is compact and symmetrical, well boxed in and protected from dirt. The team is relieved of weight and of the side draught by resting the hounds upon a pair of front wheels, making it also very convenient to turn a square corner, as will be learned by a little practice. Price, 40*l*. Unfortunately, we did not see it at work.

At stand 22, Messrs. Garrett, of Saxmundham, exhibit an extensive collection of agricultural implements, including drills, threshing-machines, horse-hoes, steam-engines, chaff-cutters, &c. They have received prizes for their drills, as will be seen in the award published below. Among them we refer to the following more in detail:—A broadcast manure distributor. The manure is delivered from the box by the means of a barrel of a novel construction, consisting of a shaft fitted with prongs which carry over the manure, and, in so doing, come in contact with a series of scrapers which rise and clean the barrel, as it rotates,



without the aid of brushes, sweepers, or any other perishable material; from whence it passes down the shoots or conductors, and is evenly distributed all over the surface, or in three or more rows. The shoots or conductors are furnished with wire rods fixed in alternate lines, giving them the effect of a sieve, whereby the manure is separated and pulverised as it falls. Price 14*l*. 14*s*.—The well-known patent horse-hoe is calculated for effecting an important improvement in field cultivation, as by its use Oats or corn of every kind, drilled in rows of not less than 7 inches apart, may be hoed in a superior manner, and at a cost not exceeding 6*d*. per acre. It is adapted for all the prevailing methods of drill-culture, either for cleansing crops drilled on level surface or in ridges—the axle-tree being moveable at both ends to suit the varied intervals between the rows of plants; and as each cutting hoe works on a separate and independent lever, the weeds are effectually destroyed, however uneven the surface of the ground, the hoes being kept in a uniform depth by means of regulating keys. The horse-hoe offers advantages over hand-hoeing besides the saving of expense, inasmuch as the work may be performed at the proper time; and as the hoe penetrates a greater depth, fresh life and vigour are given to the growing plants by stirring the earth around them. The steerage forms a valuable feature in the implement, as the hoes may thereby be guided with the greatest precision, perfectly hoeing the intervals without injuring the plants. As much as 10 to 15 acres per day may be hoed with one horse and one man and a boy. Price 16*l*.—The patent revolving horse-hoe for bunching out the lines of Turnip plants, so as to fit them for singling, is a more cumbersome implement than we should think it need be. It is said to cut the ground at any depth required, to 5 inches deep, and will leave the plants at any distance that may be required, and when set to a particular distance it cannot err. It will do two or more drills at the same time; and for two drills is worked by one man, a boy, and one horse. On ridge work it will do one acre per hour; and the inventor during the past season hoed 120 acres of Turnips with it. Price 31*l*. 10*s*.

The Rev. S. Smith exhibited, at stand 27, some of the implements adapted to his row culture of the Wheat plant. The specimen of this mode of cultivation, which had been intended for the illustration of the subject near the show-yard, had not been commenced sufficiently early in the season to present a satisfactory appearance now, and did not therefore attract much notice.

At stand 38, Mr. Brinsmead, of Torrington, Devon, exhibited a novelty in the shape of a straw-shaker, consisting of a number of parallel revolving rods of triangular section, armed with fringes of short teeth along their edge, which passed through one another's intervals. As the whole system revolved, the straw laid upon them received a dancing motion onwards, while the chaff and corn lying loose among it fell through the intervening spaces into a hopper, or on to a creeper below.

At stand 40, Messrs. Hornsby, of Grantham, exhibited a large collection of implements—steam-engines, threshing-machines, drills, &c.—for some of which prizes were awarded. Their 6-horse portable steam-engine is thus described:—The principal advantages of this improved patent engine are, the cylinders and pipes connected therewith being placed inside the boiler or steam-chamber, are effectually protected from the weather and frost at all times; this improvement effects a great saving in fuel, which is an important consideration in a portable engine; it also does away with condensation in the cylinder, rendering the engine less liable to get out of order; likewise the management less troublesome, having no condensed water in the cylinder. In all engines with the cylinder outside the boiler, the water in the cylinder pipes, and pump in the winter season frequently becomes frozen, and even if great care is taken by the person in attendance upon the engine, injury is often done; and if not, much time is lost. This is an evil which can never take place in the exhibitors' patent engine. The boiler is tubular; the plates are as follows: Shell of fire-box  $\frac{3}{4}$  of an inch, crown of do.  $\frac{3}{4}$  of an inch, horizontal part  $\frac{1}{2}$  of an inch; all other plates, 5-16ths of an inch, with the exception of tube plates, which is  $\frac{3}{8}$  of an inch thick—the quality best Butterly, or Staffordshire plates; the diameter of cylinder 7 $\frac{1}{2}$  inches; length of stroke of the piston 14 inches; the number of revolutions of crank shaft per minute from 120 to 135, as desirable; the crank shaft 2 $\frac{1}{2}$  diameter of best faggoted wrought iron; the diameter of fly-wheel is 4 feet 10 $\frac{1}{2}$  inches; weight of same 5 cwt. 2 qrs., which acts as driving-pulley. The probable time it will require to generate steam to 45 lbs. pressure is about 45 minutes; the quantity of fuel it will require to get up the steam, about 40 lbs.; the consumption of fuel for every hour it is in full work, from 4 to 6 lbs. of coal, according to quality, per horse-power per hour. Price 215*l*. If with copper tube plate in preference to iron, 8*l*. extra.

We shall refer to other implements worthy of notice next week; the meagreness of our present notice must be excused by the late period in the week when the show yards are now opened. They used formerly to be opened on Tuesdays, but the greater labour now thrown upon the judges involves the appropriation of that day to the work of adjudication. We must not omit reference to the three admirable and complete sets of barn-works exhibited by Messrs. Ferrabee, of Stroud; Garrett, of Saxmundham; and Clayton and Co., of Lincoln; the last is certainly one of the completest and most perfect arrangements we have ever seen.

The following is the award of the judges:—

## PRIZE LIST.

JUDGES OF IMPLEMENTS:—Messrs. Joseph Druce, J. V. Gooch, T. W. Grainger, Henry Hamman, W. Lister, J. H. Nalder, W. Owen, J. J. Rowley, T. Scott, W. Shaw, O. Wallis, W. Woodward. CONSULTING ENGINEERS:—Messrs. Easton & Amos.

KIND OF IMPLEMENT.	PRIZE.	NAME OF EXHIBITOR.
Plough adapted for general purposes	27	W. Busby
Plough adapted for deep ploughing	7	W. Ball
One-way or turn-wrest plough	7	Ransome & Sims
Paring plough	5	T. Glover
Dynamometer, especially applicable to the traction of ploughs, and indicating the extent of work done	5	E. H. Bentall
Subsoil pulveriser	5	J. & F. Howard
Machine for making draining tiles or pipes for agricultural purposes	10	John Whitehead
Instruments for hand-use in drainage	3	H. Winton Jones
Heavy harrow	5	William Williams
Cultivator, grubber, and scarifier	5	J. & F. Howard
Pair-horse scarifier	10	Ransome & Sims
Drill for general purposes	10	R. Garrett & Son
Steerage corn and Turnip drill	10	R. Hornsby & Son
Drill for small occupations	5	James Smith & Son
Most economical small-occupation seed and manure drill for flat or ridged work	5	R. Garrett & Son
Turnip drill on the flat	10	R. Garrett & Son
Turnip drill on the ridge	10	R. Hornsby & Son
Dropping machine for depositing seed and manure	10	R. Garrett & Son
Manure distributor	10	R. Garrett & Son
Horse-hoe on the flat	5	R. Garrett & Son
Horse-hoe on the ridge	5	J. & F. Howard
Collection of agricultural tools for hand labour	5	Not awarded yet.
Reaping machine	20	Not sufficient merit.
Mowing machine for natural and artificial Grasses	10	Thomas Milford
One-horse cart for general purposes	5	W. Crosskill
Light wagon for general purposes	10	
Best portable steam-engine, not exceeding 6-horse power, applicable to threshing or other agricultural purposes	20	
Second best do. do.	10	
Best fixed steam engine, not exceeding 8-horse power, applicable to threshing or other agricultural purposes	20	
Second best do. do.	10	
Best portable threshing machine, not exceeding 2-horse power, for small occupations	10	
Best portable threshing machine, not exceeding 6-horse power, for larger occupations	15	
Best portable threshing machine, not exceeding 6-horse power, with shaker, riddle, and winnow, that will best prepare the corn for the finishing dressing machine—to be driven by steam	20	
Best fixed threshing machine, not exceeding 6-horse power, with shaker, riddle, and winnow, that will best prepare the corn for the finishing dressing machine—to be driven by steam	20	
Corn-dressing machine	5	Clayton, Shuttleworth, & Co.
Do, for small occupations	5	E. R. Turner & Co.
Grinding mill for breaking agricultural produce into meal	10	
Linseed and corn crusher	5	
Chaff cutter, to be worked by a horse or steam power	10	James Cornes
Chaff cutter, to be worked by hand power	5	James Cornes
Turnip cutter	5	B. Samuelson
Oilcake breaker, for every variety of cake	3	R. Garrett & Son
Do, for thin cake	3	W. N. Nicholson
Most economical steaming apparatus for general purposes	5	W. P. Stanley
Most economical machine for preparing unsteeped Flax straw for market, by manual or other labour	10	
Churn	3	Burgess & Key

SPECIAL PRIZE OFFERED BY PHILIP PUSEY, ESQ.  
Water drill, to drill four rows of Turnips, with artificial manures, on the flat ... R. & J. Reeves ... £10

## MISCELLANEOUS.

KIND OF IMPLEMENT.	AWARD.	NAME OF EXHIBITOR.
Revolving horse-hoe	Medal.	R. Garrett & Son
Digging machine	Do.	B. Samuelson
Drainage level	Do.	H. A. Thompson
Seed cleaning machine	Do.	J. Gillam
Patent straw shaker	Do.	H. Brinsmead
Draining plough, improved	Do.	Fowler & Fry
New implement—Bean cutter	Do.	Ransome & Sims
Improved haymaking machine, with double action	Do.	Smith & Ashby

The following articles were highly commended:—Corn Rakes made of Tubular Iron, exhibited by Mr. J. W. Sharman; Tools for Draining Land, exhibited by Messrs. Mapplebeck and Lowe; Screw Lifting Jack, exhibited by Messrs. W. Dray and Co.; Clod Crusher, for its self-cleaning principles, exhibited by Mr. W. Crosskill; Norwegian Harrow, exhibited by Mr. W. Crosskill; Drills generally, for simplicity of construction and moderate prices, exhibited by Messrs. J. Smyth and Son; Drill for general purposes, exhibited by Messrs. R. Hornsby and Son; Drill for Manure and Turnips, &c., on the flat, exhibited by Messrs. R. Hornsby and Son; Steerage Corn and Seed Drill, exhibited by Messrs. Garrett and Son; Combined Seed Sowing and Seed Drilling Machine, exhibited by Messrs. R. Garrett and Son; Drill for small occupations, exhibited by Messrs. Holmes and Son; Manure Distributor, exhibited by Messrs. Holmes and Son; Dropping Machine for Grain, exhibited by Mr. W. East; Steel Grinding Mill, exhibited by Mr. G. Harwood; Patent Gouge Turnip Cutter, exhibited by Mr. Hugh Carson; Roller Mill, exhibited by Mr. W. P. Stanley; Patent Socketing Apparatus, exhibited by Mr. J. Whitehead.

The following articles were commended:—Turnwrest, for Shallow Ploughing, and the combination as Moulding Plough, exhibited by Mr. James Comins; Sub-Pulveriser for its lightness of draught, exhibited by Mr. Richard Read; Ditto for its efficient leverage, exhibited by Messrs. Gray and Co.; Heavy Harrows, exhibited by Messrs. J. and F. Howard; Light Harrows, exhibited by Mr. W. Williams; Four-horse Grubber, for high cultivated lands, exhibited by Mr. James Coleman; Ditto for cultivated light soil, exhibited by Mr. Charles Hart; Pair-horse Scarifier for ditto, ditto, exhibited by Mr. C. Hart; Ridge Hoe, exhibited by Mr. W. Busby; Ditto for simplicity of expansion and contraction, exhibited by Mr. E. Hill and Co.; Cast Iron Manger, Water Trough and Rack, exhibited by Messrs. W. Dray and Co.; Cottage Mangle, exhibited by Messrs. W. Dray and

Co.; Improved Cast Iron Stable Furniture, exhibited by Messrs. E. Hill and Co.; Wrought Iron Gate, exhibited by Messrs. E. Hill and Co.; Patent Weighing Machine, exhibited by Messrs. E. Hill and Co.; Pig Trough, exhibited by Messrs. Barnard and Bishop; Cottage Mangle, exhibited by Messrs. Barnard and Bishop; Self-adjusting Cart Saddle, exhibited by Mr. J. Dunlop; set of long light Cart Harness, complete, exhibited by Mr. R. Vick; Strong Sheep Folding Hurdle, exhibited by Mr. B. Wright; Improved Portable Copper, exhibited by Mr. H. A. Thompson; Slate Milk Cooler, exhibited by Mr. J. Cale; Asphaltum Cauldron, exhibited by Mr. J. Woods; Mining Machine for Mining Meat, exhibited by Messrs. S. Nye & J. Gilbert; Double-action Greenhouse Pump, exhibited by Mr. R. Read; Gig Harness, with improved fastening instead of buckle, exhibited by Mr. J. C. White; Double-ridged Plough, exhibited by Messrs. J. and F. Howard; Plough Blades, exhibited by Messrs. J. and F. Howard; Clod Crushers, exhibited by Mr. W. Crosskill; Ditto for its self-cleaning principles, exhibited by Messrs. Gibson & Son; Liquid Manure Drill, exhibited by Messrs. Tasker & Fowler; Drill for small occupations, exhibited by Messrs. R. Garrett & Son; Tile Machine, exhibited by Mr. T. Scraggs; Brick-making Machine, exhibited by Messrs. Fowler & Fry; Selected for further Trial during Harvest: Bell's Reaper, exhibited by Mr. William Crosskill; McCormick's ditto, exhibited by Messrs. Burgess & Key; Hussey's Improved ditto, exhibited by Messrs. Dray & Co.; Ditto, exhibited by Messrs. Garrett & Son; Hussey's Reaper, exhibited by Mr. Obad. Hussey; McCormick's ditto, exhibited by Mr. Bernhard Samuelson.

B. T. BRANDRETH GIBBS, Hon. Director of the Show.

THURSDAY, July 14.—The yards were open this morning at 6 o'clock. It had been raining all night, and they have accordingly been in the most disagreeably wet state all day. We are glad to find that the entries in cattle, sheep, and pigs exceed in number those of the show at Lewes, and that there is a general excellence of quality exhibited, though there may be fewer extraordinary animals. As usual there seems to be a general want of merit in the bull classes—it is easier to breed 10 good heifers than one good bull. The Devon classes are very good—more equal and altogether of better quality than the others. The Herefords are pretty good, as certainly they ought to be, considering that the show is on the threshold of the principal breeding districts for that breed; so that, although the animals shown are very good, yet from the favourable position of Gloucester and the excellent railway communication, we can scarcely say that they come up to our expectation. The means that have been employed against the system of over-feeding breeding animals for exhibition have not been without their influence. We quite concur with the Society and with the majority of breeders, respecting the evils of the practice, and we hope that the step now taken will ultimately check it, and so remove the only obstacle in the way of the Society's influence being wholly for good on the improvement of breeds; we regret, however, to find that the change has been the means of preventing some of our best breeders attending as exhibitors—men who, on former occasions, have contributed greatly to the quality of the Show. The probability is that their animals intended for exhibition had been raised to such a pitch in condition, that they could not be safely reduced in time for the Gloucester meeting; so as to be sure that the jury should not find a verdict of "guilty" against them. There have, however, been none in the cattle classes actually disqualified, and we believe that it was wise in the jury of inspection to have performed their duties in a somewhat lenient manner on the first occasion. We hope the gentlemen who may have been deterred from exhibiting will see the thing in its true light, and admit that the true interests of breeders, as of farmers generally, are essentially served by the adoption of the new system of examination into the condition of the animals. We cannot pass over without expressing our opinion that the Society is not altogether free of blame in allowing the course they now wish to check to have been carried on so long. The late Lord Ducie, who took a prominent part in the appointment of the juries of inspection, urged this subject on the attention of the Society with the sincerest, and we are sure the most intelligent regard to the good of breeders, and we have personal knowledge of the fact that his lordship himself had paid dearly for his experience in the high feeding of breeding animals.

SHORT-HORNS.—The first class contains 18 animals, being a larger number than was shown at Lewes. Some very creditable animals are to be seen, but none of extraordinary merit. No. 4, shown by Mr. Niblett, of Bristol, is a straight, well-proportioned animal, of nice quality. No. 6, shown by Mr. Stratton, received the 2*d* prize; its colour, a blue roan, is somewhat objectionable in a short-horn; its general form is pretty good. It girths 8 feet, and is 5 feet 5 inches long. It does not handle very well, though it has been successful at several previous meetings. The 1st prize has been justly awarded to No. 11, shown by Lord Berners. He is of a rich roan colour. From his hair and quality of flesh we supposed him to be of pure origin, and on inquiry we found that he is closely allied to the far-famed blood of Mr. Bates. His head, joints, and hind-quarters are good; his flank heavy and well set. He is not entirely without faults, though they are few. He girths 8 feet, and is 5 feet 3 inches long. No. 12 (Mr. Fowle, of Market Lavington), is a roan; a very nice, straight, useful animal. No. 14 (D. J. Niblett, Esq., of Harefield); if the theory of like producing like holds good in this case, the progeny of this animal will be very plain. In the class of young short-horn bulls 11 animals are shown, among which there are but few good ones, though the 1st and 2*d* prizes were carried off by two very good animals. The 1st prize is to Mr. Booth's white bull—we fancy there is a slight defect behind the shoulder, but in other respects he is very good. The 2*d* prize is given to a fair, useful beast (Mr. Fletcher, of Mansfield), not equal to the first. The



former girths 6 feet 11 inches, and is 5 feet 2 inches long; the latter 6 feet 9 inches, and is 5 feet long.

The class of short-horn cows contains some magnificent animals, though, as a whole, we think we have seen a better show. The 1st prize was, however, carried off by a perfect model of a cow belonging to Mr. Smith, of the Grove, near Bingham, Notts. She possesses in perfection almost every point and property that can be desired in a cow, and is shown in the condition in which all breeding animals ought to be shown. She is rather light in her fore-quarters. She girths 7 feet 5 inches, and is 5 feet 1 inch long. The 2d prize is awarded to Mr. Booth, for a roan cow of first-rate quality—remarkably good in many points, but disproportioned by fat. She is not very evenly grown, but her good points are so prominent that she will always command the attention of judges. She girths 7 feet 4 inches, and is 5 feet 4 inches long. Mr. Stratton and Mr. Sainsbury show very useful cows in this class.

The class of short-horn heifers consists of eight animals, varying much in quality and symmetry—but the most perfect animal in the yard is in this class. It is shown by Mr. Booth, and of course received the 1st prize. She girths 7 feet 3 inches, and is 4 feet 11 ins. long. Nothing can be more level and equally proportioned. She is in very high condition, and must have walked into the yard in the absence of the jury of inspection. The 2d prize was also carried off by Mr. Booth, for a roan heifer, not so high in condition as the last, nor so symmetrical, but of first-rate quality—her rumps are, by no means good. Mr. Bowley shows a very useful animal in this class, but too short and chubby.

The class of yearling heifers contains some very useful animals. The 1st prize was carried off by a very nice white heifer, belonging to Mr. B. H. Allen, Staffordshire. The hair is somewhat "sharp" and harsh, but in other points she is very good. She girths 6 feet 7 inches, and is 4 feet 6 inches long. The 2d prize is given to Mr. Stratton, for a roan heifer, with fine head and fore-quarters, and broad loin, but not firm; flank deep and good. Girth, 6 feet 4 inches; length, 4 feet 8 inches.

**HEREFORDS.**—The 1st class of this breed is not so well filled as we should have expected, though the good quality and symmetry of those that were shown make up for the deficiency in number. The 1st prize was awarded to Lord Berwick, for a remarkably fine well-made bull. His head and fore-quarters are very good, with the exception of a slight defect in the upper part of the shoulder. In Class II., the 1st prize was awarded to Mr. Price, of Court House, Leominster, for a remarkably even well-made bull, with very good deep hind-quarters, good flank, and very compact general form. No. 88, shown by Lord Berwick, is a useful beast, though not equal to the last. Among Hereford cows, No. 94 is a nice straight beast, of good quality and general form; her calf, however, does not speak well for her. She is shown by Mr. Ackers, of Painwick. No. 96, shown by Lord Berwick, is a thick well-made beast, but very fat, and apparently having a cross of the short-horn in her. No. 98, receiving the first prize for cows in milk or in calf, is rather a larger formed animal, of pretty good quality.

Among Hereford heifers, No. 105, shown by Mr. Mayberry, of Brecon, is a fair useful animal, disfigured rather by crooked legs.

**DEVONS.**—Among the bulls, No. 120, shown by Mr. Wright, of Tanton, received the 1st prize, and very deservedly so, being a very well-made beast. The 2d prize was carried off by No. 121, Mr. Turner, of Barton, also a nice bull, though not equal to the last—it is not so good in the hind quarters, though its general quality is superior. Among yearling bulls, Mr. Turner has carried off the 1st prize by a nice bull of good quality.

The class of Devon cows is perhaps better than on any former occasions, as a whole. The 1st prize is reservedly awarded to a very well-made cow, though the judges must have had some difficulty in deciding upon the second. We refer to the prize-list below:—

#### LIST OF PRIZES FOR CATTLE, &c.

**SHORT-HORNS.**  
**Judges.**—Messrs. John Grey, Charles Stokes, and John Wright.  
 Class I. Bulls under four years old.—40l. to Right Hon. Lord Keythorpe Hall, Tisbury, Wiltshire; 20l. to Richard Booth, Hinton, Wilts.  
 Class II. Yearling bulls.—25l. to Richard Booth, of Warley, Wiltshire; 15l. to William Fletcher, of Radmanston, Notts.  
 Class III. Cows in milk or in calf.—20l. to Henry Smith, of the Grove, Bingham, Notts; 10l. to Richard Booth.  
 Class IV. Heifers in milk or in calf, under three years old.—15l. to Richard Booth; 10l. to ditto.  
 Class V. Yearling heifers.—10l. to B. H. Allen, of Longcroft, Lichfield; 5l. to Richard Stratton.

**HEREFORDS.**  
**Judges.**—Messrs. William Cox, Thomas Hartshorne, and John Williams.  
 Class I. Bulls under four years old.—40l. to Right Hon. Lord Cecil, of Crookhill, Shrewsbury; 20l. to John Carwardine, of Court House, Leominster.  
 Class II. Yearling bulls.—25l. to Edward Price, of Courthouse, Leominster; 15l. to Right Hon. Lord Berwick.  
 Class III. Cows in milk or in calf.—20l. to John Monkhouse, of Court House, Leominster; 10l. to James Ackers, of Painwick, Gloucestershire.  
 Class IV. Heifers in milk or in calf, under three years old.—10l. to Lord Berwick; 5l. to P. Turner, of Leominster.  
 Class V. Yearling heifers.—10l. to Edward Price.

**DEVONS.**  
**Judges.**—Messrs. Philip Halsey, E. L. Franklin, and Henry Trevelyan.  
 Class I. Bulls under four years old.—40l. to George Turner, of Court House, Exeter; 20l. to Robert Wright, of Moor Farm, Devon.  
 Class II. Yearling bulls.—25l. to George Turner; 15l. to Robert Wright, of Moor Farm, Devon.  
 Class III. Cows in milk or in calf.—20l. to George Turner; 10l. to Robert Wright.  
 Class IV. Heifers in milk or in calf, under three years old.—15l. to George Turner; 10l. to Robert Wright.

15l. to George Turner; 10l. to James Hole, of Knowle House, Dunstree, Somerset.

Class V. Yearling Heifers.—10l. to James Quartley, of Molland House, South Molton; 5l. to ditto, ditto.

#### WELSH BREDS.

**Judges.**—Messrs. J. E. Jones and Thomas Hunt.  
 Class I. Bulls under four years old.—no entry.  
 Class II. Yearling Bulls.—10l. to William Powell, of Eglwysnewydd Margam, Talbach, Glamorgan.  
 Class III. Cows in milk or in calf.—10l. to William Powell; 5l. to George Goode, of Croft Cottage, Carmarthen.  
 Class IV. Heifers in milk or in calf, under three years old.—10l. to William Powell.  
 Class V. Yearling Heifers.—5l. to George Goode.

#### OTHER BREDS.

**NOT INCLUDING THE SHORT-HORN, HEREFORD, DEVON, OR WELSH BREDS.**  
**Judges.**—Messrs. Thomas Hunt, John Edward Jones, and E. L. Franklin.  
 Class I. Bulls under four years old.—10l. to Nathaniel G. Barthorpe, of Creetingham Rookery, Woodbridge, Suffolk.  
 Yearling Bulls.—10l. to Samuel Burbery, of Wroxhall, Warwick.  
 Class III. Cows in milk or in calf.—10l. to Captain Inge, of Thorpe, Tamworth, Staffordshire.  
 Class IV. Heifers in milk or in calf, under three years old.—5l. to Edward Cane, of Berwick Court, Alfriston, Lewes, Sussex.  
 Class V. Yearling Heifers.—5l. to W. C. Cartwright, of Aynhoe Park, Brackley, Northampton.

#### HORSES.

**Judges.**—Messrs. J. R. Colton, W. C. Spooner, and William Linton.  
 Class I. Stallions for agricultural purposes, foaled previously to the 1st of January, 1851.—30l. to Samuel Clayden, of Little Linton, Cambridge.—2d, 15l. to William Wilson, of Ashbocking, Ipswich.  
 Class II. Stallions for agricultural purposes, foaled since the 1st of January, 1851.—20l. to John Ward, of East Mersea, near Colchester; 2d, 10l. to George Sexton, of Thorington Hall, Wetherstead, Ipswich.  
 Class III. Roadster Stallions.—15l. to John Lister, of Addingham, near Oatley, Yorkshire.  
 Class IV. Stallion Ponies.—10l. to W. B. Reed, of Victoria Square, Clifton, near Bristol.  
 Class V. Mares and Foals for agricultural purposes.—20l. to Henry Bailey, of Walgaston Farm, near Berkeley, Gloucester; 10l. to T. B. Brown, of Hampden, Andoversford.  
 Class VI. Mare Ponies.—5l. to W. B. Reed, of Clifton, near Bristol.  
 Class VII. Two years old Fillies for agricultural purposes.—15l. to T. B. Brown; 5l. to Jas. E. Owen, of Hodcott, West Ilsley, Newbury.

#### SHEEP (LEICESTERS).

**Judges.**—Messrs. Hugh Aylmer, Samuel Bennett, and Henry Chamberlain.  
 Class I. Shearling Rams.—30l. to William Sanday, of Holme Pierrepont, Nottinghamshire; 15l. to T. E. Pawlett, of Beeston, Sandy, Bedfordshire.  
 Class II. Rams of any other age.—30l. to T. E. Pawlett; 15l. to William Sanday.  
 Class III. Pens of Five Shearling Ewes of the same flock.—20l. to William Sanday; 10l. ditto.  
**SOUTHDOWN, OR OTHER SHORT-WOOLLED SHEEP.**  
**Judges.**—Messrs. Edward Trumper, John Waters, and Edward Pope.  
 Class I. Shearling Rams.—30l. to Jonas Webb, of Babraham, Cambridge; 15l. to ditto.  
 Class II. Rams of any other age.—30l. to Henry Lugar, of Hengrave, Bury St. Edmunds; 15l. to William Rigden, of Hove, near Brighton.  
 Class III. Pens of Five Shearling Ewes of the same flock.—20l. to Henry Lugar; 10l. to ditto.

#### LONG-WOOLLED SHEEP.

**NOT QUALIFIED TO COMPETE AS LEICESTERS.**  
**Judges.**—Messrs. John Abbott, Charles Clarke, and N. G. Stone.  
 Class I. Shearling Rams.—30l. to William Lane, of Broadfield Farm, Northleach; 15l. to William Garne, of Aldsworth, Northleach.  
 Class II. Rams of any age.—30l. to William Slatter, of Stratton, Cirencester; 15l. to Edward Handy, of Sevenhampton, Andoversford.  
 Class III. Pens of Five Shearling Ewes of the same flock.—20l. to William Lane; 10l. to ditto.  
**PIGS.**  
**Judges.**—Messrs. John Clayden, William Hesselstine, and Henry Edision.  
 Class I. Boars of a large breed.—15l. to Robert Crossley, of Holland St. Miles, Plating Newton, Manchester; 5l. to Thomas Horsfall, of Burley Hill, Otley, Yorks.  
 Class II. Boars of a small breed.—15l. to William Northey, of Lake Liffon, Devon; 5l. to John Moon, of Lapford, Crediton.  
 Class III. Breeding Sow of a large breed.—10l. to Thomas Craven, of Whetley St. Manningham, Bradford.  
 Class IV. Breeding Sow of a small breed.—10l. to John Moon.  
 Class V. Pen of three breeding Sow-pigs of a large breed, of the same litter, above four and under eight months old.—10l. to William James Sadler, of Bentham Purton, Swindon.  
 Class VI. Pen of three breeding Sow-pigs of a small breed, of the same litter, above four and under eight months old.—10l. to the Right Hon. Lord Wenlock, of Esrick Park, Yorks.

Reports on the Sheep and Poultry, with the prize-list of the latter, must be put off till next week.

#### HORSES.

Although the show of horses at Gloucester has been exceeded in numbers and surpassed in excellence by some preceding shows, yet on the whole it was very respectable, and the promise of future improvement evinced in the class for two-year-old cart stallions was highly satisfactory. Commencing our notice with Class No. 1, we find 30 stallions of all ages, from 3 years old and upwards, contending for the prizes offered by the Society. The Suffolks as usual bore away the palm, the 1st prize being awarded to a very fine, powerful, Suffolks, 4-year-old horse, No. 219, exhibited by Mr. S. Clayden, of Linton, near Cambridge, possessing, if not greater excellences, yet fewer faults than any other horse in the show. The 2d prize was given to No. 227, belonging to Mr. W. Wilson, near Ipswich, a splendid specimen of a cart-horse, certainly and unquestionably the finest horse in the show, possessing immense strength, perfect symmetry, and great activity, but having one defect, which, though it might have robbed him of the 1st prize, yet, in our opinion, was redeemed by his otherwise golden virtues. His hooks showed the effects of the work he had done during the last three years, in the existence of thorough-pins which, if they had appeared in a young horse, would probably have put him out of the pale of competition, but which, in a horse of six years' old, simply operated as a weight in the adverse scale, outbalanced on the other side by splendid qualifications. No. 206, a very fine black

horse, was highly commended, whilst Nos. 201 and 220 received commendations. There were other worthy specimens of the English cart-horse which, though not particularised by the judges, yet possessed great merit. We may enumerate as being thus worthy of notice Nos. 203 and 204, 215, 229, 231.

Class 2, for two-year-old Horses for Agricultural Purposes, though less numerous than class 1, yet surpassed it in excellence. The 1st prize of 20l. was awarded to Mr. John Ward, of East Mersea, near Colchester, for a most promising Suffolks horse, possessing almost every excellence, whilst the 2d prize was given to No. 238, also a Suffolks, the property of Mr. George Sexton, near Ipswich, a very fine horse, and with the exception of fetlocks too oblique, a near approach to perfection. No. 242, the property of Mr. W. Wilson, was highly commended, and Nos. 243, 247, 248, and 249, were thought worthy of commendation.

In class 3, for Roadster Stallions, we were grievously disappointed. Only 10 were entered, amongst whom we looked in vain for perfection. The prize was given to a very neat-looking horse, possessing a good deal of symmetry, but with scarcely sufficient substance, but whose action was very superior. No. 253, belonging to Mr. Jesty, displayed a good deal of symmetry, but whose action was rather too blood-like for a first-rate nag. No. 259 was the next best horse in this class.

In class 4, for Stallion Ponies, we experienced disappointment, which, in the proximity of Wales, we little expected. No. 1103, a strong, neat pony, was worthy of the prize awarded to him; and there were some very pretty Shetland ponies, which, however, the late alteration in the assessed taxes had very much depreciated in value.

Class 5, for Cart Mares and Foals, did not equal in merit the same class in many former shows. The first prize was given to a remarkably strong, compact, and useful mare with a very good foal, No. 276, belonging to Mr. Henry Bailey, near Berkeley, Gloucester; whilst the second was awarded to Mr. T. B. Browne, for his four-year-old Suffolks mare of considerable merit, and with a very good foal by her side. Nos. 281 and 282 were deemed worthy of commendation; and No. 280 exhibited very considerable excellence, and would no doubt have received a prize had not certain faults been found which the common observer could not detect.

In Class 6, for Mare Ponies, there was only a moderate amount of merit. The prize was awarded to No. 1105, whilst a nice little animal, No. 286, received commendation.

In Class 7, for Cart Fillies, there was but little competition. The first prize fell to the lot of No. 293, the property of Mr. T. B. Browne, and would probably have so fallen with much greater competition; whilst the second was gained by Mr. Owen, near Newbury. Both were promising fillies, and will no doubt in good time, with the assistance of Class No. 2, impart their good qualities to posterity.

#### PIGS.

The day has been remarkably wet and miserable for visitors at the Show-yard—for ourselves we fear our readers will complain of the paucity of our report. We have for several years given dimensions or admeasurement of many of the better animals in the different classes of cattle and sheep; to-day such facilities were out of the question, what with dripping umbrellas and squeezing, or partially drowning.

We had some difficulty in taking a fair view of very many animals worthy of especial notice. We fortunately passed through the sheep and pig classes before the crowding was at its height. These classes are very numerous and satisfactory. The pigs are more numerous, but do not quite equal some former years in quality and usefulness. The sheep have seldom been surpassed, and the class of long-wools has never been equalled at any former Show. The juries of condition have disqualified some animals, but we think they have been lenient to a fault; however, it is an error on the right side, and will be duly appreciated by breeders. A few rams were evidently of comparatively little use for lamb getting, and were properly set aside. The placards stating the reason can be read by any one, so that no great cause of complaint can be sustained. It was the same with a few pigs, but by no means a sufficient number. We will name some of those that struck us as containing most merit, but we cannot go through the classes consecutively:—

#### CLASS I.—LARGE BREED.

595. Possesses great length, rather curved back, and rump too low, snout concave, ears thin and pointing up, very pleasing look, great depth of body, rather loose flesh and skin, hair curled—he is thus described in catalogue; Robert Crossley, Holland Street Mills, Plating Newton, near Manchester, a 2 years 4 months and 6 days old pure large Lancashire Boar, "Sir William Wallace," white with blue spots in the skin, bred by exhibitor: sire Partridge Sir William Wallace, dam Desdemona, sire of dam Nelson. (1st Prize).  
 602. Possesses a well-formed frame, great depth of carcass, ears up, a very good animal; Thomas Horsfall, of Burley Hill, near Otley, York, a 2 years 10 months and 1 week old white Yorkshire Boar, "Hector," bred by exhibitor: sire Rose of Keyghley, dam Zenobia, sire of dam Young Cupid. (2d Prize).  
 598. Well-formed, ears up, good back; Moses Cartwright, of Stanton Hill, near Burton-on-Trent, Stafford, a 2 years and 2 months old white Stanton Boar, "Don John," bred by exhibitor: sire Don Juan.  
 504. Very good, too fat; John Harrison, jun., of Heaton Norris, near Stockport, Lancashire, a 1 year 4 months and 18 days old white and blue large Boar, "Young Nelson," bred by John Harrison, sen., Heaton Norris, near Stockport; sire Young Chetfield, dam Alice, sire of dam Bendigo.  
**CLASS 2.—SMALL BREED.**  
 622. Very prettily formed, shoulders good, rump short; Henry S. Hayward, of Folkington, near Willingham, Sussex, a 9 months and 1 week old white Boar, bred by exhibitor.



625. Good thighs, short legs, deep body, very good, but too fat; Edward Akroyd, of Denton Park, near Otley, York, a 1 year 3 months and 2 weeks old improved Essex black Boar, "Highland Harry," bred by Henry Ambler, of Watkinson Hall, near Halifax; sire Mulatto, dam Bracelet, sire of dam Essex the Second.
626. A very good pig, but too fat—disqualified on that account—rump too low, legs short; William Northey, of Lake near Lifton, Devon, a 3 years and 7 months old improved Leicester black Boar, bred by Mr. Rogers, of Tide Ford, near St. Germans, Cornwall.
627. A very good pig in every respect; perhaps his rump is a little too short, neck too thin, and ears too short; William Northey, of Lake, near Lifton, Devon, an 11 months and 1 week old improved Leicester black Boar, bred by exhibitor. (1st Prize).
628. A well-formed chine and good shoulders; loin and rump rather too narrow but good, snout short, cheeks very fat and good; John Moon, of Lapford, near Crediton, Devon, a 1 year and 5 months old Essex black Boar, bred by W. Fisher Hobbs, of Boxed Lodge, Colchester. (2d Prize).
629. Well-formed fore-quarter and back, a good pig; Thomas Horsfall, of Dalley Hall, near Otley, York, a 1 year and 5 months old small white Boar, "Wharfedale Lad," bred by Stephen Blackley. (See 602).

## CLASS III.—SOWS OF LARGE BREED.

630. An extraordinary animal, but hair coarse; Edmund Ruck, of Castle Hill, near Cricklade, Wilts, a 2 years and 3 months old improved Gloucestershire black and white Sow, bred by exhibitor.
631. Prize; great length, depth, and height, fine thighs, back not very good, flank rather thin, and stands indifferently; Thomas Craven, of Whetley Street, Manningham, near Bradford, York, a 3 years 5 months and 2 weeks old large blue and white Sow, "Victoria," breeder not known.
632. A very good deep frame, ears pointed forward and down, almost too fat; Rev. C. T. James, of Irmington, near Ivy Bridge, Devon, a 2 years 3 months and 2 weeks old Neapolitan and Berkshire black Sow, bred by exhibitor.
633. A fine large Sow with 5 sucklings; Thomas Horsfall, of Burley Hall, near Otley, York, a 4 years and 4 months old large white Sow, "Zenobia," sire Young Cupid, sire of dam The Doctor, out of Matchless.

## CLASS IV.—BREEDING SOWS OF A SMALL BREED.

634. A good Berkshire with 7 sucklings; Samuel Druce, jun., of Eynsham, near Oxford, a 1 year and 6 months old improved Oxfordshire black Sow, bred by exhibitor.
635. A very good Sow, with good back, rather slight breast; R. Brodhurst Hill, of Bach Hall, near Chester, a (about 4 years old small white Sow, "Lady Wenlock," bred by Mr. Unthank, near Penrith; sire Young Thormanby, sire of dam Wenlock.
636. A capital Sow, but large enough for large breed; Thomas Horsfall, of Burley Hall, near Otley, York, a 2 years 3 months and 1 week old improved Yorkshire small white Sow, "Daphne," bred by exhibitor; sire Hero, dam Zenobia, sire of dam Young Cupid.
637. A small, well-made Sow, suckling 6 large pigs; the Hon. Mrs. Howard, of Milborne, near Malmesbury, Wilts, a 1 year and 3 months old Yorkshire white Sow, "Lady Jemima," bred by exhibitor; dam Lady John, sire of dam Lord John.
638. A capital chine and shoulders, rump rather down, and loin not broad; Charles Lambert, of Sunk Island, near Ottingham, York, a 1 year and 10 months old New Forest black Sow, "Lady Chesterfield," bred by J. Thompson, Stubbington, near Chichester.
639. Prize; nearly perfect in form, except rump little too low; John Moon, of Lapford, near Crediton, Devon, a 7 months old improved Essex black Sow, bred by exhibitor; sire Snowball, dam Gipsy Queen.
640. Very good, and same character as 705; bred by Mr. Moon.
641. Very good Sow; bred by S. Ashton, Peter Street, Manchester.
642. Two very good Sows, but too fat; surely no one can complain of the jury of condition here. Both shown by Rev. C. T. James; 713, Rev. C. T. James, of Irmington, near Ivy Bridge, Devon, a 1 year and 9 months old improved Essex black Sow, bred by John Moon, of Lapford, near Crediton.
643. Well formed good Sow; bred by Geo. Edward Taylor, of Oatlands, near Leamington.

## CLASS V.—BREEDING SOWS OF A SMALL BREED.

644. Prize; three extraordinary Sows at their age—very heavy and good; William James Sadler, of Benthams Purton, near Swindon, Wilts, a pen of three 7 months and 3 weeks old Berkshire dark and white Sow Pigs, bred by exhibitor.
645. Three very good Sows—good rumps, nearly correct form, good frame, deep made and good quality; William Northey, of Lake Lifton, near Lifton, Devon, a pen of three 6 months and 1 week old improved Leicester black Sow Pigs, bred by exhibitor.
646. Beautiful quality and frame; Chas. L. Clare, of Hindly House, near Liverpool, a pen of three 6 months old improved Essex black Sow Pigs, bred by exhibitor; sire Clare's Sambo, dam Judy, sire of dam Flying Dutchman.
647. Three extraordinary Sows, good frames, and very fine quality; Lord Wenlock, of Esrick Park, near York, a pen of three 7 months old small white Sows, bred by his lordship; dam Sweetlooks, sire of dam Wiley.

The annual dinner of the Society was held on Wednesday evening, under the presidency of Lord Ashburton. Among the more important topics referred to by the speakers were—the merits of America as a home for agricultural emigrants, referred to in great detail by the American Minister; the relative duties of landlords and tenants, referred to by the President; and the encouragement of education both among labourers and farmers, advocated by the Earl of Harrowby. The pavilion was not, we think, so full as we have seen it on past occasions, and there was hardly so much useful and interesting matter introduced into the speeches. The best received of the addresses were those by Sir R. I. Murchison and by Judge Haliburton. The prize list was read at the close of the meeting.

## POULTRY.

DERBYSHIRE AND MIDLAND COUNTIES POULTRY SHOW. —We have received a prize-list of the first annual exhibition of the above Society, which starts under very distinguished patronage, and to which, believing, as we do, that these Societies are productive of much good, we heartily wish success. The prize sheet contains 14 classes and 69 prizes. The Secretary is Mr. Alfred Madeley, of Derby.

Poultry Literature. —A lady begs to recommend "Maria" to read the prize essay on the "Rearing and Management of Poultry," by Mr. William Trotter, in the "Journal of the Royal Agricultural Society of Eng-

land" (Vol. XII., part I., No. 27), published in 1851. It contains full and simple directions, which she knows from experience to be good.

POULTRY.—An Amateur. You should poultice your cock's foot with white Lily root, wrap the entire foot in the poultice, and keep from it all dirt, &c.; let him have a walk where he can tread on nothing but Grass; when the swelling appears ripe, open it freely and wash it well out, removing any core you may find therein, and wrap up the foot again to keep it clean. If you allow the swelling to remain it will eventually kill the bird,—the best instrument is a sharp razor. The loss of appetite and cessation from crowing are produced from lack of condition, as while your bird is continually obliged to rest on one leg he will not thrive.—M.E. I cannot give you any remedy for the blindness of your chickens at a fortnight old, I have never met with such a case before. As there is, no doubt, a natural cause for it, your medical adviser would probably be able to detect it.—Edison. I have never found any difference in the hatching of my Spanish and Cochon China eggs, beyond, perhaps, an hour or two. I consider it a bad plan to mix different shelled eggs together. The Spanish is remarkably thin, and the Cochon very thick. The young of the latter are longer making way through the shell than the former, and when chickens are hatching, unless those that appear first are removed immediately, the hen becomes uneasy and sits hollow. If out of 13 eggs three or four chickens appear first, I always remove them, and put them in a flannel in basket till all are out. If this be long, I remove the eggs that are added, to pacify the hen, and put all the chickens together under her.—J.W.T. I know no fool called "robbet." The description given is that of a rumpkin, or rumpless fowl. A cross between the white Dorking and Cochon China fowls would not produce a tailless bird, nor the sharp, fine head you mention.—T.F. I know no one who has the "dumplings," or creepies; but Mr. Fairlie, of Cleveley Park, near Newmarket.—G.W. I cannot say whether Cochons will maintain their value another year. First-rate birds sell as well as ever; I consider ordinary ones on the decline.—D.T.N. Turkeys are not like other poultry, and it is difficult to name either the cause or cure of their diseases. Perhaps, in your case, those you moved away were attacked before they were removed. When you shut them up, they should be let out early in the morning, at sunrise. Feed them with eggs boiled hard, and chopped fine, groats, roasted meat cut up very fine, some stale bread soaked in strong beer, night and morning. Move them if you can, to a sunny spot, on a light soil, and near a hedgerow or small copse if you can. Have you ants' eggs in your neighbourhood; if you have not, it would be worth your while to send for a few sacksful from the nearest place where they have them. In turkeys, as in pheasants, they are the panacea, and almost only remedy for these anomalous disorders. J. Bailey, 113, Mount Street.

## Notices to Correspondents.

PIGEONS: *Columba*. You will find a work recommended by Mr. Bailey, a few weeks ago, in the poultry column.

TURKISH-SEED: *Subscriber*. We have a leading article on the subject in type.

## Markets.

## COVENT GARDEN, JULY 16.

Most kinds of produce are now supplied in abundance, and trade is tolerably brisk. Forced Peaches and Nectarines are, however, not quite so plentiful this week. Strawberries from the open ground continue to be well supplied. Importations from the Continent of Potatoes, Carrots, and Artichokes are still kept up, and there are some good French Cherries and Apricots in the market. The latter are very fine at from 4s. to 6s. per doz. Greengages and Orleans Plums from the South of France fetch, per bush, 10s. There is also a large quantity of foreign Pines in the market, and they are in fine condition. Rhubarb is abundant. Young Carrots and Turnips fetch from 4d. to 6d. per bunch. Green Peas are coming in in very good condition, at from 6d. to 1s. per quart shelled, and from 2s. 6d. to 5s. per bushel sieve. Old Potatoes may still be obtained. Good Ash-leaved Kidneys from Cornwall, Essex, and Kent are plentiful. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonettes, Cinerarias, Pinks, and Azaleas.

## FRUIT.

Pine-apples, per lb., 4s. to 5s.  
Grapes, hothouse, per lb., 2s. to 5s.  
Peaches, per doz., 10s. to 25s.  
Nectarines, per doz., 10s. to 25s.  
Melons, each, 3s. to 8s.  
Cherries, per lb., 6d. to 3s.  
Strawberries, per basket, 1s. to 2s.  
Gooseberries, per bush, 2s. to 3s. 6d.

## VEGETABLES.

Cabbages, per doz., 6d. to 1s.  
Cauliflowers, each, 2d. to 4d.  
Greens, per doz., 2s. 6d. to 4s.  
French Beans, per 100, 9d. to 1s. 6d.  
Asparagus, per bundle, 1s. to 4s.  
Rhubarb, per bundle, 3d. to 6d.  
Potatoes, per ton, 80s. to 120s.  
— per cwt., 4s. to 8s.  
— per bush, 2s. 6d. to 5s.  
Turnips, per doz., 2s. to 4s.  
Cucumbers, each, 2d. to 4s.  
Celery, per bundle, 9d. to 1s. 6d.  
Carrots, per doz., 6s. to 8s.  
Spinach, per sieve, 1s. to 2s.  
Onions, per bushel, 8s. to 12s.  
Beet, per doz., 1s. to 1s. 6d.  
Leeks, per bunch, 3d. to 4d.  
Shallots, per lb., 6d. to 8d.  
Tomatoes (foreign), per doz., 6s. to 8s.

## HOPS.—BOROUGH MARKET, JULY 15.

Messrs. Pattenden and Smith report that the accounts received this morning from Mid and East Kent and Worcester are considered more unfavorable, vermin still being on the increase. Parts of the Weald of Kent and Sussex are said to have rather less vermin, but all agree in opinion that there is a great proportion of the Hop plantation in which the bine is still in a very weak and unkind state. It of course remains to be seen what effect the present drenching rains may have. Most persons think, unless very hot weather follow, that it will operate much against the crop. The market remains firm, and there is scarcely anything doing on duty.

## HAY.—Per Load of 36 Trusses.

SMITHFIELD, JULY 14.  
Prime Meadow Hay 90s to 100s  
Inferior do. ... 70 80  
Rowen ... 45 54  
New Hay ... 45 50  
CLOVER  
Second cut ... 105s to 120s  
... 80 100  
Straw ... 28 33  
E. J. DAVIS.  
CUMBERLAND MARKET, JULY 14.  
Prime Meadow Hay 110s to 118s  
Inferior do. ... 90s to 100s  
New do. ... 80 100  
Straw ... 32 36  
Old Clover ... 110 120  
JOSEPH BAKER.

## WOOL.

BRADFORD, THURSDAY, JULY 14.—Trade is still very languid. The stocks in the manufacturers' hands previous to the clip were greater than was generally considered. The prices now sought are therefore an effective barrier to trade, nor do we see any prospect of an improved demand unless sellers moderate their pretensions, or wait till the stocks in hand are used up.

YARNS.—The demand for yarns for shipping is not quite so

active as for a few weeks past. The subject of war is the all absorbing topic. For spoils the demand is steady, and prices without change.

PIECES.—The deliveries to the merchants of orders are going on, but not many new engagements entered into.

## SMITHFIELD.—MONDAY, JULY 11.

We have a very large supply of Beasts, a considerable proportion are of middling quality, consequently the choicest kinds are disposed of at a reduction of about 2d. per 8 lbs., but a large number of inferior remain unsold. There is also a considerable increase in the number of Sheep and Lambs; trade is very dull, but the best qualities are not much lower. Calves maintain our quotations of Friday. From Germany and Holland there are 1707 Beasts, 5770 Sheep, 353 Calves, and 80 Pigs; from Scotland, 420 Beasts; 1406 from Norfolk and Suffolk; and 500 from the northern and midland counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Here- ... 4 4 to 4 6  
fords, &c. ... 4 4 to 4 6  
Best Short-horns 4 2 4 4  
2d quality Beasts 3 0 3 8  
Best Downs and ... 5 0 to 6 0  
Half-breds ... 4 6 4 10  
Do. Shorn ... 0 0 0 0  
Beasts, 4683; Sheep and Lambs, 31,110; Calves, 443; Pigs, 390.

## FRIDAY, JULY 15.

We have only a small supply of good Beasts, and consequently they are readily disposed of at a small advance on Monday's quotations, but inferior qualities are not dearer. The number of Sheep and Lambs is much smaller than of late, and the average quality very inferior; prices have advanced about 2d. per 8 lbs. Choice English Calves are scarce and rather dearer. Our foreign supply consists of 314 Beasts, 3990 Sheep, 567 Calves, and 30 Pigs; from Norfolk and Suffolk, and 90 Miltch Calves from the home counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Here- ... 4 4 to 4 6  
fords, &c. ... 4 4 to 4 6  
Best Short-horns 4 4 4 6  
2d quality Beasts 3 0 3 8  
Best Downs and ... 5 0 to 6 0  
Half-breds ... 4 8 5 0  
Do. Shorn ... 0 0 0 0  
Pigs ... 3 4 4 4

## MARK LANE.

MONDAY, JULY 11.—The supply of English Wheat to this morning's market was moderate, and disposed of at the prices of this day's night. We have a large arrival of foreign, chiefly from Southern Europe, and having a better attendance of country buyers than on Friday, a retail business was transacted at our last week's quotations. Floating cargoes are obtainable at about 2s. per qr. below the highest rates realised, and at this reduction a few cargoes have changed hands. Barley brings an advance of 6d. to 1s. per qr. Beans and Peas are unaltered in value. Oats continue in very limited supply, and needy purchasers are compelled to pay an advance of 6d. to 1s. per qr. The Flour trade is very quiet.

PER IMPERIAL QUARTER.  
Wheat, Essex, Kent, & Suffolk ... 48-60  
— fine selected runs ... 46-61  
— Talavera ... 56-63  
— Norfolk ... —  
— Foreign ... 35-63  
Barley, grind. & distil., 23s to 26s. ... 24-30  
— Foreign, grinding and distilling ... 25-30  
Oats, Essex and Suffolk ... 25-28  
— Scotch and Lincolnshire ... 25-28  
— Irish ... 22-25  
— Foreign ... 19-22  
Rye ... 29-32  
Rye-meal, foreign ... 35-40  
Beans, Mazagan ... 33s to 38s  
— Pigeon ... 36s to 42s  
— Foreign ... 34-42  
Peas, white, Essex and Kent ... 40-44  
— Maple ... 32s to 38s  
Maize ... 30-32  
Flour, best marks delivered ... 40-47  
— 2d ditto ... 32-40  
— Foreign ... 32-40  
FRIDAY, JULY 15.—The arrivals of English Corn this week have been moderate, but large of foreign. Wheat and Barley this morning's market was better attended, and a fair business transacted in Wheat at the full prices hitherto obtained, quit recovering the tendency to depression observable on Wednesday. In Flour some large sales have been made at extreme rates. Considerable transactions also occurred in floating cargoes of Wheat, at an improvement of 1s. per qr. The value of spring corn remains as on Monday.

## ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
Qrs.	2450	Qrs.	1690	2560 sack
Irish ...			2130	
Foreign ...	27380	15760	12250	740 bbls

## IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
June 4	43 3	29 6	19 0	34 0	38 9	33
— 11	43 11	29 10	18 10	34 9	38 1	34
— 18	45 0	29 1	18 11	30 11	38 11	34
— 25	46 11	29 3	20 1	32 8	39 5	34
July 2	47 3	29 10	20 6	32 6	40 1	35
— 9	47 8	29 2	20 6	35 11	40 8	35
Aggreg. Aver.	45 8	29 5	19 8	33 5	39 0	34

## FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	July 4.	June 11.	June 18.	June 25.	July 2.	July
47s 8d	...	...	...	...	...	...
47 3	...	...	...	...	...	...
46 11	...	...	...	...	...	...
46 0	...	...	...	...	...	...
45 11	...	...	...	...	...	...
45 3	...	...	...	...	...	...

LIVERPOOL, TUESDAY, JULY 12.—The arrivals of Wheat Flour this week are upon a moderate scale. The trade during the week has been inactive, the millers and dealers having variously supplied themselves pretty well, but prices have scarcely varied. The business at this morning's market was made and principally to consumers. Wheat was considered to be 1 2d. per bushel, and Flour 6d. per barrel lower than on this day's night. Oats and Oatmeal are rather dearer, and in demand. In other articles—Indian Corn, Barley, and Beans—turn of price was a trifle in favour of the buyer. Peas are scarce and command full prices.—FRIDAY, JULY 8.—With the exception of foreign Wheat, and a few arrivals of Indian Corn barrel Flour, our imports of the past three days are very trifling. There is, at this day's market, a limited number of cotton buyers, and the election interferes with the attendance of local trade. Most purchasers having recently supplied requirements, the general business to-day proves of only moderate amount. Wheats are held very firmly, and quotations are as commanded by buyers at a slight concession, in some cases Oats and Oatmeal steady at the late improvement. Egyptian Beans a slow sale at 55s. Indian Corn is in moderate request Tuesday's rates.



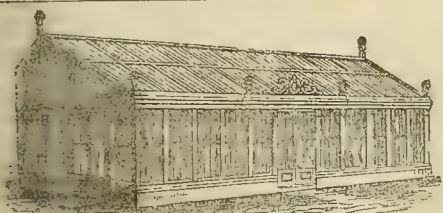
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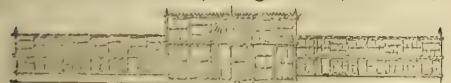
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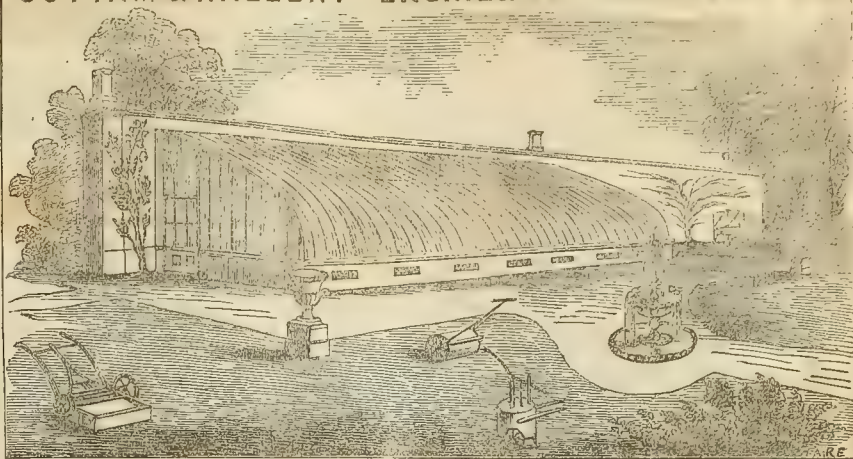
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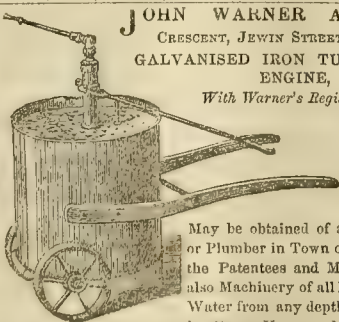
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No. 30.—1853.]

SATURDAY, JULY 23.

[PRICE 6d.]

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**SUTTON AND SONS** having made it their special business to collect Natural Grass Seed, and mixing them in proper sorts and proportions to suit the various soils of Great Britain, can supply them either separate or mixed, of the very best quality, at moderate prices.

For particulars, address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## SEEDS FOR AUTUMN AND PRESENT SOWING.

**J. CARTER, SEEDSMAN AND FLORIST, No. 238, High Holborn, London,** takes the liberty of submitting the following List of SEEDS for present or Autumn sowing. They will be forwarded, Carriage-free, at the prices affixed. By sowing Perennials and Greenhouse Seeds at this season, a whole year is gained, and the Autumn-sown Annuals flower much earlier than when sown in Spring. The Perennials will come in very useful for bedding and filling up vacancies in Spring. The Assortments comprise the finest varieties. 50, 25, or 12 may be had at the same rate as per 100.

**I. FOR PRESENT OR AUTUMN SOWING.**

100 BIENNIALS AND PERENNIALS, all hardy	20 0
100 GREENHOUSE SEEDS, annual and perennial	30 0

**II. FOR AUTUMN AND EARLY SPRING SOWING.**

100 ANNUALS, all hardy	16 0
25 CALIFORNIAN ANNUALS, all hardy	4 0

**III. ALSO THE FOLLOWING ASSORTMENTS, &c.**

**HARDY ANNUALS.**

4 Calliopsis	1 0	12 Petunia	4 0
4 Candytuft	1 0	12 Phlox Drummondii	4 0
4 Clarkia elegans	1 0	5 Primula sinensis	3 6
4 Clarkia pulchella	1 0	4 Thunbergia	1 6
5 Collinsia	1 0	4 Tropaeolum	1 6
4 Convolvulus minor	1 0	Mixed Greenhouse	1 0
6 Godetia	1 0	Seeds	1 0
12 Larkspur, dwarf	2 6	<b>STOVE SEEDS.</b>	
12 " tall	2 6	Achimenes, mixed	1 0
4 Lupinus	1 0	Canna, mixed	0 6
6 Nemophila	1 0	Ferns, West Indian	1 0
6 Poppy	1 6	4 Gesnera	3 0
6 Scabiosa	1 3	Gloxinia, mixed	1 0
4 Scizanthus	1 0	Mixed Stove Seeds	1 0
4 Sweet Peas	1 0	BI- & PERENNIALS.	
3 Viscaria	1 0	8 Antirrhinum	1 6
5 Xeranthemum	1 0	6 Aquilegia	1 6

**GREENHOUSE AND FRAME SEEDS.**

4 Acanthia	1 0	8 Campanula	2 0
4 Anagallis	1 6	8 Digitalis	1 0
3 Broomrape	0 9	3 Forget-me-Not	1 0
4 Calceolaria, 100 var.	2 6	4 Gaillardia	1 6
4 Chorozema	1 6	4 Geum	1 0
4 Cineraria	3 0	12 Hollyhock	2 0
6 Erica	2 6	6 Indian Pink	1 6
Gomphrena, orange	1 0	8 Lupinus	1 6
4 Heliotropium	1 6	6 Gnolthera	1 6
4 Hibiscus	1 6	4 Passerina	1 6
4 Kennedya	1 6	8 Penstemon	2 0
4 Maurandya	1 6	4 Potentilla	1 0
6 Mimulus	2 0	4 Sweet William	1 3
4 Passiflora	1 6	4 Wallflower	1 6

Mixed Packets at 6d. each may be had of all the above, except Achimenes, Calceolarias, Cineraria, Gesnera, and Gloxinia, of which the smallest Packets are 1s. each.

**ALEXANDER PONTEY, NURSERYMAN, Plymouth,** begs to offer the following healthy Plants in pots at the Prices and Heights named:—

Araucaria excelsa	24 to 36 inches	2 2 0
"	18 "	1 1 0
" gracilis glauca	9 "	0 7 6
" from New Caledonia	4 "	1 1 0
Abies Jessoensis	12 "	1 1 0
Andromeda formosa	6 "	0 10 6
Biota glauca	7 "	1 1 0
Thujaopsis borealis	9 to 9 inches	0 3 6
Libocedrus chilensis	6 "	0 3 6
"	12 "	0 7 6
"	15 "	0 10 6
Fitzroya Patagonica	12 "	1 1 0
"	6 "	0 7 6
Thuja filifolia	6 "	0 2 6
Taxus adpressa	9 "	0 2 6
"	12 "	0 3 6
" baccata (yellow fruited)	12 "	0 2 6
" marginata	12 "	0 2 6
Cephalotaxus Fortunei (male)	12 "	1 1 0
" (female)	12 "	1 1 0
Podocarpus Totara	18 "	0 2 6
"	6 "	0 2 6
" coriacea	6 "	0 3 6
Quercus glabra	6 "	0 3 6
Enonymus ambrinarius	6 "	0 2 6
" japonicus	12 "	0 1 6
Hex latifolia	6 "	0 3 6
" furcata	6 "	0 5 0
" coronata	6 "	0 5 0
" microcarpa	4 "	0 5 0
" latifolia nova (true)	12 "	0 2 6
Eurylia japonica	6 "	0 2 6
Pittosporum Mayi	12 "	0 2 6
Ligustrum japonicum	12 "	0 1 0
" ovalifolium	12 "	0 1 0
Hydrangea japonica	9 "	0 1 0
Escallonia macrantha	12 "	0 1 0
"	18 "	0 1 6
Cupressus funebris	12 "	0 1 6
Podocarpus coriaceus	9 "	0 1 6
Bontzia gracilis vera	6 "	0 1 6
Picea Nordmanniana	9 to 12 inches	1 1 0
Pinus insignis	6 "	0 2 6
" Franzosiana	9 "	0 10 6
" Pinow	6 "	0 1 6
Myrsine undulata	6 "	0 2 6

ALEXANDER PONTEY, Nurseryman, Plymouth.

## ROSES.

**EDWARD DENYER, NURSERYMAN, Loughborough Road, Brixton,** within three miles of London, informs his kind patrons in general, that his unrivalled COLLECTION OF ROSES, reaching to nearly one thousand varieties, are now in Bloom, and free to the inspection of all Visitors, Sundays excepted. Orders taken at this time and executed in November next.

## LAVENDER.

**TO BE DISPOSED OF, a Crop of LAVENDER** from 8 to 10 acres, within 3 miles of the Twyford Station. There is a Still, Baskets, and everything necessary to extract the oil on the premises.—Apply, post paid, to M. F., Post Office, Henley-on-Thames, Oxfordshire.

**GEORGE TAYLOR, JUN., FRUIT SALESMAN,** St. John's Market, Liverpool.

Contractor for and Purchaser of  
**PEACHES**  
**MELONS**  
**NEUTRINES**  
**APRICOTS**  
And other choice Fruits during the season.  
Goods sold on Commission.

**GREAVES FOR PIG FEEDING.**—The Subscribers have a few tons of Lard Greaves, of good quality, to dispose of. Price, only 7d. per ton, delivered at Fenning's Wharf, close to London Bridge.

RICHARDSON & STRANGMAN, Waterford.

**ESTABLISHED MORE THAN 100 YEARS.**

**THOMAS MILLINGTON, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.**

WAREHOUSE, ST. BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, Squares in boxes, 100 feet each. not above 40 inches long. Under 6 by 4 ... 12s. 6 by 4, 6 by 4 1/2 ... 13s. 16 ounces ... 3d. per foot. 7 by 5, 7 1/2 by 5 1/2 } under 9 by 7 15s. 21 ounces ... 4d. " 8 by 6, 8 1/2 by 6 1/2 } 20s. 26 ounces ... 5 1/2d. " 9 by 7, 9 1/2 by 7, 12 by 10 } 20s. 32 ounces ... 7 1/2d. " 13 by 10, 14 by 10, 15 by 10 }

Large Sheet of No. 16 very superior, packed in cases of 100, 200, and 300 feet, at 2d. to 2 1/2d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Chandeliers and Ornaments, Fern Shades and Dishes.

**JAMES PHILLIPS AND CO., 116, Bishopsgate Street Without,** have the pleasure to hand their prices of

**GLASS PRESERVE JARS.**

3 inches diameter	0 3	With lid	0 4 1/2 each.
4 "	0 5	"	0 7 "
5 "	0 7	"	0 9 "
6 "	0 9	"	1 0 "
7 "	1 0	"	1 3 "
8 "	1 3	"	1 7 "
9 "	1 6	"	2 0 "
10 "	2 0	"	2 6 "

Fruit Bottles, 3s. 6d. per dozen.

**GLASSES FOR WALL FRUIT.**

**HALLMAN'S FRUIT PROTECTOR.**—REGISTERED.

Glasses, 8 inches diameter ... 15s. per doz.

" 6 " " " " " " 9s.

" 4 " " " " " " 6s.

**GLASS MILK PANS (17 inches in diameter), the same size as the foreign ones, but superior in colour, make, and quality, at 2s. each, or 21s. per dozen.**

Propagating Bee Glass at reduced prices. Stand Frames, Cucumber Tubes, Milk Siphons, Glass Churns, and most articles requisite for the Dairy and Horticultural purposes.

116, BISHOPSGATE STREET WITHOUT.

**GLASS FOR CONSERVATORIES, ETC.**

**HETLEY AND CO.** supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES AND SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

**TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.**

**PATENT GLASS TUBES, Iron**

Coated with Glass, Gutta Percha, Combined ditto, Patent Flexible India Rubber Tubing, and every other hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Shuco Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

**FREEMAN ROE,**

HYDRAULIC ENGINEER,

70, Strand, and Bridgefield, Wandsworth.

**BAKER'S FOUNTAINS.**

**THE PRESENT, BEAUFORT STREET, KING'S ROAD, CHELSEA.**

**MESSRS. BAKER** can confidently recommend their

FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 2 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.



### HEATING BY HOT WATER. EFFICIENCY GUARANTEED.

**HOT-WATER HEATING APPARATUSES**, upon approved principles, supplied and fixed in Horticultural and other Buildings, by **WILLIAM DODDS & CO.**, Heating Engineers, 102, Leadenhall-street, London. First-rate references if required.

### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

**EDWARD AND A. WEEKS** (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.

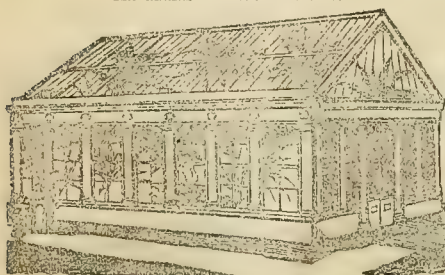
One, two, and three-light Boxes always on hand.



**HOTHOUSES, CONSERVATORIES, &c.**, made and fixed complete, at a considerable reduction. **CUCUMBER AND MELON BOXES AND LIGHTS** of all sizes, made of the best materials, glazed and painted complete, kept ready for immediate use, packed and sent to all parts of the kingdom. Reference may be had to the nobility, gentry, and the trade in most of the counties in England.—**JAMES WATTS**, Hothouse Builder, Claremont Place, Old Kent Road, London.

### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON**, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

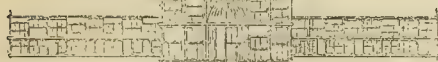
G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

### HORTICULTURE IN ALL ITS BRANCHES.



**J. WEEKS & Co.**, King's Road, Chelsea,



### HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The **HOT-WATER APPARATUSES** (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation. The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. **J. WEEKS & Co.**, King's Road, Chelsea, London.



### BEEHIVES.

### NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE.

As originally introduced by George Neighbour & Sons, complete, with all the recent improvements, glasses, thermometer, &c., price 35s., securely packed for the country.

This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees, the produce being of crystal purity. The public are hereby cautioned against a piracy of this Beehive. Early applications addressed to **Geo. Neighbour & Sons**, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Hives, with drawings and prices, sent on receipt of two stamps.

AGENTS.—LIVERPOOL: JAMES CUTHBERT, 12, Clayton Square. MANCHESTER: HALL & WILSON, 50, King Street. GLASGOW: AUSTIN & M'ASLAN, 168, Trongate. DUBLIN: J. EDMONDSON & Co., 61, Dame Street.

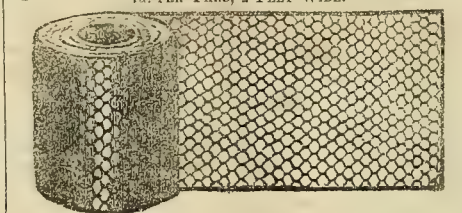
### RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.—NEW TWINE NETTING (Tanned if required).

—1 yard wide, 1 1/2 per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard; half-inch mesh ditto, 2 yards wide, 6d. per yard. **THE ELASTIC HEXAGON GARDEN NETTING**, 7 1/2 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 4d. per square yard. Tanned Netting, 2 or 3 yards wide, 1 1/2 per yard; 4 or 6 yards wide, 3d. per yard—exactly the same as advertised by others at double the above prices. Coir or Hemp Sheep-folding Net, of superior quality, 4 feet high, 4d. to 6d. per yard. Lamb Net, 6d. per yard. Fishing Nets, Poultry Fencing. A 20-yard Drag Net, with Purse complete, 2s. 10s. A Single Walled Drag Net, any length and depth, 1s. per square yard. Casting Nets complete, 1s. per yard, measured round the Lead Line. The Nets, any size, 1s. per square yard complete. Minnow Nets, Eel Nets, Landing Nets, equally cheap, all warranted first-rate quality and workmanship. Rabbit Net, 4 feet wide, 1 1/2; 6 feet wide, 2 1/2; 8 feet wide, 3d. per yard. Each Edge Corded, 3d. per yard extra, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing, against Fowls, Cats, &c., at **WM. CULLINGFORD'S**, No. 1, Strathmore Terrace, Shadwell, London. Orders by Post, with Post-office order or Town reference, punctually attended to.

**TANNED NETTING**, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Serim Canvas, for Wall Fruit.

At **EDGEMONT & Co's**, 17, Smithfield Bars, City, and Old Kent Road, Southwark; and at Brunswick Street, near the East India Export Dock, Poplar, where may also be seen erected Emigrant Tents in great varieties, on their latest improved principles.

### GALVANISED WIRE GAME NETTING.—7d. PER YARD, 2 FEET WIDE.



	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 "	6 1/2 "
2-inch " extra strong "	12 "	9 "
1 1/2-inch " light "	8 "	6 "
1 1/2-inch " strong "	10 "	8 "
1 1/2-inch " extra strong "	14 "	11 "

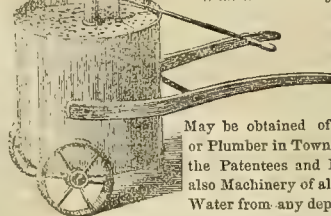
All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free. Manufactured by **BAXAND & BISSOP**, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

### JOHN WARNER AND SONS,

CRESCENT, JEWIN STREET, LONDON.

### GALVANISED IRON TUB GARDEN ENGINE.

With Warner's Registered Spreader.



Is strongly recommended, for durability and low price, viz., £3.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height, by Steam, Horse, or Manual Power.

### WATERPROOF PATHS.—Those who would enjoy

their Gardens during the winter months should construct their walks of **PORTLAND CEMENT CONCRETE**, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, **J. B. WHITE & BROTHERS**, Millbank Street, Westminster.

### PERUVIAN GUANO.

### CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

### ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, **ANTONY GIBBS AND SONS** think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2 1/2 per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

### PERUVIAN GUANO.—The guaranteed import of

Messrs. **ANTONY GIBBS AND SONS**, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes.

**WILLIAM INGLIS CARRIE**, 10, Mark Lane, London.

### SUPERPHOSPHATE OF LIME, warranted the

very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also **CORN MANURE** for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

**PERUVIAN GUANO**, guaranteed the genuine importation of Messrs. **A. GIBBS & SONS**. A constant supply of **LINSEED AND RAPE CAKE**. **EDWARD PURSER**, Secretary.

**LONDON MANURE COMPANY**, Bridge Street, Blackfriars.

### MANURES.—The following Manures are manu-

factured at Mr. Lawes' Factory, Deptford Creek:—Turnip Manure ... per ton £7 0 0 Superphosphate of Lime ... " 7 0 0 Sulphuric Acid and Coprolites ... " 5 0 0

Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

### GUTTA PERCHA HORTICULTURAL LABELS

FOR ROSES, SHRUBS, TREES, &c., are easily read, very elegant, and extremely durable. Price 8d. per dozen, including every name, printed on the Gutta Percha in bold letters. Sample dozens sent post free on receipt of 12 postage stamps. Sold by **E. TAYLOR**, Gutta Percha Warehouse, Colchester.

### IRON HURDLES ETC.

**THOMAS PERRY AND SONS**, Manufacturers of Wrought Iron Plain and Ornamental Hurdles, improved continuous Fencing, Gates, &c., Highfield Iron Works, Bilston, Staffordshire, and 28, Oxford Street, London. From the extent of their works (situated in the centre of the iron district), and other advantages, **THOMAS PERRY & SONS** are enabled to execute all orders in the promptest manner, and on the lowest possible terms.

### WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d. Patent Pump ... 1 15 0 Patent Pump with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... 3 0 0

Larger sizes if required. To Emigrants proceeding to the Gold Regions they will prove to be the most simple, durable, and the cheapest Pumps hitherto introduced.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

**JOHN WARNER & SONS,**

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

### STEPHENSON AND PEILL, 61, Gracechurch Street,

London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Hothouses and other Buildings by Hot Water. From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

### CARSON'S ORIGINAL ANTI-CORROSION

PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to **WALTER CARSON & SON**, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

### THE COMFORT OF A FIXED WATER-CLOSET

FOR £1.—Places in gardens converted into comfortable Water-closets by the **PATENT HERMETICALLY SEALED PAN**, with its self-acting valve, entirely preventing the return of cold air or effluvia. Indispensable for the health and comfort of a family in hot weather. Any carpenter can fix it in two hours. Price 12l. Hermetically Sealed Inodoriferous Chamber Commodities, 11 4s., 2l. 6s., and 3l.; also Improved Portable Water-closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps. At **FYFE & Co's**, 26, Tavistock Street, Covent Garden, London.

### BERDOE'S SUPERIOR LIGHT SUMMER

OVER-COATS possess every quality essential to a really respectable and gentlemanly garment, and, if desired, the well-known additional recommendation of resisting any amount of rain, without confining perspiration (the fatal objection to all other waterproofs); and being entirely free from vulgar singularity, are adapted for general use at all times equally as for rainy weather. Price **TWO GUINEAS**; or, waterproof, 45s. and 50s. Every size kept; also, one of the largest stocks in London of every description of over, summer, morning, and shooting coats, &c., &c.

**W. BERDOE**, 96, New Bond Street, and 69, Cornhill (only).



## JUST HARVESTED.

**SUTTON'S LINCOLNSHIRE RED GLOBE TURNIP.**—Fine New Seed, 1s. per lb. **SUTTON'S EARLY SIX WEEKS,** 10d. per lb. **CHIVAS'S ORANGE JELLY,** 2s. per lb., or at reduced prices in large quantities. Carriage free to all parts, except parcels under 20s. value.  
Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**WILLIAM BARNES** respectfully begs to acquaint his Friends and the Public generally that he has now ready to send out a small portion of his unrivalled **CALCEOLARIA SEED**, saved from his collection so universally admired by those who purchased his seed last season. Also, **CINERARIA** and **HOLLYHOCK SEED**, saved by himself, from all the best kinds in cultivation, which W. B. has purchased from all the most eminent growers of the above two beautiful tribes of plants, and cannot fail to give the greatest satisfaction to all those who may think proper to purchase his Seed.

The above can be sent by post in 2s. 6d. and 5s. packets. A remittance is expected from unknown correspondents.  
Camden Nursery, Camberwell, London.—July 23, 1853.

**WM. WOOD AND SON** beg leave to announce that their unrivalled Collection of **ROSES** is now coming into fine bloom, and will continue in great perfection during the season. The Nursery is distant 12 miles from Haywards, on the London and Brighton Railway, from whence conveyances may be obtained.

N.B. There is a Coach from Brighton to Tonbridge Wells, and vice versa, on each alternate day of the week (Sundays excepted), passing within a mile of the Nursery.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

**THE QUEEN OR CAULIFLOWER CABBAGE.**—The above Cabbage is of most delicate flavour, quite equal to the Cauliflower; very early and requires good ground. The stumps left in the spring after the Cabbages are cut will reproduce Cabbages all the summer, so that persons growing this kind need not make more than one good bed in the year. It should be sown this month and planted out in September.—1s. per oz.

**LONDON MARKET CABBAGE.**—Saved from a very choice stock. This kind is of larger growth than the Queen, and will do well for exposed situations.—1s. per oz.

**HAMPSHIRE BROWN COS LETTUCE,** 1s. per packet.—A most excellent kind to stand the winter.

**NEW HARDY CAULIFLOWER,** 1s. per packet.—This kind will stand the winter without protection if pricked out early in the autumn, in unmanured ground and in a dry airy situation.

The above sent free by post on the receipt of postage stamps or a post-office order.

JOSEPH SHILLING, Nurseryman and Seedsman, Winchester.

**PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.**

**JOHN CATTELL,** Westerham, Kent, begs respectfully to inform the public that he has still a plentiful supply of Plants of his superior true sorts of the above, which will be forwarded to order on receipt of postage stamps or Post-office order made payable here, at the following reduced prices, package included:—All the sorts of Early Cabbage, Savoy, and Kale, including Brussels Sprouts, 4s. 6d. per 1000; all the sorts of Autumn and Spring Broccoli, 4s. 6d. per 1000; all the sorts of Celery, 4s. 6d. per 1000; Cauliflower, Early and Late, and Red Cabbage, 3s. 6d. per 1000; Drumhead or Cattle Cabbage, 3s. 6d. per 1000. 6d. per 1000 less when no package is required. Packages of 1000 and upwards delivered free of carriage to London, and to the Edenbridge Station of the South-Eastern Railway.

**SEED OF CATTELL'S DWARF BARNES,** and of his superior **DWARF RELIANCE CABBAGE,** may be had in packets, by post, for 12 penny stamps per packet, the former containing one ounce, as usual, and the latter half an ounce.

**VINES FROM EYES IN POTS.**—The following select varieties of GRAPES are offered, part of a stock of 4000 as being now nearly ripe, and in a fit state for planting; they are of extra fine quality, mostly two years old, stout, and 6 to 7 and 8 feet long, 3s. 6d. each, except those priced, carriage paid to London.

- |                                     |                                  |
|-------------------------------------|----------------------------------|
| 1. Barbarossa, 5s.                  | 10. Richmond Villa Hamburg, 5s.  |
| 2. Black Prince.                    | 11. Royal Muscadine.             |
| 3. Black Prince Hamburg (Williams). | 12. Muscat of Alexandria.*       |
| 4. Chasselas Musqué.                | 13. Cannon Hall Muscat.*         |
| 5. Grizzly Frontignan.              | 14. Purple Constantia (Welbeck). |
| 6. White ditto.                     | 15. St. Peter's (Oldaker's).     |
| 7. Black Hamburg.                   | 16. Sweet Water, Dutch.          |
| 8. Mill Hill Hamburg (late), 5s.    | 17. Sweet Water Floride.         |
| 9. The Pope Hamburg (early).        |                                  |

No. 3 was raised from seed by John Williams, Esq., of Pitmanston; it is of first-rate quality, a most vigorous grower and great bearer. No. 14 is a Frontignan Grape, and one of the finest in favour.

\* Extra sized plants of these in No. 12 pots can be had at 5s. each.

THOMAS RIVERS, The Nurseries, Sawbridgeworth, Herts.

## PICEA BRACATEATA.

**MESSRS. VEITCH AND SON,** of Exeter, and the Exotic Nursery, Chelsea, have much pleasure in stating that they have been fortunate enough to raise a limited number of Seedling Plants of the above beautiful **NEW CALIFORNIAN PINE**, of which a full description was given by Dr. Lindley, in the leading article of the *Gardeners' Chronicle* of July the 9th. The Plants are two years' Seedlings, established in small pots, price 4s. each. Specimens of the cone and foliage can be seen by visitors, at either of MESSRS. VEITCH'S Nurseries.—July 23.

## The Gardeners' Chronicle.

SATURDAY, JULY 23, 1853.

MEETINGS FOR THE ENSUING WEEK.

Thursday, July 26	Royal South London Horticultural	1 P.M.
	Horticultural	3 P.M.
Thursday, — 28	Zoological	9 P.M.
	Naturalists	9 P.M.
Colony Show for the Present Month—26th.	Handsworth and St. Paul's—27th.	Isle of Wight and Buckingham—28th.
Medical Horticultural (Derby).		

It is very probable that in by far the greater number of cases where bad consequences arise from **EATING FUNGI**, some mistake has been made respecting the particular species employed, and not that a species which in ordinary usage is wholesome is in some especial instance deleterious. Persons who are not intimately acquainted with Fungi cannot be too strictly cautioned against the use of such kinds as are not generally admitted by amateurs of these productions into their cuisine. Few practised fungophages would, for instance, encourage such a tough ill-flavoured species as *Ag. ostreatus*, though

it may now and then find advocates on the continent, where any kind of food which is not positively poisonous occasionally forms an article of consumption. Here and there, however, we have reports of some one bold enough to dash at anything which has a decent reputation, and an instance of the danger of such practices has very recently occurred. *Ag. ostreatus* is properly an autumnal species and is reported to be wholesome, but there is a vernal species, *A. euosmos*, which very closely resembles it, and can scarcely be distinguished except by the subtle character that its spores are of a roseate tint, resembling what is known by the name of French white, not of an unclouded chalky aspect; for though in some cases this species has a strong smell of Tarragon, in the instance before us this pleasant odour was replaced by a disagreeable, musty, farinaceous smell.

A person who had gathered a quantity of this species, under the notion that it was *A. ostreatus*, was cautioned by one well versed in such matters against its use, as tough and unwholesome; but without further conference, having found some smaller specimens, he persisted in cooking them. The next day he was seized with violent griping pains at short intervals, and frequent diarrhoea, and even when these were moderated they were sufficient, in the presence of a physician, to whom we are indebted for the report of the case, to double him up occasionally, from their suddenness and severity. It appeared that, as the Agaric was not palatable, he took only such a piece "as would lie over a breakfast cup." He had slept comfortably, and did not feel unwell till he was about to take breakfast, after which he was seized with violent retchings, and as these subsided other symptoms supervened; but happily, as the portion taken was but small, the cerebral evil was confined to an uneasy swimming sensation in the head. There is little doubt that if the dish had proved more palatable serious consequences would have ensued. The patient is a very strong man, and one whose digestive powers are by no means apt to take offence at trifles, and therefore the case is so much the better calculated to recommend due caution. If such danger may unconsciously arise where species are so closely allied that even the most practised mycologist could not at once decide as to their difference, we need not be surprised that fatal mistakes should occur where even palpable differences are overlooked. *M. J. B.*

THE next **ROYAL FOREST** on our list is that of **HOLT**, or **ALICE HOLT**; but since its accounts were, till the year 1847-48, mixed up with those of another forest called **WOOLMER**, and both have been for many years under the same management, it is necessary to take them together. Both are in Hampshire, not far from Farnham.

Holt Forest consists of 1896 acres, of which about 34 are occupied by lodges. The soil is principally clay or loam, extremely well adapted to the growth of Oak. Woolmer occupies about 5949 acres, of which 1847 are in timber. Mr. CLUTTON described, in 1849, 300 acres of the latter as having a very good crop of Oak, and the rest as being too poor to bear anything better than Scotch Fir and Larch; as to the unenclosed forest, consisting of above 4000 acres, the poverty of the land was reported to be such as to render all expenditure upon it unprofitable. The Scotch Firs out of the enclosed parts are represented by the same authority as having grown tolerably well in some places, and as having found a ready sale for Hop poles in the Farnham Hop grounds. Upon the whole, Mr. CLUTTON was of opinion that no further expenditure should be incurred on account of the place, but that the crop should be converted into money as fast as it arrived at maturity, and the property got rid of. We should like to know who the Commissioners were who advised the occupation of such a place for the growth of navy timber. The whole value of it, timber included, after incurring an enormous expenditure, was returned in 1849 as being only about 7l. an acre. It seems to have been taken in hand in 1812.

In 1849 Mr. MILNE, then one of the Commissioners, stated that Holt was in as improving a state as it could be; Mr. CLUTTON reported that it was in a most flourishing and excellent condition; and the deputy surveyor fully concurred in these opinions. Lord DUNCAN's Committee thought that after being planted 30 years, it was, in 1849, affording a fair rent for the land.

We find little evidence bearing further upon these possessions, except a remark in the 30th Report on the Woods and Forests, that the income for 1852-3 is not very satisfactory; and a curious piece of information, elicited from Mr. PRETTEJOHN, the foreman in Woolmer. This witness stated that he had always been anxious to try the experiment of planting Oaks in those unenclosed wastes of that forest, which, as we have seen, are represented to be

a wet sterile sand; that up to 1836 he could never get his plan sanctioned; but that afterwards he did succeed, and was allowed by the present deputy surveyor to plant 4000 Oaks, selected from the plantations and inclosures, from 7½ to 11 feet high, about 1½ inch in diameter, at a cost of from 4½d. to 6d. per tree. A thousand of them died; a few have been cut, the rest were living in 1849, and nearly all were likely to establish themselves; half were doing very well indeed, in the opinion of the foreman who was permitted to try this sagacious experiment. It would be interesting to know what these Oaks are really like.

We find that the annual loss upon Holt and Woolmer for the 10 years preceding the appointment of the present deputy-surveyor varied from 128l. to 2245l.; that in the year of his taking charge there was, for the first time since 1825, an actual gain of 122l. on the 4000 acres. It is true that, in the succeeding year, the expenses exceeded the income by 1064l.; but, from that time forward, there has been always some profit realised, with the exception of 1852-3, when a loss of 461l. is anticipated. Of late the gross income of Holt and Woolmer combined has risen from 2270l. in 1839, through various fluctuations, up to 5719l. in 1847. It then began to fall, but since has risen as high as 5613l. in 1851-2. The gross income of Holt for the year 1852-3 has, however, dropped from 4570l. to 963l., in consequence of the condition of the plantations there rendering it advisable to suspend the thinning for that year.

The results of the management in these forests, although apparently not so bad as in some others, are, however, not particularly brilliant. Taking 4000 acres as the rough area of Holt and Woolmer, they have never of late years returned more than 10s. per acre to the revenue till the year 1851-2; and sometimes not quite a shilling.

The deputy surveyor of Holt and Woolmer is Mr. NEWBURGH HIGGINBOTHAM, formerly "in the medical profession, having attended two dispensaries in Ireland." He was appointed in October, 1837, by Lord BESBOROUGH, and sent to the *New Forest* for a short time. He had had some previous acquaintance with the management of woodland, "having been all his life in the country." He "had been used to plantations in his own place, and his relatives, but never had the management of a forest before." The salary is 200l. a year, with a house and six acres of land valued at 49l. a year, wood for fuel valued at 10l. a year, and an allowance of 60l. a year for horse keep.

No timber has been supplied to the Navy by Woolmer or Holt since the year 1824.

BESIDES the two forms of **MILDEW** which have been lately ravaging, to such a lamentable extent, the vineyards of the south of France, M. FABRE has observed two other serious maladies which he calls *Anthraxnose* and *Rougeau*. The former is always accompanied by certain imperfect coalblack punctiform fungals, which we believe to have nothing to do with the disease, but to be mere aftergrowths in tissues already in a more or less advanced stage of necrosis, as is the case with a minute *Phoma* which we have found abundantly on the dead shoots of our own Vines. Without any previous warning decay commences at the base of the new wood and gradually extends upwards, and does not, as in the maladies noticed last week, descend from the tips of the shoots. It is an affection apparently analogous to canker in Apples, or gumming in Plums, for the effusion of gum in the latter is merely an accidental circumstance. We do not, however, mean to assert that, in these latter instances, the evil always ascends, for we have evidence to show that the affection arises frequently from local causes, and at one and the same time spreads in two opposite directions from a common centre.

The *rougeau* is a very singular malady, partaking, however, of the nature of necrosis. It appears first in the leaves, causing them to assume a red tint, and ultimately to fall, while the whole, or one side only of the shoot on which they grew is affected, the other remaining sound. The shoots themselves do not put on the same colour as the leaves, but ultimately become black. The malady descends slowly but surely from the top of the shoots. From the moment that the leaves become red, the bunches do not swell. In those cases where the fall of the leaf is partial, black but imperfectly ripe Grapes are mixed with others which do not acquire their proper colour, but are red like the leaves. In every case the quality of the wine is greatly impaired.

It is curious that this disease is communicated from one plant to another, though it is quite inconceivable how this takes place.

In both these cases where the affection is virulent, the only plan to arrest the disease is to cut the plants off even with the ground, but it is not considered advisable to have recourse to this extreme



measure, till about three-fourths of the plant are affected. Death is the certain consequence if this is delayed too long; but as the descent of the infection is gradual, a certain measure of delay is perfectly safe.

In every case alike, whether of mildew or necrosis, M. FABRE found that vineyards situated in close valleys, or exposed to moist winds, were more subject to disease than those which were sheltered; that a thick hedge, or other inclosure, was often a complete preventative, and that a perfect system of drainage was absolutely essential to health. M. FABRE is inclined to attribute the modern prevalence of disease amongst the vineyards of the south of France to the alterations which have taken place in the mode of culture consequent on the increase of distillation of brandy from Grapes. In former days superior quality was always an indemnification for diminution in quantity, but the practice of procuring alcohol from Grapes made the quality of comparatively less consequence; and the object of cultivation, therefore, was to increase the produce, without any respect to the exigencies of the plant. Forcing manures were therefore used or less close pruning, both of which are circumstances highly favourable to the production of disease. This notion of course is only locally applicable, and cannot account for the peculiar phenomena or progressive course of the mildew, though it may be very fairly taken into account in the consideration of the peculiarly aggravated form which the disease is now assuming in the south of France, especially if we allow, with M. FABRE, that the various forms of disease which he has described, and others which have not been at present examined, are all due to very recent causes. Still, whatever we may think of the subject generally, we cannot deny that there are some good hints in M. FABRE's paper, as was sure to be the case with a practical observer at once so intelligent and judicious. *M. J. B.*

#### CULTURE OF THE VINE.—No. II.

The soil which I recommend as well adapted for the growth of the Vine is one-fourth part light turfy loam, one-fourth well decomposed rich farm-yard manure, one-fourth leaf-mould, one-eighth river sand, and one-eighth old lime mortar—all being well mixed and thoroughly incorporated by means of frequent turnings. I prefer propagating the Vine from eyes taken from healthy fruitful plants. I can then depend upon the sorts I plant, and thus avoid, when they begin to bear, the too frequent annoyance of finding that one sort has been planted for another. Having obtained in this way good strong one-year-old plants, I would plant them about the beginning of March; the soil should be carefully removed from the roots, except such as may adhere to the small fibres; the larger roots should be regularly spread out, and the longest cut back; the roots should be laid upon and covered with light rich sandy soil, to promote the growth of young fibres. And here I would observe that the front wall of the house should be built on arches, through which the plants may be brought into the house. The length to which the Vine may be cut back will be considered its future stem; but this will entirely depend upon the construction of the house, as only one eye should be allowed to push to produce the future fruitful rod.

Suppose we have been enabled to raise our own plants, and have a greater number than is required for planting, the overplus should be brought into the house, with a view to have good Grapes the first season. As Vines can be successfully grown in pots, I shall here relate my mode of practice. About the 1st of January the eye is cut with an inch of wood above and below it, and put in a small pot, commonly called a 60 or 3-inch pot; the soil most suitable for it is good leaf-mould and sand. When all are prepared, they are placed in a hot-bed or Cucumber frame; the eyes will soon burst into leaf, after which young roots will be protruded, and the lengthening of the shoot will soon follow. To encourage their growth they should be shifted into 8-inch pots. The soil may now be that previously recommended; they remain in these pots until they have grown from 18 inches to 2 feet in length, and then they should be finally shifted into 16-inch pots. When shifted the plants should be placed so low in the pot that it may not be more than two-thirds filled with soil. The necessity of ample drainage need not be insisted on; the best place to grow these Vines is in a pit sufficiently wide for the extension of the rod, and heated by hot-water-pipes, over which the pots should be placed within a foot of their surface. The mild heat from the pipes will excite the roots, and cause strong and healthy growths, which should be trained not nearer to the glass than 2 feet. Great care should be taken that, on all favourable occasions, a due circulation of air is kept up, so that strong short-jointed rods, with plump well developed buds may be produced. They should be duly supplied with water, and once a week with clear liquid manure, at a temperature the same as that in which the roots are placed. When sufficient length of wood has ripened, the water may be gradually withheld, and as soon as the foliage gives indication that maturity is accomplished, the pots may be removed to a south wall to be laid on their side, and the rods nailed to the wall,

the pots being kept dry by covering them with any suitable material. About a month before they are taken in to force the early formed buds on the rods are removed to the length of 5 or 6 feet from the pot; the rod is then coiled down upon the soil in the pot, and secured with strong pegs. The length of the rods on which the bearing buds are left may be from 6 to 3 feet, but I would not advise more than five or six bunches to be grown on one Vine. The pot will now be filled up with the compost. It is a good practice to paint the rods annually before forcing with a composition of clay, lime, and soot, to which may be added a large portion of sulphur, the effluvium of which tends greatly to prevent the attacks of red spider and thrips.

Having now planted the Vines in the border and brought the pots into the house to be placed in the most suitable situations according to its structure, I will proceed to take a review of the interior management. And here I would observe that to grow the Grape in perfection Vines alone should occupy the house; we thus get rid of mealy bug and other pests, and the consequent remedies so injurious in their application. I am well aware that the requirements of a large establishment are such that every available space must be occupied. The gardener ambitious to excel in early produce is stimulated to grow many things in Vineries which ought never to enter them. It is true many things may be cultivated there with impunity, but the chances are that the Vines will suffer. The Grapes will not be presented at table in that perfection to which they are capable of attaining, and the gardener will be deprived of at least self-approval. It would be well if employers of gardeners would act on the maxim—a "place for everything and everything in its place," and let the Vine flourish alone in the Vinery.

As before observed, the rods should be trained 2 feet from the glass. This will give room for the foot-stalk and full development of the leaf, and in future seasons will give freedom to the fruit-bearing shoots, and prevent their separation from the older wood, an evil to which they are so liable while in a young and tender state. As leaves are so important in the economy of the Vine, every care should be taken that they maintain their natural position. There should be no crowding; let every one of them have full exposure to light. It is delightful to a gardener to survey the full developed foliage like a green velvet sheet, within 1 foot of the glass, and noble bunches of Grapes below, progressing towards maturity. When the young wood has grown from 2 to 3 feet in length, it is well to see it thickly studded with small transparent globules, which indicate a healthy action of the roots. They show that the latter are absorbing food from the soil and transmitting it to the young stem to undergo the changes necessary for the formation of wood, &c., the leaves as yet not being sufficiently large for this purpose.

It is essentially necessary that a circulation of fresh air be kept up both by night and by day; to this end I would strongly recommend that holes about 9 inches square should be made along the front and ends of the house, as near the ground as may be convenient, in which wooden frames should be placed; the inside of the opening to be covered with fine wire, netting, or perforated zinc, the outside being furnished with a trap door to regulate the admission of air; similar provision should also be made along the top of the back wall, in order that the temperature may be regulated with perfect safety to the health of the plants. My experience teaches me that Vines receive more injury from neglect of proper ventilation than is generally suspected; the injurious effects of want of air are frequently attributed to other causes.

I am no advocate for the application of water with the syringe to the Vine. I have for many years discontinued its use, unless plants subject to insects are growing beneath them; then it is freely applied to the plants, but never to the foliage and fruit of the Vine. A sufficiently moist atmosphere can easily be maintained, by the use of evaporating pans, and sprinkling the paths and bottom of the house with water.

Suppose the Vines to have grown satisfactorily the first season, and to have produced well-ripened wood, when pruned, the rods should be left from 4 to 6 feet long. The house may be shut up about the 1st of the following February; two or three bunches may be left on each Vine this season, but the primary object should be to have the plants well established, abundantly rooted, and wood thoroughly ripened, before a crop is taken from it. The third season the rods should be left as long as the width of the house will allow. They will show abundance of fruit, but here lies the danger; the Vines are yet young, an over crop would much injure them, therefore proceed cautiously, removing the bunches judiciously, so that a moderate crop may be left regularly over the house. The good effects of this practice will be evident in due time.

When in bloom it is desirable to give the rods a smart tap two or three times a day, to cause a dispersion of the fertilizing powder; some of the sorts that are shy in setting may have the farina of more fruitful varieties shaken over them; bunches of which may be left to cut for this purpose. When the berries are the size of peas, no time should be lost in thinning them; this is a tedious process, requiring skill in the performer, who should have a previous knowledge of the size of berry each variety is capable of producing. Great care should be taken that the bunches do not come in contact with the hand or any part of the operator's dress so as to cause abrasion of the tender skin of the berries and disfigurement of the bunch. When the stoning

process commences the berries will apparently cease to grow and little progress will be made, but no means should be used to hasten the stoning; on the contrary, a steady moderate temperature should be maintained until it is accomplished. When the fruit begins to colour a gradual withdrawal of moisture should take place, the same temperature may be continued, but a more abundant supply of air should be given; this is very important, for on a due circulation of air will depend the colour and bloom of the fruit. The colour of the Peach and the Apple depends upon a full exposure to the rays of light, not so that of the Grape, which elaborates the colouring matter more intensely under the shade of the foliage. The temperature of the house should vary from 55° to 65° by night, and from 70° to 85° by day, according to the state of the external temperature, avoiding all violent transitions, which can hardly occur if due attention is paid to what is so particularly insisted on, a due circulation of air. *Tassel.*

#### STYLIDIUM FASCICULATUM.

WHEN found in the shape of large well-managed specimens, with small bright pinkish blossoms, nearly hiding the foliage, this Stylidium has a very cheerful and pleasing appearance, altogether different from that of the mass of plants which bloom at the same season. Although rather delicate, and very liable to suffer from improper treatment, especially from excess of moisture at the root, yet if potted in a rich porous soil, through which water can readily pass, and otherwise carefully managed, it will be found to grow freely, and to soon form useful sized specimens.

Cuttings made of firm bits of the young wood planted in sandy, peaty soil, covered with a glass, and placed in a very gentle bottom heat, root freely. When just rooted sufficiently to bear handling, they should be potted singly in small pots, and kept rather close and moist till they have become established, when they may be inured to more light and air, in order to induce growth of a healthy character. Beginners, however, who can afford to buy healthy plants from the nursery, had better do so; for this, like other plants of a somewhat delicate nature, requires more attention to propagate it successfully than many amateurs might be inclined to give it.

In order to be able to produce large specimens, one or two seasons' growth will be necessary before they are allowed to blossom. Plants procured at the present time may be induced to make considerable progress before the end of the growing season. They should be placed in a cold pit or frame, where they can be screened from the direct rays of the sun in the event of bright hot weather setting in, and the atmosphere should be kept moist by sprinkling the plants, &c., on the mornings and afternoons of sunny days, shutting the frame up at a rather high temperature after the afternoon's syringing, but some air should be left on for the night. Aim at obtaining dwarf healthy growth, and regulate the treatment accordingly. If the pots are full of roots give a moderate shift at once, as it is advisable to have the plants well established before the end of the growing season, and they should be prepared for winter by full exposure to the sun's rays and a free circulation of air after the end of August. It will also be advisable to remove them to an airy part of the greenhouse by the middle of September, and to water them rather sparingly after that time.

During winter give no more water to the soil than is necessary to prevent its becoming very dry, but when water is applied give enough to moisten the whole ball, and give no more until absolutely necessary again, allowing the plants to occupy a place near the glass free from currents of cold damp air. About the middle of March they may be encouraged to start into growth by increasing the temperature to 55° or 60° by day, with sunshine and air, and 50° at night, and giving water more freely as they exhibit symptoms of growth. It will be necessary, however, to cut back last season's shoots, and this should be done as soon as any increase of temperature is given. The shoots must be cut back to within a few inches of the crown, otherwise it will be impossible to obtain compact bushy specimens. Give a moderate shift as soon as the plants start into growth after being cut back, but only to such as require it. If aphides make their appearance, which will very probably be the case with plants excited into growth early in the season, fumigate with tobacco smoke at once. Keep the atmosphere in a healthy moist state, and draw the syringe lightly over the plants on the mornings of fine days, especially when you are inducing them to start into growth. The same treatment may be continued during the spring, giving air and water more freely after the plants are in full growth, but avoiding cold currents. In May or early in June the specimens may be removed to a cold pit or frame, or a quiet corner near the glass in the greenhouse will suit them.

A second shift may be required by vigorous plants, and, if so, this should be given as soon as it may be necessary, in order to get the pots well filled with roots previous to winter; and healthy plants not over potted will be benefited by an occasional supply of weak manure water during the growing season. The autumn and winter treatment already recommended will be proper again, and if the specimens are not considered large enough for flowering, they must be cut back in spring, and permitted to have another season's growth. Flowering plants should be allowed to remain in the



greenhouse until their blossoms expand, and they should be fully exposed to light to colour the flowers: they may then be removed to the conservatory, or wherever their presence will be most agreeable. After flowering, the shoots should be well shortened, weakly ones cut out, and the plants placed in a situation to induce growth, giving a shift if necessary.

Good turfy peat, with a very small proportion of light sandy turfy loam, must be used for the growth of this plant. The peat and loam should be broken up into bits about the size of a garden Bean, and to three parts of this soil add one of sharp silver sand, with a sprinkling of charcoal or broken potsherds. Be careful to secure efficient drainage, and never report unless the ball is in a healthy moist state, and the soil to be used in the same condition. *Alpha.*

### Home Correspondence.

**Galvanised Iron Tanks.**—I fear that Mr. Lucas has been to a bad market for his experience in the use of galvanised iron; for, as the first person who, I believe, used it in this country for heating horticultural buildings, I can safely say it answers perfectly, and with me it has presented none of those disadvantages of which he complains. A range of houses was heated here with it in 1845, by Messrs. Porter and Son, of the Southwark Ironworks, but now of Birmingham; they taking the risk of replacing it with a cast-iron apparatus if it was found not to answer after twelve months' trial. In my case the iron was made into 4-inch and 9-inch piping, the latter being for the flow and the smaller for the return pipes. In fixing, the engineer had considerable trouble, for Messrs. Porter, thinking solder joints would do to connect the pipes, they fixed the pipes several times, but each time when the water became heated the expansion was so great as to break the joints in all directions. At last a strong galvanised iron collar 2 inches broad was placed inside the end of each pipe, and then being brought together within a strong cast-iron collar made for the purpose, they were packed with rope-yarn and red-lead in the usual manner. Not a joint has leaked since, and to all appearance the apparatus looks likely to stand for a number of years longer. With the exception of a new boiler, "Burbidge and Healey's" cast-iron boiler having split quite through, and the leakage of one of the elbow joints, which a tinman repaired with a soldering iron in a few minutes, the apparatus has not cost a shilling in repairs since it was first put up, neither can I perceive that the galvanised surface has given way, except where it was broken in turning the joints. If the pipes and connections could be made and galvanised afterwards, I have no doubt the system would answer much better, as then every part would be properly coated with the zinc, but that is impracticable, as the heat necessary for the fusion of the zinc, of course would destroy all the solder joints. As my case was an experimental one, I have no doubt the contractors lost 50*l.* or 60*l.* by the job; but as luxuries begin to be called for in Australia and our other colonies, I have no doubt that galvanised iron piping, from the lightness of carriage and ease of transit, will be much in demand. The iron used by Mr. Lucas I should imagine was corroded before it was galvanised, and hence the cause of the coating giving way in specks as described by him. Some galvanised watering pots have been in use here now nine years, and are sound and good. One of them has had water boiled in it many times, but yet the inner coating has not given way, which I consider is conclusive evidence that the defect in Mr. Lucas's case was in the iron, and not in the coating or galvanising of it. *W. P. Ayres, Brooklands Nursery, Blackheath.*

**Honey.**—Can any of your correspondents inform a novice in bee-keeping why some honey, after a few months, becomes nice and hard, and can be cut out with a spoon, and some remains in a perfectly liquid state, although retaining a good flavour and colour. It was all taken at the same time, but from three hives, and underwent, as far as I know, the same management. As it is much preferred in a solid state, I should feel greatly obliged to any one who could enlighten me on the subject. *Tyndal.*

**Winter Broccoli.**—The least observation should convince any person that the almost universal destruction of winter Broccoli last spring was caused by excess of succulency from the mild wet season, in the early part of winter; the sudden change in February from wet to dry frost caused their death. Now, what does this point out in their treatment—to plant winter Broccolies on the top of ridges thrown up, &c. &c.? On the contrary, for summer Cauliflowers, plant below the level, and keep them always so, for they head better in moisture. *C. P., York.*

**Use of Dried Scotch Fir Leaves.**—It may not be generally known how useful an article the dead leaves of the Scotch Fir may be to gardeners and others, in many parts of the country where they are abundant, for planting pots in during winter; where plants require protection, they will be found as good in resisting frost as many substances that are used for that purpose. The most of your readers require fire-heat the greater part of the year, as well as many of our plants, and it is often an object of some importance to have a fire applied lightly; the fall of the Fir leaves is early in the season, when the days are long and the weather warm; rake them together when they are in a dry state; a sack or two of them, well packed, and kept in a dry place, will serve a long time for lighting fires in furnaces or dwelling-houses. When a fire is wanted, take two or three handfuls of the leaves and place them

in the grate, applying a lighted match to them, and the sticks and the coals laid upon them will soon be in flames. Fir leaves, I believe, would make very poor manure, but by burning them, the resin will be set at liberty, and a small quantity of potash and other salts may be obtained among the ashes. *P. Mackenzie.*

**Cutting Bottles.**—Let your correspondent "W. C. T.," who asks how the bottoms of old wine bottles are to be cut off, take a piece of card-board and steady it with a gloved hand round the bottle at the part to be cut off, pass round the edge of the card-board a glazier's diamond, once or twice, then with a wooden mallet give a smart rap, and the bottom will come off. *X. Y. Z., Hants.*—I have two methods to propose. 1. To saturate a twist of hemp with ether, spirits of wine, or spirits of turpentine, pass it round the bottle, and by the expansion of ignition it will break on the line desired. 2. Fill the bottle with water up to the line of demarcation, then pour on it a surface of oil, and insert a heated piece of metal. The expansion of the oil preceding that of the water will effect the same object, by the same principle. *J. S. R., Minster Acres.*—I have two more methods:—1, when the glass is not thick, a file mark may be made, the deeper the better, about half an inch above the bottom, or where the glass is thinnest; and the point of a red hot poker brought in contact, near one end of the scratch. This will soon produce a crack, which may be led round the bottle, by the red hot poker. A convenient substitute for the poker is sold (at Griffin's, 10, Finsbury Square) under the name of "Springcoal," consisting of charcoal powder worked up with gum, and rolled out into rods the size of a quill. This being lighted at one end and brought into contact with the glass (in place of the poker), blowing on it to drive off the dust and keep up the ignition, produces and leads the crack, just as well as the poker, and keeps its own heat: a little practice makes this easy. 2, where the glass is very thick, the file-mark cannot well be made deep enough to direct the crack. Such bottles may be placed upon the hot plate of a stove or oven, until very hot at bottom, approaching to red, and then remove to a dish of cold water. The bottoms thus often crack out pretty straight, but when the crack is very uncomformable, one end of it may be guided by the hot poker or springcoal as above. *J. Prideaux.*

**New Modes of Propagating Vines and Mulberries.**—I have been told that the Barbarossa Vine is difficult to propagate from eyes; I purchased a plant of it this spring, but when received it had pushed shoots two inches in length or more. I had, therefore, no chance of trying it from eyes this season. I permitted the shoots to grow 7 and 8 inches long, and then I broke them all off, except the leading one; I merely stuck the broken bits in the side of the pot the Vine was in, and they are now growing away rapidly. If it is difficult to strike from eyes (a point which Mr. Butcher could soon decide), it appears that it may be propagated readily from young shoots. The above simple process is another illustration of the many methods by which plants may be increased. Some years ago I struck a lot of Mulberry plants from eyes, just in the way we propagate the Vine. *W. Brown, Merevale.*

**Eschscholtzia Californica.**—Last summer some off-sets were taken from an old plant of this *Eschscholtzia*, and planted in two different places in a small garden. One of these flowered in the usual way, with yellow flowers, but the other bore all its flowers white—a creamy white. This year part of the white flowered plant was taken off and planted not very far from where the yellow one was last year, and this season it has yellow flowers, while the plant that was white last year is white still, and all the self-sown plants around it are white also. The path separates the two colours; are white *Eschscholtzias* common? *T. S. P., Pembroke Dockyard.* [Not uncommon by any means.]

**Fumigating Plant Houses.**—At p. 406 is detailed a plan for fumigating houses which are heated upon the Polmaise system, so as to avoid inconvenience to the operator. A method equally effectual, and which is applicable to any horticultural building, however heated, I have practised for some time past with perfect success. In the door or window-frame of the greenhouse I bore a hole, which I stop with a common cork. When fumigation is necessary I draw the cork, and insert the nozzle of the fumigator, and thus the house is speedily filled with any amount of smoke, while the operator is inhaling the pure air outside. *D. C. Whalley.*

**Stimulia japonica.**—We beg to record the following, as illustrative of the hardness of this plant. In the summer of the past year a small one was placed in the open ground, without any reference to a favourable situation. In fact it was in the open quarters. It grew well, passed the severe and peculiar winter unharmed, and early in May it was in full flower. It had only four shoots; but each bore a head of bloom. The entire height of the plant, flowers and all, was not more than nine inches. These several bunches of bloom are now replaced by berries, which are nearly swelled their full size. It is in full health, and making new wood rapidly. *Standish and Noble.*

**Dielytra v. Dielytra.**—The question vexata as to the comparative claims of these names is solved beyond all possibility of doubt on reference to the original paper in which the genus was proposed. In the second part of the first volume of "Römer's Archiv für die Botanik," p. 43, 1797, is a paper on the genus *Pumaria*, by Dr. Moritz Balhazar Borchhausen, of Darmstadt. Among other genera he proposes that of *Dielytra* for *Pumaria cucullaria*, L., resting its characters on the peculiar

structure of the corolla, and the six distinct stamens. He adds especially, "I have named the genus from *dis* two, and *κλυτρον* a spur, because the flower is so clearly distinguished by its two spurs." *M. J. B.*

**Potato Disease.**—Of late years we have been so accustomed to this disease, that one naturally looks for its reappearance, and I regret to inform you that it has already shown itself extensively in this neighbourhood. Its progress is rapid, and the most disastrous consequences to the crop may be anticipated. The disease has generally appeared here about the last week in July or the first week in August, and from the unfavourable state of the present weather I fear that its virulence will be increased. *W. W. Chichester.*

**Spermatozooids in Spirogyra arcta and Conferva glomerata.**—The discovery of the spermatozooids of Lichens, by M. Itzigsohn, which has led to such interesting results in the hands of M. Tulasne, naturally induced the author to extend his researches in other directions likely to reward attentive observation. Notwithstanding the careful investigations of Thuret, Derbès, and Solier, the discovery of spermatozooids in those genera which are propagated by zoospores, except as regards Cutleria, which belongs to the group of phaeosperms, and if Robin's observations are entitled to acceptance, in *Ulva lactuca*, was still a desideratum. It is true that certain observations recorded by Meyen, Braun, and Karsten indicate more or less distinctly the existence of the bodies now brought to more especial notice by Itzigsohn; but allowing due credit to those authors, Itzigsohn will still be entitled to the chief place of honour due to the discovery, provided the facts which he adduces are confirmed. In a letter addressed to M. Tulasne, in 1852, and which is published in the "Annales des Sciences Naturelles," he announces the discovery of these bodies in *Spirogyra arcta* and *Conferva glomerata*; and in the "Botanische Zeitung," for the 25th of March, and 1st of April, of the present year, he has given a fuller report of his discovery, accompanied by numerous figures. When conjugation is commencing in the *Spirogyra*, but apparently not in the conjugating threads themselves, he finds the spiral band of endochrome gradually resolved, more or less completely, into a number of distinct globose sacs (called by the author spermatosphæria), within whose cavity numerous globules are formed, whether furnished with a distinct cellular wall or not is uncertain, each of which gives rise to a spiral body endowed with active motion, resembling strongly the spermatozooids of mosses. These bodies if kept in water increase greatly in size, a circumstance which requires further observation and comparison with what the author has published respecting the spermatozooids of Lichens, which seems not to have attracted the attention of Bayrhafer and Tulasne. He detected the same organisms in *Cladophora glomerata*, and indicates bodies apparently identical with the above-mentioned mother-cells in *Edogonium*, *Mougeotia*, and *Bulbochate*, though in these genera he has not hitherto ascertained the existence of the spermatozooids. In *Vaucheria* he has also observed mother-cells, but the spermatozooids appear to assume a different form. The parent cells are themselves endowed with motion. No vibrating cilia have at present been found upon the spermatozooids. They have not, however, been examined under the most favourable circumstances for the discovery of such delicate organs. The matter is one of considerable importance as regards physiology, and though it cannot at present be considered as an established verity, it is highly deserving of record, and we doubt not, like the author's previous studies, will lead to many points of interest. *M. J. B.*

### Societies.

**CALEDONIAN HORTICULTURAL, July 9.**—On this occasion the following prizes were awarded:—Silver medal to Mr. Reid, gr. to Professor Syme, for *Helichrysium proliferum* (Bieton variety) and *Polygala cordifolia*. Achromenes, extra award to Mr. Young, gr. to Mrs. H. N. Ferguson, for longiflora major and Jareguia. Heaths, silver medal to Mr. Reid, for *ventricosa Bothwelliana* and *tricolor elegans*. Pinks, in pots not exceeding 10 inches, extra award to Mr. Henderson, gr. to C. K. Sivewright, Esq., for Harriet (Kerr's), Hon. Mrs. Herbert (Keynes'), and Dianthus (Smith's). Spikes of Phloxes, 1st, Mr. Kerr, gr. to R. Brown, Esq., with Gem, Antagonist, Baronet, Adsward, and Abd-el-Meschied-Khan; 2d, Mr. Mitchell, with Antagonist, Iphigene, Masterpiece, and Abd-el-Meschied-Khan. Telargoniums, in 8-inch pots, extra award to Mr. Henderson, for Conspicuum (Foster's), Emily (Beck's), and a seedling named Stella. Fancy sorts, silver medal to Mr. Henderson, for Reine des Français, Ytolinski, and Perfection; 2d, to Mr. Pender, gr. to D. Anderson, Esq., with Winchester Beauty, Decorum, and Armada. The prize of One Guinea, offered by Messrs. Lawson and Son, for the best 24 cut Roses, was gained by Mr. Robertson, gr. to A. J. Adie, Esq., with Splendens, Augustine Mouchelet, Duchess of Sutherland, Du Petit Thouars, D'Aguesseau, Mary Ann, Frederick II., Giant des Batilles, Paul Ricaut, Baronne Prevost, Baron Hallez, Comte Boubert, Lady Alice Peel, Charles Duval, Kean, Duke of Cambridge, Boule de Nautic, Triomphe de Laque, Comte Odort, William Jesse, Madame Lamoricière, Marquess de Moyn, Henry Lecocq, and

\* See also Derbès et Solier, Mémoire sur quelques points de la Physiologie des Algues, tab. 2, figs. 2 and 11.



Neome. A second premium was voted (by the Society) to Mr. Edwards, gr. Lauriston Castle, for Captain Sisolet, Lanei, General Jacqueminot, Madame Laffay, Grandissima, Great Western, Marquess Bocella, Duke of Cambridge, Colonel Combs, Paul Ricaut, William Jesse, Thiers, Chénédole, Amiable Queen, Richelieu, Charles Duval, Mrs. Elliot, Duchess of Sutherland, Boule de Nanteuil, Triomphe de Luxembourg, Adèle Prevost, Baronne Prevost, Géant des Batailles, and Lady Alice Peel. The prize of One Guinea, offered by Messrs. Dicksons & Co. to practical gardeners, for the best six Calceolarias, was awarded to Mr. Henderson, for Lady Franklin, Beauty of Lancashire, Antagonist, Sir R. Peel, Othello, and Baptiste Lulli. In addition to the articles sent for competition, there was a fine display of productions sent for exhibition only. Messrs. Dicksons & Co. exhibited *Allamanda nerifolia*, *Pelargoniums*, *Balsams*, &c., with cut blooms of *Roses* and *Pansies*. Messrs. Lawson & Son contributed *Roses*, *Pelargoniums*, and *Pansies*, with *Fuchsias* and *Balsams*, *Tropeolum azureum*, &c. Messrs. J. Dickson & Sons sent *Pimeleas* and other greenhouse plants, *Jasminum Sambac*, with double flowers, and *Roses*. Messrs. Downie & Laird exhibited *Myosotis azorica*, *Phloxes*, *Balsams*, and *Roses*, *Pelargoniums* and *Pansies*. Mrs. Carstairs sent *Pelargoniums*, *Fuchsias*, and *Roses*. [Mr. Stark exhibited *Collinsia bartschii*, *Myrtus americana*, and greenhouse plants. *Rhododendron javanicum* was shown in flower by Mr. Methven, who also sent *Pelargoniums* and other greenhouse plants. *Roses* were exhibited by Mr. Handasyde, and Messrs. Ballantyne and Sons. Messrs. Young and Mackay sent *Heaths*; and Mr. R. T. Mackintosh a flowering plant of *Rhododendron javanicum*. Mr. Lightbody showed *Pinks*. From the garden of Mrs. Fraser were *Calanthe veratrifolia*, *Myosotis azorica*, and *Alpine Plants*. From Dr. Paterson, *Hoyabellia*, and *Medinilla magnifica*, for which a certificate was voted. From I. Anderson, Esq., a number of variegated hybrid *Geraniums*, and a new species of *Calceolaria* from the Andes. From J. A. Raines, Esq., *Geraniums* and *Fuchsias*. From J. A. Pringle, Esq., *Roses*. From S. Hay, Esq., *Pelargoniums*, *Achimenes*, and *Adonia versicolor*. From J. Mood, Esq., 2 *Fuchsias*. From C. K. Sivewright, Esq., *Pansy* blooms and *Pinks*. From G. B. Simpson, Esq., blooms of his Seedling *Pink*, *Balmoral Castle*. From Mr. Crockett, *Petunia Prince Camille de Rohan*. From Mr. Fraser large heads of *Cabbage Lettuce* and an *Echinocactus*. From Mr. Macfarlane, *Princess Alice Maud Strawberries*. From Mr. Ramsay, gr. to N. Malcolm, Esq., a hybrid *Melon*. From Mr. Sanderson, *Keens' Seedling Strawberries*. From Mr. Grieve, *Pansies*. From Mr. Cuthbertson, *Roses*. From Mr. Stirling, *Alpine Plants*, including *Trifolium fimbriatum*, *Lysimachia azorica*, and *Wulfenia obliqua*.

ENTOMOLOGICAL, July 4.—The President in the chair. Donations of entomological works presented to the library by Prof. Fischer, of St. Petersburg, M. de Saussure, &c., were announced. The President called attention to a work on the British Species of Carabidae, by the Rev. Mr. Dawson, proposed to be published on the same plan as the *Insecta Britannica* publications, as soon as a limited number of subscribers could be obtained. M. de Saussure having completed his volume on the Solitary Species of Wasps, also now proposes to complete this family by the publication of the social species, or true Vespidæ. A box of Coleoptera, from Perthshire, collected by Mr. Foxcroft, was exhibited, containing great numbers of rare Coleoptera and Lepidoptera, *a. g.*, *Lamia ædilis*, *Lycus aurora*, *Boleophagus crenatus*, &c.; all of which would be divisible among Mr. Foxcroft's subscribers. Mr. Jansen exhibited *Pachetria leucophaea*, *Spherosoma Quercus*, and other rare insects, captured during the June excursion to Mickleham; Mr. Tebbis, a specimen of the rare *Notodonta trepida* captured at Highgate; Mr. Weir, *Aploa palpella*, reared from *Genista tinctoria*; Mr. Hunter, caterpillars and chrysalis of *Limenitis Sibilla*, found on the Honeysuckle; Mr. F. Bond, *Hydrellia caliginosa*, from the New Forest; Mr. S. Stevens, *Plinthus caliginosus*, from Wickham, and a recently-disclosed specimen of *Chariclea Delphinii*, of unknown locality; Mr. Waring, several living mole crickets; Mr. Carter, *Cucullia umbratica*, with a bundle of pollen of some flower attached to its head; Mr. Douglas, *Aphelia pratensis*, infested with a parasitic *Gordius*, and *Laverna ochracea*, Curtis, bred from *Epilobium hirsutum*, also a species of *Anthrribide*, which has materially injured a quantity of Mace in the London Docks by eating the inner substance, leaving the skin entire; Mr. Edwin Shepherd, *Madopoda salicis* and *Retinia Turionana*, from Darenth. A note was read from Herr Hagen, on the insects described in Hill's "Decade" (London, 1773, 4to), in opposition to the vituperation of Fabricius. Mr. S. Stevens mentioned a circumstance which he had recently observed whilst collecting moths, which may prove of much practical value to the nocturnal Lepidopterist. Having sugared various trees, to entice the moths, he had noticed that, instead of greedily frequenting the sugar, they assembled in great numbers on a Thistle, which Mr. Stevens found was much infested with aphides, the saccharine secretion from which attracted them to the spot. A note was read from Mr. Lowell, her Majesty's inspector of small arms, on the ravages of a small beetle on Walnut-wood gun-stocks kept in store at the ordnance depôts, and requesting information and advice on the subject. Mr. Westwood exhibited some of the insects sent to him by Mr. Lowell, which proved to be *Latridius porcutus*. He also exhib-

bited *Lampronia corticella*, reared from a small scarlet larva which destroys the shoots of Raspberries; *Hylobius abietis*, which had this year done much injury in Scotland, by devouring the foliage of Plums and Peaches; *Astyages Luscipennella*, reared from a case-bearing larva which infests *Roses*; and the chrysalis of *Oncopeltus sambucaria*. He described the peculiar structure of the latter, unnoticed by Curtis and Hubner, and also that of the remarkable chrysalis of the *Lampronia*. It was announced that the second excursion of the Society was fixed for the 9th of July, at West Wickham and Addington.

COUNTY OF GLOUCESTER AND CHELTENHAM HORTICULTURAL.—The great midsummer exhibition of this Society, to which the contributions of continental growers were invited and specially encouraged, took place on the 12th inst. in the Pittville Gardens, which never before were graced by a finer display of plants than were assembled on this occasion. It is reported that upwards of 10,000 visitors entered the grounds. The arrangements made by the committee were on an extensive scale. Tentage 1300 feet long by 40 feet wide was erected, so as to form three sides of a square, the pump room (a large circular building) forming part of one side. In this a few plants were placed; but most of them were arranged under the canvas. In one division were collections of stove and greenhouse plants from Mr. Cole, gr. to H. Colyer, Esq., H. Brown, Esq., M.P., A. Lawrence, Esq., of Bath, Earl Beauchamp, Courtland Shaw, Esq., and others, and associated with them were Cape *Heaths*, from Messrs. Cole, Rollisson, and others. In this tent was also an extremely interesting collection of hardy evergreens, including various new sorts of *Hollies* and other things, from Messrs. Standish and Noble, who also furnished a group of *Sikkim Rhododendrons*. Mr. Schröder and Messrs. Rollisson had large and fine collections of *Orchids*, as had also Mr. Holford and others. Variegated plants in beautiful condition, and different species of *Nepenthes*, were furnished by Messrs. Veitch and Rollisson. *Achimenes*, *Gloxinias*, &c., were plentiful and good. *Fuchsias* were shown, but they did not exceed mediocrity. Other florists' flowers were also present in tolerable abundance, more especially *Verbenas* (very good), *Pelargoniums*, and cut *Roses*; the latter forming, as they always do, one of the most attractive features of the show. The collections of foreign plants, for which a separate schedule was provided, consisted, for the most part, of *Palms*, *Agaves*, *Yuccas*, *Bonapartæas*, *Theophrastas*, *Sterculias*, and things of that kind. They were generally small, and though varied and far from being uninteresting, their barely clad stems and small heads did not seem to please our English gardeners. They, however, arrived very late, and, therefore, they were not set up to the best advantage. Among the continental exhibitors who contributed to this part of the show were M. Van Houtte, of Ghent; M. De Verschaffelt, of Ghent; M. Van Geert, of Antwerp; M. De Jonghe, of Brussels; Madame Legrelli, of Antwerp; and M. Linden, of Brussels. Some Antwerp *Peaches* were shown, but they were not good, being both colourless and tasteless. The show of English fruit was excellent, more especially *Pine-apples*, some capital examples of which came from Mr. Jones and Mr. Fleming. *Grapes* were but middling. *Vegetables* were plentiful and good. Some of the devices in cut flowers were very tasteful and elegant; and altogether this exhibition may be pronounced to have been the largest and most successful that has been held under the auspices of this society.

## Rebivus.

*Nereis Boreali-Americana*; or contributions towards a History of the Marine Alga of North America. By W. H. Harvey, M.D. Parts 1 and 2. 4to. Van Voorst.

UNDER the modest name of "Contributions," Dr. Harvey has published a very valuable and very learned account of North American Sea-weeds, illustrated by excellent figures skilfully drawn by himself. The talents of the author have been worthily supported by the Smithsonian Institution of Washington, at whose cost the work is published, and it gives us very great pleasure to say that the beautiful volume now produced will bear comparison with the finest European works on the same subject. It is dedicated to Professor Bailey, of West Point, than whom no one is better able to appreciate the great value of such an addition to science. The present volume is occupied by the brown-seeded and red-seeded races; the second will comprehend the green-seeded, or *Chlorospermæ*.

We regret that such a book should be too remote from the objects of horticulture to permit our doing more than thus expressing our admiration of the scientific as well as artistic skill with which it has been brought before the world.

*A Naturalist's Rambles on the Devonshire Coast*. By P. H. Gosse, 8vo. Van Voorst. Pp. 451. With 28 Plates.

MR. GOSSE has already gained so entirely the reputation of an agreeable writer upon zoological subjects that we are scarcely called upon, on the present occasion, to do more than announce another work from his pen. His new subject—the coast of Devonshire and its marine productions—forms a highly useful sea-side companion, containing, as it does, good popular descriptions of the singular zoophytes which the naturalist is

constantly meeting with in such places, and about which, we venture to say, that less is popularly known than any other attractive branch of Natural History. It will, however, soon become familiar to well informed persons, in consequence of the facility with which aquatic animals, whether from fresh or salt water, can now be studied in that most interesting exhibition, the Aquarium in the Zoological Gardens in the Regent's Park.

The luminosity of the sea, a phenomenon which excites so much wonder as well as admiration in the minds of those who behold it for the first time, is well known to be owing to the presence of various marine zoophytes, for an account of some of which, by Mr. Gosse, we are just able to find room:—

"*Luminosity of the Sea*.—I was coming down lately by the steamer from Bristol to Ilfracombe in lovely summer weather. Night fell on us when approaching Lynmouth, and from thence to Ilfracombe, the sea, untroubled by a breeze, presented a phenomenon of no rare occurrence, indeed, to those who are much on the water, but of unusual splendour and beauty. It was the phosphorescence of the luminous animalcules; and though I have seen the same appearance in greater profusion and magnificence in other seas, I think I never saw it with more delight or admiration than here. Sparkles of brilliance were seen thickly studding the smooth surface, when intently looked at, though a careless observer would have overlooked them; and as the vessel's bows ploughed up the water, and threw off the liquid furrow on each side, brighter specks were left adhering to the dark planks, as the water fell off, and shone brilliantly until the next plunge washed them away. The foaming wash of the furrow itself was turbid with milky light, in which glowed spangles of intense brightness. But the most beautiful effect of the whole, by far, and what was novel to me, was produced by the projecting paddle-boxes. Each of these drove up from before its broad front, a little wave continually prolonging itself, which presently curled over outwardly with a glassy edge, and broke. It was from this curling and breaking edge, here and there, not in every part, that there gleamed up a bluish light of the most vivid lustre, so intense that I could almost read the small print of a book that I held up over the gangway. The luminous animals evidently ran in shoals, unequally distributed; for sometimes many rods would be passed, in which none or scarcely any light was evolved, then it would appear and continue for perhaps an equal space. The waves formed by the summits of the swells behind the ship continued to break, and were visible for a long way behind, as a succession of luminous spots; and occasionally one would appear in the distant darkness, after the intermediate one had ceased, bearing no small resemblance, as some one on board observed, to a ship showing a light by way of signal.

"While on this subject I will mention the charming spectacle presented by some of the Sertularian zoophytes, in the dark. Other naturalists, as Professor Forbes, Mr. Hassal, and Mr. Landborough, have observed it before me, and it was the admiration expressed by them at the sight that set me upon witnessing it for myself. I had a frond of *Laminaria digitata*, on whose smooth surface a populous colony of that delicate zoophyte *Laomedea geniculata* had established itself. I had put the frond into a vessel of water as it came out of the sea, and the polypes were now in the highest health and vigour in a large vase in my study. After nightfall I went into the room, in the dark, and taking a slender stick struck the frond and waved it to and fro. Instantly one and another of the polypes lighted up, lamp after lamp rapidly seemed to catch the flame, until in a second or two every stalk bore several tiny but brilliant stars, while from the regular manner in which the stalks were disposed along the lines of the creeping stem, as before described, the spectacle bore a resemblance sufficiently striking to the illumination of a city; or rather to the gas-jets of some figure of a crown or V.R., adorning the house of a loyal citizen on a gala-night; the more because of the momentary extinction and relighting of the flames here and there, and the manner in which the successive ignition appeared to run rapidly from part to part.

"It has been a question whether the luminosity of these polypes is a vital function, or only the result of death and decomposition. I agree with Mr. Hassal in thinking it attendant, if not dependent, upon vitality. The colony of *Laomedea* in the preceding experiment was still attached to its sea-weed, and this had not been washed up on the beach, but was growing in its native tide-pool when I plucked it; it had never been out of water a single minute, and the polypes were in high health and activity both before and after the observation of their luminosity."

## Garden Memoranda.

THE GROVE, NEAR WATFORD, THE SEAT OF THE RIGHT HON. THE EARL OF CLARENDON.—It would, perhaps, be difficult to find a park of its size more beautiful than that which surrounds this quiet but tasteful country residence. About 200 acres of valuable Grass land, finely undulated and well wooded, stretch out in all directions from the house, which is placed on the top of a gentle eminence commanding a fine view of the valley below, in which the Grand Junction Canal, which passes through its centre, and a fine piece of ornamental water lying parallel with it, form conspicuous features. The approach, leading from the road to Watford, after winding round the brow of the rising ground on the opposite side of the valley, and crossing the pieces of



water just mentioned, first by means of a raised stone bridge and then by a level iron one, pursues a devious course up the hill till it reaches the house. The latter, an irregular brick building, is furnished on its south and east fronts with a small but well kept flower garden, in which the bedding plants are accommodated in different devices of beds on gravel, the whole being set off to advantage by a smooth closely shaven Grass lawn interspersed with Laurels, standard Roses, Irish Yews, Arbor-vites, and other dwarf Conifers, all in the most luxuriant health. Containing as it does large masses of American plants, this garden is gay from early summer till late in autumn; for no sooner are the Rhododendrons out of flower than Roses take their place and keep up a considerable amount of floral beauty till the bedding plants come in, which, together with Dahlias and Hollyhocks, bloom on till the frost kills them. Among bedding plants were the white ivy-leaved Pelargonium (which pegged down looks uncommonly well), Unique, Diadematum erubescens, Tom Thumb, and improved Frogmore; Verbenas, among which White Perfection is better liked than Mont Blanc; Calceolarias, Ageratum coelestinum, and other plants usually employed for massing. A series of beds surrounding a fountain and basin is filled with Roses, dwarf standards, among which we remarked *Géant des Batailles*, *Duchess of Sutherland*, *Baronne Prevost*, *Mrs. Elliott*, *William Jesse*, *Jacques Lafitte*, and *La Reine*, all of which have been found to succeed admirably, cultivated in this way, more especially *Baronne Prevost*, which blooms most profusely. The common and crimson Chinas, however, make as good beds as any; *Aimée Vibert* forms a lasting standard, and the old *Fulgens* is very effective in this way. On the walls were *Gloire de Rosamère*, *Ophiré*, *Sidonie*, and *Lamarque*, together with some very fine specimens of *Cotoneaster microphylla*, *Wistaria*, *Jasmines*, and *Magnolias*, &c. Two noble Cedars of Lebanon, with "ivy-mantled trunks" ornament the centre of this garden, and near the west entrance are some of the largest Silver Firs we have ever seen. They are exceedingly lofty, with bare stems, measuring for the most part 14 feet in circumference, at about 3 feet from the ground. Indeed, the whole of the timber in the park, consisting chiefly of Beech, Ash, Oak, and Chestnut, has attained a height not often met with, even in the very best soils.

The Kitchen Garden lays near the bottom of the valley, by the side of the canal. A main walk, bordered with herbaceous plants, passes down the middle of it, and terminates in a neat little flower garden, in front of the glass houses, which consist of Vineries, Peach-houses, Fig-houses, and a conservatory, the latter lofty, and not very well suited for plants. It was filled for the most part with Pelargoniums, among which scarlets were conspicuous, some of them forming fine masses of flowers. These latter had been potted up from the open beds in autumn, kept dry or nearly so all winter, till spring, when they received a shift, and were encouraged to grow, after which they came finely into blossom, and will form magnificent plants all the autumn. One house of Grapes has just been cut, and another is nearly in perfection. The Vines have been renewed of late years; but this has not been done at the expense of the loss of a crop, for the houses being furnished with brick pits inside had young Vines planted in them, which were permitted to come into bearing before the old ones were removed, and they have been kept on till now the permanent Vines planted in the outside border have arrived at a fruitful state. French Beans are planted in the beds under the Vines; they come in early and produce well till they can be gathered out of doors. Strawberries are largely forced here, more especially Cuthill's Black Prince, which is a favourite, and which attains a size here it does not often acquire elsewhere. This does not arise from rich feeding, for no manure-water or other stimulants are employed; the soil they are growing in is, however, maiden loam of the best quality. Two runners are always laid in a pot about this time; they are wintered dry and cool, and are then started in a gentle bottom-heat, when, after having a season of perfect rest, they push vigorously and bear abundantly. There is a good Cucumber house here, from which Cucumbers, upwards of 2 feet long, are cut all the spring and summer. The sorts most liked are the Long Green and Manchester prize. Melons are also largely cultivated. The first pit of them has been cut, and two others containing good crops are nearly ripe. Among the sorts were Hybrid Persian, Green Gage, Golden Drop, and Egyptian Green-fleshed. Mushrooms are always a heavy crop here. The beds are made in a cool shed; the dung (straw and all) after sweating a little is put into form, spawned, covered thinly with loam, watered gently now and then, and in due time plenty of "buttons" never fail to make their appearance.

As regards open garden fruit, Apples and Pears will be a fair crop; but Peaches, Nectarines, and Apricots are here, as elsewhere, thin. Vegetables, more especially Peas and Cauliflowers, are abundant and good; Broccoli suffered severely here last winter, Snow's Superb and other fine kinds being completely killed. The sorts that stood best were Knight's Protecting and Mammoth.

## FLORICULTURE.

**POTENTILLAS.**—I have *Menziesi*, *Antwerpensis*, and *Bicolor grandiflora* now in full bloom; the first a profuse bloomer with a fine habit, and flowers of bright

scarlet, is really a very fine variety; it makes one almost regret that the rage for what are termed bedding plants should so far exist as to all but exclude the culture of herbaceous plants generally, but more especially subjects like these *Potentillas*. The advantage herbaceous plants have over bedding plants was never more manifest than it is this season. *Verbenas*, *Petunias*, *Calceolarias*, and indeed all half-hardy plants that generally look so gay at this period are, owing to the continued rain, almost unsightly, while the hardy perennials, the proper occupants of the flower borders, are now in their greatest beauty, and in many instances form a brilliant contrast with their less showy neighbours. *P. Antwerpensis*, though not so vigorous in growth as the sort just named, is, nevertheless, a decided acquisition; its double flowers of vivid orange have a dazzling effect, more especially if placed between *P. Menziesi* and *P. bicolor grandiflora*, where they show themselves to most advantage. *P. bicolor grandiflora* is really a charming *Potentilla*, realising, in every respect, the description given of it on its being first sent out; many of the blooms are as large as a crown piece, well cupped, and round, and they are produced in abundance. The colour is a striking combination of flame and scarlet. *Reuben Miles*.

**BEDDING ROSES.**—One of the first essentials in a bedding Rose is that it should stand well up on its foot-stalk. For a pole or climber the reverse of this would, of course, be the most graceful; one is to be looked down upon, the other *up at*. If this is remembered, the value of such qualities in their respective adaptions will at once be recognised. However abundant or prolonged a bloomer a Rose may be, if it droops its flowers, half its effect in a bed is entirely lost. And if a shower of rain falls, the accumulated moisture, acting by its weight on the feeble foot-stalk, increases the evil. A bed of such Roses can never give satisfaction. Scrambling Roses, to be pegged down during their season of growth, do not make the kind of effect in beds that one could wish. I would have all worked plants, selecting them with different heights of stock, to suit the different position in planting; the dwarfier on the outside, the taller in the centre. I should not expect great results the first season of planting. During that period I should have an eye to the formation of the head, endeavouring to extend it horizontally as much as possible. When once the surface of the bed becomes over-arched with good flower-bearing wood, and the luxuriance of the plants is checked, supposing the kind of Roses to be suitable, nothing in the way of massing could be more beautiful. This may be inferred from the effects of a single head of a free-blooming standard of any kind. To get good beds some little time must be consumed in the preparation. One must not be impatient. Young and luxuriant plants will never realise all that is expected of them. But there is no reason why the necessary preparation should take place in the flower-garden. The reserve-ground is the proper place for preparation, and Roses may be prepared there as well as in the beds in which they are to flower. Suppose two seasons' probationary treatment is required, they can there be attended to, and transplanted in full condition to their allotted beds in the garden. To treat Roses as ordinary bedding plants, and selecting from them at random, must ever end in partial disappointment; and from not giving the subject due consideration, and taking the necessary precautions, doubtless arises most of the disappointment in this branch of gardening. *G. L.*

**NATIONAL FLORICULTURAL SOCIETY, July 14.**—MR. STAINS in the chair. The following awards were made. Certificates of merit.—To a Hybrid Bourbon Rose, called *Vivid*, from Messrs. Paul—a variety with a vigorous climbing habit, and well formed bright scarlet-crimson flowers. To the same for Moss Rose "Princess Alice," a very double sort, with pale pink flowers, having deeper pink centres, and altogether a very desirable addition to this class. To Mr. Bragg, of Slough, for *Verberna "Standard,"* a rosy lilac kind, with yellow eye, shaded with crimson. To Dr. Maclean, for *Pink "Great Western,"* a full-sized finely-formed variety, possessing good substance, and smooth, with bold petals, having a large field of ground colour. To Mr. Bragg, for scarlet *Pelargonium "Gloire,"* a dwarf horse-shoe-leaved sort, with great trusses of deep, bright scarlet. Label of commendation to Mr. Looker, of Oxford, for *Pink "Earl of Derby,"* a rosy purple, heavily laced kind, of full size. Ditto to Mr. Bragg, for *Verberna "No Plus Ultra,"* a French-white variety, with very large rosy centre and yellow eye, truss small, but novel and peculiar in marking. Ditto to Mr. Gill, Westbourne Grove, for *Verberna "Joseph Hume,"* a compact dwarf sort, of medium form, colour rich purple, with a white eye. Ditto to Mr. Wood, of Nottingham, for *Delphinium pulchrum*, a lavender-blue variety, with a pink blotch at the extremity of each petal. Messrs. Veitch had cut blooms of *Pelargonium "Fair Helen" (Storey's)*, apparently a fine kind, the under petals being French-white, and the upper ones shaded carmine, margined with white. Other new plants were also shown by Messrs. Veitch: and we remarked the fancy *Pelargonium* from Mr. Bragg, called *Lady Mary Labouchere*, which was rewarded at a former meeting.

**SCOTTISH SRAZLARS FLOWERS.**—At the last monthly meeting, held in Edinburgh for the exhibition of seedling florist flowers, the following awards were made:—Certificate of Merit to *Pansy "Beauty,"* a light-ground variety of first-rate qualities, exhibited by Messrs. Downie and Laird. William Hunt, Esq., exhibited a single bloom of a seedling *Gloxinia*, to which a Certificate would have been awarded if the plant had been shown. The flower is of fine form, measuring 2½ inches across; the inside of the lower part of the tube of a pale straw colour, beautifully spotted, and deepening into a very rich velvety purple at the throat, the divisions of the corolla shading off into a violet tinge.

## Miscellaneous.

**Peat Mould as a Manure.**—The following extract respecting the relative value of this manure is taken from the Curator's Annual Report on the Botanic Garden, Glasnevin, published in November last:—"The experiments ordered by your council to be made, with a view of testing the value of peat mould as a manure, were conducted in accordance with the directions given

by your Professor of Chemistry, who sent the turf mould manures prepared. The other kinds tried against them were made up in the Garden, and the ground chosen—a deep alluvial soil resting on a limestone gravel bottom. It was marked out in small plots, each comprising half a square perch. The seeds were sown on the 5th of May, and the produce weighed on the 24th of November, when the following results appeared:—

Kinds and Quantities of Manures used, with the different Crops.	Weight of both Roots and Tops.	Weight of Roots only.
No. 1. Half square perch of ground manured with one stone of night-soil and turf mould mixed. Crop, Swedish Turnips, produced ...	Cwt. lbs. 24 0	Cwt. lbs. 1 81
No. 2. Do., same space of ground, and same kind and weight of manure Crop, Mangold Wurzel, produced ...	2 84	1 49
No. 3. Do. do. do. Crop, Sugar Beet, produced ...	3 0	0 81
No. 4. and the two following, viz., 5 and 6, half stone more of the same kind of manure was added, being at the rate of one and a half stone to the half perch. Crop, Swedish Turnips ...	2 84	1 96
No. 5. Do. do. do. Crop, Sugar Beet ...	2 28	0 85
No. 6. Do. do. do. Crop, Mangold Wurzel ...	2 0	1 16
No. 7. One and a half stone sewage semi-fluid manure from water-closet, mixed with turf mould. Crop, Swedish Turnips ...	2 90	2 0
No. 8. Same kind and quantity of manure as No. 7. Crop, Mangold Wurzel ...	2 42	1 56
No. 9. Do. do. do. Crop, Sugar Beet ...	2 84	0 70

"The following kinds and quantities of manures were tried against the turf-mould, which, in the experiments already mentioned, was not charred, with the same kind of crops:

Kinds and Quantities.	Weight of Tops and Roots.	Weight of Roots only.
No. 10. Half square perch, manured with one stone sewage semi-fluid manure and peat-mould charred, mixed. Crop, Swedish Turnips ...	Cwt. lbs. 2 0	Cwt. lbs. 1 56
No. 11. Do. do. do. Crop, Mangold Wurzel ...	1 20	1 34
No. 12. Do. do. do. Crop, Sugar Beet ...	2 0	0 96
No. 13. Half perch manured with two stone of farm-yard manure. Crop, Sugar Beet ...	3 0	1 25
No. 14. Same space of ground manured with two stone of sea-sand. Crop, Mangold Wurzel ...	3 0	1 20
No. 15. Same space manured with two stone of decayed leaf mould. Crop, Swedish Turnips ...	2 0	2 0

"The above results show the greatest produce to have been obtained from the farm-yard manure and the sea-sand. There can, however, be no doubt of peat-mould being valuable to mix with manures."

**Reproduction of the Toad and Frog without the intermediate stage of Tadpole.** By E. J. Lowe, Esq.—The following brief remarks on the Toad (*Bufo vulgaris*), and the Frog (*Rana temporaria*), may perhaps be received with some degree of interest, as they are, I believe, contrary to the generally received notion of the procreation of these reptiles. Ray, and most naturalists, at least, consider toads and frogs as oviparous animals, yet it is apparent that they are viviparous as well, or if they do not bring forth their young alive, have the power of reproduction in a different manner to the ova and subsequent tadpole. Mr. J. Higginbottom, of Nottingham, who has paid great attention to this subject, has clearly proved the development of the tadpole to the perfect toad in situations wholly deprived of light, as I have through his kindness several times witnessed. My present remarks are intended to show that occasionally frogs and toads are reproduced in localities where it would be impossible for the intermediate stage of tadpole to have any existence. 1. Toads deposit spawn in cellars and young toads are afterwards observed. Last summer several masses of spawn were procured from my cellar, having been found deposited amongst decaying Potatoes, &c., and subsequently young toads were noticed. The cellar is free from water, and at a considerable distance from any brook. 2. Young toads are observed about hot-beds. In the kitchen-garden at Highfield House (which is entirely walled round), young toads have been noticed about the Cucumber and Melon-beds. The gardeners have been in the habit of bringing toads to these beds to destroy the insects; these have continued amongst the warm damp straw all summer. It is after these beds have remained three or four months that the young ones have been noticed. Toads would have to travel nearly half-a-mile to reach this garden from the brook or lake, and also to mount a steep hill, besides taking the opportunity of coming through the door. Toads so small are not seen in any other part of the gardens. 3. Young toads and frogs observed in abundance at the summit of another hill, whilst quite small. During the past summer, especially in the month of July, very many young toads and frogs were seen amongst the Strawberry plants, apparently from a week to a month old. These might possibly have travelled from a brook a few hundred yards distant; yet it is strange that, with the exception of these beds, no young toads could be found elsewhere in the garden. A number of full-grown toads are mostly to be seen about these beds. 4. Young frogs dug out of the ground in the month of January. In digging in the garden amongst



the Strawberry-bugs (near where so many toads were observed last summer), in the middle of January in the present year, a nest of about a score young frogs were upturned. These were apparently three or four weeks old. This ground had been previously dug in the month of August, and many Strawberry plants buried; it was amongst a mass of these plants in a state of partial decomposition that these young ones were observed. 5. Young frogs are bred in cellars, where there is no water for tadpoles. In mentioning the subject to Mr. Joseph Sidebotham, of Manchester (an active botanist), he informed me that young frogs, and in fact frogs of all sizes, were to be seen in his cellar amongst decaying Dahlia tubers. The smallest of them were only about half the ordinary size of the young frog, when newly developed from the tadpole. He further stated that there was no water in the cellar, and no means of young frogs entering, except by first coming into the kitchen, a mode of entry, if not impossible, highly improbable. Mr. Sidebotham never found any spawn. It seems probable from the above, that frogs are occasionally born alive in situations where no water can be found for the spawn to be deposited in, and that toads are either reproduced in the same manner, or from the egg directly. The latter mode seems most likely, owing to spawn having been found previously to the young toads. Mr. Higginbottom tells me the same remark on the birth of the Triton, without the stage of tadpole, has been mentioned to him. *Annals and Magazine of Natural History.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

We have previously adverted to the advantage derived from giving plants some kind of rest after blooming, to restore their exhausted energies, and to enable them to make a vigorous start when the new growth commences. At this season of the year greenhouse plants done blooming should have a comparatively cool temperature; and no structure presents so many advantages for the purpose as a house with a north aspect. We may state further, that for growing delicate-leaved plants through the summer, houses having a north or north-east aspect are preferable; while for the purpose of retarding plants, or for preserving them in bloom, they are indispensable. Such plants, therefore, as *Epacris*, *Leschenaultia*, *Pimeleas*, *Aphelexis*, and others of similar habit, which have been kept for late bloom and are now over, should be placed in a house of the above description, or in deep frames with the sashes turned towards the north, having first picked off the old remaining blooms; here, by gently syringing once or twice daily, the plants may remain till a new growth commences, when any pruning they may require may be given them, and they may afterwards be placed in more favourable positions for ripening their wood. Camellias, whenever the young wood appears getting ripe, may be removed to the open air; they thrive best in the shade, and a situation shaded from the mid-day sun, and sheltered from high winds, should be secured for them; be careful to place them on a dry bottom, to prevent the possibility of worms getting into the pots. Chinese *Azaleas*, which are equally forward in their growth, and have formed their next season's flower buds, may likewise be turned out; unlike Camellias, the latter require full exposure to sun and air, and should be placed in an open situation, that their wood may become thoroughly ripened; it will, however, perhaps be necessary to place them for a week or two in a partially shaded situation, to harden their foliage sufficiently to bear the full sun, or the sudden change from a house to bright sunshine might cause their leaves to turn brown or burn. Orange trees, when too full of bloom, should have the flowers thinned out. They are always in request either for drying or distilling. The young fruit, when too thickly set, should likewise have a thinning, as a few will be sufficient to remain. To procure dark glossy foliage, water with clear soot water.

#### FORCING DEPARTMENT.

**PINERY.**—As soon as the principal part of the present crop is ripe, the pit will most likely be required either for fruiting the winter stock or for the succession intended for next season's fruiting; whatever fruit, therefore, may yet remain to ripen should be carefully removed to one end of the pit, unless circumstances enable you at once to transfer them to a house devoted to fruiting the autumn and winter supply, in which case the house may be cleared whenever the principal part is cut. The bottom-heat must be freshened up by the addition of fresh material, and made ready for plunging the new stock of plants, as they are placed in their fruiting pots. In the meantime advantage should be taken, if requisite, to put the house in repair, and the heating apparatus in a state of efficiency, knowing no such favourable opportunity will again occur for a twelvemonth. Supposing the plants are grown in the open bed system, the same conditions must be observed, and a supply of fresh soil got ready in which to plant out the Pines. Give air liberally to successions, and water freely when the pots become full of roots. Shading may be dispensed with from the present time. Keep the bottom-heat steady. At this season the young stuff may be potted whenever they require a shift.

**VINERY.**—Fires this damp weather will be necessary to Grapes swelling; it should be accompanied by abundant ventilation, which will prove the best preventive of mildew; as the houses are cleared

of Grapes, endeavour to keep the foliage healthy for some time to come. The syringe should be used freely in the morning to keep down insects. By keeping the leaves in healthy action for a time longer, further secretions are elaborated and the foundation laid for success the following year. Vines in pots, intended to fruit next season, should now be well supplied with liquid manure, to swell out and perfect their buds. Melons require care this wet weather to keep them in health, which can only be done by maintaining a steady bottom-heat and free ventilation. Keep the strictest watch on red spider and mildew; for both, sulphur properly applied is the best preventive, in addition to keeping the roots in action by a well adjusted bottom-heat. Sow Lord Kenyon's or other good house Cucumber for autumn supply, and pay the same attention to the growing crops as directed for Melons. The potting of Strawberries for next season's forcing should now be proceeded with whenever the pots into which the runners were layered are full of roots; rather strong, rich loam, and well rotten dung, will be the most suitable soil. The kinds intended for early forcing need not have quite such large pots as those intended for a later supply; when potted place them in an open situation, exposed to the sun, placing the pots either on boards or a prepared bottom, to prevent worms from working through.

#### FLOWER GARDEN.

The late heavy rains have done considerable damage to flower gardens, by flooding the beds and destroying the more delicate plants, while herbaceous things, Dahlias, and other tall growing plants in exposed situations, have been broken down; these matters should be set to rights without delay, and every thing requiring the application of supports should at once have them, and be made secure. Independently of the above, Geraniums and such other plants as require hot and dry weather to bring them out, are blooming indifferently, the wet state of the ground having stimulated the growth too much; and where the beds for the latter have not been drained, and the soil heavy, the plants will scarcely get into a good flowering state before winter. This shows the necessity which exists for properly preparing the soil, and draining the beds previous to planting; for, although, the present amount of rain is not to be expected every year, yet a careful attention to the above should be paid by all anxious for a good display of flowers in unfavourable seasons. Herbaceous plants, Lilliums, and many other bulbs are now in full beauty; note any seedlings of the above which present new features for future trial; the present will likewise be a good time for noting down any improvement which may be effected in the arrangement of this class, as regards height, colour, or time of flowering, that the required alterations may be carried out at the proper time. Cloves, Carnations, Mule Pinks, &c., should now be layered, and the propagation of the more valuable herbaceous plants, should as soon as possible be finished, as the propagation of the usual bedding plants will require immediate attention. Lawns will require to be cut frequently this damp weather; give them another look over, to eradicate Plantains and similar weeds, which detract from high keeping, and prevent the growth of the finer Grasses.

#### HARDY FRUIT GARDEN.

Continue to keep the current year's wood of the Vine, Peach, and Apricot closely nailed in, to obtain the advantage of what little sun heat we get. The system of summer pruning recommended at p. 440, and previous Calendars, should be carried out till the whole of the breast-wood is disposed of. Preparations should at once be made for forming new Strawberry plantations, a rather heavy loam, well enriched with the cooler dungs, suits them best, and which should be trenched at least 2 feet in depth, well mixing the dung with the soil as the operation proceeds. Select the strongest runners for the purpose, and which will be all the better if they have been previously laid into small pots; before planting, prick in a dressing of very rotten manure. In planting, allow plenty of room between the rows, being, however, guided in this by the variety planted; the smaller leaved kinds may be planted at a much less distance apart than the stronger growing varieties.

#### FLORISTS' FLOWERS.

Seedling Ranunculuses should be taken from the pans or boxes in which they have been grown, but as many are so minute, and so like the colour of the soil, that without great precaution some may be overlooked, we have found the best plan to be, to put soil and roots altogether into a fine wire sieve, and by holding it under a tap or pumping through it, the soil has been washed away, and every root left; they must then be placed in the sun for an hour, and afterwards removed to an airy, shady place, to dry gradually. The large roots of named varieties should also be taken up, if not already done; for should they start again, which they are apt to do previous to being removed, their death is inevitable. Continue to put in Pink pipings; disbud Carnations and Picotees, giving occasional doses of liquid manure. Attend sedulously to Dahlias. Tie as they require it, and give a good supply of water. Turn up the soil of Tulip beds, and expose it in ridges; this will be of much service.

#### KITCHEN GARDEN.

Directly each crop is over let the haulm, &c., be removed, and after throwing recently slaked lime over the ground to destroy slugs, which abound everywhere this wet season, the plot should be dug over, even if not immediately required for planting. Remove the waste and spare leaves from Cabbages, Cauliflowers, &c., as the produce is cut, to preserve the requisite order, and

to prevent the increase of vermin. When the state of the land will permit, loosen the soil between growing crops, particularly on heavy soils. Look at former directions respecting getting out a good supply of winter stuff, and fill every available space with Borecoles, Coleworts, &c., which will be found useful enough in the spring. Amongst this class, one of the most valuable as a productive winter vegetable is the Purple Sprouting Broccoli, and it should be found in every garden. The later crops of Celery should now be planted, and where an early supply is wanted, a row or two may be earthed up, if sufficiently strong. Now is the best time for sowing spring Cabbage; Wheeler's Imperial with us is certainly the best early Cabbage, but doubtless there are others equally good; at a period of about a week's time the Enfield Market and other later sorts should be sown. Endive and Lettuce should now be sown in larger quantities, to have a good stock for winter.

#### STATE OF THE WEATHER NEAR LONDON.

For the week ending July 21, 1853, as observed at the Horticultural Gardens Chiswick.

July.	Moon's Age.	BAROMETERS.		TEMPERATURE.						Wind.	Rain.
		Max.	Min.	Of the Air.			Of the Earth				
				Max.	Min.	Mean	1 foot deep.	2 feet deep.			
Friday.. 15	9	29.276	29.364	66	48	57.0	60.5	58	S.W.	.34	
Saturday 16	10	29.606	29.578	66	51	58.5	59.6	58	S.W.	.26	
Sunday 17	11	29.834	29.525	69	47	58.0	59.6	58	S.W.	.00	
Monday 18	12	29.982	29.813	66	52	55.0	60.0	58	S.W.	.35	
Tuesday 19	13	29.929	29.904	71	48	59.5	60.0	58	S.W.	.02	
Wednesday 20	14	29.987	29.859	71	55	62.0	60.0	59	S.W.	.00	
Thursday 21	15	29.531	29.750	70	58	64.0	61.5	59	S.W.	.06	
Average ..		29.816	29.727	68.4	51.3	59.8	60.1	58.3		1.03	

July 15.—Overcast; heavy showers; cloudy.  
16.—Showery; heavy clouds and showers.  
17.—Fine; cloudy and fine; clear at night.  
18.—Fine; with clouds; heavy showers; densely overcast.  
19.—Breezy; showery; very clear at night.  
20.—Uniform haze; very fine; slightly overcast.  
21.—Slight rain; cloudy; overcast; rain at night.  
Mean temperature of the week 3 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending July 30, 1853.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.			
						N.	N.E.	S.E.	W.
Sunday 24	72.2	52.3	62.2	9	1.16 in.	7	7	1	1
Mon. 25	74.4	52.3	63.3	9	0.35	7	7	1	1
Tues. 26	72.3	52.0	62.7	13	0.79	1	3	2	3
Wed. 27	74.6	51.8	63.2	10	0.56	1	3	4	2
Thurs. 28	76.4	54.1	65.3	12	0.32	2	3	4	1
Friday 29	74.3	53.3	63.8	12	0.31	1	3	4	2
Satur. 30	74.0	51.1	62.6	14	0.88	3	3	1	7

The highest temperature during the above period occurred on the 28th, 1844—therm. 82 deg.; and the lowest on the 24th, 1839—therm. 40 deg.

#### Notices to Correspondents.

**BOOKS:** *Young Gardener*, Macintosh's "Greenhouse, Hothouse, and Stove," will possibly suit you.—*Eboracensis*. The last edition of the Horticultural Society's Fruit Catalogue was published in 1842. A supplement to it is now in the press, and will shortly be ready.

**BROCCOLI:** *W H B.* We do not know the address you inquire about.

**CRYSTAL PALACE:** *H H R.* You should apply to Sir Joseph Paxton.

**HOLLY-HEDGE:** *V X.* April is the best time for cutting down your large Holly-hedge.

**INSECTS:** *Anon.* Your Roses are infested with the larvæ of a small sawfly, *Centredia ethiops*, the history and figure of which is given in the *Gardeners' Chronicle* for 1843, p. 524. Syringe the trees well with a mixture of clear water, soot, unslaked lime, and soft soap.

**NAMES OF PLANTS:** *J C L.* *Cirrhæa tristis*.—*F.* It seems to be a variety of *Iris lusitanica*; but *Iris* is not to be named from single flowers.—*L M N.* *Teucrium corymbosum*.—*M P J.* They are all trifling varieties of *Oncidium lanceanum*, having no names and not worth naming.—*C F.* *Carex intermedia* and *axillaris*, with *Luzula sylvatica*.—*A D.* *Bolophyllum radiatum*.—*J M.* We are unable positively to identify your plant from a single leaf and flower; but it seems to be a *Pittosporum* of some kind.—*Amigo.* *Lantana Cammaria* and common *Hysop*.—*C L.* Not a Duckweed, but *Callitriche verna*.—*D E.* *Gomphocarpus fruticosus*.—*D S H.* Your flower, which you found "growing wild on the chalk soil at the entrance of a Beech-wood coppice in the neighbourhood of Dorking," seems to be merely the common *Orange Lily* in a starved state, escaped no doubt from some garden.—*Lower of Flowers.* Apparently seedlings of *Calceolaria scabiosifolia*, an annual.—*W E.* *Sisyrinchium striatum*.—*C L P.* 1, *Polypodium vulgare*; 2, *Lomaria borealis*; 3, *Asplenium Trichomanes*.

**PEARS ON QUINCE STOCKS:** *W V.* Very little, but certainly some, effect is produced upon the fruit of Pears by the Quince stock on which they ripen. It is not, however, of such a nature as to affect their quality much.

**PRESERVING FRUIT:** *Anon.* We learn from Mr. Lovejoy that the best way of keeping the bottles from bursting, when his mode of preserving is followed, is not to fill them with water too near the bung; not to bung them too tightly at first; and not to employ too quick a fire, but, on the contrary, to allow three-quarters of an hour for the water to get hot in. Hay between the bottles is not required.

**ROSES:** *Sub.* Cases such as yours, where three flowers grow out of one calyx, are not very uncommon with the *Rosa*.  
**THE NIMROD STRAWBERRY:** We have received samples of this from Mr. Sanders, the intelligent gardener at Tedworth, with a request that we would state our opinion of it. So far as we can judge of it, after having been packed in a post-office bag for several hours, we should say it is superior to the British Queen; it is large, oblong, or rather conical, with the same colour as that variety, but sweeter and richer. It is said by Mr. Sanders to be an excellent bearer, and to force well; in addition to which it is reported to be much harder than the British Queen, nearly all which perished last winter round Tedworth, while this Nimrod suffered in no degree whatever.

**WATER WHEEL:** *A B.* You will find some account of it in a Review of Mr. Marshall's pamphlet on the subject, at p. 662 of our volume for last year.

**MISC:** *T L W M.* You cannot trace an ellipse truly by a continuous line with compasses. You must, therefore, use a triangle; or, having determined the length and breadth of the ellipse, you may complete the figure by means of curves derived from the sections of a cone. You can obtain these curves from the mathematical instrument makers.—*G E.* To preserve green Peas for winter use, they should be dried in a cool oven, and hung up in paper bags; or, perhaps, you might like to try the Russian plan, described at p. 390 of our Volume for 1851. We never knew frogs to do any harm in a flower-garden.



## THE BEST STUBBLE TURNIP.

**SUTTON'S EARLY SIX WEEKS** will be found the most certain cropper and best for the last sowing. It may be sown until the latter end of August with certainty of producing a fine crop. Price 10s. per lb., or 5s. per gallon.

Mr. K. Hickman, of Brimpton House, near Newbury, in a letter, dated February 1st, 1853, says:—"I must mention the Six Weeks' Turnip as the best sort I have ever seen for earliest and latest sowing. I have grown them several years, and have invariably found them to produce more feed in less time than any other Turnip. I have had them after Wheat, of a good size, within six weeks from the time of sowing."

N.B. Carriage free, except parcels under 20s. value.—**JOHN SUTTON & SONS**, Seed Growers, Reading, Berks.

## CHIVAS'S CHESTER ORANGE JELLY TURNIP.

**MESSRS. SUTTON, SEED-GROWERS**, Reading, Berks, having been appointed by Mr. Chivas, agents for the sale of his **ORANGE JELLY TURNIP SEED**, was furnished with a supply of new seed of Mr. Chivas's growth, in time for delivery to purchasers on the 20th of July. Price 2s. per lb. Carriage Free, except parcels under 7 lbs.

## SILVER MEDAL AT THE GLOUCESTER SHOW.

**MR. SAMUELSON'S PATENT DIGGING-MACHINE** is now working regularly at Banbury, and in Kent, Middlesex, Surrey, Cheshire, Yorkshire, North Wales, &c. Price 27l. 10s.

For references apply to Mr. B. SAMUELSON, Engineer, Banbury (successor to the late J. Gardner), Manufacturer of Gardner's Turnip-cutters, McCormick's Reaper, Lawn Mowers, Kase's Force Pumps, &c.

**POULTRY SHOW.**—The First Annual London Great SUMMER POULTRY SHOW will be held at the Baker Street Bazaar, on WEDNESDAY the 27th, THURSDAY the 28th, and FRIDAY the 29th of July. Admission, Wednesday, 2s. 6d.; Thursday and Friday, 1s. Open from 8 in the morning till 8 at night.

## DORSETSHIRE POULTRY IMPROVEMENT

**ASSOCIATION.**—The Second Annual Exhibition of this Association will be held in Dorchester on WEDNESDAY and THURSDAY the 19th and 20th of October next, when the Silver Cups given by the Lord Lieutenant (Earl Digby), the Earl of Hereford, Mr. Sheridan, M.P., and Mr. Gerard Sturt, M.P., in addition to the Society's Premiums, will be offered for competition. Prize lists, forms of entry, and the rules of the Association, may be had on forwarding six penny postage stamps to the honorary secretary. Entries to be on the forms only on or before 1st of October next. G. I. ANDREWS, Hon. Sec. Dorchester, July 23.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, JULY 23, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, July 27	Poultry Show at Baker Street.
THURSDAY, — 28	— Agricultural Society of England.
FRIDAY, — 29	— Agricultural Imp. Society of Ireland.
WEDNESDAY, Aug. 3	Yorkshire Agricultural Society, at Leeds.
THURSDAY, — 4	York Agricultural Society, at York.
WEDNESDAY, — 3	— Agricultural Society of England.
THURSDAY, — 4	— Agricultural Imp. Society of Ireland.

THE GLOUCESTER SHOW of the Agricultural Society, notwithstanding the unpropitious character of the weather, has by no means been unsuccessful. We do not suppose that any of those interested in its success would say this. Friday's sunshine made amends for the weather of the previous days, both to the Society itself and to those in the city who had prepared for a greater influx of visitors than had till then made their appearance. The numbers in the yard on Wednesday was 2566; on Thursday, 10,257; and on Friday, by 5 P.M., no fewer than 23,000 had paid for admission.

For those who came to examine our agricultural machines the meeting was the very best of the long series of which the Society can now boast; and, as regards those who came to show them and sell them, we have been informed that more business was done, more orders given and purchases made, than on any previous occasion.

The cattle yard, as our reports have shown, was as attractive as usual, and the efforts of the Society to draw out provincial agricultural resources were successfully exhibited in the extraordinary quality of the long-wooled (not Leicester) sheep, and of the short-wooled Shropshire Downs.

Few novelties may have this year appeared in the implement yard, but those that were shown had been already tested by some considerable experience of their merits, and both Samuelson's digger and the revolving Turnip-hoe may be considered likely, perhaps in some modification of their present form, to come into general use.

If disappointment was felt in reference to any point which might at this meeting have been illustrated, it was probably owing to expectations that the method of culture adopted by the Rev. S. SMITH, at Lois Weeden, would have found some disciple in the neighbourhood of Gloucester, public-spirited enough to exhibit the system and its results, so far as the season of the year would permit. A plot of land was indeed provided, by the care of Mr. SMITH himself, for the purpose of showing the working of the machines intended for his row culti-

vation; and rows of Rye in the condition in which the young Wheat plants are at the time of their autumn cultivation, presented the intervals proper for the right action of these implements. The weather, however, and the bustle of the more important trial grounds, prevented that attention from being given to this plot which it deserved—and which in spite of these obstacles it would have received had there been alongside of it evidence of the merits of the system in the shape of a ripening crop, such as we are informed Mr. SMITH's own fields at this moment present.

We have again been favoured with the examination papers used at the close of the last session of THE ROYAL AGRICULTURAL COLLEGE. And having been favoured with some of the replies to the papers, we shall have the opportunity of laying them before our readers, both as being in themselves instructive, and as furnishing the best possible proof of the efficiency of the College, as an institution for agricultural education. An adjoining column contains the questions proposed under the several heads into which the examination was divided. We shall publish some of the replies, at intervals, during the next few weeks.

THERE is still a large proportion of THE BREEDING STOCK of THE COUNTRY of a very inferior description, entailing of course upon farmers a very serious loss. Various means have been adopted for encouraging improvement, but probably the best, because the most natural, will be found in the demand which has this year been experienced at our spring sales, from not only better markets at home, but also from American farmers, who have purchased more liberally than usual at high figures; and, from the spirit which prevails, there is every appearance of summer shows and sales being equally well attended. We may refer here to what is already known, however, to most of our readers—the important sale of short-horn cattle at Tortworth Court, Gloucestershire, towards the end of next month; one of the most important sales probably that has ever occurred in this country, as, before the period of its occurrence, we may hereafter take occasion to show.

The object which the farmers of the New World have in view is not merely to improve their breeds of cattle, but their agriculture generally. Some time ago we noticed the backward state of their agriculture, and the hopelessness of their competing in the English market under its rude and expensive system; and they themselves appear to have found out experimentally the soundness of our conclusion, agricultural statistics probably having opened their eyes to their true position. They have discovered that, by adopting our best systems of husbandry, they can not only grow finer breeds of oxen, sheep, and pigs, which will enable them to effect larger shipments of superior dairy produce and salted provisions over and above their own supplies, but that they can, at the same time, ameliorate their exhausted soils.

The Americans have, therefore, three objects in view—the improvement of their live stock, the amelioration of their exhausted soils, and the export of larger quantities of agricultural produce of better quality.

The first of these comes home to us directly, inasmuch as it improves our market for well-bred cattle. For many years we have now been familiar with the visits of American agriculturists purchasing breeding stock. In 1833, for instance, "The Ohio Company for Importing English Cattle" was formed expressly for the purpose, when it selected one of its most talented members to visit this country and make purchases. The representative chosen was the well-known agriculturist, FELIX RENICK, Esq., who returned with a fine herd of 20 short-horns, consisting of bulls and cows from the stocks of our best breeders, and which were held by the company for several years, and then sold by public auction at prices greatly above their original cost, including all expenses, some of them fetching upwards of 2000 dollars. In 1836 even 3000 dollars were refused for a short-horn cow ("Violet") imported that year, so high was the value of the breed at that period. What gave rise to the formation of this company we are told were the successful experiments of Mr. RENICK in fattening oxen on Indian corn. He and his brother found that they could grow immense crops of it upon the virgin soils of Ohio, but they could not sell it. Hence they devised the scheme of marching it to distant markets in the Union in the shape of beef, and were successful beyond expectation. They further found that improved short-horns, from their early maturity and propensity to fatten, returned them a much larger quantity of beef from a given quantity of corn than their native breeds.

It is computed that, since the feeding on Indian

corn commenced, the weight of cattle in Ohio has been increased 100 lbs. per head generally, so that if the soil can be restored to its original fertility, yielding 100 bushels and upwards per acre, the probability is that we shall have an active demand for first-rate breeding stock for some time to come, both for fattening and dairy purposes.

This demand of the New World for breeding stock, however, can only be looked upon as of a temporary kind. Rearing short-horns, for instance, for the American market is a speculation which few farmers will be found to embark in; at the same time the demand has its value, inasmuch as it assists to remunerate that class of breeders who expend large sums in rearing an improved stock for the English market, but who otherwise would not have been repaid; and, if it accomplishes this, its value will not be easily estimated, for larger sums have annually been spent for the general benefit of home agriculture than farmers have hitherto been grateful for, and breeders of this class have not received that remuneration which their labours have merited.

The second of the above objects interests us only indirectly. To maintain the soil at its maximum degree of fertility is a valuable maxim—one not very easily observed in practice, and for which, as American agriculture has neglected it, she now suffers a diminution of produce to the extent of nearly 20 bushels of Wheat per acre; thus reading us a valuable lesson, for it has been estimated that it would take a sum nearly equal to the national debt of England to restore the American soil to its primitive fertility.

The third object—the increase of American exports—is more a commercial than agricultural question, and therefore we shall not enlarge upon it. Hitherto the American farmers have paid too little attention to the quality of their exports consigned to this country. But all shortcomings of this kind they are now endeavouring to improve with an energy worthy of our imitation.

## CAPILLARY ATTRACTION AND LAND DRAINAGE.

In your Paper of the 26th Feb. last, a correspondent, "G. T. Clitheroe," used the expression "overcoming capillary attraction," with reference to land drainage. In asking for an explanation, March 12, I remarked that he might as well try to overcome the rotation of the earth. The answer given only increased my perplexity, and I then, at your request, shortly stated my notions of the subject. On the 21st of May you dealt with the whole question in a leading article; and you closed your case in a second leading article on the 2d of July. In the former article you said that my criticism on the words "the capillary attraction could not be overcome" (as having reference to the depth of drains necessary for that purpose) "was founded on a wrong impression as to what was meant by the phrase in question." I conceive it means that the capillary attraction is overcome by drains, and that it requires a certain depth of drain to effect that object. It appears to me that such is not the case. First this supposes a certain limit above which water will not rise in a soil by capillary attraction; or that water lifted or spreading in a soil by capillary attraction will drain from the soil. I am not able to discover the one, nor can I find proof of the other. Of capillary attraction generally it may be said, that by its known laws water rises in the pores of a soil or substance, in an inverse ratio of the diameter of those pores; the ratio progressing rapidly with the diameter of the pores. Professor Leslie calculates the rise of water in coarse sand or loam as follows: If the gravel were divided into spaces of a hundredth of an inch, the water would ascend 4 inches, and so on, to a ten-thousandth part of an inch, when the height would be 25 feet. To make this calculation good, the pores should be continuous and always open. In most soils the cohesion of the particles, and consequently the diameter of the pores is affected by the contact of water. In chalk this is not the case. To speak first of this substance. In chalk the pores, which are not to be discovered by a strong microscope, are always open. A piece of dry chalk, 6 inches high, of which the foot is placed in contact with a surface of water, absorbs about one-third of its bulk and about one-fourth of its weight; it will become quite saturated in a short time, say one hour, so that it will take up no more, though immersed in water. Moreover, if suddenly immersed when dry, it will not be thoroughly saturated, a portion of the air contained in the pores being impounded in the centre. If a second piece be placed on that saturated, the water will pass through one to the other, and so on. About 30 pieces piled on each other in a glass tube, the point of contact between some of them being not more than the surface of a pin's head, become saturated in about two months; so that the top piece, when immersed, would not take up more than the turn of the scale in addition. Hence we see how water is lifted in chalk, which will not part with a single drop by drainage. Clay, when submitted to water, also becomes saturated by capillary attraction, but much less rapidly than chalk. As it exists *in situ*, it is subject to contract when the water is evaporated, and swells when water is returned to it.



This makes experiments on it rather difficult, because, when submitted to the action of water, or when dried, it is apt to fall to pieces; but it has been ascertained that pieces of clay, as taken from beneath the surface, and which have never been disturbed, will transmit water by contact; and an examination of clay, such as the London clay, the gault, kimmeridge and Oxford clays, below the reach of atmospheric evaporation, shows that it is saturated with water, and that the only drainage is through cracks, fissures, piercings of roots, worms, &c.

If clay in a state of powder or dust be placed in a tube, the water will rise in it but very slowly, even when pressed together; the force of cohesion (or whatever it may be) draws the particles together in masses, leaving cracks or fissures, showing that water rising in a loose soil will seek, and form to itself, the smallest possible interstices between the particles of the soil. In neither case will the clay part by drainage with any of the water so taken up. Though water rises freely at first in sand, and slowly afterwards, it also has power to retain that which it lifts. I cannot admit that the expression "overcoming capillary attraction" can be defended, because water raised and retained by capillary attraction is evaporated; it was drainage, not evaporation, to which it was applied. I deny that "it is just because the soil can part with the water raised within it by capillary attraction that the land is drainable." Land is drainable because the water passes through passages which are not sufficiently minute to lift and retain the water. Dig a hole in a clay soil where these passages are filled with water to a certain height, say 2 feet from the surface; at that point you will find the first trace of free water; though the soil above be saturated by capillary attraction; to that level will the water attain, if time be given it, though the drainage will be slow, because the passages are generally small. Presuming the soil to be homogeneous, if other holes be dug, a water line or level will be found; therefore I assent to the assertion that, "after a heavy rain, there is in practice" such a level, below which water exists freely, and above which, it is sustained by capillary attraction." I allow that this level is on the surface of the soil in undrained land (when the land is full of water), "and in drained land that it is about the level of the drains" (subject to exceptions). But I cannot admit that "there is another level to which water may be raised in soils above this lower level, in consequence of the capillary attraction." If there be such a level, I have failed in any case to trace it. All my observations lead me to believe that fig. 2 represents the state of the soil below the free-water line only, or below the drains. In the second article (July 2), it is stated that "the operating cause in land drainage is the weight of water" (as forced down by gravitation); granted. But I do not admit that "the principal obstacle in its way is the attraction existing between the water and the soil containing it, to which the name of capillary attraction has been given;" except, indeed, that the force which arrests the rain-drops on a pane of glass be capillary attraction. Whether the force be in fact the same, though differently exerted, I do not know. As for "a column of water 2 feet high being able to overcome the capillary attraction in the case of water and sand, while the pressure of a column of water 4 feet high is needed to overcome the similar force in the case of water and clay," I do not understand it; does it mean that, as the pores are smaller in clay, the capillary force is stronger? If so, I contend that there is no drainage through the capillary pores, and that the only drainage is through passages which will not hold up the water above the level at which it can escape, and that in perfectly drained soils the capillary pores are still charged with water, with which the soil will not part except by evaporation. J. C. C., Long Wittenham, July 7.

#### ROYAL AGRICULTURAL COLLEGE.

##### SESSIONAL EXAMINATION.—PRACTICAL AGRICULTURE.

1. Describe the acts of husbandry during the present session in Nos. 2, (3 and 5), 7, (30 and 31), 37, 38, 40. Value those in 38.

2. Describe the kind of crop in every field upon the farm at present, and the state of such fields as may not at present be in crop, and what it is intended to sow in them.

3. State what are the different breeds of horses, cattle, sheep, and pigs upon the farm. Give a short account of the peculiarities of the various breeds.

4. Enumerate the names and values of the different implements and machines in use on the Royal Agricultural College Farm. Describe the various artificial manures now being applied to the Turnip crop, and the commercial value of each per ton. Describe the methods used for preparing coprolites and dissolving bones.

5. Give your opinion as to the relative expense of using artificial or farm-yard manure. How may this expense be modified by the peculiarities of individual farms, so that in one farm, or part of a farm, it might be most desirable to use artificial manure, or the reverse?

6. Describe the sowing of (1) Beans, (2) Peas, (3) Barley, (4) Oats. What crops may they follow? and precede? When and in what manner would you sow them? How much seed would you use per acre? Name a few of the common kinds of each, with their supposed peculiarities. To what diseases and casualties are they exposed?

7. On what soils and in what manner would you prepare the land for Flax? How much seed per acre

would you use? In what manner would you sow it? How much is an acre of Flax usually worth, reckoning both straw and seed? Can you recollect the respective quantities of seed and straw grown here last season?

8. At what time and in what manner would you plant Potatoes? What quantity of seed would you use? and what would you consider a fair crop? Give the usual cost per acre.

9. What is the expense of a crop of Carrots, of Mangold, of Swedes, or Turnips? If one be more expensive than the other give the reason.

10. What are the relative advantages and disadvantages of drilling root crops on the flat and on ridges? Show what has been the practice in this particular on the Royal Agricultural College Farm this season in the different fields devoted to root crops.

11. What is the advantage of winter manuring? In what part of the Royal Agricultural College Farm can this be seen?

12. Name the common sorts of artificial Grasses sown on arable land in this country. Which have been sown on the Royal Agricultural College Farm this season, and in what fields, and in what quantities per acre?

13. In making hay of Clover or other artificial pasture, what are the indications of its being unripe, ripe, and over ripe? How do you know when to cart hay to the stack; and what precautions should you use to prevent the stack over heating, if circumstances oblige you to cart rather too soon? Is an acre of Grass usually worth more or less to consume in summer than as hay in winter? Give reasons for your opinions.

14. What is the difficulty which stands in the way of making in all cases such a Dr. and Cr. account of every field or crop as shall show exactly what you gain or lose thereby? Show nevertheless how this may be approximated to by giving a two years Dr. and Cr. account of a Turnip crop followed by Barley.

15. Describe the management of the sheep and cow stock on the Royal Agricultural College Farm during the whole of the past season.

Cirencester, June 17, 1853.

#### ORGANIC CHEMISTRY.

1. What do you get by heating cream of tartar in a crucible to a red heat?

2. What is the action of moderately concentrated nitric acid on cane-sugar, milk-sugar, and on gum?

3. How can you distinguish cane from grape sugar?

4. Mention the chemical characters of gelatine.

5. How much anhydrous alcohol can you obtain from 100 gallons of a vegetable juice, containing 10 per cent. of grape-sugar in solution?

6. What are the best means of preventing decay in timber?

7. What is the reason that milk becomes coagulated when it is kept for some time in an open vessel?

8. What is the composition of bones?

9. Mention the general composition of urine, and state on which of its constituents its fertilising value principally depends.

#### AGRICULTURAL CHEMISTRY.

1. Give a short description of the principal classes of soils.

2. What is the cause of the great fertility of many alluvial soils?

3. Mention some of the physical characters which influence the fertility of a soil.

4. What are the probable functions of humus in the soil?

5. Mention the chief reasons in support of the view that the organic part of plants is derived from the atmosphere.

6. How do you best prepare superphosphate of lime?

7. What is the composition of soot, and its value as a manure?

8. What principles ought to guide the farmer in the application of artificial manures?

9. What is the composition of shoddy, and how is it best applied to the land?

10. Is it more economical to buy ammonia in the form of ammoniacal liquor of gas works, or as sulphate of ammonia, or as guano, supposing the price of good guano, containing 16 per cent. of ammonia to be 10*l.* per ton, sulphate of ammonia 15*l.*, and ammoniacal liquor of gas works, containing 7 ounces of sesquicarbonate of ammonia in the gallon, to be 1*l.* per gallon?

Equivalent of S = 16.

" N = 14.

" C = 6.

Cirencester, June 18, 1853.

#### INORGANIC CHEMISTRY.

1. What is the composition of the atmosphere?

2. How can you prove the presence of ammonia in the atmosphere?

3. How can you readily distinguish real diamond from Cornish diamond?

4. Describe the preparation and properties of English sulphuric acid.

5. Mention an easy mode of ascertaining the strength of commercial oil of vitriol.

6. Describe the preparation of coal gas, and mention its properties.

7. Why does the flame of an alcohol lamp give less light than that of an oil lamp?

8. How much quick lime can you obtain from 1 ton of limestone, containing 96 per cent. of carbonate of lime?

Equivalent of Ca = 20.

" C = 6.

9. How much nitrogen is there contained in 100 lbs. each of nitrate of soda; of Peruvian guano, containing 16 per cent. of ammonia; of sulphate of ammonia, and of nitrate of potash? Equivalent of N = 14.

" O = 8.

" H = 1.

" S = 16.

" K = 39.

" Na = 23.

1. What changes does limestone undergo in burning?

2. In what states of combination does potash occur in the soil?

3. Describe the preparation of nitre and its properties.

4. Under what circumstances do organic matters, containing nitrogen, give rise to the formation of nitric acid, and when to the formation of ammonia?

5. How can you readily detect the adulteration of Glauber salt in sulphate of ammonia?

6. What is the composition of the coprolites used on the Royal Agricultural College Farm?

7. Give the tests for lime.

8. Give a short description of the principal varieties of clays.

9. In what states of combination are the metals found in nature?

10. Express in symbols the composition of Glauber salt, Epsom salt, common salt, salt of sorrel, smelling salts; green, blue, and white vitriol.

Cirencester, June 18, 1853.

(To be continued.)

#### Home Correspondence.

*Influence of Atmospheric Agents.*—In spite of the great advance which artificial manures and fertilisers have given to modern agriculture, it still seems to be a question whether we sufficiently appreciate or understand the means which nature herself adopts for renewing the fertility of the soil, by supplying some of the most essential ingredients from her own exhaustless resources in the atmosphere. When we consider the composition of air and water, and how intimately these fluids must be blended with the finer portions of soil at the surface, and how constantly they must be subjected to the chemical effects of the solar rays and the electrical changes produced by evaporation, not to mention the vast agencies of heat and cold, and of the great electric phenomena of the atmosphere, and their ever-changing relations as regards the electricity of the earth,—we may form some idea, though faint, of the extent of that decomposition which is constantly going on. By such decomposition of the air and water which are diffused among the finer particles of the surface soil, and by the recombination of their atoms under a different arrangement, we obtain (among others) nitrate of ammonia, one of the most essential principles for vigorous growth in many plants, especially corn; to be modified more or less by conversion into sulphate, carbonate, or phosphate—especially the bibasic or triple phosphate—according to the peculiar circumstances and nature of the different species of soil, it (nitrate of ammonia) is formed in the atmosphere in connection with certain electrical phenomena, and exists in the air as carbonate, probably from the nitrate having undergone decomposition upon its contact and commixture with the carbonaceous exhalations and salts of the earth's surface. If we recognise these processes as a part of the means which nature adopts in fitting and renewing the soil for an endless succession of vegetable production, we ought to consider how far we may best imitate, or at least promote, them. The practical correctness of Tull's views is fully borne out by the discoveries of modern science. There can be no doubt that the most favourable condition for promoting the above-mentioned chemical changes of air and aqueous matter must be a light, pulverulent, and highly comminuted state of the surface soil, and it becomes a curious and most interesting problem to determine the extent to which they may be promoted by art. An experiment of the following kind might be suggested. Let two or more loads of common surface soil (after having been still further pulverised by screening), be spread out on a flat spot, well exposed to the sun and wind, forming a layer of about 4 inches thick; let it be laid lightly in breadths or beds of 6 or 8 feet wide, leaving narrow paths between, like furrows. Let it be well raked with an iron rake night and morning, and watered once in 24 hours, if there be no rain. Once a week the roll should be passed over these breadths, and a fresh thickness of pulverised soil added, to undergo the same treatment. I should conceive that the free exposure to the air of such highly pulverised soil, in the loosest possible state, aided by moisture and the sun's rays, must produce largely those changes to which I have been alluding. In dry weather the surface ought to be well watered night and morning, because this is not only for the purpose of supplying some of those chemical principles, but also for dissolving what salts may have been formed, and carrying them down to the undermost layer, which will thus serve as a receptacle to prevent their vapourisation and loss. Surely there is a period during the growth of a Wheat crop when finely pulverised earth thus impregnated would be of immense service; I mean at the time when the grain is forming. It is then when Wheat most requires its azotised food to enable it to form one of the most important principles of its farina; and I cannot but think that a supply of earth thus prepared might be easily deposited in March or April, if the lines had been drilled at a sufficient width. The experiment which I remember at Holkham, where



Wheat was drilled in lines 15 or 18 inches asunder, certainly produced a mass of tall vigorous corn, which, unless you looked down the lines, would be taken for a heavy crop. This was on light bad Wheat soil; but, owing to the great width of the drills, the horse-hoe had been enabled to be used to a much greater extent, and when the plants were much higher than usual. For the same reason, would it not be possible, by a simple mechanical contrivance, to deposit a quantity of this pulverulent earth, highly impregnated with ammoniacal salts along the lines? The celebrated experiment of Darwin, of earthing up and transplanting a single Wheat plant, so as to keep up a constant tillering, bears strongly upon the point; for it is a familiar fact that a single plant of Wheat can multiply itself 10 or 20-fold, if its power of tillering be sufficiently promoted. In March or April the rain would soon send the ammoniacal salts down to the roots, which are already taking their necessary supplies of siliceous, calcareous, and alkaline materials for the formation and growth of the stem and leaves. Again and again would the horse-hoe, pulverising and fertilising, pass between the lines, mix the new and old soils thoroughly together, and mould them up against the young plants. Why have fallow intervals of a yard wide? Why not cover the whole field with drills a foot or 14 inches apart, leaving spaces or furrows 18 inches wide every 10 or 12 feet, to serve as gangways for the men and horses? *Edward Rigby.*

*A Trip through Gloucestershire.*—Comparison is the source of improvement to all who appreciate the benefits derivable from successful and profitable examples, whether exhibited in the general disposition of a farm, the growth of its crops, arrangement of buildings, or quality of stock. The county contains an immense breadth of first-rate Grass land, producing excellent crops, but the season has been very adverse to making hay. I was astonished at the great variety of practice as regards the harvest season. There were stacks of new hay; and carting home and making and cutting hay, and Grass which would not be cut for a month, were all to be seen within every mile. Beans and Peas are healthy, and promise to yield excellently, being clean and well cared for. I saw some extraordinary crops of Barley growing upon land which would usually be thought too heavy for it; but probably the prevalence of limestones may form a soil favourable to its growth—a great portion was of the six-rowed variety, standing very high and thick, nor did I see a field of it laid, although this was the case with some fine pieces of Chevalier. Wheat was pretty even, and of medium appearance, with occasionally some thin strips; but every person seemed reconciled to a late harvest. Teasels are grown to a considerable extent in rows, about 26 inches apart, and I was told are often very profitable. Root crops are mostly drilled on the flat, with I suppose a superabundance of manure, as a great deal remained on the surface. Swedes looked well and were being hoed out, but it is remarkable that they go over them three or four times with the hoe. Mangolds seem to be great favourites, and were swelling out charmingly. Potatoes are reported to be going, but I found it was what somebody had heard from somebody else; saw plenty of fine healthy stalks, nor could I discover any unfavourable circumstance except that of being smothered by endless rows of hedge-timber, which is a disgraceful blight on Gloucestershire. Amidst this it is a pleasure to open out upon Whitfield, where the plants see sunshine and breathe fresh air—accomplished by grubbing up trees and hedges, after the fashion of a celebrated doctor who began his prescription by smashing the sickroom windows, as the best means to drive away the fever. The farm slopes gently on either side, convenient roads divide the land, and hurdles are used to separate grazing stock. Barley (partially laid) is a good crop, but surpassed by some nearer Bath. Wheat is tolerably good, than which I did not see a better crop in that county. Cabbages, Mangold, and Swedes all look well and clean, but on passing through the drills, aquatic reeds and plants displayed themselves, which I thought would not be the case with deeper drainage; the weather has been against Carrots, which look thin. A piece of ground that was not very mellow is sown broadcast with turnips; which is rather a bad example. The lesson inculcated at Whitfield is, exterminate all hedges, and keep your root crops clean; but I cannot by any means accede that it is in every respect exemplary. The farm buildings are not at all worthy of imitation in several points, nor roofing with tiles, which were knocked off in some places. While there it came on a smart shower, and I took shelter in a boiler-house, where pigs are also fattened; a stream of water came pouring down one corner, and flooded the floor; the spouts overflowed into the piggery, and at the ends rushed on to the roads instead of being conveyed away in pipes; the liquid-manure tank is small and contained several dead pigs and fowls. Not many cattle are kept at present, but the boxes held a few very fine bullocks in good condition, and so clean as to augur well for that system. A money-making farmer would probably keep fruit trees by themselves, where they would not interfere with the operations, nor tempt from work, rather than plant a row through the centre of his land so close to water as to be unhealthily covered with moss and lichens. I did not expect to see so many convolvulus flowers twisting round the wheat stalks; but better things are promised by-and-by; amongst which it is to be hoped that Earl Ducie will think about a renewed treading, with more comfortable means, and accommodation to workpeople than at present; so that Whitfield may at least be brought upon a par with many other

farms, and form a creditable concomitant to his magnificent new mansion. *T.*

*Show of Horses at Gloucester.*—I beg to draw your attention to an error in your account of the Prizes given at Gloucester to Horses in Class II., where you state Mr. Wilson's Suffolk Stallion was "highly commended" as No. 242. [It should have been "commended."] The fact being that the only two-year-old horse "highly commended" was not a Suffolk, and was entered as No. 243. Accuracy being the soul of such a periodical as your Journal, I think it right to request you to rectify this mistake; more especially as these same barren honours were awarded to the brother of No. 243 as "highly commended" at Windsor, in 1851, and both horses were the property of *F. Leyborne Popham, Littlecote, Hungerford. July 17, 1853.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND. MEETING AT GLOUCESTER.

*Friday, July 15.*—The weather cleared up this day, on which the largest attendance at the show yards might at any rate have been expected, owing to the cheaper admission granted; and both the streets of Gloucester and the yards exhibited a wonderful difference from the previous days. We continue our remarks on the implements.

In stand No. 27 were a set of implements for carrying out the Lois Weedon system of Wheat growing. The Society had set apart a piece of ground on which to exhibit the use of Mr. Smith's implements; for, as in entering on any novel mode of farming, mistakes are always liable to be made, and those mistakes may lead to failure, it was clearly desirable that an opportunity might be given to the public to judge whether a system which has proved so successful in some cases, might or might not be equally practicable and successful in all. To test this, there were the implements used by the author himself. First, there was the hand-marker, for marking out the lands with accuracy; then the one-horse drill, the horse-hoe, and rollers; the scarifier for stirring the land; all of them of very simple construction, and not at all intended to supersede any other means which the operator might prefer if they could produce the same results. The public had no opportunity given them to see the implements go through the intended process, in consequence, we suppose, of the heavy rains which fell during the greatest part of the show. We inspected Mr. Smith's crops of Wheat in the spring, and they certainly looked very fine; and we have been informed that at this moment they promise a yield of at least six quarters from each half acre—a fact of which it is in the power of any one to judge for himself by actual inspection.

Messrs. Howards' stand presented an admirable exhibition of their well known ploughs and harrows in stand 45. Their light harrows again received the prize.

At stand 59, J. Huckvale, Chipping Norton, we noticed a Turnip hoe of the same revolving character as that shown by Messrs. Garrett. A similar implement was shown, we remember, at the first meeting of the Society at Oxford. At stands 62 and 63 two liquid manure drills were exhibited, the one by Messrs. Reeves, of Westbury, Wilts, the well known implement invented by Mr. Chandler; the other, exhibited by Messrs. Tasker & Co., of Andover, and invented, we believe, by Mr. Spooner, of Southampton. The former acts on the cup principle, and supposes the manure to be suspended or dissolved in the reservoir for the liquid. The latter contains two reservoirs, one for water which is delivered simply from cocks, and the other a box for powdered manure, which is delivered in the ordinary way into the drill funnels, down which the water is pouring, so that it is washed directly with the seed into the soil. The prize was awarded to the former, as an implement of whose merits full experience has been had during the past few years. The latter was commended. Among the advantages contended for on its behalf by the manufacturers are the following:—

1. The water and the manure apparatus being independent of each other, admits of the application of almost any amount of water per acre (from 1 to 15 hogsheads) which can be varied to any extent, whilst the distribution of the manure may remain the same.
2. Being fitted up with Tasker's patent rotary tumblers, the manure is measured out with mathematical accuracy, every row and indeed every plant receiving the same, which can scarcely be accomplished when the manure is previously mixed with a large quantity of ashes, or widely suspended in a quantity of water.
3. It admits of the application of bones, superphosphate of lime, guano, and indeed of every kind of concentrated manure in conjunction with water.
4. Combining in itself the advantages of a water and a dust drill, it may be used either with or without water, at the option of the owner, or as the situation of the field, the state of the weather, or the supply of water, may render desirable. Thus it obviates the necessity of an agriculturist purchasing or hiring two separate drills.
5. As the water is discharged on the principle of gravitation, no power is employed in raising it, and the wear and tear of buckets and other apparatus is dispensed with. The drill therefore works lighter than any other drill constructed on different principles, and discharging into the earth an equal weight of solid and liquid matters.
6. Whilst the simplicity of its construction secures it

from getting quickly out of repair, it is assisted in this respect by the fact that as the liquid is not impregnated with the acid properties of the manure, the rusting and injury of the metal it comes in contact with is altogether removed.

At stand 68, Mr. Samuelson exhibited his well-known Gardener's Turnip cutter, which received the prize; and his digging machine, which was honoured with a silver medal. Not having yet seen this digger at work here, we cannot yet speak of its performances; but we have received many communications on the subject which perfectly justify the award of the judges. Stand 69, Messrs. Barrett and Exall's, of Reading, contained a number of steam engines, thrashing machines, and other barn implements, and implements of cultivation. The number of steam engines in the yard we may mention is upwards of 40, and Messrs. Barrett and Exall contributed five of them. Mr. Busby exhibited carts, waggons, and ploughs, and received the prize for the best plough for general purposes. Stand 72 contained a number of steam-engines, thrashing machinery, &c., exhibited by Clayton and Co., of Lincolnshire. The following is the account of their 6-horse power portable steam-engine. Since last exhibited it has had some important improvements added to it, which consist in a new method of heating the exterior surfaces of the cylinder and slide box, thereby effecting a great saving of fuel. The cylinder is placed in a jacket, the space between the two being filled with steam, while the outer surface of the jacket, by being placed in the smoke box, is surrounded by heat of 400° and upwards, thereby preventing any radiation, which, in the opinion of the exhibitors, cannot be the case when the cylinder is placed in the steam chamber of the boiler, inasmuch as the boiler must be increased in its external dimensions to receive the cylinder, thereby increasing its radiating surface. It is fitted with an expansion valve, which, together with the patented improvement, renders it very economical. This engine has a tubular boiler of plates 5-16ths of an inch thick, and tube plates 5-8ths of an inch thick; quality, best Thornycroft, excepting the firebox and tube plates, which are Lowmoor. The cylinder is 8½ inches in diameter, and 14 inches stroke. The crank shaft is made of Lowmoor wrought iron 2½ inches in diameter, and makes 115 revolutions per minute. Diameter of fly wheel, which serves as a driving pulley, is 5 feet, and weighs 5 cwt. It will occupy about 50 minutes, and consumes 35 lbs. of coal to raise steam to a pressure of 45 lbs. upon the square inch; consumption of coals per hour, when in full work, 30 lbs. It is fitted with an improved governor; and the boiler is covered with hair felt, and cased over. Price 215*l.*; if with wood wheels, 5*l.* extra. The 4-horse power portable engine exhibited at this stand consumed only 4.32 lbs. of coal per hour per horse-power!

At No. 76, Messrs. Foster and Fry exhibited their draining plough, which has received prizes at many past meetings. The machine in its present state consists of a plough and windlass. The plough is a strong wrought-iron frame, carried on four foot six inch wheels; the front wheels are 9 inches, and the hind wheels 6 inches wide. In the centre of the frame is a cast-iron block, carrying the coulter, and the gear for elevating and depressing it; the coulter is a solid forging 7 feet long, 14 inches wide, and 1½ inch thick; to the bottom of the coulter a conical plug of cast-iron is attached, which forms the drain; the tiles are drawn into the drain, slung on a rope attached to the heel of the plug. The axle of the front wheels moves on a pivot in the centre, so that the wheels can be set to follow the course of a furrow when required. The frame hangs loose on the hind wheels, to which a steering lever is attached, which guides the progress of the whole machine. The windlass consists of a cast-iron bed-plate, supporting a drum and spindle, to which is attached a cross-head and horse-levers, and is worked by four horses. Upon the drum is wound a wire rope, which is returned round a pulley-sheave attached to the front of the plough, and being set in motion draws up the plough from the opposite side of the field, the drain being formed and the tiles deposited in its progress. The windlass is firmly fixed in the ground by an anchor-plate and struts. The advantages of this implement are a great saving over hand labour, and avoidance of injury to the surface. With four horses, four men, and two boys, 60 chains, or above 1300 yards of 3 feet 6 inch draining, with the pipes deposited, can be done in a day. In the stiff clays the land is most efficiently drained without the use of pipes or tiles of any kind. Subject to a royalty. Price 180*l.*

The Northumberland clod-crusher was exhibited here and some at other stands also. It is a double roller, consisting of 40 crushing-wheels on two axles, working within each other, and continually cleaning one another. It reduces the land to a fine tilth, because it suffers no clod to pass larger than the space between the crushers—about three-quarters of an inch. As every crushing wheel acts independently, and bears its own weight on the land, nothing equals it as a hand-presser. It is proved to be the best roller for young Wheat in spring, and it makes unrivalled preparation for Grass and Clover seeds. It is also very useful on an old sward, where it breaks up the moss. Three horses abreast are sufficient to work it.

Among the farming implements that were exhibited must be named Bentall's broad share and Glover's (of Kensington) plough. The former has a beam of wrought iron; on the under side of which is bolted a strong iron frame, on the hind part of which



are affixed shares of various widths, from 6 to 24 inches. On the front part of the same frame is attached a point. This, with the sole of the implement, forms a point of near 3 feet in length, which precedes the share in its work, breaking the hard ground, and causing the share to adhere to the land. On the same frame wrought-iron cutters are attached, through slots. These are for the purpose of cutting the land transversely in subsoiling, but may be dispensed with advantageously, in stony or rocky ground. The front as well as the sole of the frame is protected by false pieces, to prevent the body of the frame from wearing. Price 6*l.* 15*s.* The latter is a plough with a deep and abrupt mould-board and very wide share. It is adapted to pare turf or stubble ground to any depth required, from 1 to 3 inches, and 14 inches wide: it lays the turf in a curl—the best possible form for drying; and its merits are attested now by a very lengthened experience of it all over the country.

**IMPLEMENTS.**—Prizes not awarded at the date of our last publication:—

For the best **PORTABLE STEAM ENGINE**, not exceeding six-horse power, applicable to thrashing or other agricultural purposes, Messrs. Clayton, Shuttleworth, & Co.  
For the second best ditto, Messrs. Hornsby and Son.  
For the best **FIXED STEAM ENGINE**, not exceeding eight-horse power, applicable to thrashing or other agricultural purposes, Messrs. Clayton, Shuttleworth, & Co.  
For the second best ditto, Messrs. Barrett and Exall.  
For the best **PORTABLE THRASHING MACHINE**, not exceeding two-horse power, for small occupations, Messrs. Ransome and Sims.  
For the best **PORTABLE THRASHING MACHINE**, not exceeding six-horse power, for larger occupations, Messrs. Ransome and Sims.  
For the best **PORTABLE THRASHING MACHINE**, not exceeding six-horse power, with shaker, riddle, and winnower, that will best prepare the corn for the finishing dressing machine—to be driven by steam, Mr. Charles Hart.  
For the best **FIXED THRASHING MACHINE**, not exceeding six-horse power, with shaker, riddle, and winnower, that will best prepare the corn for the finishing dressing machine—to be driven by steam, Messrs. Clayton, Shuttleworth, & Co.  
For the best **CORN-DRESSING MACHINE**, Messrs. Hornsby and Son.  
For the best ditto, for small occupations, Messrs. Hornsby and Son.

#### SHEEP.

We now present our readers with a report of the Sheep classes; but, as we said last week, we were prevented taking our usual and more careful review of them by the state of the weather and over-crowding of visitors under the awnings. The short time now elapsing between the opening of the show yard and the publication of our journal caused us to defer it last week, neither shall we take our readers so consecutively through every pen and criticise every animal as heretofore; but we will take those animals that appeared to us most deserving our notice, or demanding our animadversions, so, as far as we can, to point out the best course to be followed in the choice of the breeding stock.

**LEICESTERS.**—Class I. *Shearling Rams*.—The first lots we shall notice are the five shearlings (300–4), shown by Mr. Pawlett, of Beeton, Bedfordshire; they are a very superior lot, but we think Mr. P. has shown us better shearlings—we thought them a little loose in hand, but they are so slightly wrong in this point that it appears wrong to name it; 302 is a finely-proportioned sheep, in good form and good symmetrical frame—he took the 2d prize of 15*l.*; 301 is very like him in many points; 303 has a better rump, and was commended. Mr. Sandy's lot of shearlings come next; he is the old competitor of Mr. Pawlett, and, as usual, the prizes vary between them; indeed, it is only now and then that these breeders of Leicesters allow the prizes to be abstracted from them; we certainly thought Mr. Sandy's the better lot this year; their proportions were quite equal, and their hand was more perfect than Mr. Pawlett's: but again, we thought Mr. P.'s had rather larger frames, and a little more wool; 308 took the 1st prize of 30*l.*, he is a very superior shearling; his plaits and rump very good, and his proportions nearly perfect, with a firm good hand. 309 has an extra chine and plaits, and great depth of chest—a very good lot; 309 highly commended. Mr. G. Turner's (Barton, Exeter) lot is the next on our list; we thought them coarser in offal and less symmetrical in appearance than many we have seen Mr. T. show; they stand high on strong legs, their forms not so compact as the above lots; they are very useful profitable sheep, but are wanting in depth of frame and fineness of quality. Mr. Abraham, of Barnet-le-Wold, near Brigg, Lincolnshire, shows two good shearlings, but they denote something stronger than pure Leicesters, having more size and more wool. Mr. J. Borton, of Malton, Yorkshire (Nos. 315–17): These sheep are very creditable to the breeder—well formed frames, and fair quality of mutton, but not firm enough. 316 and 317 are two good shearlings. Mr. Moon, of Crediton, shows two compact, well formed shearlings, which were commended. Mr. Radmore's (Collumpton) are two very good shearlings. 324 has a nice form, and was commended.

**Class II. Rams of any other age.**—In this class the two eminent breeders above-named, Messrs. Pawlett and Sandy, take opposite prizes, Mr. P. taking the 1st, and Mr. S. 2d; both lots of sheep are of first order and quality; Mr. P.'s being again somewhat the largest framed animals, Mr. S.'s the more compact and symmetrical and best in their hand; we know not which to prefer, and we are sure the judges must have had some difficulty in arriving at a decision. Be that as it may, the balance was so trifling that all were contented therewith. They are nearly all that Leicester sheep should be, and we cannot be so invidious as to compliment the

one at the cost of the other; both gentlemen deserve and received great credit. Mr. G. Turner's sheep in this class present the same showy character as his shearlings. Mr. Abraham's two sheep are large, compact, and good. Mr. S. Umbers' is a good lot; right forms, but small. 349, commended. Mr. Borton's are two good sheep. 348, capital chine and plaits.

**Class III. Shearling Ewes.**—We do not think the pen of ewes, No. 357, shown by Mr. J. Wilkins, of Corse, Gloucester, does him credit. Mr. Sandy's two pens, 358 and 359, of ewes, have not been much surpassed at any of our shows, and seldom equalled; they took the 1st and 2d prize. Mr. Abraham showed a good pen of ewes, which were commended. The class of Leicesters quite keep up their eminent character, and are a very profitable kind of sheep for all medium lands.

**SHORT-WOOLS.**—Class I. *Shearling Rams*.—Mr. Rigden, of Hove, near Brighton, shows some very superior shearling south-downs (No. 361–3), and from the stock of Mr. Jonas Webb; Mr. Webb must take care of his heels. Mr. Ellman's (Beddington, Lewes), are useful sheep, nothing more. Duke of Rutland's (No. 367–9) too long, and uneven in form. Mr. Sainsbury's (West Lavington, Devizes) are a lot of very useful sheep; frames are not correct in form; their heads rather large, with too much crown. Mr. Harrison's lot (Frocester Court, Gloucestershire) show more wool, but have indifferent frames. Mr. Hayward's (Folkington, Sussex) lot are small, nicely formed, with light wool. Lord Walsingham's are fair sheep, but light wool. Mr. Lugar (Bury St. Edmunds) shows some remarkably good sheep, excellent in frame and quality, and he bids fair to equal any of his competitors; his show of shearlings is exceedingly good; large frames, and good quantity of wool, with beautiful looks. 393, commended. Mr. Jonas Webb's lot of shearlings is the next we shall notice. They still retain their superiority; their whole contour of frame and feature is very fine and symmetrical; 404 takes the 1st prize of 30*l.*, and 408 the 2d of 15*l.*; they are sheep of surpassing merit, as indeed are the whole lot. 405 and 407 were commended; they do not look to possess large frames and great substance, but on closer examination every part is seen to be full and proportionate; the wool looks rather light, but it is thick set; they denote the greatest number of true bred good points in the yard. Sir George Throckmorton's, No. 421–2, are two profitable sheep; their plaits deficient. Mr. Williams's (Buckland, Farringdon) sheep are good and have plenty of wool.

**Class II. Rams of any other age.**—Mr. Rigden's two sheep, 426–7, are animals of prime quality and usefulness, in all main points commendable. 427 takes 2d prize of 15*l.* Mr. Elman's, 428–9, are good sheep, but have not sufficient depth of body. Mr. Sainsbury's, 430–35, are a very serviceable good lot; their heads too large, their chins and plaits rather thin and narrow as a whole. 435, has a good form, but rump defective and short; commended highly. Mr. Lugar's sheep, 538–9, are splendid specimens of Southdown rams. 439 is decidedly the best down in the yard, in fact, few people have ever seen a better; he is nearly all the best proportions and finest looks that can be required in a ram; he took the 1st prize of 30*l.* Mr. Robinson's (Burton-on-Trent) sheep, 440–1, are nicely framed, but too short. The Duke of Beaufort's are two very good sheep, fair frames. The Earl of Chichester's ram is good and long in frame, but too narrow. Mr. J. Talbot, Temple Guiting, Cheltenham, will do better next time.

**Class III. Shearling Ewes.**—Mr. Rigden's, 446–7, is a pen of very fine and very prime ewes, highly commended. Mr. Talbot is desirous of attaining notoriety; he will do better. The Duke of Richmond's pen have great substance, but indifferent form and thin necks—long frames; commended. Lord Walsingham's pen of ewes have very good frames, but light wool; they are highly commended. The Duke of Beaufort's have very pretty forms and good stock. Mr. Lugar again shows admirably, his pens of ewes taking the 1st and 2d prizes; no animals in the yard pleased us so well as these, their beauty of countenance and general appearance was admired by all; their frames as nearly correct as can be conceived, and their quality of flesh and wool plentiful and excellent: we congratulate him upon his attaining such a high position among the Southdown breeders, and wish him every success that he so well merits. The Southdowns have long stood pre-eminent amongst the British breeds of sheep, and this year they do not abate one jot of their superiority. Mr. Jonas Webb has long enjoyed the reputation of being the best breeder of this class of sheep, and he too, retains his enviable position, though he continues to be hardly pressed by aspiring breeders—we can only say he must take great care and still progress, or he will be overtaken—the superiority of his flock is yet undoubted; the most remarkable fact is that Mr. W. should have kept the lead so long—he is deserving all praise, and to him must be attributed the great celebrity of the Southdown breed of sheep. We are the last to attribute partiality to judges, but men do and ever will possess peculiar tastes, and these will be manifest in adjudging merit. We should like to see fresh judges every year going over all the classes.

**LONG-WOOLS.**—Class I. *Shearling Rams*.—Mr. W. Hewen's (Northleach) shearling rams, 456–8, are very good sheep, well formed, and fine quality; their wool thin and varying in staple. Lord de Mauley's are a good lot of rather small Cotswolds; frames not quite so compact as might be, and wool varied. Mr. W. Garne (Northleach) shows a very superior lot of sheep, with

large handsome frames, on good but rather long legs; 468 takes 2d prize of 15*l.*; he has a very large frame, broad loin, and deep thighs, fine formed breast, chine, and plaits, stands high, wool fair, but straight in staple. 469 is highly commended; he has a good chest and deep frame, stands lower than 468, but has similar wool. Mr. E. Handy (Andoversford): This is a fair and very useful lot of sheep; they are too narrow in frame, and stand too high; backs good and wool more curly in staplelock: 471 commended. Mr. W. Slatter's (Cirencester): this (477) is a more compact sheep, short and thick. Mr. G. Hewer's shearlings have very well formed frames and good rumps, chins not good; 479 commended. Mr. W. Smith's (Fairford) is a large sheep with light wool and dark face and legs. Mr. W. Cother (Woodstock) showed a profitable lot; wool rather thin; 482, commended, is a very useful sheep. Mr. G. Fletcher (Andoversford) 485–9: This is a very respectable and useful lot of shearlings, but with dark or spotted faces and legs; 485 has a good form and level make, and was commended; 488 was also commended; he is taller but not so well made. Mr. J. Lane (Cirencester) showed two large and serviceable sheep with longer wool.—Mr. W. Lane (Northleach): This is the best lot of shearlings; large frames, long, deep, and good in form, good rumps and good and heavy wool; a fine selection, and do great credit to Mr. Lane; 495 took 1st prize of 30*l.* Mr. W. Smith's 499–501: This is a good lot of shearlings, much alike, with curly wool; but we do not like dark faces and legs.

**Class II. Rams of any other age.**—Mr. C. R. Smith, Fairford, 502: This sheep was fed out of form; heavy rump and good plaits. Mr. W. Hewers, 508–6: These are extraordinary sheep in size, but vary in form and wool. Lord de Mauley, 508–9: Large and useful sheep, thin thighs and flanks; too much skin under the jaws. Mr. W. Gaines, 510–11: Two large sheep with good frames, but light wool; 511 commended. Mr. E. Handy's, 512–13: These are two very first-rate sheep; 512 has excellent chine and plait, and very compact frame; he took the 2d prize of 15*l.* Mr. W. Slatter's (514) ram has very excellent mutton and fine wool; rump not good; fair shoulder, chine, and chest, but not first-rate; prize of 30*l.* Mr. W. Cother's: Two good useful sheep. Mr. W. Lane: Very large and good sheep, and in keeping with Mr. Lane's flock No. 519; highly commended.

**Class III. Shearling Ewes.**—Mr. W. Caldicot, Chipping Norton, 520: This is a pen of ewes with compact frames and fair quantity of wool. Lord de Mauley, 521–2: These pens of ewes are too narrow in frame and too small, with legs too long. Mr. W. Garne's 523–4: These are two good lots, and rather large frames; much alike, but show some dark or spotted faces. 524 is commended; they are very pretty, and show well. Mr. T. Gillett (Witney), 525: These are very unlike; our remark is, "five and five sorts;" dark faces and legs. Mr. W. Cother (Woodstock), 526–7: These are two pens of pretty and compactly-formed ewes, with good wool, but some dark and speckled faces, and legs. Mr. G. Fletcher (Andoversford), 528–30: These pens of ewes are very superior. 528 is well matched, and large in frame. 530, well formed, more compact, and much alike; both lots highly commended. 529 is not so much alike. Mr. T. Gillett: These are two pens of good ewes. 531 have large frames, good wool, and are well matched—commended. 532 longer frames and narrow; some speckled faces. Mr. W. Lane: These are two pens of beautifully-formed ewes; very compact frames, of good quality, and fine offal. 535 are almost all that can be desired in a Cotswold ewe. These pens further enhance the credit of Mr. Lane as a breeder. 535 takes 1st prize of 30*l.*; 534 the 2d prize of 15*l.*

We did certainly expect to see a good show of Cotswold sheep, knowing that Gloucester is their favourite county, but they have surpassed our expectations; we have seen Mr. Large and others show better individual animals, but never have we seen so many good ones. As sheep, they are the most noble specimens that Britain can boast. Leicesters and Downs may be more profitable as breeds, but they cannot come up to the grandeur of appearance that a well proportioned improved Cotswold displays. We speak of them as animals; of their adaptation for general use we say nothing; our impression on that point is unfavourable to them as a breed. Like large bacon pigs they are not in accordance with the present and growing taste of the public. We must, however, congratulate the breeders on producing such a splendid show, and we trust it will stimulate to much further progress in improving this valuable breed, and we will just say or repeat the old saw—"the biggest are not always the best."

**SHROPSHIRE.**—The class of sheep shown as Shropshires have agreeably disappointed every stranger to the Shropshire flocks. They were represented as comprising every imaginable cross—why, better animals were never seen than were shown in this class! Some beautiful animals, and nearly all of them denoting profitable adaptation. We hope every district to be visited by our useful Society will display a like improvement. The Lincolnshire long-wools will most probably appear in considerable numbers next year under their special class. We hope they will prove well. They are neither Leicesters nor Cotswolds, but a most valuable breed, with wool unequalled in quantity and quality combined.

**Class I. Rams of any age.**—Mr. John Gillett (Witney), two very profitable sheep; 537 had scarcely his superior in the yard for good serviceable qualities, he took the 1st prize of 20*l.*; 556 is a good shearling, not pure bred, but very profitable for common breeders to adopt; he



was highly commended. Mr. S. Meire (Much Wenlock) 538—40: These are three good sheep, with large fair frames. Mr. S. Druce (Eynsham), Nos. 541—3: These are not a good lot—frames long and coarse. Mr. Thos. Horton (Cressage, Salop), 546: This is a good sheep in frame and wool, and valuable in any country; he takes 2d prize of 10l. Mr. S. King (Hungerford), Nos. 547—50: This lot are large downs—they have coarse frames and much offal. The Earl of Aylesford's, 553-4, are two good and useful sheep in frame and quality. Mr. J. Druce (Eynsham): We cannot admire such frames and heads—not compact enough. Mr. S. Haughton (Shrewsbury), No. 558: This is a fine animal and useful sheep. Mr. S. Matthews (Shrewsbury), Nos. 559-60: Not compact enough frames, long and loose. Mr. W. Foster (Stourbridge): These are a lot of very serviceable and profitable sheep—they are good in frame and character. Mr. W. Humphrey (Wantage), No. 566: These are a larger sort, but frames are defective in form. This class, as a whole, is not sufficiently compact in frame and form—too narrow and long.

**Class II. Pen of five Ewes of any age with their Lambs.**—Mr. S. Druce: The ewes have frames too long and narrow; lambs good. Mr. S. Matthews's: These have fair good frames, but out of condition; poor. Mr. W. B. Vaughan, (Ludlow), 573: Not good, and strangely shorn. Mr. W. Foster's: This is a very superior lot, and lambs good; 1st prize of 10l., of which they are well worthy.

**Class III. Pen of five Shearling Ewes.**—Mr. S. Meire, 578: A very useful and good lot; highly commended. Mr. S. Druce, 579: A useful lot of long-legged ewes. Mr. S. King, 581: A good lot, but do not match. Earl of Aylesford, 582: Fair lot; frames not good, but useful stock ewes. Mr. S. Matthews, 583: These are compact in frame, but small. Mr. W. Foster, 584-5: These two lots are again very good, and worthy of introduction into any country; they do Mr. Foster great credit as a breeder. 584 takes the prize of 10l., and 585 are highly commended; we beg to congratulate Mr. F. on the success he has met with, and which he richly merits. Mr. W. Humphrey (Wantage), 588: These are useful ewes, but their frames are indifferent.

The show of sheep is exceedingly good as a whole, and well maintains the usefulness of our Society. We have omitted one or two pens of Cheviots; they are a fair useful lot, but we have seen better exhibited, still we are very pleased to see them brought out, and wish they could have been so placed as to have secured some mark of encouragement; but it is worse than useless to put them with first class downs. We must have more classes and greater distinctions of breeds in every department.

**SOCIETY FOR THE PROMOTION OF THE GROWTH OF FLAX IN IRELAND: Belfast, June 29.**—Some very superior Flax, from the rectory of Messrs. Aitken, of Spalding, Lincolnshire, showed the quality that is produced, in England, by the hot-water steep. Another sample, from Messrs. Hay, of Dunfer, exhibited the effects of wet-rolling Flax straw, after a 40 or 45 hours' hot-water steep. It was stated that this simple but effectual mode of purifying Flax, steeped by Schenck's system, so much increased its value that it was likely soon to be adopted at all retteries. The sub-committee, appointed to try the several new scutching machines, made a preliminary report upon that of Mr. M'Bride, which was the first they had tried. This machine is completely self-acting, and dispenses with trained labour. The Flax straw, after rolling, is spread thinly between two ropes, which are kept at a great tension, and is by them held fast, and carried on to a set of beaters or scutch blades, which clean the lower half of the flax. The continued movement of the ropes brings the Flax to a part of the machine, where, by an ingenious yet simple contrivance, the position of the flax is reversed, i.e., the ends formerly held by the ropes are let go, and the other ends grasped. By the onward motion of the ropes the unsutch ends are presented to another set of scutch-blades, which complete the process of scutching. The Flax is carried on by the ropes to where the latter become separated, and the fibre is then readily gathered into handfuls and pulled out of the machine to make up into sticks in the usual manner. One person to place the straw in the machine, and two others to arrange and take away the fibre, are all that are required to attend it, excepting, of course, those who strike and roll the straw, and carry it to the machine. At the last trial made by the sub-committee, 47 lbs. of steeped straw were scutched in nine minutes, and yielded 9 lbs. 13 oz. of fibre. This yield was at the rate of 23 lbs. 6 oz. of fibre to the 112 lbs. of straw, and the amount of work done equal to 49 stones per day of 23 working hours.

**MR. MECH'S GATHERING AT TIPTREE, on Wednesday last,** was as successful as it ever has been, whether judged by the strictly professional or the social merits which it undoubtedly possesses. A large number of gentlemen, chiefly agriculturists, were present, and nothing was wanting for the perfect enjoyment of a very pleasant day, either in the character of the weather, the appearance of the farm, or the hearty hospitality with which every one was received. We hope to publish a report next week.

## Reviews.

**Richardson's Rural Handbooks.**—*The Sheep and Shepherding.* By M. M. Milburn, Author of "The Cow," and of various Agricultural Prize Essays. W. S. Orr & Co.

This is one of the best of a very cheap and useful series of publications. Poor Richardson, with whose contributions on the Dog, the Bee, the Hog, &c., the series commenced, has not lived to see the completion of his idea; but the public are indebted to him, and to his publishers, for one of the cheapest and most immediately useful of all the many periodical cheap issues from the press of late years; and this little volume, the second by Mr. Milburn, is one of the best. It contains enough of

the natural history and general character of the sheep to interest the general reader, and enough of strictly descriptive matter and practical detail on management, expenses, produce, and profits, to interest the practical agriculturist. A valuable chapter is given on Australian sheep-farming, which will probably induce many an intending emigrant to purchase the work. They will find in it a short and general account of the shepherd's life and the flockmaster's prospects in that country, which may perhaps determine their choice of a colony if not of an occupation.

"The progress of a flock in Southern and Western Australia is thus given by George Grey, Esq., some time governor of Australia, and late captain of the 83rd regiment:—In Western Australia, a settler, commencing with a flock of 100 ewes would have in five years, with ordinary management—

Ewes	...	...	180
Maiden Ewes	...	...	56
Wethers	...	...	164
Ewe Lambs	...	...	72
Wether lambs	...	...	72

Total ... 544—value 800l.

But in Southern Australia, a settler, commencing with the same number, would have in five years—

Ewes	...	...	540
Maiden Ewes	...	...	168
Wethers	...	...	492
Ewe lambs	...	...	216
Wether lambs	...	...	216

Total ... 1632—value 2400l.

This gives a balance in favour of Southern Australia of 1600l."

It is, however, more especially for the English farmers that this little book is intended, and its descriptions of the different breeds, and its chapters on the general subjects of breeding, rearing, fattening, and treatment under disease, fully establish its claim to their attention.

## POULTRY.

**ROYAL AGRICULTURAL SOCIETY OF ENGLAND.**—The second Poultry Exhibition of this Society was held at Gloucester last week, and those most concerned in it have every reason to be gratified with the result. The object of giving prizes for Poultry is not here so much to please the amateurs, and afford an arena for friendly competition, as to point out and encourage the most useful and profitable bird for an agricultural establishment. Public opinion and the verdict of competent judges would seem to point to the Dorking as possessing these properties, and the display in them was great indeed. The judges affirm, without fear of contradiction, such an exhibition of them was never before seen together. An inspection of the catalogue will show that the best names and breeds were in the competition. Those highly commended would anywhere else have gained prizes; the commended must consider they have really first-rate fowls, and the unsuccessful will feel it no discredit to have been beaten by such opponents. In these classes, three, including both the first prizes, were gained by Captain Hornby, two by T. T. Parker, Esq., two by Mr. Lewry, and one by Lord Hill. The competition was not great in Spanish, the two first prizes were gained, as usual, by Captain Hornby, with two pens of unusual merit; Mr. Mapplebeck, of Birmingham, took the third, with a pen of good birds; and the fourth was awarded to Mr. Adams, of Malvern. Next in order were the Cochins, and it would seem to be the province of this Society to introduce a new name to fame every year in this class. Last year the honours were awarded to Mr. Higgs; but this year they were claimed by a pen of unusual beauty and perfection, belonging to Mr. Terry, of Walton Terrace, Aylesbury. Mr. Punchard had the second prize; the third was awarded to Mrs. Herbert, for a pen of white chickens; and the fourth to Dr. Gwynne, for Braham Pootras or grey Cochins. As most amateurs have opportunities of seeing the Catalogue and Prize List, we will refer them to that for details, and content ourselves with mentioning those pens whose merits deserve especial notice. The golden-spangled Hamburgs of Mr. William Ludlam were excellent, and the cock was spangled with a correctness and perfection of marking difficult to be obtained. The silver-spangled of Mr. J. Jennens were also good. The Malay fowls of A. C. Sayers, Esq., were very good, and formed an exception to this generally deficient class. The three prize pens of Polanders were good, especially those belonging to C. Rawson, Esq.; and another pen (the property of the same gentleman), highly commended, would have occupied a different and higher position but for an inferior hen; the cock and one hen were excellent. The prize turkeys were admirable, and their weights were very great. Those belonging to Mr. Fairlie weighed 49 lbs., and Lord Hill's possessed a brilliancy of colour, and were in such condition as is seldom seen. An idea may be formed of the excellence of the goose class when it is stated that among birds of 1853 nine pens of one gander and two geese were found weighing upwards of 34 lbs. each, in moderate condition; and the successful weighed respectively 41, 40, 39, and 39 lbs. each. While giving due merit to the Toulouse, the judges were glad to see such fine specimens of the English white geese, which certainly carry heavier weight in proportion to size than their imported competitors. Among the ducks, the Aylesburys of Mr. Weston were very good, and the black of H. T. Pigott, Esq., were beautiful and true bred. The commendations were numerous, and deservedly so. The arrangements were admirable. The pens were spacious,

lofty, and well constructed, occupying the entire length of the show-yard; and there was a plan adopted worthy the imitation of all exhibitors, if space will permit it, viz., a strong iron bar and posts, running in front of the cages, and projecting about 3 feet from the pens. It affords the birds plenty of air, and enables spectators to see them much better, especially the lower pens. Those who attended the meeting officially owe their best thanks to the committee for the arrangements made to secure their comfort in lodging, &c. The judges were Mr. T. B. Wright, of Great Barr, Birmingham; Mr. Torr, of Aylesby Manor, Grimsby; and Mr. Baily, of Mount Street, London. The following is a list of the prizes awarded:—

**Class I. DORKING FOWLS:** cock and two hens, chickens of 1853.—5l. to Capt. Hornby, R.N., of Knowsley Cottage, Prescott; 3l. to James Lewry, of Handcross, Crawley, Sussex; 2l. to the same; 1l. to T. T. Parker, of Astley Hall, Chorley, Lancaster.

**Class II. Dorking Fowls,** more than one year old; cock and two hens.—5l. to Capt. Hornby, R.N., of Knowsley Cottage, Prescott; 3l. to the same; 2l. to Viscount Hill, of Hawkstone, Shrewsbury; 1l. to T. T. Parker.

**Note.**—The judges unanimously agree that the Dorking Classes were never equalled at any exhibition in the kingdom.

**Class III. SPANISH FOWLS:** cock and two hens.—5l. to Capt. Hornby; 3l. to the same; 2l. to W. B. Mapplebeck, Bull Ring, Birmingham; 1l. to J. P. Adams, of Newland, near Malvern, Worcester.

**Class IV. COCHIN-CHINA FOWLS:** cock and two hens, chickens of 1853.—5l. to Edward Terry, of Aylesbury, Bucks; 3l. to Chas. Punchard, of Blunt Hall, Haverhill, Suffolk; 2l. to Mrs. S. R. Herbert, of Powick, near Worcester; 1l. to W. C. Gwynne, of Sandbach, Cheshire.

**Class V. GAME FOWLS:** cock and two hens.—3l. to N. N. Dyer, of Broomhouse, Tewkesbury; 2l. to Edward Love, of Comberford Flour Mills, Tamworth; 1l. to Edward Glover, of Olton, near Solihull, Warwick.

**Class VI. HAMBURG FOWLS:** Golden and Silver Spangled, or Golden and Silver Pencilled: cock and two hens.—3l. to William Ludlam, of Bradford, York; 2l. to J. Jennens, of Moseley, Birmingham; 1l. to Thomas Lowe, of Whateley, Fazeley, Staffordshire.

**Class VII. MALAY FOWLS:** cock and two hens.—3l. to A. C. Sayers, of Clanville House, Andover; 2l. to Henry Worrall, or Knotty Ash House, near Liverpool; 1l. to W. B. Mapplebeck, Bull Ring, Birmingham.

**Class VIII. POLAND FOWLS:** cock and two hens.—3l. to Christopher Rawson, of the Hurst, Walton-on-Thames; 2l. to William Cox, of Brailsford Hall, Derby; 1l. to W. G. Vivian, of Singleton, Swansea.

**Class IX. TURKEYS:** cock and two hens.—5l. to Right Hon. Viscount Hill; 3l. to John Fairlie, of Cheveley Park, Newmarket; 2l. to R. T. Head, of the Briars, Alphonston, Exeter; 1l. withheld.

**Class X. GESE:** gander and two geese, hatched in 1853.—5l. to T. T. Parker; 3l. to the same; 2l. to Capt. Hornby; 1l. to T. T. Parker.

**Class XI. AYLESBURY DUCKS:** drake and two ducks.—3l. to John Weston, of Oxford Road, Aylesbury; 2l. to Miss L. C. Stow, of Bredon, Tewkesbury; 1l. to Miss Wilcox, of Nailsea Court, Bristol.

**Class XII. ROVEN DUCKS:** drake and two ducks.—3l. to Henry Worrall, of Knotty Ash House, near Liverpool; 2l. to W. W. Rowe, of Longbrook, Milton Abbot, Devon; 1l. to Capt. Hornby.

**Class XIII. DUCKS OF ANY OTHER VARIETY:** drake and two ducks.—3l. to H. S. Pigott, of Brockley Court, Bristol; 2l. to the same; 1l. to Miss S. Buckle, Moat House, Uckington, Cheltenham.

**POULTRY: E G.** The disease you complain of is cramp, and is the result of the long rain we have had. It is difficult, almost impossible, to cure, but it will be prevented, if, during wet weather and cold winds, you give your chickens stale bread soaked in strong ale morning and evening. If treated with medicine, a pill, the size of a small pea, made of equal parts of gentian, mustard, and ginger is the best remedy, and a sufficient dose for a chicken.—*Original Subscriber.* When hens lay soft eggs, instead of putting lime in the water, a few baskets of bricklayers' rubbish should be thrown about their haunts; lime should also be laid about. I have little doubt your fowls lay, and then eat their eggs; that is common after laying soft ones, as it is for the shell they first take to them. If such be the case, and I have little doubt of it, watch them narrowly, and remove the egg the moment it is laid; they will then take to the lime, &c., and give up their unnatural propensity. If your Spanish fowls are really good, you may not grow rich, but your hobby will be very profitable.—*J. G.* Spanish fowls are always naked when they moult, and most hens are ragged, especially on their backs, at this time of the year. I do not approve your method of feeding. The greaves are stimulating either to fatten or to induce laying, but the continued use of them causes internal fever, which, by drying the skin, prevents the growth of the young feathers, which are deprived of nutriment. Feed them night and morning with oatmeal, mixed with milk, and give at mid-day some Wheat. I think you will find your fowls do better, and soon get into feather.—*Querulous.* When the judges at Gloucester said it was the best show of Dorkings they ever saw, they did not thereby mean the most numerous, but the best in quality. I do not consider it would have added to the exhibition had there been a hundred more pens of inferior birds.—*Tyro.* A bird trimmed in any way, whether the cock have his tail pulled, or the hen her hackle cut, is disqualified for competition. This cannot be too generally known. *J. Daily, 118, Mount Street.*

## Miscellaneous.

**Peruvian Guano.**—The importation of Peruvian guano in 1851 amounted, it is stated, to 199,732 tons, and in 1852 to only 86,224 tons. The falling off in the arrivals, therefore, amounted last year to 113,439 tons, or more than one half. The cause of this decrease was entirely owing to the scarcity of tonnage, and not from any falling off in the supply at the place of deposit. The extraordinary demand for vessels during nearly the whole of last year for the Australian trade necessarily occasioned, more or less, a scarcity of tonnage in all other trades, and that in guano suffered in proportion to others. It must be highly satisfactory, however, to the Peruvian bondholders to know that the demand for Peruvian guano continues rapidly to increase; and whereas the quantity sold by the agents of the Government in 1851 amounted to 87,987 tons, which produced, after payment of freight, insurance, commission, and all other charges, a net profit of 369,580l., during 1852 the quantity of guano sold amounted to 138,149 tons, producing 592,813l. net, being an increase in the sales of 50,162 tons, and an increase in the net proceeds of 213,233l. *Morning Chronicle.*



## Calendar of Operations.

JULY.

[Will our correspondents, under this division of the Paper, be kind enough to post their letters so as to reach London on the Thursday? Some of the following communications have been delayed by the length of the Gloucester report.]

**BORDER OF THE FENS, July 2.**—The backward spring has been succeeded by a late summer, the hay time being at least a fortnight later than usual. Those who have deferred cutting their Grass will be rewarded by a heavy swath and a prospect of finer weather than prevailed in the middle of June for hay-making. The Clover has been much damaged by the heavy and continued rain; Clover cannot be permitted to "stand" so long as Grass, as when in full flower the leaves are apt to fall off when the most valuable portion of the fodder is lost. Clover is this year generally light, and it will have to be cut a second time instead of being fed off, as the meadow and waste hay will make but indifferent fodder, from the standing Grass being flooded two or three feet deep in the washes and lowlands. Very little hay has been secured yet, and that in bad condition, regard not being had to the rule for carrying Clover—"you may get it green, but you must not stack it wet." We have been lately engaged in making a large manure heap for 12 acres of Cole seed, by carting from the roads about the yard all the trodden straw and odds and ends, so as to make the honestest tidy and ready for the reception of corn and hay. The weather has favoured this process by inducing fermentation, so that with 4 bushels of dissolved bones per acre, 2 cwt. salt, and a sprinkling of guano, we shall obtain a tolerable dressing for the Cole seed which will be sown next week. Our Suede Turnips look strong and healthy, and will be ready for singling out before harvest. We are hoeing and cleaning Mangold Wurzel, which have come up irregularly, owing to the extremely dry weather of May. Root crops now, however, bid fair to be abundant, particularly Potatoes, which have been cleaned and moulded up. Beans have received their final hoeing; they flower well, and spread their perfume wide, and already give promise of a good yield. The corn crops about here have improved amazingly, and now only require to be let alone for the next month. Weeds are much complained of, especially Charlock, Daisy-weed, Crow-weed, and Butter-cup. I saw five persons in a field of Wheat lazily hoeing, as I thought; on making inquiry, I learned they were raking out Harif. Weeds must not be tampered with—they must be extirpated. Thistles are as great a nuisance as Harif or Charlock; Docks also flourish in the fens with Willow-weed, Twitch, and Nettles, and great quantities of these weeds are propagated from the foulness of hedge-rows and dikes sides, corners, and neglected places; they want rooting out wherever and however they may have gained a footing, or the careless farmer will find "one year's seeding costs seven years' weeding." Next week we propose to clip our lambs, previous to parting them from the ewes; they were not done earlier, because the mixture of arsenic, sulphur, pearl-ash, and soft soap tends to keep the flies off from this time until flies cease to be troublesome. Corn and cattle keep steadily advancing, and the railway companies have laid their heads together to share in the expected profits of the farmers, by advancing their charges for conveyance from Peterborough to London for sheep from 5d. per head to 1s. 2d., beasts from 4s. to 6s. 6d. This is a dilemma out of which we cannot clearly see our way, only to caution the agriculturists to use every effort by their representatives in Parliament to restrain the monopolising powers of the railway world within their present boundaries, which are already too great for directors of dividends to yield through those mighty arteries of the empire over the producers and consumers of food, if its proper channel be diverted, or its supply restricted by arbitrary exaction. Whilst talking of the price of corn, I may mention the remark of a friend, "that this free trade will not do at all—it makes everything so dear; we must have protection again, if only to secure reasonable rates." J. W., Peterborough.

**SOUTH HANTS.—Wheat, Barley, and Oats, in the strong and heavy soils, are the best crops remembered for some years past in the straw, and the ears small (of Wheat). On lighter soils Barley is more promising, and where the sheep have been close folded in dry weather. The finest crops are Peas and Beans; these, however, have yet to go through their day of trial, as well as the Potato crop, which is also very promising. The hay crops, and most of them were very fine and heavy, have been considerably damaged by wet. Mangold Wurzel still increases in favour as a root crop, to succeed Turnips, which last are sown in South Hants in greater breadths than some years since, and in a more sensible manner; the broadcast and double drill systems are nearly exploded. They are sown mostly in single rows, after the Scotch system, a plan introduced by Alexander Falconer, Esq., some 17 years ago; this gentleman, I remember, was told the plan would not answer, and, as to 27 inches apart, they protested he would have no crop at all. But experience has satisfied those obstructors of all improvements who still sow broadcast, and sometimes drill Turnips like Wheat, at 9 inches wide, in rows. Farms in South Hants are much nearer in their fences and ditches, but many still as of old time. Political feuds have put an end to the old agricultural societies and all ploughing matches, save Christchurch, in these parts. Q. R. S.**

**BERKSHIRE FARM, July 1.**—The previous cold dry winds were in the second week of the past month succeeded by warm westerly breezes, with thunder showers, heavy, and, at times, long continued. Under this change vegetation improved rapidly, and pastures which were very bare can now keep their usual stock. The last few days have been rather colder, with wind more northerly, and still showery. From want of moisture the Swedish Turnip seed lay dormant for, in many cases, four or five weeks, and what few plants did come were mostly destroyed by fly. There are some exceptions to this on light soils, where the plants are being thinned. Generally the plants have appeared within the last fortnight, but inferior to the other varieties more recently sown. Cereal crops are improving in appearance, and those earliest sown are in ear. Wheat is not well stood out, and rather deficient in length of ear. The breadth of winter Wheat is very small, the greater proportion having been sown late in spring. Barley looks healthy, though backward on clay soils before the rain came. Oats are good, having been sown first, and in good order. Beans and Peas look well, but short in straw. Clover for hay, which was very light in most instances, is improving under the showers, and but little has been mown yet. Lean stock still bring high prices, and grain is improving. Demand for Wheat very active. Lanmermuir sheep-shearing is pretty well over. J. T.

**DORSET FARM, July 11.**—We have had a long continuance of very unfit weather for haymaking, and have only now carried what was cut three weeks ago, while in many hay Clover now lying in the field that has been cut four or five weeks, and, of course, good for nothing; but except where it has been down very long, it is not so bad, for we have not had rain to hurt it. It has been perpetual fog, the sun scarcely appearing, so that as it has not been deprived of its own sap, it has not suffered so much from the heavy dews; but if we do not have good hay, nor much of it, we are likely to have a good supply of Turnips here at least. I do not remember to have seen them look better in coming up. Except among the first that we sowed, the fly has not hurt at all, and it could hardly have done so, the weather being so cloudy. The corn does well; Grass is overpowering us everywhere, and we have reason to fear that the heavy dews and long Grass will be hurtful to our sheep, for they are liable to get lame when this is the case. At some time of the year we can counteract it by mowing them on the fallow ground during the night, until the dew be off the Grass, and when this is possible we have not much harm done, but at the present time that is out of the question,

and we can only feed them upon the Clover stubble, where they will certainly do best. Live stock do well, and fetch good prices. Our wether lambs, which are generally sold at this time of the year, have been bringing good prices—from 4s. to 6s. a head higher than last year, and all other sheep are far dearer than they have been for several years. The Potato disease is setting in again—not so rapidly as last year, but with every appearance of being as general. Here it has first showed itself on land that lay low and rather damp, and is gradually finding its way to higher and drier land. It has sometimes been thought here that it has always been seen after the wind has been blowing from the east, but this season we have had very little easterly wind, but more from the south, south-west, and west; and it seems that this supposition, like a great many others, is not much to be thought of; but I may here speak of what I think is a little amiss in planting. It is a common practice hereabout to reserve all the smallest Potatoes for seed, and putting them in whole, which surely is a mistake, because they can only produce weak shoots, and then there are too many of them, so that the holm is close and tender, and less able to resist the destructive attack. Let us suppose what the consequence would be if we were to sow all the lightest of our grain, or breed from the smallest and weakest of our stock. And where is the difference? There is just as good reason for disposing of our best grain and stock, retaining the worst for production, as there is for doing it respecting Potato culture. I do not say that this is the cause of Potatoes degenerating, but it is not likely to assist it? G. S.

## Notices to Correspondents.

**GRASSES.** *H. D. N.* The "artificial" Grasses, if the word be used in contradistinction to *Fescues*, *Poa*, &c., would refer to the Clovers; but it is generally employed to designate *sown* Grasses, as distinguished from meadow land.

**GUTTA PERCHA.** *Woglog*. It does not decay readily, and it will easily resist 70 feet of water. As to whether "no rat usually makes his dinner of it," we cannot say; but we believe it stands this test, too. Frost does not injure it—heat easily softens it, but not an ordinary summer heat.

**POULTRY.** &c. *T. L. E.* No plan has appeared recently. As to your other question—Kennedy will do.

**WHEAT.** *J. W.* Heavy rains falling on the Wheat when in flower are no doubt injurious; but the process of fertilisation is effected before the protrusion of the anthers—the period when Wheat is commonly said to be in flower.

## Markets.

## COVENT GARDEN, JULY 23.

Vegetables and fruit are now supplied in abundance. Peaches and Nectarines are sufficient for the demand. The supply of Strawberries is falling off a little. Imports from the Continent of Potatoes, Carrots, and Artichokes are still kept up; and there are some good French Cherries and Apricots in the market. English Cherries are coming in very plentifully, but owing to so much wet they are in bad condition. Greengage and Orleans Plums from the South of France fetch 4s. per basket. There is also a large quantity of foreign Pines in the market, and they are in fine condition. Rhubarb is abundant. Young Carrots and Turnips fetch from 4d. to 6d. per bunch. Green Peas are coming in in very good condition, at from 6d. to 1s. per quart shelled and from 2s. 6d. to 5s. per bushel sieve. Potatoes are beginning to show symptoms of disease. Mushrooms are scarce. Out flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonette, Cinerarias, Pinks, and Azaleas.

## FRUIT.

Pine-apples, per lb., 4s. to 8s  
Grapes, hothouse, per lb., 2s to 5s  
Peaches, per doz., 10s to 24s  
Nectarines, per doz., 10s to 24s  
Melons, each, 3s to 8s  
Apples, per bush, 4s to 6s  
Cherries, per lb., 6d to 8s  
Strawberries, per basket, 1s to 2s

## VEGETABLES.

Cabbages, per doz., 6d to 9d  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 2s 6d to 4s  
French Beans, per 100, 9d to 1s 6d  
Asparagus, per bundle, 1s to 4s  
Rhubarb, per bundle, 3d to 6d  
Potatoes, per ton, 60s to 100s  
— per cwt., 3s to 6s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 2d to 3s  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 1s to 2s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

## HOPS.—BOROUGH MARKET, JULY 22.

Messrs. Patenden and Smith report that the accounts from Worcester, Weald of Kent, and Sussex come rather more favourable; whilst from Farnham, Mid and East Kent, the vermin are said to increase. Market very firm. Duty, 140,000.

## HAY.—Per Load of 36 Trusses.

**SMITHFIELD, JULY 21.**  
Prime Meadow Hay 100st to 115s  
Inferior do. ... 90 95  
Rowen ... 45 55  
New Hay ... 60 80

**CUMBERLAND MARKET, JULY 21.**  
Prime Meadow Hay 108st to 112s  
Inferior do. ... 90 100  
New Hay ... 45 80  
Old Clover ... 118 126

**WHITECHAPEL, JULY 21.**  
Fine old Hay ... 100st to 105s  
Inferior do. ... 92 95  
New Hay ... 65 84  
Straw ... — —

## COAL MARKET.—FRIDAY, JULY 22.

Hollywell, 18s. 6d.; Carr's Hartley, 17s.; Eden Main, 17s. 3d.; Howard's West Hartley Netherton, 17s.; Wallend Riddell, 17s.; Wallend Haswell, 18s. 3d.; Wallend Stewards, 18s.; Wallend Tees, 18s.—Ships at market, 124. Market very brisk.

## WOOL.

**BRADFORD, THURSDAY, JULY 21.**—The colonial sales appear to maintain the opening prices—which are lower than the closing prices of the previous sale. The different fairs throughout the country are nearly over, except the weekly markets, and the business done has fallen very far short of former years, and what has come to this market cannot be sold for cost. This has brought about a great dulness with the farmers, and an unusual quantity of wool remains in their hands—as the prices they seek cannot be afforded at the seat of consumption. Noils and brokes are made in only limited quantity, and prices consequently firm. Yarns.—There is a rather better feeling in yarns for export, and anything offering a bargain is more freely removed. The demand for Lancashire is now very limited, and with any amends from this quarter, yarns would no doubt command better prices.

**PIECES.**—There is no material change. The deliveries by the manufacturers keep the stocks moderately low.

## SMITHFIELD.—MONDAY, JULY 18.

The number of Beasts is considerably smaller, and consequently prices have advanced on all kinds; notwithstanding, there are some inferior qualities left unsold. The supply of Sheep and Lambs is very short for the time of year; they are speedily disposed of at an advance of fully 2d. per 8 lbs., and in some instances rather more. Calves are also on the average dearer. From Germany and Holland there are 1681 Beasts, 3940 Sheep, 291 Calves, and 30 Pigs; from Scotland, 200 Beasts; 1200 from Norfolk and Suffolk; and 500 from the northern and midland counties.

**Per st. of 8 lbs.—s d s d**  
Best Scots, Here-  
fords, &c. ... 4 8 to 4 10  
Best Short-horns 4 4 4 8  
2d quality Beasts 3 4 4 0  
Best Downs and  
Half-breeds ... 4 10 5 2  
Do. Shorn ... 0 0 0 0  
Beasts, 3939; Sheep and Lambs, 25,470; Calves, 378; Pigs, 410.

## FRIDAY, JULY 22.

We have a very small number of choice Beasts, consequently they are as dear as on Monday last, but other kinds are lower. The supply of Sheep and Lambs is the largest we have had this season, the former are 2d., and the latter 4d. per 8 lbs. lower than on Monday. Although the number of Calves is large, good ones are quite as dear as of late. From Germany and Holland there are 176 Beasts, 4100 Sheep, 432 Calves, and 10 Pigs; from Norfolk and Suffolk, 200 Beasts; 300 from northern and midland, and 85 Milch Cows from the home counties.

**Per st. of 8 lbs.—s d s d**  
Best Scots, Here-  
fords, &c. ... 4 6 to 4 8  
Best Short-horns 4 2 4 6  
2d quality Beasts 3 2 3 8  
Best Downs and  
Half-breeds ... 4 8 5 0  
Do. Shorn ... 0 0 0 0  
Beasts, 327; Sheep and Lambs, 15,050; Calves, 737; Pigs, 315.

## MARK LANE.

**MONDAY, JULY 18.**—The supply of English Wheat to this morning's market was small, and disposed of quickly at an improvement of 2s. to 4s. upon the prices of this day se'night. We must also advance our quotations for foreign 2s. per qr. In southern cargoes considerable business has been done at 1s. to 2s. per qr. higher rates. The top price of Flour is raised 3s. per sack, and barrels bring 1s. more money. Barley is unaltered in value. Beans and Peas are fully as dear. Oats are scarce, and bring a trifling advance.

**PER IMPERIAL QUARTER.**  
Wheat, Essex, Kent, & Suffolk ... White 52-63 Red 48-57  
— fine selected runs ... ditto 50-64 Red 48-57  
— Talavera ... 59-66 Red 48-57  
— Norfolk ... 40-63 Red 48-57  
— Foreign ... 40-63 Red 48-57  
Barley, grind, & distil, 23s to 26s ... Chey. 24-30 Malting 25-29  
— Foreign, grinding and distilling 25-31 Malting 29-33  
Oats, Essex and Suffolk ... 18-23 Feed 18-23  
— Scotch and Lincolnshire ... 18-23 Feed 18-23  
— Irish ... 19-22 Feed 17-24  
— Foreign ... 19-22 Feed 17-24  
Rye ... 29-32 Foreign 17-24  
Rye-meal, foreign ... 35-40 Harrow 35-40  
Beans, Mazagan ... 33s to 38s ... Tick 35-40 Harrow 35-40  
— Pigeon ... 36s to 42s ... Winds. Longpod ... 35-40  
— Foreign ... Small 34-42 Egyptian 32-34  
Peas, white, Essex and Kent ... Boilers 40-44 Suffolk 40-45  
— Maple ... 32s to 38s ... Grey 31-36 Foreign 32-45  
Maize ... White Yellow ... 32-45  
Flour, best marks delivered ... per sack 43-50  
— 2d ditto ... ditto 35-43 Country 35-43  
— Foreign ... per barrel 25-28 Per sack 39-43

**FRIDAY, JULY 22.**—The supplies of English grain this week have been exceedingly small, but the arrivals of foreign Wheat and Barley are good. There was a better attendance at this morning's market, and more animation apparent than on Wednesday; a fair business was transacted in foreign Wheat at the full prices of Monday, which in a few instances were exceeded, but the value of English is unaltered. The southern fleet is being quickly disposed of, and prices at 1s. and 2s. per qr. higher rates than on Monday. Marianopolis 50s.; Taganrog Ghirka, 47s. 6d.; Odessa 46s.; Polish Odessa 45s. For spring corn of all descriptions there is a fair demand at Monday's prices. Flour has met an extensive demand, at an improvement of 6d. per barrel.

## ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 850	Qrs. 1430	Qrs. 1430	660 sacks
Irish ...	—	—	8440	—
Foreign ...	10460	10200	6080	6190 brls

## IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
June 11 ...	s. d. 43 11	s. d. 29 10	s. d. 15 10	s. d. 34 9	s. d. 38 11	s. d. 34 9
— 18 ...	45 0	29 1	15 11	34 9	38 11	34 9
— 25 ...	46 11	29 3	20 1	32 8	39 5	34 9
July 2 ...	47 3	29 2	20 6	32 6	40 1	35 10
— 9 ...	47 8	29 2	20 6	32 6	40 1	35 10
— 16 ...	49 8	28 11	20 11	34 10	40 5	36 8
Aggreg. Aver.	46 9	29 4	19 11	33 7	39 7	35 8

## Duties on Foreign Grain 1s. per qr.

**FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.**

PRICES.	June 11.	June 18.	June 25.	July 2.	July 9.	July 16.
49s 8d	...	...	...	...	...	...
47 8	...	...	...	...	...	...
47 3	...	...	...	...	...	...
46 11	...	...	...	...	...	...
45 0	...	...	...	...	...	...
43 11	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, JULY 19.**—The arrivals of Wheat, Flour and Indian Corn from abroad this week are large. There was a good attendance of town and country millers at this morning's market, and rather a large business was transacted in Wheat, at an advance on last Tuesday's prices of fully 2d. per bushel on good samples of white, and of 3d. per bushel on the Mediterranean, and other descriptions of red. Flour brought an advance of 6d. per barrel and sack, but the sale was less frequent than of Wheat. Oats and Oatmeal fully sustained late rates. Beans without change. Peas scarce, and in request. Indian Corn commands full prices. **FRIDAY, JULY 15.**—At this morning's market there was a good attendance of town dealers and of millers from the country. Wheat and Flour met a moderate demand both for consumption and for holding over, at an advance upon Tuesday's prices of 1d. per 70 lbs. and 3d. to 6d. per barrel. Oats were in fair request, at an improvement of 1d. per 45 lbs. Oatmeal was neglected. No change in the value of Barley and Peas, but Egyptian Beans receded 1s. per 480 lbs. There was a good demand for white Indian Corn, at 31s. 6d. to 32s. per 480 lbs.







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Clematis	Cnothera bifrons	Tigridia Paronia
Collinsias	Onions	Transplanting
Colewort	Paeonies	Tree Lifting
Cress	Parsnip	Tulips
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Crocus	Peaches	Vegetable Cookery
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Budding upon body Bud, insertion of, into stock	Roses, short list of desirable sorts for budding with a pushing eye	Grafting, advantage of
Bud, preparation of, for use	Sap-bud, treatment of	Operations in different months
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Buds, failing	Shoots and buds, choice of	Roses, catalogue and brief description of a few sorts
Buds, securing a supply of	Shoots for budding upon, and their arrangement	Scion, preparation and insertion of
Caterpillars, slugs, and snails, to destroy	Shoots, keeping even, and removing thorns	Selection, choice and arrangement of
Causes of success	Shortening wild shoots	Stock, preparation of
Dormant buds, theory of replanting with explained	Stocks, planting out for budding upon: the means of procuring; colour, age, height; sorts for different species of Rose; taking up,	APPENDIX.
Guards against wind		A selection of varieties
Labelling		Comparison between budding and grafting.
Loosing ligatures		
March pruning		
Mixture for healing wounds		

JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden.

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# THE GARDENERS' CHRONICLE

AND

## AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 31.—1853.]

SATURDAY, JULY 30.

[PRICE 6d.

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**CALEDONIAN HORTICULTURAL SOCIETY.**  
The GRAND DAHLIA and HOLLYHOCK COMPETITION, Open to the United Kingdom, will take place in the SOCIETY'S GARDEN, INVERLEITH, simultaneously with the Autumn Fruit Competition, on SATURDAY, September 10, when Five Silver Cups (value 5 Sovereigns each), and numerous other Prizes will be awarded.  
Judges for Dahlias and Hollyhocks.—Messrs. TURNER, Slough; STEWART, Cargillfield, Edinburgh; and LAING, Dysart House.  
Full particulars may be obtained on application to  
W. W. EVANS, Superintendent.  
Experimental Garden, Edinburgh.—July 30.

**GRAND EXHIBITION**  
IN THE MUSEUM GARDENS, DURING THE MEETING OF THE YORKSHIRE AGRICULTURAL SOCIETY AT YORK, ON THE 3d AND 4th OF AUGUST.

**THE YORKSHIRE PHILOSOPHICAL SOCIETY.**  
Assisted by the Royal Botanic Society's Garden, Regent's Park; the Royal Botanic Garden, Edinburgh; the Honourable East India Company; the Apothecary's Garden, Chelsea; Botanic Garden, Sheffield; his Grace the Duke of Northumberland, the Earl Fitzwilliam, Dr. Lindley, Professor Balfour, Professor Royle, and several eminent Nurserymen, will hold an EXHIBITION OF PLANTS, remarkable for Variety, Beauty, and Utility in the Arts, comprising Living Plants, and preparations of the parts most curious in structure, most instructive in Physiology, or most valuable in Food, Medicine, and the Arts.  
Among the objects already secured and in course of arrangement is a large specimen of one of the Palms that produce Sago.—Cecus revoluta, a male plant, from the Botanic Garden, Sheffield. This plant flowered for the first time in England in the hothouse of the late Miss Nelson, in Bootham: it is now flowering again, after a lapse of 18 years. A female is now flowering in the garden of J. Yates, Esq., London, which the Yorkshire Philosophical Society hope to exhibit at the same time.  
Plants used for food, including Tropical Fruits and Spices, from his Grace the Duke of Northumberland, amongst them the Longan, Vanilla, Pimento, Rose Apple, Nutmeg, Musa, Papaw, &c.  
Splendid Living Plants of Sagar, Coffee, Rice, &c. Plants of the Assam and Chinese Teas, with their produce.  
70 varieties of Wheat, 20 of Barley, 20 of Oats, 4 of Rye, and upwards of 200 sorts of Grasses, in a living state.  
Among the varieties of Wheat will be observed M. Esprit Fabre's original specimens (entrusted by Dr. Lindley to the Yorkshire Philosophical Society for this occasion), of Touzelles Wheat, procured, after 12 years' culture, from the wild Grasses known to botanists as *Egilops ovata*, and *E. triticoides*.  
Plants yielding textile fibres, as Cotton, Flax, &c. Amongst them a most splendid Scarf, from Manila, made of the Pine-apple leaf fibre, kindly contributed by John Waterhouse, Esq., Halifax.  
Beautiful Handkerchief, made from the Fibre of the Nettle, contributed by the Rev. R. Puleine. The Cotton Plant, with its various products, from John Bond, Esq., Halifax.  
Flax and Hemp in various stages of preparation, from — Marshall, Esq., Leeds.  
The Medicinal Plants of different Countries, with the preparations from them.  
Plants yielding products which are used in dyeing and painting. Woods in different stages of preparation for dyeing, from — Norris, Esq., Halifax.  
Large collection of Coniferous Plants, including upwards of 100 species, consisting of Pinus, Abies, Picea, Juniperus, Cupressus, Taxus, Thuja, Taxodium, Araucaria, Buxus, Gleditsia, Pitt-Royia, Cryptomeria, Biotia, Cedrus, &c., from Fisher, Holmes, & Co.  
Collection of Ferns, from Earl Fitzwilliam and Mr. Allis. Other Plants, including the rare and curious Cephalotus foliolaris, from the Marshes of King George's Sound, in New Holland. *Dioscorea muscipula* (Venus's Flytrap). *Desmodium gyrans* (the moving plant), &c.  
Collection of Variegated Plants, and Plants with singular Colours. Plants yielding Gutta Percha, Caoutchouc, Resins, &c., &c.  
A series of beautiful specimens and preparations, kindly lent by Dr. Lindley, illustrative of his Lectures in University College, London.  
Cotton, Roads, Seed Vessels, Woods, &c. Collection of Articles made from Plant, &c., as Ammonia, Acetic acid, Tar, Paraffin, Oils, &c., contributed by Lady Frankland Russell.  
It is expected that the VICTORIA REGIA, and other rare Aquatic Plants, will be in flower.  
The MUSEUM, with the recently discovered TERSELATED PAVEMENT and PLEISTOCENE, will be open to the Visitors.  
The HAND of the Immortalizing Dragon will, by permission of Lieut. Colonel Widdoway Moore, attend at the Museum Garden on both days of Exhibition.  
Admittance on Wednesday, August 3, 2s. each; on Thursday, August 4, until 12 o'clock, 2s. each; and 1 after that hour, 1s. each. Children under 12 years of age half price. The Exhibition will be open from 10 o'clock a.m. until 7 o'clock p.m. each day.  
Communications relating to the Exhibition may be addressed to Mr. H. J. BRYCES, Superintendent of the Yorkshire Philosophical Society, Museum, York, who is now engaged, under the direction of the committee, in the duty of making the preliminary arrangements.  
T. H. THORPE, 3 Secretaries of the Yorkshire Philosophical Society.

### FERNS AND LYCOPODIUMS.

**ROBERT SIMS' Priced List of more than Two Hundred species and varieties of Hardy Greenhouse, and Stove Ferns, and Lycopodiums, can be had on application.**  
Nursery, Foot's Cray, Kent.

**JOHN HENCHMAN** is now sending out his choice CINERARIA and CALCEOLARIA SEED, at 2s. 6d. per packet. Large packets for the Trade, containing as much as 8 of the 2s. 6d. packets, at 10s. each.—Edmonton, July 30.

**THOMAS WELLAND, Surrey Gardens, Godalming, Surrey,** can supply fine DRUMHEADS for Cattle, also fine EARLY PLANTS, at 3s. 4d. per 1000, packed and delivered at the Godalming Station.

**BRITISH QUEEN STRAWBERRY RUNNERS.**  
—Having taken several prizes for the largest and best BRITISH QUEENS, thousands of them weighing upwards of two ounces, and many three, I have now a large Stock of strong, healthy Runners, fit either for Potting or for Planting out, at 5s. per 100. Can be had at Mr. Solomon's, Sen., Covent Garden, or Mr. Moses, Gracechurch Street, City; or at my Grounds at Isleworth. Post-office Orders made payable at Hounslow.  
THOS. BRACH, Market Gardener, Worton, Isleworth, Middlesex.

**EDWARD GEORGE HENDERSON AND SON,** Wellington Road, St. John's Wood, London, are now prepared to send out by post their newly-saved seed of CALCEOLARIAS and CINERARIAS. Great care has been taken in selecting the Seed, and Messrs. E. G. H. & Son can, with confidence, recommend it to produce first-class flowers equal with any named varieties.  
Directions for sowing, &c., will be forwarded. Calceolaria, 1st quality, 5s.; 2d ditto, 2s. 6d. Cineraria, 2s. 6d. and 5s. packets.

**WAITE'S KING OF THE CABBAGES.**—This is the earliest and best Cabbage in cultivation, and quite distinct from the Enfield.  
J. G. WAITE feels inclined to think many parties have been deceived in having had Enfield sent them for this Cabbage, they therefore condemn the merits of it without having had the REAL thing, which is quite distinct from all other varieties. To be had in any quantities of not less than 1 lb. at 4s. per lb.  
J. G. WAITE'S Seed Establishment, 181, High Holborn, London.

### CHOICE FLOWER SEEDS.

**FINE IMPREGNATED CALCEOLARIA SEED, saved** from the best collection in England, 2s. 6d. per packet; fine selected HOLLYHOCK SEED, warranted from Chatter's sorts, 1s. 6d. per packet; CINERARIA SEED, from fine named varieties of 1852, 1s. 6d. per packet; ANTIRRHINUM SEED, saved from the best kinds, per packet, 1s. 6d.; AQUILEGIA or COLUMBINE, from a collection of the best sorts, 6d. per packet.  
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

### THE NIMROD STRAWBERRY.

**LUCOMBE, PINCE, AND CO.,** have such pleasure in stating that they possess the entire stock of this much admired Strawberry, and purpose sending it out in the first week of October next. It was raised at Tedworth by Mr. Sanders, the intelligent gardener there, who is justly celebrated for his skill in the culture of all our finest fruits. The superiority of "Nimrod" has been well proved by fairly testing it during two seasons, with all the best new and old varieties. It has been submitted to the criticism of numerous competent judges, who all highly approve of it. Further particulars will appear in another Advertisement.—Exeter Nursery, Exeter, July 30.

**ALEXANDER PONTY, NURSERYMAN, Plymouth,** begs to offer the following healthy Plants in pots at the Prices and Heights named:—

		24 to 36 inches	£. s. d.
Araucaria excelsa	...	...	2 2 0
"	gracilis glauca	18 "	1 1 0
"	from New Caledonia	4 "	0 7 6
Abies Jesoensis	...	12 "	1 1 0
Andromeda formosa	...	6 "	0 10 6
Biota glauca	...	7 "	0 7 6
Thujaopsis borealis	...	6 to 9 inches	1 1 0
Libocedrus chilensis	...	6 "	0 3 6
"	...	12 "	0 7 6
"	...	15 "	0 10 6
Fitzroya Patagonica	...	12 "	1 1 0
"	microcarpa	6 "	0 7 6
Thuja filifolia	...	6 "	0 2 6
Taxus adpressa	...	9 "	0 2 6
"	...	12 "	0 3 6
"	baccata (yellow fruited)	12 "	0 2 6
"	marginata	12 "	0 2 6
Cephalotaxus Fortunei (male)	...	12 "	1 1 0
"	(female)	12 "	1 1 0
Podocarpus Totara	...	18 "	0 2 6
"	coriacea	6 "	0 2 6
Quercus glabra	...	6 "	0 3 6
Eucalyptus frimbriatus	...	6 "	0 2 6
"	japonicus	12 "	0 1 0
Hex latifolia	...	6 "	0 3 6
"	foreata	6 "	0 3 0
"	coriacea	6 "	0 5 0
"	microcarpa	4 "	0 2 6
"	latifolia nova (true)	12 "	0 2 6
Eurybia japonica	...	6 "	0 2 6
Pittosporum Mayi	...	12 "	0 2 0
Ligustrum japonicum	...	12 "	0 1 0
"	ovalifolium	12 "	0 1 0
Hydrangea japonica	...	9 "	0 1 0
Escallonia macrantha	...	12 "	0 1 0
"	...	18 "	0 1 6
Cupressus funebris	...	12 "	0 1 6
Picea canadensis	...	9 "	0 1 6
Deutzia gracilis vera	...	6 "	0 1 0
Picea Nordmanniana	...	9 to 12 inches	1 1 0
Picea insignis	...	6 "	0 2 6
"	Fraserianum	9 "	0 10 6
"	Pinus	6 "	0 1 6
Myrsine undulata	...	6 "	0 2 6

ALEXANDER PONTY, Nurseryman, Plymouth.

### "ENGLAND'S GLORY" FUCHSIA.

**JOHN HARRISON** begs to offer fine Pyramidal Plants of the above splendid Fuchsia, which has now proved decidedly superior to every other white in cultivation, at 12 to 18 inches, 15s. each; 9 to 12 inches, 10s. 6d. Smaller sized, fine plants, 5s. to 7s. 6d. each. Banks' Glory and Dr. Lindley, 2s. 6d. to 10s. 6d. each. Vesta, Lady Emily Cavendish, Lady Franklin, Mrs. Patterson, Incomparable, and other new varieties of this season, 2s. 6d. to 3s. 6d. each.  
Grange Nursery, Darlington.—July 30.

**WILLIAM BARNES** respectfully begs to acquaint his Friends and the Public generally that he has now ready to send out a small portion of his unrivalled CALCEOLARIA SEED, saved from his collection so universally admired by those who purchased his seed last season. Also, CINERARIA and HOLLYHOCK SEED, saved by himself, from all the best kinds in cultivation, which W. B. has purchased from all the most eminent growers of the above two beautiful tribes of plants, and cannot fail to give the greatest satisfaction to all those who may think proper to purchase his Seed.  
The above can be sent by post in 2s. 6d. and 5s. packets. A remittance is expected from unknown correspondents.  
Camden Nursery, Camberwell, London.—July 30, 1853.

### CHOICE CINERARIA, CALCEOLARIA, AND HOLLYHOCK SEEDS.

**LUCOMBE, PINCE, AND CO.,** have now ready for sending out SEEDS of their very fine CINERARIAS, CALCEOLARIAS, and HOLLYHOCKS, which have been selected with great care from the best and most distinct varieties. The great satisfaction which their Cinerarias and Calceolarias have given for several successive years enables them to recommend their Seed of the present season with much confidence.  
The Hollyhock Seeds were all saved from the finest and most approved varieties, which, it is well known, have been cultivated very successfully in the Exeter Nursery.

Sealed packets of Cineraria, at 2s. 6d. each; Calceolaria, at 2s. 6d. each; Hollyhock, at 2s. 6d. each. Free by post, and warranted by them.  
N.B. It is a good time to sow these seeds, thereby securing a stock of strong early blooming plants.  
Exeter Nursery, Exeter.—July 30.

### SHILLING'S QUEEN CABBAGE.

**STEPHEN SHILLING** has the original sort true, and will supply seed on application, free of carriage, at 1s. per oz. It has headed the earliest, and proved the best Spring Cabbage for several seasons past.  
WALCHEREN BROCCOLI, true, at 2s. per oz, or 1s. per packet.  
STEPHEN SHILLING, Nurseryman and Seedsman, North Warnbro, near Odiham, Hants.

S. S. respectfully suggests the importance of observing both his Christian name and address on all letters intended for him, as the omission is likely to cause mistakes.—July 30.

### PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

**JOHN CATTELL**, Westerham, Kent, begs respectfully to inform the public that he has still a plentiful supply of Plants of his superior true sorts of the above, which will be forwarded to order on receipt of postage stamps or Post-office order made payable here, at the following reduced prices: package included.—All the sorts of Early Cabbage, Savoy, and Kale, including Brussels Sprouts, 4s. per 1000; all the sorts of Autumn and Spring Broccoli, 4s. 6d. per 1000; all the sorts of Celery, 4s. 6d. per 1000; Cauliflower, Early and Late, and Red Cabbage, 8d. per 100; Drumhead or Cattle Cabbage, 3s. 6d. per 1000. 6d. per 1000 less when no package is required. Packages of 1000 and upwards delivered free of carriage to London, and to the Edenbridge Station of the South-Eastern Railway.  
SEED OF CATTELL'S DWARF BARNES, and of his superior DWARF RELIANCE CABBAGE, may be had in packets, by post, for 12 penny stamps per packet, the former containing one ounce, as usual, and the latter half an ounce.

**STRAWBERRIES, Four New Varieties for £1.**  
NICHOLSON'S AJAX, very large and handsome, most exquisite flavour, unequalled as a dessert fruit, and forces well.  
NICHOLSON'S RUBY, medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; forces well.  
NICHOLSON'S CAPTAIN COOK is a first-rate market fruit; colour scarlet, very large size, great bearer, and carries well; plant remarkably strong and hardy.  
NICHOLSON'S FILL-BASKET.—Nothing can exceed this fine sort as a market fruit; it is of a very bright scarlet colour, general shape round, gets very large, but never out of shape; it is a tremendous bearer, preserves well, and will carry any distance. Plants remarkably robust and healthy.

These splendid Strawberries have been the wonder and admiration of all who have seen them; the two first for their excellence as a dessert fruit, the two latter for their abundance, size, and colour, and other good qualities as a market fruit.  
These four really good varieties of Strawberries can alone be got of Mr. W. NICHOLSON, for 1s. per 100; or any two of the above for 12s., box included. Post Office orders made payable at Yarm, Yorkshire.—Egglecliffe, near Yarm, July 30.

NURSERY, CLAPHAM, JULY 20, 1853.

**ON RETIRING from the BUSINESS** lately conducted by my Brother JOSEPH and Self for the last 15 years, I beg to return my sincere thanks for the kind and liberal support we have received during this long period, and venture to hope that the confidence so long reposed in our united efforts to meet the wishes of our friends and customers may be continued unabated to my Brother, who will in future conduct the Establishment on his own account.  
JAMES FAIRBAIN.

To THE FRIENDS AND SUPPORTERS OF THE ABOVE OLD ESTABLISHED FIRM.  
The Business lately conducted by my Brother JAMES and Self, having by mutual consent and arrangement devolved upon me, I beg leave to return my sincere thanks for the kind and valued support we have received from you during the period of our partnership, and to assure you that should I be favoured with your commands, no exertion on my part shall be spared to give satisfaction and secure your future confidence.—I remain, Gentlemen, your obedient, humble servant, JOSEPH FAIRBAIN.







We admit that Mr. CUMBERBATCH is in no way answerable for the delinquencies of his predecessors; and we are not at all desirous to prejudge his case. If he shall be hereafter found to have executed his duties efficiently, as well as honourably, without fear or favour, and with that full



knowledge of forest management which a deputy surveyor is bound to possess, we shall be too happy to acknowledge his merits. But he must expect to be called to strict account; for great public interests can no longer be sacrificed to miserable private intrigues, and the Crown is not to be further victimised by the imbecility or scandalous negligence of agents. These gentlemen are by no means to be lost sight of, because they are so small. We therefore trust that the next Parliamentary return will tell us what the New Forest has become under Mr. L. H. CUMBERBATCH's management; and that not by *ex parte* statements, such as we have lately had to record in the case of Holt, which we suspect to be quite as bad as its neighbours, although there is no direct evidence to prove it so. What the public has a right to insist upon is, an examination of every Royal forest by competent, unprejudiced persons, unconnected with its officers—and most especially of the New Forest. We shall then, and then only, know what is going on; and until that information is communicated to Parliament, we suspend our judgment respecting Mr. CUMBERBATCH.

Attached to the New Forest, and forming part of the same charge, is a place called New Park Farm, consisting of land peculiarly suited to agricultural purposes, according to Major FREEMAN, who, however, does not appear to have claimed any credit for agricultural experience. Mr. KENNEDY does not regard the soil as being of a first-rate quality, but he is of opinion that it might be rendered valuable by draining and good management. It contains 250 acres of land available for farming purposes. It seems to have been a singularly unprofitable place; for, up to 1846-47, it had produced a loss of 4300*l.*, although no less than 17,500*l.* of its receipts consisted of the estimated value of that part of its produce which was applied to forest purposes. We observe that, in future, this little property is to be regarded as a part of the New Forest, and not to be accounted for separately.

It will not surprise any one to learn that the POTATO DISEASE has reappeared this year in numerous instances, and is spreading with such rapidity as to threaten an amount of mischief equal to that of 1846. In all quarters complaints are heard of the late crops, but the early samples seem likely to have escaped without material damage. We must, however, remark that some of the beautiful early Potatoes exhibited last Tuesday to the Horticultural Society became diseased the next day.

What more especially produces alarm in our own mind is the sudden appearance of spots on the leaves, attended by a general rustiness of the underground stems, and the disagreeable smell which more especially marked the years 1845 and 1846. Ireland does not seem to have as yet taken alarm, but we have no expectation that the mischief there will be less than with ourselves.

Letters from Saxony say that disease there is already discoverable by the nose alone.

It is evident, too, that these vegetable diseases are on the increase on the Continent. Letters from Montpellier bring very bad Vine news. The scarcity of wine is such, that qualities which 10 years ago were worth only from 20 to 25 fr. the muid, are now selling at 200 fr. the muid.

We have nothing favourable to report concerning Prof. BOLLMANN's plan of high drying Potatoes. Most that were so prepared in the Garden of the Horticultural Society have rotted. We must therefore suppose that we are imperfectly informed of the amount of temperature to which the Russian Potatoes were subjected.

## ENTOMOLOGY.

### WAX INSECTS.

In addition to the supplies of wax obtained from the honey-bee, several other substances have long been adopted as its substitutes, and employed in commerce, amongst which are a white vegetable wax, obtained from the *Stillingia sebifera*, a tree of the order Euphorbiaceæ, in China and the East, and a vegetable wax, of a greenish colour, obtained in the West Indies and North America, from the Wax-bearing or Candle-berry Myrtle, *Myrica cerifera*, which is extensively used in North America, from Virginia to Carolina. Specimens of a dark greenish vegetable wax, probably from the same tree, were exhibited in the Great Exhibition of 1851 from New Brunswick. Another kind of wax supposed to be extracted from the seeds of *Rhus succedanea*, Linn., as related by Kæmpfer and Thunberg, is known in commerce under the name of Japan bees'-wax, the texture and properties of which have been described by Mr. D. Hanbury.

Several species of insects likewise secrete a waxy matter which has been employed as a substitute for that of the honey bee. A white wax of the same class with the latter, but containing more carbon, is produced in India by a species of *Coccus*, described by Anderson under the name of *ceriferus*, found upon the *Celastrus ceriferus*. By Anderson the product of this insect was

termed white lac. In its chemical characters, as detailed by Dr. Pearson (Phil. Trans. 1794), as well as in the mode of its production, this white lac is certainly different from the true white wax insects of China. Dr. J. E. Gray has generically separated the insect producing this white lac from the other Coccidæ, under the name of *Ceroplastes* (Spicil. Zool. 7), but very incomplete characters have hitherto been published of its peculiarities. From a specimen of this insect in my cabinet (represented in the three figures to the right of the woodcut), the female differs from all other Coccoi in having the body large and nearly globular, composed of a hard solid white waxy matter. Other species have been found by Humboldt and D'Azara, the latter of whom mentions a firm white wax the produce of one of the Coccidæ, which is collected in South America in the form of pearl-like globules from the small branches of the "Quabiramy," a small shrub two or three feet high. The insect itself is not described in detail, but it is probably identical with a species of *Coccus*, of a beautiful white colour, collected upon the stems of various shrubs in Brazil by J. Miers, Esq., F.R.S., &c. (to whom I am indebted for a specimen figured on the left side of the woodcut), which is extremely similar in its characters to the *Ceroplastes ceriferus*. Gray has also described and figured (Spic. Zool. 7, pl. 3, f. 6), another species from Rio Janeiro, under the name of *Ceroplastes Janeirensis*, as well as one from Chili, *C. chilensis* (ib. f. 7). Both Mr. Gray's species were collected by the late Lady Calcott, during her residence in Brazil. In the dried state in which we receive them, they appear to consist of six large marginal and a single dorsal division, having somewhat the appearance of the back of a tortoise. These seven plates, of which the covering of the female is composed, are arranged in two lateral pairs and a central series, consisting of an anterior, a dorsal, and a posterior plate; the nucleus of the six marginal plates is close to the lower edge, that of the dorsal one nearly central. *C. chilensis* is large, white, pellucid, the plates nearly equal in size, the dorsal one being flattish; it was found on the branches and peduncles of a tree with pinnated leaves; *C. Janeirensis* is smaller, brownish, subopaque, hemispherical, the dorsal plate being convex; it was found on a species of *Solanum* with simple lanceolate leaves. Mr. Gosse brought another species from Jamaica, where



WAX INSECTS.

he discovered it on the trunk of a lancewood tree. "It melts in the flame of a candle like wax, and approaches the *C. Janeirensis* in size, but its colour and form is different, being yellowish green, the base of the body almost hexagonal, with six marginal plates, each of which is slightly notched in the middle below; the upper plate is notched behind, and has two prominences in front." It is described by Mr. Adam White in the "Annals of Natural History," xvii., f. 333, under the name of *Ceroplastes Jamaicensis*.

A memoir has lately been published in the Bulletin of the Société des Sciences Naturelles of the Canton de Vaud, by Dr. Chavannes, in which he describes two species of these wax insects, natives of Brazil, respecting which he furnishes us with several interesting economical details, although his description is not sufficiently precise to enable us to determine whether either of his species be identical with Gray's *C. Janeirensis* or Mr. Miers' white species. Both M. Chavannes's species are found in the neighbourhood of Rio Janeiro on the hills near the Bay of Bosafogo. The first, which he names *Coccus Psidii*, lives upon a shrub of the genus *Psidium*, known under the name of the *Araço do Mato*; the smaller branches of which are sometimes nearly enveloped by the dilated bodies of the female insects, the largest of which are about the size of peas; their general form is like that of a very convex tortoise, with the edges rather recurved; their colour is that of white wax, and in the middle of the back is a grey mureo; on the underside in front (always turned towards the extremity of the branch) is a blackish impressed mark which corresponds to the head of the insect; in the larger specimens the coat of wax is about half a line thick, and on removing them from the branches a great number of reddish eggs are exposed, from which the young cocci are soon disclosed; they are reddish and very active. The second species was found by Dr. Chavannes, upon a Cassia with violet coloured flowers, and is thence named *C. Cassia*; it is larger than the

preceding, and has a dusky tint on its anterior part. When placed in pure water, or in water to which a little liquid ammonia has been added, these two species emit an abundance of colouring matter of an amaranth red tint, that given out by the *C. Psidii* being more orange. On plunging the insects, in muslin, after the colouring matter has been discharged, into boiling water, the waxy portion rises to the surface and may be collected in flakes. It begins to melt at 50° Réaumur, but does not become entirely liquid under 60°; it burns with a brilliant flame, and is not entirely soluble in any dis-solvent, boiling alcohol leaving half of the matter undissolved. The chemical properties of the insect are further detailed, from which it appears that whilst they approach nearer to those of wax and are distinguished from resins, they resemble the latter in their electrical property, which is as great as that of gum lac. After reviewing the different opinions of authors as to the origin of gum lac (some of whom have confounded it with the exudation from the plants caused by the puncture of the insects,\* whilst others have regarded it as the vegetable fluid which has been sucked up by them, and then exuded from their bodies); M. Chavannes arrives at the conclusion that the waxy matter of these insects is a real secretion of the skin, as is also the white powder with which so many other Hemipterous insects are clothed, whilst the great analogy between the waxy secretion of the Coccoi and gum lac leads us to conclude that the latter is a secretion of the insect and not an exudation or discharge of vegetable matter.

Sir George Staunton, in his "Account of Lord Macartney's Embassy to China," mentions some swarms of uncommon insects busily employed upon small branches of a shrub somewhat like a Privet, each not much exceeding the size of the domestic fly, having pectinated appendages rising in a curve, bending towards the head, not unlike the form of the tail feathers of the common fowl, but in the opposite direction; every part of the insect being of a perfect white, or at least completely covered with a white powder. The particular stem frequented by these insects was entirely whitened by a substance or powder of that colour strewn upon it by them, "and which was supposed to form the white wax of the East. This substance is asserted, on the spot, to have the property, by a particular manipulation, of giving in certain proportions, with vegetable oil, such solidity to the composition as to render the whole equally capable of being moulded into candles. The fact is ascertained, indeed, in some degree, by the simple experiment of dissolving one part of this wax in three parts of olive oil made hot. The whole when cold will coagulate into a mass approaching to the firmness of bees'-wax." The insect represented by Sir G. Staunton is the larva or pupa of the *Flata limbata* of Fabricius, and Capt. Hutton has given some further particulars of the same insect in the Journal of the Asiatic Society of Bengal for 1843, stating that the wax-like substance afforded by the insect is dropped as a sweet sticky liquid upon the leaves of the plants upon which the insects feed, so that they appear to be thinly bedewed with honey, and which hardens as it dries by exposure into a snowy-white brittle substance, giving the tree the appearance of being white-washed or frosted over with white sugar like the top of a twelfth-night cake. It dissolves readily in water, but could not be combined with heated oil, nor would it melt on the fire either with water or oil. The matter, however, of which Captain Hutton speaks, is evidently the excrement of the insect analogous to the honey dew, one kind at least of which is the excrement of the aphides, whereas the white matter mentioned by Sir G. Staunton is secreted from various parts of the body of the insect, and is of a totally different character from that described by Captain Hutton, being the same white floccose matter with which the bodies of great numbers of species of Homopterous insects are more or less coated, and which in one species of Fulgoridæ forms a mass of threads several inches long. But whether the white secretion of the *Flata* has been really employed as a wax, or whether it was not mistaken by Sir George Staunton for the true wax insect of China, has yet to be ascertained.

The woodcut represents a twig of the *Stillingia sebifera*, the pupa and perfect *Flata limbata*, three figures of *Ceroplastes ceriferus* slightly magnified, and two of Mr. Miers' allied Brazilian species magnified. J. O. W.

## OBSERVATIONS ON THE ROT IN CARROTS.

BY DR. S. REISSK.

(Translated from the German.)

For some years Carrots have been affected in many parts of Europe with a malady resembling that of Potatoes, Beet-root, Kohl Rabi, and other vegetables. The evil was more prevalent than before in the course of the past summer (1851), and attracted general notice. The result of a series of observations is now laid before the public.

In order to understand more perfectly the phenomena induced by the affection, it is necessary to take a glance at the normal structure of the tissues in Carrots; and since the decay depends on the metamorphosis of the cells, the sound cells must first be examined. The tissue of sound Carrots consists throughout of thin-walled juicy cells. The vascular bundles, as is usually the case in juicy roots, are comparatively few. Between the cells are numerous minute intercellular spaces, especially

\* The vegetable manna of the Pharmacopœia is often produced by the punctures of *Coccus Fraxini* in Calabria.

† From the Monthly Reports of the Berlin Academy, January, 1852.



in the bark. The form of the cells varies in different strata. In the cuticle there are many layers of tabular narrow cells; to these succeed gradually wider cells, which are larger in proportion as they are more deeply seated. In the central portion, answering to the wood, and in the neighbourhood of the vascular bundles, there are first elongated and then short parenchymatous cells. The skin is so soft that the cuticle in full-grown Carrots is easily corroded by means of moisture.

The contents of the cells in stored up roots are for the most part clear, and at the first glance void of any solid constituents. In those cases only in which the bark has become green, as in roots which stand partially out of the ground, or which have been exposed to the light a long time after being raised, the cells contain chlorophyll. In a normal condition two different kinds of matter only are found in the liquid with which they are filled; 1, proteine compounds; and 2, oil or fatty substances.\* The protein occurs in the form of membranous or tabular mottes, which remain as the rudiments of an earlier stage of vegetation, and belong to the formation of cell-membranes and gelatinous currents. It next occurs here and there, as delicate granules. On the application of tincture of iodine these bodies become more clearly visible, and then the formation of new cells, which had at first escaped notice, on account of their great transparency, is very observable. Rudimentary membranes appear, which are at present confined to fragments of skin, and others in the form of elongated or spherical sacs. They are generally, but not always, filled with granular matter. By the process of coagulation, consequent on the application of iodine, many proteine granules also become visible.

Fatty substances occur in many cells, but most frequently and clearly in the narrower cells, and in the neighbourhood of the vascular bundles. They are at first fluid, but at a later period become solid. In the outer cells we observe only minute oil-drops, which, even under high magnifying powers, appear like little granules. When larger their true nature is easily recognised. In many of these, cavities are at length formed, which seems to indicate a firmer composition. The conditions under which the fatty matters occur are most evident in the deeper-seated elongated tissue. There we observe oil-drops nearly similar in form, but of various sizes, and others which contain cavities, and are of a firmer consistence. If the cavities are very small they appear merely as black points. We must not confound with these the smaller light spots which are produced by the occurrence of smaller drops upon the larger. The oil-drops frequently coalesce with one another, and, hardening at the same time, form an unequal crumbling mass. These hardened bodies acquire, at a later period, a brown tint, and form irregular lumps. Sometimes, however, they assume the form of firm splinters, which remain perfectly colourless. Sometimes the drops are so large as to fill a considerable portion of the cells. In this case also they harden into uneven fragments. At a later period, when the rot has commenced, these masses become still harder, and assume a crystalline aspect.

The decay commences generally in the ground, and increases when the roots are raised, if they are kept moist. If they are cleaned and kept in a dry and airy place the affection is checked, and the portion of the tissue which was healthy remains sound. The rot attacks the bark first and extends inwards; the upper thin part of the root where the tissues are more tender and juicy is frequently attacked first. Three stages may be distinguished according to the outward appearance of the malady, and three periods according to the phenomena which the vital conditions of the cells present under its agency. Though in general those stages which are established by external signs answer to the above-mentioned periods, still such modifications and deviations occur, that the first division is scarcely available for scientific purposes. For the malady may present externally the indications of the first stage, and yet many cells may have already passed into a condition indicative of a more advanced stage. I shall nevertheless give a sketch of the outer appearances of the malady. The peculiar epochs, as pointed out by the inner metamorphosis of the tissue, will be most conveniently explained at the close of the examination.

The diseased roots exhibit small, superficial, discoloured brownish spots, in which the tissue is softer and more flabby. When dried the spots become of a darker brown. This affection of the tissue extends both externally and internally, so that the spots which were at first scattered, at a later period became confluent. The more rapidly the decay extends, and the moister the locality, the tissue is of a paler brown, and at the same time the more pulpy and watery. With a less intensity of the malady and a less degree of moisture it is of a deeper brown, but loses little in point of consistence. If a decaying root be exposed to the air, it is quickly covered with mould. If it remains in the ground it changes entirely into a loathsome pulpy mass. If a root strongly marked with decayed spots is divided, the inner apparently sound portion is soon discoloured. If

moulds appear on the outer surface, the inner sound part soon acquires a musty smell, and passes gradually into decay.

If we examine the alterations of the tissue which take place in the affected spots, we remark first that the contents of the cells show an increase in respect of the quantities of solid constituents. These consist principally of modifications of the fatty substances. The oil undergoes the transformation above described into brown granular splintery masses; although this transformation is rare in sound roots, it is prevalent here. Hardened fatty granules appear in those cells which still retain their natural colour, together with others of a more intense brown, and still harder consistence; and besides these, extremely minute molecules, which are also composed of fatty matter. Amongst these different substances, proteine grains also are frequently visible.

In those places which are strongly attacked by the rot and have a dark brown aspect, the above described granular masses are very compact, so that they often entirely fill the cells and render them opaque. We remark, also, that it is not merely the original pure oil which has changed into a brown substance, but the fluid contents of the cells themselves have become in parts hardened and united with the already present fatty masses into similarly shaped lumps. In this manner many cells present granular masses, others more homogeneous bodies. In those which are more transparent, we can trace clearly the thickening of the fluid contents into an homogeneous gradually firmer substance which involves the granular bodies. Meanwhile, these matters are developed, as in the sound preserved roots, into hard, colourless, transparent, crystalline bodies. At first they are brownish granular lumps, which gradually acquire a more uniform appearance and sharper outline, then become transparent and colourless; and finally assume a crystalline structure. They do not become perfect crystals, though this may be observed in the decay of many fruits, as, for instance, in Grapes.

In those parts where the rot advances rapidly and the tissues appear more watery and pale, as is indeed generally the case in those Carrots which decay quickly, the loosening of the tissues and the destruction of the cells follows, without the occurrence of such abundant and dark-coloured granular masses in their contents. On the contrary, pure oil is very evidently formed in excess, which gradually hardens, and at a later period only acquires a brown tint. Many cells contain drops of oil which frequently run into each other, and then become hard and form grains; and at last, by means of the addition of new layers, little lumps, which at length become brown. A few rudiments of cells also appear here and there.

The first changes of the decaying tissue present, for the most part, these phenomena. Fermentation soon commences. We see, even in sound roots, the intercellular spaces filled with air. By the loosening of the tissues and the erosion of the skin, the access of air to the inner organs is greatly facilitated. In this way fermentation is easily set up in matters containing a large proportion of sugar, to which the rich proteine constituents act as a ferment. First of all the juices collected in the intercellular passages are acted upon, and then those inclosed in the cells. When fermentation has commenced in one place it soon extends, after the well-known fashion, to the sound tissues. These, especially when there is much moisture, are so quickly acted upon by the fermentation, that the contents of the cells do not go through the described metamorphoses, and no deposition of brown granular matter takes place. The tissues finally pass into an offensive pulpy mass.

The commencement of fermentation is indicated by the presence of yeast globules. They occur first in those places which are most accessible to the air, on the surface of the loosened tissue and in the intercellular spaces, at a later period also in the cells themselves. They do not arise at all from the access\* of fungal embryos, but by a simple differential separation of molecular grains from the sap. As proteine granules, starch grains, &c., occur as solid matters in the fluid contents of the cells, so also the delicate bodies which form the foundation of yeast globules. These granules are developed into soft homogeneous globules, which at a later period become elongated, form minute truncheons, and often contain cavities. By the combination of globules and staff-like bodies, branched forms arise. Many of the latter become elongated, forming tubes which branch and grow into mycelioid threads. These spread luxuriantly into the loosened tissues, and extend inwards. In the air they are developed into long threads, which have generally a bluish green or grey colour. They are frequently barren, but often grow into *Penicillium glaucum*. In abnormal circumstances, however, they may be developed into other fungi, as is the case in the Potato murrain.

The tissues thus subjected to fermentation, and penetrated by mycelium, are gradually decomposed, and their contents become free. These and fragments of the walls of the cells, together with the remains of the fungi, are the final produce of the malady.

The stages of the rot may be distinguished as follows, according to the intimate metamorphoses of the tissue which have been described.

1. *The stage of simple decay.*—It consists in the loosening of the tissues, and in the formation within the

cavities of solid brown (diminished) bodies, which are produced by the fluid contents, and for which the materials are supplied by the sugar, fatty matter, and protein of the cells.

2. *The stage of fermentation.*—This is distinguished by the occurrence of yeast globules and mycelium.

3. *The stage of the formation of humus.*—This consists in the perfect decomposition of the tissues, and of the fungi which have vegetated amongst them.

The first stage essentially depends upon the general course of development. It can, however, be retarded when the second takes its place. It serves, also, in a certain degree, merely to prepare the way for fermentation in any particular portion of the tissue, and to introduce it. From this circumstance, and from the perception that the transformations of this stage are in such close connection with the normal conditions of the tissues, it might be concluded that we have before us rather a physiological than a pathological question, and this is actually the case. The transformations which take place in this stage are throughout the same with those to which the tissues of sound roots are subjected in age. I must confine myself at present to the mere indication of this fact. To give a complete proof would require a more comprehensive inquiry. We know, indeed, very little altogether of the history of the development of decay. Pathological decay can only be understood by means of a comprehensive representation of the phenomena of decay in different objects.

Is, then, the Carrot-rot a disease? This question finds its answer in what has just been stated. It cannot be a peculiar disease in that sense in which the word is generally used, but it is only an earlier appearance of the very process which would otherwise take place at a later period. If the affection be called a disease we must adopt some other limitation of the word.

What, then, is the cause of the decay? The proximate cause may be assigned, with great probability, though not absolute certainty, to the increase of the proteine contents of the cells. The rot becomes pernicious and destructive when fermentation is associated with it. Fermentation is, however, quickly induced by the proteine, which acts on the sugar of the juice like yeast. The same appearance is presented as in rotten Potatoes, which equally contain an increased amount of proteine. On what, however, this increase of proteine constituents depends is a question which cannot be answered at present; and consequently no rational means assigned for the prevention of the decay.

It remains only to say a few words on the nature of the brown matter which in the first stage fills partially or entirely most of the cells. It admits of no doubt that this matter has the closest affinity with that which fills the cells in decayed discoloured Potatoes. This is stated by Harting (Ann. des Sc. Nat. 1846) to be ulmin, and the Potato-murrain to be an ulmification, or humification of the tissues. Other observers have adopted this view. In the case before us the brown contents might be considered as ulmin, if the history of development were not against it. This shows that very different substances contribute to its formation. 1. The proteine of the cells; 2. The fatty matter; 3. The saccharine juice; 4. In some cases also, the remains of decomposed chlorophyll and starch. From the different characters of these substances, which at last produce by their transformation a solid brown compound, it is very probable that a greater fundamental difference is produced in the final product than we are in a condition to recognise from the imperfection of our means of analysis; for the chemical examination of individual cells, and the due separation of their several contents must be effected, in order to arrive at a luminous conclusion. This much, at least, is clear, from these observations, that the brown matter which we are able to demonstrate generally by means of the microscope in decaying cells, and which is called ulmin, is, without sufficient grounds, considered as pure, and exclusively composed of that substance. We shall only then be on sure ground, when the history of the development of normal decay, and the formation of humus, has been ascertained.

### Home Correspondence.

*Nimrod Strawberry.*—I see in your "Notices to Correspondents," that you have given a favourable opinion of this Strawberry, raised by Mr. Sanders, of Tedworth. As I saw it in bearing the other day, and tasted the fruit, I can safely affirm it to be a valuable acquisition, being a free bearer, hardy, and unexceptionable in size, colour, and flavour. The Queen, though a right Regal fruit, when grown in first-rate style, is, as every one knows, fully as tender as a Cauliflower plant, and nearly as capricious a bearer as Myatt's Pine. But from what I saw of growing plants of Nimrod, I should pronounce it as hardy as the Elton. Beside it grew another seedling named King Lud, with fruit rounder than that of the above, and of a rich dark colour, of which the inside flesh partook. The fruit is elevated above the foliage by stout, erect, footstalks; and it appears to be a profuse bearer. Mr. S. informed me that he has forced this latter kind extensively with the best success, as it sets its fruit well in unfavourable weather, when forced early, while the older kinds, such as Keens' Seedling fail. I do not much admire the names which have been given to these Strawberries, but I presume the former is named in compliment to the "mighty hunter" of modern times, the liberal proprietor of the princely gardens in which it was raised;

\* Starch occurs in any quantity only during active growth. Compare on this subject the beautiful observation of H. Hoffmann, Flora, 1849. In full-grown roots, according to Hoffmann, it is diminished probably into gum; and as I am inclined to believe from actual observation, into sugar also. Moreover the quantity of starch differs in different varieties, and may be replaced by fatty matter, as in the seeds of leguminous plants. In the decayed Carrots which have come under my observation, I have found no persistent starch granules.



and I think them both worthy of cultivation. *John Spencer.*

**Degeneration of Races.**—The wearing out of certain varieties of fruits and florists' flowers seems a subject well worthy of further investigation. It might be useful to bring to notice the genera, or the species of plants, most subject to such decay, and thus direct attention principally to the obtainment of new seminal varieties of the species most requiring renewal of good sorts. The Apple seems particularly liable to wear out, for, in addition to the kinds already noticed in the *Gard. Chron.*, there are many kitchen Apples formerly common that are now rare; the Codlin, for instance, some years ago the cheapest Apple, and the most esteemed summer one for puddings and tarts; the Codlin was formerly a most abundant and certain bearer, its fruit excellent at different stages of its growth; gathered young, it was used as green Apricots now are; and by thinning the crop, the remaining fruit swelled to a large size. It was thought indispensable for dumplings and for "Codlins and cream," no other variety of Apple having the same agreeable acidity and flavour. To the Codlin succeeded the Lemon Pippin, also now wearing out; and for winter use the Russeting, at present scarce and a bad bearer. These three fruits used to be common in cottage gardens, some trees of them still remain in such a garden near Canterbury, but they have ceased to bear abundantly there as elsewhere. The recent acquisition of valuable varieties of Pears may have caused neglect of old sorts, many of them inferior to the new ones; yet some of the old varieties were excellent—the Bergamot, for instance, formerly abundant and cheap, but rarely brought to market now; the Jargonelle still keeps its ground, though always a dear fruit. About 60 years ago a fruiterer in Bridge Street purchased choice specimens of the Jargonelle at 6s. a dozen, when, at the same time, the finest Windsor Pears were sold for 4s. a bushel. Probably varieties of stone fruits are more durable than those of Pears and Apples, for some of the Peaches and Nectarines recommended in an early edition of Miller's Dictionary continue in successful cultivation. The old Morello Cherry still flourishes as formerly, so does the May Duke; some varieties of Cherries are, however, disappearing; a very rich large black Cherry, for example, though formerly common, is now rarely seen, and in Kent, it is said, that the old Kentish Cherry is becoming a shy bearer. *B.*

**Honey** (see page 469).—"Tyndwif's" fluid honey arises from a portion of honey being abstracted and the vacuum made up by pump water. Good honey is firm, and compact. Amongst the ancients it was regarded as the symbol of death, but "Tyndwif's" honey is the symbol of dishonesty. *X. Y. Z., Hunts.*—Your correspondent has, perhaps, exposed his honeycombs too much to the air in removing the honey from them; that operation is best performed while the combs are hot from the hive. The sooner the dripped honey is excluded from the air the better; and to ensure its becoming firm and nice in a candied state, it is essential to keep it in a dry place. *Anon.*

**Cycas revoluta.**—There is at present flowering at the Grove, Brislington, Somersetshire, the residence of H. Ricketts, Esq., a very fine specimen of this Cycas, and from having flowered in 1847, it is a kind of floricultural curiosity. It is a noble plant, and a large specimen of the sort, the circumference of the foliage measuring upwards of 30 feet, and the girth of the trunk being upwards of 3 feet. The plant stands in a tub in the centre of Mr. Rickett's spacious Camellia house. *Rob. Ruppen, Bristol.*

**Geach's Self-acting Fumigator.**—It has hitherto been our practice to destroy green-fly by blowing the bellows to raise smoke, from an old cracked sauceman, an old sand riddle, a flower-pot, or the like filled with tobacco fuel in some of its least attractive forms. A fine calm evening is selected for a smoking night, and the operator, with a cloth tied over his mouth, lies down flat on the floor of the house to be smoked, the filthy pot being only the length of the bellows from his nose, and there he has to puff away and remain until the smoke begins to descend to the floor, and the gust thick and foul gets to his lungs, when he has to grope for the door or be carried out by his companions. Such is a fair sample of the process of smoking moderate sized houses; but in the case of large conservatories, it is a still more serious affair, and only old hands, habitual smokers, dare attempt such a task; since an hour or two of stifling poison is not a safe dose for every constitution, still the deed must be done; for it is a point of the very highest importance to horticulture that green-fly should not be spared. Invention has been racked to get rid of the smoking nuisance, and the following account of a self-acting fumigator, which I saw at work on the 8th of June at Plymouth, will be hailed with pleasure by those who have had to be present at a few smokings on a large scale. The machine is substantially made of copper, and consists of two parts, the fire-box and the blower; but for the sake of simplicity and to appeal to ideas already established in the minds of gardeners, I will endeavour to explain it as divided into three parts; the first, being the ball of the pipe or hopper, containing the ignited tobacco; the second part seems little else than the common wheel bellows or blower already well known in every garden, and to be seen in most of the seedsmen's windows, painted green, with a mahogany wheel; the third, being the driving apparatus, seems akin to the common bottle-jack that is to be seen in the ironmonger's shops, or on active service in the tradesman's kitchen: these three parts neatly arranged and put together constitute the self-acting fumigator, manufactured by Mr.

Geach, of 39, York Street, Plymouth. They are made of three sizes, the largest runs half an hour and costs 50s., the second size runs for a shorter period and costs 30s., and the smallest size costs only 20s. The air which feeds the bellows is sucked from the hopper containing the tobacco and therefore there is less risk of sparks or flame than there would be if the smoke came direct from the fuel to the plants; this is important where amateurs or others might be using curtains to smoke Roses or other plants out of doors. The largest sized machine, including the fire-box and connecting tube, is not larger than a hat-box, consequently the thing is admirably adapted to the limited space of pits and frames. *Alex. Forsyth, St. Mary's Church, Torquay.*

**Cockroaches.**—We have heard that half a pound of soft sugar, 1 ounce of arsenic, and 2 lbs. of oatmeal, well mixed up together, is an infallible remedy for these troublesome vermin. *J. Weeks and Co., King's Road, Chelsea.*

**Wild Potatoes in the Bahamas.**—A former intimate acquaintance of mine had resided some years on the Island of Exhuma (one of the Bahamas), she asserted that Potatoes were there growing wild, of excellent quality, and of large size. I doubted the fact; on which she said that they were abundant in stony ground; that when wanted for kitchen use, she used to send out a servant to collect them, who had no further trouble in obtaining a supply than that of removing some loose stones under which they were abundant. *B.*

**Irish Truffles.**—I was not aware till recently that Truffles grow in Ireland; I was shown some lately at Castle Taylor in the county of Galway: they were growing under some Beech trees in the pleasure ground. They were accidentally found by a dog scratching up a few some years ago. The specimens taken up in my presence were very good. The soil is a light loam on limestone. *Cavanensis.*

**Origin of Potato Disease.**—As touching the vexed question, whether Potato blight is atmospheric, and begins in the haulm, or radical, and originates in the tuber, I beg to inform you that I have just separated half a peck of diseased Potatoes from a small heap of early Ash-leaved Kidneys, which have become since digging affected with the disease; but there was not a spot on any leaf of the whole crop, nor on any tuber, at the time when they were dug. *E. G., Castle Cary.*

## Societies.

**HORTICULTURAL, July 26.**—E. BRANDE, Esq., in the Chair. J. Baring, Esq., H. F. Broadwood, Esq., W. Ricardo, Esq., and Lieut.-Colonel Harriott were elected Fellows. Collections of vegetables, formed as before, the subjects of special competition on this occasion, and among the three exhibitors who came forward, Mr. Burns, gr. to Earl Stanhope, at Chevening, again stood indisputably first. He had a large and finely-varied exhibition of kitchen-garden produce of the very best description, each article being extremely good of its kind, and true to name. He contributed Frame and Purple Kidney Potatoes, the latter a handsome sort not often seen; Early Horn Carrot, Hodge Radish, Dutch and Stone Turnip, Old and Spring-sown Beet; Spanish, Tripoli, Globe, and Strasburg Onions; Vanack, Wellington, and Early York Cabbage; Sword Long-pod, and Windsor Beans, the former the hardier of the two; Shilling's Grotto, Champion of England, Mammoth Dwarf, Ne plus Ultra, and Auvergne Peas; Victoria, Linneus, and Giant Rhubarb; Scarlet Runners, Fulmer's Dwarf Speckled Kidney Beans, Jerusalem Kale, Cabbage Sprouts, London Leek, Vegetable Marrow, Common Sorrel, Fennel, Spearmint, Summer and Winter Savory, Pot and Knotted Marjoram, Sweet Basil, Borage, Sweet Bay, Tarragon, Tansy, Pennyroyal, Giant and Curled Parsley, Round Spinach, Red and Green Orach leaves, Cauliflowers, Large Mushrooms, Shallots, Union Cabbage, Drumhead, Bath Cos, Paris Cos, and Black-seeded Green Cos Lettuces; White Spine Cucumber; Salmon, White, and Red Turnip Radishes; Seymour's White and Red Celery, White Mustard, Italian Corn Salad; Water, Golden, and American Curled Cress; Chervil, Burnet, Lemon and Common Thyme; and Variegated, and Common Sage. We understand that the kitchen garden seeds used at Chevening, and from which this excellent produce has been obtained, were all supplied by Messrs. Wrench and Sons, of London Bridge. The next exhibition in point of merit was furnished by Mr. Smith, gr. to Mrs. Reay, of Little Blake Hall, Wanstead: it contained Burbridge's Eclipse, Blue Scymetar, Auvergne, Green Mammoth, and Ne Plus Ultra Peas; Asiatic and Walcheren Cauliflowers; Taylor's Windsor and Early Mazagan Beans; Nonpareil and Early Dun French ditto; West Ham and Enfield Market Cabbages; Early Horn, White Dutch, and Long Red Carrots; Old and New Beet; Globe Artichokes; Early Dutch and Early Stone Turnips; Globe Onion; Ash-leaved Kidney, Jackson's New Ash-leaved Kidney, Haigh's New Kidney, Early Shaw, Early Globe, and Early American Potatoes; Horse Radish; various Vegetable Marrows, Prickly Spinach, Curled Parsley, Seymour's Red Celery, Nasturtiums, Scotch Leeks, Victory of Bath and Sheridan's Cucumbers, Paris Cos (misnamed Snow's Cos) and Victoria Cabbage Lettuces; Early Salmon, Red, and White Turnip Radishes; Mustard and Cress, Chicory, Sorrel, small Onions, Chives, Mint, Balm, Fennel, Sweet Basil, Sweet and Pot Marjoram, Red and Green Sage, Summer and Winter Savory, Lemon and common Thyme, and Horehound. These were all of very good quality, and from a

garden of but limited size. Among the Potatoes, that called Haigh's New Kidney did not appear to be different from the Lapstone, which is well-known to be an excellent sort. The dish of Jackson's New Ash-leaf was better than that of the common sort, the tubers being large and much finer. Mr. Spivey, gr. to J. A. Houblon, Esq., of Hallingbury, near Bishop's Stortford, had a third collection. With regard to the above exhibitions, it will be understood that the Knightian Medal, as first prize, was awarded to Mr. Burns, and the Banksian, as second prize, to Mr. Smith; but in addition to the Society's prizes these two exhibitors received, the first 3l., and the second 2l., being sums offered by Dr. Lindley in the beginning of the season, to be awarded to those cultivators who might carry off the greatest number of prizes for vegetables at the meetings in May, June, and July. Mr. Patterson, of Thame Park Gardens, showed his Matchless Green Marrow Pea, a large fine-looking kind; but, in this instance, too old to judge with any certainty of its quality. A collection of Peas was furnished by Mr. Wrench, of London Bridge, but they arrived too late for competition. They consisted of Early Green Marrow, Dwarf Imperial, Flack's Pea, Banksian Marrow, Scymetar, Auvergne, Blue Prussian, Tall Sugar, the kind with eatable pods, the latter being destitute of the tough lining inside which other Peas have; Burbridge's Eclipse, Early Surprise, and Ringwood Marrow. Concerning these Mr. Wrench stated that the Auvergne is an admirable sort, and most prolific, which is, in fact, the experience of all who have tried it. The Banksian Marrow is also thought very highly of; the seed of this sort originally came, it is said, from Sir Joseph Banks's garden.—Of plants, Messrs. Henderson, of Pine-apple Place, sent 6 specimens of Burridge's Scarlet Salpiglossis, a showy fine kind, but not so scarlet this year as it was last, the flowers, in point of fact, being orange; and along with it a similar number of plants of the white variety of *Lobelia ramosa*: a Certificate of Merit was awarded for the Salpiglossis.—Mr. Pince, of Exeter, furnished a *Hemantthus* newly imported from the Zulu country; it is nearly allied to *H. coarctatus* and *hyalocarpus*, but possibly distinct from either.—C. Leach, Esq., of Clapham Park, sent the all but uncultivated *Disa grandiflora* in flower: the blossoms were not so finely coloured as those of Mr. Hanbury's *Disa*, shown at the last exhibition at Chiswick, but the plant in the present instance was better grown. It was stated to be three years old—one year older, we believe, than Mr. Hanbury's plant; it certainly looked established and disposed to thrive.—Mr. Keynes, of Salisbury, sent a box of very nice Picotees, and another of Carnations.—Mr. Ayres, of Brooklands Nursery, Blackheath, produced a Seeding Pelargonium from fulgidum, crossed with one of the dark fancies. With it were sent specimens of another Cape cross, viz., *P. formosissimum* of Sweet, with possibly the Fancy called Jenny Lind. The blooms were large, pure white, with a purple blotch on the upper petals, while the foliage bore a close resemblance to that of the Cape species.—Of Pine-apples, Mr. Fleming, gr. to the Duke of Sutherland at Trentham, sent a capital Black Prince weighing 5½ lbs., and a Providence 7½ lbs.; a Banksian Medal was awarded. Mr. Draper, gr. to the Bishop of Salisbury, received a Certificate of Merit for a beautifully ripened and well-formed Queen weighing 5 lbs. 2 oz., and a similar award was made to Mr. Jones, gr. to Lady Charlotte Guest, for two handsome Ripley Queens, weighing respectively 4 lbs. 14 oz., and 4½ lbs.—From Mr. Smith, gr. to Mrs. Reay, came bunches of Oldaker's West's St. Peter's Grape, black, with a good bloom on them, but not ripe. The same exhibitor also sent a hybrid green-fleshed Melon.—From Mr. Grant, gr. to G. H. Simms, Esq., came Victory of Bath green-fleshed Melon, which, on being cut up, proved to be not very good.—Messrs. Youell, of Great Yarmouth, sent a boxful of beautiful fruit of the Fastolf Raspberry; they were unusually large and fine, and well deserved the Certificate of Merit which was awarded them. A similar award was also given to Mr. Myatt, of Deptford, for his Strawberry called Cinquefolia, a large showy kind, which, on being stated by the chairman, was pronounced by him to be "a well flavoured very good Strawberry, considering the large amount of wet we have had." Mr. Myatt also sent a branch of *Sambucus racemosa*, ornamented with numerous clusters of small red berries, which are very handsome. This species, we learn, is fruiting more freely this year than usual.—Mr. Fleming produced a dish of Brown Turkey Figs, which were stated to have been grown in a house on the new plan, described and figured at p. 372 of our volume for 1852. The house was finished in April of that year, and there are now plenty of ripe Figs in it, as well as a good crop of Grapes (swelling), and on the front trellis a few nice Apricots. Mr. Fleming states that these houses answer better than any he has, and that similar ones are being erected by many noblemen and gentlemen throughout the country.—From J. Luscombe, Esq., of Combe Royal, Kingsbridge, Devon, came half a dozen Shadocks, for which a Certificate of Merit was awarded. They were stated to have been produced by a tree growing against a south wall, where it received no protection except that of a reed frame at night or in very severe weather by day.—From the garden of the Society came the pale variety of *Platy codon chinensis* called alba, *Myosotis azorica*, a brilliant deep-blue flowered plant, that ought to be better known than it is; various *Acimenes*, among which was the pure white *A. Margarette*; *Erica eximia* and *tricolor superba*, *Sinningia villosa*; *Oxalis rosea*, a very showy kind for conservatory shelves, produc-



great masses of flower at this season of the year; Barnes' variety of *Phenocoma proliferum*, *Kalosanthus miniata*; the *Fuchsia* called *Gem*; *Campanula garganica*, *Diplacus grandiflorus*; the new French Balsam mentioned in another column; *Calceolaria chelidonioides*, a yellow sort, which having no opening or mouth in the flowers, will be found to be useful for bedding in wet seasons; and the following new annuals, viz., *Schizanthus violaceus*, the white *Eschscholtzia*, the yellow *Hymenoxis californica*; a white variety of *Campanula pentagonia*, the orange-flowered *Calceola sonchifolia*, *Podolepis chrysantha*, *Venidium calendulaceum* and *eximium*, the white variety of *Nolana grandiflora*, *Cenia turbinata*, and *C. t. formosa*; *Centranthus macropsiphon*, and its pale variety called *rosea*, both handsome *Valerian-worts*; *Monolopia californica*, and *Collinsia bartsisefolia*. The orchard department contributed the following vegetables, viz.:—*Knight's Tall Blue* and *Tall White Marrow*, *Dickson's Early Favourite*, *Fairbeard's Champion* of England and *Blue Prussian Peas*; *Early Mazagan*, *Broad Windsor*, and *Marshall's Prolific Beans*; *Scarlet Runner*, *Sutton's Cornish*, and *Cock's* or *Vanack Cabbage*; *Round Summer Spinach*, *White* and *Red Orach*; *Navet Blanc plat hâif*; *Early White* and *Red Strap-leaf Turnips*; *Chou rave blanc plat hâif de Vienne*, *Vegetable Marrows*, *Laitue Alphonse blonde à graine noire*, *Laitue Alphonse blonde à graine blanche*, *Laitue Pomme d'Été* ou *d'Automne*, and *Bath Cos Lettuce*; and of fruits, *Seymour's Golden Perfection*, and *Cassaba Melons*; *Rivers's New Large-fruited Double-bearing Raspberry*, *Wilmot's New White* and *Red Currants*; and six sorts of the old, small, sweet, early *Gooseberries*, viz., *Oval Red*, *Sulphur*, *Irish White Raspberry*, *Early Green Hairy*, *Early White*, and *Small Dark Rough Red*. It may be mentioned that, among all the new varieties of *Peas*, none have been found to equal *Knight's Marrows*, in point of sugary qualities. *Dickson's Early Favourite* is a good variety, early and prolific; and the *Blue Prussian*, as a summer *Pea*, still maintains its place. *Sutton's Cornish Cabbage* is a good kind, the ribs of the leaves being nearly as tender, when cooked, as those of the *Portuguese Couve Tronchuda*. The *Early White Strap-leaf Turnip* is a new sort, which is likely to prove excellent. The *Laitue Alphonse blonde à graine noire* and *à graine blanche*, are sorts of *Cos Lettuces* which grow to a large size, but they do not heart well, and require tying in order to blanch them; they have, on the other hand, the very great merit of running to seed more unwillingly than any other *Lettuces*. *Rivers's new large-fruited double-bearing Raspberry* is an excellent bearer, both early and late. *Wilmot's new white Currant* is a good variety, easily distinguished by the leaf, which is more cut than that of any other white *Currant*.

## Notices of Books, &c.

*Origin, History, and Description of the Bomerang Propeller.* By Lieut.-Col. Sir T. L. Mitchell. Boone.—This pamphlet has nothing to do with the cultivation of the land, but it has much to do with the efficiency of the navy. It explains the principles of the author's celebrated invention, which sanguine persons believe will reduce the voyage from London to Sydney to a month; it tells the simple history of the discovery, it shows what its effects have been ascertained to be, and it deals very effectually with the criticisms that it has elicited. That the form of screw called the *Bomerang* increases speed, reduces vibration, and saves fuel and wear and tear, is now matter of undisputed evidence.

*Godwin's History in Ruins* (Chapman and Hall), consists of a series of letters upon the rise and variations of architectural styles. It is written in familiar language, and illustrated with good woodcuts. The author not unaptly calls it "a handbook of architecture for the unlearned."

A third edition of Professor Lindley's *Vegetable Kingdom* (Bradbury and Evans) has just appeared, with numerous corrections and very large additions. The supplemental indexes of new matter occupy 10 pages of small type in triple columns. A considerable number of new illustrations has been introduced, and many of the old ones are replaced by better.

## Garden Memoranda.

**HORTICULTURAL SOCIETY'S GARDEN, TERNHAM GREEN.**—In the Arboretum we found Dr. Lindley busily engaged in marking out an alteration in the "Rhododendron clump" in front of the orchestra. This, as is well known, has hitherto been a circular belt of *Rhododendrons*, surrounding, as it were, a grassy basin in the centre; but now this belt is to be broken up, and its contents disposed in irregular masses, traversed in various directions by broad strips of lawn, so as to permit a free passage all through them. This will be a great improvement, for as the belt stood, besides its formal appearance, it acted as a barrier to keep visitors on show days at a distance from the orchestra. The beds along the sides of the new walk on the east side are now nearly in full beauty, and altogether the Arboretum is at present, as indeed it always is, in excellent order. Against the conservative wall, we remarked a large specimen of *Spartium Euneas* covered most profusely with yellow blossoms. As an autumn flowering wall plant this is worth atten-

tion, especially where, as in the present case, it is allowed to grow freely out from the wall.

In the American garden flowering plants of *Yucca recurva* adorned the rockwork (on certain positions of which, plants of this kind are very effective), and in other parts of this garden various *Spiræas* were in blossom. Among these the most remarkable was *Spiræa Lindleyana*, a fine looking shrub, with great flat clusters of white flowers formed on the ends of the branches, which are clothed with a beautiful Fern-like foliage. The others consisted of *S. arizefolia*, *buxifolia*, and *Douglasi*; the latter having neat upright spikes of purple blossoms. For autumn flowering these *Spiræas* are invaluable; for by means of them, *Leycesteria formosa*, the *Hydrangeas cordata* and *arborescens*; *Roses*, *China* and other sorts, among which "drooping climbing" kinds worked on tall stems as standards have a fine effect, a garden may be kept extremely gay till very late in the season. The *Ghent Alstroemerias* which have wintered safely in the open ground here, are now in blossom, and very beautiful they are. All the protection they received was merely derived from their being planted a little deeper in the soil than usual.

Among new annuals which have bloomed since our last report, may be mentioned the white variety of *Nolana grandiflora*, which forms a good contrast with the blue variety; the New Holland *Podolepis chrysantha*, a good, showy, yellow composite; *Schizanthus violaceus*, a distinct looking species, with a colour that has hitherto been much wanted; *Schistanthe pedunculata*, with brick-red, Alonsoa-like flowers; a species of *Gilia*, with lead-coloured blossoms, that are larger and finer than those of *capitata*; *Collinsia bartsisefolia*, a species with the appearance of *C. bicolor*, but much more dwarf; *Cenia pruinosa* and one or two other kinds. Concerning the *Cenias turbinata* and *t. formosa* named last month, we have to state that they may with justice be called perpetual flowering; for no sooner is one crop of blossoms off, than another equally plentiful makes its appearance. Indeed, few of the new Annuals are so well worth attention as these *Cape Cenias*, whose flowers, with the exception of being without the ray, somewhat resemble *Camomile* blossoms. The most brilliant thing, by far, however, is the crimson *Linum*, which is flowering rather more freely than before, but still it is thin and delicate.

The multitudes who admire the beautiful *Begonias*, which every winter grace the stoves here, surely can have no idea that they are nearly as easily managed as a *Pelargonium*, or we think they would be often met with in collections than they are; such, however, is the fact. After they have done flowering, they are removed from the houses to a station at the bottom of a low north wall, where they are allowed to dry and have a season of rest. When that is over, which is about this time, they are taken in hand, shifted, and placed in a pit, where, after they have started, they are cut back a little and then grown on to be ready for the stoves in winter. The chief point in their treatment is doubtless the drying and resting in summer; for without these they would never flower so well as they do.

Among new things we observed that the *Pine* seeds lately received from Oregon from Jeffreys are coming up, and that the plants raised from the first lot are potted off. What they may be worth will therefore soon be determined. We also remarked numbers of young plants of the *Yucca-like* *Bechorneria*, the seeds of which were presented to the Society by the Hon. W. F. Strangways.

It may be worth notice that the *Sobralia macrantha* planted out in the bed of the great conservatory is at present in flower, and altogether appears to be perfectly established there. On the shelves, which were very gay, was a good white *Balsam*, tinged with lemon. It is one of the sorts called by the French *Camellia Balsams*, on account of the size and doubleness of their flowers.

*Chrysanthemums* (small plants struck late, which is found to be the best plan), are now placed in their blooming pots. They are struck four together in small pots, from which they are transferred to larger ones, in which they are spread apart a little, topped, and encouraged to grow on without any further stopping till they bloom. By this treatment, they do not throw out a number of small shoots late and too weakly to flower well.

In the orchard department *Strawberries* are nearly over, with the exception of *Thoms' Seedling*, a good sort, *Old Pine*, and one or two others. With regard to the *Old Pine*, it may be mentioned that it will bear well, and longer on the same ground without renewing, than almost any other *Strawberry*. It, however, likes a top-dressing of leaf-mould put on in spring for the surface roots to feed on. Apples are a fair crop; they are better upon standards than dwarfs; for, owing to the close pruning of the latter, the blossoms suffered from late spring frosts. Peaches and Nectarines on walls are bearing tolerably well, the latter rather better of the two. The tree under *Cottam* and *Hallen's* Peach frame, which is better open at one end, is very healthy in foliage, and making good wood; but the fruit on it at present does not seem to be much, if at all, in advance of that on the open wall.

The *Potatoes* treated according to Professor Bollman's plan have not come up well. At present only one or two weakly ones have appeared, and an inspection of some of the sets found them decaying and enveloped in a web of mildew. The probability is that they were "roasted" too late in the season, i. e., after vegetation had become active. This will of course be remedied should another trial of the system take place.

## FLORICULTURE.

**VIOLETS.**—The side shoots of the Neapolitan Violet strike root freely, if taken off in March and planted on a border by a south wall, in a compost of leaf-mould, loam, and sand, well mixed together. The cuttings ought to be planted 4 inches apart in the rows, and 6 inches between the rows, to allow them to be lifted with balls at their roots. The most suitable compost is a mixture of leaf-mould, well decayed cow-dung, sand and loam, in nearly equal proportions. As soon as the cuttings are properly rooted, they ought to be carefully lifted, and planted in beds about 9 inches apart in the rows, and 12 inches between the rows; after planting, a good watering is requisite, to settle the mould about the roots, and shading should be used for a time, removing it gradually as the plants get established. Great care must be exercised in watering, for if they are allowed to suffer for want of moisture, it will, in all probability, retard their flowering season considerably. I have found them to be much benefited by an occasional watering with weak sheep's-manure water, until they commence flowering, when it must be withheld, or it will affect the perfume of the flowers. Under the above treatment I have had plenty of blooms by the second week in September, and they have continued until the first of my forced plants came into flower. In forcing the Violet, I would advise a frame to be placed where it would have the greatest amount of sunshine during the short days of winter; the same compost may be used as recommended above; and to ensure a free drainage, a quantity of rough material may be put in the bottom of the frame; the frame can then be filled to within 6 inches of the top with the compost; after which the plants may be put in, well watered, and shaded for a few days until they have become established. The planting must be regulated according to the time when they are wanted to flower; if put in in June, they may be had in flower about Christmas. If wanted then, forcing should begin about the middle of September, placing the lights over them during the night only for the first fortnight; after that they must be permitted to remain on during the day, but the frame must nevertheless be well aired. They may remain under this treatment for another fortnight or three weeks, when less air will be required, for by that time the short days and cold nights will have set in. They should be covered with mats, so as not to allow frost to reach the plants. After the first set of plants come into flower, the lights may be withdrawn from them, and used to bring on a succession; but a temporary frame must be placed over them to support the covering. By the above mode of management, I have been always able to gather a large weekly supply of well developed finely scented flowers. G. L.

**PROPAGATION OF GREENHOUSE AZALEAS.**—I have succeeded best in propagating them when their wood is about half ripened. I use cutting pots or pans, filled about half way up with broken pots, over which a small quantity of rough material should be placed, to prevent the fine mould from mixing with the drainage. I fill the pots with a mixture of two-thirds peat and one-third sand, to within half an inch of the rim. After pressing the soil lightly with a small pot or circular board made for the purpose, I cover with silver sand, and after sprinkling it with a fine rose watering pot, to settle it, insert the cuttings. After they are put in, they should be covered with a bell-glass to prevent evaporation, and the pot plunged in a bed with a slight bottom heat. When rooted, they will require a little air, which may be given by tilting up the glass on one side. When they begin to grow in spring they will require repotting into small pots in a mixture of peat and sand; they may then be placed in a gentle hot-bed for four or five weeks, and afterwards removed to the front of a close house for some time. Towards the middle of May they will require fresh potting into 4-inch pots in the same compost as before, pressing the soil firmly round the ball of the plant in potting. They should be afterwards removed to a cold pit or frame, and kept close for two weeks or more, and well shaded from the strong rays of the sun until well established, when air and light may by degrees be admitted. Look over them carefully at intervals and stop all luxuriant shoots that will bear it. The plants will be benefited by being lightly shaded during sunshine until their growth is established. Give all the light and air possible, in order to secure vigour and healthy appearance, and to ensure the ripening of their wood. They may remain without repotting till the following spring, when they must be shifted as the vigour of the plant may warrant. About the end of June, if they have done well, they will be assisted by another shift, and will still continue to increase in size if properly attended to, as frequent shifting is found to be the most secure method of treatment and less dangerous in the hands of amateurs. The following spring will produce fine young plants in a fit state for flowering in 6-inch pots. As they increase in age, a freer state of bloom is secured by adding a portion of loam to the compost, making one part of loam to one of peat, with a little sand to preserve the porosity of the soil. They may be induced to flower earlier than usual by a little forcing in a warm part of the greenhouse. P.

**PELARGONIUM.** June. As soon as your cut-down plants have broken sufficiently at the eyes, shake out and disroot them, and with a sharp knife take off all straggling roots; repot into fresh soil, with 2 inches of drainage at the bottom of the pots. These in 8-inch pots may now be placed in 6-inch ones. Keep them in a close frame or house till they get established, just damping them over-head with a fine rose three or four times a



week, as soon as they have recovered from the sun, they may be abundantly given night and day, sheltering them from heavy rains, and keeping them clean from green fly. Continue to cut down your plants as they go out of flower, making cuttings of the tops.

**TEA ROSES: Novice.** The following may possibly answer your purpose:—Adam, rich rosy salmon; Clara Sylvain, white, centre creamy; Comte de Paris, flesh-coloured rose; Devonensis, pale yellow, edges creamy white; Elize Sauvage, yellow, centre orange; Eugénie Desgaches, bright rose; Goubault, rich rose, centre buff; Madame de St. Joseph, pale pink, centre rose; Mansais, rose, shaded with buff; Souvenir d'un Ami, delicate pink; Taglion, creamy white, centre flesh.

#### SEEDLING FLOWERS.

**KALOSANTHES: J. Morgan.** Your seedlings are very handsome, more especially Nos. 3 and 6, which cannot fail to become favourites.

**PELAGONIUMS: C.** Apparently an improvement on *Diadematum* cutescens.

**FIRKS: K.** Very much dried up; but apparently too small and thin ever to be first-rate flowers.

#### Miscellaneous.

**Disease in Stone Fruit Trees.**—The disease in trees bearing stone fruits, pointed out last year by M. Léveillé, has more especially fixed upon the Cherry this season; in many gardens after the trees had flowered and set their fruit, and were apparently in good condition, they either partially or completely died when the stone was being formed. On examining the interior of the dead branches we perceived that the pith had become black, as if a sort of vegetable gangrene had attacked it. Plum trees have also been partially affected in the same manner. Some of the latter attacked at the time of flowering have not died, but the flowers have proved abortive; the growth of annual shoots has stopped, and the leaves have attained only a third of their natural size. The gardeners trust that the trees will recover with the August flow of sap, a hope in which we, however, scarcely indulge. At Montreuil many Peach trees have been attacked with the same disease. At the Orleans railway station, a portion of them which have been so remarkably well conducted by M. Lepère, of Montreuil, is dead or partially attacked with gangrene; these trees have been suffering, more or less, for several years. Facts of this kind have a physiological cause as yet unknown, and which it will be important to discover, in order that we may endeavour to counteract its disastrous effects. *M. Ysabeau, in Revue Horticole for June 1853.*

**Brick-burning as a Nuisance.**—On a recent motion before Sir W. P. Wood, on behalf of three persons resident between Fulham and Hammersmith, for an injunction to restrain a defendant from burning bricks on his land, situated about 200 yards from their residences, the Vice-Chancellor said that Lord Eldon had thought it doubtful whether brick-burning was a nuisance at all; but he could not assume that the case would be decided in the defendant's favour. As to the effects of brick-burning being a nuisance, the case of *Walker v. Selfe*, decided by Lord Justice Bruce, when Vice-Chancellor, established that they were, under certain circumstances, such as contiguity, and in certain conditions of the atmosphere, when it affected the health or the comfort of the neighbours, not being persons of a capricious or peculiar idiosyncrasy. The defendant was about to burn several thousand bricks, and intended to continue the operation until September. The evidence showing that at times some of the parties were injuriously affected in their health, and experienced nausea, and were obliged to close their doors and windows, he should grant an order restraining the defendant, until after trial, from burning any other bricks than those on the existing clump, and from continuing to do so after that day week, the plaintiffs undertaking to proceed to trial with their action at the next Surrey Assizes, and to submit to such order as the court might make in respect of damages sustained by the defendant in consequence of this order.

**Gigantic Cedar.**—There exists in California, says the *Echo of the Pacific*, on one of the mountains of the country of Calaveras, a Cedar said to be the largest tree in the world. A correspondent of the *Herald of Sonora*, who has paid a visit to the spot for the purpose of examining this prodigy of the vegetable kingdom, describes it as follows:—"At the level of the earth its circumference is 92 feet—4 feet up, it is 88 feet—at 14 feet, it is 61—and thence it gradually tapers. Its height is 285 feet; and it has none of that deformity which commonly characterises trees with enormous trunks. From one end to the other it is a model of symmetry. The age of this giant Cedar, counted by its zones, is 2520 years" (!) This king of the forests of the world is now having its bark—which at the base is nearly 14 inches in thickness—stripped away to a height of 50 feet, for the purpose of being sent to the Great Exhibition in New York. *Athenæum.*

#### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

The principal plants that decorate the conservatory at this season will be some of the most showy annuals, Fuchsias, scarlet Geraniums, with Achimenes, and, where there is room, a considerable number of stove plants and Orchids may be safely introduced; and if in addition a few Palms, &c., be added, they will give the charm of tropical scenery to the house, and render it more attractive. Brugmansias and other gross feeding plants must be liberally supplied with liquid manure, to maintain them in vigorous health, and at the same

time to prolong the period of their blooming. The climbing plants will likewise require going over at short intervals, to keep the strong growers within limits; any shoots which have done blooming may be cut in, which, with many species, will induce a second flowering. Take every means to keep down insects, which, at this season, are more than usually troublesome. Examine the plants standing out of doors, and any appearing to suffer from the late rains should be at once removed under glass. ORCHIDS.—Some of the earlier started ones will have ripened their growth, and may now be removed to a cooler and drier house, where they can slowly progress to a state of rest; but the change should take place slowly. As the plants approach a state of maturity, more light may be allowed them, which will help to ripen the pseudo bulbs. Continue to plants yet growing the requisite amount of heat and moisture to carry on the present year's growth, but avoid unnecessary stimulants at this season, which might induce a fresh growth, which to many species would be injurious to their blooming next season. Fires will be necessary during cold nights, but lessen the shade, except in bright weather. Plants suspended on blocks and baskets must be daily examined to see the growing material is kept sufficiently moist, while at the same time stagnant damp must be avoided.

#### FORCING DEPARTMENT.

**PINERY.**—Whenever the house for next season's fruiting is ready, the plants had better be transferred there at once; the more forward plants should be selected, and have their final shift before removal. When it is desirable to have fruit early, say in April or May, the fruiting pot should not be over large, as it will be necessary to get the plants into rest early. As a rule they should have their pots well filled with roots by the middle of September, and while growing allow them all the light you can command, and a proportionate quantity of air. The best Pines for very early forcing are the Black Antigua, common Queen, and the Providence; to assist them a few Jamaicas may be started in October, as they take a couple of months longer to ripen than the above. The plants for the summer crop may remain for a week or two, unless there are reasons for potting them immediately. They may have a larger shift than recommended for the above, and should be kept growing longer in the autumn.

#### FLOWER GARDEN AND SHRUBBERY.

The flower-garden will be now in its greatest beauty, and every means must be taken to keep turf, gravel, and edgings of all kinds in the neatest order, that no drawback to the complete keeping of the whole may occur; dead flowers should be picked off daily, and stray growths reduced within proper limits. Trailing and climbing plants should be frequently gone over, to keep them neatly trained and secure from rough winds; for the same purpose examine Hollyhocks, Dahlias, and other tall growing plants. Remove the dead flowers from Roses, and encourage the production of autumn blooms in the Perpetuals, by watering with liquid manure, and mulching the surface of the ground, where practicable. Continue the propagation of plants for next season, in which dispatch with the more delicate Pelargoniums should be urged, to get them established before winter.

#### HARDY FRUIT GARDEN.

As time permits, go over the espalier, as well as the dwarf Apples and Pears, to remove the summer shoots, leaving wood where vacancies occur; and to fill up the intended outline of such trees as are being trained into pyramidal and other shapes. It will likewise greatly benefit open standards of the above fruits if they could receive the same treatment. We hope in future, planting full standards (except for Grass orchards) will be a rare occurrence, as we feel confident low trees are not only the more manageable, but, as they can be pruned easily, will bear a larger quantity of fruit on a given space, with the advantage of the fruit being less liable to be blown down by high winds. Mat-up or otherwise protect Cherries, Currants, &c., intended to be kept for some time. Should dry weather occur, water the beds of Alpine Strawberries, to keep them in a growing condition for the production of autumn fruit.

#### KITCHEN GARDEN.

The present is a busy time in this department, and in many places rendered more so by want of room to plant out the required crops for winter and spring—indeed we rarely see a kitchen garden too large, or even large enough to carry out the cultivation of vegetables successfully. Where there is a scarcity of room just now to plant out a sufficient supply of Broccoli, Borecole, &c., our own practice is to plant them out at a foot apart each way, and as ground comes to hand by the removal of the summer crops, each alternate row is lifted and planted, and afterwards every other plant of the remaining rows; this leaves the crop at a proper distance, and keeps the plants from becoming weak and long-legged. Should dry weather set in, Cauliflower, Spinach, Lettuce, Celery, &c., should be regularly watered, as the above and similar vegetables can only be had in perfection in hot weather by the help of water. Endive may now be planted in larger quantities. Plant the crop intended to stand till Christmas on raised beds, or a sloping border, particularly if the soil is wet. Thin out Lettuce, and tie up to blanch those kinds requiring blanching. The earliest Parsley should now be cut over to grow bushy again before winter; a south borders should be either planted or sown with this useful vegetable, so as to be easily protected during hard weather in the winter. In the northern parts of the country, the true Flanders Spinach should be sown in a somewhat sheltered situa-

tion to stand the winter; it will be time enough yet in the south, where the common round-leaved may yet be sown. Sow Tripoli and the White Spanish Onion to stand the winter, thick in the seed beds for spring transplanting. The early planted crop now ripening should be taken up and laid on one side to dry, as may Shallots and Garlic when getting ripe, for if left in the ground too long they are apt to rot. Cut the various herbs, &c., used for distilling or drying when they reach the proper stage. The early crops of Potatoes may now be taken up if the haulm is ripe, or is decayed through disease. Dry the Potatoes well before storing them away, and let the medium ones, intended for seed, be exposed to the air sufficiently to "green them" before storing. A good breadth of stone or green barrel Turnip should be sown in an open situation for winter; we prefer the latter, as it keeps firm for a much longer time than the stone, and is harder.

#### STATE OF THE WEATHER NEAR LONDON.

For the week ending July 28, 1853, as observed at the Horticultural Gardens, Chiswick.

July.	Moon's Age.	BAROMETER.		TEMPERATURE.					Wind.	Rain.
		Max.	Min.	Of the Air.			Of the Earth			
				Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday..	16	29.765	29.610	70	48	59.0	61.5	58.5	S.	.01
Saturday	17	29.762	29.879	76	53	64.5	61.5	58.5	S.W.	.00
Sunday	18	29.829	29.719	72	47	59.5	62	59	S.W.	.00
Monday	19	29.783	29.776	73	52	62.5	61.5	58	S.W.	.04
Tuesday	20	29.781	29.798	68	56	62.0	61.5	59.2	S.W.	.00
Wednesday	21	29.847	29.834	73	57	65.0	61.5	58.5	S.W.	.13
Thursday	22	29.795	29.770	72	53	62.5	62	59	W.	.10
Average ..		29.846	29.771	72.0	52.3	62.1	61.6	55.1		1.13

July 28—Overcast; slight rain; overcast.  
 — 24—Clear and very fine throughout; partially overcast at night.  
 — 24—Overcast; cloudy; overcast.  
 — 25—Very fine; clear; rain at night.  
 — 26—Cloudy; partially overcast.  
 — 27—Overcast; cloudy and fine; densely overcast; thunder, lightning, and heavy rain at night.  
 — 28—Rain; cloudy; showery; overcast at night.  
 Mean temperature of the week 54.0 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending August 6, 1853.

July and August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.		Prevailing Winds.							
					N.	E.	S.	W.	N.E.	S.E.	S.W.	N.W.	N.	N.W.
Sunday 31	74.4	51.1	62.7	11	0.66 in.	3	1	3	3	2	7	8	1	2
Mon. 1	73.1	51.7	62.4	12	1.23	1	1	3	3	3	3	4	1	1
Tues. 2	75.2	53.4	64.3	13	0.65	1	1	3	3	3	3	4	1	1
Wed. 3	74.2	51.6	62.9	15	1.03	1	3	3	3	3	3	4	1	1
Thurs. 4	75.4	52.3	63.8	15	0.85	1	3	3	3	3	3	4	1	1
Friday 5	75.1	53.1	64.1	13	0.43	1	3	3	3	3	3	4	1	1
Satur. 6	72.4	52.3	62.3	11	0.78	1	3	3	3	3	3	4	1	1

The highest temperature during the above period occurred on the 1st, 1845—therm. 92 deg. and the lowest on the 3d, 1847—therm. 33 deg.

#### Notices to Correspondents.

**ARAUCARIAS: Eboracensis.** We believe the Chilean species to prefer a moist to a dry soil, but to dislike a wet or calcareous one. It will take time to obtain the information you want about temperature. The other question we cannot have received. There is no special work on the periods of ripening of fruits, which, of course, vary with districts; but in all pomological works of any account the season is given.

**BLASTED FRUIT TREES: J. S. F.** We regret our inability to explain, or even to theorise upon, this common phenomenon.

**CABBAGES: W. C.** They are affected by Anbury, a disease about which you will find some information at p. 442 of our current year's volume. The usual remedy is to put woodashes into the holes in which the Cabbages are planted.

**CLOCHES: Z.** Mr. Pilkington's address is—The Glass Works, St. Helen's, Lancashire.

**GRASSES: Worcester.** Use a mixture of *Dactylis glomerata*, *Bromus sylvaticus* and *giganteus*, *Festuca elatior*, *Aira crepitosa*, and *Arrhenatherum avenaceum*.

**HEATING: Limerick.** Hot-water pipes will answer your purpose best; but they are much more costly than flues. It would be wrong of us to recommend publicly one person rather than another; no doubt respectable tradesmen in Dublin would be easily found to do the work.

**INSECTS: Amiens.** Your Neuropterous insect is possibly the female of *Libellula depressa*, but we cannot determine it by your insufficient description.

**LETTUCES: Novice.** If you tie them up when they are wet they will be almost sure to rot. It should be done when they are in a dry state, and after they have begun to Cabbage. The leaves should be carefully gathered up, and a bast ligature passed round them, so as to hold them neatly together, but not too firmly.

**NAMES OF PLANTS: A. P.** *Sambucus racemosa*.—**B. B.** *Diplacus glutinosus*.—**J. S.** *Euphorbia Lathyrus*.—**C. F. 1.** *Juncus obtusiflorus*; **2.** *J. acutiflorus*; **3.** *J. bufonius*; **4.** *Carex pseudo-cyperus*.—**Mary.** Goats' Rue, or *Galega officinalis*.—Another inquiry or two, which relate to this subject, are unavoidably deferred till next week.

**NORTH BORDERS: H. R. M.** It is not possible to advise you well without seeing the border. We presume that you would have no difficulty in establishing upon it such plants as *Hypericum ciliatum*, *Berberis aquifolium*, *Vinca major*, and similar shade loving species.

**PRESERVING FRUIT: A. B. S.** Mr. Lovejoy's method will doubtless answer for both green and ripe fruit.

**RASPBERRIES: C.** Your seedling appears to be a good bearer, but the fruit is not near so large as that of the Fastoff.

**ROSES FROM CUTTINGS: J. H.** Propagation by cuttings may be performed with success all through the growing season. As soon as the forced plants have bloomed, the shoots taken off (when pruning for a second bloom) may be cut to a joint with two or three eyes, allowing the leaves to remain on all excepting the bottom eye intended to be inserted in the soil. About six of these cuttings placed round a 4-inch pot, in equal parts of loam, leaf-mould, and sand, will be sufficient. They should be placed firmly in the pots, and afterwards well watered through a fine rose; then plunged where they will have a moderate bottom-heat, and be shaded from the mid-day sun. In a few weeks, when rooted, they may be potted separately into 3-inch pots, and gradually hardened off. The same soil may be used as before, but broken up fine, or sifted, with the addition of a little sand. Cuttings will strike through the summer, and at any period when the young wood can be obtained well ripened. They may be taken as late as September, but must then remain in the cutting-pots during winter, and be potted off early in spring.

**STRAWBERRIES: C. J. R.** begs us to say that, since nobody has yet given him an account of the peculiar merits of Knave's Pine, he hopes that some one will at least inform him, whether or not there is any difference between that sort and the British Queen.

**Misc.: W. C.** Persons of respectability experience no difficulty, we believe, in obtaining admittance to see the gardens you mention.



**MR. SAMUELSON'S PATENT DIGGING MACHINE** (Silver Medal at the Gloucester Show), will be tried at the Yorkshire Society's Meeting at York, on the 2d August, and exhibited on the 3d and 4th. Price, 27*l.* 10*s.*, at Banbury.

For references apply to Mr. B. SAMUELSON, Engineer, Banbury (successor to the late James Gardner), Manufacturer of Gardner's Turnip Cutters, McCormick's Reapers, Lawn Mowers, Kase's Force Pumps, Churns, &c. Prize at Gloucester for the EIGHTH time to Mr. SAMUELSON's improved Gardner's Turnip Cutter.

**THE CONSERVATIVE LAND SOCIETY.**—The Ninth Public Drawing for priority of choice on the Society's estates in various counties, will take place at the offices, 33, Norfolk Street, Strand, on SATURDAY, the 13th of August, at 12 o'clock. All persons who take and pay on shares before the time of drawing will participate. Shares 50*l.* Monthly payments 8*s.* per share. Post-office orders for 12*s.* 6*d.* in the name of the Secretary, payable at 282, Strand, will secure the immediate entry of new country or town members in the Society's books. Office hours from 10 to 5, except on Mondays and Fridays, and then from 10 to 8 o'clock. The allotment of the Brockley Park estate, Forest Hill, West Kent, and of the estate half way between Ware and Hertford, is fixed for Thursday, the 18th, at the offices.

CHARLES LEWIS GRUNSEIN, Secretary.

**ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.**

PATRON—His Royal Highness PRINCE ALBERT.

PRESIDENT OF COUNCIL—Earl BATHURST.

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Surveying, Civil Engineering, and Mathematics—W. Sowerby, A.I.C.E.

Manager of Farm—R. Valentine.

Assistant to Chemical Professor—A. Williams, M.R.C.S.

The MIDSUMMER VACATION will terminate on the 11th of AUGUST.

Students are admitted either as Boarders or as Out-Students. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l.* per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though for younger students a longer time is recommended. There is a department for general as well as for agricultural education.

Prospectuses and information can be had on application to the Principal.

The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM, by the FARM MANAGER, may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester. Price 1*s.*

**COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.**

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College.

The terms and other particulars may be had on application to the Principal.

**DORSETSHIRE POULTRY IMPROVEMENT ASSOCIATION.**—The Second Annual Exhibition of this Association will be held in Dorchester on WEDNESDAY and THURSDAY the 19th and 20th of October next, when the Silver Cups given by the Lord Lieutenant (Earl Digby), the Earl of Ilchester, Mr. Sheridan, M.P., and Mr. Gerard Sturt, M.P., in addition to the Society's Premiums, will be offered for competition.

Prize lists, forms of entry, and the rules of the Association, may be had on forwarding six penny postage stamps to the honorary secretary. Entries to be made on the forms only on or before 1st of October next.

G. I. ANDREWS, Hon. Sec.

Dorchester, July 30.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, JULY 30, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Aug. 3	1—Agricultural Society of England.
THURSDAY, — 4	2—Yorkshire Agricultural Society, at York.
FRIDAY, — 5	3—Agricultural Imp. Society of Ireland.
THURSDAY, — 6	4—Agricultural Soc. of England.
FRIDAY, — 7	5—Agricultural Imp. Society of Ireland.

The introduction and general use of CONCENTRATED MANURES, both of natural and artificial origin, form one of the most remarkable features in the modern history of agriculture. Twenty years ago farm-yard dung, lime, and bones constituted the simple and nearly sole sources whence the farmer obtained his supply of fertilising substances. Now, however, science and perverted ingenuity—if such a conjunction can be tolerated in one sentence—have multiplied manures to such an extent that the chief difficulty the non-scientific farmer has to encounter is how and what to select, where the choice is so varied in its objects, and so complicated in its nature by puffing advertisements, every adjective of which is a superlative, and every sentence and statement an illustration of that style of language familiarly known as the hyperbole. Already are the stock-phrases of the turf introduced into our advertising vocabulary in the shape of unanswerable and all-argument-defying bets of hundreds of pounds sterling, as to the virtues of a certain manure; and by-and-bye we may probably see some bold innovator of the Moses & Son's style, retaining a doggerel rhymester to rehearse in verse the superiority of his super-excellent superphosphate, manufactured, however, not from bones or coprolites, but from the

Hampshire hills; and also of his genuine ammoniacal guano, deposited, not by the sea-birds of the Pacific, but by the quiet waters of the Eocene period, in the chalk basin which holds the London clay.

"Were farmers wise, adulteration is a game that manure-dealers would not often play at," contains an advice not less important to the agricultural community than that pithy maxim from which it is parodied is to the body politic. The question "what has chemistry done for agriculture?" is occasionally asked in a disparaging and doubtful tone by some disappointed and despairing practical man; but a much more pertinent query would be to inquire candidly "What practical benefits have farmers, as a class, endeavoured to obtain from chemistry?" So far as the former question is concerned, we need only to compare the condition of British agriculture as it was in 1823 with what it is in 1853, to be convinced of the fact that, had chemistry not been brought to bear upon it during the intervening period, we must still have been groping in the dark for the simplest principles upon which the manufacture and application of manure are based. If chemistry has done nothing for agriculture beyond merely suggesting the making of superphosphate of lime, this country has paid very dear for the now nearly time-worn discovery of a German chemist; and our great agricultural societies have been and are still lavishing funds that might be better employed, if it be true that the only laurel which British science has yet been able to wreath around the brow of agriculture is the gift of a foreigner. But to many of our readers who have had practical and substantial proofs of the power of chemistry to render good service to agriculture, any defence of this science must seem a work of supererogation; still, there are others who are either wilfully or ignorantly blind to the fact that it is to it that we owe not only the introduction of many new manures, and protection against fraudulent dealers, but also sounder views regarding the management and application of the contents of our tanks, boxes, and strawyards. While we would yield to the practical man any merit that may be attached to the first employment of guano in farm practice, yet his experiments and results, however successfully carried on and concluded, could never have suggested the use of any one of the many fertilising substances which chemical investigation has discovered. The chemist has pointed out and specified the elements of which guano is composed, and, in addition to this information, he has taught us that its fertilising principles are not *sui generis*, but are distributed in very great profusion over the length and breadth of the United Kingdom, and have long been, and still are, intentionally and unintentionally permitted to run to waste than waste under our very noses—not secretly or stealthily, but with a most offensive obtrusiveness to every organ of sense that can take cognisance of their presence. Every common or private sewer that discharges its contents into a running stream, every black pond which receives the drainings of a farmyard, and every uncovered dunghill, are as certainly, at this moment, dissipating the elements of fertility into the ocean and atmosphere, as the guano ships are bringing them to our shores. Our country is thus not unlike a patient labouring under chronic hemorrhage, whose life and strength can only be sustained by a large and constant supply of concentrated and stimulating nourishment. That this wasting and wasteful disease of the "body agricultural" is susceptible of an effectual and radical cure, is what no one will doubt who is at all conversant with those principles of economy which characterise our arts and manufactures.

If the waste materials of a factory or a foundry can be worked up anew into useful forms, so assuredly can those which are produced in the consumption of our crops by man and beast. Properly speaking, there is no such thing in nature as waste; for every process of growth and decay is but a series of loops in that endless web in and within which the mysterious functions of vegetable and animal life are completed and ever again renewed—each generation springing, phoenix-like, from the ashes of its predecessor. Even the waste which human ignorance occasions is ultimately repaired by the diligent and thrifty hand of Nature; for, although the materials of fertility are to all human appearance lost for ever in the depths of the ocean or dissipated in the heights of the atmosphere, yet they are safely stored up for future use sometime and somewhere. Nature thus strives hard to teach us wisdom; but we have been slow to learn—slow to perceive that her principles are imperatively uniform, and yet so flexible that, like the elephant's trunk, they are capable of being applied to the smallest as well as to the vastest objects. If a farmer is so careless of the materials of fertility which his own farm pro-

duces, or so ignorant of their value as to permit them to ooze away into rivers or be lost in the atmosphere, Nature will take care that they shall in some way contribute to the general good; but to him who thus despises them, they are lost to all intents and purposes. One pound weight of ammonia from the Chinch islands is not one whit more valuable than the same quantity volatilised from a fermenting dunghill in Britain; yet how general is it the practice now-a-days for shrewd, intelligent, saving farmers to pay cheerfully from 5*d.* to 6*d.* for the former, and at the same time to begrudge one farthing's worth of labour to secure the other. J. H.

An able letter, from the pen of a well-known Agricultural writer, lately appeared in the *Times* newspaper, the main object of which was to advocate the policy of free-trade in Guano, and to assert the national benefits already derived from that manure, with the great increase of such benefits which would attend its increased abundance and diminished cost. In order to illustrate the advantages insisted upon, they were compared to those derived from the use of liquid manure distributed over the land by pipes, and applied to the surface by the force of steam.

The same comparison occurs at once to almost every writer on the subject. Thus in the article "SEWAGE MANURE," to be published in the forthcoming number of "BLACKIE'S Cyclopaedia of Agriculture," Mr. MECHI writes:—"What is Sewage? In it the chemist recognises rounds of beef, streams of milk, cargoes of sugar and coffee and port wine, millions of 4 lb. loaves, and thousands of tons of cheese and butter. Therein are not only all the alimentary productions of our own country, but also our enormous alimentary imports—altered in form, it is true, but scarcely in utility or in value. It is truly a well-known but unworked mine of gold, equal in annual value to one-half the interest of the national debt. We might call it a stream of liquid guano. It exists in a form of peculiar availability, and almost self-portability; its fertilising powers are enormous. We may estimate its value by the sums expended to compensate for its loss. We pay for our guano two millions annually; for unprofitable oil-cake and corn, to feed our manure-making animals, many millions; and vast sums are annually abstracted from the agricultural pocket for phosphates and artificial manures."—So much for sewage on the large scale; and that these remarks are true of liquid manure upon the farm, hear what the correspondent of the *Times* has said:—

"At Myremill, in Ayrshire, Mr. Kennedy feeds under cover in the summer months 220 large oxen, 460 sheep, 20 horses, and 150 store pigs on 90 acres of Italian Rye-Grass. Last summer his house-fed sheep fattened better than in the field, and were kept on Italian Rye-grass for four months, at the rate of 56 head per acre! They likewise received a daily supply of steamed food. But, allowing for this, we find that on this farm each acre of Grass keeps about four times as much live stock as the average of the cultivated land of similar quality in England. Mr. Kennedy has attained this high state of fertility by the use of liquid manure distributed over the farm in pipes, and applied to the surface by the force of steam in a jet like a shower of rain. To use Mr. Mechi's graphic words, he can "increase his wet days" as he finds it necessary, and when other people's fields are parched with drought his are glistening with perennial verdure. Having an unending supply of water, he can either mix it in his manure tank with a more enriching substance, and so shower it over the land, or he can sow guano broadcast over the Grass, and then wash it in dissolved; or, if nothing but moisture is needed, he applies that only.

"No doubt such an apparatus requires a large stock both of capital and skill—the one to start it, and the other to conduct it. A most important experiment it is, however, and one likely to lead to great results ere long. It has been copied in various parts of England, and Mr. Mechi has stated in your columns the success which has attended the system as adopted by him. Frenchmen and Germans have visited Mr. Kennedy's farm to examine it, and expressed their admiration of the system, some of them going even so far as to say that it is almost the only thing in our farm management in England that they would care to copy."

There can be no doubt that this experiment at Tiptree, Myremill, and a few other places, is one of the most important that have ever been made in Agriculture. It is the nearest approach to that artificial climate which enables the gardener to do what he likes with the plants *he* grows; and if it shall prove that these showers of liquid manure can be provided economically, then may the cultivator under our fickle skies be held almost as directly responsible for the abundance and quality of his agricultural produce as, now, is the cultivator under glass for that of the hot-house. And, taking into consideration the great advantage of the dilute liquid form in which manure is presented to the land at Tiptree and Myremill, together with the facile manner in which manure disappears under the influence of the



jet, and finds its way along the pipe, it is difficult to doubt the ultimate cheapness of this plan. Certainly, to any one who watches the dung in the receptacles under the cattle and the pigs dissolving under the playing of the jet, and in an hour supplying the tank with the material for a day's pumping, by which a single boy covers many acres with manure, it appears certain that the plan has been discovered by which the cheapest artificial manuring may be most efficiently applied, and by which even the deficiencies of a fickle climate may be economically supplemented. It is, we believe, the duty of the owners and occupiers of land, and it certainly is their interest, to watch with particular care the experiments now proceeding at Myremill and at Tiptree. We hope that full details of the actual cost which has attended both will soon be laid before the public.

Meanwhile, and somewhat curiously, the past week has given evidence of the connection between the economical use of home manures and the cheapening of foreign supplies, in the interest which has been excited at once by the occurrence of Mr. Meech's annual gathering, and by the announcement of a new source of Guano.

The following letter, conveying intelligence of the very highest agricultural importance, appeared in last Tuesday's *Times* :—

"SIR,—I did not expect, when I last wrote to you, that my anticipations would be so early realised. An immense deposit of guano has been discovered in the Indian Ocean, between Mauritius and Calcutta. I have seen samples of it this morning in the chambers of Mr. J. BELL, 25, York Place, Edinburgh. It has been analysed by Prof. ANDERSON, of Glasgow, and is now also in the hands of Prof. WAY, of London, for analysis. Four kinds of it have been brought home, two of which are of superior quality, resembling the guano of Saldanha Bay; the other two are comparatively inferior.

"The discoverer relates that being becalmed off an island he sent his boats ashore for water. They returned without it, but told what they had found. The captain of the ship visited it, and, having made several voyages for guano to Ichaboe, he at once pronounced the substances with which the island was covered to be guano. Having traversed the island in various directions he found guano everywhere; in greatest depth, however, in the caverns and crevices of the rocks. He secured samples and brought them home.

"The samples having been taken from near the surface, the quality is supposed to be inferior to what may be found beneath, as it is injured by the action of the weather. The deposit is reported to be immense, the island being 20 miles long by seven broad, and thus 40 times the size of Ichaboe. There are no strong ocean currents near the island, and it is said that convenient loading stages can be erected with great facility in the creeks and bays along its coasts. Steps are now being taken to make the guano available to the British farmer. We may hope to have supplies of it ere long.

"This discovery shows what may be reasonably anticipated from a search in other quarters, and especially off the rainless coast of Peru, as mentioned in my last letter. This is the true way to break down the monopoly of Peru, and to secure for the agriculturist abundant and cheap supplies of guano, and thereby to the consumers of beef and mutton an increasing quantity at a more moderate price.

"I am, Sir, your obedient servant,  
"JAMES CAIRD."

#### ROYAL AGRICULTURAL COLLEGE. SESSIONAL EXAMINATION.—AGRICULTURE.

Answered by Mr. WILLIAMS.

[The numbers of the following paragraphs are those of the questions in page 474, to which they are answers.]

(1.) In No. 2 field there are on one side—1st, Potatoes; 2d, Parsnips; 3d, white and red Carrots; 4th, Mangold Wurzel. As a great many of the Parsnips failed, they are now planting Cabbage plants to fill up. No. 2 had a dressing of about 18 tons of farm-yard manure ploughed in, in the winter; the field was left till the spring, when it had the heavy iron harrows over it three times; it was then rolled, the part intended for Potatoes, Parsnips, and Mangold Wurzel was ridged—the Potatoes were then planted (25 bushels to the acre), which were covered in by the plough; the Parsnips were dropped by hand, the seed previously having been well mixed with 1 bushel of soot to each pound of seed, and 6 lbs. of seed to the acre—they were then rolled. The part for the Carrots was drilled on the flat with the Carrot seed and 1 bushel of soot to each pound of seed, which had a little guano added; 6 lbs. of seed to the acre. The part for Mangold Wurzel was ridged, the seed was steeped before sowing and drilled with the small drill; 6 lbs. to the acre. The Carrots are being now hoed for the second time; the Potatoes and Parsnips have been hoed, and they are now hoeing the Mangold Wurzel. Part of this field has Vetches on it, which they began to cut for the horses on 7th June. Part has Swedes; about 2 acres in the corner next 6 and 10 have early Turnips; and the part next No. 2, where the Beans were, is now being prepared for Swedes. The part which they are now preparing (with the exception of about 1½ acre) is being manured with about 20 loads per acre; it is then spread and ploughed in. It has been ploughed and harrowed and rolled; the Turnips

are to be drilled on the flat. Next come the Vetches; this piece was manured with about 17 tons of farm-yard manure in autumn; it was then ploughed, harrowed, and rolled; the Vetches were drilled 4 bushels to the acre. Next comes the part that Swedes are sown in; this was manured with farm-yard manure also (part was done when they were sowing the Swedes, part in the winter), about 17 tons per acre; it was ploughed, harrowed, rolled, and ridged, and 3 lbs. of seed drilled on the ridges per acre—now hoed and singled.—In No. 7 we have Peas; this is a field which had Barley in it last year; it was ploughed, harrowed, and rolled; the Peas were drilled on March 9 (4 bushels to the acre), and harrowed again; they have been hand-hoed twice, and the Charlock picked out of them. This field as soon as the sheep came off the Turnips was ploughed, harrowed twice, drilled with spring Wheat (2½ bushels to the acre), and harrowed again; when it grew up a little, it was sown with the following mixture—4 lbs. of white Clover, 10 lbs. of red ditto, and 1½ bushel of Rye-grass per acre: they horse-hoed it in; the Couch on this field was picked and burnt.—No. 38 field was ploughed, harrowed, and rolled twice. The following is a valuation of the acts of husbandry in this field :—

1 Acre.—1 Ploughing ...	£ s. d.
2 Harrowing ...	0 1 3
2 Rolling ...	0 1 6
1 Drilling ...	0 3 0
3 bush. of Seed, at 4s. ...	0 12 0
1 light Harrowing ...	0 0 6
Horse and hand-hoeing ...	0 1 6
4 lbs. White Clover ...	0 2 0
10 lbs. Red do. ...	0 5 0
¾ bush. of Rye-grass ...	0 2 6
Sowing ...	0 0 6
	£1 18 9

(2.) The following are the crops on the different fields of the farm :—

No. 1, Swedes; 2, Potatoes, Parsnips, Cabbages, White and Red Carrots, Mangolds; 3 & 5, Swedes, Vetches, Turnips, and fallow for Swedes; 4, Seeds; 6 & 10, Winter Wheat, and a little Spring do, where the Winter failed; and Oats; 7, Peas; 8, Barley and Seeds; 9, Barley, and part Seeds and Barley; 11, Barley and Seeds; 12, Barley and Seeds; 13, Fallow, for early Turnips; 14, Wheat, Pain's Rivets (bearded); 15, Buildings; 16 & 17, Flax; 18, Swedes; 19, Beans; 20, Pen Pasture; 21, College; 22, Sainfoin and Clover; 23, Botanical Garden; 24, Pen Pasture; 25, Pasture; 26, ditto; 27, Barley; 28, Sainfoin and Clover; 29, Oats and Seeds; 30 & 31, Spring Wheat and Seeds; 32, Pen Pasture; 33, Seeds (pastured); 34, Wheat (Lawson's Red Straw); 35, Seeds (part pastured and part mown); 36, Coats Barn and Paddock; 37, Fallow for Turnips, Oats and Sainfoin; 38, Barley and Seeds; 39, Seeds (mown); 40, Swedes and Fallow for Turnips.

(3.) The breeds of horses on the College farm are :—Stallion, Clydesdale; the two brown mares (Merchant's) and the two whites are also Clydesdale; two Cleveland mares, two Suffolks; the rest are the old English breeds, or crosses from the different breeds. The cattle are short-horns. There are one or two cows only half bred; the bulls are all short-horns. The sheep are the Cotswold breed. The pigs are nearly all Berkshire. There is one Fisher Hobbs sow, and one Yorkshire ditto; one Radnor or improved Yorkshire boar; two young boars, not quite pure (from a sow which was out of a Fisher Hobbs sow). All the rest of our own breeding pigs are Berkshire. As regards the different breeds of horses, I think the Clevelands are the best suited for this farm, as the soil is so light, and they being lighter-made animals can combine speed with their strength (which is quite sufficient for all ordinary purposes); they are about the same height as the Clydesdale, only lighter made and finer boned. The Suffolk are a shorter thick-made horse, combining strength with speed, but not so quick as the Clevelands. The Clydesdale are a heavy large horse, best suited for heavy clay lands or drawing drays, &c.; they are almost too heavy for this farm. "The cattle," short-horns, are now generally allowed to be the best breed any one can keep, as they possess a great aptitude to fatten, and in some cases are good milkers, though not such good milkers as the Ayrshire, Alderney, and Kerry; they come to maturity earlier than most other breeds, and fatten quickly. The Cotswold breed of sheep are called Long-wools, they come to perfection very soon; even at nine months old they can be brought to 25 or 30 lbs. per qr.; they do not bring so much as the Downs per lb., but then they greatly excel the Downs in quantity; this applies to their wool as well as flesh; a very good breed is a cross out of a Down ewe by a Cotswold tup. The Berkshire breed of pigs is considered to be the hardest and at the same time easiest fattened; they are black, with white on feet and faces; a very good breed is a cross between the Berkshire and Fisher Hobbs; the Yorkshires are white; a cross with them and the Berkshire is very good, but not so good as with the Fisher Hobbs.

(4.) *The Machines of the Farm.*—The engine—this threshes, grinds, cuts chaff and Turnips, and pumps; the cost of this might be 500*l*. The Suffolk drill is of great use on so large a farm as this; with manure boxes, and all complete, costs about 40*l*. The ploughs which we generally use are 2-wheeled iron ploughs; they cost about 4*l*. 10*s*. The harrows cost from about 2*l*. to 5*l*., according to size and weight. We have two of Hussey's reaping machines—they cost 18*l*. each; a Staffordshire harrow, this cost about 12*l*.; a Ducie's cultivator, it costs about 14*l*.; a heavy roll, 14*l*.; Crosskill's roll, 18*l*.; a light roll, about 11*l*. Our carts are of different sorts, Crosskill's, Scotch, &c.; they cost from 12*l*. to 15*l*. each, and a weigh-bridge costs about 20*l*. I have now mentioned the principal machines on the farm; there are others which are never used—Norwegian harrow, another heavy cultivator which would require about six horses to draw it, subsoil ploughs, draining tools, &c.

ARTIFICIAL MANURES for Turnips, applied at per acre :—

1st.—3 cwt. of Bone-dust, at 18*s*. 4*d*. per quarter; 1 cwt. of Guano, at 10*l*. per ton; 6 bush. of Soot, at 5*d*. per bush.  
2d.—Another mixture.—8 bush. of Bone-dust; 2 do. Guano; 2 cwt. of Night Soil, at 2*l*. 12*s*. per cwt; 2 cwt. of Super-phosphate.  
3d.—Another mixture for 2 acres.—15 cwt. of Coprolites; 5 cwt. Guano; 4 bush. Salt; 10 do. Soot.

To prepare coprolites you must first grind the coprolites to a fine powder; then sift them; then place them in a tub for the purpose; and to every 3 cwt. of coprolites add 1 cwt. of water; mix well, and then add 1 cwt. of sulphuric acid to each 3 cwt. of coprolites. Stir well while the effervescence takes place, so as to have every part dissolved, and brought under the action of the sulphuric acid. Leave the mixture to settle down an hour or two, and then take out of the tub and put in a heap. When wanted for use it must be broken out of the heap and pounded, so as to break all the lumps. To dissolve bones hot water is best; add one-third of the weight of bones of water; mix well together, or they do not all get soaked; leave them for about 10 minutes or a quarter of an hour to soak; then add one-third of the weight of sulphuric acid, and stir them well; leave them for a short time, an hour or two; stir if convenient, and then put into a heap as the coprolites were done. By using hot water instead of cold the bones will be brought under the action of the sulphuric acid better, and will dissolve more readily. In dissolving coprolites some people mix the acid with the water and then add the coprolites; but I do not think they mix so well as when a portion of coprolites is mixed with the water, and a portion kept back, to prevent them boiling over—or by throwing in some coprolite powder when the mixture is boiling up it prevents it boiling over.

(5.) The relative expense of using artificial and farm-yard manure :—The former costs 2*l*. to 2*l*. 5*s*. for a general dressing, and the latter, say 20 tons to the acre which is the general thing, at 5*s*. per ton, would cost 5*l*.; then again artificials are much easier taken about from the homestead to the fields, as 1 cwt. of artificials would do several acres, whereas it would take 40 of farm-yard manure. Again, on a hill-side, it is best to use artificials, as they are not so likely to get washed down as dung. If farm-yard manure can be made in some yard close to the field, it does not then cost so much; but then, when I said artificials were 2*l*. per acre, I did not reckon the labour of mixing them and dissolving the coprolites, &c., which would make a great difference in their price per acre. On a farm a long distance from a town or railway, the carriage of the artificials would have to be reckoned; or a farm on high ground, as the carting up would take so much longer than if you had your own manure made and carted it down; if you have a part of your farm some distance from your buildings, and near a yard, you can then cart your manure out of it to the field about or nearly as cheaply as you could bring out your artificials.

(6.) Beans are considered as a cleansing crop; they are sown to alter the rotation and take the place of a root crop; they do best on stiff clay soils when used for a cleansing crop. The crop before should be drilled and hoed, and they should be drilled, at any rate, not less than 18 inches between the rows; and horse and hand-hoed two or three times. There are the winter and spring Beans, the former are sown from end of September to end of October, sometimes to the end of November. The spring Beans are sown from end of January or beginning of February till middle of March, but this is too late; ours were sown on March 7th. The principal kinds are Mazagan, Horse, Russian or Winter Bean, Scottish Black and White Eye, &c. Three to four bushels is the quantity sown per acre, 3 to 5 inches deep. A good rotation on stiff soil is Wheat, Beans (dunged), Barley or Oats, Seeds, Wheat or Oats. Peas answer on light soils; they sometimes follow roots but generally corn crops before roots; they sow them the same time as spring Beans, February or beginning of March, 3 to 4 bushels per acre, same distance as Beans. Manure should never just go before Peas, as it forces them too much; if put on it should be in the autumn; it then has the soil pulverised. Barley comes after a root crop; generally you drill 2½ to 3½ bushels per acre, and sow broadcast 4; the principal kinds are—1st, Chevalier, this is of the best quality for malting; 2d, Long-eared Nottingham, has a larger yield than No. 1, not so good in quality; 3d, Old English, does best on poor soils. There are varieties of skinned Barleys. Barley generally precedes seeds. Oats, in Scotland and Ireland, take the place of a Wheat crop after seeds. You sow about the same quantity as Barley, rather more if anything; the principal kinds are the White Angus and Black Tartars—the Tartars have the ear all on one side, the Angus have it scattered over their stalk. Oats are the cheapest corn crop to grow. Drill 9 inches between the drills, 2 to 3 inches deep. These corn crops are liable to suffer from the attacks of wire worm; the best plan is to roll well with Crosskill's Roll. The Beans, if forced by manure, are liable to disease and blight—the best preventive is, sow early and cultivate well.

(7.) *The land for Flax* should be ploughed well, harrowed and rolled, and got as fine as possible by rolling and harrowing; it need not be a very stiff soil for Flax; it does well on a loam. You sow two bushels of seed per acre, and sow it broadcast; it should be sown on as clean land as can be possibly got, and kept clean from all weeds, and rolled to keep it fine; and fine Flax about here is only worth 8*l*. or 10*l*. per acre; 8*l*. is what we have had the last 2 years for it. In Ireland, where



there are more manufactories, and it is more sought after, it is worth up to 12l. or 15l. per acre. Last year we grew about 18 bushels of seed, and 2 tons of straw per acre.

#### HISTORY OF SCOTTISH AGRICULTURE.

Few countries have experienced more of the evils of feudal tenure than Scotland, and none have so completely been emancipated from its thralldom. Notwithstanding the natural disadvantages of a poor soil and an ungenial climate she is now placed by common consent in the very front rank of agricultural excellence. Her farmers have been held up for the last 50 years as models of intelligence, industry, and successful practice, while her landlords have been no less noted for their public spirit and private worth. Any attempt to trace the causes which have produced results so satisfactory in the agriculture of Scotland cannot be uninteresting to the agriculturist. What the landlords and tenant-farmers of Scotland have effected in agricultural improvement may not merely be successfully imitated by all, but even excelled by many districts more favourably situated as regards soil and climate.

The history of agricultural improvement in Scotland can scarcely be said to embrace much more than a period of 150 years, for if we go much further back than the reign of William and Mary, we fall upon those "troubled times" when civil war, party contention, and political and religious strife, occupied the minds of men more than the peaceful pursuits of agriculture and commerce. At that time the agriculture of North Britain was in as low a condition as could well be conceived, and far inferior to that of the southern part of the island, where drill husbandry and green crop cultivation had been introduced and advocated by various practical and theoretical writers, headed and led on by the ingenious Tull. The land in Scotland was then neither drained, manured, nor cultivated, except in the rudest and most imperfect manner, and no system of husbandry was known that could restore fertility to the soil, unless what necessity and nature compelled, viz., rest or pasturage. The only green crop, if under such circumstances it can be called so, was Peas or Beans, but as these were sown broadcast, upon exhausted and dirty land, they were quite as often productive of an aggravation of bad farming than otherwise.

When we read of the agricultural condition of the country at the commencement of the 18th century, we seem to be carried backwards to some very remote period of antiquity, when its inhabitants were little better than a horde of savages. Yet how different are the facts which history reveals. At that time Scotland was in a comparatively advanced state of morals and literature. The great bulk of the population could read, many could write, and all enjoyed the means of acquiring elementary instruction. As regards religious knowledge, the rural population were especially advanced. Many of these were the descendants of those who had stood up so stoutly for "Kirk and Covenant" in the dark days of the persecution, and the principles for which they had contended, and shed their best blood in defence of, had descended as cherished heir-looms to their children. The agricultural labourers were far more deeply versed in theological lore than their descendants of the present day. Intellectual research was directed almost exclusively to those questions which related to ethical and metaphysical science, and this was no doubt the result of those political and ecclesiastical revolutions by which the country had been so grievously convulsed during the three last reigns of the Stewarts. The revolution settlement of 1688 allayed, in a great measure, the fermenting elements of political discord, but the old attachment of the Scottish heart to the banished race, and the civil wars, and rumours of war, which prevailed during the first half of the 18th century, ever and anon fanned the flame of rebellion and distracted public attention from the pursuits of industry, so that it was not till after the bloody '45 that anything like a continuous effort was made in the direction either of agricultural or commercial improvement.

Farms in Scotland were generally of small arable dimensions at the beginning of the last century, and instead of each holding having its own set of offices, situated on the land to which it belonged, a number of these were often found huddled together in a sort of village or hamlet, and generally in the neighbourhood of a "peel" tower, castle, or what had been an abbey or monastery where they had originally been located, for mutual protection, in the times of border and highland forays. This patriarchal system, as a matter of course, necessitated an immense expenditure of time and labour in going to and returning from the outlying farms. After the parliamentary union of England and Scotland this system began to break up, as the causes which led to it had entirely ceased along the border counties, although nearer the highlands it was still necessary as a protection from the *raids* of the caterans. The transition from the hamlet-system to the erection of farm-houses and steadings in the land to which they belonged was a slow and tedious process, in consequence of the prejudices of the tenantry on the one hand, and the want of capital, on the part of the landlords, on the other. East Lothian, Mid-Lothian, and Berwickshire, set the example of providing separate accommodation for the families and live stock of different farms, but that these were of the very humblest and most imperfect construction may be learned from Lord Kames's "Gentleman Farmer," written during the penultimate quarter of the 18th century, in which he says, "Our farm-offices are set down straggling and confused, as if by accident, here a

barn and there a stable; cow-houses so awkwardly situated that they cannot be cleaned until the cattle be turned to the door." The farmers' dwelling-house consisted of a low one-storied range, having the offices straggling forward at either end, and forming a sort of irregular square, and having an excavated hole in the centre of the yard, into which every species of filth was thrown, and from which the drainings continually oozed out and collected in a black puddle at the very door-stone of the dwelling-house. The fittings-up and furniture of the house were of the meanest description. Clay floors both "but" and "ben," walls unlathed, often unplastered, damp and green with mould; chairs and stools—tables there were none—of the commonest materials, and the former so constructed as to suggest the idea of a perpetual penance to the occupant. The kitchen, or *but*-end of the house, was the sitting apartment for master and man, mistress and maiden, and behind the fire-place, which stood forward from the wall, generally sat a gang of beggars or wandering tinkers in the winter evenings. The family and servants sat at the same board, and partook of the same fare, which consisted of oatmeal porridge or sovens for breakfast, kail-brose for dinner, and Potatoes and milk for supper; but the Potatoes were only added to the bill of fare about the middle of the century. Although there be little in the physical aspects of this picture to admire, it is not devoid of social and religious points of excellence. Scotland's "brightest bard" has immortalised the moral position of the peasantry in the "Cottar's Saturday Night," and contemporary history assures us that amidst poverty and wretchedness caused by the neglect of cultivating the soil, the rural population of those days was nevertheless pervaded by a deep tone of religious feeling,—often harsh, stern, and morose, but always sincere. The unmarried farm servants were continually within the influence of the farmer's family circle, enjoyed all its social comforts, and engaged in its religious observances. Whatever may have been the improvements that have been effected in the physical condition of the farmer class of Scotland, it must be confessed that in all those districts where the "bothie" system prevails, no adequate substitute has been provided in lieu of that respectable status which the unmarried ploughman occupied under that older system which is now entirely exploded.

Passing from the dwelling-house to the farm-buildings, we find them composed of a barn, stable, and cattle byre. The barn stood on one side, and was frequently built of such materials as could be most conveniently obtained on or in the neighbourhood of the farm. On some farms situated on the Carse clay the whole suite of buildings, including the dwelling-house, was composed of clay, straw, and stones intermixed, and having the rafters down to the bottom of the walls, which were seldom more than 6 feet in height. On light-land farms the building materials were stones and fails (sods) intermixed, and having the roof formed of straw and sods. The stable was never furnished with traverses, and not unfrequently it had neither rack nor manger, and, as a necessary consequence, the horses ran loose and fought for their scanty provender, much of which was rendered useless by the conflict; the stronger and more vicious ones appropriated the "lion's share," while the younger and weaker ones had too frequently to go to work upon half rations. Their harness was a curious medley of untanned leather and tarry ropes, and was both made and mended by the ploughmen in their leisure hours.

Out of doors the prospect was not improved. The fields were small, irregularly shaped, and arranged on the run-rig system, being divided by broad *banks* or waste strips of land, covered in summer with a luxuriant growth of Couch Grass, Thistles, Docks, &c., which shed their seeds in all directions over the arable fields. The ridges, even in dryland, were laid up a yard higher in the crown than at the open furrows, and never were nor could be ploughed, except in a longitudinal direction. The ploughs were heavy and clumsy in the extreme, and were drawn by six or eight cattle and a couple of horses, yoked two and two in each, but seldom all drawing at one time, while the driver, with his goad or *slang*, had no sinecure in running from one to another, and backwards and forwards, alternately striking and soothing the motley throng. The seed when sown was covered by harrows with wooden teeth, which merely scratched the surface and left the furrowslice unbroken below. During summer a constant struggle went on between the corn and weeds, which quite as often terminated in favour of the latter as the former. Indeed, we are assured by writers of the last century that about 18 to 20 bushels of Oats per Scotch acre were about an average yield, and from 10 to 15 bushels of Barley or Peas. There were no fallows nor green crops for many years after 1700, to employ the ploughman in summer, and for many weeks at that time their only labour consisted in pulling Thistles to serve as food for their horses or cattle at night. Two back-loads of Thistles per day to each man was the regular task-work to be performed in a summer's day, and, of course, much of the time was spent in sleep and idleness. The threshing of the grain was solely accomplished by flails, and generally on a damp earthen floor, and winnowed between two doors placed opposite each other, and in the direction from which the prevailing winds blew. The grain was thus seldom properly cleaned, and generally contained a considerable proportion of dust and sand swept from the floor during the threshing and winnowing processes. It was taken to mill or market on horseback, each horse having a 6-bushel bag slung across its back; and even hay, straw, and dung

were conveyed in the same manner. It is no exaggerated statement to say that the number of horses, cattle, and men-servants kept on a farm for the sole purposes of ploughing, harrowing, threshing, taking grain to market, and transporting dung and lime, was five times greater than at present. For example, two horses and one man can carry 80 bushels of Barley, 96 of Oats, or 64 of Wheat to market upon two single carts, whereas formerly they could only take on an average about 12 bushels of each. Six cattle and two horses were required to draw a plough then, with a man and boy to attend, whereas one man and two horses are sufficient now for the purpose, and make far better work. No wonder that, under such circumstances, the whole agricultural population were in a state of great penury, when the produce of the land was well nigh consumed in the process of obtaining it.

(To be Continued.)

#### Home Correspondence.

*Machine Tools.*—Machine-tools are as yet unknown to farmers; indeed, such tools can only be economical where the savings obtained by their use more than cover the interest of the capital sunk for their acquisition, with a per-centage in addition to compensate for their wear and tear, and to afford a reasonable profit; so that, however cheaply operations might be performed by machine-tools compared with manual labour, it could not be desirable to provide such engines where they are likely to be employed but a few days or weeks in the year. This drawback might, however, be rendered nugatory by the simple expedient of putting machine-tools upon wheels, as I lately proposed for Australia. Landed proprietors might confer a valuable boon upon their tenants by providing machine-tools and hiring them out at a rate sufficient to compensate for first cost and wear. Farther, machinists and tradesmen of various denominations (carpenters and blacksmiths, for instance), might realise a good profit by occasionally letting out machine-tools, which at other times would be employed in their own workshops. When the inspector-general of naval works, in the year 1801, proposed and effected the introduction of a moveable steam-engine in Portsmouth dockyard, it was little thought that this invention would become of such general application as it has since done; so the idea of putting machine-tools upon wheels may be scouted at first, and afterwards become of extensive utility. The most useful machine-tools to begin with for working metal might be tilt-hammers, for such purposes as forging and riveting, especially for the repair of tools and implements, as also the straightening of nails; boring engines; apparatus for grinding and sharpening tools and implements, &c. Machine-tools for cutting and shaping wood would probably be of greater variety, and more extensively used; they would consist of saws, both reciprocating and rotatory, for cutting and cross-cutting of wood of various dimensions and for various uses—many of such saws being provided with moveable beds, whereby to enable the wood to be cut at pleasure to any given depth or angle; also machine-tools for tonguing and grooving, for boring, for morticing, for dove-tailing, for planing, &c. The remarkable patent of 23d April, 1793, "for various new and improved methods of working wood, metals, and other materials," is said to have been the origin of most of the machinery now in use for working wood, metal, and other substances; at all events, a reference to it would enable any moderately-skilled machinist to fabricate machine-tools, to facilitate the several mechanical works required at a farm, or indeed in any ordinary workshop. The machine-tools in question should, for general application, be so contrived as to be set in motion by the turning of an axis, that axis being capable of attachment to a steam-engine, as also for applying to it either the motive power of animals or that of man; in the latter case often by a treadle. It was in such ways that, in the years 1794 and 1795, machines were worked for effecting most of the above-mentioned operations, with a great saving of expense, over and above the far superior accuracy with which articles were cut and shaped by men altogether without skill. It would further be desirable that the wheels should be capable of either easy displacement or of fixture, in order that the engine when in use might rest on a steady base. B.

*Carts versus Waggon.*—When discussing the merits of carts as compared with waggons, it will be well to bear in mind that on this side the border there are many reasons why carts may appear to a disadvantage. In the first place carters are generally prejudiced against them, and if not, they are not very expert in managing them, either in loading or driving. They have a belief among them that they are hard upon the horse's back, and to obviate this, they always load them too much backward, so that when a horse has to go up hill, he does so to great disadvantage. But if they are told of this mistake, they say the shafts bear too heavy going down hill if they load otherwise. But then a good and convincing test for all who hold this opinion, is to have a load put forward, just so that it may bear lightly on the shafts going up hill, and then turn the horse with his head downwards, and ask the carter to lift the shafts so as to free them from the horse. And it will be strange if he do not succeed in doing so. Well, if he do this, surely he will not say that he can lift what will hurt or be too much for a horse to bear. Master as well as servant might try this test if they have any doubts about the matter; and it is well known that a horse will take more with him if allowed to carry part and draw the rest.



But what I think more against the use of carts becoming general is, that they are here so seldom to be found of anything like good construction. Some years ago, I had occasion to look out if I could find any one in the neighbourhood who could make a good cart; and, on inquiry, found that Mr. A. had a Scotch cart, and Mr. B. had one, so of course I went to see if they were the thing; but, though I have seen many Scotch carts, yet I should not have known them to be such if I had not been told so, and then I hardly believed it; and I was not surprised to hear that neither the master nor servant liked them; indeed, I should have been surprised if they had, for it was more than I could have done with all my prejudice in favour of carts over waggons. I have had the working of some by different makers, and of course various patterns, but I have only found one that comes up to what I think near perfection. Made by Mr. Stratton, of Bristol. The body is not made with solid plank sides, but with a light framework lined with half-inch board, and holds a cubic yard within the sides. The body is straight and the shafts are attached to it, and not to the axle. It weighs about 7½ cwt., and is strong, light, and durable. The only drawback is the wheels, which have cast-iron naves, and when they wear a little in the socket there is no possibility of putting in new ones that I am aware of, so the wheel may be lost though not half done. They ought to have wooden naves; or, if cast-iron, to be made so that a new socket can be put in when required. Crosskill makes wheels that stand well, but the axles are, for some reason that I cannot make out, made to carry the cart on their flat side, and the consequence is that with heavy loads they are apt to bend, throwing the wheels apart at bottom and narrower above. Why not alter this? If we can get a light, strong, and simple-made cart adapted to harvest as well as other work, we should soon turn waggons to the right about. I omitted to state that Stratton's cart has a frame to put on for carrying hay or straw, which is in four pieces, one for each side; it is light, so that a man could carry what belongs to two carts in his arms, and though light it is strong, and when on the cart measures from front to back 11 feet by 8 wide, equal to many waggons in surface to load upon. So I trust before any venture to compare the merits of carts against waggons they will first ascertain if they have a cart worth the name. Let them not suppose that everything so called is one. If they have them of the proper construction, there is no fear of the result in competition. *G. S., Dorset.* [The firm of Stratton and Son no longer exists. Their former foreman, Mr. Chard, carries on the business on the same spot.]

*The Soil and its Uses.*—The soil, when composed of suitable ingredients, serves three very important purposes in agriculture. First,—It acts mechanically in enabling plants to fix themselves to particular positions. Second,—By the disintegration of its insoluble compounds soluble mineral food is provided for plants; and, Third,—It acts as an absorbent of fertilising substances applied to it. The soil which in virtue of its natural composition and good management performs the whole of these functions, is in the best possible condition to yield remunerative crops to the farmer. A well-cultivated soil gives the roots of plants facilities for ramifying in all directions, so as not only to fix each plant firmly to the ground, but to afford it the opportunity of deriving nourishment at greater or less depths from the surface, according to the nature of its roots. The more complete the pulverisation of the soil, the less manure will it require, for nature has endowed atmospheric air with the power of so acting on inert vegetable and mineral matters with which it comes into contact, as to render them capable of taking part in the building up of living structures. The more finely that earth is pulverised, the greater too will be its power of absorption, and hence in two ways less manure will be required in the production of crops. Every farmer is aware of this fact, and accordingly when land to which manure is being applied is very coarse, it is thought necessary to give it an extra supply. Is it a theoretical as well as practical fact then, that good cultivation may to a very considerable extent be made to serve the purpose aimed at in the application of manures? Old Jethro Tull, with an intuitive perception of the great leading principles of cultivation far in advance of his time, thought so, and most of his views are now considered orthodox by scientific as well as practical men. He erred in imagining that plants lived upon soil, and in thinking that the greater the comminution of its parts, the more easily would the roots absorb the minute particles. Like other original investigators, he had to grope partially in the dark, and we ought rather to be astonished at the accuracy of most of his opinions than disposed to detract from his merit because of a single error in judgment. The general accuracy of his theory has been fully demonstrated by the practical experiments of the Rev. Mr. Smith, at Lois-Weedon, and henceforward the Tullian system of husbandry will have a direct bearing on the science and art of farming. To do away altogether with our present systems of manuring would no doubt be injudicious, not because crops could not be raised without manure, but for the simple reason that farm-yard dung and other manures afford the most direct and least expensive method of producing remunerative crops. The aim of the farmer should be to save manure by thorough cultivation; not to dispense with it altogether, even were he satisfied that constant stirring of the soil would of itself be the means of affording crops of average weight. To be in a proper position to cultivate land remuneratively, its

origin and ingredients ought to a certain extent to be known, for what, as every one knows, may be good management on one soil may be the very reverse on another. Apply lime, for example, to soils on the trap formation, and in most instances the price will be thrown away; or in like manner put organic manures into a soil already gorged with inert vegetable remains, and unless decomposition has begun the case will be little better. Science is so inseparably connected with agricultural practice, that the practical man, though ignorant of the fact himself, can scarcely perform a single operation without calling some scientific law into action. A knowledge of science is in this way of the greatest importance to the farmer, for it gives him a reason for everything he does or sees others doing, and prevents him from walking blindfolded into untenable practices. In the leasing of farms for instance, far too little attention has hitherto been given to the geological formation and chemical condition of the soil. Its appearance is generally merely looked at, and from its colour and apparent texture a judgment is formed which is to tell on the interests of a whole family for a period often extending to nearly 20 years. Surely when such important interests are at stake the assistance of a scientific person should be secured, and by careful investigation he will be in a position to state the true nature of the land, and the course of management likely to make it yield the best returns. In the valuation of land also by professional valuers estimates are too generally formed from mere appearances. The productiveness of a soil is judged of by its apparent composition and colour, and this affords the basis for a calculation of its value, subject to modifications arising from aspect and situation as to roads, markets, &c. Now this cannot be said to be a scientific system of valuing land, but till a general classification of soils has been adopted there is no other method of doing it. Experience by the eye is to a certain extent the valuer's guide, but by-and-bye it is to be hoped the classification of silicious, aluminous, calcareous, and humous soils, with the agricultural properties or defects of each clearly established, will afford a more satisfactory data for his guidance. No doubt the colour of soils will always to a greater or less extent have a bearing on their intrinsic worth, for by reason of it their power of absorbing and retaining heat is partially regulated. Sir H. Davy proved that stiff white clay soils were not easily heated, and when wet retained their heat for a very short period. He also found that chalks were difficult to heat but retained the heat better than white clay, and that black humous soil was the most readily heated of all. His experiments also went to show that brown soils containing much carbonaceous or ferruginous matter acquired a higher temperature than those of a light colour. Besides the colour then of soils chemical and geological qualities ought to afford the best data in estimating its value. From Professor Way's experiments on the power of soils to absorb alkaline compounds, it is also obvious that a system of classification would require to include the relative absorbing power of different kinds of land. All these matters, though apparently theoretical, bear of necessity on practical agriculture, and just in the degree in which they are understood and acted on by the farmer will he be walking systematically and safely in the selection and management of a farm. But, on the other hand, it should be remembered that mere knowledge of such matters will never make a theorist a farmer, for "practice with science" is just as necessary as science with practice. *J. Lockhart Morton.*

*London Drainage Bill.*—You are aware that a Bill under the above title was introduced into Parliament this session, by which it was proposed to accomplish the following objects:—"To afford means for effectually draining the metropolis; to preserve the Thames from the pollution at present passing into it; and to collect the produce of the sewers for agricultural purposes." These objects were to be secured by the construction of a tunnel sewer on each side of the Thames, passing under and intercepting the contents of the present sewers, conveying the same to a distance from the metropolis, and there, by deodorising and precipitating it, to form an inodorous and dry manure. This bill was referred to a select committee before whom, during an investigation of seven days, the following facts were proved by evidence:—

"That the proposed tunnel sewers were capable of carrying off 37,000,000 of cubic feet of sewage per diem, whilst the daily amount of sewage, according to the highest estimate is only 12,000,000 of cubic feet. That by these tunnel sewers, and by no other means, can the whole of the low-lying districts of the Metropolis be efficiently drained. That for the ordinary rain-fall ample provision is made, the flushing or scouring power of which will carry down into the tunnel sewers all the foul matter that may be in the general sewers, leaving them clean channels, through which any amount of storm-water will afterwards pass into the Thames. That the proposed terminal works were sufficient for the purpose, and that the process of manufacturing the manure was so inoffensive as to admit of the works terminating at the River Lea, 3½ miles short of the distance proposed by the plan. That the tunnels could be constructed without interfering with the traffic of the thoroughfares under which it was intended to pass; and that the proposed tunnel sewers, branch sewers, and works, could be efficiently constructed for the sum of 900,000*l.*, eminent contractors being fully prepared to undertake the contract."

The minutes of evidence, &c., before the committee were ordered to be printed, on the motion of the chairman, reference to which will confirm the foregoing statements. This important public work, originating with, and now proposed to be carried out by public enterprise, and in all probability without charge to the rate-payers, could not fail to confer such incalculable advantages upon the metropolis that it was deemed reasonable that the

parishes benefitted should share the risk in a small degree. A clause was therefore inserted in the bill providing that they were to contribute towards a dividend of 3 per cent. on the outlay (not exceeding 900,000*l.*) in so far as the sale of the manure failed to produce that rate of interest. This guarantee was to extend only over 25 years, and to be altogether extinguished whenever the profits amounted to 3 per cent. Under this clause the greatest amount which under any circumstances could be payable by the metropolis would be 27,000*l.* per annum for 25 years, equal to a present value of 450,000*l.*, or one-half of the cost of the works. The parishes—the parties really interested—did not appear against the bill in committee, which was opposed only by the representatives of the two Commissioners of Sewers; and on them therefore will rest the responsibility of any delay that may arise in carrying this work, or of devising some better plan for the drainage of the metropolis, and a more advantageous method of raising the capital. *W. C. Stephens, 29, Royal Exchange.*—P.S. By the minutes of evidence taken before the committee, you will see that the Commissioners do not contemplate taking any steps for relieving the Thames from its pollution; but, on the contrary, they contend that such pollution is not particularly injurious, and that they intend to confine their labours for many years to come to the formation of extended inland sewers, in connection with the present outfall sewers, which will greatly increase the pollution of the Thames, and still further endanger the health of the metropolis. *W. C. S.*

### THE TIPTREE GATHERING.

July 20, 1853.

Not having been able to be present at Mr. Mechi's annual gathering last Wednesday, we give the following account of it, abridged from the *Times* and the *Bury Post*.—"Mr. Mechi held his annual gathering of agriculturists on Wednesday, and it went off as pleasantly as ever. On no former occasion has the attendance been so numerous, the crops in better order, or the spirits and volubility of the host more high. The day was fine, and the first three hours of the day were spent in examining the state of the crops, and in testing the latest novelties in agricultural implements. Whatever may be the effect of a very unpropitious season elsewhere, at Tiptree it has done no harm; and while the agriculturists there seemed to be generally of opinion that the harvest would be short and late, not a grumble about the weather fell from their host's lips. He has this year very excellent Wheat, and in other respects the produce of his farm promises a good average; but the two points on which his management shows strongest and to the best advantage are his Clover and his Rye-grass. These bear unmistakable testimony to the value of the new system of liquid manure irrigation which Mr. Mechi has adopted, and in the details of which he has carried out many valuable improvements. The Clover is a second crop, and the Rye-grass a third, and both are exceedingly luxuriant. It may therefore be regarded as the chief feature of the present gathering at Tiptree that it furnishes, within easy reach of the metropolis, a remarkable confirmation of the large results which have been already obtained in Scotland from liquefying the manure of the farm, conveying it through iron pipes to every part of the land, and by gutta percha tubing attached to hydrants, distributing it liberally either upon the fallows or upon the growing crops. Such a system not only saves the heavy expense of cartage, but presents the plants with their natural food in the most convenient, direct, and effective form. It is a great step in advance; and, being no longer an experiment, but fairly adopted by the most enterprising farmers, is paying the way for the introduction of that larger and still more important change by which the sewage of the towns will be made to fertilise the country, and, instead of breeding fever and pestilence, will help to increase the supply of food for the people. The next important point of any novelty brought forward on Wednesday was the trial of Samuelson's digging machine. We had a better opportunity of examining this new implement at Tiptree than at Gloucester, and the result confirms the favourable opinion we then formed of it. The same influences which are pressing upon the attention of the farmer the importance of a good reaping machine, are also now urging him to consider how he can secure deep disintegration of the soil by more effectual means than the plough, and yet without having recourse to the spade. Mr. Samuelson's invention, in its present form, can only be regarded as an improved grubber, but it suggests the practicability of what is so ardently sought, and in that point of view possesses an interest much beyond its actual and proved merits. In the management of his stock, Mr. Mechi has made some advances upon the practice of former years. By a coating of limewash he has got rid of the swarm of flies that used to torment his cattle, and the same simple expedient tends to keep his feeding sheds cool and sweet. His tank regularly every morning draws off the accumulations of the manure during the previous day, which are washed into it and liquefied. He now keeps upon the produce of the 170 acres of which his farm consists 360 sheep and 40 bullocks. He has also about 160 pigs, which, however, are fattened off with purchased food. His stock is not so large as perhaps it might be; the open boards upon which the cattle stand are set rather too far apart for their comfort, and there are other criticisms to which this part of his management is subject; but it must not be forgotten that he is only in the second year of the new system of irrigation, that his



whole plans are altered by it, and that he aspires to be an experimenter as well as a practical farmer."

The following is a report of Mr. Mechi's speech at the afternoon entertainment. "The health of their kind-hearted entertainer" was proposed in highly complimentary terms by the Earl of Harrowby, and drunk in the most enthusiastic manner.

Mr. Mechi, in responding to this toast, observed,—His friend, the Vice-Chairman, had been kind enough to pay him a high meed of praise. Generally, however, such expressions, like that of his friend Mr. Gurney, were qualified with a spice of doubt. Either "Mr. Mechi had a good spirit," or "it was not every one who could afford to do it." (Laughter.) But that was not the question at issue; the question was this, Was it profitable to farm unimproved land? Was it profitable to have small fields with large hedge-row trees that almost met in the centre? Was it profitable to waste all their liquid manure for want of good buildings, which the landlord ought to put upon a farm, and charge interest for to the tenant? Was it right to make tea to send down their brooks and ditches, and keep the tea-leaves at home? (Laughter.) He could not afford to do that; and after all, they must recollect that the position in which he was placed was the result of strict observation and calculation of the rules of arithmetic. He could not afford to speculate upon unimproved land; he could not afford to farm with ordinary buildings and to keep animals cold and wet, so that all the food they took was required to convert the water that fell upon them into steam. Every practical man knew that flocks exposed to winter's rains did not progress; that they would consume whole fields of Turnips, but make no mutton. These were errors which must be remedied. He knew it was asked where was the money to come from? and his answer to that was, "Reduce your acreage, both landlords and tenants." Land was fetching at the present time from 30 to 33 years' purchase; and if a man had too much, whether landlord or tenant, let him cut in halves, and put the same amount of capital upon the half retained as was formerly spread over the whole. He was sure that was what they were coming to; but he was aware that great changes were not to be brought about by Act of Parliament; the most effectual agent was the force of public opinion expressed at meetings like this; for if Englishmen could only be brought to look at things in the proper light, and to calculate for themselves, they would soon renounce their errors and adopt a better system. One of the great criminalities in farming at the present day was that almost every farmer was in want of manure. It was a law of nature that there was no difference between a quarter loaf or a bullock, and the excrementitious matter which was sent down to pollute their rivers and brooks, instead of being returned to the land. What he wished them to consider was, that this excrementitious matter was food in another shape—unchanged in its elements, and merely changed in form. An old soldier, who had been in China, told him that while on sentry early in the morning he used to see the Chinese go with pails from house to house to collect what had once been food, and which they would carry three or four miles to their ground. In this matter he believed the Chinese were right in calling the English "barbarians," compared with themselves. If the sewage of our towns were applied by pipes and steam to the surrounding land, there would be no difficulty in supplying them with good milk, and thus prevent that deterioration of race which was caused by drinking "sky-blue." (Laughter.) They must go to China for a lesson on that point. He had been rather snubbed by some for not inviting all practical men on these occasions; but did Sir Robert Peel call in the old watchmen when he instituted the new police? (Laughter.) The fact was, they wanted a little new blood. He confessed himself a great agricultural sinner thus far; he had married commerce and manufactures to agriculture, but their progeny had been employment for unemployed labour; improvement in the social and moral condition of peculiar neighbourhoods; and increased intelligence among the rural population. Agricultural improvement was a large and extended question. The employment of steam, for instance, involved a thousand other matters; and he hoped he should no longer see prizes for men knocking about the barn-floor.—(Laughter.)—when they ought to be superintending a piece of machinery like the steam-engine, which would beat them in labour, but which required their intelligence to superintend it; and which might truly be called one of the farmer's best friends. He did not wish the good old-fashioned husbandry. Bad farming undoubtedly was. It was difficult to alter the received opinion of a great country, but the sooner it was done the better; and they must not only attack the prejudices of the tenant but of the landlord. In mercantile affairs the man who had the best machinery, so that he could produce the best article at the cheapest price, was sure to take the first place in the market; and it was the same in agriculture, although the result was not quite so obvious. For instance, his friend Mr. Hudson, of Castle Acre, could fatten a bullock on oilcake, sell him for less in Smithfield, and yet get more profit than the farmer who followed the old system of feeding. Great as had been the noise against his balance-sheet, the tables were now turned. Not an ounce of guano had been applied to his farm till about three years ago. He believed that if they swept the country round, they would find upon the majority of the farms the permanent charges increased 20 or 30 per cent., simply for the want of improvement; and he could confidently state that his own agricultural proceedings had now resulted profitably. He did not say he had not made some mistakes; but he did not stand alone in that respect. Every man who turned out of the beaten track would find a great many bushes and briars to cut down before he could make a straight path. But he would not have any one despair in agriculture; England was a great country; they could find capital for their railroads and other great undertakings, and why not apply the same enterprise to the land? The time was when the law forbade farmers to educate their sons, but that was now found to be the right way. Now education and science were brought to bear upon agriculture, and with such aids, although the population might double itself in the next 50 years, he believed they should be as well able to feed them as at present. Farmers generally were afraid to turn up their soil, because their solid manures had no effect beyond the first 9 or 10 inches; but with liquid manure, percolating and enriching to some 4 or 5 feet depth, they had a perfect mine of fertility; and when the same system should have spread over the country, he believed the increase of production would be beyond their conception. He thanked them for listening to these observations, and as long as it pleased God to spare him he should continue to move them with the same object that had always influenced him—viz., the improvement of agriculture. (Much applause.)

POULTRY.

THE GREAT METROPOLITAN SHOW, July 26 and 27.—Poultry shows are now become matters of daily occurrence; but, as in everything else, there are degrees of comparison, and from whatever cause it may arise excellence varies in its different degrees. It is the object of all, and the London summer show may boast at its outset that it has accomplished it, and although it may be said that those who now project these exhibitions have precedent to guide them, still among the most successful there is something left to desire—the exception may be in this instance. Under the able superintendence of Mr. Catling the arrangements were nearly perfect. Nine hundred and thirteen pens of poultry competed for

the various prizes. Exquisite specimens were plentiful, but one feature will not fail to strike every observer, which is, that in all exhibitions, the principal prizes go to the same competitors, thereby establishing the fact that under all circumstances excellence will meet its reward, and receive that which is its due. With these introductory remarks we will proceed to describe the principal merits of the exhibition, and refer our readers to the prize list for the detail. It is almost needless to say that Captain Hornby carried off the two first prizes in Spanish, and the second in the first class. Mr. Ramsden, of Ivy Lodge, Twickenham, entered the lists for the first time, and deservedly took the principal prize in Class III. Messrs. Owen, Fox, and Buckley, divided the others. In the rising class of Dorkings, Captain Hornby again took five prizes, including two first. Mrs. Towneley Parker and the Rev. J. Boys took the others, and among the commended we were glad to see Sir A. Macdonald and Mr. T. Nice. White Dorkings contributed two laurels to the successful career of Mr. Fairlie, of Cheveley; Mr. Antell, of Portsea; Mr. Jennens, of Moseley; Mrs. Mills, of Bisterne; and Mrs. Wilcox, of Nailsea Court, took the other prizes. Class IX. opened the competition for Cochins Chinas; a cock and two hens, adult birds. We cannot speak favourably of this class, while we would make due allowance for the time of year and consequent lack of condition in the birds. The prizes were divided between Mr. Potts, Lord Berwick, and Mr. Punchard. In the next class the competition was very great, the number of pens being 136. However unpropitious the season may be for adult birds, it is the time for chickens, and the beautiful pens rivaling each other, while they may excite the admiration of spectators, caused feelings akin to despair in the minds of the judges. One pen for beauty of form and honesty of plumage was pre-eminent. We allude to that belonging to Mr. Terry, of Aylesbury, which, victorious at Gloucester, came to the metropolis to earn fresh distinction. The second prize went to a pen of beautiful chickens belonging to Mr. Sparham, of Enfield, and the third to Mr. Gilbert. The commendations were numerous and well-deserved. In the remaining classes the honours were awarded—first prizes to Messrs. Punchard, Mapplebeck, and John Harrison, jun., of Snelston; second to Messrs. Fairlie, Punchard (two), and Holmes, of Birmingham. Mr. Fairlie, Lady Caroline Legge, and Mr. Sparham, took well deserved commendations. White cochins are improving, and the chickens were especially beautiful. Mr. Peters, of Moseley, and Mrs. Herbert, took first prizes; Messrs. Holmes of Birmingham, Peters, Meston, Crawther, and Adkins, divided the remaining awards. For almost the first time, good black cochins were exhibited, and we were pleased to see the first prize carried off by the Rev. G. Calvert, of Beeby; the second was awarded to Mr. Braine, of Abbotsey, Newton Abbott, and the judges regretted they had not a third to give to an excellent pen belonging to Mr. Cattell, of Birmingham. Although not good, the Malay class was more numerous and better than it has been of late. There were good game fowls, but not in great numbers. The golden-spangled Hambro' fowls were very good, and the silver good, thereby excelling their pencilled brethren, which were by no means meritorious. The chickens in the pencilled classes were, however, good, especially some silver belonging to Miss Walker, of Northampton. There were many excellent bantams. Class 43, for other varieties, is now becoming an interesting part of an exhibition. The various novelties there introduced lay the foundation for future distinct breeds. Mr. Vivian, of Singleton, is here especially and deservedly distinguished; the numbers of different Polands introduced bring that breed more particularly under notice. Messrs. Rawson, Adkins, Fairlie, Vivian, and Potts divided the prizes, and they were well deserved by birds of unusual merit and beauty. Although they no longer belong to the "other distinct varieties," yet as most of them originally appeared there, we have deferred notice of them till now. We do not pretend to say whether it is an improvement, but it would appear that the beardless birds have retired from the field, and left it in possession of their competitors who rejoice in that appendage. An emu fowl, in class 43, may claim originality, and will meet admirers. The silk fowls were good, as were the dumplings and frizzled fowls. There was little competition in turkeys; the season of the year is adverse to the exhibition of them. Ducks and geese were excellent and numerous, but the latter were not so heavy as usual. The white again defeated their Toulouse brethren. The dealers' prize was awarded to Mr. Castang, of Leadenhall Market; and the champion cup to Mr. Adkins, of Birmingham. The arrangements were in every way admirable. The judges were E. Hewitt, Esq., of Birmingham; W. Symonds, Esq., of Redwell, Weymouth; and Mr. Baily, of Mount Street, London. The following is their award of prizes:—

Class I. SPANISH (cock and two hens): 1st, Captain W. W. Hornby, R.N.; 2nd, Edward Owen; 3d, T. H. Fox, 44, Skinner Street, Snow-hill. Commended: Edward Owen, High Street, Shrewell.

Class II. SPANISH (cock and three pullets): 1st, Captain W. W. Hornby, R.N.; 2d, Edward Owen; 3d, ditto.

Class III. SPANISH (cock and one pullet): 1st, J. G. Ramsden, Ivy Lodge, Twickenham; 2d, James Buckley, Llanelly, Carmarthenshire.

Class IV. DORKING (cock and two hens): 1st, Captain W. W. Hornby; 2d, ditto; 3d, Mrs. T. T. Parker, Ashburn Hall, Chertsey, Leamington. Commended: John Fairlie, Cheveley Park, Newmarket; Sir Archibald Macdonald, Bart., Woolmer Lodge, Hants; John Porteus Esq., Pearce, Lower Sleuton, Whimple, near Exeter; Thomas Lyne, Malmesbury.

Class V. DORKING (cock and three pullets): 1st, Rev. J. Boys, Biddenden; 2d, Captain W. W. Hornby; 3d, ditto. Commended: Robert Boys, Eastbourne, Sussex; Rev. James Boys, Biddenden Kent; William Copley, Eccleston, Prescott.

Class VI. DORKING (cock and one pullet): 1st, Captain W. W. Hornby; 2d, Mrs. T. T. Parker. Commended: Thomas Nice, Great Bradley Hall; Rev. J. Boys.

Class VII. DORKING (cock and two hens): 1st, Joseph Jennens, Moseley, Birmingham; 2d, Mrs. Mills, Bisterne, Ringwood, Hants; 3d, John Fairlie.

Class VIII. DORKING (cock and three pullets): 1st, Nathaniel Antell, Portsea, Hants; 2d, Ann Wilcox, Nailsea Court, Bristol; 3d, John Fairlie.

Class IX. COCHIN CHINA (cock and two hens): 1st, T. H. Potts, Kingswood Lodge, Croydon; 2d, Lord Berwick, Cronkhill, Shrewsbury; 3d, Charles Punchard, Hunt's Hall, Haverhill. Commended: T. H. Fox. [This class not meritorious.]

Class X. COCHIN CHINA (cock and three pullets): 1st, Edward Terry, Aylesbury; 2d, H. M. Sparham, Brigadier Hill, Enfield; 3d, Henry Gilbert, 47, Upper Phillimore Place, Kensington. Commended: C. Rawson, The Hurst, Walton-on-Thames; John Eason, Thurlow Lodge, Lower Norwood; James Bessell, Spark Brook, Birmingham; W. G. K. Breavington, Sutton, near Hounslow; T. H. Potts, Kingswood Lodge, Croydon.

Class XI. COCHIN CHINA (cock and two hens): 1st, C. Punchard; 2d, John Fairlie; 3d, witheld.

Class XII. COCHIN CHINA (cock and three pullets): 1st, W. B. Mapplebeck, Bull Ring, Birmingham; 2d, Charles Punchard; 3d, witheld.

Class XIII. COCHIN CHINA (cock and one pullet): 1st, John Harrison, jun., Snelston Hall, Ashbourne; 2d, Charles Punchard; Commended: John Fairlie; Lady Caroline Legge, The Orchard, Blackheath; H. M. Sparham, Brigadier Hill, Enfield.

Class XIV. COCHIN CHINA (cock and two hens): 1st, G. C. Peters, near Moseley, Birmingham; 2d, Benjamin Holmes, 112, Hew Street, Birmingham; 3d, witheld.

Class XV. COCHIN CHINA (cock and three pullets): 1st, Mrs. Edmund Herbert, Powick, Worcestershire; 2d, G. C. Peters, Moseley, Birmingham; 3d, E. H. L. Meston, Great Yarmouth.

Class XVI. COCHIN CHINA (cock and two hens): 1st, Henry Parker, Church Lane, Hansworth; 2d, Jacob Crawther, Isleworth; 3d, G. C. Adkins, Edgasham, Birmingham.

Class XVII. COCHIN CHINA (cock and one pullet): 1st, Rev. George Calvert, Beeby, near Leicester; 2d, C. J. Braine, Abbotsey, Newton Abbott. Commended: James Cattell, Worcester Street, Birmingham; John Fairlie.

Class XVIII. MALAY (cock and two hens): 1st, Manstone and Goodman, High Street, Tottenham; 2d, Cyrus Clarke, Street, near Glastonbury; 3d, Charles Ballance, 5, Mount Terrace, Taunton.

Class XIX. MALAY (cock and three pullets): 1st, James Leighton, 183, High Street, Cheltenham; 2d, W. W. Hayne, Sutton, Surrey; 3d, witheld.

Class XX. GAME FOWLS (cock and two hens): 1st, Edward Farmer, Great Sparkbrook, Birmingham; 2d, J. R. Rodbard, Aldwick Court, Wington; 3d, R. W. Wilson, Stamford-le-Hope, Romford, Essex.

Class XXI. GAME FOWLS (cock and three pullets): 1st, John Buckley, Desford, Leicester.

Class XXII. GAME FOWLS (cock and two hens): 1st, G. C. Adkins; 2d, F. Powell, Hillingdon, near Uxbridge; 3d, Captain W. W. Hornby, R.N. Commended: J. R. Aldwick Court, Wington; R. W. Wilson, Stamford-le-Hope, Romford.

Class XXIII. GAME FOWLS (cock and three pullets): 1st, John Buckley; 2d, R. W. Wilson, Stamford-le-Hope, Romford, Essex; 3d, witheld.

Class XXIV. GAME FOWLS (cock and two hens): [No entry].

Class XXV. GAME FOWLS (cock and three pullets): 1st, R. W. Wilson.

Class XXVI. GAME FOWLS (cock and two hens): 1st, F. H. Powell, Hillingdon, Uxbridge; 2d, E. C. Adkins; 3d, ditto.

Class XXVII. GAME FOWLS (cock and three pullets): 1st, G. C. Adkins; 2d, G. W. Wilson.

Class XXVIII. GOLDEN-PENCILLED HAMBURG (cock and two hens): 1st, C. Edwards, Brislington, Bristol; 2d, W. Page, Sutton-walton, near Dartford; 3d, C. J. Mold, Wingfield Park, Belper. Commended: Mrs. Helen K. Seymour, Handford, Blandford.

Class XXIX. GOLDEN-PENCILLED HAMBURG (cock and three pullets): 1st, J. B. Chune, Coalbrookdale, Shropshire; 2d, W. B. Mapplebeck; 3d, Rev. T. L. Fellowes, Beighton, Rectory, Acle, Norfolk.

Class XXX. SILVER-PENCILLED HAMBURG (cock and two hens): 1st, Mrs. Mills, Bisterne; 2d, G. C. Adkins; 3d, Hon. Mrs. Astley, Swanton House, Thetford.

Class XXXI. SILVER-PENCILLED HAMBURG (cock and three pullets): 1st, Miss Rachel Walker, Clipstone Rectory, Northampton; 2d, G. C. Adkins; 3d, Mrs. Helen Ker Seymour, Handford, Blandford. Commended: F. Buckland, Wraisbury, Staines.

Class XXXII. GOLDEN SPANGLED HAMBURG (cock and two hens): 1st, G. C. Adkins; 2d, Joseph Jorden, Waterfall Cottage, Birmingham; 3d, G. C. Adkins. [This class meritorious.]

Class XXXIII. GOLDEN SPANGLED HAMBURG (cock and three pullets): 1st, witheld; 2d, T. P. Edwards, Lyndhurst; 3d, witheld.

Class XXXIV. SILVER SPANGLED HAMBURG (cock and two hens): 1st, Joseph Jennens, Moseley, Birmingham; 2d, Thomas McCann, Graham House, Malvern; 3d, G. C. Adkins.

Class XXXV. SILVER SPANGLED HAMBURG (cock and three pullets): 1st, R. S. Thomson, 1, Adelaide Terrace, Windsor; 2d, G. C. Adkins; 3d, John Fairlie. [This class meritorious.]

Class XXXVI. POLAND FOWL (cock and two hens): 1st, G. C. Adkins; 2d, A. Balls, Nazing, Essex; 3d, Mrs. G. C. Peters, Moseley, Birmingham.

Class XXXVII. POLAND FOWL (cock and three pullets): 1st, G. C. Adkins; 2d, C. Rawson, Walton-on-Thames; 3d, witheld.

Class XXXVIII. POLAND FOWL (cock and two hens): 1st, W. G. Vivian, Singleton; 2d, ditto, ditto; 3d, G. Rawson. Commended: G. C. Adkins; K. H. Bush, Ashton Lodge, Bath.

Class XXXIX. POLAND FOWL (cock and three pullets): 3d, W. B. Mapplebeck.

Class XL. POLAND FOWL (cock and two hens): 1st, C. Rawson; 2d, G. C. Adkins; 3d, Thomas H. Potts, Kingswood Lodge, Croydon. Commended: P. Jones, jun., High Street, Fulham.

Class XLI. POLAND FOWL (cock and three pullets): 1st, T. H. Potts; 2d, C. Edwards, Brislington, Bristol; 3d, T. H. Potts. [We regret that we have not room for the bantam list.]

Class XLV. GESE (gander and two geese): 1st, Anstyn Williams, 8 Broad Street, Reading; 2d, W. G. K. Breavington, Vicarage Farm, Sutton, Hounslow. Commended: Miss Rachel Walker, Clipstone Rectory; Mrs. T. T. Parker, Astley Hall, Chorley.

Class XLVI. DUCKS (drake and two ducks): 1st, W. G. K. Breavington, Sutton, Hounslow; B. Heywood, Brooksbank, Tickhill; John Fairlie, ditto, ditto; 2d, Mrs. Ann Wilcox, Nailsea Court; Captain W. W. Hornby; John Fairlie; W. Horton, Birmingham.

Class XLVII. TURKEYS (cock and two hens): 1st, John Fairlie, Cheveley Park, Newmarket; 2d, John Rodbard, Aldwick Court, Wington.

Class XLVIII. GRISLE FOWL: 1st, W. G. Vivian, Singleton; 2d, John Rodbard, Wington, Bristol.

The Silver Champion Cup, value 15*l*, was awarded to Mr. G. C. Adkins, Edgasham, near Birmingham.

The Dealers' Prize, of 5*l* 5*s*, was awarded to Mr. P. Castang of Leadenhall Market.

Boys, Biddenden; 2d, Captain W. W. Hornby; 3d, ditto. Commended: Robert Boys, Eastbourne, Sussex; Rev. James Boys, Biddenden Kent; William Copley, Eccleston, Prescott.

Class VI. DORKING (cock and one pullet): 1st, Captain W. W. Hornby; 2d, Mrs. T. T. Parker. Commended: Thomas Nice, Great Bradley Hall; Rev. J. Boys.

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Class XXIII. GAME FOWLS (cock and three pullets): 1st, John Buckley; 2d, R. W. Wilson, Stamford-le-Hope, Romford, Essex; 3d, witheld.

Class XXIV. GAME FOWLS (cock and two hens): [No entry].

Class XXV. GAME FOWLS (cock and three pullets): 1st, R. W. Wilson.

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Class XL. POLAND FOWL (cock and two hens): 1st, C. Rawson; 2d, G. C. Adkins; 3d, Thomas H. Potts, Kingswood Lodge, Croydon. Commended: P. Jones, jun., High Street, Fulham.

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## Miscellaneous.

**Improvements in treating Sewage Waters and Matters.**  
—Patent dated January 5, 1853.—William Bardwell, of 4, Great Queen Street, Westminster, Middlesex.—This invention consists in constructing a building, having at its basement or ground-floor a filter-bed within a close chamber, into which the sewage waters and matters, flow from the sewers. From the floor or filter-bed within this chamber are suspended trays or shelves, covered with sawdust, or other matters, moistened with dilute sulphuric acid. The floor or filter-bed is supported by beams or bearers of iron coated with zinc; and in order to obtain the pressure of the atmosphere upon the matter on the filter-bed, the underpart of the filter is so arranged that the air may be withdrawn by means of air-pumps, or otherwise. The floor on the top of the filter-bed is to be of some strong perforated substance, as iron or zinc, that it may bear the matters shovelled upon it. Below this is arranged strata or filtering media, through which the water passes, leaving the solid matter behind it. This is to be thrown, or otherwise raised on to a floor above, and there mixed with other matters suitable for making manures; and it will be convenient to have a third floor above, for keeping a supply of such matters, as are to be mixed with the sewage waters before they are led away through channels appropriated to the purpose. *Mechanics' Magazine*, July 16, 1853.

## Calendar of Operations.

JULY.

**CHESHIRE, July 12.**—Since the last communication from this part of the country there has been a great change in the prospects of the dairy farmers. A fortnight ago there was every appearance of an abundant supply of good hay in the meadows, and many farmers were just beginning to mow, when all their hopes were disappointed by a violent thunder-storm, which commenced about 6 o'clock in the morning of the 9th inst., and continued without intermission nearly five hours. In a short time the brooks began to fill very rapidly, and by the afternoon the water could be seen rising above the hay Grass, where it had not been cut, and driving before it what had been mown; the water kept rising during the night, and the following morning (Sunday) the whole of the meadow land had the appearance of an immense lake. It is 19 years since there was such a flood in harvest time, and then a great deal of the hay had been secured. The farmers are now turning their attention to the pasture land, with a view of securing a few loads of hay from the overgrown parts which have been rejected by the cattle, and also to planting every spare bit of land with Cabbage, Mangold Wurzel, and Swedish Turnip, or of sowing the unutilised Turnip for a late crop, the Green Melon, the new seed of which is now ready, a considerable quantity having been secured before the storm. It is to be feared that the Wheat, which was in full bloom at the time of the storm, has suffered from having the blossom removed prematurely, but the stiffness of the straw has hitherto prevented it being beaten down, as from the severity of the storm might have been expected. English labourers appear scarce, and wages generally have risen about 3s. per week since last summer. Irish labourers are more plentiful than usual, but their wages too are considerably higher. *Nicholas Cox, Stapleford Hall.*

**SOUTH OF DEVON, July 14.**—Since the last report, much of the Clover hay has been secured, although the weather, generally speaking, has been very unfavourable, and likely to impair the quality of the hay. Labourers are scarce, and consequently well employed. Turnip sowing is progressing, and the complaints of the fly are not so numerous as at first, the seed vegetating fast, and making rapid growth. Our report of the Potato crop is not so encouraging, the disease having appeared in many spots, and there is very little doubt but that this showery, and, at the same time, sultry weather, will only accelerate its progress. Wheat, Barley, and Oats are now coming into ear, and look well, as far as the plants are concerned; the former, however, are very thin in the ground, and must be a deficient crop.

**OXFORDSHIRE, July 21.**—Since our last we have had a succession of heavy thunder showers, and all the valleys are completely inundated, so that the hay-making has progressed very slowly and unsatisfactorily; in fact, the whole valley of the Thames, we may safely say, is under water, and a lighter crop we have not known for many years past. The consequence must be that winter fodder will be very short and inferior, and it will therefore behove us all to pay every attention to the growing crops of roots, of which we are pleased to say we have an excellent prospect, both of Swedes, Turnips, and Mangold Wurzel. We are busily occupied in the day intervals in hose and hand hoeing. We are scarcely able to give an opinion of the prospect of the Wheat crop yet—the Barley and Beans more particularly; the winter ones appear more promising than they have been for some years. Our winter Oats will be fit to cut in about a week, and the Flax will also be ready for pulling if we have a few days' sun. The grazing oxen and sheep are doing well, and will soon be fit for market. *Eynsham, near Oxford.*

**RHIMS OF GALLOWAY, July 25.**—Since the date of our last report we have had a succession of wet weather, which has tended to improve crops of all kinds; but within the last few days the weather has been very wet and boisterous, which has done a good deal of injury to many of the crops, especially Potatoes and Beans; Wheat has also suffered in exposed situations, and, where heavy, it has been a good deal lodged; dry sunny weather would be very desirable to mature this and all other kinds of grain crops. Turnips are still backward, and grow very slowly, as they do not agree with too much moisture. Pastures are abundant, and stock thriving well. It has been bad hay weather, and the crop a very light one. The annual district cattle show takes place this week, and it is expected to be the best one we have had; great care has been taken in the selecting and feeding of stock for the show; lean cattle continue in great demand, and at high prices.

**SOUTH HANTS.**—Since my last report the weather has been very wet, and the strong south-westerly gales have as usual caused much blight. Beans are blighted and will not be worth harvesting; Potatoes going off in all places, and the stench from the decayed haulm most offensive; Wheat in patches is blighted also. The rain has lodged the finer and heavier crops of Wheat and Barley, but the lighter crops have escaped. Peas, also, and Tares are likewise struck; Mangold Wurzel hangs back from the coldness of the atmosphere and the heavy rains; Turnips are most promising; much of the meadow hay remains in the fields, and is considerably damaged. New Wheats have risen from 13s. to 14s. per five quarters, and the gallon loaf is 16d. Harvest will be two to three weeks later than usual. *G. R. S.*

## Notices to Correspondents.

**ABORTIVE EARS OF WHEAT: P.P.B.** The cases of partially abortive ears are very common. It is probably owing to the character of the weather during flowering.

**LAWN: L.L.K.** You may keep Grass closely eaten down by using open hurdles, so made that sheep can feed through them,

and keeping a boy continually shifting the line forward from one side of the field to the other. The best form of hurdle for this purpose is as if it were made of two, leaning against one another at top, and separated by stretchers a yard wide at bottom.

**SALT: S.H.** If used abundantly enough to kill insects it would also kill plants. Lime the land well, and give it good winter tillage. About Cabbages next week.

**TANK WATER: C.L.** You should either constantly and largely dilute it and pump it as liquid on to the Grass land directly, or pump it undiluted on to compost heaps of absorbent material, such as old tan, dry earth, &c. The water used as diluent will be the best absorbent of fetid effluvia.

**WATER MEADOWS: A Shepherd.** You should obtain the services of a professional man. It is impossible to say what the grounds would cost without seeing them. Your other question next week.

**WHEAT: Eitenach.** The Bellevue Talavera is as early a Wheat as we have. If you want an early harvest you had better try it; and as you state your winters are mild, you might do this with safety.

\*.\* We hope next Saturday to give a report of the present state of the crops, collated from 300 returns from agricultural correspondents in the different counties of England, Scotland, and Ireland.

## Markets.

COVENT GARDEN, JULY 30.

Vegetables and Fruit are now supplied in abundance. Peaches and Nectarines are sufficient for the demand. English Grapes are plentiful, and the sale for them is heavy. The supply of Strawberries has very much fallen off. Imports from the Continent of Potatoes, Carrots, and Artichokes are still kept up, and there are some good French Cherries and Apricots in the market. English Cherries are very plentiful, but owing to so much wet they are in bad condition. Greengages and Orleans Plums from the South of France fetch 4s. per basket. There is also a large quantity of foreign Pines in the market. New Oranges from Marseilles have just made their appearance, and for so early in the season they are very good. Young Carrots and Turnips fetch from 4d. to 6d. per bunch. Green Peas are very good, at from 6d. to 1s. per quart basket, and from 2s. 6d. to 5s. per bushel sieve. Potatoes are becoming very much diseased. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonette, Cinerarias, Pinks, and Carnations.

**FRUIT.**  
Pine-apples, per lb., 4s to 7s  
Grapes, hothouse, p.lb., 1s to 3s 6d  
Peaches, per doz., 8s to 20s  
Nectarines, per doz., 8s to 20s  
Melons, each, 2s to 4s  
Apples, per bush, 3s to 5s  
Cherries, per lb., 6d to 3s  
Strawberries, p. basket, 1s to 2s

**VEGETABLES.**  
Cabbages, per doz., 6d to 9d  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 2s 6d to 4s  
French Beans, per half sieve, 2s to 3s  
Rhubarb, p. bundle, 3d to 6d  
Potatoes, per ton, 40s to 100s  
— per cwt., 3s to 5s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 2d to 8d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 1s to 2s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d  
Garlic, per lb., 6d to 8d

**HOPS.—BOROUGH MARKET, July 29.**  
Messrs. Pattenden and Smith report that the accounts from the plantations come on the whole rather more favourable, and the duty has advanced to 150,000l. The market remains firm, with a steady demand for consumption.

**HAY.—Per Load of 36 Trusses.**  
**SMITHFIELD, July 23.**  
Prime Meadow Hay 105s 105s  
Inferior do. ... 85 95  
Rowen ... 50 60  
New Hay ... 50 80

**CUMBERLAND MARKET, July 28.**  
Prime Meadow Hay 105s 105s  
Inferior do. ... 80 98  
New Hay ... 50 84  
Old Clover ... 120 130  
**WILTSHIRE, July 28.**  
Fine old Hay ... 100s 110s  
Inferior do. ... 80 90  
New Hay ... 75 84  
Straw... ... 32 36

**COAL MARKET.—FRIDAY, July 29.**  
Eden Main, 17s. 3d.; Wallsend Haswell, 18s. 6d.; Wallsend Hetton, 18s. 3d.; Wallsend Lambton, 17s. 9d.; Wallsend Stewarts, 18s. 3d.; Wallsend Tees, 18s. 3d.—Ships at market, 49.

**WOOL.**  
**BRADFORD, THURSDAY, July 28.**—The colonial sales appear to maintain the opening prices—which are lower than the closing prices of the previous sale. The different fairs throughout the country are nearly over, except the weekly markets, and the business done has fallen very far short of former years, and what has come to this market cannot be sold for cost. This has brought about a great dulness with the farmers, and an unusual quantity of wool remains in their hands as the prices they seek cannot be afforded at the rates of consumption. Noils and brokes are made in only limited quantity, and prices consequently firm.

**YARNS.**—There is a rather better feeling in yarns for export, and anything offering a bargain is more freely removed. The demand for Lancashire is now very limited, and with any amends from this quarter, yarns would no doubt command better prices.

**PIECES.**—There is no material change. The deliveries by the manufacturers keep the stocks moderately low.

## ENGLISH TIMBER.—July 30.

	ROUND TIMBER.	PLANK.	INCH BOARD.
	Per load.	Per foot cube.	Per foot superf.
Oak	£5 10 to £6 0	3s. 0d. to 5s. 0d.	0s. 4d. to 0s. 6d.
Ash	4 0 — 5 10	2 6 — 3 0	0 3 — 0 4
Elm	3 0 — 4 10	1 6 — 2 0	0 2 — 0 3
Beech	2 10 — 3 10	1 6 — 2 0	0 2 — 0 3
Lime	3 0 — 4 0	2 0 — 2 6	0 3d — 0 4d

**ENGLISH AND FOREIGN BARK.**  
There has been a large supply of English, and the quality and condition being so generally good this season, ready sales have been effected at from 13l. 10s. to 14l. 10s. per load of 45 cwt.

English Coppice, p. load of 45 cwt. ... £14 0 0 to £15 0 0  
" Timber ... 13 0 0 to 14 0 0  
Antwerp Coppice, per ton ... 5 5 0 to 6 0 0  
" Timber ... 5 5 0 to 6 0 0

**LIVERPOOL BARK MARKET.**  
English Timber, per ton of 2400 lbs. ... £6 10 0 to £6 15 0  
" Coppice, " " ... 6 15 0 to 7 0 0

SMITHFIELD.—MONDAY, July 25.

There was a considerable increase in the number of Beasts, yet the average quality was by no means first-rate, and consequently these descriptions are not much lower. The supply of Sheep and Lambs was also larger, and trade worse; there was a reduction of fully 2d. per 8 lbs. on the former and 4d. on the latter. Big Sheep, owing to the hot weather, met with a very heavy sale. Calves are lower. From Germany and Holland there are 1944 Beasts, 7590 Sheep, and 416 Calves; from Scotland, 380 Beasts; 300 from Norfolk and Suffolk; and 1400 from the northern and midland counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 4 6 to 4 8	Best Long-wools... 4 2 — 4 6
Do. Shorn ... 4 4 to 4 8	Do. Shorn ... 0 0 — 0 0
Best Short-horns 4 2 — 4 4	Ewes & 2d quality 3 6 — 4 0
2d quality Beasts 3 4 — 3 10	Do. Shorn ... 0 0 — 0 0
Best Downs and Half-breeds ... 4 8 — 5 0	Calves ... 3 8 — 4 8
Do. Shorn ... 0 0 — 0 0	Pigs ... 3 0 — 4 4

FRIDAY, July 29.

The supply of Beasts is not large, but fully adequate to the demand; trade is dull, and Monday's quotations are barely maintained. The number of Sheep and Lambs is considerably smaller than on this day week; they are consequently pretty readily disposed of, and on the average prices are better. There is a very large supply of foreign Calves, but choice ones are by no means plentiful; the best descriptions therefore are not much lower. From Germany and Holland there are 320 Beasts, 1960 Sheep, 634 Calves, and 25 Pigs; from Scotland, 50 Beasts; 300 from northern and midland, and 90 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 4 4 to 4 8	Best Long-wools... 4 0 — 4 8
Do. Shorn ... 4 4 to 4 8	Do. Shorn ... 0 0 — 0 0
Best Short-horns 4 2 — 4 4	Ewes & 2d quality 3 8 — 4 2
2d quality Beasts 3 0 — 3 8	Do. Shorn ... 0 0 — 0 0
Best Downs and Half-breeds ... 4 10 — 5 2	Calves ... 3 6 — 4 8
Do. Shorn ... 0 0 — 0 0	Pigs ... 3 0 — 4 4

MARK LANE.

**MONDAY, July 25.**—The supply of Wheat from Essex and Kent at this morning's market was larger than it has been for some time past; the Kent was disposed of at the full prices of this day's market, and some sales of Essex were made early in the morning, at 1s. per qr. advance, but the demand afterwards slackened, and some portion remained unsold at a late hour. The demand for foreign was limited, but our quotations are fully supported. Flour is a less free sale than on Friday, and its value unaltered. In floating cargoes, little has been done, and purchases are rather more easily effected. For Barley there is a fair demand at last week's rates. Beans and Peas are unaltered in value. Oats are a slow sale and about 6d. per qr. cheaper.

PER IMPERIAL QUARTER.	s. 8.	s. 8.
Wheat, Essex, Kent, & Suffolk ... White	52-63	Red ... 48-57
— fine selected runs ... ditto	50-64	Red ... 50-59
— Talavera ...	59-66	
— Norfolk ...		Red ...
— Foreign ...	40-63	
Barley, grind. & distill., 23s to 26s ...	24-30	Malt ... 25-29
— Foreign, grinding and distilling ...	25-31	Malt ... 29-33
Oats, Essex and Suffolk ...	18-23	
— Scotch and Lincolnshire ... Potato	23-26	Feed ... 18-23
— Irish ...	22-25	Feed ... 20-21
— Foreign ... Poland and Brew	19-25	Feed ... 17-24
Rye ...	23-32	Foreign ...
Rye, Poland, foreign ...		
Beans, Maragosa ... 35 to 38s ... Tick	35-40	Harrow ... 35-40
— Pigeon ... 36s — 42s ... Winds		Longpod ...
— Foreign ... Small	34-42	Egyptian ... 32-34
Peas, white, Essex and Kent ... Boilers	40-44	Suffolk ... 40-45
— Maple ... 32s to 38s ... Grey	31-36	Foreign ... 32-45
Maize ... White	43-50	Yellow ...
Flour, best marks delivered ... per sack	43-50	
— 2d ditto ... ditto	35-43	Country ... 35-43
— Foreign ... per barrel	25-28	Per sack ... 39-43

**FRIDAY, July 29.**—The supply of English grain this week has been moderate, but that of foreign Wheat and Barley considerable. To-day's market was not numerously attended, and but a very limited business transacted, holders being indifferent to selling unless fully former prices can be realised. In floating cargoes the trade is inanimate, owners being exceedingly firm. The value of Barley, Beans, and Peas is unaltered. Oats are 6d. per qr. cheaper. Flour is in fair demand at Monday's prices.

## ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 1250	Qrs. —	Qrs. 4680	560 sacks
Irish ...	—	—	2770	
Foreign ...	22130	14930	16620	8801 brls

## IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
June 18	s. d. 45 0	s. d. 29 1	s. d. 18 11	s. d. 30 11	s. d. 38 11	s. d. 34 6
— 25	46 11	29 3	20 1	32 8	39 5	34 9
July 2	47 3	29 10	20 6	32 6	40 1	35 10
— 9	47 8	29 2	20 6	35 11	40 8	35 0
— 16	49 8	28 11	21 11	34 10	40 5	36 8
— 23	51 10	29 4	21 6	35 3	40 4	37 10
Aggr. Aver.	48 1	29 3	20 5	33 8	40 0	35 9

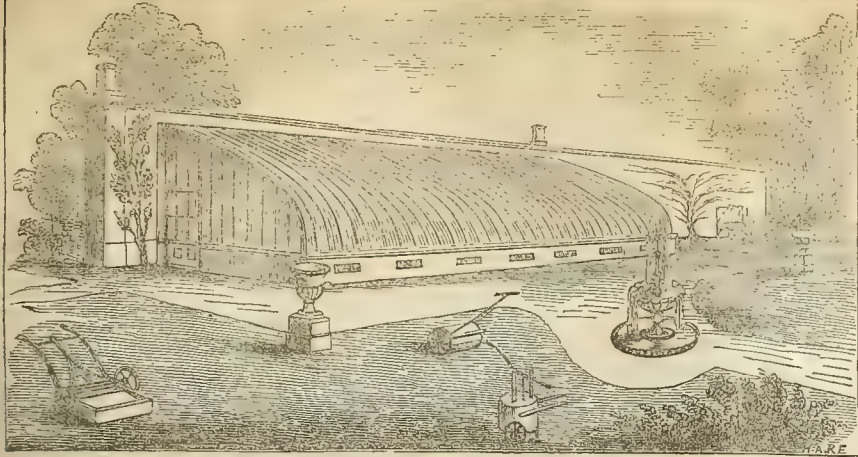
## FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	June 18.	June 25.	July 2.	July 9.	July 16.	July 23.
51s 10d	...	...	...	...	...	...
49 8	...	...	...	...	...	...
47 8	...	...	...	...	...	...
47 3	...	...	...	...	...	...
46 11	...	...	...	...	...	...
45 0	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, July 26.**—At this morning's market there was a good attendance of town and country millers and dealers, who bought to moderate extent of Wheat and Flour, at an advance of fully 2d. per 70 lbs. and 1s. per sack on the prices of Tuesday last. Floating cargoes of Wheat were obtainable on rather easier terms. Oats of fine quality being scarce, brought an advance of 1d. per 45 lbs. Oatmeal without change in value. Barley and Peas brought full prices, and Egyptian Beans improved fully 6d. per 480 lbs. Indian Corn on the spot met with more inquiry, and was generally held for rather more money; arrived cargoes must be quoted fully 6d. per qr. cheaper, but those at a distance were in demand. — **FRIDAY, July 15.**—The arrivals since Tuesday from Ireland and coastwise are light, but moderate from foreign ports. At this morning's market there was a good attendance of town dealers and of millers from the country. A large business was transacted in Wheat and Flour, at an advance on Tuesday's prices of 2d. per 70 lbs., and 9d. to 1s. per barrel and sack. Oats of good quality, being very scarce, must be quoted fully 3d. per 45 lbs. dearer. Oatmeal without change, and the demand limited. Barley, Beans, and Peas brought rather more money. Indian Corn on the spot met with a little more inquiry.



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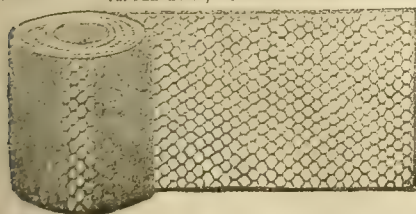


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Garden VasesMowing Machines  
Fountains  
Ornamental Wire Work  
Flower StandsHand-glass Frames  
Game Netting  
Hurdles  
Garden ChairsGarden Engines  
Do. Syringes  
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Flower LabelsFlower Sticks  
Garden Bordering  
Watering Pots  
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EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.  
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.**TANNED NETTING**, for the protection of Fruit  
Trees from frost, blight, and birds, and for the security of  
fresh sown Seeds, either in gardens or fields, at 1d. per square  
yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim  
Canvas, for Wall Fruit.At Edgmont & Co.'s, 17, Smithfield Bars, City, and Old Kent  
Road, Southwark; and at Brunswick Street, near the East India  
Export Dock, Poplar, where may also be seen erected Emigrant  
Tents in great varieties, on their latest improved principles.**RIPE FRUIT, STRAWBERRIES, AND SEED****BEDS.—NEW TWINE NETTING** (Tanned if required)  
—1 yard wide, 14d. per yard; 2 yards wide, 3d. per yard; 4 yards  
wide, 6d. per yard; half-inch mesh ditto, 2 yards wide, 6d. per  
yard. **THE ELASTIC HEXAGON GARDEN NETTING**, 70  
meshes to the square inch, effectually excludes birds, wasps, flies,  
&c. from fruit trees, flower or seed beds, 4d. per square yard.  
Tanned Netting, 2 or 3 yards wide, 14d. per yard; 4 or 6  
yards wide, 3d. per yard—exactly the same as advertised  
by others at double the above prices. **Coir or Hemp Sheep-**  
**folding Net**, of superior quality, 4 feet high, 4d. to 6d. per  
yard. **Lamb Net**, 6d. per yard. **Fishing Nets**, Poultry Fencing.  
A 20-yard Drag Net, with Purse complete, 2l. 10s. A Single  
Veddy Drag Net, any length and depth, 1s. per square yard.  
Casting Nets, complete, 1s. per yard, measured round the Lead  
Line. **Flue Nets**, any size, 1s. per square yard complete. **Minnow**  
**Nets**. **Eel Nets**, Landing Nets, equally cheap, all warranted first-  
rate quality and workmanship. **Rabbit Net**, 4 feet wide, 14d.;  
6 feet wide, 24d.; 8 feet wide, 3d. per yard. Each Edge Gorded,  
1d. per yard extra, suitable for Poultry Fencing. **Square Mesh**  
**Cricketing Net**, 6x its full width and length, made of stout cord,  
2d. to 4d. per square yard; this is the best article made for  
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Strathmore Terrace, Shadwell, London. Orders by Post, with  
Post-office order or Town reference, punctually attended to.**GALVANISED WIRE GAME NETTING.**  
7d. PER YARD, 2 FEET WIDE.

	Galvan- ised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 " "	6 1/2 " "
2-inch " extra strong "	12 " "	9 " "
1 1/2-inch " strong "	8 " "	6 " "
1 1/2-inch " extra strong "	10 " "	8 " "
1 1/2-inch " extra strong "	14 " "	11 " "

All the above can be made any width at proportionate prices.  
If the upper half is a coarse mesh, it will reduce the prices one-  
fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d.  
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Manufactured by BARNARD & BISHOP, Market Place, Norwich,  
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Cast-iron Pumps for the use of Farms,  
Cottages, Manure Tanks, and Shallow  
Wells. **2 x 4.**  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead  
pipe attached, and bolts and nuts  
ready for fixing ... .. 3 0 0  
Larger sizes if required.To Emigrants proceeding to the Gold  
Regions they will prove to be the most  
simple, durable, and the cheapest Pumps  
hitherto introduced.May be obtained of any Ironmonger or  
Plumber in Town or Country, or of the  
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remarkably salubrious qualities which are essential to Chocolate  
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recommended as delicious and nutritious condiments for the rail-  
way carriage, the nursery, the invalid chamber, or the luncheon  
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the skin soft, pliable, and free from dryness, scurf, &c., clear it  
from every humour, pimple, or eruption; and by continuing its  
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'To Professor Holloway: Sir, Five years ago my wife had a  
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and at last she began to despair; a friend, however, recom-  
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valuable medicines the wound was completely healed; it is  
now four months since, and there is not the slightest appear-  
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the drive, the promenade, the aquatic excursion, ladies will find  
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to the complexion, dispelling the cloud of languor and relaxation,  
allaying all irritability and heat, and immediately affording the  
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delicately clear and fair complexion. In cases of sunburn or  
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of each, as spurious imitations are abroad.—Sold by A. ROWLAND  
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FOR ROSES, SHRUBS, TREES, &c., are easily read,  
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Wrought Iron Plain and Ornamental Hurdles, improved  
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part of clean gravel add one of sharp river sand. To five parts  
of such equal mixture add one of Portland Cement, and incorpo-  
rate the whole well in the dry state before applying the water.  
It may then be laid on 2 inches thick. Any labourer can mix  
and spread it. No tool is required beyond the spade, and in 48  
hours it becomes as hard as a rock. Vegetation cannot grow  
through or upon it, and it resists the action of the severest frost.  
It is necessary, as water does not soak through it, to give a fall  
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Poultry"—without which none are genuine. They are made in  
two qualities, the first of which is 40s. the half-dozen, and the  
second quality 30s. the half-dozen. Gentlemen who are desirous  
of purchasing shirts in the very best manner in which they can  
be made are solicited to inspect these, the most unique and only  
perfect fitting shirts. List of prices, and instructions for measure-  
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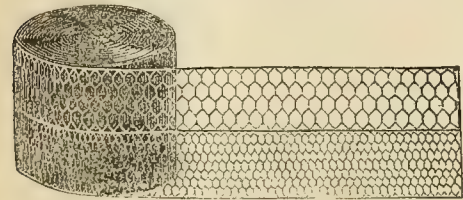
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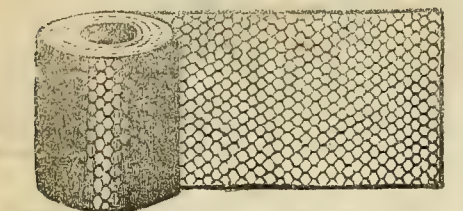
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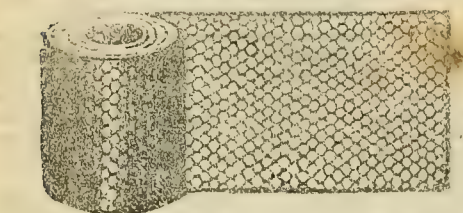


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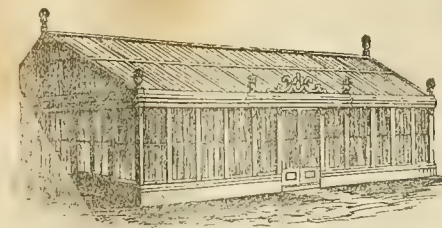
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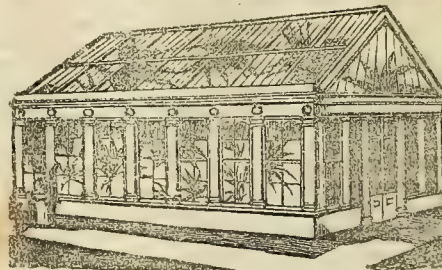
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**PERUVIAN GUANO**, the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.

WILLIAM INGLIS CARRIE, 10, Mark Lane, London.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

**PERUVIAN GUANO**, guaranteed the genuine importation of Messrs. A. GIBBS & SONS. A constant supply of LINSEED and RAPE CAKE. EDWARD PURSER, Secretary.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—

Turnip Manure ... .. per ton 27 0 0

Superphosphate of Lime ... .. 7 0 0

Sulphuric Acid and Coprolites ... .. 5 0 0

Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## IRON HURDLES.

**STEPHENSON and PEILL**, 61, Gracechurch Street, London; and 17, New Park Street, Southwark, Manufacturers of every description of Iron Fencing, beg to call the attention of Noblemen and Gentlemen to their present prices of HURDLES:—for Saddle, 6 feet long, 3 feet high, with 5 bars, at 4s. 6d.; and for Sheep, 6 feet long, 3 feet 3 inches high, with 5 bars at 5s. each.

ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON**, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.

WAREHOUSE, 57, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long.

Under 6 by 4 ... .. 12s.

6 by 4, 6½ by 4½ ... .. 13s.

16 ounces ... 3d. per foot. 7 by 5, 7½ by 5½ } under 9 by 7 15s.

21 ounces ... 4d. " 8 by 6, 8½ by 6½ }

26 ounces ... 5½d. " 9 by 7, 9½ by 7½, 12 by 10 } 20s.

32 ounces ... 7½d. " 13 by 10, 14 by 10, 15 by 10 }

Large Sheet of No. 16 very superior, packed in cases of 100, 200, and 300 feet, at 24d. to 26d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured.

Glass Shades, round, oval, and square, for Clocks and Ornaments, Fern Shades and Dishes.

**GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.**

**JAMES PHILLIPS and Co.** have the pleasure to

hand their present prices of Glass for Cash:—

**SHEET SQUARES.** **CROWN SQUARES.**

In Boxes of 100 feet. In Boxes of 100 feet.

Under 6 by 4 ... .. £ s. d.

6 by 4, and 6½ by 4½ ... .. 0 12 6

7 " 5, " 7½ " 5½ ... .. 0 13 0

8 " 6, " 8½ " 6½ ... .. 0 15 0

9 " 7, " 9½ " 7½, 12 by 10 } 1 0 0

10 " 8, " 10½ " 8½, 12 by 10, 15 by 10 }

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.

21 oz. " 3½d. to 5d. " " " "

26 oz. " 3 d. to 7d. " " " "

Squares for Orchard Houses, on Mr. Rivers' plan, 20 by 15, 20 by 14, 20 by 13, and 20 by 12 always on hand. Cases of Sheet Glass, size about 40 by 30, 16 oz. to the foot, 2l. 2s. per Case of 200 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphon, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

**GLASS FOR CONSERVATORIES, GREENHOUSE S PIT FRAMES, ETC.**

**HETLEY and CO.** are supplying 16-oz. Sheet Glass

of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches. Inches. Per foot. Per 100 feet

From 6 by 4 ... .. 7 " 5 " 2d. is £0 12 6

7 " 5 " 8 " 6 " 2½d. " 0 13 9

8 " 6 " 10 " 8 " 3d. " 1 0 0

10 " 8 " 12 " 9 " 3½d. " 1 2 6

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.

21 oz. " 3½d. to 5d. " " " "

26 oz. " 3 d. to 7d. " " " "

**PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS** for Horticultural purposes, at reduced prices, by the 100 square feet.

**GLASS TILES AND SLATES** made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

**PATENT PLATE GLASS.**—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

**GLASS SHADES**, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half.

List of Prices and Estimates forwarded on application to JAMES HETLEY & Co., 35, Soho Square, London.



## PICEA BRACTEATA.

MESSRS. VEITCH AND SON, of Exeter, and the Exotic Nursery, Chelsea, have much pleasure in stating that they have been fortunate enough to raise a limited number of Seedling Plants of the above beautiful NEW CALIFORNIAN PINE: of which a full description was given by Dr. Lindley, in the leading article of the *Gardeners' Chronicle* of July the 9th. The Plants are two years' Seedlings, established in small pots, price 3s. each. Specimens of the cone and foliage can be seen by visitors, at either of Messrs. Veitch's Nurseries.—August 6.

## PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, Westerham, Kent, begs respectfully to inform the public that he has still a plentiful supply of Plants of his superior true sorts of the above, which will be forwarded to order on receipt of postage stamps or Post-office order made payable here, at the following reduced prices, package included:—All the sorts of Early Cabbage, Savoy, and Kale, including Brussels Sprouts, 4s. per 1000; all the sorts of Autumn and Spring Broccoli, 4s. 6d. per 1000; all the sorts of Celery, 4s. 6d. per 1000; Cauliflower, Early and Late, and Red Cabbage, 3d. per 100; Drumhead or Cattle Cabbage, 3s. 6d. per 1000. 6d. per 1000 less when no package is required. Packages of 1000 and upwards delivered free of carriage to London, and to the Epsom and Brighton Stations of the South-Eastern Railway.

SEED OF CATTELL'S DWARF BARNES, and of his superior DWARF RELIANCE CABBAGE, may be had in packets, by post, for 12 penny stamps per packet, the former containing one ounce, as usual, and the latter half an ounce.

WILLIAM BARNES respectfully begs to acquaint his Friends and the Public generally that he has now ready to send out a small portion of his unrivalled CALCEOLARIA SEED, saved from his collection as universally admired by those who purchased his seed last season. Also, CINERARIA and HOLLYHOCK SEED, saved by himself, from all the best kinds in cultivation, which W. B. has purchased from all the most eminent growers of the above two beautiful tribes of plants, and cannot fail to give the greatest satisfaction to all those who may think proper to purchase his Seed.

The above can be sent by post in 2s. 6d. and 5s. packets. A remittance is expected from unknown correspondents. Camden Nursery, Camberwell, London.—August 6.

CUTHILL'S PRINCE OF WALES AND BLACK PRINCE STRAWBERRIES.—Strong plants will be sent out on the 15th of August.—I need not say more in their favour than that they have been in bearing from the 15th of June to the 1st of August, and all sold in Camberwell, and in pound punnets, the two sorts producing upwards of one ton weight. The same gentlemen and gardeners who judged the Black Prince seven years ago have also pronounced the Prince of Wales to be the best late Strawberry, and like its royal parent, an enormous bearer, but much larger, and good flavoured, and will make the best of all for forcing as a late sort, and is good for preserving; 15s. per 100, or 10s. for 50. Black Prince prepared for forcing, 7s. 6d. per 100; Fine, for planting out, 5s. per 100. Extra plants allowed to the trade.

CUTHILL'S Pamphlet on the Potato, containing the best way of avoiding the Disease, as well as Growing Large Crops. This Treatise is founded strictly on the laws of Nature. It also contains Asparagus, Seakale, Rhubarb, Strawberries, Cucumbers, Melons, &c. Price 2s. or by post, 2s. 4d. Also, CUTHILL on Market Gardening Round London. The first work of the kind ever published. Price 1s. 6d., or by post 1s. 8d. Post Office Orders to be made payable at Camberwell Green.

JAMES CUTHILL, Camberwell, London.

## The Gardeners' Chronicle.

SATURDAY, AUGUST 6, 1853.

COUNTRY SHOWS FOR THE PRESENT MONTH.—17th: Glasgow Carnation and Picotee.—23d: Handsworth and Loddish.—24th: Salisbury.—30th: Long Wycombe, Banbury, and Wolverhampton.—31st: Colchester, Thornbury, and Wycombe.

WHEN A TREE is extensively BARKED or otherwise wounded, can the injury be repaired? This question has doubtless been asked by almost every person who has a garden or an orchard; and the answer is invariably in the negative, unless he trusts to the slow advance of new matter over the face of the wound from the edges of the bark. And the effect of this reparation is, after all, merely to hide the wound, not to cure it.

Nevertheless, DUHAMEL showed, above a century ago, that if such wounds are covered with glass before the surface has time to dry, and are then excluded from the action of the atmosphere, a complete cure is effected. He observed in one of his experiments an appearance of gelatinous matter oozing out from between the longitudinal fibres of the albumen; small granulations afterwards formed, and in ten days after the commencement of the experiment they had acquired a greenish tint. During the summer these appearances extended, principally downwards, and the wound became cicatrised without the lower lip of bark having contributed to the result. The new bark thus formed was very uneven, having been formed by numerous independent granulations; in some places it was even deficient. Upon examining some of the specimens thus obtained, DUHAMEL found a thin layer of wood beneath the new bark; and he hence concluded that wood can produce bark, and that the bark thus formed can afterwards produce wood.

The statement of DUHAMEL was confirmed in all essential particulars by MEYER and others, who, like that author, thought they observed the new matter oozing out of the medullary processes, or points between the longitudinal fibres.

More recent experiments by M. TRÉCUL, while they confirm the fact that new bark and wood can be formed by the whole surface of a fresh wound, if protected from the air, also appear to prove that this is not effected exclusively by the development of new tissue from the ends of the medullary rays; on the contrary, this observer found that in some cases the new matter proceeded directly from the longitudinal fibres. Without dwelling upon the important

anatomical details included in his observations, and which belong to pure rather than to applied science, we shall confine ourselves to the practical results of his experiments.

All his observations were made upon rings of wood deprived of bark, and varying in length from 8 inches to 20 inches. To form an effectual guard against the action of air, &c., the following method was employed: several turns of wood or iron wire were carried round the trunk next the lips of the decortication, in order to keep the covering completely off the surface of the naked wood; a coat of putty (*mastic de Vitrier*), was laid upon the lips of the wound, which was then covered with a piece of India-rubber cloth; care was taken to ensure a perfect join of the two upright edges of the latter, and this proved to be so successful that in several cases the liquid which oozed out of the albumen eventually filled the whole space between the wound and the envelope. A sheet of card paper was then rolled round the India-rubber covering, and the whole was guarded by straw.

In every case new bark and wood were formed on the surface of the wound, and irrespective of either the upper or lower lip; excrescences of various forms and sizes grew up from the face of the wood, and eventually joined into plates of new matter. M. TRÉCUL, however, found the new tissues, formed by aid of the contrivance above described, very apt to become mouldy and rotten, as might have been expected from the very nature of his arrangements.

The general result of his inquiry being such as we have described, the question arises whether there may not be reproductive power enough in wood to renew itself after having been wounded by amputation as well as decortication. M. TRÉCUL proved that the new bark and wood were formed by the living tissues below them. It would, therefore, seem as if wood and bark could be renewed wherever pre-existing tissue retains its vitality. Should that be so, then a wound through a limb, laying bare the whole interior, ought to be curable, provided it is excluded from the contact of dry air, and provided the vitality of the part is sufficiently active. It is true that the power of reproduction in all the experiments on record was ascertained to belong to the surface of albumen, called by the French the seat of renovation (*couche génératrice*); and it is not improbable that it is here alone that a sufficient amount of vitality resides to effect the restoration of the bark and wood; but we have not experimental proof that it is so. We would therefore suggest that the curious inquirer may find something on this subject upon which to exercise his ingenuity; and that it is worth while to make some trials, for which the present season, when trees do not bleed, may be proper. To those disposed thus to operate, we should recommend, not M. TRÉCUL's apparatus, which is troublesome and which brings on decay in the new granulations, but some one of the many kinds of grafting wax, employed on the continent; when warm, it can be painted over the wound, which may then be left without further care. Sixteen parts by weight of black pitch, three of yellow resin, three of bees-wax, and three of tallow, form a good cheap mixture, rather too sticky perhaps, but easily corrected, if that is so, by increasing the quantity of resin. Some decortications might also be made by way of experiment, and painted with the same mixture, which must not, however, be hot enough to kill the tissue with which it comes in contact. Other ingredients, such as tallow and bees-wax, which melt at a very low temperature, might also be employed. Such experiments cost little, and might be tried upon worthless trees by any one residing in the country. Should the result be negative, it will not be the less useful, inasmuch as it will set this question at rest for the future.

THE Royal forests now remaining to be noticed are of small moment, compared with those already examined.

PARKHURST, situated near Newport in the Isle of Wight, consists of about 1000 acres. In 1848, Mr. MILNE reported it to contain no large timber, but some underwood, which was then under removal "as quickly as it could be disposed of." The soil is principally strong clay; and, in the opinion of Mr. MILNE, no reason existed why it should not produce good timber. The oldest trees in Parkhurst were then under 20 years of age, the forest not having been enclosed until 1815. No explanation was offered of the reason why trees should be only 20 years old in a forest which had been enclosed for the space of 33 years.

In another part of his evidence, Mr. MILNE reported the area of this forest to be 1100 acres, and the deficiency upon it to have amounted, by 1846-7, to the sum of 13,500*l.*, which he accounted for by

the produce being of little present value, and the expenses considerable. He was, however, of opinion that the income would be, from that time forward, equal to the expenditure, and that in a very few years it would exceed it.

We observe that at the time when Mr. MILNE gave his evidence the sales had chiefly consisted of poles, faggots, bark, and gravel.

The deputy surveyor is Sir JAMES CAMPBELL, the same gentleman who is charged with the management of Bere, described in a former article (*June 25*). He was appointed in November, 1848. Up to that time Col. THORNHILL, and we suppose his assistant Mr. WILLIAM REED, held Parkhurst in conjunction with the New Forest. Sir JAMES CAMPBELL's evidence in 1849 was directly at variance with that given by Mr. MILNE in 1848. He reported that the area was 1160 acres, not 1000 or 1100; he was of opinion that the place had neither been thinned enough nor drained enough—and yet there had been an expenditure of above 32,000*l.* upon it; some of the plantations, he said, were growing very well, others not so well; and he described the land as the very worst that could be, stiff yellow clay mixed with gravel. We own that such land does not seem to us at all bad or unsuited to growing Oak, if managed by intelligent foresters; and the experience of former days is most unfavourable to Sir JAMES CAMPBELL's opinion, for in the recital of the Act for enclosing Parkhurst, it is expressly declared that the reason for doing so is that "the forest was heretofore of great value and utility, from the timber and underwood thereon." Sir JAMES was nevertheless of opinion that the timber could never be so fine as in his forest of Bere; but when pressed for a reason, although he still pointed to the soil not being so good, he fell back upon the bad quality of the old timber still remaining in Parkhurst, which did not grow well, having hardly got any heads, because, as he *naively* added, *he supposed they had been cropped by deer and cattle!*

During the 10 years which preceded the arrival of the present deputy surveyor, there had been a loss of 985*l.*; and of that, 234*l.* had been incurred in the previous year. In the first year of his office, Sir JAMES CAMPBELL produced a loss of 232*l.* upon the 1160 acres in question; in the second year he netted 91*l.* 10*s.*; in the third year he lost 20 guineas; in 1851-2 he gained 30 guineas. The accounts for 1852-3 are not yet published, but it is expected that 20 guineas more, or about 44*d.* an acre, may be gained. We trust that so grand a result will have been arrived at.

A good part of the plantations at Parkhurst must now be above 35 years old; Mr. CLUTTON told Lord Duncan's committee that plantations ought to pay their way when they are 20 years old; and when 30 years of age there ought to be a considerable surplus. Measured by this standard Parkhurst should be producing a net income of at least 40*s.* an acre, instead of 44*d.*

We do not find a return of the emoluments of the manager of this forest.

SALCEY FOREST is in Northamptonshire. It consists of 1277 acres of land, described as likely to yield a crop of Oak, "though not hitherto sufficiently thinned." Mr. CLUTTON reported it to be adapted to the growth of the very best quality of Oak, but he was evidently dissatisfied with its management, as is seen from his recommendation that it should be better thinned, that trees interfering with the growth of Oak should be removed, that underwood should not be allowed to compete with Oak, and so on. To those familiar with his apologetic one-sided reports, this will be seen to be very strong condemnation of the deputy-surveyor.

This woodland property has hitherto been an annual loss; the deficit for 1848-9 is returned as 403*l.*; for 1849-50, as 399*l.*; for 1850-51, as 437*l.*; for 1851-52, as 237*l.*; and the loss upon 1852-53 is anticipated to be 128*l.* This, however, is not surprising, considering that the whole forest has been replanted since 1835, and is still too young to be profitable.

Here, in fact, is the scene of the celebrated operations of one KENT, a lawyer's clerk, appointed in 1827 by the Board of Commissioners when Mr. ARBUTHNOT was chairman. Mr. MILNE stated that he had known him previously, but did not recommend him. KENT had never had any management of timber before, and knew nothing about it; but Mr. MILNE saw no objection to him on that account. After holding the office for seven years this gentleman absconded, having previously, without the knowledge of the commissioners, cut down the whole forest. He was afterwards transported, for embezzlement to a large amount.

The present deputy surveyor is Mr. THOMAS LINNELL, a farmer, tenant of the Duke of Grafton, between whom and the Crown there are conflicting



rights, now about to be settled under a commission. He was appointed by the Duke of GRAFTON in 1834, with a salary of 200*l.* a year, and 30*l.* for the keep of a horse, together with a lodge and 6 acres of land valued at 18*l.* a year.

The two last forests in our list are WHITTLEWOOD and WYCHWOOD, both now happily disafforested, in pursuance of Acts passed in the present session of Parliament. With these it is therefore not our purpose to concern ourselves. We, however, should not be justified in leaving them without pointing out a circumstance, which puts the system under which the Royal Forests have been managed, in a clear light. The forest of Whittlewood is one in which there have been unavoidable differences between the Duke of GRAFTON and the Crown, arising out of conflicting and ill-defined rights and claims. The Duke of GRAFTON, under letters patent of King CHARLES the Second, claims to be entitled to all the coppices, &c., and also to certain rights of common, &c. This district, consisting of 4000 acres, lies in the neighbourhood of Salcey—the history of which we have just given. And to whom of all men in the world have the Commissioners of Woods and Forests entrusted this forest for the last 20 years, together with the difficult duty of protecting the interests of the Crown against the adverse interests of the Duke of GRAFTON, but to Mr. LINNELL, the deputy surveyor of Salcey, a gentleman appointed upon the Duke's recommendation, and actually one of his Grace's tenants. Mr. MILNE again saw no objection to this convenient arrangement, and had never heard of any dispute between the Crown and the Duke of GRAFTON, in which the services of Mr. LINNELL could have been available, except something about deer. Under the circumstances it would have been very surprising if the Duke had found cause to complain. His Grace's interests could not be otherwise than well looked after, whatever may have been the case with those of the Crown.

We must also add that the whole receipts from Mr. LINNELL'S forests, from the time of his appointment in 1834 up to the year 1847-8, was only 18,675*l.*, and that the expenditure during the same period was 25,689*l.*, leaving a clear loss to the country of above 7000*l.* Now Whittlewood contained 4600 acres, including a place called Hazleborough Walk, a tract of about 500 acres; and Salcey consists of 1277 acres. Hazleborough and Salcey are young, and may be regarded as unable to yield much revenue; but we still have 4100 acres, in Whittlewood alone, covered with "a good deal of fine Oak." And out of all this, instead of a noble income having been realised, we find an actual loss of 500*l.* a year.

AFTER existing for more than a century and a quarter, the PHYSIC GARDEN at CHELSEA is about to be dismantled. Originally conveyed to the Society of Apothecaries by Sir HANS SLOANE, in order that a garden near London might be for ever set apart for the promotion of botanical science, and in aid of medical studies, this place has gained an historical interest in consequence of its association with the name of PHILIP MILLER, the prince of gardeners, as he has been not unaptly designated. He was appointed by Sir HANS SLOANE himself, and so early as 1724 became celebrated as the author of "The Gardeners' and Florists' Dictionary," in two volumes, 8vo, which seven years afterwards expanded into the celebrated "MILLER'S Gardeners' Dictionary," the numerous editions of which are still conspicuous upon the folio shelves of all horticultural libraries. We believe there is no doubt that the plants which MILLER enumerates were all cultivated at Chelsea, and that his practical directions for cultivation were the result of experience actually gained there. His collection must, however, have been very meagre in the beginning, for in 1724 the list of greenhouse plants, recommended by him to growers, amounted only to 24 sorts, among which were included the White Portugal Broom and the *Althæa frutex*, at that time supposed to be tender.

For many years past the Chelsea Garden has been devoted to the gratuitous instruction of students belonging to the medical schools of the metropolis. So considerable a number of plants useful for teaching has been collected, and the whole of the plants under glass have been brought to a state of such excellent health by Mr. MOORE, the present curator, that, notwithstanding the injury sustained by hardy plants from the smoky atmosphere which surrounds them, it is doubtful whether the Garden has ever been more really useful than it is at the present time.

The Society of Apothecaries have now, however, resolved to pull down their houses, to discontinue the lectures, and to give away the tender plants; retaining nothing more than the shrubs and herbaceous plants still struggling for life in the open

borders. And thus the ancient place will disappear from the map of the metropolis.

It is this circumstance, we presume, which London gossip has distorted into a breaking up of the Horticultural Society; unless, indeed, so silly a story has been invented by some ingenious gentleman whose wish is father to the thought.

#### WINTER BROCCOLI *alias* DOUBLE CROPPING.

THE remarks of your correspondent, "C. P.," of York, (see p. 469), have recalled to my recollection a system of planting "winter stuff" which may be worth the notice of those who, like myself, have unfavourable soils and cold situations to contend with. Like "C. P." I plant on ridged ground, but unlike him place the tender kinds in the valley and hardy varieties at the top, and thus make the latter protect their more tender neighbours. Suppose a piece of ground is thrown into ridges, three or four feet wide, on the top of each ridge plant a row of Purple Sprouting Broccoli, Brussels Sprouts, curled Borecole, or any of the hardy kinds of Kale; and then between the ridges plant Walcheren, Snow's, Grange's, Hammond's, or Purple Cape Broccoli, and so on; with regard to the other kinds, as Adams's Winter Imperial, Knight's Protecting, &c., of course some little skill must be exercised, in order that the crops may come off the ground about the same time, such as planting the Walcheren and Snow's between the Autumn Sprouting, early Brussels Sprouts, &c.; or, if preferred, the tender crop, when ready, can be cleared away, and the ground forked up and prepared for early Peas, Beans, or Lettuces, to which the stronger growing Broccoli will form a protection as late as you please in the spring. This system of management, I am quite certain, may be very profitably followed by all who have to contend against exposed situation, and it is questionable whether those in protected ones, who frequently suffer the most in sudden changes of temperature, would not profit by the practice. By following this system, on Christmas-day, 1851, I cut both Walcheren and Snow's Broccoli sound and good, though on the preceding night the thermometer registered 17° of frost. The flowers were certainly frozen, but being thawed in spring water they were not injured in the slightest degree—a fact worth recording; for though Cauliflowers and Broccoli may be protected in frames, in pits, in open sheds, or with the assistance of straw-covered hurdles in the open garden, or, as used to be practised at Welbeck, by suspending the plants from the roof of a shed or barn, yet all these systems give a check to the plant, and too frequently impart that tainted flavour and nauseous smell so particularly disagreeable in stale Brassicas of all kinds. Should the weather prove very severe, some additional protection may be afforded by gathering the leaves of the tender kinds together and tying them loosely, like summer Lettuce, for blanching. In this way the flower will be kept dry, be of better colour, and less likely to be injured by a sudden thaw. Where it is convenient, some short dung, litter, or leaves, may be put around the stems of the plants; or a few dozens of frigi-domo, or waterproof caps, might be made for the purpose, and placed over the plants in very severe weather, which would not be an expensive matter, as with care they would last for many years.

In pursuing this system of planting, it is necessary to observe the rule that the rows of plants point north and south, so that what little sun we have in the winter may act alike upon both sides of the row, which would not be the case if they ran from east to west. That a great number of winter crops might be materially protected by intermediate rows of stronger growing plants, I have not the least doubt; for it is perfectly plain that almost all crops suffer more from the parching effect of east and north-east winds than they do from intense cold, as the one, if continuous, withers up the plant, while intense cold merely locks up its energies for a time.

Were I growing vegetables for a gentleman's family, or as a market gardener, I should certainly be induced to try this protective system; for instance, instead of a 3 feet bed of Spinach or Parsley, with a pathway on each side, I would have a row of dwarf Borecole, or Wilcove or Mammoth Broccoli, which, by breaking the force of the wind, and supplying it to a great extent with moisture, before it gets to the more tender crop, would act as a great preservative, independently of the advantage the crop would gain by the heat absorbed during the day not being radiated so rapidly at night. Cabbages for spring use, or Coleworts for winter pulling, might be protected in the same way; at every 4 or 5 feet I would have a row of Borecole, Brussels Sprouts, or some other hardy tall growing Brassica; for though at the first blush it might look queer, it would soon be seen that there was method in the plan, and where that is apparent all other objections give way. By such an arrangement there would be, when the rows of winter stuff were removed, a proper site for a second crop of dwarf Peas, or by doubling the distance, say to 8 feet apart, it would be suitable for the tall growing kinds of Peas, or Runner Beans, and it is quite certain that 10 rows of Peas at 8 feet or 12 feet will not only produce a much heavier crop than three rows in the same space, but one of much finer quality. It is only occasionally that we see a good row of Peas, for in almost every garden they are crowded together and spoiled. A row of early Peas, say Prince Albert or Warner's Emperor, is generally a matter of 3 feet high and a foot through; but a row of the same

kind, properly grown, *i. e.* sown on trenches prepared as for Celery, should be 4 to 5 feet high, and at the least 4 feet through. A row so grown will not yield Peas like swan shot both in size and texture, but large pods, containing large Peas, succulent, and of fine flavour, much more like Marrow Peas than the Marrows we are obliged to eat in the hotels of the great metropolis.

But to return to my subject; I know some gardeners object to mixing crops, but if the mixing is systematically carried out, then I think their objection is founded more on prejudice than principle, for, as I before intimated, it is quite certain that heavier crops may be obtained, and of much finer quality; and, after all, it is quality which pays the commercial man, or imparts satisfaction at the employer's table.

At the present time the market gardeners in my neighbourhood are "getting out" their Celery, and between the rows, along the centre of the ridge, is a row of Walcheren Broccoli, or Cauliflower, if you please, and on each side of it a row of White Cos Lettuce. The Lettuce will give way in time for gradual earthing, and the Broccoli will be away long before the final "banking up" of the Celery. Other ridges between rows of Celery are crammed full of strong plants of Coleworts, and these also will be bunched up and in market in a few weeks, and quite in time to do justice to the Celery. This is what some gardeners call "stealing a crop," but I think it is stealing the oil which keeps the carriage moving, and which pays the expenses of cultivation before the principal crop is fit for market. It must never be forgotten, however, that the London market gardeners know no limit to either manure or labour; their crops at the present time are being literally planted on hot-beds, for the quantity of fermenting dung which is worked hot into the ground for a crop is quite sufficient to impart considerable warmth to it at the present time.

This double cropping is the system by which Mr. Smith of Lois-Weedon is not only making four blades of Grass grow where but one grew before, but by which, when almost all the corn-growing countries are panic-stricken, with the certainty of a very short crop of Wheat, he can boldly step out and announce his crop as 12 quarters to the acre, which is more than double the average crop of corn-growing districts! But Mr. Smith is following in the wake of the best market gardeners, and like them he is reaping the benefit of proper cultivation; for there is no reason why, by proper cultivation, every acre of ground in the country should not yield crops equally abundant as those obtained by Mr. Smith.

While on the subject of double cropping, I must make a remark relative to "disleafing," a practice recommended by Mr. Smith, and discussed at some length in the *Chronicle* some 12 months back. I still object to Mr. Smith's practice of taking the head off the plants at one fell swoop, (*Ed.*) but I feel quite certain that gradually pursued, that is, a few leaves removed weekly, it will be attended with considerable advantage. We want, however, comparative experiments. I have a small piece of Yellow Globe Mangold Wurzel sown at 3 feet apart, and I intend to divide it into three equal portions, one lot to be heaved the beginning of October, the second to be gradually disleafed, as I practised last season, and the third to be treated on the good old "let-alone" system. The result shall be accurately reported, for though my crop was not got in till the middle of June, I still anticipate a good average yield. Should the disleafing prove even equal to the let-alone system, I have a system of cropping to recommend which, I doubt not, would answer the purpose of cottagers, *viz.*, throw the ground into shallow 3 feet ridges during the winter, and, by frequent forking, get it into as fine tilth as possible. In February sow the ridges with Dwarf Fan, Royal Cluster, or Marshall's Prolific Beans, placing each row along the brow of the ridge, and the Beans at 9 inches apart. In April dibble in the Mangold at 15 inches apart in the valleys, and through the summer keep the ground properly tilled, and as often as convenient soaked with liquid manure. By the end of August the Beans will be fit to garner, then fork the ridges over, and plant three rows of Dwarf Cabbage, such as Atkins's Matchless, Wheeler's Imperial, or Enfield Market. Any one of these crops will pay rent and expenses of cultivation, leaving the other two crops as profit. The Cabbage should be sown thinly on good ground the first week in July, and if the plants are strong at the time of planting out they will be fit to clear away for market by the end of October. Here, then, would be three good crops cleared between the 1st of February and the end of October, thus leaving three months for winter exposure and the preparation of the ground for the succeeding crop. I am surprised that the dwarf early Cabbages mentioned above are not more cultivated for agricultural purposes. We hear talk of stubble Turnips, but stubble Cabbage prepared as directed for planting between the rows of Mangold Wurzel would be a much more certain and profitable crop. If the plants are strong when put out at the end of August, by the end of October they will average at least one pound each, and supposing one plant to each square foot, we should thus have upwards of 20 tons per acre of excellent green food produced in six or eight weeks, which for sheep would be exceedingly valuable. What other crop would produce the same weight at the same season in the same time?

With the present threatening aspect of the Potato



crop, and the certainty of a dear loaf for the next twelve months, the subject of Cabbage culture is an important one, not only with reference to agriculture but also to the feeding of the million. Some farmers in Shropshire have already taken up the subject of Cabbage culture for sheep feeding, and are much pleased with the result. Therefore I say unto others, "Go and do likewise." *Wm. P. Ayres, Brooklands Nursery, Blackheath.*

### FRUIT CYLINDERS.

By A. FORSYTH, St. Mary's Church, Torquay.

THE culture of hardy fruit trees and hardy fruit-bearing shrubs is a subject of such importance, that any system of management calculated to render the supply of fruit less precarious than it has hitherto been, will be hailed with pleasure. Almost every locality has its prevailing winds, and as "the wind bloweth where it listeth," it is no easy matter to keep tender blossoms from being damaged by such a variable current. In the beautiful arrangements of nature, the blossom is wrapped up for months in a scaly bud, hard and dry, allowing the cultivator every facility once a year to dispose of it in any form most suitable to his interest.

In cultivating the Peach, for example, the tree is carefully pruned and trained to a garden wall, and other less important fruit-bearing plants are either trained to espalier rails or grown as standards. Still there are attentions paid to all of them in the way of pruning, &c., so that the fruit buds may be advantageously placed as regards regularity and shelter. Many Pear trees are naturally tall-growing, and pyramidal in shape; such, by different manipulations, are artfully dwarfed and trained into more flat-headed forms, so as to get the blossom buds, and eventually the fruit, as much as possible under shelter. Were this not done, their profitable cultivation would be impracticable.

The action of the stormy blast or of the sea breeze upon ligneous plants induces a stunted growth and fruitless spray upon the windward side, whereas the lee side produces healthy shoots and blossoms. In the case of evergreens this is particularly remarkable, and not only does one plant shelter another, but one-half of the same plant is thus used by nature to shelter the other half. Now, if our principal hardy fruits were produced upon evergreen trees or shrubs, the tender blossoms would have a mantle of mature leaves to protect them, but unfortunately for us they "come forth like the silvery Almond-flower, that blooms on a leafless bough."

Such being the case, all sorts of appliances are pressed into the service of horticulture in spring to protect the infant fruits, such as glass shades, bunting shades, worsted net, old fishing-net, straw ropes, Spruce Fir branches, and the like. The Lancashire Gooseberry fancier has been known to share even his bed-clothes with the Gooseberry bush on a frosty night, rather than permit his "Rearing Lion" to suffer. In nurseries the compartments are chequered with evergreen hedges, or, failing that, with Beech, whose leaves remain on the plant so long as to have earned for this tree the adage "that it keeps its old coat until it sees how the new one suits." The growers of those splendid specimens of Cape Heaths, &c., which we see at exhibitions, use a tent of bunting to lessen the sun's glare and the force of storms, in order to preserve the blossoms and the foliage in the finest possible condition. The normal form of a standard fruit tree is either globular or Mushroom-shaped, and therefore it faces every point of the compass, and bears fruit all over it, having an aspect East, West, North, and South. Now, although one tree injures another by its shade and other robberies, still it is clear that the individual tree benefits as much by its foliage on the shady or northern side as it does by that on its sunny or southern exposure, and in practice we find the foliage of fruit trees, and that of many flowering plants, as Camellias for instance, on a north wall unusually fine. The distance of one fruit tree from another on an ordinary garden wall, I may take to be 15 feet; I have therefore made the circumference of the fruit cylinders which I have here introduced 15 feet, and the height 5 feet.

The ease with which all tangents may be made to run into the circumferential line peculiarly adapts the circular form to this sort of work, and the ease, too, with which a shoot fruitful at the extremities may be made to return upon the barren end of itself, and thereby clothe the bole, is no small recommendation to this style of trellis, not to mention its unity of character and consequent strength, having no ends, being a broad-based cylinder or low column. In explanation of this, the straight lines from the bole of a tree easily run into the circular form, as in ground plan (fig. 1, a), and the barren part, at the bole end of the shoot, is by the circular trellis covered by the fruitful part, so that, without any doubling back, the whole is covered with foliage and fruit; for everybody knows that fruits are

scanty near the bole end of the branch, and fruitful at the tips generally.

To show the practical value of small cylinders as compared with large ones, let us take one with a circumference of 30 feet instead of 15, and in round numbers try it thus:—

$$\begin{aligned} \text{Diameter } 5 \times 5 \times 7854 &= 19635 \\ \text{Diameter } 10 \times 10 \times 7854 &= 7854 \\ [19635 \times 4 = 7854] \end{aligned}$$

Diameter 10 is only twice diameter 5, but area 7854 is four times area 19635, showing an economy of space and materials equal to cent. per cent. by using trellises of 5 feet diameter instead of 10.

Here it will be seen that a trellis or cylinder of cir-

lengths may be accommodated with one or more cylinders, and I may here state that any moderately young tree new growing against a straight trellis may be wound round one of these cylinders with ease, and without transplanting.

As compared with other appliances for protection, these cylinders, although not handsome, are decidedly not unsightly at first, and, as the Gorse begins to get brown and withered, the young foliage of the tree expands and clothes the whole in fair colours for the summer, so that the Gorse is completely thrown into the shade.

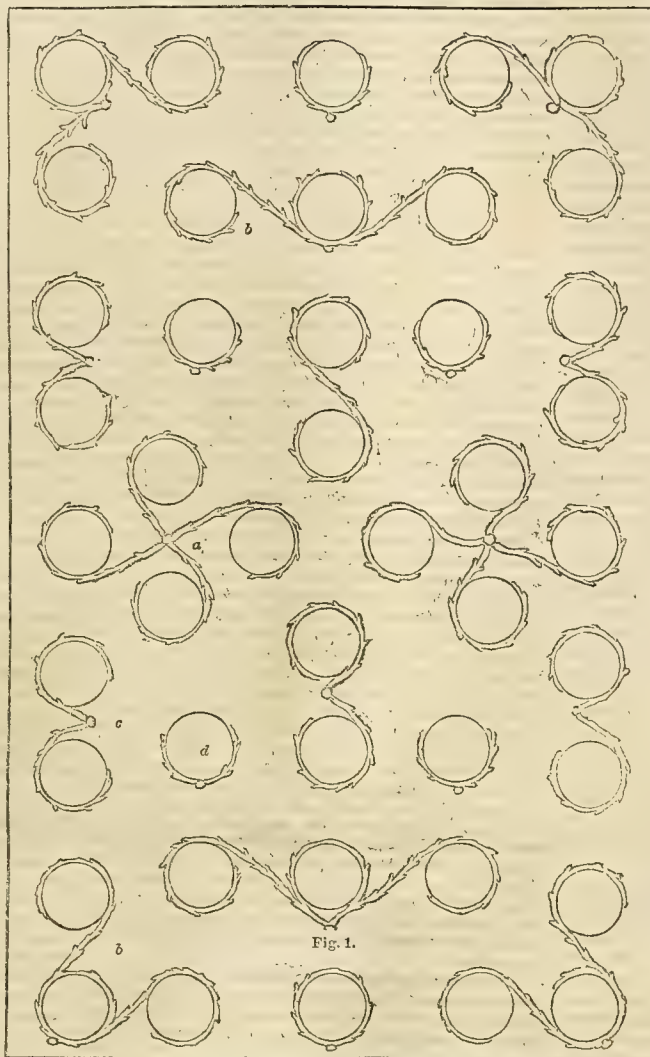
I have named Gorse as the best material, but Heath, or indeed any leafy faggots will do, and even those without leaves may have straw added to close the chinks, and thus give the necessary shelter.

The trellis is made of the same materials as ordinary strained wire sheep-fencing, the four uprights being one and a quarter inch by three-eighths of an inch, and 5 feet high without the claws, and they have no holes in them like sheep-fencing. The rods are of round iron one-quarter of an inch in diameter, and are first made into rings and attached to the uprights by means of copper wire, the uprights being notched on their outer edges about one-eighth of an inch deep with a round file, to receive the rods; by this arrangement the whole can be untied and shifted as required. The cost at this time (the iron being unusually dear) is 10s. each trellis put up and painted. Every plant upon a plane surface, as a fruit tree upon a garden wall, is fully exposed to violent action all at once: hence we see sun-strokes, from the supplies being unequal to the demand. Not so in the natural form of the tree, which is a globular and therefore a solid form, whereas the trained wall tree is but a skeleton, and that, too, backed by a reflector. The natural tree shades itself considerably, and owes much of its health to the action of leaves labouring in the shade. The present cylindrical form is, therefore, less artificial than the skeleton shape used on walls and espaliers, having all the good properties of the skeleton, and free from many of its defects.

It must be evident, from the practical examples just referred to, that, notwithstanding our variable climate, we really do succeed, with very little artificial aid, and that little only used for a very short time in getting fruits and flowers in great perfection. Sometimes the successful fruit-ground is only a sheltered flat at the sea level, as the Carse of Gowrie and the celebrated cider grounds in this county (Devon). The projecting eaves of a thatched cottage will enable a tree to flower and perfect fruit that elsewhere would not thrive. The Fig wants but very little to make it a hardy fruit tree, for we see it at Hedsor Lodge, on the banks of the Thames, fruiting freely as a standard. Certain sheltered spots, again, are famous for Plums, as Dittisham parish on the Dart where the noted Dittisham Plum (a very superior Plum, after the fashion of an Orleans), is cultivated for preserving, and in Staffordshire, on the Churnet, below Alton, there is another Plum ground, where shelter and dryness appear to be the only good

properties of the locality. It is, therefore, evident that a wholesale system of fruit-growing might be established in well selected spots with evident advantage to the community, but fruit walls for this purpose could not be built without an unreasonable outlay; besides, they are not moveable, and in the case of a tree failing on a wall, a tree has to be torn up by the roots and put there to replace it, but here you leave the tree in the earth and transplant the sheltering trellis to it.

No other system ever offered to horticulture possessed the means of protection which this does, for there is now only one side of the tree exposed, and any protection laid on the tops of the columns will be so elevated that a person may walk under, to gather fruit, &c., and it must be admitted that all fruits want a further protection than that from frost upon their blossoms. Cherries and Plums require netting from birds. Gooseberries and Currants the same. To cultivate Raspberries and Strawberries without protection would only be labour lost, for the birds would take all; even Apples and Pears are pilfered when exposed, and in the case of keeping such as Gooseberries and Currants on the trees till late in the season for dessert, they can now be snugly housed. I need only name one further advantage, and it is this, that the ripening of the wood depends mainly upon the amount of dryness, not only in the air but in the earth, and any one now, by regulating the communication between his tarpauling overhead and his drain-tiles underground, may lessen foul weather much, and whatever the farmer may say of the good effects of rain, I should prefer the bulk of our winter storms to pass over fruit tree grounds without wetting them. It is the sweltering hollows, combs, or valleys that yield the best fruits, where the staple is good and the sun pours in and the storms blow over; therefore, whatever is most convenient should be used for shelter



GROUND PLAN, SHOWING A COMPARTMENT IN A GARDEN FILLED WITH FRUIT CYLINDERS.—Scale 1/2 inch to 10 feet.

Fig. 1, a, shows a tree occupying 4 cylinders or 60 feet of trellis; b, 3 cylinders or 45 feet of trellis; c, 2 cylinders, and d, 1 cylinder.

cumference DOUBLE does not take just double the area, but no more than FOUR times the area to stand upon, and four times the amount of faggots to fill it. I have borrowed the evergreen foliage of the Gorse plant, and built a column of it within the circular iron trellis alluded to, in order that the early blossoms of our fruit-trees may not any longer be borne upon naked twigs.

Trellises similar to the foregoing existed in the gardens of the late Sir John Stanley, in Cheshire, in 1837, when

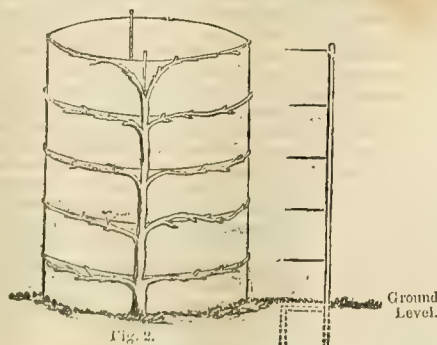


Fig. 2. Elevation of a fruit cylinder whose circumference is 15 feet and height 5 feet, showing 5 tiers of fruit-bearing shoots, 1 foot apart. Scale 1/2 inch to 1 foot.

I was gardener there, and the only alteration that I have made in my late respected employer's plan is the adding a body to his skeleton trellis.

I have shown in the accompanying plan how different



all round, and in the orchard these cylinders will maintain their ground to shelter one another, for they will be a thick wood, and an orchard of this nature can be got up in half the time that one of standard trees could be reared.

This principle is capable of further extension by means of hollow wooden cylinders of one-inch boards on end, and of circular single brick walls; but, as this paper is already sufficiently long, I will conclude here, as I have had no practical experience of culture in the hollow cylinder, whereas the other is in good working order. *Horticultural Society's Journal, July 1.*

#### LINUM TRIGYNUM.

THIS is a showy and useful plant for autumn and early winter decoration, producing, as it does, its large bright yellow blossoms freely for some two or three months together, and if guarded from damp the individual flowers remain a comparatively long time in perfection. The temperature of an intermediate house is, however, necessary during the period the plant is in bloom, for if kept in an ordinary greenhouse the flowers will be produced but scantily, and their beauty will be but short-lived, whereas if afforded a temperature of from 50° to 55°, well grown plants will be very attractive objects for a considerable time. I will suppose that young plants are in hand early in spring, and although this is their natural season of rest, yet with the view of securing a long season of growth they may be placed in a growing temperature about the middle of March. Choose a situation near the glass, where a moist atmosphere can be maintained with a moderate circulation of air, when the state of the weather will permit, and let the temperature range from 50° or 55° by night to 60° or 65° with sunheat. Take an early opportunity after placing the plants in growing circumstances to examine the state of the roots, and repot such as may require it. Unless, however, the pots are moderately filled with roots, it will be better to clear away any unkind soil, and thoroughly repair the drainage, repotting in the same sized pots until the roots have acquired a healthy condition, which, with careful attention, will soon be the case; the plants should then be afforded a liberal shift, say into pots two sizes larger than those in which they have been growing. Syringe overhead morning and evening, but apply water cautiously to the soil for a week or two after potting, for the roots are impatient of over much moisture, and if the fresh soil is over watered and allowed to become sodden, the health of the plant will be injured, and there will be considerable difficulty in getting it to make a vigorous start.

This *Linum* has a free habit of growth, and requires frequent stopping, to secure compact, bushy specimens; and the shoots should be kept regularly tied out, so as to admit light and air, which greatly promote close growth, and save the necessity for stopping so frequently. Maintain a moist atmosphere, and syringe overhead frequently during bright weather; and if red spider makes its appearance, which, unless the plants are kept in vigorous health, will probably be the case, place the affected plants so that the under sides of the leaves can be well washed with the syringe, and see that this pest is thoroughly eradicated before it gains a footing. During the summer months the plants may occupy a warm corner in the greenhouse, but a cold pit or frame which can be kept rather close, will be a more suitable situation. A second shift will probably be required towards the middle or end of May, and this should be given as soon as necessary; it will be advisable to avoid repotting near the time for removing the plants to their summer quarters. Although a high temperature, maintained by means of fire heat, would be decidedly injurious, it will be advisable to keep the atmosphere rather close, and to shut up early after syringing in the afternoon, and a slight shade should be afforded for a few hours on the forenoons of bright days. When the plants are well established in their flowering-pots, manure water, in a clear weak state, may be given two or three times a week, this will greatly assist in promoting vigorous growth. On the occurrence of unsettled weather in autumn, remove the plants at once to a light airy situation, where they can have the assistance of a temperature some 10° higher than that of the greenhouse, and where they can be allowed a free circulation of air in fine days. If they should be wanted to blossom earlier than they may appear prepared for, keeping them rather cool and dry for a fortnight, and then replacing them in a moist warm situation, will check the tendency to growth, and induce the formation of blossom buds. Care should be observed that the foliage is perfectly free from red spider previous to the appearance of blossoms, for it will be difficult to keep it under when the syringe cannot be used.

After blooming, the plants may be placed in any spare corner where they will be safe from damp and not exposed to currents of cold air, and they should not be excited into growth early in spring unless where very large specimens are desired; they should be allowed to remain at rest until towards May, giving water very sparingly while they are in a dormant state, and avoid wetting the foliage during damp cloudy weather. Before placing the plants in a warmer temperature, turn them out of the pots and ascertain the state of the roots, &c., and either give a moderate shift or repot into the same sized pots, after repairing the drainage, and removing any unkind soil, as the state of the roots may require. The treatment during this season need not differ from that recommended for last, and with careful

management, and a small annual shift, they will last for many seasons; but the shoots must be cut back rather closely when necessary, to prevent a naked appearance, and they may be disrooted sufficiently to allow fresh soil to be given without increasing the size of the pot; it will, however, be necessary to afford them a close rather warm shady situation to induce the roots to start after being cut back. Turfy loam and peat broken into small pieces and liberally intermixed with sharp silver sand and lumpy bits of charcoal, form a suitable compost.

Cuttings from short-jointed pieces of the young wood root freely; they should be selected as early in the season as is convenient, planted in light sandy peaty soil, covered with a glass, placed in a very mild bottom-heat, and guarded from damp. When sufficiently rooted to bear handling they should be potted singly in small pots and placed in a close warm situation till established, when they should be inured to a cooler atmosphere, more light and airy, and be kept growing steadily until the approach of winter, when they may be placed in a warm part of the greenhouse, and sparingly supplied with water at the root until they can be removed to a growing temperature in spring. *Alpha.*

#### Home Correspondence.

**Standard Rose Trees.**—I offer to the lovers of standard Roses a little plan of my own. It has succeeded admirably. An artificial prop to standard Roses is unsightly, and is both exposed to decay in the run of time, and to disasters from the raging of the wintry blast. In order to do without this prop, plant three standard Roses, (the longer the stem, the better) in an equilateral triangle. If on a slope, one leg must be longer than the other two. They may be from 8 to 14 inches apart. Bring the stems together at the top, and bore a hole through each of them, a little below where they have been budded; then through these holes thread a copper wire, such as is used for soda-water bottles, and bring the heads of the three plants quite close together, making the ends of the wire fast. This is all. You have here a group so firm and strong, that it can never break down, or ever require an artificial support. I made four groups last autumn. They are now in fine blow, and are much admired. *Charles Waterton, Walton Hall, near Wakefield.*

**Packing Peaches.**—At page 424 cotton is recommended for this purpose; but instead of cotton I find hay cut into chaff far better. Each fruit must be wrapped up in soft paper; they may then be packed in a box one above the other, like so many eggs in bran or saw-dust. In this way, just as in any other way, no vacant space must be left in the box. I sent a box of Grapes last year from London to Darlington, packed in this manner, and I was not a little pleased when my employer read to me part of a letter from the parties who received them, highly commending the mode of packing. To those who may have fruit to send a distance, let me add that Cucumber leaves are the best material for preserving the bloom on Grapes. *An Old Showman.*

**Potato Blight.**—In all Essex and Suffolk, particularly the latter, the Potato blight is raging with more fearful intensity than in any year since 1845, and we fear it may prove a great national calamity. Persons, however, who have availed themselves of our plan of planting very early in dry weather the earliest dwarf kinds, will have succeeded in obtaining sound crops already cleared off before the fatal spots on the leaves have appeared. The only alternative we now know of, where they are already infected, as a preventative of further destruction, is cutting off the haulm, thus bleeding, as it were, such tubers as may be contaminated till life is extinct. This process is preferable to pulling the stalks up, which destroys life instantly, shutting in disease, and causing further decay. *Hardy & Son, Maldon.*—Disease has appeared here in its very worst form. Some early sorts planted on a south border late in autumn, have, however, produced an excellent crop quite free from taint. This border had been well trenched up, and highly manured previous to planting. In order to enlarge the kitchen garden here a piece of ground adjoining it, which had for some years been a Grass paddock, was well trenched last winter and early in spring, and different parts of it planted with various varieties of both early and late Potatoes, without any manure. The disease showed itself about a fortnight back amongst the first planted of these, and in the course of a week not only the tops but about a tenth part of the tubers were much affected. It is now spreading fast amongst those planted considerably later; even the York Regents, although not half-grown, are much diseased in the tops. *J. Skene, Rochampton, Surrey, Aug. 2.*

**Yew Tree in Brabourne Churchyard, Kent.**—I send you the following evidence respecting the once glorious old Yew tree in Brabourne churchyard, in this county, and which many authors of the present day (as I suppose following older writers) have unfortunately represented as still alive and flourishing. I consider it invidious to name any one or two in particular, as it is evident how the mistake has arisen. This being the case in respect of this Yew (said to be 3000 years old), may not a like error be in print regarding other of our old trees? ex. gr. the Yew at Hedsor, Bucks, said to be 27 feet in diameter, and 3200 years old, or about 160 years older than the Trojan War! Would you not be doing the public a grateful service in clearing up this matter? In a foot-note at page 303 of vol. iii. of folio copy, of "History and Topographical Survey of the County of

Kent, by Edward Hasted, of Canterbury, Esq., F.R.S. and S.A., 1790," is the following: "Mr. Evelyn, in his 'Discourse on Forest Trees,' page 84, printed in 1664, mentions a superannuated Yew tree growing in this (Brabourne) churchyard, which being 56 feet 11 ins. in circumference, bore nearly 20 feet in diameter, and beside which there were goodly planks and other considerable pieces of square and clear timber, which he observed to lie about it, which had been hewed and sawn out of some of the arms only, torn from it by impetuous winds. This tree has been many years since gone, and a fine stately young one now flourishing in the room of it." From very recent admeasurement of the young tree, spoken of as above by Hasted, by a surveyor, a friend of mine, resident on the spot, and which may be implicitly relied on: The height of the present tree is about 44 feet. The circumference at 1 foot from ground is 9 feet 6 inches; ditto at 2 feet, 9 feet 8½ ins.; ditto at 4 feet 2 inches, i.e. where the first or lowest branch issues, 10 feet 7 inches. The diameter of surface covered by the tree is 27 feet. An intelligent old lady parishioner, aged over 90 years, never remembers the old Yew. The parish records are silent on the subject. Parties have for a series of years been in the habit of coming to examine the old Yew, but of course with no success. *W. J. Frampton, Sandgate.*

**Bats.**—Do you think that from any of your correspondents skilled in chemistry, you can learn a specific for the destruction of bats without causing a nuisance? A friend's church is infested by these vermin, and he cannot rid the place of them; they stain the floor, pews, and furniture, and the marks cannot be washed out. If any of your readers are able to mention anything which may tend to destroy them, I shall feel grateful. *C. J. Sale, Holt Rectory, Worcester.*

**Diseased Potatoes as Sets.**—I send you one or two Potatoes which were grown from diseased ones that lay in the ground during the winter; when taken out, although pulpy and little more than a kind of thick creamy substance, they had shoots of from 4 to 6 inches long. They were, for experiment, planted in a border; some that were not removed have thrown out most vigorous stalks. *Captain Parkes, R.N., The Cottage, Nightingale Lane, Clapham.* [It has been long since proved, by direct experiment, that rotten Potatoes will produce a sound crop; some say a sounder crop than apparently healthy sets. Some of the finest Potatoes we ever saw were thus obtained.]

**How to draw an Ellipse.**—In your paper of the 24th ult., there are some observations as to the mode of drawing an ellipse. The following is simple and accurate. Fix two pins upright in the board or paper on which you purpose to draw. Tie together the ends of a piece of thread, and throw it over the pins. With the point of a pencil stretch the thread as far as the pins will allow, and in this manner go round the pins. An ellipse will thus be traced on the paper. The points where the pins are fixed are the foci of the ellipse. *G. Sparkes, Bromley, August 6.*

#### Societies.

**CORNWALL HORTICULTURAL.**—At a late meeting held at Truro, the following articles were exhibited:—Best Pine-apple (Otaheite), Mr. M. Williams; second best (Queen), Mr. Vivian. Best bunch of Grapes (Wilmot's Muscat), Mr. Vivian; second best (Black Hamburg), Mrs. Fox. Best Melon (Fromham Hall), Mrs. Fox. Best pound of Cherries (May Duke), Rev. T. Phillpotts. Best quart of Gooseberries (Golden Drop), Mrs. Fox. Best Currants (White Dutch), Mr. Williams; second best (White Dutch), Mr. Vivian. Best quart of Raspberries (Easloft), Mrs. Fox. Best Strawberries (Goliath), ditto. Best Stove and Greenhouse Plants consisting of: Erica viridifolia, Hoya carnea, Clenderson, Kempferi, Rondeletia speciosa major, Vinca ocellata, Cyrtocera reflexum, Brassia verrucosa, Aphelasia purpurea macrantha, Pentas carnea, Mrs. Fox. Best six varieties (Cyrtocera reflexum, Rondeletia speciosa major, Stactis macrophylla, Erica gemmifera, Stanhopea Wardi, Eschyanthus Lobbi), Mr. G. Williams. Best Stove Plant (Hoya bella), Mr. Tweedy; second best (Stephanotis floribunda), Rev. T. Phillpotts. Best Greenhouse Plant (Kalanchoe versicolor), Rev. T. Phillpotts; second best (Stactis Holfordi), Mr. M. Williams. Best Orchids (Vanda tere, Aerides odoratum, Phaius albus, Oncidium hexosum, Calanthe veratrifolia), Rev. T. Phillpotts. Best specimen (Saccobolium guttatum), ditto. Best Gloxinias, Gesneras, Achimenes, or Sinningias (G. Petoiana, speciosa superba, Achimenes patens, purpurea magnifica), Mr. G. Williams; second best (Marie Van Houtte, Maxima, Passinghami, Rosea, Speciosa superba, Petoiana), Mr. W. P. Williams. Best specimen (maxima), Rev. T. Phillpotts. Best Pelargoniums (Forget-me-not, Leucantha, Virgin Queen, Nanda, Afghan, May Queen), Mr. Williams; second best (Magnet, Enchantress, Purple Standard, Orlando, Belle of the Village, Non-such), Mr. Lowry. Best four (Ariadne, Elise, Arethusa, Ajax), Mr. G. Williams. Best specimen (Prince Arthur), Mr. Williams. Best Fuchsias (Clapton Hero, Voltigeur, Kossuth, Prince Arthur, Splendide, Gem of the West), Mrs. Fox. Best Bulbous Plants (Gladioli insignis and cardinalis, Lilium eximium), Mrs. Fox. Best collection of cut Roses (William the Conqueror, Coupe de Hebe, Grant des Batilles, Queen Robin Hood, Madame Zontman, Dr. Arnal, Dr. Marx, Souvenir de la Malmaison, Baronne Prevost, Caroline de Sansal, Duchess of Sutherland, Hyacinthe, Didon, Paul Feras, Paul Ricaut, Blain No. 2), Mr. G. Williams. Best Picotees (May's Portia, Sharp's Elegant, Hudson's Nymph, Holiday's Delicate, Barranger's Miss Duke, Burroughes' Duke of Newcastle), Mr. Woolcock. Best Pinks (Laura, Harriet, Red Rover, Goliath, King of the Purples, Prince Albert), Mr. Woolcock.

#### Notices of Books, &c.

**Ledebour's Flora Rossica** is now completed by the publication of the fourteenth fasciculus, which includes the Ferns and a complete index of the work.

A supplement to *Pritzels Thesaurus Literaturæ Botanicae* has been published by E. A. Zuechold (Halle), in the form of a pamphlet of 60 pages.

*Instructions pratiques sur la Pisciculture, &c.* By M. Coste (Williams and Norgate).—The author of this in-



ing little volume, one of the Professors in the *Age de France*, gives the result of his own experiments in fish breeding, and a history of the progress of discovery. It was about the year 1750 that a man named Jacobi first proposed to fecundate artificially, and thus to repair the loss sustained by the fresh waters of the Continent by waste and neglect. An account of his method having been communicated by Count Goldstein, high chancellor of the Empire, to one of the ancestors of the celebrated Crocy, was published in French by Duhamel in 1830. Since that time the system has been occasionally tried to practice, especially by Mr. Shaw and Mr. Cus in this country, and it is now exciting great interest in France. M. Coste gives a very good account of the whole process; but as it will not bear curtailment we are obliged to refer the reader to his pamphlet.

### Garden Memoranda.

**STOKE PARK, NEAR SLOUGH.**—This fine place was the residence of the famous William Penn, the son of Pennsylvania, and it has remained, we believe, in the possession of his descendants ever since, within these last five or six years, when it became the property of the Right Hon. Henry Labouchere. The house, a modern building, with a domed observatory on the top, and ornamented at the sides with long rows of fluted Doric columns, stands on a gentle eminence near the centre of a noble park, which is well-wooded, chiefly with Oak, and contains a numerous herd of deer. A fine piece of water winds round the valley at the bottom of the rising ground, on which the house stands, with raised stone bridges, over which the south approach passes, and little cascades half hid among trees, serve to set off the grounds to much advantage. On the south side of the house is a conservatory, with roof and floor similar to those of the Great Exhibition of 1851. It was occupied by the kind of plants usually found in such structures at this season of the year. Among them there had been some noble masses of *Veronica asiatica*, but their beauty was nearly over. A beautiful green lawn stretches out on all sides from the terrace on which the house stands, and from this point a wide view of the surrounding country, which embraces Windsor Castle in the distance, can be obtained. The timber in the park, too, is here and there cut out to vistas, which carry the eye to some object which it has been thought desirable to bring into view. One of these terminates in a monument erected, we believe, by the Penn family, to the memory of the poet Gray, who "quietly sleeps" by the side of Stoke Church, which is also within the park, and close to the old family residence, a portion of which (bearing date 1555) still stands, and is inhabited. One or two of the rooms, with their ancient furniture are, we understand, preserved in their original state.

The kitchen garden, which is possibly as old as the house just mentioned, is now being greatly altered: three excellent Vineries are just being erected, and some substantial new walls added to it. A large pond, too, which had a place in its centre, has been drained off, the walks and ground where it was have been levelled, and indeed the garden altogether is beginning to wear quite a fresh appearance. The soil, which before the draining took place was wet and adhesive, favouring clubbing in the Brassica tribe, has now become more workable, and the clubbing has nearly disappeared; the latter has also been greatly prevented by digging the burnt refuse of the garden and plenty of manure into the ground. Abundance of excellent vegetables can now be grown where before there was only tunted produce. So much, therefore, for the benefits of draining and improved culture.

The new Vineries are divided into three compartments, one of 45 feet long, and two of 30 feet long, and they are 15 feet wide. They are heated by hot water in iron pipes; both the roof and front lights are made to move, so as to secure plenty of ventilation, and openings furnished with wooden shutters inside, and perforated zinc screens outside, have also been made in the back wall, through which air can be admitted when the weather will not permit the lights to be opened. The borders have been well drained, and they are made wholly on the surface, so that it is hardly possible they can ever become water-logged. The front wall is set on arches, and the Vines are to be planted inside the house, with the exception of one compartment, which is to have them one out and one in alternately, in order that an opportunity may be afforded of knowing which succeeds the best. Behind the Vineries are storing and potting sheds, Mushroom houses, and a room to be fitted up conveniently for the garden-men to take their meals in. The old Vineries will be permitted to stand till the new ones come into bearing. The Vines in them are apparently of great age; they bear well, however, but the bunches, though well-coloured, are small.

The beautiful exhibition of Grapes in pots, from Stoke Park, at the great show at Chiswick, in July last, will, doubtless, still be fresh in the recollection of many; fine, however, as these certainly were, they were not the best that Mr. Bousie has produced in this manner, for all the finest had been cut before the show took place. The Grapes in pots are grown here in a low span-roofed house, with a passage up the middle, and a bed on either side the beds being trained over the roof. Top heat is obtained by hot water in iron pipes and a gentle bottom heat by means of leaves. The pots are set on the leaves in October, and when the Vines have broken and are

showing fruit, the bed is filled up with fresh leaves all round the pots. A suitable growing heat is kept up, and the roots are fed once a week or so with liquid manure; but not too strong, for when that is the case, it is found to be far more injurious than beneficial. Treated in this way they progress satisfactorily and ripen off a good crop in May, each of the Vines producing eight or nine bunches, and some having even 10 bunches on them. It has been thought by some that the same Vines will not succeed a second year in pots; but Mr. Bousie has found them to bear equally good crops the second as they did the first year. The chief point to be observed is to prune them close in like walking-sticks, *i. e.*, on the Crawshaw system. Pruned in this way, and some fresh soil given them, no fears need be entertained of their succeeding. One of the compartments of this pit is at present filled with Muscats, which are swelling off a beautiful crop. It may, perhaps, be worthy of notice that the Mill Hill Hamburgh has been found very unproductive under pot culture. Strawberries, French Beans (among which the greatest favourite here is the new long-podded Nigra), and Cucumbers, are also cultivated in this pit. The Cucumbers, for a late supply, are up now, and in a short time will be planted out, after which bearing plants will be kept up all the winter. Next year Mr. Bousie intends to try Peaches over the Strawberries, this fruit and the Peach succeeding well together.

It will be recollected that the Fuchsias from Stoke Park gained the first prize at Chiswick this year, the plants being by far the best that were shown. They are still in great perfection—complete pyramids of bloom from bottom to top. This is mainly effected by keeping the laterals constantly stopped, by which means plenty of flowering shoots are produced.

The flower garden, which lays on the west side of the house, has been much altered and extended since Mr. Labouchere has had the place. It is now in fine condition, the Hollyhocks here, as well as along the side of the centre walk in the kitchen garden, being in fine bloom. Some of the second year's plants, which were not moved last winter, but protected about their crowns with a little coal ashes, have each some seven and eight stalks, thickly covered with magnificent blooms. Among the sorts, Comet, Walden Gem, Sir David Wedderburn, Spectabilis, Charles Barron, Watford Surprise, Sulphurea perfecta, Belladonna, and Magnum Bonum, were the most conspicuous.

We may mention for the information of those who have frames and other things to protect in winter, that "frigi domo" has been found here to be far more durable than mats, while it is even more valuable as a protecting material. Some that has been used two years here is scarcely the worse for wear. We also find that it is to replace mats in the Garden of the Horticultural Society, notwithstanding its much higher price in the first instance.

### FLORICULTURE.

**CULTURE OF THE CHINESE PRIMROSE.**—I generally sow my seeds about this time, or a little earlier, in shallow pans, in light sandy soil, without any manure. They are sown thinly and pressed down on the surface, so as just to be covered with the soil. After a gentle watering, the pans containing the seed are removed to a hotbed, where they remain until the young plants are about an inch in height. At this stage, they are pricked out into the same sort of pans, an inch apart, adding this time one-third leaf-mould to the soil. The plants are put into the hotbed again until they have attained the height of 2 inches, when they are taken out of the pans, and shifted into 5-inch pots that have been well drained. The compost for this and their final shift consists of equal quantities of cow-dung two years old, leaf-mould, peat earth, and sandy soil. After potting, the plants are removed into a cold frame, with an eastern aspect. The lights are kept close for a few days, and the plants are shaded from the mid-day sun until they commence growing. Air is then admitted, gradually at first, but as soon as I perceive the plants to be fairly in a pushing state, I ventilate freely. The sashes are, however, always put on when it rains, for nothing is so injurious to Primulas as water overhead, at any stage of their growth. As they begin to fill their pots with roots, I give them liquid manure once a week, made from pigeon's dung. I permit the first flower stem to rise, but only for the purpose of judging of the merits of the flower. As soon as that is decided, the good flowers are picked out, and when the pots are filled with roots the plants are finally shifted into 8 or 12-inch pots, and treated in precisely the same way as at the former shifting, and with the same situation and aspect. They remain in the cold frame until the middle of October. After that, they are brought into their winter quarters to flower in the greenhouse. As soon as the plants have stopped growing, I withhold the dung-water, as a continuance of it would be likely to destroy them in the winter months. *J. H.*

**RAISING GLADIOLI FROM SEED.**—The Gladiolus is easily propagated from seed. It may be sown about the middle or end of September, as soon as ripe, or early in the following spring, either on a slight hot-bed, or in the open air in pans or boxes, in a light sandy soil. The seed should be covered about a quarter of an inch deep; and the seedlings protected during winter with a covering of 2 or 3 inches of leaf-mould. The second year after sowing they may be pricked out into pots, an inch apart; or they may be separated into small balls, and

these balls may be allowed to remain in pots until they are large enough for planting out. In about three or four years from the time of sowing, the plants may be expected to flower; when they will amply repay all the care and attention which have been bestowed upon them. *A. M.*

**PROPAGATING THE CALCEOLARIA.**—Among other useful hints in the last Number of the "Scottish Florist," we find the following on propagating the Calceolaria. The writer says: "About the end of August a patch of ground was selected where the cuttings were to be planted, a hand-glass was then placed on the spot, and pressed firmly on the surface of the soil, so as to mark the size of it. Having ascertained the size of the hand-glass, the soil inside the mark was taken out to the depth of 6 inches, and a compost of one-third sand, two-thirds leaf-mould, put into its place; after giving this a gentle watering, the cuttings were planted, covered with the hand-glass, and shaded till they were thoroughly rooted; the shading was then removed and air admitted day and night, except in the case of severe weather, when the hand-glass was kept close. They required very little water till the middle of October, at which time they were taken out of the cutting bed and potted, the largest into 5-inch and the smaller into 3-inch pots, using the same compost as mentioned for the cuttings." They were wintered on a shelf in the greenhouse, 10 inches from the glass. In watering care was taken not to wet the foliage, and not one in a dozen damped off.

**NATIONAL FLORICULTURAL SOCIETY, July 28.**—Mr. SALTER in the chair. A Certificate of Merit was awarded to Mr. Turner, of Slough, for a Picotee called Ariel—a full-sized rose-edged kind, of good substance, purity, and smoothness. It was not, however, very well shaped. A similar award was made to Verbenia Triumph, from Mr. Smith, of Hornsey—a reddish crimson sort, with a cheerful light eye surrounded by heavy rose; truss medium sized. Label of Commendation to Phlox Madame Celeste, from Mr. Salter—a white kind, with a pale purple eye; truss large and compact. Ditto to Antirrhinum Constance, from the same raiser—a kind having a pure white tube and crimson lips, the throat inside being pale yellow. There was also a good Petunia from Mr. Ambrose, of Battersea. Aug. 4.—Mr. Salter in the chair.—First class certificates were awarded on this occasion to Verbenia Incomparable from Mr. Bragg of Slough. It has a well filled truss of large pipes, which are delicate lavender in colour, with a small greenish yellow eye. To Mr. Geo. Smith for Verbenia Islington Rival, a fine bright rosy scarlet variety, with the habit of Robinson's Defiance. To Messrs. Paul for a Hollyhock named Glory, a very long spiked sort, with vivid rosy flowers having a smooth guard petal and well filled compact centre. Label of Commendation to Carnation Phaeton, from Mr. Headley, of Stapleford, Cambridge. It is a bright scarlet flake of good colour and marking. Mr. Salter sent a scarlet Potentilla, which was very striking on account of the brilliancy of its colour, but it was somewhat deficient both in size and form. Messrs. Paul furnished a bloom of a Hollyhock named Lizzy, a delicate pink kind, of good shape and substance.

### SEEDLING FLOWERS.

**FUCHSIA: D. W.** A showy flower with well reflexed sepals; but still not so good as some possessing the same colours now in cultivation.  
**GLADIOLI: W. J. E.** Both beautiful; but of the two we like 7 the best, its yellow side petals setting off the others to advantage.  
**LOBELIA: D. W. C.** Large, and a beautiful blue colour, like that of *L. Ramosoides*.  
**PANSIES: J. R. B.** All of very poor quality; the straw-ground flower, with purple belting, is the best, and may be tried again.  
—*W. J.* Yellow, with slight tinge of bronze on the top petals, which will be stronger in spring; otherwise it is a good flower, being round, smooth, and having a rich dark eye.  
**PHLOX: E. R. C.** Pretty; but by no means uncommon.

### Miscellaneous.

**Varnish for Iron-work.**—Locksmiths and others, says the *Home Companion*, working at the forge are accustomed to blacken the articles intended for railroads by making them red-hot, and burning on them some linseed oil. This plan, which is practised to improve the appearance of the articles and to protect them from rusting, is not economical nor always successful: it fails when the combustion of the oil has been too great. By the following process a varnish is made without the above disadvantages, which gives to articles a better appearance:—Dissolve, in about two pounds of tar oil, something more than half a pound of asphaltum and a like quantity of pounded resin; the mixing is performed hot in an iron kettle, care being taken to prevent any contact with the flame. When cold, the varnish is poured into a vessel and kept for use. These varnishes are for out-door wood and iron-work, not for japanning, leather, or cloth. Oil varnishes are used for patent leather, and copal for japanning metal. *Builder.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

As light decreases, shading must likewise be gradually lessened, and in a short time discontinued altogether, except to a section of Orchids, which will require its application for some time longer. We have in former Calendars adverted to the importance of well ripening the wood of plants (hard-wooded ones particularly) intended to bloom in perfection next season, and we allude to it again, as the year's growth by this time will in all likelihood be completed, and the remainder of the autumn should be devoted to maturing the season's growth. Exposure to the full influence of air and light, the principal agents to effect the purpose, is essential; and although water in sufficient quantities must be given to meet the plants' requirements, they should not have much more (if practicable to prevent it), as an extra supply of water might in some instances induce an autumnal growth, a point to be avoided. It will, however,



be better to soak each plant well when requiring water, and then allow it to become somewhat dry, than merely to damp the surface only daily while the principal parts of the roots are suffering. Achimenes, as they go out of bloom, may be placed in a frame to ripen their tubers, exposing them fully to the sun, but keeping them rather dry. If the different varieties of Epiphyllum have made their growth under glass, they may be removed to a sunny spot out of doors. Continue to pot off seedling Cinerarias, Chinese Primroses, and Calceolarias from the seed-pans when the plants are large enough for the purpose.

#### FORCING DEPARTMENT.

**VINERY.**—Wherever the leaves in the early house show indications of ripening, the sashes should be removed and the Vines fully exposed; beyond stopping any late lateral growths which may appear, the Vines should not be touched until the leaves fall. As each Vinery is exposed, the sashes, rafters, &c., should be put in a state of repair and painted, that everything may be in good working order when the time for forcing again arrives. If the sashes are not wanted for repairing they may be used for a variety of purposes, such as ripening Grapes, Peaches, &c., against walls, forwarding Tomatoes, or to assist in the propagation of bedding stuff. Young Vines planted during the present or past season should be stopped, when once they have reached the top of the house. Where the rods however are intended to carry fruit next season, and the Vines are growing freely, six or eight joints beyond where it is intended to cut them back should be left, as a too close stopping might cause the principal eyes to break, and endanger next season's show of fruit. Lateral shoots after this may be kept stopped back pretty close, as the object now will be more to ripen the existing wood than to encourage fresh growths.

**PEACH HOUSE.**—As the houses are cleared of fruit, the trees should be gone over, and the wood not required to produce fruit next season cut away; tie the remaining shoots neatly in without injuring the leaves, removing the laterals as you proceed, this will allow more light and air to reach the wood intended to carry next season's crop, and will assist towards maturing well developed fruit buds, rendering the chances of the succeeding crop nearly certain; to ripen their wood, close up the house early in the afternoon of each bright day—a temperature of 85° or even 90° will not hurt them for two or three hours. In the evening open the house again as much as the sashes will allow: fires should be made in wet weather, by day accompanied with air; in fact, to be brief, aim at a dry and rather high temperature by day, and as cold a one by night as circumstances will permit. Keep down red spider by well engineering the trees every morning with air on the house. When the leaves begin to change colour and the wood becomes brown up to the point, the sashes may be removed. It would much assist the ripening process if the borders could be protected from heavy rain, or rather if they could be kept dry altogether. Fruit trees in pots intended for forcing, if the wood is well ripened, supposing they have been growing under glass, may be removed to the foot of a south wall, and in a few weeks to a shady cool place to rest.

#### FLOWER GARDEN AND SHRUBBERY.

Now that the principal planting out for the season may be considered over, attention should be at once directed towards furnishing a supply of plants for another year; and as flower garden plants are now yearly required for the humblest gardens, and in some places have to be produced in very considerable quantities, the propagation of what are popularly called "bedding out plants" forms a considerable part of a gardener's duty during the autumn and spring months; and some forethought is necessary, where several thousand plants are required, to enable this to be done with the least expense and inconvenience. The class of plants which will first require propagating are Geraniums, of which both the fancy and common bedding kinds require to be struck in time to get established in small pots before winter. The different scarlets and horse-shoe-leaved varieties may remain for a week or two longer; with the above may be classed *Crassulas*, *Lantanas*, *Hydrangeas*, *Mesembryanthemums*, &c., as they should all be struck early, to flower freely the following season. *Petunias*, *Verbenas*, *Heliotropes*, *Salvias*, and *Lobelias* may be taken in hand next, reserving *Calceolarias* for the last, as they strike better during the cool weather of autumn than earlier in the season. The above general hints will show young beginners how to proceed without wasting time. *Verbenas* and *Calceolarias* may be struck under hand-glasses, or in a cold frame, which will answer for most of the others; but *Geraniums*, including the scarlet varieties, will strike freely on a south border inserted in sandy soil. We will allude to this subject again in future Calendars. Sow intermediate Stocks, to be kept in pots throughout the winter for spring flowering, and pot a quantity of *Bromptons* for the same purpose; planting the remainder in a sheltered spot, to take their chance through the winter. As the greater part of the flower garden plants will now be at their highest perfection, a careful survey should be made, to see whether the arrangements of the different colours employed are capable of improvement; and for the same reason, the habit and colour of new varieties under trial should be noted, and if any are found to possess a more desirable habit or colour, no time should be lost in procuring and propagating them for next season. Well roll lawns, which in many places have become soft and spongy through the late rains; the rapid growth of Grass must be met by mowing rather oftener; the same remarks will apply to gravel walks.

Surface weeding, in shady places especially, will be required, or the application of salt and water to eradicate the smaller weeds, mosses, &c., after which they should be well rolled, to make the surface firm and even.

#### HARDY FRUIT GARDEN.

Apricots and the choice kinds of Plums will require some protection as they approach a ripe state, to preserve them from the ravages of wasps, flies, &c.; the Nottingham hexagonal netting is the best we know for this purpose. Thin the best kinds of Apples and Pears where too thickly set, if fine fruit is wanted. Let Grapes, Figs, Peaches, &c., have all the advantage of a full exposure, by keeping the wood closely tied, or nailed to the wall. If Figs are growing vigorously, the laterals produced since the last stopping may have their points again pinched out.

#### FLORISTS' FLOWERS.

Miserable and wretched has the weather been for these last six or seven weeks, and the fixtures for floral exhibitions have been generally much too early. Carnations especially have suffered, many rotting before the flowers could expand. Layering these plants may be proceeded with; some nice light vegetable mould and sand, with pegs (hooked) of fern or lead, and a thin-bladed sharp knife are the amateur's requisites. We have often, after we have pegged down the layers, placed a smooth flat stone as large as a crown piece on the soil, with which the incision was covered, thus prevented it being washed away; at the same time, in the hottest weather, there was a genial moisture beneath it which certainly much facilitated the emission of roots. Should the weather take up, of which there is every appearance, no time must be lost in crossing those flowers from which seed is desired. **PINKS.**—First-struck pipings may be planted out, potting a quantity in order to fill up vacancies, which may occur by the ravages of wire-worms, &c. The wet weather has caused these flowers to lace well this season, and, singularly enough, we perceive numerous promising pods of seed swelling, a result we should hardly have expected. Make Pansy beds; and attend to the training and thinning of the shoots of Dahlias: place small inverted pots, with a little dry moss within them, on the top of the stakes; these are effectual traps for earwigs.

#### KITCHEN GARDEN.

Never since 1846 have we noticed such a general attack of the Potato disease as at the present time. In numerous instances the haulm, even of late planted crops, are denuded of their leaves and blackened by the pestilence. In such cases pull them up, or cut them off level with the soil. The ground may then be usefully occupied by planting *Borecole* of all the kinds, *Broccolies*, *Brussels Sprouts*, *Coleworts*, or even drilling in *White Turnips* between the rows. It is now too late to sow Swedes, but plenty of young plants is generally easy to be obtained; and in the absence of the former named plants, may be planted to fill up the ground. As time permits, the Potatoes may be dug when the tubers are a little more ripened, and before the plants get too large, throwing a little earth up the stems of the plants as you proceed; after which the plants will make way, and prove of the greatest use in the spring. Celery and Cardoons should now be earthed up as wanted; to grow these well, with clean straight heads, they should grow to nearly their full size before being earthed up; up to which time they will (the former particularly) require liberal waterings when the weather is dry; before proceeding to earth up Celery, divest the plants of a few outside leaves, and the suckers, which sometimes are found at the base of the stem. Then tie them up with a straw of bast close under the leaves, and earth up to the tie, which should afterwards be removed. A second earthing may probably be required, but the above will generally prove sufficient. When Celery is planted in beds, three or four rows in each, thin boards may be placed between the rows, while the earth is put in; which ever way is practised, the earth must be as dry as possible, and the plants likewise, when the operation is done. Cardoons are best tied up with hay-bands before earthing. Make preparations by collecting a sufficient quantity of horse-droppings for commencing a Mushroom bed the end of the month, and which from this time should be regularly collected and prepared for successional beds. Sow succession crops of the white and red Turnip Radish; thin out Chicory, and plant largely of Endive. Where the ground is wet, this crop should be planted on raised slopes, facing the south, to prevent damping in wet weather.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending Aug. 5, 1853, as observed at the Horticultural Gardens, Chiswick.

July and August.	Baromet. Hgt. in Feet.	TEMPERATURE.							Wind.	Rain.
		Baromet.		Of the Air.			Of the Earth.			
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.		
Friday.. 29	29.84	29.81	71	56	63.5	62	59	S.W.	.03	
Saturday 30	29.34	29.74	68	48	58.0	63	59	W.	.09	
Sunday 31	29.84	29.91	71	58	64.5	61	59	S.W.	.03	
Monday 1	29.93	29.81	70	58	67.0	62	61	S.W.	.03	
Tuesday 2	29.93	29.86	73	52	62.5	64	61	N.E.	.00	
Wednesday 3	29.93	29.91	74	52	63.0	63	61	E.	.00	
Thursday 4	30.02	30.05	74	45	59.0	63	60	N.E.	.00	
Average ..	29.94	29.86	72.4	62.7	62.5	62.6	60.2		.06	

July 29—Fine; rain at night.  
30—Fine; hazy; white clouds; clear.  
31—Clear; cloudy and fine; overcast; rain.  
August 1—Uniformly overcast; very fine; rain.  
2—Fine; very fine; overcast.  
3—Uniform haze; white clouds; clear at night.  
4—Fine; very fine throughout; clear.  
Mean temperature of the week 2 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending August 13, 1853.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Wind.			
						N.	N.E.	E.	S.W.
Sunday 7	71.6	51.2	62.9	7	0.57 in.	1	4	2	5
Mon. 8	75.3	49.8	62.6	10	0.40	1	4	1	4
Tues. 9	74.4	51.4	63.4	10	1.06	1	4	1	4
Wed. 10	75.1	53.0	64.1	13	0.35	1	4	1	4
Thurs. 11	74.8	51.7	63.3	14	0.74	1	4	1	4
Friday 12	74.5	51.6	63.0	12	0.47	1	4	1	4
Satur. 13	72.8	50.3	61.5	12	1.14	1	4	1	4

The highest temperature during the above period occurred on the 13th—therm. 93 deg.; and the lowest on the 13th, 1839—therm. 32 deg.

#### Notices to Correspondents.

**BIRDS:** E. W. All that we know of the Virginian Nightingale is given in our volume for 1851, p. 566, to which we must be referred.

**BOOKS:** J. A. Your inquiry is too vague to admit of an answer. If you will say in what sense you employ the word botany, we shall be happy to advise you. But so extensive a subject it is to be studied with a view of gaining "a complete knowledge of it, unless a person is prepared to devote his life to its extensive study."

**CORROSIVE SUBIMATE:** N. B. The use of corrosive sublimate according to the directions given by one of our correspondents some time since, is not recommended by us, except experimentally. It is so dangerous an agent that one never uses it safely with it. If vegetables, strawberries, &c., be watered with it, they are likely to absorb it, and be killed; but we do not think it dangerous to eat fruits if produced weeks after the poison was absorbed. If the ground be watered with it, or for four days previous to planting vegetables, there would be danger in eating them, for the corrosive sublimate is decomposed. If you try any experiments with this substance we shall be very glad to hear the result.

**CROSSING THE MIRABILI:** C. D. You will find the original matter in the *Revue Horticole*, Nos. 9, 10, 11, of the present year. **GRAPES:** M. E. C. Shanking arises from many causes; but your case, we imagine from the border being so cold and wet, to interfere with the proper action of the roots. Drainage will improve the condition of the soil, and covering with tarpauling, or other material, in winter, so as to keep off the wind, will doubtless greatly diminish the evil.

**GREEN WALNUTS:** W. H. A half sieve contains, we believe, 175 to 200 fruit, more or less, according to their size.

**HIGH TEMPERATURES:** Eboracensis. The highest temperature the shade recorded in *Howard's Climate of London*, and in *Meteorological Journal* kept in the garden of the Horticultural Society at Chiswick, were July 13th, 1808, 95 deg.; 13th, 1825, 97 deg.; July 5th, 1852, 97 deg., and on following day it was 95 deg. On the 17th July, 1834, a thermometer on the lawn, exposed to the sun's rays, but not affected by radiation from walls and other objects, rose to 130 deg., does not appear from *Howard's* work that the 8th of June, 1814, was a hot day, at least, near London, the maximum being 65 deg.!

**INSECTS:** E. F. H. S. Your Beech trees are infested with *Coccus Fraxini*. A mixture of quick lime, and soft soap will doubtless be serviceable in destroying the insects, but wash the trees over with common oil will be effectual.—N. A. Your Roses are infested with the larvae of the small saw *Selandria atropis*. See our replies to queries last week. **W. C. J.** The minute caterpillars on your Roses are apparently those of the ermine moth, *Bombix lubricata*, in a very young state. Shake the plants sharply over a white cloth, and destroy the insects as they fall, and use the fluid alluded to in the answer to *Cartwright*. The larvae of your fruit trees are infested with the small mining caterpillars of a little moth, *Tineola*. See *Gardeners' Chronicle*, 1841, p. 261. We know better remedy at the present time than picking off and burning the blisters, or if a tree of value be attacked, blotches might be squeezed between the fingers, so as to destroy the insect.—J. M. D. The insects sent as having attacked the Spruce and Scotch Fir trees are not the caterpillars of moths, but of a small saw-fly. Pray explain how this is, and possible send us some of the cocoons in a little box, so as to escape being crushed, as those are now sent. The ground at foot of the trees should be raked off and buried, as the cocoons are probably formed among the loose rubbish on the ground. **Cartwright.**—J. C. If people will believe that insects are cause of the Potato disease we cannot help it. Those who have sent are described in our article in the *Gardeners' Chronicle*, 1847, p. 483. That they are found on the Potato, many other insects, and that they suck its leaves is also certain, but Potatoes quite free from insects are attacked; and America, they attribute the disease to an insect which is native of our islands. W.

**INIS:** A. H. The species allied to *ochroleuca* are *stenogaster*, *Guldenstüdtii*, and *halophila*; but none of these grow six high. There is a fine Indian, *I. aurca*, very handsome, but are unacquainted with its stature. You are, no doubt, aware that they all acquire much larger dimensions than when grown in water.

**MORPHOLOGY:** J. S. Your specimen is a very striking example that condition of the floral organs of the Rose which is represented in our Volume for 1847, p. 171.

**NAMES OF PLANTS:** A. B. C. *Cystopteris fragilis*. S.—C. K. L. *Goniopteris penicillata*; 2. *Cyathea dealbata*; 3. *Asplenium lucidum*; 4. *Lastrea Filix-mas*; 5. 6. *Athyrium Filix-mas*; 7. *Lastrea spinulosa*; 8. *Lonicera microphylla*. S.—H. E. *Shepherdia canadensis*.—Constant Reader. 1. *Cyrtocarpus flexuosus*; 2. *Pentstemon carnea*; 3. *Ceanothus azureus*.—T. B. H. *Japanica*.—J. H. It is one of the many species of *Coniferæ* which infest still or stagnant waters.—W. E. C. *Abies cephalonica*. L. B. S. Your fungi were putrid and deliquescent when they reached us; we shall therefore say they could not have been *Mushrooms*.—K. B. There is a limit to everything, and ability to name plants is limited by the time at our disposal. We are quite unable to give up hours to the determination of the species of a boxful of weeds.—C. H. We suppose it some kind of *Martagon Lily*; but the specimen was in so shrunken fragments when it reached us, and unaccompanied by leaves, or any account of its history.—W. H. E. *Spicebush*, a hardy shrub, native of Nepal. A very handsome plant.—A. Subscriber. *Lycopodium denticulatum*.—W. H. E. *Lycopodium arvense*.—D. Achillea filifolia.—J. Henderson. 1. *Lycopodium discolor*, not at all like *revolutum*; 2. *Phlox articulata*; 3. *Mariannthus ceruleus*; 4. *Saxifraga aspera*.

**PEAS:** F. Your Peas have a broad rather short pod, contain about six Peas, which are not so tender and sugary as those of Knight's Marrow. It is, however, one that is likely to suit market very well.

**POTATOES:** An Inquirer. There is no sufficient reason for supposing that the disease is caused by electricity. You may fancy it to be caused by anything; but *fancies* are not reasons.

**SEASON OF FRUITS:** Eboracensis. It is no doubt true that in the edition of the Horticultural Society's Fruit Catalogue, published in 1826, no seasons were given; for at that early period no had been ascertained in the Society's garden. But the second edition is as full as possible in that respect, and so is *Lindley's "Guide to the Orchard"*; and these are the two standard modern English works on fruit trees.

**TIGRIDIA:** W. C. M. Your leaf has all the symptoms of having been grown in a soil too cold and too damp.



## ROYAL AGRICULTURAL COLLEGE,

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## EARLY SPRING FEED.

**TRIFOLIUM INCARNATUM, OR ITALIAN CLOVER.**—This valuable Clover thrives well if sown upon a Wheat stubble without ploughing, and produces an immense crop for cutting in April or May next; should be sown in August. 24 lbs. per acre. Price 6d. per lb. for fine seed, just harvested.

**DICKENSON'S ITALIAN RYE GRASS**, for same purpose, should be sown in August; 24 bushels per acre. Price 7s. per bushel. New Seed.—Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

N.B. CARRIAGE FREE, except Parcels under 20s. value.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, AUGUST 6, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Aug. 10—Agricultural Society of England.  
THURSDAY, — 11—Agricultural Imp. Society of Ireland.  
WEDNESDAY, — 17—Agricultural Society of England.  
THURSDAY, — 18—Agricultural Imp. Society of Ireland.

There are several particulars connected with the collated returns of HARVEST PROSPECTS, in another page, to which reference must be made, in order that the true force of the report thus given may be properly estimated. One relates to the unusual lateness of this year's crop. Few of these reports have thus been penned within a fortnight of harvest time, and many of them are written six weeks before the result which they anticipate can be attained. This is interval long enough for the completest changes; first-rate prospects may yet be spoiled—they were so, in a much shorter period, in the case of the Wheat crop last year; and very inferior prospects may improve; they are very generally improving, in the case of the Oat crop, at present in Ireland and Scotland, where a dry spring had acted injuriously. This consideration has influenced many of our correspondents, who have objected to give an opinion at all so long before the period of harvest; and it necessarily influences all of them to the extent of rendering their reports statements of opinion much more than statements of fact.

We venture, therefore, to request all who have kindly furnished these reports to make another return to our inquiries on this day fortnight. Harvest will then be general over the greater part of Great Britain, and it may thus be more accurately described. What we ask for is this:—*That on next Saturday week, August 20, all those who have furnished the replies collated in the adjoining pages will be kind enough to post another report under the same heads as the former one, specifying the then condition and prospects of the Wheat, Barley, Oats, Beans, Peas, Hay, Green, and Potato crops respectively, signing it with their name and address in full, and directing it, as formerly, to the Editor of this Paper, 5, Upper Wellington Street, Strand.* A copy of the Paper in which the results of this second inquiry appears shall, as in the present case, be forwarded to those who may thus assist us.

Another imperfection in the present returns will be obvious to almost every reader. They do not divide the whole country amongst them. There is many a district whose condition is altogether unreported. We have not space large enough to

accommodate the fuller returns which are desirable. Nevertheless, we should be glad to improve in this respect also; and we therefore ask any one, who may believe that his neighbourhood is entirely unrepresented, to send in, on this day fortnight, replies such as we have asked for above, and if possible we will find room for them in our next publication.

A third fault is, we fear, incurable. We cannot give in each case the full account which is desirable; it must be condensed into two or three words, but how imperfectly, let a couple of instances prove. Both are reports from the County of Warwick. One writer says of the Wheat crop, "Much under average," but adds as follows:—"It is impossible by two or three words to give anything like an adequate idea of the Wheat crop in my neighbourhood. Very little was sown in the autumn; and the greatest part of the spring sown Wheat is very late, and cannot be fit to cut before the latter end of September; under the most favourable circumstances for ending the ensuing harvest, I am confident the quantity of Wheat grown in my locality will be very little above half its usual average." A second report, which we have translated into "not more than two-thirds of an average," says as follows:—"A much smaller quantity of Wheat sown than usual; winter sown Wheats are patchy, thin, and in some cases attacked with mildew—they are, upon close inspection, a light crop. Spring Wheats on cold and strong soils are starved from the autumnal and late rains. Winter and spring sown Wheats together are not likely to yield above two-thirds of an average—many fields not more than two-quarters to the acre." It is to the inadequate character of the two or three words for which alone we have room to convey all that the fuller reports state, that we are now referring; and this is a fault for which we have no remedy.\*

Let us, however, now refer, not to our mode of publishing these reports, but to the very serious character of the intelligence they convey.

We regret to say that the instances just quoted are by no means uncommon; the great majority of the reports of the Wheat crop are unfavourable. In making numerical statements of their character, they are necessarily assumed to be of equal force one with another, but it must be remarked that this is not really the case, for six or seven English counties might be named, the reports of the Wheat from which would far outweigh in importance those of all Ireland; their full meaning will, therefore, be gathered only by those who shall study these reports in detail. Nevertheless, we give the following tabular statement for the information of such as may not be able to devote the time such an examination would require:—

Returns regarding the Wheat crop.	"Good," "Very good."	"Average," "Fair."	"Under average."	"Much under average."
England & Scotland	5	13	91	75
Ireland	22	16	17	3
Total returns	27	29	108	78

Let it be remembered that almost universally a very short breadth of Wheat is reported—an unusual extent of Barley and Oats having been sown—and that this is especially true of Ireland, and it must be considered that the above statement of our harvest prospects indicates the worst that has for many years been experienced.

The following is the present statement from England, Scotland, and Ireland, of all the grain crops specified in the circular:—

	"Good," "Very good," "Over average."	"Various," "Average."	"Bad," "Deficient," "Under average."
Wheat 242 reports	27	29	186
Barley 232 "	80	113	39
Oats 245 "	76	122	47
Beans 143 "	49	73	21
Peas 127 "	30	60	37

Keeping in mind the relative contents just referred to, it will, we think, be seen from the above Table that a very short crop of Wheat, a large produce of Barley and Oats, perhaps more because of the acreage than the crop, and an average crop of Peas and Beans respectively, will probably be harvested.

As regards the green crop returns, they generally give promise of but poor produce of cattle food. The hay is very much injured—and green crops are late; in the north they have been very much injured by the fly, and in the south they are hampered with weeds. Of the Potatoes, all we can yet say is that with the promise of a bulky produce there has as yet been but little appearance of the disease in Ireland—while all through central and southern England very great complaints of its ravages are

\* The word "Various" in the Wheat column generally means winter sown good, spring sown late and inferior; while in the Barley column it means Barley soils good, on clays which should have been in Wheat, bad.

made. On this and on other points we shall be able, we hope, to speak more confidently on this day three weeks.

THE DRAINING MATCH of the Hertfordshire Agricultural Society, to which we called attention a few weeks back, took place on Friday, the 22d inst., at Chisfield, about a mile and a half from the Stevenage station of the Great Northern Railway, on the estate of EDWARD PARKINS, Esq., who is employing the General Land Drainage Company to execute the drainage of his estate. The novelty of the exhibition consisted in making this particular county the centre of competition for all England, and so ordering the *modus operandi* that the united efforts of the numerous competitors might present a practical illustration of how draining should be executed. The work of cutting, for instance, was executed, not as is usual at county agricultural meetings, by one man doing his best and polishing off his work as he goes, but the competing cutters were obliged to work in gangs of three men each, as they would ordinarily do, and as soon as the cutting was finished, the pipelayers commenced their work, and finished the whole operation before the eyes of the visitors. This practical method of exhibiting the manipulation of draining in its most attractive form to labourer, tenant, and landlord was originated by Mr. BAILEY DENTON, who gave the several prizes competed for, and who challenged all England to the match, with a view of showing the Hertfordshire men what was done in other counties, and with a view also of showing, we presume, the capabilities of the staff of workmen employed by the General Land Drainage Company, whose engineer he is. The result showed that all the successful competitors were from that company's staff, and as, in addition to the high character of the judges, Mr. HEWITT DAVIS and Mr. THOMPSON, we were informed that they are, or were, connected with the rival draining companies, we may assume the awards to have been given without any favour towards those who gained them.

The field selected for the trial was on the margin of the London basin, and showed not only a forbidding subsoil to the drainer, but a badly farmed and repulsive surface to the visitor, calling out not only for deep draining but deep cultivation and generous treatment from the tenant. With the stiff yellow clay was to be observed stones, gravel, and veins of sand, indicating the diluvium of the plastic and London clays in proximity to the chalk on which it rests. The drainers had therefore a diversity of soil to work upon, and this fact will explain why some of the shorter were esteemed more meritorious than the longer lengths.

Never was better work done than was done by men from Hunts and Lincolnshire, while most praiseworthy efforts were made by those nearer home. Good tools were shown to be identical with good work, and the diversity of their character proved that in different localities and different soils they worked with different shaped tools, and that no one shape or length can apply to all soils. We observed that the flat-faced graft was more readily freed, if stiff clay soil were operated upon, than the concave; while the best tool for the gravelly, sandy, and broken soils is that of the concave shape. Upon this point we would observe that if the judges of draining tools at the Royal Agricultural Society's shows were working men, we should not find any patent tool-taking the prize, for on no two soils will the same shaped tool work with equal effect. Uniformity is inconsistent with practice.

There were 51 men in the drains, consisting of 17 gangs of three each. There were eight competitors for pipe laying. Of the cutters there were two gangs from Lincolnshire, three from Huntingdon, two from Bedfordshire, and the rest from Hertfordshire—including some from the estates of Lord ESSEX, Sir EDWARD BULWER LYTTON, M.P., and Mr. HALE. The four successful gangs were the three from Huntingdon and one from Lincolnshire, and were men in the service of the General Land Drainage Company. The time devoted to the cutting was five hours precisely.

The first prize was given for a length of 108 feet, cut 4 feet deep, for 2-inch pipes, and the opening at top was 12 inches. The second prize, for 84 feet length (stony), with a 12-inch opening. The third prize, for 59 feet length (very stony), with 11½ to 11½-inch opening. The fourth prize for 116 feet length, with 13-inch opening. The successful competitors for pipe laying were a Northumberland man and a Yorkshire man, both in the employ of the General Land Drainage Company.

Many of the visitors came from a great distance—from Lancashire, Lincolnshire, Essex, Wilts, and Northumberland; there was also a goodly muster of local agriculturists, and the whole party seemed gratified with the day's entertainment.



## STATE OF THE CROPS, AUGUST 1, 1853.

[The following Returns are in reply to a Circular asking for the Appearance of the Crops in the neighbourhood to which it was sent.]

COUNTIES.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	GREEN CROPS	POTATOES.	HARVEST TIME.	NAME AND ADDRESS.
<b>SCOTLAND</b>									
ROSS .....	Fair	Excellent	Good average	Fair	Very fine	Promising	Very fine	Middle of Aug.	K. Murray, Lochshin
ELGIN .....	Very light—not average	Average	Average	.....	.....	Very promising	Look well—very well	End of Aug.	J. Hamilton, Forres
INVERNESS .....	About average	Light	Light	.....	.....	Very promising	Promising	Beginning Sept.	R. Mackenzie, M.D., Eilenach
FORFAR .....	Average	Average	Good	Good	Good	Very inferior	Excellent	End of Aug.	R. Colvill, Cairnton
	Under average, and one-fourth less extent	Average	Under average	.....	.....	Poor indeed	Very fine	Sept.	A. Bell, Montrose
	Under average, and less extent	About average	Promising	.....	.....	Injured by fly	Good	Sept.	W. Smith, jun., Brechin
PERTH .....	Fair	Good	Good	Bulky	Bulky	Fair	Look well	End of Aug.	C. Playfair, Carse of Gowrie
FIFE .....	Considerably under average	About average	Full average	Not average	Not average	Turnip middling	Look well	End of Aug.	P. Edie, Abernethy
	One-fifth under average	Over average	Over average	About average	Average	About average	Look well	Beginning Sept.	J. Haxton, Drummond
	Not average	Over average	Full average	Under average	.....	Very late	.....	Sept. 1	W. Vetch, Kinghorn
E. LOTHIAN .....	30 per cent. under last year	Generally bulky	Very fine and full	Fair	.....	Very late	Looking well—touched in garden	End of Aug.	G. Hope, Drem
M. LOTHIAN .....	Average	Full average	Good	Fair	.....	Backward—improving	Looking well—touched in garden	Aug. 25	J. Melvin, Ratho
LANARK .....	.....	Barley average	About average	Very good	Good	Unpromising	Good—diseased	Sept.	D. Gairdner, Hamilton
RENFREW .....	Under average	Under average	Under average	Generally good	Good	Inferior—Anbury appearing	Generally healthy	End of Aug.	G. Boyd, Renfrew
AYR .....	May be an average yet	.....	Under average	Under average	.....	Under average	Apparently good	End of Aug.	A. Ralston, Dunduff
BERWICK .....	Early sown, good; late sown, poor; extent under average	Good	Good	Good	.....	Three weeks later than usual	As yet healthy	Sept. 1	J. Wilson, Churnside
	Under average—one-fourth less extent	Average, and great extent	Average	.....	.....	Not an average	Disease appearing	Middle of Sept.	G. Logan, Greenlaw
ROXBURGH .....	Under average	Under average	Average	Under average	Under average	Promising, but late	Over average—symptoms	Sept. 1	J. Thomson, St. Boswell
	Under average	Under average	Average	Under average	Under average	Under average	Look well	Sept. 1	P. Brodie, Selkirk
SELKIRK .....	Under average	Barely average	Barely average	.....	.....	Turnips look well	Appear average	.....	J. Stalker, Galashiels
DUMFRIES .....	Under average—less extent	Fair average	Not average	Fair	.....	Late—not a full crop	Good hitherto—symptoms	3d week in Aug.	W. Thomson, Dumfries
	.....	Average	About average	.....	.....	Late—look well	Good hitherto—symptoms	2d week in Sept.	J. Little, Langholm
WIGTON .....	Under average	Light crop	Under average	Fair	.....	Very backward	Disease appearing	End of Aug.	A. H. McLean, Stranraer
<b>ENGLAND.</b>									
NORTHUMB- BERLAND .....	One-fourth under last year	Average	Various	Good	Full Cover	Poor prospect	Promising as yet	Sept.	John Grey, Dilston
	Under average	Average	Full average	Good	Good	Late—promising	Never better	Middle of Sept.	J. Thomson, Coldstream
	Light, and two-thirds of the usual extent	Good	Indifferent	Middling	Fair	Poor	Looking well	Middle of Sept.	W. Glover, Newcastle
	Very light, and one-fourth less extent	Very various	Good	Light	.....	Hay—half a crop	Look well	Beginning Sept.	P. Nairn, Belford
CUMBER- LAND .....	Very good.	Very good	Very Good	.....	.....	Not promising	Poor	End of Aug.	T. Wilson, Ullswater, East
	Considerably under average	Over average	Over average	.....	.....	Early sown bad	Good at present	.....	S. Rigg, Abbey House, West
	Light crop	Fair average	Fair average	.....	.....	Very late—but growing	Luxuriant in field	Middle of Sept.	Cumberland Penrith
	Various, not equal to last year	Looks well	Good	.....	.....	Various	Good hitherto	Sept.	T. Donald, Carlisle
	Much under average	Full average	Over average	Good	Good	Late	Good—but symptoms	Sept.	T. Gibbon, Longtown
DURHAM .....	Short and thin	Pretty good	Various	.....	Very Good	Very bad	Looking well	End of Sept.	—, Durham
	Bad	Light	Very light	.....	Light	Light	Looking well	End of Sept.	G. Bell, Hallgarth Street
WESTMORE- LAND .....	Under average	Pretty good	Thin	Short	Pretty good	Generally good	Pretty good	End of Aug.	R. B. Dixon, Darlington
	Under average	Over average	Under average	Average	.....	Not good	Looking well	.....	W. Turner, Milnthorpe
	Thin and light	Full crop	Good	.....	.....	Plenty—but late	Looking well	End of Aug.	J. Crosby, Kirby Thure
	Doubtful	Very good	Very good	Very good	.....	Not good	Diseased	End of Sept.	J. Robinson, Warcop
						Very bad	Symptoms of disease	Sept.	W. Key, Casterton Hall
YORK .....	One-fourth under average	Full average	Good	Average	Good	Various	Disease showing	Sept.	J. Oldroyd, Bamsley
	Autumn sown average; but there is much spring sown.	Average	Under average	Promising	Promising	Promising—but late	Promising—but late	End of Aug.	F. W. Tyas, Doncaster
	Two-thirds of an average	Full average	Good average	Various	.....	Late and various	Strong—but disease appearing	Middle of Sept.	J. Horsfall, Otley
	Various and late	Full average	Average	Average	Full average	Various and late	Average	Sept.	H. J. Turner, Richmond
	Light crop	Good	Fair	Good	.....	Promising	Look well	End of Aug.	P. Stevenson, Thirsk
	Far below average, and less extent	Poor	Variable	Better	Backward	Unpromising	Disease appearing	Aug. and Sept.	T. Farrington, Cleveland
	Very thin	Looking well	Various	.....	Looking well	Promising—but late	Look well	Late.	—, Leyburn
LANCASH..	Rather light	Rather good	About average	Very light	.....	Promising—but late	Poor	End of Aug.	J. Patterson, Ulverston
	Good	.....	Good	Excellent	.....	Good	Luxuriant	Sept.	M. Saul, Garstang
	Bad	Good	Good	.....	.....	Turnips bad	Good	Sept.	G. Drewry, Holker
	Winter sown uneven	Good	Good	Good	.....	Not promising	Very good	End of Aug.	F. Twining, Standish
	Thin and late	.....	Irregular	Good	.....	Very late	Good—disease appearing	End of Aug.	E. Evans, Wigan
CHESHIRE..	Early sown good—but generally thin	Full crop, but laid	Average	.....	.....	Not average	Very much diseased	End of Aug.	W. Palin, Stapleford
	Early sown promising	Looking well	Very good	Good	.....	Middling	Showing disease	Sept.	H. Tipping, Warrington
	One-third less extent and thin	Average	Good	Blighted	Average	Late and foul	Early sorts diseased	Sept.	R. Owen, Tarporley
DERBY .....	Scarcely average	Average	Average	Very good	.....	Excellent	Over average	End of Aug.	A. J. Bernays, Derby
	Little grown, but thin	.....	Looking well	.....	.....	Favourable	Doubtful	.....	W. Shaw, Newbarn
		.....	Very promising	.....	.....	Promising	Deficient and diseased	September	B. Swaffield, Ashbourne
NOTTS .....	Thin, light, and lodged	Bulky, but coarse	Very light	Good	Very poor	Hay badly got	Very good—diseased	End of Aug.	J. Young, Newark
	One-third under average—mildewed.	Under average	Under average	Various	Under average	Late	Much blighted	Middle of Aug.	J. Buckley, Normanton-hill
	1 qr. p. acre under last year	Very good	Good	Good	Good	Partially good	Much diseased	Middle of Aug.	T. Stafford, Marham
	Generally looking well, but broken and laid	Good as to quantity	.....	Healthy	Average	Hay bad	Very good	Middle of Aug.	C. W., Newark-to-Gainsbro'
LINCOLNSH.	Under average	Average	Light	.....	.....	Not looking well	Good	Aug. 21	F. Sowerby, Grimsby
	Mildewed, injured, and one-fourth less extent.	Good	Good	Good	Good	Turnips promising	Generally good	Middle of Aug.	F. B. Colton, Eagle Hall
	One-fourth under average	Heavy, but laid	Much under aver.	Full	Good	Late	Much diseased	Middle of Aug.	W. Hesselstine, Brigg
	Average on loams, under average on clays	Heavy and good	Not bulky	Looking well	Very good	Late and poor	General disease	End of Aug.	Croft Sharpley, Louth
	Crop various—average on light lands—short in acres	Very good	Bad	Good	Good	Various, opinion cannot be formed	Good—blight appearing	About Aug. 23	W. B. Wingate, Spilsby
	Average—signs of mildew	Looks well	Good average	Good, less extent	Good	Late and starved	Diseased	Middle of Aug.	J. A. Clarke, Long Sutton
SALOP .....	Full average	.....	Under average	Good	Various	Rape late & poor	Diseased	Middle of Aug.	T. Aitken, Spalding Fen
	Much under average	Well	Middling	.....	.....	Various	Symptoms of dis.	September	W. Minor, Market Drayton
	Thin	Very good	Average	.....	.....	Very middling	Do. do.	End of Aug.	J. Powell, Stafford
STAFFORD ..	About half a crop	Generally good	Various	Very bad	Various	Healthy—late	Diseased	September	R. Davies, Little Wenlock
	Generally good	Late—average	Good	Good	Bulky	Turnip injured	Going fast	End of Aug.	—, Branet
	Not good and late	.....	Various	Deficient	Late—bulky	Hay badly got	Good hitherto	September	—, Stone
	Under average	.....	Good	.....	.....	Late	Healthy in fields	End of Aug.	—, Newcastle
LEICESTER.	Much under average	Very good	Very good	Deficient	Not good	Promising	Looking healthy	End of Aug.	J. Aston, Ashley
	Half a crop	Wants sun	Light	Full	Full	Not good	Good hitherto	September	T. Spencer, Knosington
	Much under average	Average	Under average	.....	.....	Late & deficient	Diseased	.....	G. Townshend, Hinckley
	Not average	Much laid	Fair average	Average	Good	.....	Look healthy	.....	C. Noel, Peckleton
RUTLAND ..	Average	Good	Good	Good	Average	Various	Diseased	Mid. of Aug.	W. Fancourt, Empingham
HEREFORD ..	Various—under two-thirds of an average	Over average	Full crop	Generally good	Very good at present	Unusually good	Good in fields	September	—, Leominster
	Very thin and light	Good—late	Good	Light	Average—late	Hay badly got—Turnips good	Good at present	End of Aug.	—, Hereford
	Very short of an average	Heavy crop	Heavy crop	Good	Light, blighted	Promises well	Look well	End of Sept.	W. Bennett, Stretford Bury
	Fair average	Promising	.....	Good	Various	Very good	Early sorts bad	3d week in Aug.	W. Price, Ross
	Probably deficient	Average	Average	.....	Pretty good	Very promising	Healthy in field	End of Aug.	P. N. Edwards, Brinsop
	Very thin, but healthy	Good	Good	Various	A little blight	Good	Good at present	3d week in Aug.	J. Mathews, Blakemore
WORCES- TER .....	One-third under average	Good	Good	.....	Indifferent	Good—injured by wet	Badly blighted	End of Aug.	H. Hudson, Pershore
	Far below average	Good	Good	Over average	Good	Good—rather late	Good at present	Two weeks later	F. E. Williams, Doddenham
	Nearly one-third short of average	Nearly average	.....	Full average	Not average	Good and healthy	Generally diseased	20th Aug.	J. W. Fletcher, Upton-on-Severn
	Deficient and late	Good	Good	Average	Partial	Good—weedy	Disease showing	20th Aug.	R. Smith, Droitwich



STATE OF THE CROPS—continued.

COUNTIES.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	GREEN CROPS	POTATOES.	HARVEST TIME.	NAME AND ADDRESS.
ENGLAND.									
WARWICK.	Very deficient	Good on light soils	Generally good	Heavy	Good	Short extent	Disease showing	End of Aug.	W. Aitcheson, Berkeswell
	One-third under average	Average	Hardly average	Average	Not average	Various	Two-thirds diseased	End of Aug.	J. Burbury, Wootton Grange
	Very late—partially blighted	Looking well	Quite average	Good	Nearly destroyed by wet	Very late—unpromising	Much diseased	End of Aug.	J. Ford, Warwick
	Much under average	Average	Average	Average	Bad	Late	Diseased	End of Aug.	J. H. Burbury, Kenilworth
	Much under average	Various	Under average	Various	Bad crop	Various	Early sorts diseased	Middle of Aug.	W. Gibbs, Stratford-on-Avon
	Not above two-thirds of an average	Various	Fair but doubtful	Under average	Half a crop	Late, weedy, unpromising	Disease showing	3d week in Aug.	J. Lane, jun., Goodrest
	One quarter less corn, and one-third less extent	Late but full	Average	Various	Generally poor	Less extent and poor	Again blighted	Sept.	H. Thornley, Marston Hall
ORTHAMPTON	One quarter less Wheat, and one-sixth less acres	Generally promising	Not near average	Bulky—badly corned	.....	Late and foul, but improving	Blight showing	End of Aug.	J. B. Smeeton, Naseby
	Early sown fair—late sown bad	Various	Average	Very good	Good	Very late	Good, but blight showing	Middle of Aug.	W. Gray, Courteen Hall
UNTINGDON	Short breadth—bad crop	Under average	Average	Average	Average	Not good	Partly diseased	End of Aug.	R. Beart, Godmanchester
	Diseased and short	Various	Average	Good	Blighted	Good	Much diseased	End of Aug.	P. Purves, Bampton
	Not quite average	Various	Average	Average	Average	Good on dry land	Much diseased	End of Aug.	Page Howard, Granchester
AMBRIDGE	Good—signs of blight	Average	Good average	Good	.....	Good	Much diseased	End of Aug.	A. S. Huston, Chatteris
	Generally good	.....	Bad	Good	.....	Good	Much diseased	Middle of Aug.	J. Fryer, Isle of Ely
	Under average	Good	Average	Average	Good	Late, but healthy	Diseased	End of Aug.	W. Cubitt, N. Walsham
ORFOLK	Six bushels under average	Very good	Good	.....	.....	Not very good	Very much diseased	Aug. 20	—, Thorpe Market
	Rather light, and laid in places	Good	Good	Good	.....	Generally good	Diseased	Middle of Aug.	J. J. Hill, Briston
	Under average	Average	Very bad	Pretty good	Middling	Late	Becoming diseased	Middle of Aug.	T. Brown, Downham
	Much laid, and injured	Average: lodged	Below average	.....	Uncertain	Generally not good	Becoming diseased	Middle of Aug.	H. Taylor, Smallbro'
UFFOLK	Much under average	Generally good	.....	Average	Average	Partially good	Diseased	Middle of Aug.	G. Fenn, Beccles
	The lightest crop for many years	Average	.....	Various	Under average	Not promising	Badly diseased	Middle of Aug.	H. Edwards, jun., Woodbridge
	Short in quantity and poor quality	Very light	Very light	Average	Average	Very late	Badly diseased	Middle of Aug.	L. O. Cottingham, Saxmundham
	Much broken—under average	Not so good as last year	.....	Promising well	Deficient	Late	Disease appearing	Middle of Aug.	J. G. Cooper, Saxmundham
	Much damaged—one-fifth under average	Average—laid	Fair	Under average	Injured by fly	Unpromising	Almost all tainted	Aug. 8	C. Welton, Wickham Market
SSEX.	Generally light	Various	Average	Promising	Injured	Very late	Disease progressing	Middle of Aug.	A. Barfield, Dunmow
	Under average, and injured	Good	Under average	Good	Good	Injured by fly	Diseased	Aug. 8	J. Malpas, Harwich
	Not good; thin, and hurt by weather	Good	Moderate	Good	Moderate	Not good	Blight increasing	Aug. 8	J. G. Fenn, Ardeleigh
	Injured by storms—under average—short acreage	Good	Average	Partial	Partial	Good	Generally blighted	Aug. 8	W. Fisher Hobbs, Boxted Lodge
	Light crop	Middling	Light	Middling	Bad	Middling	Blighted	Middle of Aug.	C. Hall, Romford
	Very much under average	Fair crop	Not average	Good till lately	Very good	Turnips plant well	Very much diseased	Aug. 10	J. J. Mechi, Kelvedon
	Various—much under average: laid, and mildewed	Various—much under average	Considerably under average	Good	Middling	Various	Slightly diseased	Aug. 8	R. Baker, Chelmsford
	Average on free soils—not average, and short extent on clays	Fair crop—not heavy	Good on gravels, bad on clays	Over average	Early good, late blighted	Promising	Worse than ever known	Aug. 8	W. Hutley, Witham
ERTS.	Under average in extent and produce—laid	Average—not laid	Small crop and weedy	Various	Fair crop	Weedy	Precarious	Middle of Aug.	—, St. Albans
	Plant thin—yield bad	Good—laid in places	Good—laid in places	Very good—partly blighted	Good	Good plant	Good	Middle of Aug.	C. J. Humbert, Watford
	Short crop—average	Good	Average	Good	Good	Turnips very good	.....	Middle of Aug.	J. B. Lawes, Rothamsted
DFORD	One-third under average	Various	Average	Good	Bad	Good except Mangold Wurzel	Good—blighted	Middle of Aug.	W. Lavender, Biddenham
CKS.	Winter-sown maggoty—spring-sown looks badly	Bad on wet lands	Generally good	Very promising	.....	Full crop—late	Lately attacked	Middle of Aug.	W. G. Duncan, Stony Stratford
DFORD	One-third under average	Fair	Under average	Average	Very bad	Late	Much diseased	Middle of Aug.	A. Fraser, Claydon
	Somewhat deficient	Various	Very short	Average	.....	Average	Good—diseased	28th Aug.	R. Page, North Newington
OUCESTER	Very deficient	Good	Variable	Excellent	Fair	Fair	Partly diseased	Middle of Aug.	S. Druce, jun., Eynsham
	Deficient in ear	Inclined to white blight	Middling	Not well podded	Good	Good	Generally blighted	Middle of Aug.	J. R. Hulbert, Cirencester
	Quite average	Average	Late&indifferent	Average	Good	Over average	Diseased	Aug. 20	R. Vallentine, Cirencester
	Autumn sown good	Good	Uneven	Not well podded	Good	Very promising	Gone off	Aug. 20	J. Kearsey, Tarlton
	Autumn, good—spring sown bad	Average on hill land	Under average	Partly blighted	Partly blighted	Promising	Uncertain	Aug. 20	J. F. Peasey, Winchcomb
	Thin, late, under average	Average	Average	Average	Good	Average	Rotten	End of Aug.	J. Hunt, Almondbury
	Thin and late	Various	Moderate	Tolerably good	Middling	Good but foul	Much diseased	Very late	S. Taylor, Gloucester
	Winter, good—spring sown bad	Good	Good	Various	Various	Promises well	Diseased in places	End of Aug.	N. Addison, Coleford
ONMOUTH	Rather thin	Good	Good	Well podded but blighted	.....	Excellent	Disease spreading	End of Aug.	T. Dyke, Monmouth
	Unpromising	Good on dry land	Light	Very good	Blighted	Very promising	Haulm diseased	.....	G. R. G. Relf, Uske
	Thin crop	Very good	Very good	.....	Healthy	Very good	Dis. appearing	End of Aug.	H. Price, Monmouth
	Winter thin; spring sown good	Good	Good	.....	.....	Good—much hay in field	Look well	End of Aug.	W. H. Little, Abergavenny
WIMBORNET	Depends on the weather	Good, but laid	Very good	Average	Average	Turnips very good	Disease shows	End of Aug.	C. P. Collyer, Dulverton
GLTS.	Below average	Good	Very good	Partly blighted	Good	Good	Diseased	In three weeks	J. W. Eastment, Wincanton
	Various—acreage about average	Very good	Generally bad	Very good	Fair	Good—laid	Tops diseased	End of Aug.	T. Arkell, Swindon
	Under average	Good—lodged	Middling	Suffering from wet	Good	Very good	Diseased	End of Aug.	J. Spencer, Bowood
	Two-thirds of a crop	Pretty good	Fair	Much blighted	Better than Beans	Very bad indeed	Worse than ever	Sept.	J. R. Maskelyne, Calne
	Very deficient	Good	Not good	Various	Good	Hay bad—Turnips good	Blight showing	In three weeks	G. Brown, Marlborough
KS.	Below average, but various	Fair average	Very bad	Various	Fair average	Very good	Good—diseased	End of Aug.	E. Moore, Farringdon
	Under average	Good	Average	Good	Good	Good	Very bad	Middle of Aug.	J. Williams, Abingdon
	Under average	Over average	Barley average	Over average	About average	Good	Much diseased	Aug. 8	J. Adams, Thatcham
	Average on the chalk hills	Very promising	Very bad on the Downs	Bulky and well podded	Bulky	Late sown are weedy	Disease appearing	End of Aug.	T. Chandler, Hungerford
DESEX	Blighted	Good	Good	Partly blighted	Bad	Good	Much diseased	End of Aug.	C. Webster, Uxbridge
ELY	Average crop—'Lois-Wooden' Wheat good	Heavy crop—laid	Very good	Good	Partly blighted	Good	Never more blighted	End of Aug.	J. Manwaring Paine, Farnham
	Under average, and less extent	Promises well	Generally good	Promising	Unusually good	Injured by wet	Late crops are precarious	End of Aug.	E. J. Lance, Bagshot
EX	Blighted—much under average	Average	Very good	Good	Good	Very good	All diseased	Middle of Aug.	H. E. Sadler, Chichester
	Unfavourable	Very good	Average	Good	Unfavourable	Good	Blighted generally	Aug. 8	H. S. Hayward, Willington
	Thin and under average	Average	Average	Average	Average	Good average	Blighted generally	Aug. 20	J. Brotherston, Robertsbridge
T	Not two-thirds of an average	Average	Very good	Very good	Full average	Very good	Generally blighted	Middle of Aug.	R. Matson, Wingham
	Good	Not average	Very superior	Very good	Various	Good	Generally blighted	Middle of Aug.	—, Sittingbourne
	3 are per acre, and two-thirds usual extent	Looking well	Improving	Large crop	Quite average	Quite average	Blight shows	Middle of Aug.	J. Smeed, Ashford
	Under average	Good	Good	Very good	Deficient	Promising	Precarious	Middle of Aug.	J. Smeed, Thanet
	Under average	Full average	Average	Good	Average	Not blighted	Never worse	Middle of Aug.	M. Sudford, Dover
TS	Worst crop for many years, and short extent	Good average—large breadth	Fair average	Winter blighted, summer average	Average, but blighted	Do not promise beyond average	Improving	Middle of Aug.	J. Eames, Lynton
	Very deficient	Good	Fair	Various	.....	Improving	Very bad	Middle of Aug.	S. Cheellham, Southampton
	Good—some blighted	Fair—laid	Average	Fair—blighted	Average	Good—weedy	Badly diseased	Middle of Aug.	H. Raynbird, Andover
	50 per cent. under average produce, do. do. extent	Average	Average	Average	Average	Average	Badly diseased	Middle of Aug.	J. Hindell, Bursledon
	Extent and produce under average	Barely average	Barely average	Over average	Over average	Good—weedy	Badly diseased	Middle of Aug.	W. C. Spooner, Southampton
ET.	Thin	Good, but laid	Fair	Good	Signs of blight	Promising	Diseased	3d week in Aug.	W. Pope, Bridport
	Not good	Good	Good	Middling	Middling	Late	Bad	Aug. 20	J. Farnedge, Benminster
	10 per cent. under average	Average	Average	.....	Average	Good	All blighted	Aug. 20	W. Voss, Gorle Castle
	Under average and blighted	Good	Average	Blighted	.....	Good	Much diseased	Aug. 20	G. Singer, Dorchester
	Thin and much injured	Bulky—laid	Very good	.....	Blighted	Good	Much diseased	Aug. 8	M. Small, Blandford



## STATE OF THE CROPS—continued.

COUNTIES.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	GREEN CROPS.	POTATOES.	HARVEST TIME.	NAME AND ADDRESS.
ENGLAND.									
DEVON .....	Under average, and blighted Fair crop, but rusted and injured Very deficient Indifferent Much injured by wet	Good Fair Laid Average Much injured	Average Various ..... Average Promise well	Fair ..... ..... ..... .....	Under average ..... Destroyed by insects ..... .....	Promising Indifferent Turnip promising Smoothered in weeds Sickly—Hay spoiled Very fine Very fine	Very bad Much diseased Much diseased Slightly diseased Rotting	Middle of Aug. Aug. 22 Aug. 22 ..... End of Aug.	G. Turner, Exeter John Benson, Tavistock S. Cornish, Kingsbridge G. W. Fowler, Dartmoor G. Langdon, Barnstaple
CORNWALL.	Considerably under average Thin, and likely to be under average Thin, and likely to be under average Under average Much laid, two-thirds usual extent, and half that spring sown Considerably below average Thin, and rusted Much below average	Very heavy Very promising Very promising Injured by wet Full average, but laid Average Ear short—straw weak Below average	Exceedingly fine Fair average ..... Good Generally good Apparently good	..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... .....	..... ..... ..... ..... ..... ..... .....	End of Aug. End of Aug. End of Aug. Middle of Aug. Middle of Aug. Aug. 22 Aug. 22 Middle of Aug.	J. Moore, Crediton J. Michelmores, jun., Totnes G. Andrew, St. Austie J. Wills, Launceston W. Elliot, Plymouth J. Michell, Truro H. Tresawna, Probus W. F. Karkeek, Truro
WALES.	In general rather light About average	Better Very good	Not very heavy Very good	Fair .....	Fair .....	..... ..... ..... ..... ..... ..... .....	Good hitherto Splendid—blight appearing	..... ..... End of Aug.	J. Williams, Conway, Carnar J. Burnell, Llanelly, Carnar then

## IRELAND.

COUNTIES.	WHEAT.	BARLEY.	OATS.	GREEN CROPS.	POTATOES.	HARVEST TIME.	NAME AND ADDRESS.
DONEGAL .....	Little sown—good	Little sown—good	Fair	Good	Very good—little appearance of disease as yet	Middle of Sept.	T. J. Atkinson, Ballyshannon
DERRY .....	Promises well	Average	About average	Turnips very good	Never better—no appearance of disease	End of Aug.	J. J. Clark, Maghera
	Average	Tolerable	Under average	Very promising	Looking well	Sept.	Charles Pollock, Magherafelt
ANTRIM .....	Very good—not much	Fine crop	Under average	Not promising well	Very fine—no blight as yet	End of Aug.	S. Orr, Coleraine
	Bad	None	Various	Very late	Good	Sept.	J. Burmiston, Randalstown
TYRONE .....	Looks well	Very promising	Very good	Very backward	Looking very well and not diseased	End of Aug.	R. Rolis, Houghton, Lishburn
	Pretty fair		Under average	Promising	Promise well, and not blighted yet	End of Aug.	J. Knox, Strabane
	Very good	Good	Not average	Good	Very good	End of Aug.	W. Paterson, Newton Stewart
			One-third under	Good crops	Excellent—luxuriant—good quality	End of Aug.	J. Buchannan, Ormagh
			average				
MAYO .....	Over average		Light crop	Look very well	Promise beautifully—no disease as yet	Sept.	R. Junk, Stewartstown
	Good	Average	Short in straw	Late—midding	Very good—no blight as yet	Sept.	Rev. W. D. Stoney, Castlebl
	Small extent—promises well	Good	Abundant	Late	No blight, thank God; and most luxuriant	Very late	G. Hildebrand, Westport
	Very little—very bad	Average					
SLIGO .....			Average; middling	Injured by fly	Very abundant and very fine	Sept. and Oct.	A. S. Perkins, Killala
LEITRIM .....	Good		Fair average	Very good	Most abundant, and no blight as yet	Sept. 8	J. Knott, Boyle
FERMANAGH .....	Good		Fine and short	Average	Most luxuriant—no blight as yet	End of Sept.	James Lindsay, Manorhamilton
MONAGHAN .....			Very good	Never better	Most excellent	Aug. 20	A. Mair, Linask
			Short average	Good, but late	Very good hitherto—blight has lately appeared		J. Marrow, Balibeg
			Deficient in straw	Middling	Luxuriant		G. B. Coulter, Castleblayney
ARMAGH .....	Fair		Good—short straw	Look well	Never better, and a great many planted	End of Aug.	R. Boyd Hardy, Tanderagee
	Light	Average	Average	Good	Good—no blight here as yet	Aug. 21	W. Boyd, Armagh
DOWN .....	Under average	Good	Not good	Bad	Good—no appearance of disease	Sept.	R. McCreery, Pontaferry
	Half the extent—promising	Promising	Under average	Progressing	Generally luxuriant—slight symptoms of disease	End of Aug.	J. Andrews, Comber
	Good	Good	Short straw	Late	Stalks most luxuriant—blight shows in early	End of Aug.	H. E. Boyd, Dromara
					sorts		
ROSCOMMON .....			Average	Not average	Healthy and luxuriant—best for years	Sept.	D. Boyd, Carrick-on-Shannon
	Very small extent		Half a year's crop	Very superior	Never better, and healthy hitherto	End of Sept.	J. Kelly, Church Street
LONGFORD .....	Average	Average	Good average	Good	Good and healthy as yet	Aug. 20	E. Morgan, Edgeworthstown
	Good		Very good	Short crop and late	Very fine and abundant—no disease	Sept.	J. W. Goodfry, Granard
CAVAN .....	Good		Light	Very fine	Most luxuriant and healthy	Sept.	Isaiah Gibson, Eallieborough
	Thin and short	Short & indifferent	Short	Remarkably good	More and good—healthy	End of Aug.	J. Albert Nesbitt, Buleturk
LOUTH .....	Very good	Excellent	Very good	Very good	Luxuriant—little or no disease	End of Aug.	W. M. Culloch, Dundalk
DUBLIN .....	Good	Good	Very good	Excellent	Very good—no blight as yet	End of Aug.	J. Donaghy, Glasnevin
WESTMEATH .....	Much improved	Light	Very short	Very good	Very promising	End of Sept.	G. Bagnall, Milton Pass
	Pretty fair	Light	Average	Late, but doing well	Very good hitherto	End of Sept.	R. Bagnall, Tyrrell's Pass
	Good	Very good	Fair	Light	Very good	End of Aug.	W. Newburn, Mullingar
GALWAY .....	Good	Good	Average	Good, though late	Very good	End of Aug.	R. B. Seymour, Banagher
	Very fine	Fine	Short	Late—improving	Luxuriant, and no blight	End of Aug.	J. Shiel, jun., Roscommon
		Good	Very good	Very good	Very good		J. Ellis, Letterkenny
KING'S CO. ....	Average		Good	Late	Very fine—hardly a trace of blight	Aug.	E. Beuley, M.D., Clare
KILDARE .....	Various	Good	Fair	Promising	Appearance of good crop	End of Aug.	G. Lamb, Castleclermont
CLARE .....	Good	Uneven	Good	Late	Excellent—very little blight	End of Aug.	W. Digan, Killalee
	Under average	Average	Average	Bad	Blight set in	Sept.	W. Bennett, Newmarket
QUEEN'S CO. ....	Fine average	Not so good as last year	Good	Late, but look well	Look well, but disease general over all	End of May	Michael Dunne, Strabally
	Light crop	Good	Good	Good	Good hitherto—but disease apparent	Sept. 8	Thomas Roe, Rathdowney
CARLOW .....	Promising	Good	Promising	Promising well	Good hitherto—but disease apparent	End of Aug.	P. B. Mosse, Rutland House
	Tolerably good	Good	Very good	Excellent	Promising—said to be partly diseased		John De Renzy, Clonsilla
WICKLOW .....	Various	Average	Various	Healthy and promising	Healthy—no blight as yet	End of Aug.	R. J. Dickson, Tinakilly II
	Looks well	Average	Never better	Better than last year	Good—slightly diseased	Sept.	J. Daly, Enniskerry
LIMERICK .....		Very good	Good	Very good	Very good		G. Gubbins, Bruff
TIPPERARY .....	Thin	Good	Very good	Uncommonly fine	Disease commencing	Sept.	J. Fennell, Cahir Abbey
	Good	Good	Good	Good, except	Good	End of Aug.	W. Ryan, Cashel
				Carrots			
	Very good	Very good	Very fine	All very good	Producing well, and many planted	Middle of Aug.	R. D. Bolton, Massory, E
KILKENNY .....	Average	Average	Very good	Good, but late	Slightly blighted	Sept.	D. A. Milward, Tullagher
	Very good	Never better	Very good	Middling	Never better, and no disease as yet	End of Aug.	P. Grace, Freshford
WEXFORD .....							
	Average						
	Thin, light, scanty	Excellent	Short in straw	Very good	Good—disease appearing	End of Aug.	G. Gordon, Ferns
	Short but good	Good	Light	Turnips good	Never better till disease set in	Middle of Aug.	E. Carroll, Castlebl
		Good	Good	Not an average	As yet safe	Sept.	G. Glascock, J. P., Camolin
			Short straw	Very good	Never better—disease appearing	End of Aug.	J. D. Drake, Stokess
WATERFORD .....	Very indifferent	Very good	Good	Good	Promising—slight symptoms of blight	End of Aug.	R. T. Barron, Kilmac Thom
	Very fine	Very fine	Never finer	Very good	Finest crop I ever saw	Sept.	E. Kennedy, Currebeke
KERRY .....	Good	Very good	Very fine	Excellent	Late and just blighted	Sept.	J. O'Sullivan, P.P. & V. G.
	Average	Now good	Now very good	Very late, but promising	Very good, no signs of blight here yet—certain of a good crop and great extent	End of Aug.	J. Creagh, Tarbert
	Good	Good	Average	Not good	Good—a little blighted	End of Aug.	F. A. Twinnam, Kantuck
CORK .....	Middling, thin	Good	Very good	Promising	Good—partly diseased	End of Aug.	D. Barclay, Blarney
	Average	Average	Very good	Good	Leaves injured—tubers good	Sept.	T. C. Cole, J. P., Inishin
	Good	Good	Good	Look well	Slight appearance of blight	Sept.	H. Longford, Donerally
	Looks well	Very good	Very good	Looking well	Fine crop—nothing to alarm as yet	Very late	D. Clanchy, Charleville
	Good	Good	Good	Good	Partially blighted	Sept.	S. Piddell, M.D., Kildarro

## Home Correspondence.

*Superphosphate of Lime and its Adulterations.*—A correspondent, "X. Y. Z.," Hampshire, has recently denounced, in no measured terms, the robbery practised on the Hampshire farmers by a manufacturer of superphosphate of lime, in whose works, by dint of prying into certain bags he happened to discover "one which contained a third of refuse, such as pieces of shingle and gravel, heads and tails of iron nails, and lumps and pieces of broken stone jars," and believes it "the stuff sold to raise a fine crop of Turnips." Assuming that if such be the composition of the manure sold, he denounces it as "a gross imposition, which deserves to be publicly exposed, name and place," and forthwith proceeds to do

it in order to protect the farmer from such impositions, and to account for the price of the article varying from 6l. 10s. to 3l. per ton. Now, a few weeks since I was going over a similar manufactory in the beautiful valley of Stroud, when my eye dropped on a few hundred-weight of such a mixture as "X. Y. Z." discovered in the bag, but which was in close proximity to a large heap of bones. My curiosity as to its use was excited, and I inquired into what manure such a mixture entered, when I was informed it had been picked out from the bones and thrown aside as waste; that the bone collectors were great rogues, and that they were in the habit of thrusting iron railway pins, nails, and clay into the hollows of long bones to increase their weight, and to add stones and other rubbish having the appearance of

bone, for similar purposes, but which it was necessary to carefully remove before the bone was subjected to grinding process. Such, I take it, would have been the history of the "one bag one-third full of refuse" covered by "X. Y. Z." had he asked, as I did, for explanation, and saved him from paying so ill a premium to the much abused Hampshire farmers, who suppose them so blindly ignorant as not to be able to distinguish "lumps of broken stone jars and nails" from an article now so well known and extensively used as superphosphate of lime. A. B. C., Gloucestershire.

*The Potato Disease.*—Some statements have been made in the public papers of the appearance of disease in the Potatoes in several parts of Ireland, which have some hopes that the appearances upon which



statements have been founded have deceived the recorders of them. In the first case, it is too early for the disease to show itself this year; for (and I have before called attention to the fact) on every alternate year, and that the odd year, since it was first noticed, and this includes the first year, the disease has been invariably developed some three weeks or more later than in the even years, that is, in 1815, '47, '49, and '51, it was later than in 1816, '48, '50, and '52. In 1847 it was so late that it was confounded with the natural ripening or decay of the haulm, and we were led very generally to believe, in Ireland, that it was among the things that had been. But, from a fact that has occurred in Cavan, about five miles from Granard, I have yet stronger hopes that this is a false alarm, or if not so, that the disease, as in this case, may have given way to the vital strength of the plant, from which we might safely augur the future security of the crop. One John Briody planted seven stones of Ballygawley Pinks on the continuations of ridges in which he had planted Scotch Downs. About a fortnight since, the leaves and stems of a very large number of these Ballygawley Pinks became, as is supposed, very markedly diseased, the stems so much so as afterwards to be broken off by the wind; none of the South Downs were affected, and he tells me that he has heard that the Ballygawley Pinks, which are not a common Potato here, have been similarly attacked in other places. I saw these Potatoes a few days since, the blackened parts of the stems that remained had recovered their natural toughness; they had been as is usual very brittle, and every one of those stems which had been broken off, most of them to within two or three inches of the ground, as well as the others, had put out two or three vigorous shoots as healthy and as strong as the soundest plants could. This is the only instance of disease I have heard of in this part of the country. There is a very considerable breadth of ground under Potatoes and the crop generally is very fine and promising. Early Potatoes of a good size, and well in numbers under the stalks, are digging in the open grounds. There is less appearance of mildew in the wheat than has been for some years past, and the Oat crop generally looks well, but short in the straw. Turnips few and have suffered much from drought and dry. *J. M. Goodfif, Granard, July, 1853.*

**The College Examinations.**—I rejoice to see that it is your intention to continue, from time to time, the publication of the examinations at Cirencester College. The questions themselves are most instructive, and I have always valued this part of your Paper almost more than any other, not even with the exception perhaps of statements of farm accounts—failures as well as successes; i.e., when the balance shows a loss as well as when it shows a profit. These statements of accounts are most important when fairly given, and most useful and instructive to the occupier of land. I trust therefore you will, from time to time, evoke from your correspondents tables of accounts connected with farming. Few like to publish failures, but they are equally important with successes; for truth is what we want in all things. I have sometimes thought of forwarding you some accounts of my own farm, but I cannot put them yet into a satisfactory state; I do not mean as regards profit (though I have been hitherto far enough from that), but as regards such an accuracy as would be useful to any one except myself. When I can strike anything out, I will favour you; and I shall be able, I hope, to show that my accounts are kept not only correctly, but at less expense and with fewer entries than most farm accounts are, if we are to judge by the cost of the account-books offered to the public. *W. Grant.*

**Sowing Turnip Seeds.**—Having read a good article in your Paper of the 16th ult., on the sowing of Turnip and other seeds, it has occurred to me that you, or some of your correspondents, will be able from positive experience to answer the following query:—A seed-grower in this locality is now about to harvest a field of Turnip seeds, the one-half of which is Swedes and the other Dale's Hybrid; both were in bloom at the same time: will either or both be deteriorated by their being grown without any intervening space between? A respectable and intelligent neighbour tells me that he "thought away for many years" in an unsuccessful attempt to hybridise Swedes with yellow Turnips. *H. D.*

## Societies.

### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held at the Society's House, in Hanover Square, on Wednesday, the 3d of August: present, Mr. Pomeroy, President, in the chair; Mr. Raymond Barker, Mr. Barnett, Mr. Hodgson Barrow, M.P., Mr. Bramston, M.P., Mr. Brandreth, Mr. Burke, Colonel Challoner, Mr. Druce, Mr. Garrett, Mr. Grantham, Mr. Hamond, Mr. Fisher Hobbs, Mr. Milward, Mr. Mainwaring Paine, Mr. Sillifant, Professor Simonds, and Professor Way.

The following new members were elected:

Raymond, Rev. Sir John H. C., Northchurch, Berkhamstead  
Cherlow, Thomas Lyon, Baynard's Park, Guildford, Surrey  
Oldham, John, Carlton-on-Trent, Nottinghamshire  
Cookes, James Herbert, Berkeley, Gloucestershire  
Radcliffe, Thomas Blatherwick, Scarning Moor, Tuxford, Notts.  
Wilson, J., Shaw Farm, Home Park, Windsor  
Clarke, G. Milner, Goldington House, Sarat, Rickmansworth  
Wood, John Bad, Eastall, Chipping, Monmouthshire  
Patterson, Cook Tylden, Thurston, Bedfordshire  
Barnard, George, Courtloughs, Throverton, Devon  
Michael, John Michael, Swansea, Glamorganshire  
Banks, John Jackson, Kendal, Westmoreland  
Kington, Samuel, Layrich, Throverton, Devon  
Cooke, Rev. Samuel Hay, Beckley Grove, Oxford

Cumberbatch, Lawrence Henry, Queen's House, Lyndhurst  
Dalzell, Robert, 4, Pall Mall East, London  
Buck, Albert, Sansome Terrace, Worcester  
Rayer, Rev. Henry, St. Athan's Cowbridge, Glamorganshire  
Scott, Thomas, 5, Charing Cross, London  
Hemley, John, Shelton, Bingham, Notts  
Smith, John Banks, Langrick, Boston, Lincolnshire  
Kirkpatrick, Thomas, M.D., Glasnevin, Dublin  
Barber, Samuel Wordsworth, Hayton Castle, Retford, Notts.  
Birch, James, Newport, Monmouthshire  
Livesey, R. N., Preston, Lancashire  
Lindow, Henry William, Gowcomb, Stow, Gloucestershire  
Eyre, John, Stanton, Shifnal, Salop  
Samman, John, Oddington, Stow, Gloucestershire  
Oldham, George, Alfreton, Derbyshire  
Power, K. Manley, Hill Court, Ross, Herefordshire  
Joitt, Christopher, Palterton, Chesterfield, Derbyshire  
Webster, Crayston, Kendal, Westmoreland  
Harker, James, Tibshelf, Alfreton, Derbyshire  
Turvill, George, Manor Farm, East Shalford, Surrey  
Stanbridge, Thomas, Kiddington, Euston, Oxon  
De Courcy, Viscount, Lusignan, France  
Longcroft, C. T., Havant, Hampshire  
Everington, William, Skegness, Boston, Lincolnshire  
Crofts, John, Cirencester, Gloucestershire

**FINANCES.**—Mr. Raymond Barker, Chairman of the Finance Committee, laid before the Council the monthly report on the accounts of the Society; from which it appeared that the current cash balance in the hands of the bankers was 2232*l*. He also submitted to the members the quarterly balance-sheets of income and expenditure, and of invested property and liabilities. The Council adopted this report, and the suggestion of the Committee that the thanks of the Council should be conveyed to the County of Gloucester Bank, for the courtesy and exactness with which they had acted as the local bankers of the Society during the period of its country meeting, recently held in that city.

**VICE-PRESIDENT.**—On the motion of Mr. Raymond Barker, seconded by Mr. Hamond, Lord Ashburton was elected one of the vice-presidents of the Society, in the place of the late Earl of Ducie.

**MEMBERS OF COUNCIL.**—On the motion of Mr. Raymond Barker, seconded by Mr. Barnett, the Hon. Alexander Leslie Melville, of Branston Hall, near Lincoln, was elected one of the general members of Council, in the place of the late Professor Sewell; and on the motion of Mr. Fisher Hobbs, seconded by Mr. Garrett, Mr. Nathaniel George Barthrop, of Creetingham Rookery, near Woodbridge, Suffolk, was elected one of the general members of the Council, in the vacancy created by the transfer of Lord Ashburton's name to the list of Vice-Presidents.

**POULTRY.**—The Council appointed Mr. Milward, Mr. Barnett, Mr. Simpson, and Mr. Brandreth Gibbs, to act as a committee on all inquiries connected with the farm-poultry exhibited at the late meeting at Gloucester and on suggestions for the regulations for their future exhibitions; with a request that the committee would report on these subjects to the Council at the monthly meeting in December.

**CONDITION OF CATTLE.**—Mr. Lister Maw's suggestions were received from the General Meeting at Gloucester, and referred to the Special Council in December, when the regulations for the Society's exhibition at Lincoln would be taken into consideration.

**LINCOLN COMMITTEE.**—On the motion of Mr. Brandreth, seconded by Mr. Milward, the Council agreed to the following list of the General Lincoln Committee: Lord Ashburton (chairman), Hon. A. Leslie Melville (vice-chairman), Earl of Yarborough, Hon. R. H. Clive, M.P., Right Hon. Sir John Trollope, Bart. M.P., Sir John Villiers Shelley, Bart. M.P., Sir John V. B. Johnstone, Bart. M.P., Sir Montague Cholmeley, Bart., Mr. Raymond Barker, Mr. Barnett, Mr. Brandreth, Mr. Cavendish, Colonel Challoner, Mr. Evelyn Denison, M.P., Mr. Brandreth Gibbs, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Jonas, Mr. Milward, Mr. Simpson, and Mr. W. B. Wingate (all trustees and vice-presidents being *ex-officio* members). It was arranged that this committee shall continue in force until the Lincoln meeting, and should meet without summons at 11 o'clock, A.M. on the first Wednesday of every month, excepting the months of September, October, and January; and by summons at such special times as the country meeting business might require.

**IMPLEMENT PRIZES.**—The Council, agreeably with their standing resolution, took into consideration the prizes to be offered for agricultural implements and machinery, at the Lincoln meeting next year, and postponed the question of their final adoption until the first Wednesday in December, Mr. Slaney's offer, and Mr. Denison's recommendation, of a prize; with suggestions from Mr. Eggar on the classification of implements, and from other parties, were referred for consideration to the same date. Mr. Hamond's communication of a memorial from the principal implement makers, and suggestions of his own, for rendering the exhibition and trial of implements at the Society's country meetings still more instructive and generally useful, were referred to the Implement Committee of the Society, with a request that they would also report on the subject to the Council at their monthly meeting on the first Wednesday in December.

**ROYAL VETERINARY COLLEGE.**—Professor Simonds laid before the Council the annual report of the Governors of the Royal Veterinary College on their progress during the past year in the application of the veterinary art to cattle, sheep, and pigs. This report was referred to the Journal Committee.

**JOURNAL.**—The Council, on the representation of Mr. Wentworth Dilke, a life member of the Society, and one of the British Commissioners to the United States of America, now resident at New York, ordered a complete set of the Society's Journals to be forwarded to the Smithsonian Institute at Washington.

**DEPOSITS OF GUANO.**—Mr. Faulks, of Crosby, near Liverpool, and Mr. James Bell, of York Place, Edinburgh, favoured the Council with interesting statements connected with the important discovery of extensive excrementitious deposits of sea birds, on islands and caves along certain ranges of the eastern coast of Africa. They also forwarded to the Council with these statements a collection of samples, showing the varying nature of the deposits according to circumstances of situation and depth. Among these was a deposit containing 80 per cent. of phosphate of lime (without carbonate), and a crystallised substance containing 91 per cent. of nitrate of soda, "found in small lakes, upwards of a yard and a half in diameter, in caverns, and in valleys; and surrounding these small lakes, as crystallised incrustations, to an almost incalculable amount. These gentlemen remark, in reference to the guano: "The immense amount of deposited guano cannot be calculated; it is found in extensive caverns as deep as could be pierced with two boarding pikes, lashed together, about 12 feet. It is also found completely covering the side of the island less exposed to rains. The discoverer's words are, 'There is enough to supply Great Britain for 20 years;' and he is an old and respectable commander and part owner, whose experience in the guano-trade is of long standing." The Council ordered their best thanks to Messrs. Faulks and Bell for the communication then made to them on the important question of a cheap and abundant supply of guano to the farmers of this country, and which the Council referred to the Guano Committee of the Society.

**MISCELLANEOUS COMMUNICATIONS.**—Mr. C. Hampden Turner informed the Council of a report made to him by Sir John Rennie of the successful cultivation of Potatoes planted in alternate rows with Hemp. The Rev. Philip Gurdon suggested further trials on the exact influence of inoculation for pleuro-pneumonia on healthy animals. Mr. Tippetts communicated a paper on the application of soot as a manure. Mr. Garvens on Irish Moss. Mr. Clarke, Mr. Hunt, and Mr. Curwood, on improved tillage. Mr. Walkinshaw, of Belfast, specimens of Potatoes, and a copy of his work on their cultivation.

**ADJOURNMENT.**—It was decided, on the motion of Mr. Raymond Barker, "That the customary leave of absence be granted to the secretary, and under his direction to the clerks of the establishment, during the ensuing adjournment," which was fixed to extend to Wednesday, the 2d November.

## POULTRY.

**POULTRY: F. A. D.** I do not believe the offspring of an egg parakee of the nature of the animal that hatches it. I have never found it make any difference in the sitting of a duck, whether she were hatched under a hen or not. Some ducks, the Aylesbury among the number, are bad sitters, and are always hatched under hens; some birds of this breed may have given rise to the belief or report.—*H. D.* There is little difficulty in rearing turtle doves; at first they must be blown with hempseed and water; they will soon feed themselves. They must always be fed at break of day.—*C. R.* I am sorry to differ from your competent authority, but I have no hesitation in saying, a silver pencilled Hamburg cock with a black tail is, so far as exhibition is concerned, a worthless bird, and cannot get even a commendation. It is known by the veriest tyro that even the principal point and beauty of such a bird is the silvering of the tail feathers; a black tail is a defect that cannot be got over. *J. Baily, 113, Mount Street.*

## Miscellaneous.

**Certain Improvements in the Mode or Method of Preparing, Cleaning, Drying, and otherwise Treating Wheat, Pulse, Seeds, and other Grain.**—Patent dated January 6, 1853.—Edward Hutchinson, of Tyldesley, Lancaster, corn miller.—Mr. Hutchinson proposes to use steam instead of water for the purpose of cleaning grain. He incloses a wormed cylinder in a second one formed of wire sufficiently fine to prevent the grain from falling through it. The whole of this is confined in a steam-tight case. The grain to be cleansed is introduced into the wire cylinder through a pipe, and the wormed cylinder by revolving drives it along to the other end, the steam meanwhile softening and removing the dirt; it is then led away through a second pipe.—*Claim:* The use of steam for preparing and cleansing Wheat, Pulse, and other grain. *Mechanics' Magazine, July 16, 1853.*

## Calendar of Operations.

### JULY.

**DORSET FARM, July 30.**—We have had a very catching season, and about as bad an one for haymaking as I ever remember: There has been very little made good, and some has not been made at all, but left on the land, it Clover, and converted into a dressing for the succeeding Wheat crop; and as this must not be done in the water meadows, as it would hurt the Grass often, much of it has been carried away anything but fit for the rick, and some of it has been consigned to the dung-heap. There is still a great quantity to carry, and some not cut, which it is hoped will be got in in better order. But this is only one of our grievances; the Wheat crops are looking very bad, they are not only thin generally, but blighted to an extent that I have not before seen; almost every ear has some corn in it blighted, and certainly it will be an inferior crop, both as to quantity and quality. It will be fit to cut about the middle of August. Barley is also a little affected by blight, but it is a good crop generally; so that we hope to have an average return from it. Oats look pretty well, and will be about a fair crop. But as all complaining will not do, we have to report well of the Turnip crops; they have enjoyed the dull dark weather that we have had. But Potatoes have never been worse, and from all report we have had, the disease here has come earlier than it has appeared in most places. Grass has been abundant with all, and stock have done well. It would be a curious circumstance to add the quantity of rain that has fallen during the past six weeks; it would by no means confirm the report of having had such a bad season. I have no account of the quantity, but have no hesitation in saying I think it less than for the same time last year; and then



we made all our hay good, and were able to clear our land better. The rain has not been much, but we have had a continuance of drizzling fog, the sun hardly showing himself above an hour or two at one time. Mangold Wurzel is hardly doing so well as it does sometimes, which we are sorry for, as it is a root that we find of great advantage in the spring. With plenty of it in store, we can let our ewes lamb as early as they are inclined, without being afraid that keep will be short for them; a little Grass will do with them if they get a few Mangold Wurzels with it. It seems to be productive of milk, and they are very fond of it. Labourers are said to be scarce in some places, but here we have found sufficient to do our work; we have had to give rather more for hiring our Turnips, but the weather has been against the work, so that if we take that into consideration, there is not much difference. No doubt extra labourers will be wanted for harvest, as it appears coming altogether, but then it will be sooner over if we can cut it as soon as it is fit. G. S.

**FORFARSHIRE GLENS, July 30.**—During the whole of the growing season, until the middle of the present month, this district never received a copious and general supply of moisture, consequently vegetation was languid; since the 14th rains have been abundant, and all growing plants healthy and vigorous. The corn crops were generally showing ear before the rains came, and are rather deficient in bulk, but their progress towards maturity is reasonable. Hay-making is in progress; the crop is very light, and in consequence of showery weather having prevailed since the commencement of the hay harvest, the quality will be inferior. Potatoes have all the season been, and still are, healthy and luxuriant; the early kinds are ready for use. Many of the Turnips that were put in before the middle of June had to be re-sown; a legion of insects appeared about that time, and devoured the young plants as soon as they came above ground; since then they have come away freely, and still afford a reasonable prospect of a full crop. Grass is now abundant, and the live stock every day improving. Since clipping time the sheep have progressed apace, and have now quite recovered the effects of the protracted winter and cold spring. Lambs are being weaned; the number is not much deficient, but many are small, and altogether the quality is rather inferior. The clip of wool is not quite so good as usual either in quantity or quality, but the price is considerably better. At our district fair on the 18th, black-faced washed wool—the staple of the district—sold at 10d. per lb., being an advance of fully 30 per cent. on last year's price; it is mostly consumed in the neighbourhood in the manufacture of heavy woollen goods. All sorts of farm produce are still keeping their value; and at recent fairs the price of sheep has been rather advancing. The operations of the farm at present are hay-making, working the Turnips, driving and applying lime, collecting manure, cutting down Tanseys, Thistles, &c., providing peat and turf for winter fuel, and delivering the clip of wool, &c. Perhaps the maximum of rural enjoyment is attained at this season of the year. Vegetable life is in fullest vigour; the insect world is all alive; the birds in full plumage, and with full crops, sing for gladness; cattle, sheep, and horses express their happiness in gambols wild; and in the stream the fishes sportive leap. The labouring population too have fewer hardships than at any other season; the weather is fine, out-door work is not heavy, and, for the present at least, wages are good. The shepherd in his daily rounds has his present happy circumstances enhanced by contrast, when he now and again meets with the remains of a wreath of snow—still to be found lingering on the higher mountain sides—reminders of the length and severity of the past winter. And surely all terrestrial enjoyment is, or ought to be, expressive of gratitude and praise to the ever-bountiful Bestower. S.

**WESTER ROSS, Aug. 1.**—The weather throughout last month has been such as gives us reason to hope that this year's crop on the whole will be little, if anything, short of an average one. Situated among the lofty hills, we have not had the continued drought that has visited the counties on the south side of the Moray Frith; neither have we had the deluges of rain which have afflicted our agricultural brethren in England. In the counties of Aberdeen, Banff, and Elgin the crop is lighter than it has been for many years. In Ross, with the exception of a few windy days, on which the Wheat on exposed fields was somewhat broken down, and all the more so from its previous thinness, the weather has been leading the crops on to harvest at such an easy step as encourages the farmer to look forward to a copious yield and a plump sample. Harvest will be about a week later than last year. We expect to commence about the 15th of this month. The crop is cut in this quarter nearly all with the sickle. Each woman receives per day 1s., and that without food. The cost of shearing and stooking an acre is about 6s. We are busily engaged now thinning out the later sown Turnips. These are close and healthy. The earlier sown kinds have been hoed a second time. The protracted drought at the time of sowing the Swedes and earlier Turnips prevented them from braining for weeks, and now they have an irregular patchwork appearance; and, besides, that backwardness and slowness of growth which usually attend Turnips which have been early obstructed in their progress, are deplorably manifest this year. The complaint is general. A field of good Swedes is scarcely to be met with. Potatoes, as yet, look well everywhere. Our markets are well supplied with sound ones. Rumours of disease are rife; I cannot say, however, that I have seen anything like it. Cattle continue to fetch highly remunerative prices. Although there may be greater caution evinced now by the purchaser than there was in the earlier part of the season, still, cattle can be sold to such advantage as farmers have been long strangers to. Sheep farmers returned from the Inverness wool fairs delighted with free trade, and pleased with everything else. They realised for all kinds of sheep some 4s. or 5s. per head more than last year, and last year was a good one; and the stone of wool of 24 lbs. brought from 4s. to 5s. more also than last year; and, now, our hearty desire is that uninterrupted prosperity may attend the manufacturing interest.

### Notices to Correspondents.

**CABBAGE:** S. Holland. The usual time of sowing Drumheads is early in March, and afterwards at intervals in April and May, to keep up a succession of plants. Two ounces of seed are enough for a rod, and they will give 4000 or 5000 plants. This will produce a succession of plants through or into the winter. They are sometimes sown in the end of August; and the Early York Cabbages should always be sown at this time.

**CALVES:** J. P. Instill has been known in which the heifer has been prolific, although there are also facts to the contrary. W. C. S.

**CHAFF:** A Subscriber. You may displace nearly all your hay with good Oat straw, cut into chaff, and sowed in a hot and salt weak linseed soup, equal to half a pound of linseed a day per head of cattle; and the cattle will do as well. At all events they will do so this next winter, if the choice be between good straw and this year's hay. The main advantage of cutting into chaff is to avoid the waste which always takes place with hay.

**DAIRY:** D. J. W. One pound of butter from every 10 gallons of milk is a very small proportion indeed. You ought to make at least 2 lbs. from this quantity. The following are facts—*Essexshire.* In one trial 100 gallons of milk produced 27½ lbs. of butter. *Jersey.* In an instance cited by Colonel le Coutour, 8 quarts of milk produced 17 ozs. of butter. *Ayrshire.* "Agricultural Journal," Vol. I., p. 443, 9½ quarts of milk = 1 lb. of butter. *Kerry.* "Agricultural Journal," Vol. I., p. 442, 8½ quarts of milk = 1 lb. of butter. In another comparison quoted at p. 436, Vol. IV., of the "Agricultural Society's Journal," we have 1 lb. of salt butter produced from 9½, 8½, and 10½ quarts respectively from Galloway, Kerry, and Ayrshire cows. You ought to make at least 2 lbs.—perhaps three—where you now make one. You are probably mistaken.

**FLOORING FOR CATTLE SHEDS AND PIG STIES:** A Correspondent

asks for information on this point. Perhaps those who have experience of composition flooring, &c., will inform him. The following is one receipt, copied out of a past volume of this journal:—"Dig sifted gravel, such as is used for topping walks, and use coal-gas tar; level the ground perfectly; mix gravel and tar, two quarts of the latter to each bushel of the former, till every particle of gravel is saturated with tar. This is best done on a boarded or stone floor; spread evenly, about one inch thick; roll till hard with a heavy garden roller. When dry, add from two to five inches more, according to the purpose for which the floor is required. Roll as soon as laid, and frequently, until it is quite solid. Cost, at 6 inches deep, 9d. per square yard, at the following high prices:—gravel, 1d. per bushel; gas tar, 4½d. per gallon; labour, 1s. 6d. per day."

**FOWLER'S DRAINING PLOUGH:** *Kentish Landowner.* Information from any who have had long experience of it will be highly valued. It was at work near Hamstead during the past week, and many have had an opportunity of examining it. Pipe drains laid by it promise to be lasting. The main difficulty is in preserving a uniform slope in the drain in spite of variations in the declivity of the surface. This is effected by constant attention on the part of the manager to the indications of the plumb level attached to the machine. Moles of various size may be used according to the size of the pipes employed. The plough does not require greater declivity than in the case of ordinary draining.

**NETTLES:** *Scots.* You must persevere with the fork and remove their roots and all. There is no easy way of getting rid of them. **HIGHLAND SHEEP:** *Edinburgh.* The best information on the subject will be found in the monthly reports of a Lammemuir farm, published in this and late volumes of the *Agricultural Gazette*, by the late Mr. Wilson, of Dunse, in the Calendar of Operations, and the articles on sheep, black-faced sheep, and Cheviot sheep, from the same pen, in Blackie's "Cyclopedia of Agriculture."

**OATS AND GRASS:** G. B. It is difficult to say without seeing the piece. If the Grass be nearly as tall as the Oats, you had better mow the whole together, and make hay of all. If the Oats are very luxuriant and tall, and the Grass not half-way up, though abundant, you may do as we had once to do—reap or "bag" the Oats, and, taking each sheaf by the head, shake two-thirds of the Grass out of it before tying.

**WINTER BEANS:** H. Meredith. We would drill them at least 20 inches apart, in single rows.

## Markets.

### COVENT GARDEN, Aug. 7.

Vegetables are abundant, but some kinds of Fruit are now becoming scarce. Peaches and Nectarines are insufficient for the demand, and good samples in consequence fetch better prices. English Grapes, however, are plentiful, and the sale for them is heavy. Importations from the Continent of Potatoes, Carrots, and Artichokes are still kept up, and there are some good French Cherries and Apricots in the market. English Cherries are not quite so plentiful. Greengages and Orleans Plums from the South of France fetch 4s. per basket. There is also a large quantity of foreign Pines in the market. Young Carrots and Turnips fetch from 4d. to 6d. per bunch. Green Peas are very good, at from 6d. to 1s. per quart shelled, and from 2s. 6d. to 5s. per bushel sieve. Potatoes are becoming very much diseased. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonette, Pinks, and Carnations.

### FRUIT.

Pine-apples, per lb., 4s to 7s  
Grapes, house, per lb., 1s to 3s 6d  
Peaches, per doz., 10s to 2s  
Nectarines, per doz., 2s to 20s  
Melons, each, 2s to 4s  
Apples, per bush, 3s to 5s  
Cherries, per lb., 6d to 3s  
Strawberries, p. basket, 1s to 2s

### VEGETABLES.

Cabbages, per doz., 6d to 9d  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 2s 6d to 4s  
French Beans, p. hf. sieve, 1s 6d to 2s 6d  
Rhubarb, p. bundle, 3d to 6d  
Potatoes, per ton, 40s to 100s  
— per cwt., 3s to 5s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 2d to 8d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 1s to 2s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

### HOPS.—BOROUGH MARKET, Aug. 6.

Messrs. Pattenden and Smith report that the accounts from parts of Mid Kent, Farnham, and Worcester continue to speak of a large quantity of rice, and likely to go into blight, whilst in other places the bine is more clean, and progressing favourably. Market firm, and duty estimated at 155,000L.

### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, Aug. 4.**  
Prime Meadow Hay 105s to 115s  
Inferior do. ... 85 95  
Rowen ... 50 60  
New Hay ... 60 80  
**CUMBERLAND MARKET, Aug. 4.**  
Prime Meadow Hay 98s to 105s  
Inferior do. ... 80 95  
New Hay ... 50 85  
Old Clover ... 118 126  
**WHITCHAPEL, Aug. 4.**  
Fine old Hay ... 100s to 105s  
Inferior do. ... 90 95  
New Hay ... 80 84  
Inferior do. ... 50 60  
**COAL MARKET.—FRIDAY, Aug. 5.**  
Hollywell, 18s. 6d.; Eden Main, 17s. 6d.; Wallsend Riddell, 17s.; Wallsend Haswell, 16s. 3d.; Wallsend Hutton, 18s.; Wallsend Lambton, 17s. 9d.; Wallsend Stewarts, 18s.; Wallsend Tees, 18s.—Ships at market, 83.

### WOOL.

**BRADFORD, THURSDAY, Aug. 4.**—There is a shade more doing in wools, especially bright haired, which imparts more confidence to the holders, who complain that they cannot replenish stocks on the terms to enable them to meet the prices now offered by the spinners. Notts and brokes are not plentiful.

**LIVERPOOL, WOOD MARKET.** The transactions in our wool market during the past month have again been only to a limited extent, and the attention of the trade has been a good deal occupied with the large sales of colonial wools at present progressing in London; this, combined with the protracted state of uncertainty in political matters, has checked anything like an active or speculative demand, and the buyers have confined their purchases almost entirely to the immediate requirements of the trade. We are glad, however, to notice during the past week an increased inquiry for wools, particularly for clean, useful medium qualities, and as many of the manufacturers are getting very low in stock, we may expect them to come more freely into the market than they have done of late. In English and Irish combing wools there is but little change to note; there is,

however, more doing the last ten days, and the month closes with rather firmer prices for these descriptions.—*Greaves & Co's Monthly Circular.*

### SMITHFIELD.—MONDAY, Aug. 1.

We have again a large supply of Beasts, and trade is dull however, the choicest kinds are not much lower, but several inferior kinds remain unsold. There are not so many Sheep as Lambs as on this day week, but enough for the demand; price are about the same as on that day, except that in a few instances rather more money is obtained. Trade for Calves is about the same as of late. From Germany and Holland there are 215 Beasts, 5380 Sheep, and 353 Calves; from Scotland, 450 Beasts 400 from Norfolk and Suffolk; and 1800 from the northern and midland counties.

**Per st. of 8 lbs.—s d s d**  
Best Scots, Here-  
fords, &c. ... 4 4 to 4 6  
Best Short-horns 4 2 to 4 4  
2d quality Beasts 3 0 to 3 8  
Best Downs and  
Half-breds ... 5 0 to 5 2  
Do. Shorn ... 0 0 to 0 0  
Beasts, 5535; Sheep and Lambs, 25,790; Calves, 470; Pigs, 280

### FRIDAY, Aug. 5.

The supply of Beasts is large, and the demand small; price are therefore lower. The choicest qualities are disposed of, but several inferior remain unsold. Trade is tolerably brisk for Sheep, at Monday's rates; for Lamb it is slow, and prices on the average are lower. We have again a large number of Calves trade is slow, and quotations lower. Foreign supply, 506 Beasts, 3620 Sheep, and 572 Calves. Milch Cows, 85.

**Per st. of 8 lbs.—s d s d**  
Best Scots, Here-  
fords, &c. ... 4 4 to 4 6  
Best Short-horns 4 0 to 4 4  
2d quality Beasts 2 8 to 3 6  
Best Downs and  
Half-breds ... 5 0 to 5 2  
Do. Shorn ... 0 0 to 0 0  
Beasts, 1061; Sheep and Lambs, 13,280; Calves, 855; Pigs, 241

### MARK LANE.

**MONDAY, Aug. 1.**—The supply of Wheat from Essex and Kent at this morning's market was again large; the greater part of the former was taken by a country buyer at 2s. per q over the prices of this day week; the latter met a slow sale at 1s. per q. decline. Having a considerable arrival of foreign of which a large portion is direct to millers, and the weather being fine, the demand for this description was quite in retail, a late quotations. Briley meets a fair demand at late rate. Beans and Peas are unaltered in value. For Oats there is more inquiry than on Friday, at a reduction of about 8d. per q upon the prices of this day week. In Flour there is but little doing.

### PER IMPERIAL QUARTER.

	s. s.	d.	s. s.	d.
Wheat, Essex, Kent, & Suffolk ... White	54	63	Red	50
— fine selected runs ... ditto	55	65	Red	52
— Talavera	59	66	Red	52
— Norfolk	40	63	Red	52
— Foreign	40	63	Red	52
Barley, grind, & distil, 23s to 26s ... Chey.	24	30	Malt	25
— Foreign, grinding and distilling	25	31	Malt	29
Oats, Essex and Suffolk	18	23		
— Scotch and Lincolnshire ... Potato	23	26	Feed	18
— Irish	22	25	Feed	20
— Foreign	19	25	Feed	17
Rye	22	32	Foreign	—
Rye-meal, foreign	35	40		
Beans, Mazagan	33s to 38s	Tick	35	40
— Pigeon	36s	42s	Winds	—
— Foreign	34	42	Small	34
Peas, white, Essex and Kent ... Boilers	40	44	Suffolk	40
— Maple	32s to 33s	Grey	31	36
Maize	—	White	43	50
Flour, best marks delivered ... ditto	35	43	Country	35
— 2d ditto	35	43	Country	35
— Foreign	25	35	per barrel	30

**FRIDAY, Aug. 5.**—The arrivals of foreign Wheat and Oats have this week been considerable; of English grain the supply moderate. To-day's market was thinly attended, and little disposition evinced to purchase foreign Wheat except at a decline which holders were not disposed to accede to, although a slight concession upon Monday's prices would generally have been accepted. Floating cargoes are held for extreme rates. For Barley there is a fair demand at Monday's prices. The value Beans and Peas is unaltered. Oats are 6d. per q. cheap. In Flour there is but little doing, and prices are nominally the same as on Monday.

### ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
Qrs.	Qrs.	Qrs.	Qrs.	
English ... 1980	—	4740	1650	3ad
Irish ... 960	—	9190	—	—
Foreign ... 33510	5120	28310	4130	brl

### IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
June 25	46 11	29 3	20 1	32 8	39 5	34 3
July 2	47 3	29 10	20 6	32 6	40 1	35 1
— 9	47 8	29 2	20 6	35 11	40 8	35 3
— 16	49 8	28 1	21 6	35 3	40 4	37 1
— 23	51 18	29 4	21 6	35 3	40 4	37 1
— 30	52 7	29 7	22 2	36 3	40 4	37 1
Aggr. Aver.	49 4	29 4	20 11	34 7	40 3	36

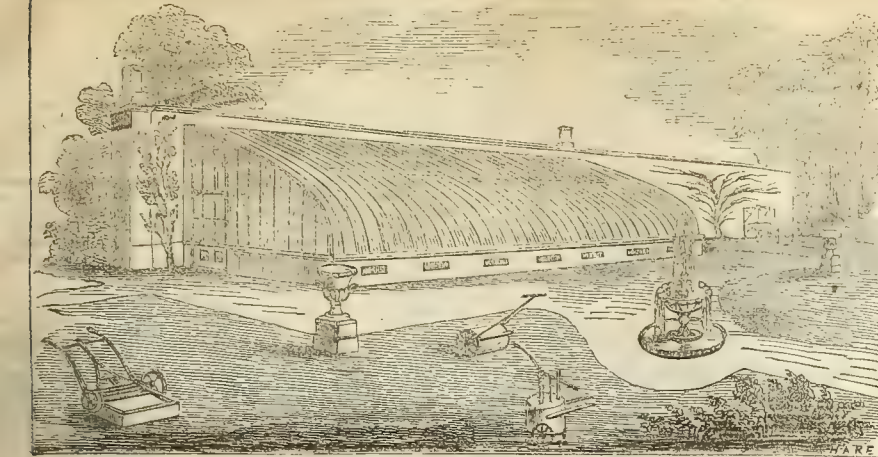
### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	June 25.	July 2.	July 9.	July 16.	July 23.	July 30.
52s 7d	—	—	—	—	—	—
51 10	—	—	—	—	—	—
49 8	—	—	—	—	—	—
47 8	—	—	—	—	—	—
47 3	—	—	—	—	—	—
46 11	—	—	—	—	—	—

**LIVERPOOL, TUESDAY, Aug. 2.**—At this morning's market there was a good attendance of town and country dealers; the day proving fine there was but little disposition evinced to business. Wheat and Flour were generally held at the price of Tuesday last, although in some instances both articles were obtainable on rather easier terms from the quay. Oats brought full rates, and Oatmeal advanced 6d. per 240 lbs. Barley being scarce, improved 2d. to 3d. per 60 lbs. Beans and Peas without change. Indian Corn, on the spot, met with a good demand, feeding purposes, at fully former quotations; cargoes at ports call were in request, at an advance of 1s. to 1s. 6d. per 100 lbs. being saleable at 29s. 3d. to 29s. 6d., and Galatz at 30s. 6d. 31s. per q. — **FRIDAY, July 29.**—At this morning's market the attendance of millers and dealers was not so large as of late. The business done in Wheat and Flour, however, was better than expected, and the prices of Tuesday were supported. Oats and Oatmeal were each a trifle dearer. Barley, Beans, and Peas were unchanged in value. Indian Corn was in fair demand for feeding purposes, and quite as dear as on Tuesday.



## COTTAM &amp; HALLEN. ENGINEERS. FOUNDERS ETC



2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

A New Show Room devoted entirely to Articles of Horticulture.

## ILLUSTRATED CATALOGUES UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Sprinkles	Garden Boring
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c

## IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &amp;c.

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EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

## EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

TO AMATEUR GARDENERS,  
LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

**PATENT GLASS TUBES, Iron**  
Coated with Glass, Gutta Percha, Com-  
bined ditto, Patent Flexible India Rubber  
Tubing, and every other Hose for Watering  
Gardens. The Hydraulic Ram, Fire, Garden,  
and every other kind of Pump, Sluice Cocks,  
Hydrants, High Pressure Cocks, and all other  
articles to be had, Wholesale and Retail, of  
**FREEMAN ROE,**  
HYDRAULIC ENGINEER,  
70, Strand, and Bridgefield, Wandsworth.

**WATERPROOF PATHS.**—Those who would enjoy  
their Gardens during the winter months should construct  
their walks of PORTLAND CEMENT CONCRETE, which  
are formed thus:—Screen the gravel of which the path is at  
present made from the loam which is mixed with it, and to every  
part of clean gravel add one of sharp river sand. To five parts  
of such equal mixture add one of Portland Cement, and incorpo-  
rate the whole well in the dry state before applying the water.  
It may then be laid on 2 inches thick. Any labourer can mix  
and spread it. No tool is required beyond the spade, and in 48  
hours it becomes as hard as a rock. Vegetation cannot grow  
through or upon it, and it resists the action of the severest frost.  
It is necessary, as water does not soak through it, to give a fall  
from the middle of the path towards the sides.  
Manufacturers of the Cement, J. E. WHITE & BROTHERS,  
Millbank Street, Westminster.

**CARSON'S ORIGINAL ANTI-CORROSION**  
PAINT, specially patronised by the British and other  
Governments, the Hon. East India Company, the principal Dock  
Companies, most public bodies, and by the nobility, gentry, and  
clergy, for out-door work at their country seats. The Anti-  
Corrosion is particularly recommended as the most durable out-  
door Paint ever invented, for the preservation of every description  
of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has  
been proved by the practical test of upwards of 60 years, and by  
the numerous (between 500 and 600) testimonials in its favour,  
and which, from the rank and station in society of those who  
have given them, have never yet been equalled by anything of  
the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testi-  
monials, will be sent on application to WALTER CARSON & SON,  
3, Great Winchester Street, Old Broad Street, Royal Exchange,  
London. No Agents. All orders are particularly requested to  
be sent direct.

**SIR WILLIAM BURNETT'S DISINFECTING**  
FLUID.—GREAT REDUCTION OF PRICE.—The merits of this  
Fluid, invented by Sir W. BURNETT, M.D., F.R.S., &c., &c., for  
the Disinfection of Sick Rooms, Clothing, Linen, &c.; for the  
Prevention of Contagion, the Preservation of Animal Matter from  
Putrescence, the Purification of Bilge-water, Cesspools, Drains,  
Water-closets, &c., are now so well known to the public as to  
render comment unnecessary.

Sold at the Office, 18, Cannon Street, City, London; and by  
Chemists, Shipping Agents, and others throughout the United  
Kingdom, in imperial quart bottles at 2s. 6d.; in pints at 1s. 3d.;  
and in bulk at 4s. per gallon.

**CAUTION.** The only genuine Disinfecting Fluid is sealed over  
the cork with the inscription, "Sir Wm. Burnett's Disinfecting  
Fluid," and accompanied with numerous testimonials of the  
highest order, and instructions for its use.

**BERDOE'S SUPERIOR LIGHT SUMMER**  
OVER COATS possess every quality essential to a really  
respectable and gentlemanly garment, and, if desired, the well-  
known additional recommendation of resisting any amount of  
rain without confining perspiration (the fatal objection to all  
other water-proofs); and being entirely free from vulgar singu-  
larity, are adapted for general use at all times equally as for  
rainy weather. Price: TWENTY GUINEAS; or, waterproof, 45s.  
and 50s. Every size kept; also, one of the largest stocks in  
London of every description of over, summer, morning, and  
shoots coats, &c., &c.

W. BERDOE, 39, New Bond Street, and 69, Cornhill (only).

## DISEASE OF THE HEART.

**SHELDON'S IMPERIAL TINCTURE AND**  
BLOOD AND LIVER PILLS, for relieving disease of  
the Heart, Palpitations, and all kinds of Nervous Affections,  
Indigestion, Bilious and Liver Complaints. See Catalogue.—  
Sold at 10s. 6d. and 1s. 6d. each; the Pills at 1s. 1d. and  
2s. 6d. per Box. Sent post-free on receipt of a Post Office order  
—Chemist, &c., opposite Clifton street, Wandsworth  
Road.

## SEATON, ON THE SOUTH COAST OF DEVON.

**TO BE LET, by Tender, for a term of 7 or 10 years,**  
from the 29th day of September next, a compact and desir-  
able TURNIP AND SHEEP FARM, one mile from the nearest  
of Axmouth, containing 201 acres 2 roods 36 perches of superior  
Arable, Meadow, Pasture, and Orchard Land, within a ring fence.  
The commodious House, with convenient Farm Premises, attached,  
all recently erected in the centre of the farm, on a southern slope,  
commands very beautiful and extensive land and sea views. The  
Estate has been thoroughly drained; and having been farmed by  
the owner, Sir Walter Trevelyan, for several years, is in a high  
state of cultivation. A custom Lime Kiln adjoins. The Estate  
is commanded by good and convenient roads. It is seven miles  
from the Market Towns of Axminster and Lyme, nine from  
Honiton and Sidmouth, and 21 from Exeter, and it is expected  
that a Railway, in continuation of the South-Western line, will  
be constructed within a short distance. To view, apply to the  
Barrister at the Farm; and for further particulars, to Mr. JAMES  
BARRAGE, Nettlecombe, Taunton, who will receive written Ten-  
ders for the same until the 10th day of September next.—Aug. 6.

**TO BE LET, a FARM in the County of Worcester-**  
shire.—The Farm is most desirably situated, within one  
mile of a station of the Birmingham and Gloucester Railway, and  
comprises a most commodious and superior Dwelling-house  
(lately fitted up with every convenience for a Gentleman's family);  
Barn; roomy Stables; Box-stalls for feeding Cattle, on the most  
improved plan; Root and Chaff Steamer, Blacksmith's Shop, &c.  
Also an excellent Water Mill, working a Threshing and Winnow-  
ing Machine; Corn Mill and Chaff Cutter. The Land is all of  
excellent quality, consisting of about 80 acres of Meadow and  
Upland Grass, and nearly 100 acres of Arable; the whole of the  
latter has been most effectually drained, and some portion of the  
former laid out for irrigation. The Farm is title free, and will be  
let from Michaelmas next. For particulars, apply to Mr. ARTHUR  
STOW, Bredon, near Tewkesbury.

**TO BE LET, from Lady-day next (the Property of**  
the Right Honourable Lord Ashburton), situate midway  
between the market towns of Callington and Liskeard, BICTON  
FARM, containing 435 Acres of Arable, Pasture, and Meadow  
Land. This Farm has been kept in hand by the proprietor for  
the purpose of Drainage and improvement, and is now a very  
desirable holding for a skilful and enterprising tenant. The  
Farm Buildings are chiefly new, and Water power has been  
obtained, which drives Machinery for the Farm, and is sub-  
sequently applied for Irrigation. The House is a very comfort-  
able family residence; and the right of Sporting over the Farm,  
and some large Woods adjoining would be also granted.—For  
further particulars and permission to view the Farm, apply to  
J. E. KNOLLS, Esq., Buckland Filleigh, Crediton, Devonshire.

## Sales by Auction.

**TO BE SOLD, by Auction, at the Anchor Inn, in**  
Cove, which is close to the Farnborough Station, on the  
South-Western Railway, on FRIDAY, August 12th, at 3 o'clock,  
EEL MOOR FARM, in Cove aforesaid, 25a. 0a. 10p. of Meadow  
and Arable Land, all good, with Farmhouse and Outbuildings.—  
Apply on the premises and to Messrs. LAMB, BROOKS, CHALLIS,  
& Co., Solicitors, Odham; and to Messrs. TRIMMER & HEWETT,  
the Auctioneers, at Farnham.

## TO COUNTRY GENTLEMEN, FLORISTS, AND

NURSERYMEN.

**SALE BY AUCTION, AT THE NURSERY (Late CULLIS'S),**  
AT LEAMINGTON.

Messrs. MANDER and ADAMS having taken the Nursery, at

Leamington, late in the occupation of Mr. Cullis, deceased, and

intending principally to attend to the cultivation of Fruits

and Flowers,

Messrs. BROWN and CLARKE are instructed

to offer for sale by Auction, on MONDAY, August 15,

upon the Premises, commencing at 11 precisely, the whole of the

TREES and SHRUBS, mostly of ornamental kinds, Gentlemen

about planting Ornamental Grounds will find in this stock some

of the best class of trees and shrubs, comprising Kalmias, Rho-

dodendrons, Azaleas, Arabis, Eucalyptus, Spiraeas, Japonicas,

Robiniacs, fine varieties of Magnolias (for which the late Mr.

Cullis was distinguished), also many varieties of Ilex, Quercus,

Juniperus, Cupressus, Taxus, &amp;c., &amp;c.; also several thousand

Standard Roses, of choice sorts, Herbaceous Plants, and some fine

Specimen Plants, all of which will be described in Catalogues, to

be had on Thursday, the 4th of August, of the Auctioneers,

Coventry, and at the place of sale.

## TO THE ADMIRERS OF PURE-BRED LEICESTERS.

**MR. STRAFFORD has received instructions from**  
Mr. Buckley (who is declining Ram breeding) to announce  
to his friends and the breeders of sheep, that he will Sell by  
Auction, without reserve, at Normanton Hill, near Loughborough,  
on THURSDAY, the 1st of September, the whole of the Leicester  
Flock, consisting of 40 RAMS and 200 EWES and THEAVES.  
The purity of this Flock is too well known to require further  
comment, than that it is directly descended from that Mr. Buckley's  
late father, grandfather, and Mr. Bakewell's of Dishley, and has  
not been crossed by any other sheep, excepting that the last five  
years Rams have been used bred by the late Mr. Burgess, of Cot-  
grave, and others bred from his flock by Mr. Sanday, of Holme  
Pierpoint. The Sheep still retain that perfect symmetry and  
fine quality of wool and mutton for which they have been so  
deservedly celebrated for more than half a century. Catalogues  
with particulars will be issued a week previous to the Sale, when  
the Stock may be inspected at Normanton Hill, which is three  
miles from Kegworth Station on the Midland Railway.

EXTENSIVE AND IMPORTANT SALE OF  
FIRST-CLASS SHORT-HORNED CATTLE, SOUTHDOWN  
SHEEP, PIGS, ETC.

**MR. STRAFFORD has the honour to announce to**  
the agricultural world that he has received instructions  
from the Executors of the late Earl Ducie to Sell by Auction,  
without any reserve, at Totworth Court, Gloucestershire, on  
WEDNESDAY and THURSDAY, August 24 and 25, the entire  
and far-famed stock of SHORT-HORNED CATTLE, consisting  
of upwards of 60 head of BULLS, COWS, and HEIFERS, com-  
prising the justly celebrated "Duchess" and "Oxford" tribes of  
Shorthorns, which, with the "Fourth Duke of York," were pur-  
chased at the late Mr. Bates' Sale, at Kirkclevington, in 1850;  
also the "Duke of Gloucester," and many other very promising  
young Bulls and Heifers bred from them, as well as others from  
the most celebrated Herds in the Kingdom. With the splendid  
Flock of 800 SOUTHDOWN SHEEP, bred from the renowned  
stocks of His Grace the Duke of Richmond, Col. Knagscott, Captain  
Pelham, Messrs. Elham, Barclay, Harris, Rigden, and others,  
since which have been used the very best Tips that could be  
obtained from Mr. Jonas Webb. Also, the unrivalled Stock of  
PIGS, descended from the most distinguished breeds in the  
country; and the very choice collection of COCHIN, CHINA  
POULTRY, of the best varieties. The character of the above  
Stock may be estimated from the fact that the originals of each  
breed were purchased without the slightest regard to price, and  
will be found to comprise some of the most valuable animals in  
the United Kingdom; as such, they are especially deserving the  
attention of breeders in every part of the world.—Catalogues,  
with pedigrees and other particulars, are now ready, and may  
be had upon application to Mr. STRAFFORD, 89, Guildford Street,  
Russell Square, London; and of Mr. THOMAS ROBINSON, the  
Barrist, at Totworth Court, Wotton-Under-Edge, Gloucestershire.

**THE SUMMER SUN AND DUST** are sources of  
serious inconvenience to persons of delicate complexion. On  
the drive, the promenade, the aquatic excursion, ladies will find  
the application of ROWLANDS' KALYDOR greatly refreshing to  
the complexion, dispelling the cloud of languor and relaxation,  
allaying all irritability and heat, and immediately affording the  
pleasing sensation attendant on restored elasticity and healthful  
state of the skin. Freckles, tan, spots, pimples, and discolorations  
are completely eradicated by the Kalydor, and give place to a  
delicately clear and fair complexion. In cases of sunburn or  
stings of insects its virtues have long been acknowledged.—Price  
4s. 6d. and 8s. 6d. per bottle. As a protector and restorer of the  
hair, ROWLANDS' MACASSAR OIL will be found alike efficacious,  
guarding it from the injurious operation of the sun and  
dust. It is highly necessary, on purchasing, to see that the word  
"ROWLANDS" precedes the name of the article on the wrapper  
of each, as spurious imitations are abroad.—Sold by A. ROWLAND  
& SONS, 20, Hatton Garden, London; and by Chemists and  
Perfumers.

## PRIZE POULTRY.

**ISAAC BRUNNING is now prepared to supply a few**  
prime 10 weeks old AYLESBURY DUCKS, warranted to be  
bred from the Birds that obtained Prizes at the Metropolitan and  
other Shows where they were exhibited last season.

Price 12s. per Couple.

He can also supply large Norfolk Geese at 15s. per couple, and  
the pure bred Black Norfolk Turkey, 25s. per couple. Packages,  
1s. each.—Orders, accompanied with Post-office orders, or refer-  
ences, addressed to ISAAC BRUNNING, North End, Great Yar-  
mouth, will meet with prompt attention.

## TO LAND AGENTS.

**WANTED, at Michaelmas next, a FARM, of 100**  
to 150 acres of mixed soil, with a portion of Meadow Land,  
between 30 and 50 miles from London, with a Gentle Family  
Residence, and near to a town or village.—Address, with full  
particulars, to R. J., Post Office, Stoke Newington, London.

**WANTED TO PURCHASE, in a genteel and**  
healthy neighbourhood, a Neat and Comfortable  
RESIDENCE, for a small family, with a well walled-in Garden,  
Flower Garden, and Lawn, Good Offices (water in quality and  
quantity indispensable), and about 25 acres of sound Land,  
part arable, part pasture. The whole thing must be freehold, and  
if high to a populous town or well frequented genteel watering  
place, it will be preferred.—Principals or their Solicitor alone  
treated with; address T. J., Wood Hall, Hilgay, near Downham,  
Norfolk.

## TO AMATEURS IN FLOWERS.

**TO BE LET, at a moderate Rental, a most convenient**  
modern built 8-roomed House, replete with every convenience,  
having a Garden 130 feet by 30 feet, and two Greenhouses well  
fitted up.—Apply on the premises, 3, Lansdowne Road North,  
near the Swan, Stockwell, Surrey.

## SURREY.

**TO BE LET, at Michaelmas next, Two desirable**  
FARMS adjoining each other in Titsey, on the Eastern side  
of the county, either together or separately, called Pilgrim's  
Lodge and Titsey Court, with good Farm Houses and Buildings.  
The first contains 343 Acres of Arable, Hop-ground, Meadow,  
Pasture, and Woodland. The second contains 180 Acres of  
Arable, Meadow, and Pasture and Wood, about six miles from  
the Godstone Station of the South Eastern (Dover) Railway.—  
To view, apply to Mr. M'LAUREN, the Barrist, at Pilgrim's Lodge.  
For particulars, to GEORGE MORRISON, Esq., Reigate.

**TO BE LET, for £150, a Small NURSERY, SEED,**  
and FRUITERER'S BUSINESS, with a good jobbing  
trade, in a flourishing neighbourhood, 3 miles from the city, the  
Proprietor having taken a larger concern. There are 2 large  
Greenhouses, Hot-water Pit 14 One and Two-light Boxes, 2 large  
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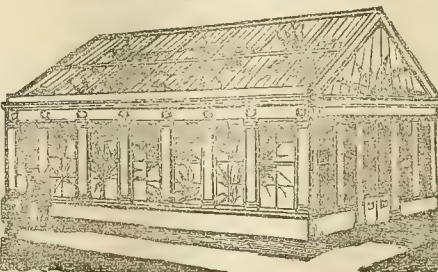
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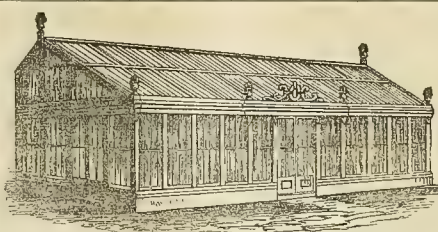
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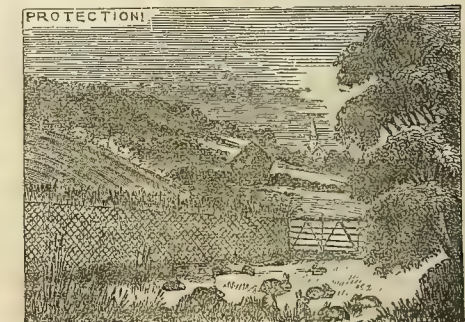
## TANNED NETTING, for the protection of Fruit

Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas, for Wall Fruit.

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## CHEAP AND EFFECTIVE WIRE FENCING.—

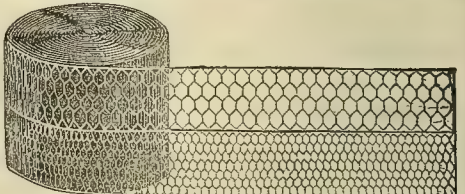
Every variety of pattern, both for garden and field purposes, made to order at very reasonable prices. The wire is of first-rate quality, being selected from the most celebrated manufactory and regardless of cost. Not less than two coats of anti-corrosive mixture applied to the Net as soon as made and included in the cost price. An experience of 15 years fully warrants the Advertiser in claiming for the Whittington Net a large share of public favour.

Apply to Mr. S. TAYLOR, 2, Wotton Parade, Gloucester; or to R. WOODCOCK, Whittington, near Stokeferry, Norfolk.

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IRON ROOFING WORKS, 94, Albion Street, Leeds, Agents for PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES.

THE PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING, and cannot rust or corrode, made any width and length.

24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.

24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. 0½d. per yard.

GALVANISED IRON SPOUTING, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphaltic Roofing Felt, &c. Apply at 94, ALBION STREET, LEEDS.

## GALVANISED WIRE GAME NETTING.—

	Galvan-	Japanned
	ised.	iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 " "	6½ " "
2-inch " extra strong "	12 " "	9 " "
1½-inch " light "	8 " "	6 " "
1½-inch " strong "	10 " "	8 " "
1½-inch " extra strong "	14 " "	11 " "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free. Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.



# PICEA BRACTEATA.

MESSRS. VEITCH AND SON, of Exeter, and the Exotic Nursery, Chelsea, have much pleasure in stating that they have been fortunate enough to raise a limited number of Seedling Plants of the above beautiful NEW CALIFORNIAN PINE; of which a full description was given by Dr. Lindley, in the leading article of the *Gardeners' Chronicle* of July the 9th. The Plants are two years' Seedling, established in small pots, price 63s. each. Specimens of the cone and foliage can be seen by visitors, at either of Messrs. Veitch's Nurseries.—August 13.

# LIVING FERNS FROM AFRICA.

ROBERT KENNEDY has just received another valuable importation of Arborescent and other FERNS from the Cape, in fine healthy condition, and would feel obliged by early orders to prevent disappointment. A General Assortment of Foreign and British Ferns, as usual.

BEDFORD CONSERVATORY, Covent Garden, London, August 13.

CUTHILL'S PRINCE OF WALES AND BLACK PRINCE STRAWBERRIES.—Strong plants will be sent out on the 15th of August.—I need not say more in their favour than that they have been in bearing from the 15th of June to the 1st of August, and all sold in Camberwell, and in pound punnets, the two sorts producing upwards of one ton weight. The same gentlemen and gardeners who judged the Black Prince seven years ago have also pronounced the Prince of Wales to be the best late Strawberry, and, like its royal parent, an enormous bearer, but much larger, and good flavoured, and will make the best of all for forcing as a late sort, and is good for preserving: 15s. per 100, or 10s. for 50. Black Prince prepared for forcing, 7s. 6d. per 100; Fine, for planting out, 5s. per 100. Extra plants allowed to the trade.

CUTHILL'S Pamphlet on the Potato, containing the best way of avoiding the Disease, as well as Growing Large Crops. This Treatise is founded strictly on the laws of Nature. It also contains Asparagus, Seakale, Rhubarb, Strawberries, Cucumber, Melons, &c. Price 2s., or by post, 2s. 4d. Also, CUTHILL on Market Gardening Round London. The first work of the kind ever published. Price 1s. 6d., or by post 1s. 8d. Post Office Orders to be made payable at Camberwell Green.

JAMES CUTHILL, Camberwell, London.

# The Gardeners' Chronicle.

SATURDAY, AUGUST 13, 1853.

COUNTRY SHOWS FOR THE PRESENT MONTH.—17th. Glasgow Carriaton and Picotee.—23d. Handsworth and Loxley.—30th. Salisbury.—30th. Long Buckby, Banbury, and Wolverhampton.—31st. Colchester, Thornbury, and Wycombe.

HAVING concluded for the present our recital of the manner in which the ROYAL FORESTS have been managed, let us now see what general inferences are to be drawn from the facts disclosed, and how far dearly-bought past experience can be turned to future public advantage. It would, indeed, have been a great waste of time and patience had our only purpose been to enumerate a long series of bygone errors occurring in a great public department, and now irremediable. It would have been of little use to show how A has made 6d. an acre of his forest, and B 6d. an acre less than nothing. This might have gratified that local ill-will which all public officers incur as the price of their official position, but it could have led to no public good. Our readers, however, know that the *Gardeners' Chronicle* is actuated by higher motives; and they will have already seen that our remarks have been strictly levelled against a system which we cannot but regard as one of unmitigated evil. That system we have endeavoured to test, not by the aid of private information and uncertain evidence, but by a conscientious adherence to the documents contained in Parliamentary papers; so that every statement is capable of immediate proof. To this we have added what has appeared to us to be the legitimate—we might say, indeed, the inevitable—inferences to which such statements lead.

And what is this system proved to have been? It is shown to have consisted in entrusting woodland property of incalculable value to officers wholly unacquainted with its nature, and having no sort of experience in rural affairs;—property, too, affected by seasons, by age, by its own inherent qualities, and by the mere act of annual growth, together with the annual changes consequent thereupon. The deputy surveyors to whom the Royal forests are entrusted have had, for all practical purposes, undisturbed control over the management. Had they been educated for the purpose of filling such important offices, the Royal forests might have been rendered as profitable as those of others. But a young gentleman fresh from College, a retired clerk from the War Office, a farmer, an attorney's clerk, an apothecary, a militia officer, a flower-gardener, a county magistrate, an invalid officer, a brewer's clerk, have for many years formed the active staff to which has been intrusted the great, and, we repeat, the very difficult task of making and managing new plantations, and of keeping in health timber adapted to the service of the navy. The Commissioners of Woods, &c., have in fact selected deputy surveyors on the same principle as deputy storekeepers.

The result is what ought to have been foreseen: forests worth 40s. an acre attended by constant loss, or by wretched gain; heavy and needless expenses, miserable returns; plantations smothering themselves; soil planted with unsuitable trees; and noble timber allowed to fall into ruin.

The Royal Forests are preserved for the sake of furnishing a supply of timber to the navy. They have been enclosed for no other purpose, and the duty of the surveyor is to keep this constantly in view. But as regards this, we have two admitted facts. The first is that no timber whatever was supplied to the navy from 1833 to 1843, a period of 15 years, during which time the forest management seems to have been in a state of paralysis. The second fact is that when the supply of navy timber was renewed it proved to be of such bad quality that a large part of it was rejected by the dockyard officers.

Under circumstances such as these we are entitled to say that the plan of appointing officers wholly unacquainted with the practical details of their business has been tried, and has signally failed; not however because of official parsimony, or of that parliamentary pressure which has sometimes been so unfortunately exercised. On the contrary, the blue books show that between 1803 and 1847 the Royal forests which have formed the subject of our notice had expended upon them no less a sum than one million two hundred and sixty-three thousand pounds, in round numbers, as is shown by the following returns:—

Bere Forest	...	...	...	£61,000
Chopwell Wood	...	...	...	26,000
Dean Forest	...	...	...	425,000
Delamere Forest	...	...	...	79,000
Holt and Woolmer Forests	...	...	...	117,000
New Forest and New Park Farm	...	...	...	440,000
Parkhurst Forest	...	...	...	32,000
Whittlewood and Salcey Forest	...	...	...	83,000

£1,263,000

We must not, however, omit to state that Mr. MILNE, one of the late Commissioners of Woods, &c., has put on record an opinion diametrically opposed to our own. We have already stated that he saw no objection to the appointment of an attorney's clerk to the management of Salcey, although the gentleman was known to be wholly unacquainted with its duties. In 1849 Mr. MILNE expressed a similar opinion, that, as a general principle, it was of no great importance whether the managers of Royal forests understood their business or not. At p. 400 of the first report of Lord DUNCAN's committee will be found Mr. MILNE's evidence upon this point. He admitted that the deputy surveyors were generally unacquainted with their business when first appointed; but he thought that they became sufficiently acquainted to do their duty satisfactorily afterwards; an intelligent person would very soon learn everything necessary. What the sufficiency of their acquaintance has been, and in what degree their performance has been satisfactory, these records have declared.

Mr. MILNE, however, added that, if a person "regularly brought up to the business" could be procured, it would no doubt be more desirable; but he thought the salaries too low to secure the services of such a person. The context shows that the business here referred to was that of a *land and timber surveyor*! From which we conclude that it has not been considered necessary that a man should know how to grow and cultivate timber; but that it was enough for him to know how to measure and sell it. Upon this extraordinary doctrine comment is superfluous.

Let us hope, however, that such appointments will never again be possible, and that in future the interests of the Crown will be confided to experienced officers of known ability, educated in the management of woodland property, and capable of directing whatever productive powers the Royal forests may possess to the two great ends for which they are established, namely, such an income as a private gentleman would insist upon, and such timber as the purveyor of the navy can conscientiously accept for the dockyards.

The country is now thoroughly alive to the importance of the question; the control of the forests is in the hands of a most able public officer; and we confidently expect that Parliamentary vigilance will prove an effectual obstacle to the pernicious system of postponing the public good to "Parliamentary exigencies."

Since the above was in type we learn from the *Hereford Times* that Mr. EDWARD MACHEN, the deputy surveyor of the Forest of Dean, has resigned his office; although he still continues to hold it "against his will for public convenience." His retirement has, in fact, been already celebrated by the presentation of a valuable testimonial at a public dinner, attended by a large number of his relatives, forest-officers, and personal friends. We shall be curious to see how the appointment is filled up.

During the Mediaeval times—of every production of which, good, bad, or indifferent, it is the fashion

with certain parties, in the present day, to speak with unqualified praise—the hearts of the good people of Europe often failed them, for fear, on the reports they heard, of showers of blood, infecting linen, articles of food, or even the sacred host itself, with pollution. A voluminous collection of such records was made by EHRENBORG; and during the prevalence of cholera in this country, a few years ago, our attention was gravely called by a physician of some merit to similar appearances as connected, in some mysterious way or other, with that calamitous disease. Some such appearances are common enough, for there is scarcely a village in which the base of some damp wall may not be found apparently stained with blood, though, in reality, merely covered with a rich crop of an obscure Alga; and cases not very unfrequently occur in which a species of *Epicoccum* produces deep and broad stains on various vegetable substances sufficiently damp to admit of its growth.

Two remarkable cases of such an appearance on cooked meat as well as vegetables were recorded in 1848, and during the past summer by EHRENBORG and MONTAGNE, in both which cases we have had an opportunity of examining specimens; and a third occurred at Bristol a few days since, to Mr. H. O. STEPHENS, who observed a portion of cold round of beef covered, in the course of a few hours, with patches of the most brilliant carmine. Dr. MONTAGNE's case occurred during the very hot weather of July, 1852; but there certainly has been no excessive temperature to bring into account this year. The patches consist of a multitude of extremely minute globules, endowed with active molecular motion, and presenting no peculiarity of structure. Dr. SETTE, who in modern times was the first to examine the matter with any accuracy, gave the substance the barbarous name of *Zoogalactina imetropa*, considering it, and we believe correctly, as a fungal; while Dr. EHRENBORG, on his principle of referring every possible substance to the animal kingdom, called it *Monas prodigiosa*; and MONTAGNE referred it to the order of Alga under the name of *Palmella prodigiosa*. We have little doubt that it is in point of fact very nearly allied to the yeast fungus, which is now known to be merely a masked form of either *Oidium* or *Penicillium*, or to the pale specks which are so very common in uncooked meat in an incipient state of putrefaction. The vivid blood-like hue and rapid growth are, in reality, the great cause of attraction. The rich colour is capable of being transferred to silk, and is, we believe, very permanent. M. J. B.

# LOIS WEEDON CULTIVATION OF SWEDES AND WHEAT.

ANY approach towards exaggeration is a step the wrong way, and is fatal to real progress. I lose no time, therefore, in correcting your correspondent's twofold error in reference to my practice in the treatment of Swedes, and to my crops of Wheat. In confirmation of your statement last year that the tops of roots, in certain cases and under certain conditions, may be removed without injury to the growth of the plant, I brought forward the following facts: That, before my Swedes had reached their full growth, I had cut off the tops about half an inch from the bulb—that the bulb had, by proof, continued to grow, and had thrown out fresh leaves all round the crown; and, moreover, that the root had not been injured perceptibly by the process. I added that the practice was not original, but had been tried with success in Scotland; and that, on analysis, it was there proved that the root, so treated, only differed from Swedes grown in the common way, in containing 1 per cent. more of water. I proceeded to state that, in my deeply pulverised and well-manured clay soil, I grow my Swedes in single rows, 5 feet apart, interlining them generally with other crops, requiring different food and coming off earlier; that of Swedes I had thus drawn 27 tons of weighed bulbs, and 240 bushels of early Potatoes; and that, before cutting the leaves of the Turnip, the leaves met, and were 3 feet high.

It did strike me that so vast a weight of succulent and nutritious matter, containing more of bone-making substances than the bulb itself, was not meant to be wasted, and I gave it, in its freshness, to my young stock, as food especially suited to their growing condition. In thus going beyond the mere statement of the facts themselves, which were the point of my remarks, I did not presume to recommend the practice for general adoption, but simply to offer it for consideration, to be sifted by the shrewdness and intelligence of your practical readers. With reference to the yield of my Wheat crops, the average hitherto has been about 34 bushels, year after year, from the same acre of land, one moiety being in crop, and the other moiety fallow, alternately; and, if the weather continue favourable, I believe that the produce this year, both on the clay and the gravel piece, will be 50 bushels from each half acre.

It may seem extraordinary that in a season like the present (1853), when the character of the Wheat crop generally is lightness, mine should be so heavy; but, my



rule is to get in my Wheat early, and the plant was up before the rains set in. So that my trenched intervals of pulverised loam and clay carried off all superabundance of injurious moisture, while they retained all the nourishing substances the rain had brought down. And, in reality, that which was so hurtful to others was serviceable to me.

This is not the place to enter in detail on the profitableness of such a scheme, if generally carried out; but it did strike me when I first published the "Word in Season," in 1849—as it strikes me still—that if, out of a farm, say of 400 acres, 100 acres were devoted wholly and for ever to Wheat on this plan, and that if with Wheat at 35s. or 40s., a net annual gain of from 7l. to 10l. per acre could be secured to the proprietor, the plan would be so abundantly remunerating as to justify the title of the pamphlet, "How to grow Wheat with profit."

I feel some delicacy with regard to the unsuccessful experiments; but as I scarcely know an instance of any one making the trial who did not bring to it a mind full of reflection, he will bear, I am sure, with equanimity, and without a spark of unkindly feeling, my concluding remarks. You have the plan before you in all its details. If you would succeed—and you cannot do so other-wise—follow it out with accuracy. Get your good seed in, on your well-cleaned land, early. Pulverise your upturned intervals. When it is well seen that your mind is made up for a certain fixed course of annual operations, never fear the want of hands. For, few farmers refuse the authority of Arthur Young; and he tells you—and I would humbly reiterate the assertion—that, in spite of emigration, or war, or the demands of the factory, "well-paid employment will always create labour." Clean and stir in the spring and summer. And, lastly, do what I have not sufficiently insisted on in my directions, but which has been entirely successful during the heaviest storms, in a case under my own eye—earth up your plant with the double mould-board in June, for its greater support against the wind and rain: carry out the scheme thus faithfully, and I do not hesitate to assure you, under Providence, a success equal to my own. *S. Smith, Vicarage, Lois Weedon, Aug. 9th.*

#### ALLOTMENT GARDENS.—No. I.

To those whom a good Providence has blessed with ample means for improving the moral and social condition of the labouring classes, and whose benevolent minds are anxious to lessen the sum of human misery, and promote by every means in their power the happiness of their fellow-creatures, it appears to me from much observation that there is no more certain or satisfactory mode of proceeding than that every landed proprietor should (as much as possible), provide a good garden for all and each of his labourers. Perhaps I ought rather to say that proprietors should provide each of their cottagers with a piece of ground, which the industry of a poor man will soon convert into a good garden; always bearing in mind that its extent should be proportionate to his requirements, and his opportunities of cultivating it with the aid of his family.

To expatiate on the humanising influence of the art of gardening on every grade of society would be superfluous, as the best and wisest men of all ages have lent their testimony to its soothing and beneficial tendency. The neatest and happiest homes of our poor men are ever distinguished by their trim and well cultivated gardens, while the rank Nettle, Briar, and Thistle are ever the concomitants of the dwellings of the idle, debased, and dissolute, and indicate most surely the dirty, slovenly state of his home and family. Turn we, in our day, to the more exalted ranks of society, we at once recognise, in the most princely patron of gardening which this or any other country ever had, the present representative of the noble house of Cavendish, a nobleman who is one of the most benevolent of our genus. Rare, indeed, are the exceptions to the rule that the true lover of a garden is not beloved and respected in his station—by his friends and dependents—or his employers.

I have often heard it objected by selfish men that it is not a good thing to let labourers have ground of their own to cultivate, because, say they, the men will work well for themselves, and be idle in their master's time. To this my observation gives the most direct contradiction. In my own case, the man who obtains the greatest number of cottagers' prizes in the course of a season, and who has the best cultivated garden at home, is my best and most trustworthy labourer.

The extent of ground which a good man, with the assistance of his family, can manage in his odd time, seems to be about 40 rods, or a quarter of an acre; from this he will supply his own humble table, and send many a basket of fruit and vegetables to market at the neighbouring town—thus realising, by his superfluities, something towards paying the rent.

Time was when political economy pointed to the apportioning of small allotments of ground to the labouring poor as a means of relieving them from idleness and the degrading vices which follow in its train; and of exonerating the more respectable portion of society from the depredations of a surplus pauper population, but happily for us in the present day such a motive does not now exist. The buoyancy of trade and the impetus which has been given to agriculture, by drainage, by deeper cultivation and cleaner surface culture, aided by the torrent of emigration, has left us no idlers—none who need now, as heretofore, to "compain in our streets."

In many parts of the kingdom a scarcity of hands is now found in the busy periods of the year, and the labour market (depending like other things for its price on the supply being much or little) owing to the latter, now looks up. This dearth of labour will without doubt increase, if means are not taken to make our men happy, and inspire them with a love of home. I have long watched with marked interest the result of cottage allotments, and my experience brings me to the conclusion that a higher degree of morality is always seen in the labourer who has a garden, as compared with him who for want of one is obliged to be unemployed in his leisure hours. Let it not be forgotten, too, that the landlord is much benefited by this practice as well as his dependent, for it is a certain fact that land which was worth nothing before it was allotted is now paying its proprietors as well as their neighbouring farms.

In the parish of Nuneham a tract of cold wet barren ground, which produced nothing formerly, is now occupied with thankfulness at a rent of 7s. 6d. for 40 poles, or 30s. per acre; while on the estate of Sir Edward Page Turner, in Oxfordshire, precisely the same result has followed the adoption of this system. Gentle readers! should there be among you any who possess waste ground which might be so disposed of, should you have labourers whom the want of a garden drives every evening to spend what should be properly applied to their domestic necessities at a beer-shop; should your dependants in your parishes be poachers, thieves, or proficients in any of the numerous courses of vice, do try the effect of giving them a portion of land to cultivate; they will gladly pay you what you ask for it, your own property and income will be improved, and you will have the satisfaction of seeing them elevated in the social and moral scale, while they will bless you and respect your property, because they learn from their little garden estate that they too have something to lose.

I purpose in my next communication to give an illustration of the happy effects of the plan I advocate, as it is best to found theories on practical facts. This I am enabled to do through the kindness of my most excellent friend William Paxton, Esq. (the brother of Sir Joseph Paxton). This gentleman has for many years managed the estates of the late Sir Gregory and present Sir Edward Page Turner. He is most highly and deservedly respected for his zeal for his employer's interests; and, to his credit be it spoken, he has never been wanting in promoting the interests and happiness of the poor on these large domains.

Mr. Paxton has at this time upwards of 564 acres let in allotment gardens; and as evidence of the gratitude of the occupiers, I may mention that a handsome silver snuff-box was given him some years ago from the poor men, who each voluntarily subscribed for it in small sums of 2d. and 3d. each. It is thus inscribed: "A token of respect to Mr. Wm. Paxton, of Langford Farm, humbly presented by the labourers of Bicester, Piddington, Blackthorn, Ambrosden, Arnett, Merten, and Murrecott. June 18, 1835." *Henry Bailey, C.M.H.S., Nuneham, Oxford.*

#### PASSIFLORA KERMESINA.

ALTHOUGH Passion-flowers cultivated in pots and trained on trellises cannot be managed so as to exhibit the graceful elegance for which the genus is so much admired when grown under more natural circumstances; yet some of the delicate varieties, and this one more especially, may be easily trained so as to induce them to assume a very pleasing appearance. This species is, moreover, a very free bloomer in a small state, producing a profusion of blossoms which, for brilliancy of colour, are hardly surpassed by any of the more robust growers. It is thus very suitable for those whose accommodation is limited.

If healthy young plants in 6-inch pots are procured at once, placed in a moist growing temperature, and kept growing during the present autumn till they have become well established in 8-inch pots, they will form good sized flowering specimens during the coming season. As early in autumn as the plants shall have filled their pots with roots, and made a moderate growth, remove them to a light airy situation, where the night temperature may average from 45° to 50°, and supply water to the soil sparingly, in order to get the wood well ripened. As soon as this is effected cut back the shoots rather closely, and after this, until it is wished to start them into growth, give no more water at the root than will suffice to prevent the soil from becoming powdery dry, and during this period the plants will be perfectly safe in a warm part of the greenhouse. Early in February, or as soon after as convenient, remove them to a light part of a pit or house, where a nice growing temperature is maintained; and if a gentle bottom-heat is at command, this will greatly assist in starting them into vigorous growth without loss of time. Give sufficient water to the soil to bring it into a moist healthy condition, and sprinkle the plants over-head frequently, to induce them to break close and freely. When the roots get into an active state, it will be necessary to give a shift, and see that this is done as soon as it is required, otherwise weakly growth will be the result of allowing them to remain in small pots in bottom-heat. Stop any shoot that may take a decided lead of the others, and continue this practice until the specimen is well furnished with healthy shoots of about equal strength, after which the trellis should be applied and the shoots kept regularly tied up until it is nicely covered, after which the ends of the shoots may be allowed to hang down loosely. A

vigorous growing young Larch plant, with the branches left on, makes a very suitable support, but where proper wire-frames can be procured these have a neater appearance, and are much more durable; but whatever the kind or form of trellis used may be, it should be applied before the shoots make much progress, as allowing them to grow without support, and clinging together in clusters, tends to produce long-jointed useless wood.

Plants continued in bottom heat during spring will make great progress, and some attention will be requisite to prevent too rapid growth, as the temperature required by many plants at this season would be injurious to this Passion-flower, and unless the temperature can be kept about 60° or 65° by fire heat, it will be better to remove the plants to a cooler situation as soon as they are fairly started into growth. With careful after management, they may be shifted into their flowering-pots at once, but in most instances it is more convenient to give a second shift where required. To have large handsome specimens, the last shift for the season must be into a 15-inch pot, and this should be done before the roots become matted, or the plants suffer for want of pot room. When the trellises are well covered with young wood, the plants may be induced to flower at almost any time, by merely allowing them to become rather dry at the root for a week, and then giving a liberal supply of water, or removing them to a cooler house for a short time, and replacing them in a warm moist temperature will have the same effect; and sometimes they will bloom freely, without any particular management.

By the time that they have done blooming they will be making fresh growth, and if placed in a moist growing temperature, cutting back the shoots to the young wood, and encouraged with manure water in a clear weak state, there will soon be sufficient wood to afford another crop of flowers, and in this way the same plant may be had in bloom three times in one season. The flowers will remain longer in perfection, and attain a higher colour, if the plants are removed to a close part of the greenhouse while they are in bloom.

After allowing them a season of rest, as directed for last season, they may be turned out of the pots, reducing the balls, so as to remove all unhealthy soil, and repotted in as small sized pots as convenient, and afterwards placed in heat, and carefully watered, until they start into growth. By thus reducing the balls, and cutting the shoots closely back every season, they will last any number of years, and old plants will be found to flower more freely than young ones. Any rich light porous soil will suit them; I use light turfy loam, and good rich turfy peat, in the proportion of three parts of the former to one of the latter, breaking it up rather fine, and adding a liberal admixture of sharp silver sand, lumpy bits of charcoal, or small potsherds. Short jointed bits of the young wood planted in sandy peaty soil, covered with a glass, and afforded a gentle bottom heat, root freely, if selected before they get too hard. *Alpha.*

#### MEASUREMENT OF TREES IN GURHWAL AND KEMAON IN 1852.

By Mr. J. STRACHEY, C.S.

THE following measurements, made by a careful observer of Himalayan trees, some of which are now being so largely introduced into Britain, are extracted from the "Proceedings" of the Botanical Society of Edinburgh, to which they were communicated by Major Madden.

##### ABIES DEODARA.

Height above the sea.	Place.	Girth.	Remarks.
8000 feet.	Wan Latoo Dehtab.	32 ft.	A perfectly sound, straight, single trunk; at 40 ft. from the ground, I tried to measure its girth, but could not manage it; but I convinced myself that at that height it must be more than 20 feet round. This is a wonderful tree.
6000 "	Jagesur.	22 ft. 10 in.	At 4 feet from the ground.
7500 feet to 8000 feet.	Wan.	29 "	These trees are in a grove of several hundreds, all within a few hundred yards of each other, doubtfully indigenous; but Cypress is common all about here.
"	"	27 "	The whole of them are most magnificent; I measured many beside these: trees of from 15 feet to 20 feet about, and I therefore do not put them down. All these are quite sound: most of them single trunks to the top. No. 1 divides into two great trunks, 20-30 feet from the ground, and is a wonderful tree; No. 2 divides into two great trunks near the base; No. 3 is a single trunk.
"	"	26 "	No. 1 is close to the Great Deodar. The height of these Cypress trees is most probably more than 200 ft.
"	"	25½ "	166 ft. high by Captain Jones' Theodolite. This is said to be the largest Cypress at Nynce Tal; and, at any rate, is a very fine one.
"	"	25 "	
"	"	24 "	
"	"	23 "	
"	"	23 "	
"	"	22 "	
"	"	22 "	
6800	Nynce Tal.	19	



## TAXUS BACCATA.

Height above Sea.	Place.	Girth.	Remarks.
9500	Above Wan.	14½	Descent on north side from Pass above Wan towards Nundakinee River.
ABIES SMITHIANA.			
8000 to 9500	"	20½	Very beautiful trees; same site as the last.
"	"	18	
"	"	15	
"	"	13	
ABIES PINDROW.			
8500	Byansee.	13	
"	"	11	
PINUS LONGIFOLIA.			
5000	Ghetee.	15½	Below Chiringa Pass
6500	"	10	
"	"	9½	
"	"	9	
"	"	8½	
5000	Below Budhangurh.	11	
"		11	
"		10	
5000		11	
QUERCUS ANNULATA.			
5000	Hutcheena Pass.	11	Kutyoor district.
QUERCUS INCANA.			
5000	Mutkot.	19	
6000	Chiringa Pass.	15	
7500	Near Wan.	18½	Very fine trees.
"	"	14	
"	"	12½	
7000	Above Boora.	16	
"	"	14	
"	"	14	
"	"	13½	
QUERCUS DILATATA (FLORIBUNDA?)			
7500	Between Byansee and Kankra.	17	10 ft. and 12 ft. very common.
8000	"	16	
"	Kankra.	15	
"	"	14	
7500	Budhangurh (near).	16	
QUERCUS SEMECARPIFOLIA.			
8000 to 8500	Byansee.	16	This size is common
9500	Kankra.	12	
"	"	16	
10,000	"	13	
"	"	13	
8000	Near Do.	17½	
"	"	17	
CASTANEA TRIBULOIDES.			
5000	Kutyoor.	10½	
"	"	9	
RHODODENDRON ARBOREUM.			
8500	Byansee.	11	
8000	Near Kankra.	12½	
"	"	12½	
"	"	12	
"	"	11	
6000	Near Paore.	12½	This size is common here.
"	"	12½	
"	"	12	
8000	Binsur.	13	
ILEX DIPHYRENA.			
9000	Near Kankra.	11½	
"	"	8½	
"	"	9	
ALNUS NEPALENSIS.			
6500	near Budhangurh.	14	
"	"	11	
PAVIA INDICA.			
6500	Ascent to Wan.	15½	
7000	"	15½	
"	"	14	
OLEA ACUMINATA.			
4500	Above Somesur.	16½	Near junction of Dujnath Road.
ULMUS EROSA.			
8000	Diwalee.	15½	
"	"	14½	
ACER (STERCULIACEUM?)			
8000	Diwalee.	14½	

## Home Correspondence.

*The New Forest.*—A person, though he tells the truth, yet not the whole truth, must be highly blameable. I am led to this observation from the letter of your correspondent in the *Gardeners' Chronicle* for July 30, relative to the New Forest. I will defy any one to read it, and to have the most distant suspicion afterwards, that any rights exist there, but those belonging to the Crown. The real fact is, that most extensive rights belong to the commoners, to which they have as much legal claim as any man has to his own estate. The Crown possesses only certain rights in the New Forest. The manor belongs to it; the timber also; and it had also that valueless, I may say injurious right, to keep deer in all parts of it. But the Crown, up to the year 1850, could never keep more than 6000 acres of land inclosed for plantation. So jealous were the commoners of encroachments, that if permission was given to any one of the freeholders or forest inhabitants to inclose a few acres abutting upon their properties, the officers elected by the commoners required an equal quantity from the plantations to be thrown open to the public. About three years since, by act of Parliament, the Crown obtained permission to inclose 10,000 more acres, upon the condition of destroying the deer. This was to it a most advantageous agreement. The deer were a continued source of expense, from the damage done to the trees, as also from the excessive and constant cost of keeping in repair the park palings

surrounding the plantations, which was absolutely necessary in general for 30 years in succession. Your correspondent talks of such a property returning a rent of 60,000l. per annum. If the foregoing is, or anything like, the truth, how is it possible to place any reliance upon his calculations or statements? I will not discuss whether any rent ought to be obtained from this forest. I doubt the wisdom of cutting timber to make a pecuniary show, which I believe ought to be retained for difficult times: but of this I am quite certain, that if your correspondent has omitted the truth, in his description of the other crown forests, as he has done in this, his statements must be worse than useless. *A Constant Reader.* [We confess our inability to discover any ground for the criticism of our correspondent. We have not pretended to give a complete history of the proceedings in the New Forest. It is in blue books only that such details are to be looked for. We are necessarily confined to general results, and to the system out of which they arise, and our correspondent's letter itself shows what the system has been. He does not question the accuracy of the general statement—that is beyond dispute—but he says that commoners have certain extensive rights, which is perfectly true, and that the deer have been a great source of expense, about which we do not entertain the smallest doubt; but we would ask why the commoners' rights could not have been long since satisfied by legal arrangements? why enormous plunder should have been permitted?—why flagrant negligence should have been tolerated?—and why the mischief caused by the deer has not been abated? A deer removal bill might have been passed in 1803 as well as in 1853. A vigilant superintendence might have been consistent with preserving the just rights of commoners, and was indeed the more indispensable because of the very exercise of those rights. If, as our correspondent says, the Crown lately obtained permission to increase the inclosures very largely, the same permission might have been obtained at any earlier period. It may be true that the New Forest would have been incapable of yielding a clear revenue of 60,000l. a year under any circumstances; such an *obiter dictum* may be excessive; 66,000 acres of land in Hampshire, of which 40,000 are good Oak land, may not be capable of yielding a profit of 60,000l. a year under any circumstances, but the main fact would still remain untouched, namely, that 66,000 acres have produced an annual loss. We will not pay our correspondent so bad a compliment as to suppose that if the New Forest, with all its difficulties, but with its 66,000 acres, were to fall to him by inheritance, he would be content to spend 520l. a year in maintaining it, or that he would be satisfied with even 680l. as clear revenue; or that he would allow the timber to remain "for difficult times," notwithstanding its annual deterioration.]

*Honey* (see pp. 469 and 486).—I do not think the answers to the honey query arrive at the real solution of the mystery. I have invariably noticed that what is termed virgin honey, viz., honey run from the comb, being all made the previous summer, granulates or becomes solid when put away in jars or bottles; but old honey will not granulate, which fact has often surprised me. *A. D., Pearson's Green, August 6.*

*Weeds and Salt.*—I find that 1 lb. of salt saturates 2 quarts of hot water. On how many square yards of ground will the 2 quarts kill weeds, and for how long? *Ballandyne.*

*Stoning of Wall Fruit.*—Permit me to direct your attention to this, viz., in my Peach-house are four Peach trees and one Nectarine tree; two of the Peach trees are on the back wall, and the other two, with the Nectarine, are in front, lying backwards in a semi-circle. The front trees have their roots outside of the house in a bed of bones, &c. Now, one of them (in front), a Noblesse, has always dropped its fruit before they are ripe, and upon opening them I have invariably found the stones to be split and the kernels rotten. It is the healthiest tree in the house. All the other trees ripen their fruit well. I would further ask your advice upon this: the leaves of my Vines always blister when the wood begins to ripen. Their roots are without the house, in a bed of bones, &c. *D. J. B.* [In unfavourable springs, when a portion of the blossoms is injured, but not to an extent that would prevent the formation of the young fruit, the latter often holds on till the stone is formed, but then the kernel is without vitality. It is observed to consist of a brown pellicle, inclosing a discoloured fluid. If this dry up the fruit may ripen; but in moist weather, and when there is a strong flow of sap, the vitiated fluid increases and bursts the stone. Instances of this have been very common with Peaches on the open wall this season, where the trees are too vigorous in proportion to the number of fruit. You must endeavour, in future, to maintain a temperature favourable for setting the blossoms, and then take care that the growth of the tree be not affected by vicissitudes of dryness and moisture. If you can thus obtain one good crop the excessive flow of sap will, in consequence, be moderated, and the evil now complained of will most likely not occur. Previously to the blistering of your Vine leaves, the latter have probably drawn the moisture from the dry materials of your border; for Vine leaves evaporate an enormous quantity of water, if a house is ventilated as it ought to be. Although we have had a deal of rain, yet your border, like many others, may be so circumstanced as to throw off nearly all the heavy falls.]

*Potato Disease in Ireland.*—Your prophecy that the Potato disease would probably soon show itself in

Ireland, has been but too fully realised. For some time past, indeed, the disease has been making considerable progress in many places in the vicinity of Cork; it was distinctly observable in an 18-acre field at Summer's Town (famous for its magnificent Cork tree), in the first week of June; in the first week of July, the foliage and many of the tubers on 4 or 5 acres of the field were greatly injured, and on visiting this field a few days since I found the whole of the foliage affected to an extent sufficient to put a stop to the further growth of the tubers. The kind is the pink-eye, and the crop having been planted in February, and early in March, the tubers have attained, as nearly as I can estimate, half the size they would have attained had they escaped the disease. Unfortunately of this half-crop a large portion, between a third and a half are diseased. This field, which is now bearing the second crop of Potatoes, having been broken up from an old pasture in spring 1852, and manured rather heavily each year, is in a worse state than any other in the neighbourhood; but I regret to have to state that every field is more or less affected, and that the decay of the foliage is progressing with great rapidity, so much so that the whole atmosphere on calm evenings is perceptibly charged, and in the vicinity of the Potato fields disgustingly so, with the peculiar effluvia which proceeds from the disease. Potatoes in the Cork markets have for the last fortnight or three weeks been as fine as ever they were at this time of year, and the best are now selling for 6d. per stone of 14 lbs. Within the last few days, however, diseased Potatoes are becoming more and more general in the markets, and from reports which have reached me, I fear that the hope which I for some time entertained that the disease might possibly be restricted to the comparatively highly manured environs of the city, is not likely to be realised. In the event of anything like a general failure of the Potato this year, it is earnestly to be hoped that our farmers will abandon the extensive culture of this faithless crop. In the vicinity of great towns, where early Potatoes very commonly make a return of 30l. or more per acre, the chance of success may be worth the hazard; every where else, with such substitutes for our cattle as Swedish Turnips, Mangold Wurzel, and White Carrots, and for human food as Oatmeal and Indian Corn, to persevere in the culture of Potatoes is altogether inexcusable. *Edmund Murphy, Queen's College, County Cork.*

*Cannas as Bedding Plants.*—It is useless planting Cannas unless they are placed in a wet situation. A damp peaty bed open to the sun is an admirable position for this noble class of plants. If strong plants of the indica (which is the best species for bedding out), are planted in May they will form a gorgeous mass of scarlet flowers, which will continue in beauty till quite late in the autumn. After the plants have done blooming, which will happen about the end of September, take them up, and keep them in a comparatively dry state in a cool stove all the winter; they will be ready for planting again in the following May. *A Lover of the Tribe.*

*Giant des Batailles Rose.*—Last year my servant placed a hand-glass over a plant of this Rose, to force it for a show; it has bloomed this year, very semi-double, and of the palest possible rose. Is that usual when forced? Will it recover? Buds from the plant bloom well and true. *F. D., Pershore.* [It is not unusual for this Rose to lose its colour, and come semi-double during a period of bright dry weather; blooms produced later in the season will doubtless be found to be perfectly double, and to have their true colour.]

*Dried Potato Sets.*—From what I am about to state the surmise will appear incorrect, that the failure of the experiment at Turnham Green in drying Potatoes on Professor Bollman's plan has arisen from their being roasted too late in the season, i. e., after vegetation had become active. It seems that the Potatoes of M. Bollman and others have only been subjected to the drying heat of an apartment in which there is a stove, and which heat, although greater than our common sitting rooms, does not approach to that of a kiln. As I wished to try the experiment on such Potatoes as have generally suffered most from disease, and as such were not now otherwise to be obtained, I went to a neglected piece of ground, on which early Potatoes had been grown last year, chiefly of a kind here called Tols, with some Kemps; as I found them by their tops on the 15th, 23d, and 27th June, they must have been in an active state of vegetation. I put 140 of the tubers of all sizes, some not larger than marbles, on those days, in a basket, which I hung in an open, roomy, kitchen chimney. On the 14th July I planted 138 of them, whole seed, all with shoots of from a quarter to 1½ inch long; two I rejected, as they showed no sufficient vegetation. Of these 138 Potatoes, four only have not appeared above-ground. Some have come up weakly, as might be expected from the size of the Potatoes and their exhausted state, but the larger number have a very fine, almost a luxuriant, growth. Of the four that have not come up, on examination, I found three in a growing state, one of these very soft and pulpy; the fourth one firm, sound, and hard, with small Potatoes formed, but no buds. Of the general Potato crop there are some few instances of mildewed leaves, but scarcely an instance of its extending to the stem; in the early Potatoes we ourselves are digging, there is no sign of disease. In Potatoes on the leaves of which mildewed spots appeared a fortnight back, a strong and vigorous vegetation is proceeding, and in two plots of Potatoes in which the stems had become blotched a month ago, the plants have recovered, and even the blotched parts of the



stem have recovered their natural toughness. As far as my observation extends there is nothing to apprehend from disease this year, the Potatoes have generally appled or their first blossoms have fallen; and, as usual, the period of about a month elapses from their being first affected to the affection becoming general, we may, let the attack come when it may, expect a very full harvest. There is a very great breadth of land under them; I think more than there has been since 1846, and Potatoes that are found to suffer less from the disease than other varieties have come into very general cultivation. We have no right, however, to augur from the exemption or late appearance of disease this year that it is on the decline, for invariably on the odd years it has made its appearance from a fortnight to a month, or even two, later than in the even years; a reference to any periodicals of the last nine years will show this. In 1847 it did not show itself in Ireland till the crop was fit to dig out. Perhaps the most favourable symptom is the strong vegetation, which appears to overcome the attack; still this may only be an event of this season, yet it has not been observed so strongly developed before; it is true a sickly effort of vitality has been seen, but which only lasted long enough to cheat the hopes of poor Pat. I think our best hopes of obtaining a crop lie in stimulating a late growth, and I have now a small experiment on this hypothesis with Ash-leaved Kidneys; they were only first manured with bog mould, but when in blossom received a dressing of dung. *John Goodijf, Granard, Aug. 8.*

*Bees.*—I have kept bees for some six or seven years past in boxes, and they have made plenty of honey, as I see through my hive windows; and I put on bell glasses and caps perpetually, but "de'il a bit" will they ever go up into them—decoy-brood comb notwithstanding. I have smoked my bees and tried to cut out some combs, as Cotton quietly tells us to do; but even with a knife, it is more easily said than done. I made a sad smash and waste the last time I tried, and killed a great many bees. What am I to do? I presume it is now too late to transfer them to an empty hive; or would they make honey enough now for the winter? I am tired of getting nothing for myself, and really cannot say,

"Sic vos non vobis mellificatis apes."

—Northwood.

*Potato Disease, Lapstone Potato, &c.*—I am sorry to inform you that this disease is committing sad havoc here, and that, contrary to my previous experience, it has attacked the matured Ash-leaved Kidneys, and destroyed at the least two-thirds, in preference to Hague's Seedling or Lapstone, which with me has always been the first to suffer. Mildew on Grapes, Cucumbers, and Vegetable Marrows, is also becoming very prevalent in this neighbourhood. With reference to the Lapstone Potato, it is stated in "Loudon's Magazine" for February, 1843, p. 66, to be a seedling between the Early Ash-top and the Scotch red-nosed Kidney. "It was raised by a shoemaker in this neighbourhood (Yorkshire), and hence the name Lapstone." I have since learned that this son of St. Crispin's name was Hague, and hence the name of Hague's Seedling, by which name it will be found in the wholesale catalogue of Hurst and M'Mullen, and several other seedsmen. It is thus described in my seed list for 1849, "No. 7 is matchless, being, in my opinion, the finest Potato in existence." I am still of the same opinion. *W. P. Ayres, Brooklands, Blackheath.*

*Chelsea Botanic Garden.*—The Apothecaries' Society have authorised me to preserve a selection of the more important tropical medicinal plants, according to a plan I suggested to them. Would you mention this as a postscript to your observations in last week's Number of the *Gardeners' Chronicle*? *Thomas Moore.*

*Silkworms.*—We have now and then reports of the success of individuals in the management of the silkworm, and the produce is stated to be of good quality. It is now more than 30 years since a company was about being formed for their introduction into Ireland. A great many Mulberry trees were imported, but the undertaking, from some cause or other, was given up. At that time, means being at my disposal, I reared many thousands of silkworms, and in order to know their proper treatment, I eagerly sought for and carefully read all the authorities on the subject within my limited means, and thus acquired some knowledge of the practice adopted in their management in other countries. I succeeded in producing a large quantity of silk, but all my attempts to have it manufactured at that time failed. Their feeding places were a Vinery and a greenhouse, and when the period arrived for the formation of their cocoons, it was an interesting sight to see the Orange, the Camellia, and the Myrtle, with other suitable plants, spangled with the silken produce. There are three objections which may be advanced against the introduction of the silkworm as a means of profitable employment in this country—1st, the deficiency of Mulberry trees to supply their necessary food; 2d, the worm being hatched before the expansion of the Mulberry leaf; 3d, the price of labour. I would dispose of the first objection, by observing that there is no reason why the common Mulberry should not be grown in this country; that it is sufficiently hardy to withstand the utmost severity of our winters there is sufficient proof. Is it not surprising that a tree so intimately associated with the production of silk should be so neglected in this great manufacturing country? It is true that on the estates of our noble aristocracy some ancient trees may be found, and here and there some old trees in places of less note; but who now-a-days thinks of planting the Mulberry tree? It is nearly 50 years since I first

handled a spade in gardening operations, and during that period I have only been required to plant one solitary Mulberry tree. I suspect that the demand is so limited for them that but few are grown in the nursery; but let it be once understood that it is important that a large supply should be obtained, and they will soon be produced to any extent. And although some of the other varieties of Mulberry may be thought to give a better quality to the silk, yet we have ample proof that the leaf of the common kind will sustain the silkworm sufficiently to enable it to produce silk of very good quality. 2d. That the eggs of the silkworm are hatched before the Mulberry puts forth its leaves. In my early experience I found that I could easily produce two broods of silkworms in a season. The eggs were placed in a Vinery which I was forcing about the 1st of February; the worms when hatched were supplied with Cos Lettuce leaves, which were kept some time in the Vinery, to dry up the external moisture before they were given to them. On such food and in the high temperature of the Vinery they thrived and underwent their changes very satisfactorily, but they never acquired that fine white powdered appearance which feeding on the Mulberry leaf gives them. The silk produced may be inferior, but the object to be attained, and which I had no difficulty in effecting, is to have an abundance of eggs to hatch at a period when the worms can at once be supplied with Mulberry leaves. 3d. The price of labour would be an insuperable objection to the keeping of the silkworm, were there not an abundant supply of it at command. There are thousands of individuals who must be supported by parochial rates, whether they work or not. Could the unions, then, not supply their quota of labourers? An abundant supply might also be obtained even from our village and national schools; for in this case, instead of labour, it might be considered a relaxation from lessons. I would by no means intrude upon the necessary play and exhilarating games so genial to the period of youth; but I would give some reward to the most careful and attentive. The labour of gathering the leaves, and giving the worms the necessary supply, with due attention to keeping their feeding shelves clean, as well as the process of winding the silk, is so easy, that under the superintendence of a few skilled hands, it is an employment peculiarly suited for youth. Could I imagine that my humble attempt to direct attention to the culture of the silkworm was worthy of the notice of those who, from their exalted position in society, can influence and direct the philanthropy of others who delight in any means of meliorating and awakening the dormant habits of attention and industry in the helpless and destitute of the rising generation, my object will be accomplished. *Tassel.*

*Double Cropping.*—In my article on this subject, p. 500, your printer has made me state a very self-evident fact, viz., that ten rows of Peas at 8 feet or 12 feet apart will produce more than three rows in the same distance. It should have been "two rows at 8 feet or 12 feet apart," &c. &c. *W. P. Ayres.*

## Societies.

ENTOMOLOGICAL, Aug. 1.—S. STEVENS, Esq., F.L.S., in the chair; Lord Goderich, Captain Cox, and several other gentlemen were elected members of the Society. A box of fine Coleoptera and Lepidoptera, collected by Mr. Foxcroft, in Perthshire, for distribution amongst the subscribers to his excursion, was exhibited. Amongst the beetles were specimens of a new British fire-fly, *Lampyrus splendidula*; specimens of different species of fungi were also exhibited, infested by *Boleophagus crenatus* and *Thymalus limbatus*. The chairman exhibited specimens of the two very rare moths, *Pachetria leucophaea* and *Hadena dentina*, from Mickleham; Mr. Wilkinson the curious-cased larvæ of *Tinea masculella*, found on the Hornbeam and Beech; and Mr. Douglas, *Ino globularia*, *Heliothis marginata*, and other rare species, all found flying around the flowers of *Silene inflata*, which is an excellent bait for the night-flying moths; Mr. F. Bond exhibited some Parsnip leaves, which had the appearance of being scorched, resembling the attack of the Potato disease. He had found no insects upon the plants sufficient to produce such results, and Mr. Westwood stated the Potatoes in his garden had been attacked on Sunday last, although they had been previously quite healthy and remarkably strong in their growth, and free from insects. Mr. Edwin Shepherd exhibited a remarkable specimen of *Anticarsia rubidaria*, in which the two cross bars of the fore wings were partially confluent. Mr. Douglas read an extract from "Layard's Nineveh" relative to the use of locusts as food, one of the carved stones representing a procession of servants bearing the materials for a feast, amongst which are locusts strung upon sticks. Mr. Frederick Smith read a memoir on the habits of *Pompilus punctum*, one of the sand wasps, which he had reared from some small oval mud cells (communicated to him by Mr. W. Thompson), which had been found at the top of a straw hive. He had thus been enabled to determine that the female is the *Pompilus petiolatus*, and that the supposed female described by Mr. Shuckard is an imaginary animal. Some observations were added on the economy of the insect as indicated by the want of bristles on the fore legs, which had been assumed by St. Fargeau, inaccurately, to prove that the insects destitute of such organs were parasites in the nests of other species, and incapable of making their own nests. Various additional notes on the habits of other fossorial Hymenoptera

were also read by Mr. Smith. Mr. Westwood read an extract from the *Gardeners' Chronicle*, and made some observations, upon the employment of chloroform in taking honey from hives. He likewise read extracts from several American newspapers on the ravages committed during the present season in the United States by a small caterpillar hitherto unnoticed. He also read a communication from Dr. Schaum announcing the decease of Professor Germar, and exhibited some specimens of a new kind of silk recently imported from Western Tropical Africa, communicated to him by the Rev. Mr. Venn. Mr. Douglas read a translation of a Report by Dr. Goepfert, on the recent additions to our knowledge of the Strepsiptera, and especially on the supposed relationship thereof to the Coleoptera. A discussion took place upon this subject, in which Herr Schiodte, of Copenhagen; and Messrs. Waterhouse and Westwood took part.

BOTANICAL, OF EDINBURGH, July 14.—The President in the chair. Mr. G. Lawson exhibited specimens of a collection of Fifeshire Mosses, proposed to be published by Mr. C. Howie, who, in conjunction with Mr. A. O. Black, had carefully investigated the Cryptogamic botany of the east of Fife. The following papers were read:—1. Experiments on the Dyeing Properties of Lichens; by W. L. Lindsay, M.D. 2. On the Cryptogamic Plants of the Neighbourhood of St. Andrews; by Mr. A. O. Black. 3. Remarks on the Hardiness of certain Conifers, as shown by the Effects of the past Winter; by Mr. W. W. Evans. 4. Notice of the Production of Cones in 1851 on *Pinus Lambertiana*; by A. G. Spiers, Esq. The tree on which the cones were produced was stated to be about 23 feet in height; the cones contained perfect seeds, from which young plants have been raised. Mr. M'Nab stated that several plants of *Abies Morinda* were fruiting this season in different situations, viz., at Riccarton, Dysart House, and the Botanic Garden. He mentioned that all these plants had grown in the Botanic Garden, and had been transplanted last year. The large plants of the same Pine which had not been transplanted showed no symptoms of flowering. 5. Measurement of Trees in Gurhwal and Kemaon in 1852; by Mr. J. Strachey, C.S., communicated by Major Madden. This communication will be found in another column of to-day's paper. 6. Notice of the osseous Legume of the *Hymenaea Courbaril*; by Dr. Seller. 7. On the rarer Plants found in the Neighbourhood of Ripon; by Mr. J. B. Davies. Several gentlemen were elected Fellows.

## EXHIBITION IN THE YORKSHIRE PHILOSOPHICAL SOCIETY'S GARDENS.

August 3d, 4th, 5th, and 6th.

The weather previously had been very unfavourable, but during the Exhibition it was all that could be desired. The number attending was about 5000, and upwards of 3000 were taken at the gates. On entering the hall of the museum on the left was the truly magnificent plant of *Cycas revoluta*, one of the species of Palm which produces sago. Great interest was attached to this plant, it having flowered at York about 18 years ago. It is a male, and in beautiful condition. The plant was purchased by Mr. Jarmock, at the sale of the late Miss Nelson, in Bootham, together with a number of other rare specimens which adorn the Palm houses of the Garden at Sheffield at the present time. It was kindly lent to the Society by the committee of the Garden, through Mr. Law, the Curator. On leaving the entrance hall and entering the lecture room (which was floored level for the occasion), the six splendid columns which support its roof were found decorated with the leaves of various Palms reaching to the capitals 30 feet in height.

Those from the Royal Botanic Garden, Edinburgh, were the Cocoa Nut Palm, the Wax Palm, Date Palm, Betel Nut Palm, &c. From the Royal Garden, Kew, *Phytelephas macrocarpa*, *Coroxylon adicola*, *Carludovica palmata*, &c. From the Botanic Garden, Sheffield, *Sagrus Rumphii* (the Sago Palm), *Caryota urens*, *Sabal Adansoni*, *Phoenix dactylifera* (the Date Palm), *Latania borbonica*, *Phoenix lenensis*, &c. On a table to the left was a collection of plants from T. Embleton, Esq., Middleton Hall, near Leeds. Large Orange trees from J. Barber, Esq., Tang Hall, loaded with fruit; large specimens of Coffee, *Musa*, *Artocarpus integrifolia*, *Cassipouia Brasiliensis* (Brazil Wood). On the table to the right were cut specimens of most of the interesting plants in cultivation, used in the arts or for food or medicine, from the Royal Gardens, Kew, the Royal Botanic Garden, Regent's Park, the Apothecaries' Garden, Chelsea, &c. Amongst them were specimens of the *Opopanax*, *Stavesacre*, *Lobelia inflata*, *Scammony*, the Mahogany tree, the Lace-bark, Cinnamon, Arrow-root, and hundreds of others.

On the table opposite the entrance was a collection of tropical fruits and spices from his Grace the Duke of Northumberland, Sion House, consisting of the Papaya, the Guava, Rose Apple, Longans, Plantain, Wild Date; beautiful specimens of the Nutmeg, showing the Mace, Pimento, &c. On the same table in the centre stood a large American Aloe, presented to the Society by James Barber, Esq.; and behind it a stem of a similar plant, with its chandelier-like branches, 20 feet in height, which flowered in the garden of H. Preston, Esq., of Morby Hall. On each side of this gigantic specimen stood plants of the Bamboo and Sugar Cane, from the garden of the Society; and behind them cut stems, showing the height to which they will grow, from the Royal Garden, Edinburgh. These were accompanied by the *Papyrus antiquorum*, *Banyan*, and *Nepenthes Rafflesii*, with its curious pitchers. In the centre of the room were two rows of glass cases. In No. 1 was arranged a collection of rare and curious specimens, kindly furnished by Dr. Lindley, amongst them a section of *Callitris quadrivalvis*, from the timber of which the Alhambra and other edifices were constructed, the source of Gum Sandarach, and supposed to be one of the kinds of Cedar used in Solomon's temple. Section of the stem of a tree used by the Chinese as a piece of ornamental furniture. Two branches cut of which parasitical *Loranthi* have fallen (the *Loranthi* are a tribe of plants similar to our Mistletoe), from Guatemala. Cone of *Bunya Bunya*, or *Araucaria Bidwilli*, a large Pine. Section of a species of *Cereus* from South America. Two examples of deformed vegetation, representing a development of embryo bud, from Prince of Wales's Island. Cases Nos. 2 and 3 contained 450 specimens of curious seeds, seed vessels, pitchers from the Pitcher Plants, bracts, spines, and appendages of plants, &c., &c., contributed by the sub-curator. Case No. 4, specimens of tobacco, snuffs, cocoas, Teas, starch, &c., from Mr. John Briggs, Pavement; and in case No. 5, specimen of drugs from the vegetable kingdom, gums, roots, barks, extracts, &c., &c., from Richardson and Dennis, King Street, York. Case No. 6 contained upwards of 200 specimens of medicinal



and commercial substances from the vegetable kingdom. In this collection were many examples of fixed and essential oils. Attention was next attracted by an interesting group of vegetable alkalis, or alkaloids. There were also some remarkable compounds of the vegetable acids, with a great many substances used as food, &c. Case No. 7 contained, in the first compartment, specimens of cones from Messrs. Veitch, King's Road Chelsea; amongst them *Sinclairia macrocarpa*, *insignis*, *Sabiniana*, *niotica*, *Edgariana*, *Californica*, *Lambertiana*, &c. The centre compartment contained a curious collection of seeds and seed-vessels, mostly East Indian, from O. A. Moore, Esq., York. Amongst these was the fruit of the *Adansonia digitata*, the Baobab, from Arungabad, Deccan, taken from a tree 50 or 60 feet high, and the circumference of which was 28 feet at one foot from the ground. There were also in this case *Areca Catechu*, the *Betle-nut*, and specimens of various tropical fruits, *c. g.*, the Guava, Custard Apple, Longan, Eagle Marmelos, Tamarind, Mango stones, Scarlet Necklace plant *inermis*, *Bennapant* of India, the famous Vegetable dye for the eye-brows, and others. All these, originally, formed part of the collection of his friend, Mr. Shearman Ralph, a well known author. The third compartment contained dye woods from Wm. Norris, Esq., of Halifax. Case No. 8 contained a very curious collection contributed by Mr. Henry Sheppard, Botanic Garden, Liverpool.

In the Library, on the centre table, was a large collection presented by the Hon. East India Company, communicated by Professor Royle to the Society and the York Medical School, and neatly arranged by O. A. Moore, Esq. Amongst them were Gums and Resins, 20; Starch, 12; Spices and Condiments, 16; Sugars, 3; Dried Fruits, 7; Oil Seeds, 16; Cereals and Pulses, 24; Dyes, 35; Medicinal Substances, 55; Silks and Fabrics, 26; Vegetable Oils and Turpentine, 20. At the end of the room, models of the Victoria Regina, Orchidaceous Plants, Mignonette, &c., in wax, by Anne Baines, adjutant were 23 specimens of *Line*, in various stages, from Marshall and Co., Leeds; these attracted great attention. Plant of the New Zealand Flax with its various produce, Caper Plants with the berries, Cocoa Nuts, &c. In the centre window was a beautiful Handkerchief, made from the Chinese Grass, and contributed by Mrs. J. Allen.

In the council room, on the left of the entrance hall, in a glass-case in the centre of the room, was a most superb scarf, from Manila, manufactured from the fibres of the leaf of the Pine-apple, contributed by John Waterhouse, Esq., Halifax; this was perhaps the most attractive object in the Exhibition; a piece of work by the inhabitants of Faigal, in the Azores; cloth from Feticara's Island, made by Eliza Quintall; fine Taifa, from the Feejee Islands, deposited by the Rev. R. Puleine. At the end of the room were specimens of peat and peat charcoal, prepared for sanitary and agricultural purposes, deposited by Lady Franklin Russell; near them were the Assam, Green, and Bohea Tea plants, with specimens of their produce, furnished by S. Tuke, Esq. On the opposite side of the room were specimens of cotton, Gossypium herbaceum and arboreum, with their produce, from the seed-plot to the manufactured article, contributed by John Bould, Esq., cotton manufacturer, Halifax; on this table there was also a portfolio of Ferns, gathered in Madeira, by Dr. Edward Simpson, Botham.

In a large marquee at the south side of the garden were deposited, on a table at the entrance to the left, 80 sorts of Wheat, 35 of Barley, 20 of Oats, and 4 of Rye; here were also placed the original specimens of M. Esprit Fabre's Touzele Wheat, produced, after 12 years' culture, from the wild Grasses known to botanists as *Erioloma* and *Erioloma*, cultivated by Dr. Lindley to the Yorkshire Philosophical Society for this occasion. On the table was a plant with the tubers of *Ullucus tuberosus* from Kew, where they are growing it for the purpose of testing its merits as a substitute for Potatoes. On the same side was a collection of 75 variegated plants, from the Garden of the Yorkshire Philosophical Society; a collection of plants sent from Mr. R. Stark, nurseryman, Edinburgh, and presented to the Society; amongst them were some rare Alpines. A collection of fine plants from J. Pease, Esq., South-end, Darlington (Mr. Pease ardent); amongst them a number of Orchids. A plant of *Ixora variegata*, 4 feet across, with a complete mass of bloom; and numerous others grown in first-rate style. A collection from Messrs. Bainbridge and Hewison, nurserymen, Bridge Street York. A fine collection of Ferns from Earl Fitzwilliam, numbering about 100 species, some of them very rare, not one of which was in Mr. Allis's collection. Near them was a fine flowering specimen of *Cleome viscosa*, the long-leaved Water Hemlock; its exceedingly poisonous plant is generally acknowledged to be one the juice of which Socrates was condemned to drink, and not that of our common Hemlock (*Conium maculatum*). In the centre of the tent, on entering, was arranged the beautiful collection of Ferns, from T. Allis, Esq., Oswaldwick, amongst them *Dicksonia Antarctica*, *Diplazium seranopense*, *Diplazium antiquum*, *Marattia macrophylla*, *Hymenophyllum Tunbridgeense*, very fine, and many more. Extending on the left a collection of *Conifera* from J. and J. Backhouse, York.—From the left to the Victoria Regia House: In the house, besides the *Conifera* which was not in flower, we noticed the moving plant, *Senecioium cyrenae*, a number of *Synspices*, &c.; *Cephalotus lachryans*, *Diomea mucupula*, &c., from Messrs. Rolison, Totting, near London. The design of the Exhibition has been carried out as far as practicable; the produce of the various articles has been placed with them, or as near as possible, and the arrangement is instructive to the mind as pleasing to the eye. *H. B. York, Aug. 9th, 1853.* [We have been obliged to abridge this report in some respects.]

### Garden Memoranda.

MR. GLENDINNING'S NURSERY, TURNHAM GREEN.—This is stated to be one of the oldest nurseries in the neighbourhood of London. As far back as 60 years ago it was well known for its Cape Heaths, to the clearing and cultivation of which the then possessor (Mr. Williams) paid some attention; and it is reported that it was among the first places where Cape Heaths were grown for sale. The nursery had, however, become all but worn out, when about ten years ago it came into the hands of Mr. Glendinning, who altered the site entirely, and under whose management it has attained its present thriving appearance. It now contains an extensive and well-varied nursery stock of the best description, and of that under glass, the Heaths, which are still favourites here, form a large portion. In their cultivation, however, Mr. Glendinning soon found that the hard water of the country, though plentiful and good of its kind, did not do them, and therefore he was under the necessity of finding soft water for them. To this end he sunk, in prominent places, large brick and cement tanks, into which the rain water from the roofs is collected, and in this has been done, the growth not only of Heaths and other plants, more especially hard-wooded sorts, has been much more satisfactory. Some of these tanks are as many as 20,000 gallons, and they are all furnished with Warren's "farm and cottage pumps," which are kept in good repair, and work well. The houses here have been mostly built as experi-

ments for proving the value of the different modes of heating and construction. There is a stove 100 feet long, in three divisions, in each of which a different temperature can be maintained by means of the quantity of hot-water pipes in them alone, *i. e.*, without the use of stop-cocks. These pipes have tanks cast on them for supplying moisture. Bottom heat is also furnished by pipes passing through the beds, and the whole is heated by one boiler, which also warms two propagating houses. The middle division of this stove contains a small collection of Orchids, among which there was a fine *Cattleya crispata* in flower. Another house 100 feet long, in two divisions, was filled with greenhouse plants, as was also a low span-roofed house, 90 feet long, with a sunk path up the middle. A number of pits is occupied by Heaths, which, as we have already said, form an important branch of business here, for the accommodation of which there is also a specimen house upwards of 60 feet long. A new span-roofed house for specimen greenhouse plants has lately been put up; it is 65 feet long, and about 20 feet wide; well ventilated, and heated with hot water, and every way well suited for the purpose. A lean-to house for pot Vines has also been erected since Christmas; it is 70 feet in length, and is heated both by hot water, a tan bed, and also by dung linings in front, the wall there being pigeon-holed. The Vines have been placed on the tan bed, and also against the back wall; but they are now being set out of doors to ripen, and a more beautiful collection it would be difficult to meet with. They are strong wooded, short jointed, and altogether such plants as might be expected to bear from 10 to 15 bunches to a pot. They consist of the leading kinds at present in cultivation, and they have all been stopped three times in the course of their growth.

Of Conifers there is a good collection, and some of the scarce kinds, which exist only in the shape of a few plants elsewhere, are here in quantity. Amongst them may be mentioned *Abies Atlantica*, of which upwards of 4000 plants have already been sent off to the north of England and Scotland, where it is found to succeed uncommonly well. We also remarked *Abies Wittmanniana* in the shape of some thousands of small young plants; beds of *Pinus tuberculata*, *muricata*, and *radiata*; likewise *Roylei*, *Abies*, *Benthiana*, *Fremontiana*, *Nordmanniana*, and *Padua*. In different parts of the grounds were fine specimens of *P. insignis*; a singular circumstance connected with this Pine is, that some plants of it had their foliage browned in one night last April, while others, equally exposed, escaped unhurt. Of the Gowen Cypress, *Cupressus macrocarpa*, and *funeris*, we noticed some capital plants; as well as of *Pinus Cembroides*, *Pinsapo*, *occidentalis*, and the true *Abies grandis*. Amongst other Conifers were numbers of bushy little plants of *Libocedrus chilensis* from 1 foot to 2 feet high; also different kinds of Yews, of which there were some interesting standards. The latter consisted of the Weeping and Golden Yews, worked about 4 feet high on green stems, *i. e.*, on stems closely pruned in, but still having sufficient foliage to cover the naked wood.

Of the Government Deodar seed, the raising of a portion of which was entrusted to Mr. Glendinning, that which was first sent over has come up well; but the last imported seeds have not vegetated at all.

Among other plants were some fine examples of the Californian Gale, a beautiful hardy evergreen shrub, the double white variety of *Prunus sinensis*, and a large plantation of standard Portugal Laurels, which, when potted and set along the sides of terrace walks, are greener, and have even a better effect than Orange trees themselves.

In the glass houses were some luxuriant young plants of *Crowea saligna* just coming into bloom, and numbers of *Boronia serrulata*, which have made very fine young wood, with not a rusty leaf on it. Among newer plants were *Rhodoleia Championi*, a shrubby Echites called *Pellieri*, *Chirita Walkeri*, *Ixora aurantiaca*, and the beautiful *Gesnera Donckelarii*.

### FLORICULTURE.

GLADIOLI FROM SEED.—In addition to what was stated last week on this subject, I beg to say that I have now cultivated Gladioli for several years, and find them best raised from seed by sowing it on the top of pots or pans, the upper surface of these being nothing more than clear white sand, the mould being underneath. The young plants strike down into the sand very readily; after spearing downwards for a week or so, I have generally strewed a little more sand over them. On throwing up their second leaves, it has been my custom to stir the upper surface of the mould, which induces the seedlings to grow very fast. After they have died down, I remove them into larger pots, or plant them out, when they mostly flower the second year. This year I have one young plant (of last September) now throwing up a flower spike. I do not grow any of the taller sorts, such as *Gandavensis* or *Lindleyanus*, except *Ramosus*, which, with me, is a shy one to seed. I may add, that I allow my Gladioli to remain out all the winter. *P. B. H., Feltham, Surrey.*

NATIONAL CARBONATION AND PRESERVATION SOCIETY.—This Association held its meeting at York this year, in connection with the Yorkshire Horticultural Society's show. There was a magnificent display of blooms, and the competition in many cases ran so close as to call forth all the skill of the judges to decide as to whom should be awarded the palm of victory. Pan of 12 Dissimilar Carnations: 1, Mr. Keynes, Salisbury, for *Mazonfort*, Owen Glendower, Garland, Queen of Bees, Tynford Perfection, Admiral Curzon, Valentine, Jenny Lind, Lady Gardiner, Beauty

of Woodhouse, and Lord Lyndhurst; 2, Mrs. Bland and son, Leeds, for *Schloßfeld*, *Magnolia*, *Willow's*, *Tenacity*, *Beauty of Woodhouse*, *Comet*, *Patience*, *Scrub*, *Brace's*, *Flora's*, *Garland*, *Firebrand*, *Squire Trow*, *Justice*, *Shallow*, *Admiral Curzon*, *Paul Fry*, and *Lovely Ann*; 3, Messrs. Bainbridge and Hewison, for *Boroughes's* *Loranza*, *Count*, *Patience*, *Mars*, *Harriet Premier*, *William the Fourth*, *Beauty of Woodhouse*, *Mr. Peto*, *Lydia*, *Mistic*, *Paul Fry*, and *Enchantress*. Pan of 12 Dissimilar Picoetes: 1, Mr. Keynes, for *James the Second*, Mrs. Barnard, *Princess Royal*, *Alfred*, *Victoria Regina*, *Haidee*, *Lord Nelson*, *Yenus*, *Countess* (Fellow), *Ophelia*, *Juliet*, and *Grace Darling*; 2, Messrs. Scholefield and Son, Leeds, for *Olivia*, *Beatrice*, *Mary Ann*, *Prince Arthur*, *Isabella*, *Miss Rosa*, *Portia*, *Alfred*, *Victoria Regina*, *Mary Ann*, and *Mrs. Horner*; 3, Messrs. Bainbridge and Hewison, for *Mrs. Barnard*, *Sebastian*, *Dodwell's* *Mary*, No. 8, *Elizabeth*, *Prince of Wales*, *Lady Harwood*, *Sir Wm. Middleton*, *Portia*, No. 70, *Miss Rosa*, and *Lady Moore*. Best 12 Carnations (open to private growers only): 1 (a Silver Cup value 4*l.*), E. S. Dodwell, Esq., Derby, for *Sarah Payne*, *Rembrandt*, *Premier*, *Firebrand*, *Rachel*, *Lorenzo*, *Lord Milton*, *Premier*, *Ariel*, *Lord Milton*, *Poor Tom*, and *Admiral Curzon*; 2, Mr. Bailey, Derby, for *Lord Raneliffe*, *Premier*, *Sarah Payne*, *Ariel*, *Falconbridge*, *Queen Victoria*, *Rubens*, *Admiral Curzon*, *Lord Milton*, *Flora's* *Garland*, *Rachel*, and *Firebrand*; 3, Mr. Keynes, for *Owen Glendower*, *Lord Raneliffe*, *Morton's* *President*, *Wilson's* *Harriet*, *Squire Trow*, *Africana*, *Lord Raneliffe*, *Hardman's* *Splendid*, *Admiral Curzon*, *Hardman's* *Splendid*, *Firebrand*, and *Admiral Curzon*; 4, J. Edwards, Esq. Pan of 12 dissimilar Picoetes (open to private growers only): 1, a Silver Cup value 4*l.*, E. S. Dodwell, Esq., for Duke of Devonshire, *Marris's* *Regina*, *Prince of Wales*, *Seeding*, *Haidee*, *Countess*, *Prince Arthur*, *Mrs. Norman*, *Mrs. Barnard*, *Bridesmaid*, *Venus*, and *Rosalind*; 2, J. Edwards, Esq., for *Mrs. Norman*, *Princess Royal*, *Alfred*, *Grace Darling*, *James the Second*, *Queen Victoria*, *Countess*, *Christabel*, *Mrs. Barnard*, and *Gem*; 3, Mr. Bailey, Derby, for the Duke of Devonshire, *Marris's* *Regina*, *Haidee*, *Countess*, *Mrs. Barnard*, *Prince Arthur*, *Prince of Wales*, *Venus*, *Bridesmaid*, and *Gem*. Carnations.—(Single specimens, open to all.)—Crimson Bizarres: 1, 2, and 4, Mr. Keynes, for *Owen Glendower* and *General Monk*. Scarlet Bizarres: 1 and 2, Mr. Keynes, for *Admiral Curzon* and *Lord Lewisham*; 3, Mr. Sibley, Nottingham, for *Prince Albert*. Rose Flakes: 1, 2, and 3, Mr. Keynes, for *Flora's* *Garland*, and *Ariel*; 3 and 4, Mr. Bailey, for *ditto*. Scarlet Flakes: 1 and 3, Mr. H. Steward, for *Wood's* *Commander*, and *Firebrand*. Picoetes.—(Single Specimens, open to all.)—Heavy-edged Red: 1, Mr. Hoyle, for *Mrs. Hoyle*; 2, Mr. Burman, for *ditto*. Light-edged Red: 1 and 5, Mr. Sibley, for *Yonell's* *Gem*, and *Jenny Lind*. Heavy-edged purple: 1 and 4, Mr. Keynes, for *Alfred* (Dodwell), and *Alfred*; 3, Messrs. Backhouse and Son, for *Lord Nelson*. Light-edged purple: 1, 2, 3, 4, and 5, Mr. Keynes, for *Haidee*, *Ophelia*, *Bridesmaid*, and *Julia*. Heavy-edged Rose: 1 and 4, Mr. Hoyle, for *Allice Hoyle*. Light-edged Rose: 2, Mr. Sibley, for *Barmad*. Yellow ground: 1, Mr. Keynes, for *Martin's* *Queen Victoria*. Premier Carnation: Mr. H. Steward, for *Lord Raneliffe*. Premier Picoete: E. S. Dodwell, Esq., for *Haidee*. First-class certificate of merit was awarded to Mr. Hoyle, for *Mrs. Hoyle*, a heavy-edged Red Picoete, of the style of *Headley's* *King James*, being larger, better coloured, and every way an improvement upon *King James*. In addition to the above, there was also a good show of Dahlias, Roses, Pansies, Verbenas, Fuchsias, and Hollyhocks. Of the latter, Mr. Turner sent 48 varieties, for which a special prize was awarded.

DAHLIA SHADE: *Norfolk Countryman*. Your shade (a piece of board with a hole at one end of it, through which the stake is passed, and tied down in front over the bloom with a bit of twine), is not near so good as that figured by Mr. Edwards in his "National Garden Almanack," though it is doubtless much cheaper.

PELAGONIUM FLOWERS: A. S. They look as if they had been eaten by slugs.

SEEDLINGS: A. Z. Your plant may still be exhibited as a Seedling, provided the entire stock is in the raiser's hands.

SHADING DAHLIAS: *Emily*. This requires both caution and judgment. Too much shading, or for too long a period, will cause the light coloured flowers to lose their delicate tints. No positive rule can be laid down as to the time the blooms should be shaded, but it may be remarked in general that a week or ten days previous to the day of exhibition will be quite long enough for the shading to be useful, even in the brightest weather. In dark cloudy weather, and in the earlier part of the season, four or five days will be sufficient. Then again, dark self-coloured varieties require less shading, because the colours are firmer, and better able to bear the full light of the sun than paler or various coloured flowers.

### SEEDLING FLOWERS.

CARNATION: J. S. & Son. Uncle Tom, though not in the best condition, is evidently a rose flake of some merit; pod good, flower full-sized, colour somewhat pale, white pure.

DAHLIAS: W. N. Too open in the petals and too coarse.

HOLLYHOCKS: W. N. Much behind those we have already in cultivation.

PANSY: D & L. Your seedling called *Beauty* is a first-class flower, remarkable for the regularity of its belting, fine substance, boldness, and general good properties; except increased solidity of surface, we can venture to suggest little improvement.

### Miscellaneous.

Culture of the *Calceolaria*.—I make my first sowing about the middle of July, and another about the 1st of August, in pans half filled with drainage, and then filled up with a mixture of about two-thirds light loam, the rest peat and leaf-mould in about equal proportions, with a good sprinkling of silver sand, all sifted tolerably fine; the pans must then be thoroughly watered, so as to wet every particle of soil, and allowed sufficient time to drain before sowing; the seed may then be sown thinly, and a little finely-sifted soil scattered very lightly over it. The pans may be placed beneath a hand-glass under a north wall, or in any other shady situation, and kept tolerably close until the plants make their appearance. The pans must be kept moist, merely sprinkling with a very fine-rosed pot; great care is required here, for if they are at all heavily watered, the seed, being so very fine, is all carried away with the water. When the plants make their appearance, more air may be given them; as soon as they will bear handling, they should be pricked out into other pans (prepared in the same manner), about 2 or 3 inches apart. They will soon make nice little plants, and may then be potted off singly into 3-inch pots, using a mixture of about two-thirds tolerably light turfy loam (not sifted), the rest leaf-mould and dung from an old Mushroom-bed, in about equal proportions, with a good sprinkling of sand; they may then be placed in a cold pit, and allowed plenty of air. The plants will soon progress rapidly; as they fill their pots with roots they must be shifted into larger sizes, until they are in 8-inch and



11-inch pots, which are large enough for any Calceolaria; they must be frequently fumigated, to keep down green-fly; all they require through the winter will be to keep the frost from them; let them have plenty of air, and at the same time keep them rather dry at the root than otherwise. As the spring advances, and as the plants fill their pots with roots, more water may be given, occasionally using weak clear manure-water. As the plants increase in growth, let the shoots be pegged down on the soil; they will root into it, and help the plants considerably. According to the time they are wanted to be in flower, let the shoots be stopped, or otherwise those that are not stopped will be in flower early in May, while those that are stopped will come into flower probably a month later; and now comes the time to repay us for our trouble. No plant can be more gay than Calceolarias while they are in flower; one only regrets that they are so soon gone. A cool, airy greenhouse is the place for them while they are in flower; they must be kept shaded from the sun, and at no time are they fond of too much light. If seed is required, now is the time to look after it, setting aside a few of the best marked and best formed flowers; these must be carefully fertilised, otherwise it is in vain to look for seed; and even then it frequently ends in disappointment. The best flowers are not the best seeders; on the contrary, they are generally the worst; they not infrequently die off altogether without ripening a single seed. If you wish to propagate certain varieties, they should not be allowed to seed at all, but should be cut down directly they are done flowering, fresh surfaced, and set in a shady situation; they will soon throw up some cuttings, which may be taken off and struck under a hand-glass in a shady situation. When struck, they may be treated the same as recommended for seedlings; but unless you have got something very first-rate, it is hardly worth while to try to save them at all, as they seldom make such fine plants as those raised from seed. If proper care is used in saving the seed from the best varieties, the generality of the plants so raised may be expected to be equal, and probably a few superior to the varieties they are raised from. I think we must thus admit that the soft-wooded varieties must be treated almost as annuals. The above treatment is recommended for soft-wooded varieties; but it will also apply equally to shrubby kinds, in which we must allow there is a great deal to be done; by carefully crossing the soft-wooded with the shrubby varieties some first-rate things may be obtained. The shrubby habit may be obtained with the large fine flowers of the soft-wooded sorts. Such plants may be perpetuated from cuttings; but every one who has grown the soft-wooded kinds must admit that it is a matter of no small difficulty to save a variety from one year to another. Besides, varieties from crosses so obtained are more perpetual flowers; they keep growing and flowering a much longer time, and are splendid things for the greenhouse and conservatory. *Mr. Constantine, in Turner's Florist, Fruitist and Gardeners' Miscellany for August.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

THE present sunny weather will assist the season's growth to get matured, and will help to check the luxuriance of wood which the late dull and damp weather had induced, and which is generally the precursor of mildew. Give air liberally to plant-houses, and carefully watch the plants' requirements for water, particularly with plants standing out of doors. The surface soil should be loosened, to admit of free evaporation. As the stove plants in the conservatory go out of bloom, remove them to a house of medium temperature to ripen, unless they are likely to bloom again, when they should be removed to the stove, and be treated so as to bring on the successional flowers. Look to the plants intended for decorating rooms and the conservatory during the autumn and winter. Some of the free-growing stove plants, as *Justicias*, *Eranthemums*, &c., may require a small shift, or the foliage is apt to become sickly. Let the whole have air liberally, to induce a stocky growth.

#### FORCING DEPARTMENT.

**PINERY.**—Supposing the stock of Pines intended to fruit early next season have filled their pots with roots, the present fine weather should be employed in getting them put into their fruiting pots, as this operation is much easier done in the open air than in the potting shed. As the plants will be expected to ripen their fruits in the pots they are now placed in, the size will be regulated by the kind of Pines grown, and in some measure by the size of the plant; for Queens and Pines of similar habit, pots of from 12 to 15 inches diameter will be sufficiently large; while pots from 15 to 18 inches will be quite large enough for the largest Providences and Cayennes. We have recommended the largest sized pots, supposing the plants are grown well and in vigorous health, but nothing but disappointment will follow placing Pines in large pots, when the pots in which they are growing are not filled with roots, or when the plants are unhealthy; under which circumstances they should be kept in small pots till they have made roots sufficient to justify shifting them. Much, however, the easiest and cheapest way to grow Pines is to have them planted out in a bed of soil furnished with bottom heat, either by hot-water pipes, or by applying hot dung underneath; the soil being supported by brick-work and slates, or rough boards; the

bottom heat required will be from 85° to 95°, and the soil may be turfy loam and peat, or mixtures of the above, with sand and leaf mould, varying the latter as the loam may be heavy or light; if the plants are growing in pots they may be turned out into other beds, whenever the bottom heat is right, a few of the outside roots being liberated, and the soil carefully packed round the balls as you proceed. The bed should be brought up pretty close to the glass, for, as the plants will grow vigorously during the autumn, they will require an abundance of light, assisted by a liberal supply of air, to keep them from drawing, and to mature the growth. Whether you are planting out or growing in pots, allow plenty of room between the plants, that the leaves may spread themselves in an horizontal direction, and then expose their surface better to the light, and it should likewise be a point that both light and air should reach the lower leaves, which is never the case when the plants are crowded together. We have before noticed that pure loam, or with but slight additions of manure, is preferable for growing Pines, to more complicated mixtures, assisting the fruit to swell by liquid manure, but where loam of good quality cannot be procured, peat will answer best, and in fact for plants to swell their fruit through the winter and early spring, we prefer it. Directly the succession plants are removed to the fruiting houses, the younger plants intended to succeed later next season, and suckers, should be reshifted and plunged, to occupy their places. **MELONS.**—The late crops will be advancing, and as light is decreasing, keep the Vines further apart, that the leaves, as they are formed, may not crowd each other. Attend carefully to the bottom-heat, which (for reasons formerly noticed) should not be allowed to decline. Red spider must be kept in check by now and then washing the interior walls with lime and sulphur. Water cautiously, but do not allow the growing plants to get dry, which would produce a check to the plants, and induce the attacks of spider. To grow Melons in perfection they should progress regularly; hence the necessity for steady bottom-heat and close watching as regards watering during the entire period of growth. **CUCUMBERS**, as the nights get cool, may have a slight covering, and the bottom-heat, if declining, should be renewed. Keep down mildew by sulphur; the covering by night, and increased bottom-heat will, however, help to keep this in check.

#### KITCHEN GARDEN.

Every day shows the hopelessness of trusting to the Potato as a root crop, and the necessity of growing increased breadths of Parsnips, Carrots, Artichokes, and whatever may reasonably become a substitute. Our former directions for planting largely the different kinds of winter greens, &c., should be acted on whenever the opportunity of vacant ground occurs. In sowing crops at this season, which do not come into perfection till spring, and which are expected to grow more or less through the winter, the ground should not only be well manured, but trenched to a considerable depth, that the rain and snows of winter may pass quickly beyond the reach of their roots, and that a comparative dryness and warmth may be thus maintained around the roots of growing plants. Those who have observed how quickly snow thaws on well-drained land, owing to its higher temperature, will at once understand how important the above conditions are to crops which are expected to make way in the depth of winter. These remarks will apply to Spinach, of which a good plot of the true Flanders for winter use may now be sown; as may two or three kinds of hardy Cos and Cabbage Lettuce; the latter will be useful for transferring to frames in February. Endive should be sown for February and March consumption, and Tripoli Onions for early spring. Still continue planting out Cauliflower and Walcheren Broccoli; before earthing up the main crop of Celery, remove a few of the lower leaves and any suckers which may be found; tie up slightly with matting, and well water the trenches with liquid manure in which a small quantity of salt has been dissolved; this will kill slugs and worms, and assist the plant to a quick growth. When the plants become dry, the earthing up may be liberal, taking care, however, not to reach the heart of the plant. Cardoons may be treated in the same way; water freely Peas, Artichokes, Cauliflowers, and succulent-leaved plants. The earliest Parsley may still be cut over to grow bushy again before winter; a south border should be either planted or sown with this useful vegetable, so as to be easily protected during hard weather in the winter. Cut the various herbs, &c., used for distilling or drying when they reach the proper stage.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending Aug. 11, 1853, as observed at the Horticultural Gardens, Chiswick.

August.	Moon's Age.	BAROMETER.		TEMPERATURE.					Wind.	Rate.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot 2 feet	deep. deep.		
Friday ..	5	30.122	30.115	71	48	58.0	63	59	N.E.	.00
Saturday ..	6	30.256	30.160	74	48	61.0	62	60	S.E.	.00
Sunday ..	7	30.293	30.130	70	50	60.0	62	60	N.E.	.00
Monday ..	8	30.192	30.151	75	47	61.0	62	60	N.E.	.00
Tuesday ..	9	30.250	30.230	75	43	57.5	62	61	N.E.	.00
Wednesday ..	10	30.222	30.247	72	47	59.5	61	60	N.E.	.00
Thursday ..	11	30.288	30.145	75	46	60.5	61	60	S.E.	.00
Average ..		30.230	30.168	72.7	46.5	59.6	62.1	60.1		.00

August 5—Fine; cloudy; partially overcast.  
 6—Very fine; clear at night.  
 7—Very fine; cloudy; clear.  
 8—Very fine; clear at night.  
 9—Slight uniform haze; very fine; clear.  
 10—Fine; very fine; clear at night.  
 11—Slight fog; very fine; clear.  
 Mean temperature of the week 4 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK, During the last 27 years, for the ensuing week, ending August 20, 1853.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13	72.1	50.9	61.5	8	0.64 in.	1	6	5	1	4	4	1	2
Monday 14	73.0	50.9	61.9	14	0.61	4	4	4	1	4	4	1	2
Tues. 15	73.4	52.7	63.0	9	0.58	1	2	1	1	1	1	1	1
Wed. 16	72.6	51.7	62.2	14	0.76	1	1	1	1	1	1	1	1
Thurs. 17	73.7	52.1	62.9	12	0.33	1	1	1	1	1	1	1	1
Friday 18	72.6	51.0	61.8	12	0.42	2	1	1	1	1	1	1	1
Satur. 19	72.6	51.6	62.1	11	0.33	2	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 13th, 1812—therm. 92 deg.; and the lowest on the 18th, 1851—therm. 38 deg.

#### Notices to Correspondents.

**AQUATICS:** *A.H.* We do not know what *Nymphaea* Mr. Paul is selling; nor do we enjoy an acquaintance with any *Pontederaca* bearing the name of *cerulea*. *P. cordata* ought to be hardy, growing wild all through the United States, and even in Canada. *P. azurea*, which is a tropical species, is tender; in gardens it usually bears the name of *P. crassipes*.  
**BOOKS:** *J.A.* Since it is merely systematic Botany that you wish to study, we advise you to proceed thus: Make yourself master of Lindley's "School Botany," which contains the rudiments of the subject; then procure some modern British Flora, such as Hooker's or Babington's Manual, and exercise yourself with that till you find that difficulties begin to disappear. In the meanwhile employ yourself diligently in describing minutely, in correct technical language, whatever plants you may meet with. Models of descriptions of this kind are given in Lindley's "Introduction to Botany," or may be found in any systematic works of modern date. As soon as you have done all this we shall be happy to advise you further.  
**GRAPES:** *Cartmel.* The Black Barbarossa Grape has a large bunch, and hangs very late without shanking, and will ripen in a house with the Black Hamburg, to which it will form a succession.  
**INSECTS:** *J.W.* We find nothing on your Apple leaves except red spider. Your Hollyhock leaves are suffering from damp, and want of a free circulation of air.—*W.F.S.* We could not discover any insects on the leaves of your *Yucca filicoides*, and consider its state to be the result of some accident.—*H.C.* The flies which have appeared in such numbers in the rooms of your house are *Syrphus balteatus*, the larvæ of which feed on aphides.—*J.A.* Your Easter Beurré Pear leaves are infested with the *Chermes Pyri* (*Gard. Chron.*, 1842, p. 156). Wash the leaves with tobacco water, or quassia and water, and sprinkle them with lime and soot mixed together.  
**MILDEW:** *Z.* Sulphur the parts affected the moment you observe them; but you must syringe well before applying the sulphur.  
**NAMES OF FRUITS:** *H.B.* Your Apple, of last year's growth, is the Easter Pippin, known also by the name of French Crab.  
**NAMES OF PLANTS:** *A.B.* Both your fungi are the same species of *Æcidium*. The appearances on the Oak leaves are "Oak spangles," galls produced by a little insect.—*J.D.A.* We are really unable to devote time to the naming collections of dried plants. Information in reason we are always most happy to afford; but there is a limit to all things. You are probably not aware that a couple of hours at least would be demanded by the specimens we have received; and two hours are a very long period in a busy man's day.—*Old Correspondent*, 1, Abies Menziesii; 3, A. (Picea) nobilis; 5, A. Morinda; 7 and 9, A. (Picea) Webbia; 8, Pinus excelsa; 11, Abies (Picea) Pinaster; 15, Pinus Hartwegii; 16, Abies (Picea) cephalonica; 20, Pinus inops.—*Mary*, *Egonia*, *semperflorens*.—*G.R.* *Eurhynchium*. We never before saw so beautiful a specimen of *Stenocarpus Cunninghamii*. The *Acerides* is a white variety of *A. quinquevulvata*; quite new to us.—*L.N.R.* The *Scutellaria* does not seem to differ from *S. parvula*, the North American species; 2 is *Epipactis palustris*.—*Mary*, *Lycopodium denticulatum* and *Cyanotis vittata*.—*Quercus*, *Thesium humifusum*.—*W.H.* *Double Rubus fruticosus* and *Spiraea sorbifolia*.—*W.S.* *Veratrum nigrum*.—*W.C.* 1, *Chrysanthemum segetum*; 2, *Eupatorium cannabinum*; 3, *Lepidium campestre*; 4, *Anagallis tenella*.  
**PEACHES:** *J.M.* Although the weights you mention are not remarkable, yet we cannot publish such statements, when made by persons of whom we have no knowledge.  
**PHORMIUM TENAX:** *Old Sub.* It is an uncommon rather than a rare occurrence for this plant to be now in full bloom.  
**POTATOES:** *J.M.R.* We are unacquainted with the address of Professor Bollmann, but a letter addressed by the post to him as Professor at the Agricultural Establishment of Gorigoretsky, Russia, will probably find him.  
**RASPBERRIES:** *D.B.* Your seedling, which you say continues bearing till late in the autumn, resembles the Red Antwerp in form and colour; but whether it approaches it in point of flavour we cannot pretend to say; for if in perfection when gathered, Raspberries lose most of their aroma by carriage. Your seedling appears to be a good bearer.  
**SALEP:** *Frere.* The roots of British Orchises, if dug up when ripe (now), constitute British Salep, which only differs from the Oriental in being smaller and less aromatic. Any tuberous rooted species may be employed; but not the fibrous rooter. When taken up, the roots are to be washed, and the brown skin removed by a brush or by dipping in hot water and rubbing with a coarse cloth. The roots, thus prepared, are put on a tin plate and baked like bread for 6 or 10 minutes. They are then removed and allowed to harden and dry in the air. We used, they are ground down and mixed with boiling water, milk and sugar.  
**STRAWBERRIES:** *W.W.* Red fruit undergoes no change beyond becoming paler as the plant gets exhausted by age or pover of soil. There are two or three white kinds in cultivation but red sorts never become white with age.  
**THERMOMETERS:** *Cartmel.* The height of the post which supports the kind of parasol under which the thermometer is placed, indicating the temperature in the shade at Chiswick is 4 ft. 6 inches from the surface of the ground to the summit of cone. On the north side of this post the thermometer is placed at 2 feet 9 inches from the ground, and about 5 inches below a horizontal line would touch the lower edge of parasol. The edge of the latter forms an octagon which we have inscribed with a circle 42 inches in diameter, each side the octagon being about 16 inches; and a triangle with a base of 42 inches and a perpendicular of 16 inches will represent pitch of the framework of the parasol. The waterproof cover is painted green, like everything around it. It will be observed that the thermometer is 5 inches lower than the edge of parasol, and is consequently exposed to the free action of air. We have not had experience in the working of Mr. Negretti's self-registering thermometers.  
**VERBENA:** *T.* In your case we should rather prefer a leaner; the other plan is unobjectionable if, for any reason, you will have it. At all events you must have the power of opening the roof, unless some very effectual ventilation is otherwise provided. Your great object should be to admit warm air in the greatest possible abundance.  
**YEW:** *H.B.* The best time to prune all Evergreens is beginning of April; and we advise that season in your if the spray is in your way, it may be now removed; but should not cut away more than is indispensable.  
**MISC:** *F.L.C.* It is the young fruit of the Tea Plant. *Pao* "Cottagers' Calendar" will, we imagine, be found to suit purpose perfectly. There is a number of other small works had; but they are chiefly confined to florists' flowers.



**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

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**AS THE ONLY IMPORTERS OF PERUVIAN GUANO.** Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

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**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also **CORN MANURE** for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

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**MANURES.**—The following Manures are manufactured at Mr. **LAWES**' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton 7l. 0 0  
Superphosphate of Lime ... .. 7 0 0  
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Office, 69, King William Street, City, London.  
N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**SEWAGE CHARCOAL MANURE.**—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the **SEWAGE MANURE WORKS**, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt., for ready money only, and in quantities not less than a ton, will be delivered at the London Terminus of the Railroads free of charge for cartage.

It may also be had from Messrs. **G. GIBBS & CO.**, 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron **ROLLERS**, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

**MR. SAMUELSON'S PATENT DIGGING MACHINE**, which obtained the **SILVER MEDAL** at the **GLOUCESTER SHOW**, and the **PRIZE** at the **YORKSHIRE SHOW** at **YORK**, may be seen at work at Banbury and in Kent, Middlesex, Surrey, Cheshire, North Wales, Yorkshire, Berwick, Gloucestershire, Worcestershire, Leicestershire, Herts, &c. Price 27l. 10s.

**PRIZE** for the eighth time at Gloucester for Samuelson's patent **GARDNER'S TURNIP CUTTERS**.

For references apply to Mr. **B. SAMUELSON**, Engineer, Banbury (successor to the late James Gardner), Manufacturer of Gardner's Turnip Cutters, McCormick's Reapers, Lawn Mowers, Kase's Force Pumps, Churns, &c.

**MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY.**—The **SIXTH ANNUAL SHOW OF LIVE STOCK** (including **POULTRY**), **AGRICULTURAL IMPLEMENTS**, **SEEDS**, &c., will be held in a Field close to the London and North-Western Railway Station, at **WARRINGTON**, on **WEDNESDAY**, September 7. There will be a trial of **REAPING MACHINES** in some fields near Warrington the day before the Show, and a Special Prize of 10l. in addition to the sum offered in the Prize List for Implements, will be awarded to the exhibitor of the best.

Entries for this Trial and for the Show must be sent to the Secretary on or before August 31; and Prize Lists and Rules, and any other information, may be had by applying to him. Warrington, Aug. 13. **HENRY WHITE**, Sec.

**IRELAND.**

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

**The Agricultural Gazette.**

**SATURDAY, AUGUST 13, 1853.**

**MEETINGS FOR THE TWO FOLLOWING WEEKS.**

**THURSDAY, AUG. 15**—Agricultural Imp. Society of Ireland.  
**THURSDAY, — 22**—Agricultural Imp. Society of Ireland.

Our readers have doubtless noticed the advertisement which for some weeks repeated the announcement in our columns of the **TORTWORTH SALE OF SHORT-HORNS**, on the 24th and 25th of this month; and those who are interested in the subject are probably already well acquainted with the history of the celebrated herd which is then to be dispersed. It is, however, one part of our business to direct attention to subjects deserving it where little interest may yet be felt, and there may be some who have cast a careless eye over the advertisement in question, who may like to know

how it is that the **Tortworth** sale is creating so much excitement in the agricultural world.

To explain this fully would probably require that we should trace in detail the agricultural career of the late **Earl of DUCIE**, and describe the long and costly experience by which his judgment as a short-horn breeder had been educated; it would need, too, that we should refer to the energy which directed him in all his agricultural proceedings, and the lavish expenditure which was incurred, especially in this particular enterprise. Every one knows that, excepting perhaps the last two or three years of his life, no sale of any importance took place at which **Lord DUCIE** was not a purchaser. At the great **Kirkleavington** sale the best animals offered were purchased by him. The chief results of Mr. **BATES**'s long, intelligent, and laborious attention to this department of agriculture were transferred to **Tortworth**, and became built in as foundation-stones, or incorporated less prominently in the work which has been for many years gradually growing there. From that time especially, **Lord DUCIE**'s name as a breeder has stood among the highest in the country. The catalogue of the sale shows how many of his animals represent the best blood of which the breed can boast—of the celebrated "**Duchess**" family, which took its rise in Mr. **BATES**'s herd, as many females will be offered at **Tortworth** as were offered at **Kirkleavington** itself, where they originated—and of others probably equally valuable, though for the present less esteemed branches of the great short-horn tribe, numerous individuals could be pointed out.

The estimation in which the **Duchess** blood is held may be gathered from the following passage on the subject, taken from the article on short-horns to be published in the forthcoming number of **BLACKIE**'s "**Cyclopædia of Agriculture**."

"Mr. **BATES**, from **Tyne-side**, and afterwards of **Kirkleavington**, deserves more particular mention for the pains he took in yet further maturing the breed. His labours, too, were not without their reward. Some of his favourite animals commanded extraordinary prices; the sale of the stock, on his decease in 1850, resulting in the best general average since the time of the **COLLINGS**. One family, for instance—the **Duchess** blood that is—realised, including young calves, 1627l. 10s. for 14 lots, being an average of 116l. 5s. per head. To show the value of lineal descent, it may be added, that this stock was descended from the heifer **Duchess**, purchased by Mr. **BATES** at **CHARLES COLLING**'s sale in 1810, nearly 40 years previously to his own."

The readers of this article, written by Mr. **STRAFFORD**, long before **Lord DUCIE**'s death, and, therefore before the sale which is now to scatter his lordship's stock could have been anticipated, will find in it how high this herd stands in the esteem of the best judges. Suffice it to say, that on **Wednesday** and **Thursday** of the week after next, Mr. **STRAFFORD** will have the task to perform of scattering far and wide—in many instances, very probably, as far as America itself—the results of labours, as a short-horn breeder, which all will admit have been directed by a well educated judgment, and always by a liberal and indeed profuse expenditure.

The weather of the past fortnight has, no doubt, greatly improved the prospects of harvest. And thus the reports which we last week gave, however true for the date at which they were written, will very probably be found to exaggerate the deficiency which, however, we must still believe to exist in the **Wheat** crop of the present year.

We publish in another page 20 additional reports, most of which arrived too late to appear last week, while some were accidentally omitted; their general tendency corroborates what we have already said, that the **Wheat** crop is very inferior; and that, taking into account their greater extent, there will be a very large produce of **Barley** and **Oats**. The following figures now represent the prospects of the **Wheat** crop at the beginning of the month:—

	Good.	Average.	Under average.
WHEAT, 263 reports.	31	34	197

And taking the counties which may be considered to include the principal **Wheat**-growing districts in England, namely, **York**, **Lincolnshire**, **Northampton**, **Cambridgeshire**, **Norfolk**, **Suffolk**, and **Essex**, we find that of 44 reports, three are good, one is average, and 40 are under average.

This, however, we repeat, relates to the appearance of the crop a fortnight ago, and we therefore again refer to the request we published last week, and which we would again put to all who have given us the information on this subject we have thus collated, that they would, on next Saturday, post a short report under the same heads as that of August 1st, signing their names and addresses in full, and directing it to 5, Upper Wellington Street, Strand; and we shall be happy, in acknowledgment,

to forward a copy of the Paper in which the results of this second inquiry are presented.

WHAT SCIENCE bestows **IGNORANCE** wastes, or altogether rejects. This is a truth founded upon the accumulated experience of centuries; and which, even in the present day, is continually receiving fresh confirmation in the mistakes and failures which occur in every department of human industry—mistakes and failures which a very slight acquaintance with scientific truth would have prevented altogether, or at least rendered less disastrous. "A little knowledge is a dangerous thing," but the apothegm is not complete unless we add that the less the knowledge the greater the danger. *Science with Practice* is emblazoned on the crest of the largest and most influential of our agricultural societies, and the union in the motto of the head to think and the hand to execute illustrates in a forcible manner the grand idea which that society proposes to work out in process of time. But, notwithstanding all the light which is constantly diffusing itself from the centres of scientific effort, there are many so-called practical men who hold by the converse of the English Agricultural Society's motto, and who consider that *Practice* without *Science* should be the watchword of the rent-paying farmer. That "one ounce of practice is better than a whole ton of theory" is an assertion which has often done duty for argument; but how far this choice morsel of logic is correct is best illustrated by the records of that department of farm practice which embraces the details of purchasing and managing what are called special manures, whether light or heavy, damp or dry, organic or inorganic. Upon no subject in agriculture has chemistry "rung its changes" with such unceasing but fruitless industry as that of the value of manures. Not only have all the proximate and useful elements been separated by analysis, but, in addition, they have been lotted, ticketed, weighed, and priced, in order that there may be no difficulty in determining the worth of any manure of which the seller furnishes an analysis. How many tons of *practice* will it take to analyse and determine the value of one ounce of guano or superphosphate correctly? Not all the accumulated practical or empirical agricultural knowledge from the days of the first tiller of the soil, down to the present hour, has been able to solve the problem contained in the question—What is the food of plants? Chemistry has certainly not made plain all the mysterious processes of vegetable life, but it has thrown a flood of light upon the composition, comparative value, uses and abuses of those substances which form the food of plants. Much of this light is, however, obscured or lost by the want of a sufficient amount of intelligent appreciation of the practical uses to which it may be applied. It is a somewhat affecting spectacle to behold an experienced farmer, deeply versed in the mysteries of marketing, utterly helpless when the printed analysis of some manure or other is placed in his hands. Experience has taught him how to calculate the weight of an ox with admirable precision, merely by the use of his sight and touch, and to work up a Turnip field with a nicety that can scarcely be surpassed even in the trimmest market-garden; but experience conveyed through the external senses can no more enable him to know the value of a manure from its analytical composition than it could the unlettered Arab of the desert to decipher the inscriptions of Nineveh or Kouyunjik by gazing on them, though it were for a life-time.

An instance recently came under our notice of the utter uselessness of chemical analysis to the farmer, when not accompanied, on his part, by some slight acquaintance with its practical uses. A sale by auction of artificial manure had been advertised to take place on a certain day of June last, in a town situated in a somewhat far-north county of Scotland. The owner of this manure had, with a most praiseworthy honesty, previously obtained an analysis of his manure from **Prof. ANDERSON**, of Glasgow, and on the day of sale printed slips of this analysis were freely distributed among the assembled farmers. The manure itself was contained in bags, and in appearance somewhat resembled good Bolivian guano, but possessing a peculiarly putrid odour, not unlike what would be imparted by a mixture of crushed bones or rotten eggs in an active state of decomposition. Its composition was as follows:—

Water	...	18.48
Organic matter and ammoniacal salts	...	11.85
Phosphates	...	12.94
Carbonate of lime (chalk)	...	27.90
Alkaline salts	...	14.32
Sand	...	14.51
		100.00
Ammonia	...	1.23

This trash was bought up readily by several well-educated and intelligent farmers, at prices varying from 4l. to 5l. per ton, as a manure for this year's Turnip crop; and in one or two cases it was bought on speculation to be held over to another year. A very slight acquaintance with the mode of calcu-



lating the value of a manure, from analysis, as made known in public journals by Professor WAY and other agricultural chemists, would have shown that its real value did not exceed 55s. per ton when compared with Peruvian guano at 9l. 16s. per ton. According to the very lowest mode of calculating the value of manures—by the ammonia, phosphates, and alkaline matter they contain—the value of a ton of this artificial manure and guano will stand thus:—

Artificial Manure which sold at 90s. per ton.			
Ammonia in a ton,	27½ lbs., at 4½d. =	20 10 3	
Phosphates "	290 lbs., at 3½d. =	0 18 1½	
Alkaline salts "	220½ lbs., at 1d. =	1 6 8	

Value per ton ... .. £2 15 1½

Peruvian Guano.			
Ammonia in a ton,	390 lbs., at 4½d. =	27 6 3	
Phosphates "	540 lbs., at 3½d. =	1 13 9	
Alkaline salts "	162½ lbs., at 1d. =	0 16 4½	

Value per ton ... .. £9 16 4½

From this comparison it appears that the artificial manure which sold so readily at 90s. per ton was alkaline salts, in reality as dear as Peruvian guano at 16l. per ton; and were we to calculate the ammonia of each at 6d. per lb., as many of our best chemists do, the result would be that the inferior manure would be worth 2l. 18s. 6d., while the Peruvian guano would be worth 12l. 5s. 1½d. But the former was bought at 4l. 10s. per ton, hence it cost as much as the latter at 18l. 17s. per ton. Ammonia and phosphate of lime are considered to be the two principal substances in the composition of a manure for Turnips, while alkaline matter is not supposed to be essential as an application in the growing of this crop; hence, if we exclude the latter from the foregoing estimates, the result will be that the artificial manure, which sold at 90s. per ton, really cost as much as Peruvian guano at 31l. per ton.

Another view of this subject will place this transaction in a somewhat amusing light. In every 10 tons of the so-called artificial manure the purchasers carted home nearly 3 tons of chalk and 1½ ton of sand; and if the extra per-centage of water over what is contained in good dry guano be taken into account, it will appear that, while one-half of the manure was utterly worthless, the other half was not equal in value to the very poorest sample of Patagonian guano. J. H.

#### ON STRAW AS MANURE.

PERHAPS "Straw as Manure" has had enough said upon it, yet despite the contempt expressed for it as such by my friend "Y," and the neglect of carbon by the compounders and vendors of manure, who, no doubt, find it their interest, in catering for their customers, to chime in with the prevailing passion of the times, I still continue to regard carbon, and straw as our more general carriage of it, a very essential constituent of our manure heap. It has been remarked that our dung-hills more rarely disappoint us than any other manures—and not to be dispensed with, except where, as in peat, we can find a cheaper succedaneum, or till we can discover a less expensive mode of supplying the soil with carbon. Indeed, could we reckon on the good fortune of so successfully wintering 70 head of cattle on 16 acres of lodged straw, I should be content with my half loaf of carbon. But I must here observe that in advocating the value of carbon, I am not disposed to under-rate the profit of using up straw for feeding under favourable

circumstances. It is rather the proposition I oppose of disposing of carbon to acquire, at its expense, other elements of vegetable composition.

Nor do I think can Liebig be cited against the value I attach to carbon, for in having to contend for the sufficiency of the carbon of the atmosphere for the normal supply of plants, he had equally to contend for, and which he did as successfully, the sufficiency also of ammonia in the air. If, then, there exist a necessity to add the latter to our soil artificially, there must exist an equal necessity to add the former to it. "No conclusion," he says, "can then have a better foundation than this, that it is the ammonia of the atmosphere which furnishes nitrogen to plants."

Perhaps there are few soils that, by due disintegration, do not yield phosphates sufficient for the normal demands of plants, and proportionate to the aerial supplies of ammonia and carbon. "Phosphoric acid is a constituent of all land capable of cultivation," says Liebig. Notwithstanding, in maintaining his inorganic theory, Liebig contended for such an amount of ammonia and carbonic acid in the air as suffices for the demands of plants, and although he observed that "azotised manure and ammoniacal salts cannot be too frequently employed," it does not appear that he ever regarded the exclusion of carbonic matters; he everywhere admits and affirms increasing produce from the artificial supply of carbon, the absolute necessity for it in the soil to sustain the primary vegetation of plants, and its effects in promoting future developments. "The roots perform the functions of the leaves from the first moment of their formation; they extract from the soil their proper nutriment, namely, the carbonic acid generated by the humus." Much of the organic root food of plants depends on the presence of this humus or carbon in the soil. Liebig does not, as my friend "Y," would infer, give it a mere agency in supplying carbonic acid from the atmosphere, but a potency of furnishing it from itself at the expense of the oxygen of the atmosphere, "By loosening the soil which surrounds young plants, we favour the access of air, and the formation of carbonic acid," &c. (P. 49, 1842). "Humus acts in the same manner in a soil permeable to air as in the air itself; it is a continued source of carbonic acid, which it emits very slowly. An atmosphere of carbonic acid, formed at the expense of the oxygen of the air, surrounds every particle of decaying humus." (P. 48). "The carbonic acid which protects the undecayed humus from further change is absorbed and taken away by the fine fibres of the roots, and by the roots themselves; this is replaced by atmospheric air [the oxygen of the air, not the carbonic acid of it], by which process the decay is renewed and a fresh portion of carbonic acid formed." (P. 49). "The power which roots possess of taking up nourishment does not cease as long as nutriment is present" (P. 50). He is speaking of carbon. It is true, he says, "When a plant is quite matured, and when the organs by which it obtained food from the atmosphere are formed, the carbonic acid of the soil is no further required." (P. 49). He might have added—for the roots are no longer in this atmosphere of carbonic acid, they have pushed into a soil where this nutriment is not present; to which the oxygen of the atmosphere has not free access, to the unoxidized carbon. Gardeners, by rendering the bottom of their borders impervious to roots, keep them within this atmosphere of carbonic acid. But Liebig is brim full of the utility of carbon in the soil, not derived from the air, in supplying its acid to the roots of plants. "A soil in which plants vegetate vigorously contains a certain quantity of moisture, which is indispensably necessary to their existence. Carbonic acid, likewise, is always present in such a soil [in which plants vegetate vigorously], whether it has been abstracted from the air or has been generated by the decay of

vegetable matter." (Page 35). "Plants during their life constantly possess the power of absorbing by their roots moisture, and, along with it, air and carbonic acid." "It is quite certain that the vegetable constituents of the excrements with which we manure our fields cannot be entirely without influence upon the growth of the crops on them, for they will decay, and thus furnish carbonic acid to the young plants." (Page 170.) I know not upon what principle we can deny the soil a supply of carbon and yet give it nitrogen; the atmosphere seems to furnish a due proportion of each to the construction of a plant. If we are to depend upon the atmosphere for the one, why not for the other? Why seek to destroy the equilibrium which nature has established? Carbon forms a very large constituent in the construction of all plants; is it not, then, as necessary artificially to supply them with it as with any other items of their composition? They take it from the soil, as well as from the air; they deprive the soil of it. Is it not necessary to make it up to the soil? "The fertility of a soil cannot remain unimpaired," says Liebig, "unless we replace in it all those substances of which it has been deprived." Dr. Hodges says, "By the gradual union of the dead vegetable with the oxygen of the air, carbonic acid is produced and slowly evolved from every particle of organic matter to which the air has access, and thus a more abundant supply of that source of food to plants is provided. The carbonic acid, as it is formed, is taken up by the roots of plants, and thus the crop attains a greater development than when dependent upon the ordinary supply of that gas afforded by the atmosphere." "If," says Liebig, in his "Letters on Chemistry," "we suppose all the conditions for the absorption of carbonic acid present, a young plant will increase in mass, in a limited time only, in proportion to its absorbing surface; but if we create in the soil a new source of carbonic acid by decaying vegetable substances, and the roots absorb at the same time three times as much carbonic acid from the soil as the leaves derive from the atmosphere, the plant will increase in weight fourfold. This fourfold increase extends to the leaves, buds, stalks, &c., and in the increased extent of surface the plant acquires an increased power of absorbing nourishment from the air." "But," says Dr. Hodges, "besides affording food for plants, by its gradual decomposition, the decaying vegetable matters accumulated in the soil are believed to prove useful by the remarkable power of absorbing ammonia and other gases which they are found to possess."<sup>1</sup>

Liebig maintains this opinion: "Powdered charcoal (carbon) surpasses all other substances in the power which it possesses of condensing ammonia within its pores, particularly when it has been heated to redness. Charcoal absorbs 90 times its volume of ammoniacal gas, which may be again separated by simply moistening it with water (De Saussure). Decayed wood approaches very nearly to charcoal in this power; decayed Oak wood absorbs 72 times its volume, after having been completely dried under the air-pump. We have here an easy and satisfactory means of explaining still further the properties of humus, or wood in a decaying state. It is not only a slow and constant source of carbonic acid, but it is also a means by which the necessary nitrogen is conveyed to plants."

But carbon possesses, it appears, a yet more valuable property, and which, if we possess any faith in the inorganic theory of Liebig, will induce us to form a still higher estimate of its value as a manure; it is that of its active or crude alkalies. Liebig says, page 139, "The interesting experiments of Struve have proved that water impregnated with carbonic acid decomposes rocks which contain alkalies, and then dissolves a part of the alkaline carbonates." J. M. Goodiff, Granard, July 22.

### STATE OF THE CROPS, AUGUST 1, 1853.

(Continued from page 508.)

COUNTIES.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	GREEN CROPS.	POTATOES.	HARVEST TIME.	NAME AND ADDRESS.
ABERDEEN.	.....	Average	Under average	.....	.....	Turnips very poor	Good as yet	End of Aug.	J. McDonald, Huntley
M-LOTHIAN	Full average	Over average	Average	Good	.....	Late, and not vigorous	Good	End of Aug.	J. Finnie, Swanston
YORKSHIRE	Thin, but promising	Good	Good	Average	.....	Good	Not yet diseased	End of Aug.	H. Briggs, Wakefield
	Thin and light—little more than half a crop	Under average	Nearly average	Average	Good	Good	Good; indications of disease	Sept.	M. M. Milburn, Thirsk
DERBY.....	Healthy, but short and small	.....	Fair average	.....	.....	Good, except where touched by fly	Early sorts touched	Middle of Sept.	J. Parkin, Wirksworth
LANCASH.	Much under average	Pretty good	Irregular	Rather good	.....	Turnips late	Dis. in places	End of Aug.	J. Aspinall, St. Helen's
NORTHAMP-TON	Very good, with exceptions	Very good	Good	Very good	Strong and healthy	Growing fast	Indications of disease	Middle of Aug.	J. Whitwell, Peterborough
STAFFORD.	Good	Good	Very good	.....	.....	Very good	About average	End of Aug.	J. Johnson, Tunstall
WORCES-TER	On dry soils autumn Wheat is pretty good; but on clays backward and indifferent.	Moderate	Moderate	Very good	Indifferent	Foul	Disease prevalent	Late	F. Woodward, Pershore
NORFOLK	Three-fourths of average	Good	.....	Good	Good	Suffering	Diseased	Sept.	C. Randell, Evesham
SUFFOLK ..	Scarcely average	Very good	Generally light	Average	Average	Abundant	Diseased	Middle of Aug.	J. Smith, Wymondham
	Less than average	Very good	Very good	Very good	Very good	Turnips not generally good	Disease general	End of Aug.	G. Edwards, Framlingham
	Not average	Improved	.....	Good crop	Injured by lice	Turnips not generally good	Blight extending	End of Aug.	C. Gibson, Wangford
SOMERSET.	Light	Good	Good	Good	.....	Fair	Badly blighted	Late	H. Cottrell, Congresbury
HANTS.....	Not an average	Generally good	Good	Various	.....	Good	All blighted	Very late	J. W. Clark, Romsey
DORSET .....	Rather under average	Bulky	Fair	Average	Good	Generally good	Bad as ever	Middle of Aug.	J. T. Tvyram, Winchester
	One-fourth under average	Rather over average	One-tenth over average	.....	Over average	Looking well	Diseased	Middle of Aug.	Wareham
DENBIGH ..	Poor on clays—average on light soils	Average	Light crop	Average	Good	Looking well	Good	Late	J. Girdwood, Chirk
	Two-thirds usual extent; very light and blighted	Fair average—late	Fair average—good deal of blight	.....	.....	Fair average on light lands	Early sorts a good deal blighted	Sept.	E. H. Griffith, Plasnewydd
WEXFORD ..	Average	Very good	Average	.....	.....	Late, but promising	Very good; diseased in places	End of Aug.	Alex. Preston, Enniscoorthy
CORK .....	Good	Good	Very good	.....	.....	Very good	Much blighted	Sept.	J. Wilkinson, J.P., Cloyne



## Home Correspondence.

*Italian Rye-grass.*—I was greatly interested by the contents of the letter which appeared in the *Agricultural Gazette* of July 30, extracted from the *Times*, relating the doings at Myrenill, and narrating Mr. Kennedy's extraordinary success in the application of sewage manure to Italian Rye-grass, the use of which Grass is certainly one of the most valuable discoveries of modern agriculture. Can you or any of your correspondents kindly inform me as to the best method of growing Italian Rye-grass on a stiff clay soil? What crop it should follow, treatment of the land previous to sowing, manure required to be applied, best time for sowing, &c. Also what crop should succeed, and whether it will stand for more than two years? I have grown it very successfully on a poor sand, obtaining by the plentiful use of liquid manure abundant crops. It is excellent food for every kind of stock, but especially suitable for horses as green food during the spring and summer; for this purpose and for cows I have mown it as early as the beginning of April. Not having underground sewage, the plan adopted was to carry out the liquid manure in a large cask, supported upon an iron axis, so arranged that when required to discharge, the man could readily swing it round, when the manure escaped through a number of holes. Above this tub was a light cart, consisting of a wooden frame and stout canvas sides and bottom, in which the fresh mown Grass was carried back to the buildings, thus loading both ways. If possible the ground was dressed the same day it was mowed; and so invigorating did this dressing prove, that I have known a crop 30 inches high mowed, after a growth of 30 days. C. [We have only grown it upon light soils: and there by sowing about 2 bushels per acre, with a mixture of Clover seeds, among young Wheat in April. This method would, no doubt, answer on clay soils also; but the seed would be better hoed in.]

*Alsike Clover.*—I was led to try it on a very small scale (having given 2s. per pound for the seed) by the continued failure of my regular sowings of red and white Clover, Trefoil, and Rye Grass, partly from the poverty of the land, and partly from the land having become Clover sick. In the spring of 1851, I sowed 10 acres in my Barley, and in February 1852, I turned my couples in it, and let it down bare until the end of June. The latter end of August, I resowed it for seed, when, owing to its being a heavy crop, I had only about 1½ cwt. seed to the acre. This year, the crop of Wheat after it is estimated at 50 bushels per acre, on land not worth 15s. per acre. Last year, I sowed 26 acres with my Barley, and treated it just the same, only that I did not take the couples out so early by a week, and the field now presents a most magnificent appearance, the whole being in full head, averaging 20 inches high, the growth of about 40 days, and the only fear I have is that it is again too big to produce much seed. The present crop grows in a 2½-acre field, about 19 acres a wild blowing sand, and about 7 acres poor yellow clay, but the plant is equally luxuriant on both. The land is barely worth 10s. an acre, to rent by itself. *E. H.* [The following is from a printed circular:—"Alsike" or Perennial Hybrid Clover Seed is indigenous in Sweden, where it has been cultivated in the native pastures of that country for the last hundred years, and has in some cases been known to grow to the height of 5 feet, although in England it attains only that of 2 feet. The root is fibrous, and the heads globular. The plant bears a greater resemblance to the white than to the red Clover; and although its stems are recumbent, they do not root into the soil like those of the white Clover; in short, it may be described as a "giant" white Clover, with flesh-coloured flowers. The plant yields two mowings annually. Linnaeus observed the Alsike Clover growing on poor, bare, obdurate clays in the Morea, where no other plant could be made to vegetate; and yet, under such unfavourable circumstances, this Clover flourished with an uncommon degree of luxuriance, and yielded shoots as tender and succulent, although not so abundant, as if reared in the most richly manured fields. Micheli mentions the plant as growing in open situations on a clayey soil, and as being, in his opinion, worthy of cultivation. Sturm says it is found in Holland, and that he tried its cultivation along with that of a great number of other Clovers, placed under the same circumstances, and that the result convinced him that there is no other kind of Clover equal to it for the purposes of feeding cattle. The red Clover will last only two years in perfection, and often, if the soil be cold and moist, nearly half of the plants will rot, and in the second year bald places will be found in every part of the field; besides that in September and October many crops left for seed are lost in consequence of the heavy rains during that period; while the Alsike Clover, on the contrary, ripening its seed much sooner, and continuing in vigour much longer, much risk and expense are avoided and a large profit accordingly accrues. Further, when this plant is once established, it will remain for a great many years in full vigour, and produce annually a great quantity of herbage of excellent quality. The best method of disposing of the Alsike Clover crop is either by mowing it for hay, cutting it occasionally as green food, or feeding it down with sheep, in which latter case it may be turned on sooner than any other Clover; and if eaten down quite bare, and the stock taken off the first week in June, the next crop will come sooner to the scythe than any other species of Clover as treated; and if saved for seed, the seed will be ripe sooner than any other, and the plant will again afford a good bite for the sheep until the land be required to plough for Wheat—a heavier crop of

which is invariably produced after Alsike than any other Clover. If mown for hay, it should be cut as soon as most of the heads are in full bloom, and before they begin to turn brown and die away. Observe the foliage in the lower parts of the plants—when the leaves turn yellow, decay, and drop off, the crop should be cut—for by standing longer the plant will lose more at bottom than it gains at the top. The weight of seed required to be sown is—according to circumstances—from 10 to 15 lbs. per acre, an extent of crop which will produce many tons annually of green herbage, independent of a crop of seed. The hardy nature of the plant is proved by the fact of its thriving by transplantation—it will admit of being taken up at the expiration of two or three years and planted in any other situation: the plant when taken up is merely divided, and its fibrous roots cut a little with a pruning knife; so that the farmer need never be at a loss for a crop of Clover. The Alsike does not suffer from the severest frosts—it will flourish on the most barren land where few Grasses will grow at all, producing a heavy crop of seed, and affording an abundance of nutritious herbage for horses, oxen, and sheep; and when land has become clover sick and cannot be depended on for a crop of the ordinary sorts of Clover—this has never been known to fail.]

*Adulterated Manure.*—Does "A. B. C." take up the cudgels to defend rogues? Is the cinder-wench and the bone-picker to have the sins of the manufacturers added to their own? Are nails used by these poor creatures to supply the vacuum of the marrow in the bones they collect? "A. B. C." must be "a double Gloucester" man to undertake what no one else will defend. "X. Y. Z." knows too well whence the compound came. He knows that bone-dust is often mixed with mortar siftings and nails, &c.; that guano is adulterated—beer is adulterated—flour is adulterated—and divers other articles, all which "A. B. C." may defend if he fancies—but they stand as large as life before the people of England. *X. Y. Z., Hants.* ["A. B. C." did not defend what "X. Y. Z." condemns. He merely gave an instance to show that the condemnation may sometimes be laid upon the wrong shoulders. He is a correspondent well known to us.]

## Societies.

**YORKSHIRE AGRICULTURAL.**—This great and important association has held its annual meetings in York during the week before last. It is the 16th anniversary of the Society. We were unable to give a report of its proceedings last week, owing to the length to which our report of the crops extended. The following is abridged from the *Leeds Mercury*:—

The entries both of stock and of implements for competition and exhibition have been very numerous, more so than last year, when the meeting was at Sheffield. Last year the entries of cattle, sheep, pigs, and horses, numbered 443, this year they reached 483. Of poultry there were at Sheffield last year 147 entries; this year at York there have been 292. The entries of implements were at Sheffield, 395; at York they numbered about 600. And it may here be remarked, that if improvement has been manifested in one department of the exhibitions of this Society more than another, it has been unquestionably in that of implements, with respect to which a perfect revolution has taken place within the last few years, to the great advantage of a vast number of ingenious mechanics and artisans, and to the benefit of those for whose use these improved implements have been invented. The short-horned cattle on the ground exhibited some of the finest specimens ever produced, the whole being spoken of by the judges in the highest terms of praise. The show of entire and other horses was much larger than at any previous meeting. In sheep the show was more limited, but included some first-rate specimens. The pigs, too, occupied their usual place in public attention; but it will be seen that fewer prizes were taken by Leeds exhibitors than on previous occasions. More of the poultry prizes came to Leeds and other neighbouring towns. With regard to the prizes offered by the Society on the present occasion, they are much the same as those given last year. The total amount of prizes offered at the present meeting is 653*l.*, or within 3*l.* of the sum awarded last year at Sheffield.

The *Trial of Reaping Machines* was fixed to take place at noon on Wednesday, the premium of the Society's gold medal being awarded to the best machine. The operations took place in a small field of Oats, belonging to Mr. Ireland, near the village of Earswick, between 4 and 5 miles from York. The field was pretty level, and the crop rather thin, but fully ripe, of excellent quality, and in beautiful condition for cutting. The judges decided that the parties showing should draw lots for the first trial, which plan was adopted. The following were the competitors, numbered as they were drawn for trial:—

1. Mr. Palmer, Stockton, Hussey's machine, with Garrett and Sons' and the Exhibitor's own improvements, the registered knife bevelled only on one edge.
  2. Mr. Crosskill, Beverley; No. 1, Bell's reaping machine.
  3. Mr. James Hart, Borough Road, London; one horse reaping machine, invented by Barker, made by Hart. This was afterwards withdrawn from competition.
  4. Mr. O. Hussey, Manchester; two horse reaping machine, maker and inventor, O. Hussey.
  5. Mr. J. Wray, Leeming, Bedale; Grass mowing and reaping machine, invented and made by the exhibitor.
  6. Messrs. Burgess and Key, London; reaping machine, maker B. Samuelson; inventors Messrs. G. and C. M. McCormick.
  7. Mr. Crosskill, Beverley; No. 2, Hussey's reaping machine.
- The judges having made the necessary arrangements, in which they were assisted by Professor Ames and some other gentlemen who were present, the proceedings commenced. The first was

Palmer's machine, invented by Hussey, and the construction of which is pretty generally known. It was drawn by two horses, and a man to drive; another man sat at the side to throw out the corn at intervals of about 20 yds, which afterwards required to be gathered by a person following. This machine did its work very well, and appeared to give great satisfaction, with the exception of a slight accident caused by one horse starting at some machines placed at the edge of the field. The corn appeared to be evenly cut, and was in some respects superior to shearing by hand. Rollers have been added to the platform of this machine to enable the man upon the machine to throw off the corn with half the labour; and the horses, by means of curried gear, now carry the weight on their backs, instead of their necks. By the knives being bevelled on one side only, soft and green crops are evenly cut by this machine. By this machine, as improved by Garrett, it is said that a clear saving of 5s. 6d. per acre may be effected in the reaping. The next machine tried was Mr. Crosskill's, invented by the Rev. P. Bell, and known as the old Scotch machine. This, instead of being drawn, was propelled by two horses, with a man behind to drive. In connexion with this machine it may be stated that when the subject of reaping machines was brought forward in 1851, Mr. Bell brought out the present machine against them in Scotland, which he had invented about 20 years previously, and regularly worked on his own farm. It cuts the corn beautifully clean, and without the aid of manual assistance throws it down on one side in perfect swathes, fully equal to what it would have been if under the scythe. Had the corn been higher it is probable that the work would have looked better. The next machine tried was No. 7, Crosskill's Hussey's reaper. The advantage of this machine was that it did not require that the horses should go at a quick pace, so as not to tip off the ears of the corn; a very decided improvement. This was followed by Messrs. Burgess & Key's reaping machine, invented by C. & C. McCormick, which started before the last trial had been completed. It was drawn by two horses, with a man behind the driver, and one to lay the corn with a rake. This machine cut well, but the laying was not considered so good. It was a large and rather cumbersome machine, and the manner of laying had the reverse of an easy appearance. The next machine tried was Mr. Obadiah Hussey's two-horse reaping machine, made and invented by the exhibitor. It was a compact and neat machine, without any fly-wheels, throwing out the corn at a distance of about three yards. During its progress an accident happened, which caused some delay. Mr. Hussey himself attended the raking box and superintended the management. It was an excellent cutter; but unfortunately, after a second effort, the machine again got fast, and began to serve as a plough in addition to its more confined character of reaper. Mr. Hussey, nothing daunted, got off again, and succeeded in obtaining a good deal of support. The cause of failure was attributed to the unevenness of the ground, caused by the furrows made in ploughing. Whilst Mr. Hussey was busied in his arrangements, attention was directed to the machine exhibited by Mr. Wray, a grass mowing and reaping machine, made and invented by Mr. Wray, of Leeming. It was drawn by two horses, one before the other, and a man on each; another man followed the machine on foot to rake off the corn in swathes. After going a short distance a breakdown took place, which was soon put right, and the machine again made a start, cutting the corn in the most admirable manner. Whilst these last were going on, at the request of the judges, Mr. Crosskill's Bell's machine was again ordered out, and made its way direct through the centre of the field and back again. The result was, if possible, more satisfactory than the first trial. The machine has the advantage of being driven slowly when required, and the pace sometimes did not exceed more than two miles per hour. By this the large flappers do not, as in some instances, catch the tops too suddenly, so as to knock out the corn and scatter it about the field. This concluded the trial at about 4 o'clock. During the proceedings it was remarked that the competitors were exceedingly kind to each other, and were never backward in case of accident, to suggest remedies, and even to state what they considered would be improvements. This feeling was particularly remarked in the case of Mr. Hussey's machine. Upon the whole the trial was satisfactory, and was a proof that great improvements have been made in many of the machines. Taking into consideration the thinness of the crop and the shortness of the Grass, there is little doubt that in the case of a fair and average yield, the reaping machines will, ere long, with additional improvements, be brought into general use.

The following are the awards for implements:—  
Plough, to plough 5 inches deep, 5*l.*, Mr. J. Palmer, of Stockton. Ditto, 7 inches, 5*l.*, Messrs. Howard, of Bedford; second, 2*l.*, Mr. J. Barker, of Donnington.  
Ditto, 9 inches, 5*l.*, Mr. W. Busby, of Newton, Bedale; and Mr. G. Meynell's plough for general purposes commended.  
Heavy harrow, 3*l.*, Mr. B. Stead, of Barnsley.  
Light harrow, 3*l.*, Messrs. Howard.  
Horse hoe on the flat, 5*l.*, Messrs. Garrett.  
Horse hoe on the ridge, 2*l.*, Mr. W. Busby; Messrs. Hill and Co.'s, commended for one with a scissor motion.  
Corn drill, 5*l.*, Messrs. Garrett.  
Turnip drill, 5*l.*, Mr. Hornsby.  
Manure distributor, 5*l.*, Messrs. Garrett.  
Liquid drill, 5*l.*, 5s., Mr. J. Kemp.  
Grubber or scarifier, 5*l.*, Mr. H. Kearsley, of Ripon.  
Broadshare or scarifier, belonging to Mr. Bentall, commended.  
Scarifier, belonging to Messrs. Hill and Co., commended for uneven surfaces.  
Horse rake, belonging to Messrs. Howard, highly commended. 1  
Haymakers, belonging to Messrs. Smith and Ashby, commended.  
Digging machine, 5*l.*, 5s., Mr. B. Samuelson.  
Clod crusher, belonging to Mr. Crosskill, Beverley, commended for self-cleansing principle.  
Dynamometer, 5*l.*, 5s., Mr. H. Bentall.  
Roller, belonging to Messrs. Gibson and Son, commended.  
Mr. Crosskill, for "Bell's Reaper," 10*l.*, and the Society's gold medal.  
An improved threshing machine, 30*l.*, Mr. Charles Hart, of Wantage, Berkshire.  
Improved agricultural waggons and carts, 3*l.*, Messrs. Crosskill.  
The prize of 25*l.* for the best portable steam engine was divided, half being awarded to Messrs. Clayton, Shuttleworth, and Co., of Lincoln, for their four-horse steam engine; and the other half to Messrs. R. Hornsby and Son, of Grantham, for their six-horse steam engine.  
3*l.* to Messrs. Richmond and Chandler, Liverpool, for an improved chaff cutter.  
2*l.* to Messrs. R. Hornsby and Son, for a cake crusher.  
2*l.* to Mr. Coulson, of York, for a mortising machine.  
2*l.* to Mr. William Smith, Kettering, for a horse hoe.  
1*l.* to Mr. John Naylor, of Briggs, for a self-hickling sack harrow.  
1*l.* to Mr. Dove, York, for small tools; and 10s. to Mr. Stanley, for his tubular field rakes.  
The Society's medals were also awarded to Mr. John Kenley, London, for a Turnip cutter; to Mr. E. H. Bentall, Maldon, for a new Beau cutter; and to Mr. George Locking, for a model of a new engine.

*The Council Dinner and Discussion.*—The dinner took place in the Guildhall. Mr. LEGARD introduced the subject proposed for discussion, namely—"The best time and mode of application, in different quantities, of guano and other land tillages, to green and to cereal crops." Passing over the scientific part of the subject, and coming more to the practical, he detailed several experiments of his own. One of the material points in a discussion of this kind was the soils with which they had to deal. Perhaps they might venture on a sort of rude classification of soils in this way. He would con-



fine himself to Wheat-growing soils. He would call them the first-class, the second-class, and the third-class Wheat soils. Among the first class he would put the alluvial soils—rich soils, those formed from the deposits of rivers and estuaries. Other soils might be brought into the same class, perhaps the red marl, and it was open to gentlemen to consider what constituted these; but, at any rate, he thought the application of hand tillage to those sort of soils would hardly be considered profitable. He did not think that the application of manures in general use would be desirable on this class of soils. He would now pass on to the second-class soils—a very large tract of corn-producing soils—among which he perhaps might mention the lime and chalk soils, the best gravel soils, and so on. If the four-shift of husbandry was pursued on this class of soils, and if Turnips were eaten on, and so on, he did not believe that very much profit would accrue by using the description of manures they had in hand. If, however, the four-course system were departed from—if, as was not uncommon just now, a second crop of Wheat were introduced into the course, as he himself had introduced it occasionally, then he believed that the application of these sorts of manures would be most valuable. If there were a departure from the Norfolk or four-course system, he believed that very great advantage would accrue by the application either of guano, or other manures which might be considered equally good; he had tried it himself, and with considerable effect. This species of fertiliser, it appeared to him, applied with greater benefit to the third class, or worst description of soils, because they seemed to require a greater amount of food. He had for several years past occupied a farm containing not altogether, but partially, a soil which, he thought, might be considered one of the worst class of Wheat soils. It is a very porous chalky gravel; so porous and so bad is the gravel that a heavy shower of rain washes the tillage away, and in a burning summer the crops are liable to be burnt up, but he had experimented on this species of soil for a few years past. Upon this kind of soil he tried an experiment with guano and nitrate of soda. The latter, being a salt, is best used upon hungry land, but upon porous or light soils a small quantity of nitrate of soda might be used with advantage. He would tell them what he had tried, in the way of manure, upon a crop of Wheat. Between the 10th and 20th April he applied, on a part of a field, 2 cwt. of guano and from 2 to 4 stones of nitrate of soda, and upon another part of the field he applied  $2\frac{1}{2}$  cwt. of guano and no nitrate of soda; the cost of  $2\frac{1}{2}$  cwt. of guano was 22s. 6d., and of the 2 cwt. of guano and the nitrate of soda, 18s. 6d., or 4s. less than the other. The result was this—the produce of the second part of the field, which cost only 18s. 6d. in guano and soda, produced 3 bushels of Wheat more than the other, which, at 5s. a bushel, gave a profit of 15s. This was upon a poor porous soil. He tried the same experiment upon a portion of stronger soil, and the guano and soda produced no more than with the  $2\frac{1}{2}$  cwt. of guano. Then he tried an experiment with guano and fold-yard manure, made by oilcake. It had occasionally been the custom to use Linseed-cake on the farm he was speaking of, and in considerable quantities, and in the autumn he tried this, which he thought was the best sort of manure for this sort of land. But in 1847, he thought it was, they deemed it advisable to give up the use of oilcake manure and resort to guano, and he applied to 106 acres 2 cwt. of guano and 2 stones of nitrate of salt per acre, the cost being about the same as manure made by oilcake, but the produce was eight bushels per acre more than that which he had previously obtained by applying oilcake manure. Gentlemen would perhaps say, this was a marvellous thing, but so it was. He would mention but one other experiment, the application of guano to Grass land, the experiment being tried with different kinds of manure upon the same kind of land, the farm-yard manure used being made in the same way as oilcake manure generally was. This oil cake manure was applied in the autumn upon a piece of wold Grass land of four years' standing, and which seemed to require something to set it agoing. It was thought that the application of 12 tons per acre of good yard manure would do some good, and it did, but it was very little. Then he tried 500 gallons per acre of liquid manure from the tank, and this had not any great effect; nothing, in fact, to what it ought to have. He next tried the experiment of dissolving 3 cwt. of guano in that quantity of liquid, for each acre, and in a very short time, almost in a few days, it produced a marvellous effect; where no white Clover had grown before, white Clover now sprung up. After this they were induced to go on, and tried 5 cwt. of guano, mixed with 2 stones of nitrate of soda, which the land had never since forgotten, and which, though once a piece of poor, was now a piece of very fair Grass land. (Applause.)—Mr. John Outwaite, of Baines, then detailed some experiments which he had made with artificial manures. Some years ago he was in the habit of using a great deal of Rape-dust, he having used in one year on less than 500 acres of land 2687. worth of that kind of stuff—Rapecake ground up into dust. He found it to be very beneficial, and thought it might be used with advantage if it could be bought at a reasonable price. He had tried it upon green crops, but it was a complete failure; but grain crops were improved in quality by it; that was, the grain was better, though it did not add much to the straw. As to Turnips, he thought a good deal depended on the way in which artificial manures were used. On strong soil he recommended guano, but on light soil he preferred bones.—

Mr. J. Wharton, of Skelton Castle, said, within the last few years he had submitted four or five samples of guano for analysis, and full four out of five were returned by Professor Way as spurious articles—perfect rubbish—not containing a particle of the qualities of real genuine guano.—Mr. R. Creyke, of Rawcliffe Hall, said, guano was at first applied to all crops, green and cereal; and it was found, as Mr. Legard had observed, that it produced too much straw and too little Wheat. In his neighbourhood, it was now applied to green crops and to Potatoes; they did not apply it direct to the Potatoes in the first instance. The guano was sown broadcast over the land. It was not applied direct to the Potatoes; but as the rain fell, the manure went to the Potatoes, and they thereby gained that fructification which they required. It was found the guano might be efficaciously applied after the Potatoes were up. When they were 4 or 5 inches from the ground, it might be sown broadcast; but it must not be applied to the Potatoes themselves in the first instance, as it gave them too great a stimulus.—Mr. J. W. Childers said there was only one place that he knew of where farming was successfully carried on without the application of manure at all. He alluded to a spot between London and Gravesend, where large crops of Clover and Wheat were grown, but where no manure had been used within the memory of man; on the contrary, the people stated that if they used manure it would spoil the crops. There was another circumstance to which he wished to refer. At Deptford there was an establishment where the manufacture of stones into manure was carried on. These stones were found on the coast of Essex and some parts of Suffolk. They were brought from those places to London, ground into manure, and afterwards sold extensively in Norfolk, and probably also in this county, at the rate of 5l. per ton. This was one of the most efficacious kinds of manure that had been discovered, particularly for green crops, and also for corn.—Sir J. V. B. Johnstone said there was another district of England where no manure was used, but still Wheat crops were successfully grown. He referred to a place in Northamptonshire, near the Weedon station, which was well worthy of being visited by any persons who were travelling that way. Mr. Mathews had made some observations with respect to the pulverisation of the land, and the great advantages which were consequently obtained. This was a principle which was to a great extent carried out by Mr. Smith, at the place he had referred to. Mr. Smith was in the habit of growing Wheat in alternate rows, without the application of manure, and his crops went on constantly increasing. This was a point well worthy the attention of practical farmers. The manufacture of superphosphate from stones, which was carried on by Mr. Lawes, had also been alluded to; and this gentleman's experiments were equally worthy of attention with those of Mr. Smith. In Mr. Smith's case the plants were made to draw from the air that stimulation which, in Mr. Lawes', they obtained from the superphosphate. Thus, two experiments were going on at the same time, by one of which the crops had been successfully grown without manure for the last 10 or 12 years, by means of the pulverisation of the soil; and in the other by the application of superphosphate.

HERTFORDSHIRE.—*Draining Match at Graveley.*—When the guests had partaken of the hospitality of Mr. Denton, a discussion ensued on the topic which had brought the company together—land drainage. It was commenced by Mr. Bailey Denton, who said: The importance of expert manipulation in draining operations can hardly be overrated at the present time, when the labour question is of such national moment; for it must be obvious that good tools and good judgment are as effective in saving time and labour, when guided by the draining operator, as in all other matters where many hands are employed. The importance of draining is admitted by all; and, although there may be some present who may demur to the declaration, it is almost as universally acknowledged that deep drainage is the only safe and permanently profitable mode of draining. In the last six or seven years there have been expended about six millions of money in the work of under-draining, and one certain result of that expenditure has been to settle the question of deep and shallow draining. The advantages of deep over shallow work have been incontrovertibly supported. In fact, the nail has not only been driven home, but clenched. Still, there is no rule without an exception; and although I am not prepared myself to admit the exception, I propose it as a topic upon which to invite discussion—I allude to the draining of meadow-land. One of the first results of draining wet Grass-land is to displace the coarser succulent aquatic Grasses by the finer and sweeter kinds, which will come to profit earlier, but will not be so abundant as the coarser kinds, in the latter end of summer and in autumn. Hence arises the question which gives substantiality to the exception I refer to. Many farmers regard a greater quantity of late inferior herbage as more important than a less quantity of superior early herbage; and as the coarse succulent Grasses indigenous to wet land can only be maintained by imperfect—that is shallow—draining, they very earnestly insist upon the expediency of draining Grass land at a less depth than arable land. As all draining is done for profit, and expediency in commercial matters often takes the place of principle, I feel the point to be a legitimate topic for discussion. The comparative profit and loss account may be thus put. Early herbage and sweet lamb feeding, arising from

deep drainage, *versus* a plentiful late herbage and sour after feeding, arising from shallow draining. This comparison serves to put the question before you—and in soliciting discussion, I feel bound to state my own conviction that the deeper drainage will be conducive to improved cultivation, and, in the end, will lead to increased quantity as well as improved quality. These remarks apply also to peat or fen-land; and as we know that in dealing with such land, the perfection of operations is the induction of water as well as its extraction, so I believe that the most perfect means of dealing with meadow land will be the removal of water during winter and spring (so as to secure early feeding), united with the occasional induction of water by the same channels during summer and autumn, so as to secure late feeding during those periods. Before leaving the question of deep drainage, I would seek a practical determination of the theory of capillary attraction—a subject upon which much has been written and said, although very little is understood about it. We, practical and working men in the science of drainage, want information on this point. If land be drained, say 4 feet deep, gravity takes all water falling on the surface down to the depth of the drains, which establish as well as maintain in clay soils a water level at that depth. In porous soils, the inclination of the surface becomes an element in maintaining the water level founded by the drainage. But under all circumstances of soil, it is believed that a line of *moisture*, in deeply drained land, exists above the line of water level from which the roots of vegetation derive their healthy support of water. Whether this line of moisture really exists as believed, and if it exists, whether it arises from suction, absorption, or capillary action, remains for later philosophers to determine. It is a very important question; for if the line of moisture sustained by the water level be identical with the surface of the ground, then evaporation will take effect upon it, and the land will remain as cold as ever. That a water level does exist in soils, acting when near the surface most prejudicially to healthy vegetation, there can be no doubt; and I will give an instance. It fell to my lot to investigate the valley of the Test for the purpose of drainage, during one of the great wind storms last year, and several trees were blown down. When the base of their roots became exposed to view, they presented as even a surface as the table you have lunched off; and, observing that some of the trees had a deeper quantity of earth attached to them than others, I became interested, and found, on examination, that according to the height of the ground in which the several trees grew above a common datum, so was the depth of the soil capsized with the tree. Thus, if the tree which had 4 feet of soil attached, was compared with the tree which had only 3 feet, it was found that the ground in which the former tree stood was exactly 1 foot higher than the ground of the last. The deduction from these facts was, that a general water level did exist, and that the roots lost their vitality and power as soon as they reached that water level. To another very important point I would direct attention. I mean the lazy, uniform, parallel system, which was all very well and safe when we were in total ignorance and were learning our lessons of men who, while teaching the public, were teaching themselves. It was as nearly right as any general rule could be; but surely after an expenditure of nearly six millions of money, we ought to cease generalising on a subject which can only be properly treated *particularly*, and with reference to each description of soil dealt with. To this *gridiron* system, I record my great objection, although it be the system sanctioned by the Government. As I have said, it was the only course the commissioners could adopt with safety when ignorance prevailed, but surely it is now time for closer examination. I have seen the gridiron applied to fields near this spot, where the chalk and London clay out-crop in juxtaposition; and, actually, for the sake of uniformity, and in furtherance of the rule, precipitated into the hands of the inexperienced—the chalk has borne the brand as well as the clay. Can anything be more absurd? Again, I have seen the gridiron riding on a hill-side bog, where the laws of gravity disregarded the laws of inappropriate theory, and at times the water was as much above the drains as at others it was below; and the result was, that vegetation stopped the pipes. These remarks are not directed at or against the Government or their inspectors, for they are not responsible for many details; and I feel bound to say that among the Government inspectors there are men as well acquainted with the practice of draining as any men in the country. We have among us one gentleman who acts in that capacity—Mr. Hewitt Davis—and who has favoured us by officiating (with Mr. Thompson) as judge, than whom there does not exist a person better informed upon the general principles of draining. But, above all the minor details of under-draining, there is one great desideratum of national importance—the clearing, deepening, and maintaining of out-falls and out-lets. Of what avail will the minor work be, if the receiving drains be insufficient for the purpose of carrying off the water ejected by under-draining?

Mr. Hewitt Davis followed, with some elaborate remarks concerning the comparative moisture required for Grass and arable land, and the supervision adopted by Government inspectors of drainage.

Mr. Bullock Webster then gave his theory of the manner in which he considered water descended into drains, illustrating it by diagrams.

Mr. Davis explained that water found its way into the drains by rising upwards and not by descent; every drop of water that fell upon drained land descended



perpendicularly, or as nearly so as the cracks in soils admitted, until they reached the level of the water which had accumulated in the soil. This level in winter would be the line from drain to drain, and if the drains were 4 feet deep, the water bed would stand 4 feet from the surface. Now, as every drop on reaching the water had raised the water bed a drop, it followed that a drop would run into the drain for every one that reached the water bed; but this drop would not be the one that reached the water bed, any more than the water which left one side of a lake on a sudden discharge into it, would be the identical drops which entered on the other. The arguments in favour of shallow draining were all based on the supposition that water went direct to the drains—as if attracted by the drains—but there was no attractive power in drains to draw water to them; and we have only to watch the course of a single drop, as if it were a berry, to see the impossibility of its getting into the drain, except by perpendicular descent and swelling up the water bed. It was unfortunate for landowners that this is not more generally understood; for, from not rightly understanding the simple course of water, by far the greater part of the expense gone to in draining was money thrown away.

J. Livesey, Esq., of Stourton Hall, Lincolnshire, next spoke. He said: The dispute on the "depth" of drainage may be decided on the extent to which the soil is drainable, if it could be proved that a clay, however tenacious in appearance, was porous, and absorbed water to the depth of 4 or 5 feet, or even 6 feet. I think the point where the soil ceases to absorb water is the proper place for the drains. I have had some practice in drainage on a soil of a generally uniform porosity, and supplied with water from some remote source. This is called a chalk marl, and is of considerable extent in the neighbourhood of Horncastle. I should wish to call the attention of the Government inspectors to what I have to say on the methods adopted by those proprietors who are and have been recently draining on this particular stratum, under Government loans. I have observed that the same shallow and narrow system (12 yards wide, and 4 ft. deep) is prescribed and practised on this porous soil, and it has occurred to me that such a system is not proper for all kinds of soils, and for this in particular. From the experiments I have made, a deeper and wider arrangement is decidedly preferable, and less costly; and by a comparison of the cost of the two methods, a saving of 2s. from 18s. will be shown in the work, and three-fourths of the materials less, it will appear, will be required. Take two fields of similarly even surface, and of similarly porous substance. The Government commission operation, at 4 feet 6 inches deep, 12 yards apart, 4s. 6d. per chain, is 18s. for four drains. The method which I have adopted is 8 feet deep, and 48 yards apart; cost of drains 8 feet deep per chain, 16s.: 4 to 1—18s. to 16s. It has been argued by the learned authorities that such depths and distances are inadequate to effect an effective drainage in a very wet season. The tests of experiment negative the theories of these learned authorities, and are open to inspection. There is no doubt that considerable value has been derived from drainage under the Government commission, and it is also highly desirable that every opportunity be afforded to the officers under that establishment, of investigating the character of the soil before any system be insisted on; that not only the land may be so drained as to pass the inspector's sanction, but that the full benefits of drainage may be obtained.

Mr. Humbert said, having passed works of drainage on Lord Essex's and other estates to the amount of nearly 5000*l.*, within the two past years, he had great pleasure in confirming Mr. Davis's statement, that the Government Inspectors were not, and in fact could not be responsible for the proper performance of the drainage works, the completion of which they were called upon to certify. They did not see the works in progress, and often not until it was difficult to distinguish even the site of the drains. They did not know therefore whether the pipes were well or ill laid, or indeed whether they were laid at all. They could only make a few general inquiries, and rely on the integrity of the surveyor. Their duty simply was to protect the heir-at-law; to see as far as possible that the principal advanced by the Government, the payment of which was to be charged on the estate in annual payments, was not squandered. The discussion had been so ably handled that there remained little or nothing for him to add; nor did he feel that anything that might be said would then bring Mr. Bullock Webster to think with Mr. Davis upon the subject of the "water table". He understood the term "water table" to mean that point at which water stood in soils requiring draining; and that it did stand at a fixed point might be readily ascertained by any person who would take the trouble to sink a few test holes 3 or 4 feet deep in such a soil as that on which they had that day been engaged. He felt certain that the drains they had seen dug in the morning now contained, and probably even discharged water, although they appeared quite free from water when dug. They had constantly observed that a drain in a wet soil appeared at first quite dry; presently the bottom became moist, then wet, and ultimately the water trickled along it; but the water never came in at the sides of the drain, it always came in at the bottom, so as to appear to rise up into it. Whether the water in the soil, or rather the soil overcharged with water, extended to an indefinite depth, as maintained by Mr. Hewitt Davis, or whether it extended only to a short distance below the surface, being upheld in it by the want of porosity in the clay, as believed by Mr. Bullock Webster, could not be proved

at that meeting; but certain it was, that the theory started by Mr. Bullock Webster, that a well of water might be obtained in any overcharged clay, could not be built upon Mr. Davis's hypothesis, because such a well would, like a drain, abstract water from the surrounding clay only within a limited distance;—whether or not it stood full would depend upon its capacity; it would certainly obtain some water, but if emptied, this would be only tardily renewed. Trial pits being wells on a small scale, might be constantly seen standing full of water, but the water found its way into them, as with drains, very slowly.

### Farm Memoranda.

**BORDERS OF DARTMOOR.**—The farms in this district are very small, averaging from 30 to 70 acres each; though some farmers have larger holdings, it is generally in consequence of small estates being thrown together. These farms possess the disadvantage of small fields, scattered farms, inconvenient homesteads—great drawbacks to the economical management of a farm. Although we are slowly moving in the right direction, viz., growing more green crops, manuring and cleaning our land better, &c., than we have hitherto done, still I am sorry to say, from observation, we are far behind; those who have not seen it scarcely crediting the improvements that have been made and still are going on in the east and north-east counties. Our fields are divided by great mounds or banks of earth, from 4 to 7 feet high, many of them of great thickness; were encumbered with hedgerow timber, as we generally are in our most sheltered valleys, doing an incalculable amount of injury. Higher lands lie exposed, fences often bad. Fields from 1 to 5 acres in extent, not many of the larger quantity; from 1 to 3 acres the general run. We have had our share of the late severe winter; snow lay through most of the month of February to a great depth. I may mention the severe weather killed most of our Gorse or Furze, both covers and hedges; Cyprus and tenderest fruit trees greatly injured. Fields not clear round hedges from drifts of snow until the 10th March, when we commenced ploughing for and sowing Oats. Frost set in again on the 18th; land froze so hard could sow no more till the 28th. Although late when finished sowing, am happy to say spring corn, with but few exceptions, looks remarkably well. I am situated on a granitic sandy subsoil; the wet autumn did not hinder us from putting in our Wheat; full average breadth sown, looking well; with favourable weather I think we shall gather more than an average harvest. Central Devon Wheat soil, not an average breadth of land sown; late tilled Wheat thin and poor. Before the Potato disease set in this district was celebrated for growing both good crops and excellent dry mealy tubers, which always commanded the best price in the markets; were very extensively and profitably cultivated; however, I think the disease has attacked us more virulently on our light soil than on any other description of land; heavy farms, which previous to the disease had no chance of competing with us, now grow both a heavier crop and of superior quality; breadth sown, not above half the average; up, looking middling. Our chief substitute is the Carrot; White Belgian and Field Altringham the sorts cultivated; if we can grow a good crop they are invaluable in fattening pigs; next to Potatoes in beginning of season, Mangold Wurzel coming later when Carrots are done; favourite sorts, Long Red and Yellow Globe; an excellent root; cultivation annually extending; eaten with fly in some places. On some farms both Turnips and Mangold Wurzel have suffered from ravages of fly, whilst others have escaped much injury, particularly when manured with superphosphate, which gets them quickly out of reach of fly. *Th. P.* [We shall be glad to hear from you. The delay of this has been unavoidable.]

### POULTRY.

We hail with pleasure the increase of Poultry Exhibitions, feeling convinced that when they are so conducted as to merit the support of amateurs, they will not fail to do good to all classes. We have before us the first prize list of the Malvern Exhibition. It comprises 25 classes, divided between adult birds and chickens of the year. There is nothing uncommon in this, but there is one innovation which delights us, viz., a cottager's class, containing four prizes of 4*l.*, 3*l.*, 2*l.*, and 1*l.* Every cottager must bring a certificate from the clergyman, or some inhabitant of known respectability in his parish, declaring him to be of good character, and also that the birds are his *bona fide* property. We hope this example will be extensively followed; for, to our minds, it is fraught with benefits that do not appear at first sight, and which our limits will not permit us to detail at present.

**YORKSHIRE AGRICULTURAL SOCIETY.**—The following is the Prize List at this show during the past week. The judges were Mr. T. H. Travis, York; the Hon. and Rev. S. W. Lawley, Escrick; and the Rev. R. Pullen, Spennithorne, Bedale. There were 292 pens of poultry exhibited.

Best Spanish cock and two hens, 20*s.*, to John Hartley, Howdon; second do., 10*s.*, to T. B. Stand, Leeds.  
Best three Spanish chickens, 20*s.*, to T. B. Stand, Leeds.  
Best Dorking cock and two hens, 20*s.*, to Mrs. K. M. T. Parker, Astley Hall, Chorley; second do., 10*s.*, to C. Rawson, The Hurst, Walton-on-Thames.  
Best three Dorking chickens, 20*s.*, to T. B. Stand, Leeds.  
Best Cochins China cock and two hens, 20*s.*, to C. Rawson, The Hurst, Walton-on-Thames; second do., 10*s.*, to H. Ambler, Watkinson Hall, Halifax. Rachel Hoggard, Clifton, York, highly commended.

Best three Cochins China chickens, 20*s.*, to A. H. Smith, Shuttle Farm, Chorwell, York, and S. E. Nutt, London. Mrs. R. M. T. Parker, Astley Hall, Chorley; J. H. Smith, Skelton Grange, York; C. S. Floyd, Sands, Holmfirth; Simeon Woodhouse, Bootham Stray, York; and George Jackson, York, highly commended. First prize to be divided.

Best Malay cock and two hens, 20*s.*, to Robert Brown, York; second do., 10*s.*, to James Dixon, Westbrook Place, Bradford. George Jackson, York, highly commended.

Best game cock and two hens, 20*s.*, to Henry Ambler, Watkinson Hall, Halifax; second do., 10*s.*, to John Kendall, Full Sutton. John Nicholson, York, highly commended.

Best three game chickens, 10*s.*, to Henry Ambler, Watkinson Hall, Halifax.

Best golden pheasant cock and two hens, 20*s.*, to James Dixon, Westbrook Place, Bradford; second do., 10*s.*, to Samuel Scholefield, Woodhouse Carr, Leeds.

Best three golden pheasant chickens, 20*s.*, to Samuel Scholefield, Woodhouse Carr, Leeds.

Best silver pheasant cock and two hens, 20*s.*, to Fergus Ferguson, Walsington, Beverley; second do., 10*s.*, to C. Rawson, The Hurst, Walton-on-Thames.

Best three silver pheasant chickens, 20*s.*, to William Ludlam; do., highly commended.

Best Chittiprat or Corsican cock and two hens, 20*s.*, to Samuel Scholefield, Woodhouse Carr, Leeds; second do., 10*s.*, to C. S. Floyd, Sands, Holmfirth.

Best Poland, any variety, with or without ruffs, cock and two hens, 20*s.*, to C. Rawson, The Hurst, Walton-on-Thames; second do., 10*s.*, to Joseph Conyers, 69, Camp Road, Leeds.

Best cock and two hens of any breed or cross, 20*s.*, to C. S. Floyd, Sands, Holmfirth; second do., 10*s.*, to George Hustler, Appleton, Tadcaster.

Best three chickens of any breed or cross, 20*s.*, to C. S. Floyd, Sands, Holmfirth. J. R. Cranswick, York, highly commended.

Best cock and three hens, black, white, or any other variety of bantams, 20*s.*, to James Dixon, Westbrook Place, Bradford; second do., 10*s.*, to Lady Londesborough, Grimston Park, Tadcaster.

Best cock of any breed or cross, 20*s.*, to Matthew Ridgway, Dewsbury.

Best pair of hens of any breed or cross, 20*s.*, to George Jackson, York. Henry Ambler, Watkinson Hall, Halifax, highly commended.

Best gander and goose, 20*s.*, to Mrs. R. M. T. Parker, Astley Hall, Chorley; second do., 10*s.*, to C. Rawson, The Hurst, Walton-on-Thames.

Best drake and two ducks, 20*s.*, to George Jackson, York; second do., 10*s.*, to William Ludlam, Bradford.

Best Turkey cock and hen, 20*s.*, to Fergus Ferguson, Walsington, Beverley; second do., 10*s.*, to Edward Akeroyd, Denton Park, Otley.

**List of Poultry Shows.**—

Yarmouth and Eastern Counties, August 16, 17, 18.

Survey Zoological Gardens, August 23, 24, 25. The entries for the above are closed.

Holmfirth, August 27. Entries close August 13.

Bury St. Edmund's, September 13, 14, 15. Entries close August 27. Secretary, G. P. Clay, Esq.

Malvern, September 21, 22. Entries close September 5. Secretary, T. Davies, Esq.

Dorsetshire, October 19, 20. Entries close October 1. Secretary, G. J. Andrews, Esq.

Reigate, November 1, 2.

Newmarket, November 8, 9, 10. Entries close October 11.

Derby, November 17, 18. Entries close October 29.

Hitchin, November 18, 19, 21. Entries close November 1.

Southampton, November 24, 25. Entries close October 31.

Doncaster, November 30, December 1. Entries close Oct. 29.

Bristol, December 6, 7, 8. Entries close November 1.

Leeds (Yorkshire), December 6, 7, 8, 9. Entries close Nov. 15.

Dublin, December 6, 7, 8. Entries close November 6.

Birmingham, December 13, 14, 15, 16. Entries close Nov. 12.

**POULTRY: G. Y.** The difference between my description of the tail of a silver Hamburg cock, and that of the Rev. E. S. Dixon, is very trifling. He says, "the latter should be black, with the feathers edged with white, gradually blending into the black." In my book, page 28, I say "the sickle feathers are tinged with a reddish white, and in the golden cock they are shaded with a rich bronze or copper." In answer to "C. R." last week, I said a black tail, i.e., without any other colour, rendered a bird worthless. The foundation colour of the tail is black, and any other colour, as white, would be a defect. I repeat, an entirely black tail would disqualify a cock at an exhibition.—*Young Beginner.* A cup-comb belongs rather to double than single classes. Such a cock would match rose-combed hens better than upright. I am glad to say the rule as to combs in Dorking fowls is less important than it was.—*Subscriber.* Rouen ducks should be very large, and the nearer they assimilate to the colour of the wild duck the better. The drake should have no white on the breast; it would be a fatal defect. It is impossible to state prize weights; ducks weighing 6*l.* lbs. each are difficult to beat.—*C. P.* Your available funds will be subscriptions, entries, admission money, per centage on poultry sold, and profit on catalogues.—*J. E. G.* I know no better mode of preserving eggs than covering them all over with butter. It must be done while they are new-laid, and must be put on thick enough to exclude air. *J. Baily*, 113, Mount Street.

### Miscellaneous.

**The Establishment of Industrial Schools** having of late years been warmly advocated by those who have felt the great deficiency of such institutions, from which the middle and lower classes might obtain a liberal education, coupled with practical instruction, induced the trustees of the Free School here, in the year 1851, to make the attempt. Under the impression that a slight sketch of our agricultural school may interest some of your numerous readers, I send you the following statement. The first difficulty against which we had to contend was the procuring a suitable plot of ground, at no great distance from the school, as the occupiers of land in the neighbourhood, though complaining of agricultural distress, were unwilling to part with so small an extent as one acre for so good a purpose. Having at length secured a piece of glbe land, a considerable expense was incurred in making a fence. Part of the free scholars were then selected to cultivate it, encouraged by a promise of the profits being divided among them; the whole project being at first viewed by the labouring population with dislike, and by the generality of the farmers either with indifference or as an improper interference with their school studies, in a scheme not likely to be productive of any good. The annual gaining of a few shillings has at length worked a great change in the minds of the parents, and has encouraged them to keep their children longer at school; the farmers, also, are constrained to admit that, "nothing can be so sure as that the lads who have been taught to work



in the garden, must make better servants than others who have not had the benefit of such training." This village and its vicinity, being almost purely agricultural, is well suited for an industrial school. The raising of a variety of crops, some of which were not before cultivated in this cold climate, such as Rye, field Carrots, and early Cabbage, has stimulated others, and promoted a praiseworthy spirit of emulation among the agricultural population. The following are the balance sheets for the years 1851 and 1852; that for 1851 does not include the fencing, which was done by Mr. Sneyd's woodman, at an expense of 10*l*, or the ploughing of the land, which two of the farmers in the village were kind enough to do gratis; that for 1852 does not include the vegetables that were distributed among the boys during the summer. I am, Sir, yours, &c., JAMES STOLLARD, Ipstones, January 17.

1851.—EXPENDITURE.	£	s.	d.
To cost of tools .....	5	4	0
To seed Potatoes, 16 bushels, at 2 <i>s.</i> , and carriage .....	2	17	9
To hired labour, 7 <i>s.</i> 8 <i>d.</i> ; rates, 2 <i>s.</i> 6 <i>d.</i> ; rent, 3 <i>l.</i> .....	3	10	2
Payments to scholars—George Johnson, 8 <i>s.</i> 4 <i>d.</i> ; William Ball, 6 <i>s.</i> 8 <i>d.</i> ; Anson Goldstraw, 6 <i>s.</i> 8 <i>d.</i> ; Jos. Johnson, 5 <i>s.</i> ; John Wardle, 5 <i>s.</i> ; 3 boys under 10 years of age, 3 <i>s.</i> 10 <i>d.</i> .....	1	15	6
	£13	7	5

RECEIPTS.	£	s.	d.
By grant from Privy Council for tools .....	1	15	1
By donation from Rev. J. Sneyd, for ditto .....	3	8	11
By cash for seed Potatoes not required .....	0	5	3
By cash for boys digging a garden .....	0	3	0
By Potatoes, 444 pecks at 6 <i>d.</i> , and 147 pecks at 5 <i>d.</i> .....	4	3	6
By Potatoes, 30 bushels of small, at 10 <i>d.</i> .....	1	5	0
By Potatoes, 104 ditto for seed, at 1 <i>s.</i> 8 <i>d.</i> .....	0	16	8
By grant from Privy Council for rent .....	1	10	0

1852.—EXPENDITURE.	£	s.	d.
To sundries .....	0	7	6
To superphosphate of lime, 21 cwt., and carriage .....	1	2	11
Guano 2 cwt. 14 <i>lb.</i> , at 1 <i>s.</i> per cwt.; and 5 cwt. 2 qrs. 19 <i>lb.</i> , at 10 <i>s.</i> ; and carriage of 2 <i>s.</i> .....	4	2	0
To seed Potatoes, 16 <i>s.</i> 8 <i>d.</i> ; garden seeds, 9 <i>s.</i> 9 <i>d.</i> ; Cabbage (cow), 2 <i>s.</i> , at 3 <i>s.</i> , 6 <i>s.</i> ; Carrot (Altringham), 21 <i>lb.</i> , at 1 <i>s.</i> , 2 <i>s.</i> 6 <i>d.</i> .....	1	14	11
To Rye, 1 bushel, 8 <i>s.</i> ; Turnip seed, 3 <i>lb.</i> , at 9 <i>d.</i> .....	0	10	6
Rates, 1 <i>s.</i> 9 <i>d.</i> ; rent, 3 <i>l.</i> .....	3	1	9½
Cash divided among boys—Jos. Goodwin, 14 <i>s.</i> 6 <i>d.</i> ; G. Johnson, 13 <i>s.</i> 6 <i>d.</i> ; A. Goldstraw, 12 <i>s.</i> ; W. Ball, 9 <i>s.</i> 6 <i>d.</i> ; J. Johnson, 9 <i>s.</i> 6 <i>d.</i> ; J. Wardle, 8 <i>s.</i> ; 7 boys under 10 years of age, 13 <i>s.</i> .....	4	0	0
Balance in hand .....	0	16	7
	£15	16	2½

RECEIPTS.	£	s.	d.
By seed Potatoes not required .....	0	5	6
By early Cabbage, 33½ doz., at 6 <i>d.</i> .....	0	16	9
By Broccoli plants, 1 <i>s.</i> 3 <i>d.</i> ; Rye, one qr. acre, 17 <i>s.</i> 6 <i>d.</i> .....	0	18	9
By Potatoes .....	3	3	3
By Peas, 14 <i>s.</i> 9 <i>d.</i> ; Beans, 8 <i>s.</i> ; Parsnips, 4 <i>s.</i> 6 <i>d.</i> ; Savoy, 4 <i>s.</i> .....	1	11	3
By Carrots, quarter-acre, 21 <i>lb.</i> 13 <i>d.</i> ; Turnips, 36½ cwt., at 9 <i>d.</i> , 1 <i>s.</i> 7 <i>d.</i> 3 <i>d.</i> .....	4	5	4½
By manure and seeds on hand .....	2	18	4
By grant from the Privy Council for rent .....	1	10	0
By cow Cabbage .....	0	7	0
Stafford Advertiser.	£15	16	2½

## Calendar of Operations.

### AUGUST.

FARM NEAR CHELSEA, ESSEX, Aug. 6.—We have experienced a fine week for farm operations. Although the sun has been much obscured, the warmth has been genial and seasonable. We have been actively engaged in horse and hand hoeing Mangold Wurzel and Swede Turnips, Potatoes, Cabbages, and white Turnips, which have progressed rapidly, and are looking well. On the 1st we commenced ploughing between the Rye crop, which had been cut a few days previously, the Rye being placed in rows of about 14 acre to each row; by this arrangement the ploughing was not stayed during the period of harvesting, and before the crop was entirely removed on the 5th some of the Turnips had appeared. The whole of the Rye crop was carted on the 4th and 5th, and the land all ploughed, scarified, furrowed, sown, and completed this day, 3 cwt. of guano and 1 cwt. of salt per acre being first applied. On this day we commenced our harvest by mowing and binding Wheat, having about 20 hands employed; and we have also this day carried about 12 acres second mow red Clover, about 1½ ton per acre, in excellent condition, and have as much more ready to carry on Monday; this crop is invariably put into cocks on the second day, which are again opened and made up daily, if the weather permits; the colour and leaf are thus preserved. The Wheat comes better to hand than we anticipated, and the grain is forwarder than the appearance of the straw would have led us to suppose; a small quantity cut seven days ago we have threshed, and it does not appear injured by so early reaping. We therefore think it advisable to continue to reap as soon as the slightest tinge of yellow appears upon the straw; for should the dry fine weather continue it will ripen faster than the hands will be enabled to cut it. All those pieces free from Clover we intend to mow; those that have Clover (which are about one-third) we shall reap above the Clover, and immediately mow the stubble and Clover together for making fodder for cattle during winter. The Wheat has recovered greatly, but little mildew apparent; the ear is, however, defective from meagreness, and the best pieces are much lodged. The Barley of this farm on Turnip soil is nearly as forward as the Wheat, and several pieces will be ready for cutting in another week. The early sown is very good; but the later sown and that on clay land inferior. Winter Beans are generally good, and many pieces are already cut. The Mangold Wurzel is growing rapidly, the Long Red especially—many roots are now 16 inches in circumference and 16 inches long above ground. Those manured with 2 cwt. of guano, 2 cwt. of salt, and 10 tons of manure per acre are better than those manured with 20 tons of manure alone, and are also superior to those manured with superphosphate 3 cwt. and 2 cwt. of salt and 10 tons of manure to each acre. The Potatoes have become suddenly and generally diseased. On the 28th a severe thunderstorm with heavy rain occurred; up to that time no disease had appeared, but within 48 hours afterwards it had become general, and now the stems are entirely decayed; we have had some of them pulled, but fear with little avail; the Potatoes are nearly all affected—one moiety are past recovery. Harvest will not be general for another week in this district. We are about 10 days later than the average of the last 20 years. A general advance in harvest wages has taken place of about 15 per cent., and the labourers are far from being satisfied. We pay them 10*s.* an acre, allowing 10 acres to each man, and harvest beer six pints per diem, with table beer ad libitum, or in lieu thereof 1*l.* is allowed for the harvest month. B. SOUTH HANTS, Aug. 8.—Wheat, now it begins to ripen, exhibits the havoc the blight has made, thousands of ears withered, and

the crop deficient in straw. Barley looks red and blighted, more particularly the early sown. Oats will be a fair crop. Beans and Peas, though partially blighted, are better in promise than a month ago. Turnips the finest seen for many years, but the early sown are backward and ragged, being attacked by the fly. Mangold Wurzel mends, but this crop the worst we have had many years. Potatoes seem annihilated—a more sweeping destruction of this tuber we never remember. Cattle and sheep have had abundance of green meat, and they look well. As to farm work, hoeing Turnips goes on rapidly,—marling and preparing land for Wheat after Tares and Clover—this hot weather very favourable for these operations. Harvest expected to be very general in about ten days or a fortnight. Q. R. S.

### Notes to Correspondents.

CLOVER: *Constant Reader*. This is a case in which the flowers are all changed, more or less, into leaves. Such monsters are not uncommon, especially in wet seasons like the present.

POTATO LAND: *Northwood*. You will get the largest produce off the land this season by sowing stubble Turnips when the Potatoes are off.

POULTRY: *G. Y.* You may trust Mr. Bailly as the best authority extant on the subject. The two passages you quote to prove the difference which you assert, are not opposed to one another. There is as much difference between them as there is between "not a black tail" and a "tail black, with the feathers edged with white, gradually blending into the black."

THE MACHINE: *A Correspondent* asked some time ago for *bona fide* information about Clayton's tile machine. The following is from a brick and tile maker, near Stone, in Staffordshire:—"I have now worked Mr. Clayton's pipe, tile, and brick machine for three seasons, and I have also been in the habit of working many other machines; in fact I have been working the machines ever since there have been machines, and I find none to beat Clayton's yet, for quality of the pipes and tiles or hollow brick, and the low price that they can be made at. And as to the pug mill, I have pugged with one horse from 20,000 to 25,000 of 2-inch pipes per day, and with a small horse. The plan of Clayton's new kiln answers remarkably well. I have burnt 22,000 of 2-inch pipes, and 4500 of bricks, with six tons of coals, while in the old kilns it would take from 10 to 11 tons of coals. I here give you the prices of pipes, as they can be made and burnt with Clayton's machinery and kilns, and tray shelves, and things proper: 1½ inch pipes, 9*s.* per 1000; 2-inch do., 11*s.* do.; 2½-inch do., 14*s.* do.; 3-inch do., 19*s.* do.; 3½-inch do., 11*s.* 4*s.* per doz.; 4-inch do., 17*s.* 8*d.* do. And larger sizes in proportion; at these prices, the clay to be good and the cost of coals not to exceed 12*s.* per ton delivered. A full set of trays is 500*l.*; you will want so many to keep the machine going properly.

WATER-DRILL: *A Hamilton*. If you intend to use it for clear water or perfect solutions of any kind, along with powdered manure and seed, Mr. Spooner's is in many respects better than the other. If for muddy water or imperfect solutions, Chandler's is the best.

## Markets.

### COVENT GARDEN, Aug. 13.

Vegetables and most kinds of Fruit are plentiful. Peaches and Nectarines are now tolerably well supplied. English Grapes are abundant, and the sale for them is heavy. Importations from the Continent of Potatoes, Carrots, and Artichokes are still kept up, and there are some good French Cherries and Apricots in the market; the latter fetch from 1*s.* 6*d.* to 3*s.* 6*d.* per dozen. English cherries are not quite so plentiful. Greengages and Orleans Plums from the South of France fetch 4*s.* per basket. There is also a large quantity of foreign Pines in the market. Carrots and Turnips fetch from 4*d.* to 6*d.* per bunch. Peas are very good, at from 6*d.* to 1*s.* per quart shelled, and from 2*s.* 6*d.* to 5*s.* per bushel sieve. Potatoes are becoming very much diseased. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonettes, Pinks, and Carnations.

### FRUIT

Pine-apples, per lb., 3 <i>s.</i> to 6 <i>s.</i>	Cherries, per lb., 6 <i>d.</i> to 8 <i>s.</i>
Grapes, hothouse, 1 <i>lb.</i> , 1 <i>s.</i> to 3 <i>s.</i> 6 <i>d.</i>	Strawberries, p. basket, 1 <i>s.</i> to 2 <i>s.</i>
Peaches, per doz., 12 <i>s.</i> to 20 <i>s.</i>	Gooseberries, p. bush, 2 <i>s.</i> to 3 <i>s.</i> 6 <i>d.</i>
Nectarines, per doz., 12 <i>s.</i> to 20 <i>s.</i>	Currants, p. hf. sieve, 1 <i>s.</i> to 2 <i>s.</i>
Apricots, per doz., 2 <i>s.</i> to 5 <i>s.</i>	Lemons, per doz., 1 <i>s.</i> to 2 <i>s.</i>
Plums, Orleans, p. pun, 1 <i>s.</i> to 2 <i>s.</i>	Oranges, per doz., 1 <i>s.</i> to 3 <i>s.</i>
Greenhouse, do., 1 <i>s.</i> 6 <i>d.</i> to 2 <i>s.</i> 6 <i>d.</i>	Seville, p. 100, 14 <i>s.</i>
Melons, each, 2 <i>s.</i> to 4 <i>s.</i>	Almonds, per peck, 3 <i>s.</i>
Apples, per bush, 3 <i>s.</i> to 5 <i>s.</i>	sweet, per lb., 2 <i>s.</i> to 3 <i>s.</i>

### VEGETABLES.

Cabbages, per doz., 6 <i>d.</i> to 9 <i>d.</i>	Garlic, per lb., 6 <i>d.</i> to 8 <i>d.</i>
Cauliflowers, each, 2 <i>d.</i> to 4 <i>d.</i>	Lettuce, Cab., p. doz., 6 <i>d.</i> to 8 <i>d.</i>
Greens, per doz., 2 <i>s.</i> 6 <i>d.</i> to 4 <i>s.</i>	— Cos, per score, 1 <i>s.</i> to 2 <i>s.</i>
French Beans, p. hf. sieve, 1 <i>s.</i> 6 <i>d.</i> to 2 <i>s.</i> 6 <i>d.</i>	Radishes, per doz., 1 <i>s.</i> to 2 <i>s.</i>
Rhubarb, p. bundle, 3 <i>d.</i> to 6 <i>d.</i>	Small Salads, p. pun, 2 <i>d.</i> to 3 <i>d.</i>
Potatoes, per ton, 40 <i>s.</i> to 100 <i>s.</i>	Horse Radish, p. bush, 1 <i>s.</i> to 3 <i>s.</i>
— per cwt., 3 <i>s.</i> to 5 <i>s.</i>	Mushrooms, p. pot., 1 <i>s.</i> to 2 <i>s.</i> 6 <i>d.</i>
— per bush, 2 <i>s.</i> 6 <i>d.</i> to 5 <i>s.</i>	Sorrel, per hf. sieve, 6 <i>d.</i> to 1 <i>s.</i>
Turnips, per doz., 3 <i>s.</i> to 4 <i>s.</i>	Artichokes, per doz., 3 <i>s.</i> to 6 <i>s.</i>
Cumbers, each, 2 <i>d.</i> to 3 <i>d.</i>	Fennel, per bunch, 2 <i>d.</i> to 3 <i>d.</i>
Colcary, per bundle, 3 <i>d.</i> to 1 <i>s.</i> 6 <i>d.</i>	Savory, per bunch, 2 <i>d.</i> to 3 <i>d.</i>
Carrots, per doz., 6 <i>d.</i> to 8 <i>s.</i>	Thyme, per bunch, 2 <i>d.</i> to 3 <i>d.</i>
Spinach, per sieve, 1 <i>s.</i> to 2 <i>s.</i>	Parsley, p. doz. bunches, 3 <i>s.</i> to 5 <i>s.</i>
Beet, per doz., 1 <i>s.</i> to 1 <i>s.</i> 6 <i>d.</i>	Mint, green, per bunch, 2 <i>d.</i> to 4 <i>d.</i>
Leeks, per bunch, 3 <i>d.</i> to 4 <i>d.</i>	Basil, do., per bunch, 6 <i>d.</i>
Shallots, per lb., 6 <i>d.</i> to 8 <i>d.</i>	Marjoram, do., do., 6 <i>d.</i>
	Watercresses, p. 12 bun., 8 <i>d.</i> to 10 <i>d.</i>

### HOPS.—BOROUGH MARKET, Aug. 6.

Messrs. Pattenden and Smith report that the accounts continue to come, on the whole, rather more favourable; still many grounds are full of vermin, and not likely to recover, besides which there is a great complaint of slack bine and the backward state thereof. The market is in a firm and healthy state, and the duty is estimated at from 150,000*l.* to 155,000*l.*

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 11.			
Prime Meadow Hay 100 <i>s.</i> to 110 <i>s.</i>	Clover .....	105 <i>s.</i> to 120 <i>s.</i>	
Inferior do. ....	90 95	Second cut .....	85 100
Rown .....	50 60	Straw .....	83 86
New Hay .....	50 80		E. J. DAVIS.

CUMBERLAND MARKET, Aug. 11.			
Prime Meadow Hay 105 <i>s.</i> to 115 <i>s.</i>	Inferior Clover .....	100 <i>s.</i> to 112 <i>s.</i>	
Inferior do. ....	84 95	New do. ....	50 100
New Hay .....	40 84	Straw .....	34 38
Old Clover .....	120 130		JOSHUA BAKER.

WHITECHAPEL, Aug. 11.			
Fine old Hay .....	100 <i>s.</i> to 105 <i>s.</i>	Old Clover .....	120 <i>s.</i> to 125 <i>s.</i>
Inferior do. ....	90 95	Inferior do. ....	100 110
New Hay .....	75 80	Fine new do. ....	90 98
Inferior do. ....	50 55	Second cut .....	84 108

COAL MARKET.—FRIDAY, Aug. 12.  
Hollywell, 19*s.*; West Hartley, 18*s.* 6*d.*; Wallend Haswell, 18*s.* 6*d.*; Wallend Stewarts, 18*s.* 6*d.*; Wallend Tees, 18*s.* 6*d.*—Ships at market, 77.

### WOOL.

BRADFORD, THURSDAY, Aug. 11.—The supplies coming to market, except of colonial, are not an average of former years; and as the spinners, from their long absence as buyers, are getting their stocks more nearly used up, they are now free to look, but cannot afford to give the prices demanded by the staplers.  
YARNS.—There is more doing in yarns; and anything cheap, suitable for shipping is inquired after. In spoils there is also a better feeling, and the business may be considered better than at the closing of last month.

PIECES.—The more satisfactory accounts from the East, and the beautiful weather which appeared with this month, give a more cheerful tone; and altogether things may be said to be better. There is more demand, and prices are firmly maintained.

### SMITHFIELD.—MONDAY, Aug. 8.

We have a larger supply of Beasts, and a large proportion are of middling quality; trade is slow, but choicest kinds cannot be quoted lower. There are a few more Sheep, but the average quality is very indifferent; the consequent deficiency in the weight of mutton causes in some instances a slight advance. Trade is heavy for Lambs, and late prices are barely maintained. Calves are not selling quite as well as on Friday. From Germany and Holland there are 2276 Beasts, 5010 Sheep, and 295 Calves; from Scotland, 220 Beasts; 300 from Norfolk and Suffolk; and 1400 from the northern and midland counties.

Per st. of 8 lbs.—s	d	s	d	Per st. of 8 lbs.—s	d	s	d
Best Scots, Here-	4	4	to 4	Best Long-wools—	4	6	to 4
ford, &c. ....	4	4	to 4	Do. Shorn .....	0	0	to 0
Best Short-horns 4	2	4	to 4	Ewes & 2d quality	3	10	to 4
2d quality Beasts 2	8	3	to 6	Do. Shorn .....	0	0	to 0
Best Downs and				Lambs .....	4	8	to 5
Half-breds .....	5	0	to 5	Calves .....	3	4	to 4
Do. Shorn .....	0	0	to 0	Pigs .....	3	0	to 4
Beasts, 4532; Sheep and Lambs, 29,700; Calves, 361; Pigs, 320.							

### FRIDAY, Aug. 12.

We have not a large supply of Beasts, and a considerable proportion were left over from Monday last. The average quality is inferior, consequently choice ones are in demand at rather advanced rates. There are very few good Sheep on offer; the demand is active, at fully Monday's quotations. Trade is scarcely so brisk for Lambs and Calves, but there is no alteration in price. Foreign supply consists of 183 Beasts, 2410 Sheep, 531 Calves, and 60 Pigs. The number of Milch Cows is 85.

Per st. of 8 lbs.—s	d	s	d	Per st. of 8 lbs.—s	d	s	d
Best Scots, Here-	4	6	to 4	Best Long-wools—	4	6	to 4
ford, &c. ....	4	6	to 4	Do. Shorn .....	0	0	to 0
Best Short-horns 4	2	4	to 4	Ewes & 2d quality	3	10	to 4
2d quality Beasts 2	8	3	to 6	Do. Shorn .....	0	0	to 0
Best Downs and				Lambs .....	4	8	to 5
Half-breds .....	5	0	to 5	Calves .....	3	4	to 4
Do. Shorn .....	0	0	to 0	Pigs .....	3	0	to 4
Beasts, 794; Sheep and Lambs, 11,120; Calves, 766; Pigs, 800.							

### MARK LANE.

MONDAY, Aug. 8.—The weather since Friday has continued fine, with N.E. winds. The supply of Wheat from Essex and Kent this morning was probably the largest since last harvest; a small portion of it was disposed of at a decline of 2*s.* per qr. upon the prices of this day's market; but even at this reduction the bulk of it remained unsold at a late hour. A few retail sales were effected in foreign, at an abatement of 1*s.* to 2*s.* per qr. upon our quotations of last Monday, and a very limited business only was transacted. In consequence of the advance of prices in Italy, floating cargoes of Black Sea Wheat have brought 2*s.* more money. Barley is in fair demand at last week's prices. Beans are a slow sale at 1*s.* per qr. decline. Peas are unaltered in value. Oats is, per qr. cheaper. For barrel Flour there is no demand.

### PER IMPERIAL QUARTER.

Wheat, Essex, Kent, & Suffolk ..	White	54-60	Red	50-57		
—	fine selected runs ..	ditto	53-65	Red	52-56	
—	Talavera ..	59-63				
—	Norfolk ..		Red	—	—	
—	Foreign ..	39-62				
Barley, grind. & distil., 23s to 26s ..	Chev.	24-30	Malting	25-29		
—	Foreign, grinding and distilling ..	25-31	Malting	29-33		
Oats, Essex and Suffolk ..		17-22				
—	Scotch and Lincolnshire ..	22-25	Feed	17-22		
—	Irish ..	21-24	Feed	19-20		
—	Foreign ..	Poland and Brew	18-24	Feed	16-22	
Rye ..		29-32	Foreign	—		
Rye-meal, foreign ..		—				
Beans, Mazagan ..	23s to 37s ..	Tick	34-39	Harrow	34-39	
—	Pigeon ..	35s — 41s ..	Winds	—	Longpod	
—	Foreign ..	33-41	Small	33-41	Egyptian	31-33
Peas, white, Essex and Kent ..	Boilers	40-44	Suffolk	40-45		
—	Maple ..	32s to 38s ..	Grey	31-36	Foreign	32-45
Maize ..	White	—	Yellow	—		
Flour, best marks delivered ..	per sack	42-50				
—	2d ditto ..	ditto	35-43	Country	35-43	
—	Foreign ..	per barrel	25-28	Per sack	39-43	

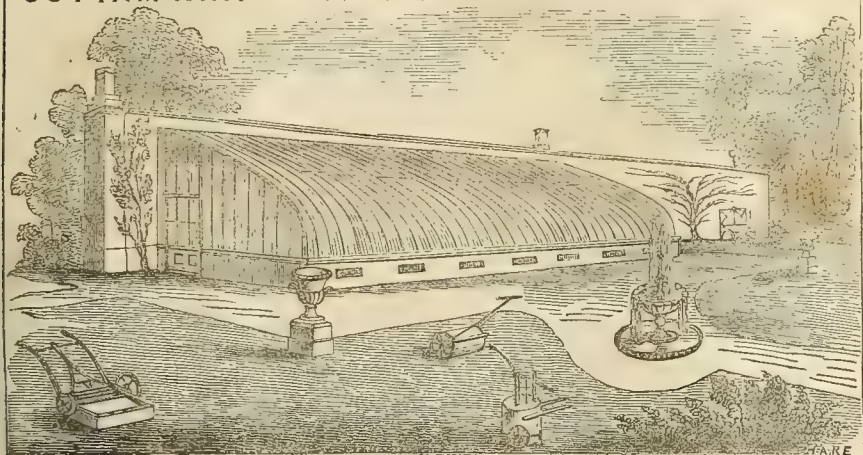
FRIDAY, Aug. 12.—The arrivals of foreign grain and English Wheat have been considerable during this week. A portion of the English Wheat left over from Monday's market was disposed of at something under this day's prices, but a larger quantity remained unsold. Business in foreign is so limited that quotations must be considered entirely nominal, millers being disinclined to purchase and holders careless of selling at a reduction, owing to the improved tone of the Continental markets, and the accounts of our own crops. The Greek merchants having generally withdrawn their cargoes, scarcely any floating business has been transacted. There is no alteration in the value of Barley, Beans, and Peas. Oats are a slow sale at a decline of fully 1*s.* per qr. For barrel Flour there are purchasers at a reduction of 1*s.* per barrel, but holders are not inclined to give way.

### IMPERIAL AVERAGES.

		Wheat	Barley.	Oats.	Rye.	Beans.	Peas.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
July	2.....	47 3	29 10	30 6	32 6	40 1	35 10
	9.....	47 8	29 2	30 11	35 11	40 8	35 0
	16.....	49 8	28 11	30 11	34 10	40 5	36 8
	23.....	51 10	29 4	21 6	35 3	40 4	37 10
	30.....	52 7	29 7	22 2	36 8	40 5	36 3
Aug.	6.....	53 9	29 9	22 6	37 3	40 7	37 10
Aggreg. Averb.		50 6	29 5	21 4	35 4	40 5	36 5



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9 by 7, 9 by 7 ... 20s  
10 by 8, 10 by 8 ... 20s  
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N.B. There will be no sale on the first Tuesday in September, as the London season will have closed; but the next sale will take place on Tuesday, the 20th September.

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# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 34.—1853.]

SATURDAY, AUGUST 20.

[PRICE 6d.]

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## HOLLYHOCKS, DAHLIAS, ETC.

### NATIONAL FLORICULTURAL SOCIETY.—

21, REGENT STREET.  
The Eleventh Meeting of the Season will be held on THURSDAY next, August 25, at 3 o'clock, when admirers of the HOLLYHOCK and DAHLIA may calculate that an exhibition of those Flowers will await them worthy the popularity such noble objects have attained. The Special Judges summoned are—  
Mr. Downie, Edinburgh.  
" Long, Watford.  
" Parsons, Welwyn.  
" Moore, Chelsea.  
" Robinson, Fimlico.  
" Dean, St. John's Wood.  
Messrs. Bircham, Bragg, Chater, Paul, Turner, and other growers, are likely to contribute specimens.  
Note.—All Flowers, &c., must be entered and staged by 1 o'clock.  
JOHN EDWARDS, Hon. Sec.

## TO DAHLIA GROWERS.

NORFOLK AND NORWICH HORTICULTURAL SOCIETY.—THE DAHLIA SHOW will be held at St. Andrews' Hall, Norwich, on WEDNESDAY, the 7th of September next. Amongst others, Prizes of 5l., 3l., and 2l., will be offered for 24 dissimilar Dahlia Blooms (Fanciers excluded), open to Amateurs, being Subscribers, and Nurserymen in the United Kingdom. No entrance fee. ARTHUR PRESTON, Hon. Sec.  
Norwich, 20th August, 1853.

CHICHESTER HORTICULTURAL SOCIETY, THURSDAY, Sept. 1, in the Gardens of the Episcopal Palace. A Military Band will attend.  
H. SILVERLOCK, Jun., Secretary.

TROWBRIDGE GRAND HORTICULTURAL EXHIBITION, open to all growers, will be held in the Ground adjoining the Railway Station, Trowbridge, on Wednesday, August 24; Silver Cups and other valuable prizes are offered. Schedules of the Prizes, &c., may be had of the Hon. Sec., Mr. JOHN GRAHAM FOLEY, Parade, Trowbridge.

BURY FLORAL AND HORTICULTURAL SOCIETY.—The First Exhibition of this Society will be held in the Large Room of the Athenaeum, on the 9th of September next, to consist of DAHLIAS, FUCHSIAS, PLANTS, FRUITS, VEGETABLES, &c. &c., for which liberal Prizes will be awarded. Persons intending to exhibit must send a written notice to the undersigned on or before the 26th inst., giving Name and Address, with a List of the Articles intended to be exhibited. Schedules of Prizes and other information may be had on application to  
ROBERT J. KAYE, Secretary.  
Bury, Lancashire, August 20, 1853.

DAHLIAS.—Upwards of Fifteen Pounds will be given in Prizes to Nurserymen and Amateurs at Newbury, on FRIDAY, September 2. Notice of competition, and payment of entrance fees, must be made on or before Tuesday, the 30th inst. For further particulars apply to the Secretaries, 9, Northbrook Street, Newbury, Berks.

## CAMELLIAS.

CHANDLER AND SONS, NURSERYMEN, Wandsworth Road, Surrey, continue to supply strong healthy CAMELLIAS, with flower buds, at 30s and 42s. per dozen, larger sizes in proportion.  
Post Office orders made payable at Rungton Cross.

## NOW IN BLOOM,

H. LANE AND SON'S NURSERY, Great Berkhamstead, about ten minutes' walk from the London and North-Western Railway Station, a choice collection of Hollyhocks, Dahlias, Verbenas, Bedding Geranium, &c. (grown to prove their quality); also Roses. Selection should be made now, and sent at their proper season. Evergreens, consisting of Conifers, Rhododendrons, &c., with all kinds of Trees and Shrubs suitable for winter garden, such as may be had at Elvaston Castle, Derby. Each Plant is grown to form single specimen, and to produce immediate effect, many being of large size.

## ROSES

EDWARD DENYER invites the attention of noblemen, gentlemen, &c., to his unrivalled COLLECTION of AUTUMNAL ROSES, now in full bloom, and will continue in flower for the next three months; all Dahlias, &c. A general Nursery Stock will be seen, viz., Fruit Trees, Evergreens, Shrubs, &c., of the finest growth of all size. Gardens and Pleasure Grounds tastefully arranged and placed on the most reasonable terms. Orders taken for plants at this time, and delivered in November next.  
Nursery, Loughborough Road, Brixton, near London.

## TO ADVERTISERS.

### THE ADVERTISEMENT DUTY being now REPEALED, the PROPRIETORS of the GARDENERS' CHRONICLE

are happy to inform those who honour them with their Advertisements, that there will henceforward be a reduction of 1s. 6d., the full amount of duty, from the customary charge for each Advertisement.

Gardeners out of place can now insert Advertisements of not more than four lines in length for 1s. 6d. each.

## STRONG VINES IN POTS.

EAGLE AND HENDERSON, by appointment NURSERYMEN, SEEDSMEN, and FLORISTS to the Queen, beg to intimate to their friends and the trade that their stock of young Vines are very superior this season. Plants from Eyes, 2 and 3 years, 6 to 9 feet, 3s. 6d. each; Ditto, 1 year, 2 feet, 2s. each. Usual discount to the trade.  
Shrub Bank Nurseries, Leith Walk, Edinburgh.

## SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER invites attention to the above Flowers, of which he has a splendid Collection now in full bloom, open to the inspection of visitors on any day excepting Sundays.—Nurseries, Saffron Walden, Essex.

## CHOICE CALCEOLARIA, CINERARIA, & PANSY SEEDS.

GEORGE WHEELER has now ready to send out Seeds of his fine CALCEOLARIA, saved from the most beautiful varieties; also CINERARIA and PANSY, of first-rate quality, each, at 2s. 6d. per packet.—Warrminster, August 20.

## LIVING FERNS FROM AFRICA.

ROBERT KENNEDY has just received another valuable importation of Arborescent and other FERNS from the Cape, in fine healthy condition, and would feel obliged by early orders to prevent disappointment. A General Assortment of Foreign and British Ferns, as usual.  
BEDFORD CONSERVATORY, Covent Garden, London, August 20.

## CHOICE FLOWER SEEDS.

FINE fertilised CALCEOLARIA SEED, saved from the best collection in England, 2s. 6d. per packet; fine selected HOLLYHOCK SEED, warranted from Chater's sorts, 1s. 6d. per packet; CINERARIA SEED, from fine named varieties of 1852, 1s. 6d. per packet; ANTIRRHINUM SEED, saved from the best kinds, per packet, 1s. 6d.; AQUILEGIA or COLUMBINE, from a collection of the best sorts, 6d. per packet.  
HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

T. LOCKHART, SEEDSMAN and FLORIST, Parson's Green, Fulham, near London, will forward his LIST of BULBS on and after the 1st of September next, free by post. He has now ready for sale 20,000 STRAWBERRY PLANTS, in 10 best sorts, at 3s. 6d. per 100, of which a List may be had.

EDWARD GEORGE HENDERSON and SON, Wellington Road, St. John's Wood, London, are now prepared to send out by post their newly-saved seed of CALCEOLARIAS and CINERARIAS. Great care has been taken in selecting the Seed, and Messrs. E. G. H. & Son can, with confidence, recommend it to produce first-class flowers equal with any named varieties.

Directions for sowing, &c., will be forwarded. Calceolaria, 1st quality, 5s.; 2d ditto, 2s. 6d. Cineraria, 2s. 6d. and 6s. packets.

ROSES and HOLLYHOCKS.—The extensive Collections growing at the Cheshunt Nurseries are now finely in bloom, where admirers of these Flowers are respectfully invited to view them. Trains of Eastern Counties Railway almost hourly to Cheshunt or Waltham.  
A. PAUL & SON, Nurseries, Cheshunt, Herts.

## FRUIT WANTED.—

GOOD PINES. | GOOD GRAPES.  
" PEACHES. | " NECTARINES.  
AND OTHER CHOICE PRODUCE.  
Apply to GEORGE TAYLOR, Jun., Foreign and British Fruit Salesman, St. John's Market, Liverpool.

## NEW AND RARE PLANTS.

MESSRS. VEITCH & SON are now prepared to execute orders for the following New and Beautiful Plants, of which they have a fine healthy stock.

## PHILEAS BUXIFOLIA.

A beautiful dwarf evergreen hardy Shrub, with small dark foliage, discovered by Mr. William Lobb on the Andes of Patagonia, beyond the snow line, producing freely its beautiful large bell-shaped deep rose-coloured flowers, the petals of which are of great substance. Although a hardy plant, it is well adapted for greenhouse culture. It was exhibited at the Horticultural Society's Garden, Chiswick, on Saturday, the 11th of June, and received the "First Prize" for New Plants, and was considered the greatest novelty of the exhibition. Strong well established Plants at 21s. each, with one over to the Trade when three are taken. A few extra strong Plants, at 42s. each.

## HOYA FRATERNA (BLOOM).

A fine new and very distinct species sent from Java, by Mr. Thomas Lobb. The flowers, which are produced in large umbels, are of a pale, yellowish buff, shaded with brown; the foliage is fine, some of the leaves measuring 1 foot in length, and remarkable no less for their great size than they are for their firmness and thickness. It is figured in "Curtis's Botanical Magazine" for December, 1852, tab. 4634. Strong, well-established Plants, at 21s. each, with one over to the trade when three are taken.

## IXORA LOBBI.

This fine species of Ixora was discovered by Mr. Thomas Lobb, in the Seribu Mountains, Java. It is a Plant of fine foliage and habit, producing abundantly its bunches of orange-scarlet flowers. Strong, well-established Plants, at 21s. each, with one over to the trade when three are taken.

Nurseries, Exeter and Chelsea.—August 20.

## GERANIUM "BRILLIANT."

OSBORN and SONS are now prepared to send out the above-named Geranium, which they consider well adapted for bedding purposes. Colour bright scarlet, habit dwarf and compact, foliage margined with white, and flowering profusely till late in the season. Price 5s. each, with the usual discount to the Trade.—Fulham Nursery, near London.

## THE NIMROD STRAWBERRY.

LUCOMBE, PINCE, and CO., purpose sending out in the first week of October next, healthy plants of this much admired Strawberry. The merits of this fine fruit have been so universally acknowledged, that L. P. & Co. feel it is unnecessary to enter into a long detailed account; they therefore respectfully refer to the opinion of Dr. Lindley in the *Chronicle* of July 23rd, page 472, and also that of Mr. Spencer in the same publication of July 30th, page 485. The stock is very limited, and, though, in order to get a large supply they ought to have kept it over another season, they have been solicited by so many persons to let it out this season, that they are unwilling to disappoint their friends. Good healthy plants, 60s. per 100. For the convenience of those who may wish to force it, or to have extra strong plants, a limited number of early layers have been put into 45-sized pots, which will be well established by the first week of October, at 6l. per 100.  
Exeter Nursery, Exeter, August 20.

## BEACH'S QUEEN, STRAWBERRY PLANTS.—

Having taken several prizes these three years, with Queen Strawberries, thousands of them weighing upwards of 2 oz., many of them I exhibited in the Crystal Palace upwards of 3 oz.; and these last three years, at Chiswick, they gained three Knightian medals, and the head prize at the great show at Leves. See Dr. Lindley's opinion of them in the *Gardeners' Chronicle*, of the 10th July, 1852, and likewise Mr. Cuthill's account of my place in the same Journal, of the 24th July. I have a large stock of Plants, the true British Queen, now ready for planting, at 5s. per 100, box included; and for forcing, taken up with balls, at 10s. per 100, packed in basket (to be returned).—Post Office orders on Hounslow, to Mr. T. BEACH, Strawberry Grounds, Worton, Isleworth, Middlesex.

## STRAWBERRY PLANTS.—The under-mentioned

first-rate varieties are now ready for sending out:—  
Trollop's Victoria, very superior, 5s. per 100; Ajax, 20s. do.; Ruby, 20s. do.; Myatt's Surprise, 3s. do.; Myatt's Eleanor, the best and latest bearing Strawberry in cultivation, 3s. do.; British Queen, 3s. do.; Alice Maud, 3s. do.; Black Prince, very early, 3s. do.; Prolific, very fine and early, 3s. do.; Crompton's Perpetual or Double-bearing Strawberry, 3s. do.

A remittance must accompany the order, either by Post Office Order or Penny Postage Stamp, on receipt of which the Plants will be sent in hamper, and package free for all orders above 5s.  
EDWARD THOMAS, Nurseryman, Seedsmen, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

## SUPERB HOLLYHOCKS, ETC.

YOEULL and CO. have now to offer a splendid collection of the above, in strong healthy plants, comprising the following fine varieties, at 12s. per dozen:—Walden Gem, Mr. C. Barron, Princess Alice, Commander-in-Chief, Snowflake, Rosa Alba, Flower of the Day, Venosa Rubra, Formosa, Magnum Bonum, Princess Royal, Black Prince, Eclipse, Obscura, Perfection, Rosa Rubra, Fireball, Maiden's Blush, Lilac Perfection, Queen, Comet, Mulberry Superb, Princess Helena, Conspicua, &c.  
PHLOXES.—The following beautiful varieties at 9s. per dozen, viz.:—Rot Leopold, Napoleon, Abdel Madjid, Eliza, Fen Bouquet, General Lamoriciere, Imperialis Major, General Negrier, Madame Frel, Imbriate, Madame Lierval, Spencerii, Villaret Joyeuse, Eucharis, Anais, with many other fine varieties.

## CHRYSANTHEMUMS FOR EXHIBITION.

YOEULL & Co. are now sending out a very choice collection of the above, comprising the Large-flowering and Pompon and Liliputian varieties; they are confidently offered as being the very best of the recent introductions, and which will not fail in giving satisfaction to the purchaser.

STRONG PLANTS, for flowering this autumn, 9s. per doz.; also GERANIUM BOULE DE NEIGE, a pure white-flowering horse-shoe-leaved variety, with fine trusses of bloom, 2s. 6d. each.  
" KINGSBURY PET, a bright rosy salmon, trusses large, with dark horse-shoe leaf, 2s. 6d. each.

" FLOWER OF THE DAY, strong, 9s. per dozen, smaller, 6s. per dozen.  
" MOUNTAIN OF LIGHT, strong, 18s. per dozen; smaller, 12s. per dozen.

" GOLDEN CHAIN, 18s. per dozen.  
CALCEOLARIA MAGNIFICENT, a splendid bedding variety, flowers of rich crimson, surmounted with a bright yellow crown, very distinct and fine, 2s. 6d. each.

" CRIMSON KING, another fine bedding variety, flowers of deep crimson, very dark and rich, and does not fade, 2s. 6d. each.

FUCHSIA GLORY (Banks'), 2s. 6d. each.  
" DUCHESSE OF LANCASTER, 2s. 6d. each.

" LADY MONTAGUE, 2s. 6d. each.  
LILIUM LANCIFOLIUM RUBRUM, flowering plants, in pots, 18s. per dozen.

CAMELLIAS, of the finest kinds in cultivation, strong plants, 1 to 1½ feet high, 21s. per dozen.

## STRAWBERRIES.

The following are strongly recommended, and can be supplied in strong plants, true to name:—

	Per 100.—s.d.		Per 100.—s.d.
British Queen (Bates's fine variety), the largest and very best in cultivation	3 6	Dickson's Royal Pine (highly recommended)	3 6
Cuthill's Prince of Wales	5 0	Kitley's Goliah	2 6
" Black Prince	3 6	Swainston's Seedling Pine	3 6
Myatt's Eleanor	3 6	Turner's Pine, fine and late	5 0
" Globe	3 6	Black Raspberry	5 0
" Prolific	3 6	Bieton Pine	3 6
Grove End Scarlet	3 6	Old Carolina	3 6
		Round White Carolina	5 0

Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 100 miles of the Nursery.—Royal Nursery, Great Yarmouth.







## PICEA BRACTEATA.

**MESSRS. VEITCH AND SON, of Exeter, and the** Exotic Nursery, Chelsea, have much pleasure in stating that they have been fortunate enough to raise a limited number of Seedling Plants of the above beautiful NEW CALIFORNIAN PINE; of which a full description was given by Dr. Lindley, in the leading article of the *Gardener's Chronicle* of July the 9th. The Plants are two years' Seedlings, established in small pots, price 63s. each. Specimens of the cone and foliage can be seen by visitors, at either of Messrs. Verrill's Nurseries.—August 20.

**STRAWBERRIES, Four New Varieties for £1.—**Nicholson's AJAX, very large and handsome, most exquisite flavour, unequalled as a dessert fruit, and forces well.

Nicholson's RUBY, medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; forces well.

Nicholson's CAPTAIN COOK is a first-rate market fruit; colour scarlet, very large size, great bearer, and carries well; plant remarkably strong and hardy.

Nicholson's MILL-ASKET.—Nothing can exceed this fine sort as a market fruit; it is of a very bright scarlet colour, general shape round, gets very large, but never out of shape; it is a tremendous bearer, preserves well, and will carry any distance. Plants remarkably robust and healthy.

These splendid Strawberries have been the wonder and admiration of all who have seen them; the two first for their excellency as a dessert fruit, the two latter for their abundance, size, and colour, and other good qualities as a market fruit.

These four really good varieties of Strawberries can alone be got of Mr. W. Nicholson, for 1l. per 100; or any two of the above for 12s., box included. Post Office orders made payable at Yarm, Yorkshire.—Eggescliffe, near Yarm, Aug. 20.

**CUTHILL'S PRINCE OF WALES AND BLACK PRINCE STRAWBERRIES.**—Strong plants will be sent out on the 15th of August.—I need not say more in their favour than that they have been in bearing from the 15th of June to the 1st of August, and all sold in Camberwell, and in pound punnets, the two sorts producing upwards of one ton weight. The same gentlemen and gardeners who judged the Black Prince seven years ago have also pronounced the Prince of Wales to be the best late Strawberry, and, like its royal parent, an enormous bearer, but much larger, and good flavoured, and will make the best of all for forcing as a late sort, and is good for preserving; 15s. per 100, or 10s. for 50. Black Prince prepared for forcing, 7s. 6d. per 100; Fine, for planting out, 5s. per 100. Extra plants allowed to the trade.

Cuthill's Pamphlet on the Potato, containing the best way of avoiding the Disease, as well as Growing Large Crops. This Treatise is founded strictly on the laws of Nature. It also contains Asparagus, Seakale, Rhubarb, Strawberries, Cucumbers, Melons, &c. Price 2s., or by post, 2s. 4d. Also, CUTHILL on Market Gardening Round London. The first work of the kind ever published. Price 1s. 6d., or by post 1s. 8d. Post Office Orders to be made payable at Camberwell Green.

JAMES CUTHILL, Camberwell, London.

## The Gardeners' Chronicle.

SATURDAY, AUGUST 20, 1853.

## MEETINGS FOR THE ENSUING WEEK.

THURSDAY, August 25.—National Floricultural, 3 P.M.  
CONCERT SHOWS FOR THE PRESENT MONTH.—23d: Handsword and Jodelle.—30th: Long Buckby, Banbury, and Wolverhampton.—31st: Colchester, Thorbury, Wycombe, and Salisbury Dablia.

It is not many years since the SEXES of PLANTS were either unknown or imperfectly guessed at. When the experiments of LINNÆUS and his general conclusions were put upon record, doubters still remained, and the validity of his conclusions was stoutly attacked. At last the question became settled in the minds of all men, except some transcendental Germans. Had it been otherwise, the modern experiments in hybridising and cross-breeding would at least have proved conclusive; and no rational being is now to be found who thinks the question should be reopened.

But it has been far otherwise with that large race which LINNÆUS wisely called Cryptogams, and the French unwisely styled Agams. LINNÆUS, from *a priori* considerations, was so persuaded that all plants possess sexes, that he ascribed his inability to discover them to the imperfection of his means of observation. He was content to await the verdict of futurity. The French, on the contrary, rushed to the conclusion that what they could not find could not exist—an opinion, the rashness of which recent discovery has fully exposed. None, indeed, have been more successful in demonstrating the error than the French themselves.

Modern research has shown that in the greater part of the lowest forms of vegetable life, and probably in all, organs exist of two sorts; the one of the nature of seeds, and capable under certain circumstances of reproducing the plant; the other minute spiral bodies having the power of active locomotion in many cases. The former are called SPORES, the latter ANTHEROZOIDES. So that if the Cryptogamic races have neither stamens nor pistil, like the flowers with which we are familiar, they, at least, possess two sorts of organs, one of which, the spore, is reproductive.

The difference, however, between antherozoids and pollen-grains is obviously so great that naturalists have hitherto refused to recognise in them a male principle, in the absence of proof that it belongs to them. The discovery in peculiar organs among Cryptogamic plants of spiral bodies, furnished with vibratile cilia, moving with all the appearance of animal life, and perishing instantly under the influence of certain substances (such as iodine) which do not affect the physical condition of the fluid in which the active motion occurs, was no doubt a very surprising fact; but there was nothing to show that these antherozoids were required to fertilise the

spores. Their very general presence in addition to spores no doubt gave much probability to the opinion, but fell far short of demonstrative proof.

Some recent observations of M. THURET now, however, increase the circumstantial proof to such a degree, that even those who have been most sceptical as to the sexuality of Cryptogamic plants must feel that the evidence is irresistible. Although his proof is limited to sea-weeds, it can hardly be objected to as illustrating the nature of other races.

Sea-weeds bear spores and antherozoids; that is well known. Certain sea-weeds, like Willows and Poplars, are what is termed dioecious; that is to say, some individuals are absolutely female, bearing spores only, while others are absolutely male, bearing antherozoids only. M. THURET has at last proved that the presence of the one is necessary to the other, if fertilization is to result. By placing certain sea-weeds in a damp atmosphere, the spores and the cells containing antherozoids (ANTHERIDS) are freely expelled, and remain on the surface of the fronds, from which they can be readily collected and transferred to vessels containing sea-water. M. THURET found that when put into separate vessels, the antherids placed by themselves immediately emit their antherozoids; the latter move about with great activity, even for two days successively, but on the third begin to decompose. Spores, also, when placed in sea-water by themselves, retain their vitality for some time, not decomposing in less than a week; they even make attempts at growth, but abortions are the only consequence, and at last they perish also. But it is far otherwise when the spores and antherozoids are mingled in the same vessel of sea-water. Then occurs a series of most curious phenomena. The antherozoids attack the spores, creep, as it were, over their surface, and communicate, by means of their vibratile cilia, a rotatory motion, which is sometimes very rapid. "Nothing," says M. THURET, "is more curious than the appearance of great brown spores rolling and tumbling about in the midst of a swarm of antherozoids." The result is the fertilization of the spore, which then begins to grow, and in ten days becomes a little cellular brown oval body, supported by a transparent rootlet.

Here, then, we at last have proof that sexes do really exist in sea-weeds, the spores being seeds, and the spiral active antherozoids having the power of the pollen-grains of the higher orders of plants. M. THURET was even of opinion that he had procured a real male between *Fucus serratus* and *Fucus vesiculosus*.

It is impossible to over-estimate the importance of this fact; for it settles the real nature of the organs of Cryptogamic plants, and finally proves them to possess sexuality. That being so, quite a new interest attaches to a department of gardening now becoming the fashion, and in which we may expect some interesting changes. Ferns are among the most beautiful and most easily grown of all plants; they too have their spores and antherozoids. Therefore, they may be expected to intermix and produce hybrids. It has been, indeed, long since asserted that true hybrid Ferns exist in the case of *Gymnogrammas*. This, although doubted by almost every body, now seems to be quite possible, and if so, we may expect other Ferns of hybrid origin to be in time produced, if they do not already exist. That would be, indeed, a triumph of art over nature; for it might—nay, it certainly would—have the effect of rendering the beautiful tropical forms of the order hardy, or at least much more so than they now are. The finest of all Ferns are those of hot countries; our own wild species are altogether insignificant. What an addition, then, it would be to the decorations of gardens if the rocky banks and shady dells in which *Lastræas* and *Pteridis* are now cultivated could be enriched with the glorious fronds of exotic *Aspidiums* and *Polypodies*. The experiment would certainly be very easy—much easier than common hybridising—and practicable by those whose skill and patience fail in the presence of such difficulties as attend the setting of a *Rhododendron*. In what way it should be tried, we will endeavour to explain on a future occasion.

ALL doubt as to the existent wide prevalence of the POTATO MURRAIN must have vanished from the mind of every unprejudiced observer. Phenomena are recurring precisely in the same order, and with the same intensity, as in 1845, and we have every reason to fear similar results, though it is impossible to predict the precise amount of loss which may be expected. And unhappily there is nothing new to say either as to cause or remedy. The present system of high cultivation will not and cannot be checked, and it is almost vain to hope that any general measures, such as were proposed in this Journal some time since, will be adopted for the

amelioration of the seed. Indeed those plans which have been most earnestly recommended are frequently the first to fail most signally, as for example that of planting Cabbages between the rows, with a view to dispose of superabundant nitrogenous matter. Though the proposal itself was clearly wrong in point of theory, there seemed to be some ground for believing that the result in certain cases had been good, but in one, under our eye at present, the only portion of a remarkably fine crop of early Ash-tops, which has been materially diseased, is precisely that between the rows of which there is a splendid growth of the large Savoy. As regards this especial variety of Potato, it is worthy of remark that the *Botrytis infestans* has never yet been observed upon the leaves, though it may generally be found upon the diseased roots. On the contrary, the base of the stem is almost always covered with incipient *Fusisporium Solani*, which occurs almost uniformly on those tubers which are affected at the same time with the wet and dry rot, for the two diseases are frequently associated.

As on previous occasions when the Potato murrain was most prevalent, other forms of decay are presenting themselves in other objects of cultivation. The Parsnip crop, for example, is much affected, and as the Potato murrain is accompanied by *Botrytis infestans*, so that on Parsnips is indicated by a closely allied parasite, *Botrytis macrospora*, UNGER, which forms white patches on the under



BOTRYTIS MACROSPORA.

side of the leaves, and as rapidly exhausts the chlorophyll, though not so rapidly as in the Potato. The fertile stems of the mould make their exit by the stomates, as well figured in 1833 by UNGER, and before they appear the mycelium which runs amongst the large intercellular passages already acts upon the chlorophyll, so as to cause a slight difference in the colour of the upper surface, by which its presence is most clearly indicated. Our figure represents three highly magnified plants of the *Botrytis*, both before and after the spores have fallen. M. J. B.

No one who has seen the effect produced by the gaseous matter proceeding from a sewer on the superincumbent turf, as pointed out many years ago by Sir H. DAVY, can help being struck by the fact that in highly manured land the air contained in its cavities cannot be the same in composition with atmospheric air. The necessary inferences, however, have not always been kept in view, and till the recent examination of the subject by BOUSSINGAULT and LIEBWY, we are not aware that in any case the proper modifications have been taken into account in the theory of cultivation. When organic matters are contained in the soil, they give rise, under suitable conditions of air, moisture, and temperature, to carbonic acid and water; or, if they are azoted, to ammonia; and in lands abounding in humus, the combustion may be so complete, especially under the influence of a warm climate, or where repeated stirring of the soil is practised instead of manuring, as to leave the ground positively sterile. It is clear that the carbonic acid so disengaged must have considerable influence on vegetation, whether absorbed directly by the roots or discharged into the circumambient air ready for reception by the leaves. In estimating, however, the quantity of carbonic acid which can act upon the vegetation of a given surface, inquiries have been hitherto almost exclusively directed to the extremely small portion contained in the atmosphere, or carried into the ground with the moisture which falls from it, to the neglect of that which emanates directly from the soil.

It becomes, then, a point of interest to ascertain to what extent the air contained in cultivated soil is modified by the process of decomposition, and it is to this that the observations of BOUSSINGAULT and LIEBWY have been directed. The great point of difficulty was to collect the air in such a way as to have it as free as possible from any extraneous admixture; a rapid exhaustion would obviously have caused a corresponding current of atmospheric air to replace what was drawn from the pores of the soil. Great



pains, therefore, were taken to admit that from the soil very slowly, and the apparatus was so arranged that the carbonic acid could be estimated at once by means of baryta, at the same time that the air was collected for examination in the laboratory. The ammonia was fixed by means of perfectly pure diluted hydrochloric acid, but in two cases only could the resulting sal ammoniac be weighed; in others there were mere traces, a circumstance which in many instances would be easily explained by the powerful attraction for ammonia which is notoriously possessed by argillaceous matter. The different analyses showed most clearly that the composition of the air contained in the soil was greatly modified. In its normal condition atmospheric air contains .0004 in volume of carbonic acid. In soil, on the contrary, 12 months after the application of manure, from 22 to 23 times as much were found, and in land recently manured as much as 245 times in weight.

If, however, the object is to ascertain the quantity of carbonic acid that is placed at the disposal of the plants growing in the soil, the proportion contained in the air confined in its pores will not suffice. It is necessary then to know the quantity of air in a given volume of earth. This volume may be easily estimated by saturating the soil with water, as the volume of air displaced will exactly equal the volume of water introduced.

Some of the main results of the experiments, instituted for this second object, are stated by the authors as follows:—

1. The air inclosed in a hectare (10,000 square metres, 11960-33 square yards) of arable land, one year after being manured, contains as much carbonic acid as 18,000 cubic metres of atmospheric air. That is to say, inasmuch as taking the average depth at 35 centimetres (about 14 inches), the hectare contains 3500 cubic metres of soil, the carbonic acid in the soil in proportion to that in the air, volume for volume, is as 36 : 7.

2. In the same quantity of land recently manured, the carbonic acid, under certain circumstances, may be represented by that contained in 200,000 cubic metres of normal air, or in the proportion of 400 : 7.

3. In the loamy subsoil of a forest, taking the average depth, as in the former instances, the amount is that contained in 5000 cubic metres, or as 10 : 7.

These are of course more or less especial cases, for every shade of difference is capable of occurring under peculiar data. In the sandy subsoil of a forest, for instance, the proportion, as compared with the loam in No. 3, was only as 1 : 2.76. *M. J. B.*

#### ENTOMOLOGY.

##### THE WAX INSECT OF CHINA, COCCUS PE-LA.

In the preceding article on wax insects we have given an account of a variety of species, chiefly natives of South America and Asia, which have been applied in the production of wax, and have shown that the accounts given by Sir George Staunton and Captain Hutton concerning a Chinese insect cannot apply, as they have been supposed, to a real wax insect.

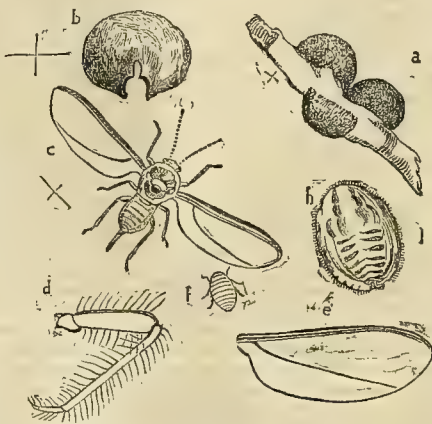
The true insect wax of China, from the accounts of Du Halde, Grosier, &c., as well as the accounts published by the Chinese themselves, has generally been considered to be a species of *Coccus*,\* but no European is believed to have hitherto had an opportunity of examining the living wax insect in its native localities, nor has any opportunity been offered until quite recently of studying it in detail. The following short abstract of the habits of this insect is condensed, from the Chinese natural historians, by Mr. Daniel Hanbury, in the "Pharmaceutical Journal," April, 1853:—

"In the spring the cocoons [?] containing the eggs of the insects are folded up by the cultivators in leaves (sometimes of the Ginger plant), and suspended at various distances on the branches of the tree which is to be stocked. After having been thus exposed for from one to four weeks, the eggs are hatched, and the insects (which are white and of the size of Millet seeds) emerge and attach themselves to the branches of the tree, or conceal themselves beneath its leaves. Some authors state that the insects have at this period a tendency to descend the tree, at the base of which, should there be any Grass there, they would remain; and that, to obviate this difficulty, the Chinese keep the ground perfectly bare, so that they are induced to ascend. Fixing themselves on the branches, the young insects speedily commence the formation of a white waxy secretion, which, becoming harder, suggests the idea of the trees being covered with hoar frost. The insect itself becomes gradually imbedded? or, as the Chinese authors say, changed into wax. The branches of the tree are now scraped, the collected matter constituting the crude wax. The time of the collecting probably varies in different districts, some authors giving June and others August as the period at which the wax harvest takes

place. At the latter period (August or September) the waxy matter becomes so firmly attached to the tree that its removal would be attended with much difficulty, and it is of the wax thus left, and at this period, that a sort of case or cocoon ('purplish envelope,' Macgowan) is formed,\* in which the eggs of the insect are deposited. The nest or cocoon, which is stated to be of the size of a Rice grain, gradually increases until, in the following spring, it becomes as large as a hen's egg (!), suggesting, when attached to the branch, the appearance of a fruit. The cocoons, called *li-chung* or *la-tze*, which enclose multitudes of eggs, are removed, sometimes together with a piece of the branch on which they are fixed, and reserved for the further propagation of the insect."

This account is by no means clear, and has evidently been drawn up by persons little accustomed to precise entomological investigations. The statement that the insect becomes changed into wax agrees with the mature condition of *Coccus ceriferus*, in which the body of the female becomes a hard white waxy mass; whilst the statement of the white secretion deposited on the trees resembling hoar frost will agree either with Captain Hutton's account of the deposition of the snowy white brittle substance by *Flata limbata*, which I consider to be excrementitious; or with the fact of the secretion from the different parts of the body of white waxy matter by other Homopterous insects.

This last mentioned condition is exhibited by a species of *Coccus* to which I provisionally applied the name of *Coccus sinensis*,† which has been recently received in England by Mr. Daniel Hanbury from W. Lockhart, Esq., of Shanghai, who forwarded specimens of the wax in a crude state as scraped from the tree, in which a number of the dried full grown bodies of the female *Coccus* are to be found, as well as pieces of stick encrusted with the wax and with the insects *in situ*. An excellent article has been published by Mr. Hanbury on the subject in the "Pharmaceutical Journal" for April, 1853, accompanied by a short notice by Mr. Quekett upon the microscopical appearance of the crude material. A careful analysis of the composition of the Chinese



THE WAX INSECT OF CHINA.

insect wax of commerce had previously been made by Mr. B. C. Brodie (Phil. Trans., 1848), but in order to enable us to clear up all the difficulties connected with the matter, arising from the insufficient description of the Chinese authors noticed above, we require a direct statement that the white waxy masses excreted by *Coccus Pe-la* form the real base of the white wax of commerce; or that the chemical analysis of the crude matter received from Mr. Lockhart is identical with that given by Mr. Brodie of the article in commerce, which is admitted to be nearly in a state of chemical purity; as at present the only identical circumstance recorded in connection with both articles is that they melt at nearly the same degree of heat, a statement, however, which at once proves the radical distinction between the secretion of the *Flata limbata* described by Captain Hutton, and that of the *Coccus Pe-la*. How far the white floccose matter exuding from the different parts of the body of the *Flata* is identical with that emitted from the *Coccus Pe-la*, has yet to be ascertained; but I may be permitted to express the conjecture that not only will they be found to be nearly identical, but likewise that if it were possible to collect the white floccose matter which exudes from the bodies of great numbers of species of *Fulgoridæ*, *Coccidæ*, &c., its chemical properties would be found to be very similar. In our own country the common coccus of the Vine, *C. Vitis*, bears the greatest analogy of any of the species of *Coccidæ*, with which I am acquainted, to the *Coccus Pe-la*, and it would be very easy to make an experiment with its secreted matter. The common American blight of the Apple tree is another equally common instance of the production of the same material which it would be equally easy and interesting to experiment upon. Neither of these insects, it is true, occurs in our

\* Probably the inflated body of the mature female insect is here referred to.

† The name of *Coccus sinensis* having been applied by Mr. F. Walker in the Catalogue of Homopterous insects in the British Museum to a distinct species, it will be advisable to adopt the suggestion of Dr. Chavannes and apply to the Chinese insect its vernacular Chinese name as the specific name, *C. Pe-la*. The name *ceriferus* applied to it by Mr. Walker is too near to *ceriferus* to be maintained.

country to such an extent as to allow of the wax, procurable from them at all, to become an article of commerce; and this only increases our astonishment at the wonderful quantity of the insects which must be found in China, and the great care of the indefatigable Chinese by which the stock is kept up. In our own country of course the chief object of the collection of the Vine coccus, or the American blight, would be the entire destruction of those insects; and this good could indeed be effected, to a very great extent, by the experiments I have suggested above, and in this manner horticulture would at least be the gainer.

Mr. Hanbury has given a fac-simile in his paper of Chinese woodcut representing the *Tung-tsin-shoo* (winter green, i. e. evergreen, tree), and the *Chung-Pé-l* (insect white wax) upon it. On two of the small terminal twigs (showing that the insects, like the young cocci of our own country, mount to the youngest shoots of the trees which they infest) are represented two large oval masses of matter enveloping the bases of the twigs and inscribed *Chung-lä* (insect wax), whilst from another twig are represented suspended several smaller Pear-shaped masses, inscribed *Lä-chung* (wax seed). These are the masses described by MacGowan as purplish envelopes, and by the author of the great Chinese herbal, *Pun-tsaou-kang-mü* as the *Lä-chung* (wax seed) and *La-tze* (wax-son) or cocoons as large as fowl's head, enclosing multitudes of eggs. That these are not the natural production of the *Pe-la* insect seems clear from their being not only at variance with the economy of any known species of *Coccidæ*, but also with the condition of the full-grown females of *Coccus Pe-la* sent home by Mr. Lockhart. I can only account for it by supposing that the herbalist has mistaken a mass of the bodies of the female filled with eggs formed into a packet for suspension on the trees for the propagation of the insect, for a natural increase of the body of a single female so as to form a case which has been misnamed a cocoon. Further information is therefore needed upon this point of the economy of the insect.

Mr. Hanbury having placed in my hands a portion of the crude wax as scraped from the tree, I at once perceived that the mass consisted of a number of the bodies of the females of a large species of *Coccus*, together with pieces of white waxy matter, which they had evidently secreted; and among the broken particles I was also fortunate enough to discover a number of the broken bodies of the males, with detached wings and legs, and great numbers of the minute young larvae provided with short legs (the antennae being broken off), and of the insects at a rather more advanced age, when the legs are no longer perceivable; I, moreover, discovered no less than three distinct species of minute Hymenopterous parasites belonging to the genus *Encyrtus*, the larvae of which live upon the *Coccus*; and a small Cimicidæ insect which in all probability sucks their juices.

The accompanying woodcut represents (a) three of the full-grown female *Pe-la* insects attached to a twig resting upon a layer of the white waxy secretion (\*). These females are of a dark-chestnut colour, and very much resemble the *Coccus* of the *Ilex* of the south of Europe. They belong to the true genus *Coccus*, which the *Coccus* of the ancients (and not the *C. Cacti* is the type, and cannot be associated generically with the *Cero-plastes*. Fig. b represents one of the female detached, seen from behind, showing the mode in which the body envelopes the twig. Fig. c represents the male insect, the body of which is of a dark-chestnut colour, the abdomen and elongated anal point reddish buff coloured, legs reddish, brown thighs, wings very slightly stained with brownish buff, and the two subcostal veins fleshy coloured. Figs. d and e represent one of the legs and wings highly magnified. Fig. f a very minute larva, half the size of a pin's head, and g one of the young at a more advanced period of growth. *J. O. W.*

#### MANETTIA BICOLOR.

THERE are many plants in cultivation which, during the short period they are in flower, have a much more striking appearance than this; but I scarcely know one which surpasses it in continuance and profusion of blossoms, or that is so accommodating in habit. Being easily propagated, and forming good size specimens in one season, it is advisable to keep up stock of young plants, which occupy less room, and are generally more satisfactory than large ones kept after blooming. Short jointed rather firm bits of young wood, planted in sandy peaty soil, covered with a bell glass, and afforded a gentle bottom-heat, root freely if properly supplied with moisture and guarded from damp; and they will probably be ready to pot off in the course of a month or so. After placing them singly in small pots, set them in a close, moist, rather shady situation, until they shall have become established in their pots; and as soon as that is the case accustom them to a free circulation of air and full exposure to sunshine in order to induce a close thick habit of growth.

Cuttings rooted early in spring, placed in a moist pit or house, supplied with pot room as may be necessary and kept rather warm, will make nice stocky plants in 9-inch pots in the course of the summer; and if kept growing gently during the winter in a temperature of from 50° to 60°, and shifted into their flowering pots early in March, and retained in a nice moist growing temperature of say 55° or 60° at night, allowing it to rise some 10° with sunshine before giving air, under proper management will form large specimens and bloom abundantly from early in June till late in autumn.

\* In the Reports of the Juries of the Great Exhibition, p. 624, the Chinese white wax is stated to be the secretion of a male insect, the *Coccus ceriferus*. From what has been stated in the preceding article, it will be seen that the insect so named is quite distinct; whilst, from what follows, it will equally appear that it is the female, and not the male insects which produce the secretion.



is plant never flowers with much effect until the pots are tolerably full of roots; therefore, manure water should be given frequently during the blooming season, which greatly assists in maintaining vigorous health, and prolonging the period of flowering. While they are in blossom the plants should occupy a situation where they can be kept sufficiently close to induce a free growth, and the warmest part of the greenhouse will be found sufficiently warm during the summer to effect this object; but it will probably be necessary to move them to where they can be assisted with a little heat when cold cloudy weather sets in in autumn. The object here is to keep them growing very slowly, and with moderate convenience this will be easily effected. Plants, however, that have bloomed during the first of the summer will become less attractive than younger specimens, which should be prepared for winter vernal, so as to have them ready to shift into their coming pots early in June, and be kept in a moist growing pit during the summer. A cold frame or pit may be so managed as to form a very suitable situation for growth of the plant at this season, and a pit where the effect of a gentle heat from a dung-lining can be obtained is the best possible place for growing the plants during the summer. They should be removed to a light airy part of the house, where the night temperature is maintained about 50°, and sparingly supplied with water until they commence blooming—if this should be necessary; it will seldom be necessary to resort to means to induce plants to produce blossoms that have been some months in their flowering pots. Plants thus prepared, if afforded a light situation, and a temperature of 55° to 65°, will bloom abundantly throughout the winter and spring months. It will, however, be necessary to water with care, and to use every means to maintain the specimens in a healthy state, giving manure in a clear weak state, if the plants appear to require it; but those in vigorous health will flower more abundantly without the application of this stimulant. I am not partial to the use of trellises for plants where they can be dispensed with, and this Manettia may, with safety and continual stopping, be trained to stakes in the form of a dense compact bush, which, to my taste, is much handsomer than where trellises are employed. It is intended to keep specimens that have bloomed for her use, they should be removed to a rather cool position as soon as they become at all shabby; be kept rather closely, well thinning out the shoots; before starting them into growth, the balls should be considerably reduced, so as to allow room for a supply of fresh soil, and a liberal allowance of manure should be afforded them as soon as the pots are liberally filled with roots; but it is better to be provided with young plants, and to throw away those that have bloomed one season.

Good turfy peat and turfy sandy loam, in about equal portions, broken up into small pieces, and well incorporated with a free admixture of sharp sand, form a noble compost for this plant; but where peat is scarce, soil may be used instead. *Alpha.*

#### CULTURE OF PYRAMIDAL CHINA ASTERS.

M. TRUFFAUT, well known as a good practical horticulturist at Versailles, has published in the "Revue Agricole," for July, 1853, a full account of his mode of cultivating the China Aster.

He sows the seeds in the open ground, and in pots or in frames under cloches (bell-glasses), or in frames. The sowing in the open ground is made in good rich well-kept soil, in the last fortnight of March. The seeds are very thinly covered with fine decayed leaf-mould, slightly watered, then covered with bell-glasses or cloches. These are covered with straw-mats when the nights are cold, and slightly shaded from the sun's rays in the days are bright.

If the weather prove favourable, the plants will appear about 10 days. Air is then gradually admitted, and the plants fully as the plants acquire strength, in order that they may become robust. It is necessary to guard against the attacks of insects; those most to be dreaded are the wood-lice and black spiders.

The plants from this sowing will commence flowering the beginning of August, and will continue till October; so that in order to prolong the flowering, it will be necessary to make several successive sowings at intervals of 10 or 12 days; but those sown in the first of March produce the most vigorous plants and the earliest flowers.

*Sowing in pots or earthenware pans.*—These, when the seeds are sown, are covered with a pane of glass, rested on the upper side with chalk and water. This has the effect of breaking the rays of the sun, and preserving the seeds from mice and other animals or insects, and it prevents the soil from becoming too dry. The pots are then placed in a house with a temperature between 60° and 70°, and as near the glass as possible, better, in a warm frame. A little air is admitted in the plants come up by tilting the square of glass, in which the chalk should be previously washed off, in order that the young plants may have as much light as possibly can be given them. The pane of glass is removed when the young stems grow up to it.

*Pricking out in the open air.*—The plants from the sowing made under bell-glasses or in frames, between the 15th of March and the 1st of April, ought to be pricked out between the 20th of April and the 1st of May, at 8 inches apart each way, in good light soil, covered with half an inch of fine leaf-mould. The plants

should be carefully watered, but not at night, for the nights at this season of the year are frequently cold.

*Pricking out under bell-glasses or frames.*—The plants from sowings made in pots or pans being more susceptible of drawing up than those raised in the open ground, ought to be pricked out as young as possible, or as soon as they have developed one or two leaves. Fifteen to eighteen are pricked out under one hand-glass, and from eighty to a hundred under a frame 4 feet 4 inches square. The plants are slightly shaded from strong sun for a few days; air is gradually admitted, and when they have taken fresh hold, the glass is taken off at all times when the weather permits, for it is to be remarked that it is not employed for forcing the plants, but merely to protect them from atmospheric vicissitudes.

*Final planting.*—Between the 1st and 15th of June, taking advantage of cloudy weather, the plants pricked out are taken up with balls, and planted from 15 to 18 inches every way apart, in soil well worked and manured with rotten dung. Basins are formed round each plant, and water is supplied several times a day when the weather is hot and dry. Twelve or fifteen days after planting the ground is hoed, or otherwise stirred between the plants; yellow leaves are picked off; the basins are again formed, and the surface of the soil is slightly mulched. Thus treated, the plants will become perfectly fresh-rooted by the first week in July. A stick is then put to each, without which it is impossible that the stems could support 50 or 100 large well-expanded flowers, which will be produced on every plant.

As the proper arrangement of flowers in a garden is very important, and as a mixture of tall and dwarf varieties of different colours has a confused appearance, the seeds of the varieties of pyramidal China Asters should be gathered separately; and by marking, and sowing in regular order accordingly, the planting can be performed early, as above directed, without waiting too late to see the colours. To preserve the beauty of the flowers, it is advisable to shade them during the hot weather in August, the shading being removed at night; but in September and October the plants are fully exposed to the light during the day, and the thin canvas is then employed for protection from the cold at night.

#### Home Correspondence.

*The New Forest.*—The temperate remarks upon my last letter, made at p. 517, tempt me to add a few more words relating to the subject of the New Forest, and your correspondent's accusations against the public officers for neglect of their duty. First, it is said of me, that I do not question the general accuracy of the statement; but I beg to say I do question it very much. If a person represents that 60,000l. per annum is the value of an estate, of which I deny as many sixpences could be properly made, I may reasonably be said to differ from him *in toto*. A person acquainted with the New Forest will hesitate to believe that there is any large quantity of timber in it fit for naval purposes. A large proportion of the trees now standing are bad Oaks, Ash, and Beech, which will scarcely pay the cost of cutting. The few Oaks that are good ought not, as I think, to be taken down, except in cases of necessity. About the middle of the reign of George III., plantations were first begun in the New Forest, but could not exceed, in the whole quantity, 6000 acres. Many of these have been thrown open to the common, and other pieces inclosed in exchange. Perhaps 10,000 acres may have been so treated. Of these, a great extent can never pay for their cost. Some portions are flourishing; 10,000 more acres are about to be planted. Will these, 40 years hence, pay their expenses? Again, your correspondent talks of 40,000 acres of good Oak land. Supposing this to be no exaggeration, the Crown has no right to inclose it; 6000 acres were all over which it had control, and it could no more take possession of this land than that of any on the boundaries of the forest. And if it had acted so illegally, it would have been the duty of the forest officers belonging to the commoners to destroy the fences or prosecute the trespassers. Your correspondent also says, that as the Crown has obtained the right to inclose 10,000 acres in 1853, it might as well have done it in 1803. But this is by no means a certainty. It required all interests to agree to the plan; and I know that very many parties are of opinion that a very improvident bargain has been made with the Crown in exchange for the destruction of the deer. The Crown naturally fixes upon the best land in the forest for their inclosures, greatly to the injury of the common rights. At all events, if this could have been accomplished at a much earlier period, I cannot perceive how the unfortunate present surveyors or inferior officers of the Crown can be blamed for such neglect. Your correspondent also says, "He would not pay me so bad a compliment as to suppose, that if the New Forest with all its difficulties were to fall to him by inheritance, that he would be content to spend 520l. a year in maintaining it, or that he would be satisfied with even 680l. a year revenue." But this would not be a parallel case. The Crown has not inherited 66,000 acres of land. It has only inherited certain rights over them; nothing approaching to the value of a freehold estate; it has only limited control over 6000 acres, in addition to certain common rights. It is not necessary, therefore, to reason upon such a supposititious case. I will only add, that from my knowledge of the forest, there are many thousand acres (I am not certain I might not say one-half the forest), which if offered to me as a gift, upon the condition that

I would plant carefully, I would refuse to accept them. *A Constant Reader.* [We by no means acquiesce in the views of our correspondent, who seems to be unacquainted with the voluminous, and we think conclusive parliamentary evidence collected in the blue books. We have studied that evidence with much care, and formed our opinion after full deliberation. Not one statement has been made by us which has not been founded upon such documentary evidence; that relating to the extent of land will be seen at p. 127 of the report for 1848, where it was given by the assistant deputy-surveyor, who reported that twenty-five thousand acres of good land were then covered with timber, and that 20,000 acres more of good strong land were fit for the growth of timber. Whether this timber consists of "bad Oaks, Ash, and Beech," our correspondent must settle with the forest officers; we neither affirm nor deny it. If it is as he represents, then the case against the forest officers is by so much strengthened, for timber can only have arrived at such a pass in consequence of their incapacity. He says that he doubts whether the place would properly yield 1500l. a year; this doubt seems rather gratuitous in the face—firstly, of Mr. Clutton's report in 1849, that "a considerable annual income" would be derived from the forest, independent of accumulating value; secondly, of the declaration of Lord Duncan's Committee that the value of the forest had been variously estimated at from 400,000l. to 1,300,000l.; and lastly, of the fact that 9000l. were actually realised in 1851-2, while the most competent judges in this country estimated its realisable value for 1852-3 at 14,000l. We will only add, that if our correspondent will look at p. 168 of the report for 1848, he will find one experienced witness declaring that in his opinion, after making allowance for commoners' rights, &c., the forest was worth 57,000l. a year. Thus it will be seen that when we suggested that the forest might under other management have produced 60,000l. a year, even that, although not at all insisted upon, and forming no material part of our case, was not so loose a statement as he imagines.]

*Lois Weedon Cultivation of Wheat.*—I see that Mr. Smith still insists that only a moiety or half of his ground is cropped with Wheat; this is a pity, because he will mislead others as he misled me; following his directions, as I considered, to the letter, I planted 3 rows and left a space for 3 rows; now the space, according to the diagram in his last edition, is only sufficient for 2 rows, therefore two-fifths of the ground are occupied by the crop. I have now corrected the mistake. By the side of the Wheat planted on his plan, is a portion planted in rows 1 foot apart, the ground having been only slightly hoed for two successive Wheat crops; the produce will, I think, exceed that with the trenched intervals, though the ears are rather longer and the straw stronger on the latter. It would be satisfactory if Mr. Smith would try the same experiments, which I shall continue. *J. C. C., Long Wittenham, Aug. 16.*

*Aerating the Soil.*—The advantages of the admission of air about the roots of a plant are not, apparently, sufficiently appreciated in this country. In the south of France, when vegetation does not advance satisfactorily, a gardener will go over his crops, stirring up the soil to a considerable depth with some such tool as a little *bigot*. Indeed, the free admission of air to the ground is considered of so much importance, that light rains are deprecated; hence, on an occasion when a market gardener was congratulated on the growing showers that had fallen in the night, he replied in a pet, "Bah! La pluie ne vaut rien pour les jardins." He added that rain hardens the surface of ground without reaching to the roots of plants; but that when water is let into the channels between beds in ridges, it goes straight to the roots of the plants on them, without depriving them of air. This observation may be applicable to the practice of watering gardens with the rose watering-pot or engine. *B.*

*British Silk.*—Any landowner who may be induced to try "Tassel's" plan of industrial employment for women and children will find that all the species of the grafted white Mulberry will thrive well in almost any drained land. I write now with the greater confidence, as, although the past season has been very trying to young trees, and I have lost some few of the Multicaulis, which thrive well in South Hants, yet not more than 1 per cent. of the grafted white Mulberry have failed, and these are all better adapted to the produce of fine silk, and are of much more certain and quicker growth than the black Mulberry. I have found a parish school girl of 11 years old, quite equal to feeding and cleaning the silk-worms; the temperature and ventilation of the room require the regulation of more mature age; the winding, also, is too delicate an operation to be entrusted to young hands, unless under careful supervision, but they may be employed in turning the wheel. If the eggs are moved into a cool dry cellar early in the spring there need be no fear of hatching before the leaf is ready. Ultimate success in this new branch of industry will probably depend on our own exertions, and on the average weight of leaf we can produce on a certain quantity of land, by careful cultivation of the Mulberry. A small manual published by J. W. Parker, West Strand, will be found useful to beginners. *George, North Hants.*

*Crooking Pots and their shape.*—I need scarcely say that the shape of a pot, and the manner in which it is crooked, exercise a great influence on the health of a plant, whether it be soft or hard wooded. The former, however, in general does not require so much drainage as the latter; but still the same principle should be carried out in both cases. In draining a pot, care should be



taken to raise the sherds, or crocks, round the sides of the bottom of the pot, instead of placing them in a heap on the crock over the hole, leaving a gutter, or cavity, round the drainage, which becomes filled with mould, inducing that scourge of pot culture—namely, sour mould. The utility of the above method consists in the pot being drained where the plant most requires it, and keeping the mould above the level of the crocks, in the middle, renders every grain of it available for the roots to feed on. The quantity of drainage in a pot is no security of its answering the purpose for which it is put there, unless it is arranged in a manner which the shape of the pot and health of its contents demand. The shape of the pots—especially those manufactured in the provinces, and more particularly in the neighbourhood of Bristol—is highly prejudicial to the health of the plant: some have the inside bottom on a dead level; while others are still more objectionable, the hole in the centre being raised, so as to leave a gutter round the sides. The result of this is, that the plant becomes a victim to sour mould, caused by stagnant water in the bottom of the pot; and, I might add, that all attempts hitherto made to induce the proprietors of the Bristol potteries to alter the shape of their pots have signally failed, in consequence of which, many of our nurserymen are compelled to get their pots from Weston-super-Mare, a distance of 24 miles from Bristol; the latter are certainly the best pots that can be obtained within that distance of Bristol, still, in point of shape, they are far from being what they ought to be; while others, again, of our nurserymen and gardeners, from a mistaken idea of economy—the irresistible temptation of 20 and 24 to the dozen staring them in the face—are content to grow their plants in pots which vary little, if anything, from what they were 50 years ago—with this exception, however, that in consequence of the potters being obliged to give two dozen for one there is a proportionate deficiency in their quality, being for the most part little more than half baked, and, consequently, soon broken. By this arrangement the cultivator is no gainer, but a positive loser; while it excites amongst proprietors of potteries an ungenerous rivalry, which, from its corrupting tendency, is alike pernicious to nurserymen and potters. The pots in use in the London nurseries, and especially at the establishment of Messrs. Hugh Low and Co., of Clapton, are in every respect better than those made in Bristol, but there quantity is not considered everything: shape and quality are most looked to. In nurseries, as in private establishments, it is notorious that valuable plants are often lost, without the cultivator being at all enlightened as to the cause; and, if told, he could hardly credit it, that in nine cases out of ten the loss of the plant is solely to be attributed, not to want of drainage, but to its improper disposition in the bottom of the pot; the proprietor of this nursery has, I am happy to say, at last succeeded in obtaining a supply of pots somewhat more shapely than those in general use. *R. Miles, St. Michael's Nursery, Bristol, Aug. 9.*

**Laya: a Digging Implement.**—Lieutenant March, in his "Walk across the French Frontier into North Spain," notices particularly the laya, a tool in very general use throughout the Basque provinces. He describes the laya as a ponderous two-pronged fork, with a long wooden handle affixed to the iron bar that connects the two long prongs. The peasant in using this tool drives it into the ground, raises and reverses the clod of earth, when the man, previously to repeating the operation, takes a step backwards. By this mode of digging the bad effect of the *bigot* is avoided, namely, the crushing down again of the newly-raised ground by the peasant's feet. The principle of the laya seems more promising than other modes for a digging machine, especially if to the prongs were added clod-crushers. In many parts of the south of France, after land has been ploughed, and often after having been dug with the *bigot*, a row of women break the clods with wooden mallet-shaped tools having long handles. For turning up soil by machinery the principle of the plough seems objectionable, because it leaves the subsoil frequently as hard as stone and impervious to water; the spade does not break up the soil so well as either the *bigot*, laya, or fork. *B.*

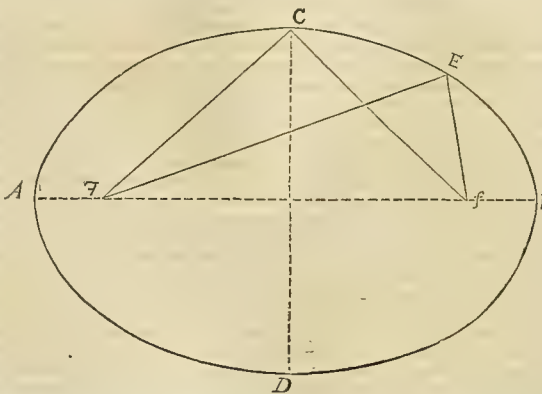
**Planting Vineries.**—I am about to plant a Vinery, and though much useful information has, from time to time, been given both by yourselves and by your correspondents, which I have always carefully perused and made notes from, and attribute much of my success from having so done, I nevertheless think there is one important question that has been overlooked, viz., whether it be better to plant the Vines in an open border, or in the Vinery itself. As far as my own experience goes, I should incline towards planting within the Vinery; I would do away with the pavement, and lay down on the floor some rich compost, some 18 or 20 inches deep, and would cover the walk or passage with rails; in a word, leaving the ground underneath disposable for forking occasionally, watering, &c. I should thus have, it appears to me, the roots much more under my command for giving or withholding water, as may be required for swelling the Grapes, ripening them, &c., and what appears to me essential, I shall be able to keep them dry while the wood is ripening. Moreover, I should be protected from the changes of the temperature, weather, &c., avoiding the necessity of a tarpauling

cover, concrete, &c.; but, before putting in the compost, I would lay down 1 foot of brick rubbish, and also some drain tiles, part of which should serve for draining off the water and part for admitting air to the roots, by openings communicating with the atmosphere. Would you kindly say whether you approve of my plan. *N. A. P. B.* [We dare say some experienced Grape-grower will answer this.]

**New Zealand Flax.**—I have cultivated this in the open border here for above 30 years; this season it has sent up a flowering stalk full 5 feet high, producing 52 flowers, whose outside are brownish or deep orange, while the inner petals are yellowish, and the stamens deep orange; as many as 40 flowers have been all open at one time (August 8th), free, perfect, and ornamental. Bees visit the flowers, which are 1 inch in length. This place lies in latitude 55° 55', and is about 160 feet above the sea, which is distant four miles from us (east coast). London in his "Hortus Britannicus," sets the plant down thus:—"Grows 6 feet; flowers, g. w., August; earth, l. s. pt." It is not so here. I have never applied water to it till the other day, when the flowering specimen had one watering; this plant has remained undisturbed for many years. I have many times thought that the New Zealand Flax should be more generally grown in gardens than it is. I employ all its spare, tough leaves, for fastening plants, flowers, &c., with. *John Street, Beil, near Dunbar, N. B.*

**Pegging down Plants.**—The most expeditious and neatest plan is to take a thin strip of Cuba bast, about 8 inches long, pass it over the shoot to be pegged, and taking the two ends together, press them into the soil with a small piece of stick, or a wire pointed at the end something like a chisel; this is an old plan, but it may not be known to some of your readers. *A Subscriber.*

**Drawing an Ellipse.**—In forming or tracing an ellipse it has been recommended to use a trammel; but I beg to suggest a much easier and more correct method, based on the well-known properties of the ellipse, that the sum of two lines drawn from any point of the circumference to each of the two foci is always equal; that is, the sum of  $r$  and  $c$  is equal to the sum of  $r'$  and  $c'$ . The mode of operating is as follows:—Place sticks for the length and breadth of the required oval, that is, at  $a$ ,  $b$ ,  $c$ , and  $d$ ; take a strong cord or line,



with a noose at each end, of the exact length of  $a$   $b$ , then place the middle of the line at  $c$  or  $d$ , and fasten with pegs the two nooses at  $r$  and  $r'$  respectively; the operation is then very simple. The oval set out as above described, is not only geometrically correct and pleasing to the eye, but it is also easily formed of any size; and the mode is of great practical value to gardeners in forming elliptical beds on lawns, &c. *John Swann, East Carleton, near Norwich.*

**Bees.**—Your correspondent "Northwood," had better take his bees; if the honey has been cut out, as he states, they will not do for stock, *i. e.*, unless he chooses to feed them and tend them winter and spring. What new hive he may have, or how constructed, I know nothing. Bees are easily managed, but there is a saying, and a true one, some are unlucky and some lucky with bees, and this *bona aut mala fortuna* pursues them for life; but, in other respects, I have not seen these bee-keepers unfortunate or unsuccessful in life. *X. Y. Z., Hants.*

**Crinums.**—The Crinum capense, cultivated in the border, produces a profusion of offsets, detrimental to its appearance. But since I have cultivated it in the pond, which is now several years, no plant of it has ever formed an offset. Upon Crinum riparium I never saw an offset, either when it was in the border, or now in the water. Is the abstinence of the capense from such a mode of increase a mark of health and vigour, or the converse? and upon the question whether it be naturally terrestrial or aquatic, which way does it tell? *A. H.* [We presume that the evidence shows *C. capense* to be an aquatic or marsh plant; and that its offsets are an indication of an unsuitable situation.]

**Clearing a Church of Bats.**—Perhaps Mr. Sale (see p. 502), may be induced to try the following plan, which has proved effectual in a neighbouring parish, where the nuisance was as great as that which he describes. Ladders were raised, and men smoked with common pipes tobacco smoke into their holes; the creatures came out half stupefied, and were easily mastered, 230 being carried out, and at present the annoyance has ceased. *L. R., Cossington, Leicestershire.*

**Club in Cabbages.**—At some seasons in the south of

France every Cabbage and Cauliflower plant is clubbed at the roots before it has grown to the size for planting out, but none of the plants are rejected on the account. When drawn for planting the gardener examines them one by one, and with a sharp knife cuts out the insect which caused the club. This is expeditiously done as to be worth while, though the retail price of a large Cabbage be but a halfpenny; good Cauliflower in the season about a penny. Cauliflowers, on first coming in and rare, sometimes sell for as much as 2d. or 2½d., and in a plentiful season fall as low as a farthing each. Surely it would answer well here to employ women and children in cutting out the club-worm. *B.*

**Dry Rot.**—The enclosed specimens of fungus were taken off last week from some Elm plank, which has only been cut out a fortnight, and placed one above another. Each plank was coated over with the fungus as if painted or papered white, and required some little force to detach it. None of the planks appear to have suffered from the growth thereon, but some few at the end indicated decay, which must have commenced during the growth of the tree. Can you inform me this is a frequent occurrence in the Elm, or any other wood, and if so, should the timber be rejected for anything like building purposes? Since it was detected the planks have been separated and placed upright. *Henr. Watkins.* [The specimens received were like pieces of kid leather. We should certainly not use timber such a state for building purposes, unless it had been steeped for a considerable time in Kyan's fluid, namely a solution of corrosive sublimate.]

## Notices of Books, &c.

Part XIII. of *McIntosh's Book of the Garden* is occupied by a variety of matters relating to the Kitchen Garden and Hardy Fruit Garden. The articles are well put together; but largely consist, as usual, of extracts from the horticultural publications of the day. Among the really original matter will be found some excellent practical instructions for hybridising, from the pen of Mr. Isaac Anderson, the most skilful operator in the way now living in Great Britain. We take the liberty of transferring to our own columns a long extract from this gentleman's valuable communication:—

"To those who would attempt the hybridising or cross breeding of plants, I will now offer some suggestions in their guidance. It is an essential element to success that the operator be possessed of indomitable patience, watchfulness, and perseverance. Having determined on the subjects on which he is to operate, if the plants are in the open ground, he will have them put into pots and removed under glass, so as to escape the accidents of variable temperature—of wind, rain, and dust, as above all, of insects. A greenhouse fully exposed to the sun is best adapted for the purpose, at least as regards hardy and proper greenhouse plants. Having got the house, secure a corner where they are least likely to be visited by bees or other insects. The plants which are to yield the pollen, and the plants which are to be the seed, should be both kept in the same temperature but where this cannot be managed, pollen from an outside plant, in genial summer weather, may be used provided it can be got; for there is a class of insects which live exclusively on pollen, and devour it so fast after the pollen vessels open, that, unless the plant is under a hand-glass (which I would recommend), it is scarcely possible to get any pollen for the required purpose. To secure against chances of this nature, a spray with opening bloom may be taken and kept in a phial and water inside, where it will get sufficient sun to rip the pollen. But here, too, insects must be watched and destroyed if they intrude. An insect like, but smaller, than the common hive bee, which flits about by fits and starts, on expanded wings, after the manner of the dragon-fly, is the greatest pest, and seems to feed exclusively on pollen. The hive bee, the humble bee, and wasp give the next greatest annoyance. All the may be excluded by netting fixed over apertures from open sashes or the like. Too much care cannot be bestowed on excluding these intruders, whose sting touch, in many cases, might neutralise the intended result; for the slightest application of pollen native to the parent plant is said by physiologists to superseed all foreign agency, unless, perhaps, in the crossing mere varieties; and the truth of this observation coincides with my own experience. Without due precaution now, the labour, anxiety, and watchfulness of years may issue in vexation and disappointment. As a further precaution still, and to prevent self-fertilisation, divide the blooms to be operated on not only of their anthers, but also of their corollas. Remove also all contiguous blooms upon the plant, lest the syringe incautiously directed, or some sudden draft of air, convey the native pollen, and anticipate the intended operation. The corolla appears to be the means by which insects are attracted; and though, when it is removed, the honey on which they feed is still present, they seem puzzled or indifferent about collecting it; or if, haply, they should alight on the dismantled flower (which I never have detected), the stigma is in most cases safe from their contact. It will be some days—probably a week or more, if the weather be not sunny—ere the stigma is in a fit condition for fertilisation. This is indicated in many families, such as *Ericaceae*, *Rosaceae*, *Scrophulariaceae*, *Aurantiaceae*, &c., by a viscous exudation in the sutures (where these exist) of the stigma, but general covering the entire surface of that organ. In this case



dition the stigma may remain many days, during which fertilisation may be performed; and this period will be longer or shorter as the weather is sunny, or damp or overcast. In certain families, such as the Malvaceæ, Geraniaceæ, &c., where the stigma divides itself into feathery parts, and where the viscous process is either absent or inappreciable by the eye, the separation of these parts, the bursting of the pollen, the maturity of the stigma, and all which a little experience will detect, indicate the proper time for the operation, sunny or cloudy weather always affecting the duration of the period during which it may be successfully performed. As to the proper time and season best adapted for such experiments, a treatise might be written; but here a few remarks must suffice. As for the season of the year, from early spring to midsummer I would account the best period; but, as I have just observed, I regard all cold, damp, cloudy, and ungenial weather as unfavourable. On the other hand, when the weather is genial, not so much from sun heat as at times occurs from the atmosphere being moderately charged with electricity, when there is an elasticity, so to speak, in the balmy air, and all nature seems joyous and instinct with life, this, of all others, is the season which the hybridist should improve, and above all if he attempt muling. The hybridist should be provided with a pocket lens, a pair of wire pincers, and various coloured silk threads. With the lens he will observe the maturity of the pollen and the condition of the stigma, whether the former has attained its powdery, and the latter (if such is its nature) its viscous condition. If he find both the pollen and the stigma in a fit state, he will, with the pincers, apply an anther with ripened pollen, and by the gentlest touch distribute it very thinly over the summit of the stigma. The operation performed, he will mark it by tying round the flower stalk a bit of that particular coloured silk thread which he wishes to indicate the particular plant which bore the pollen, and at the same time tie a bit of the same silk round the stem of the latter, which will serve till recorded in a note book, which should be kept by every one trying experiments on a large scale."

"It is quite unnecessary to offer any directions as to the results to be effected. If it is desired to reproduce the larger, finer formed, or higher coloured bloom of a plant having a tall, straggling, or too robust a growth, or having too large or too coarse foliage in a plant without these drawbacks, I need not suggest to select, in another species of the same family, a plant of an opposite character and properties—say of dwarf compact growth, handsome foliage, and free flowering habit; and if such can be obtained, work with it, making the latter the seed bearer. Or, if it be desirable to impart the fragrance of a less handsome kind to another more handsome, I would make the cross upon the latter. I cannot speak with certainty from my own experiments how far perfume may be so communicated; but I have some things far advanced to maturity to test it; and I entertain the hope that fragrance may not only be so imparted, but even heightened, varied, and improved. Or if it be desired to transfer all, or any valuable property or quality, from a tender exotic species to a native or hardy kind, work upon the latter; for so far as constitution goes, I agree with those who hold that the female overrules in this particular. I would offer this caution to those who wish to preserve the purity of certain flowers for exhibition, especially those having white grounds, not to cross such with high coloured sorts. I once spoiled a pure white bloomed *Calceolaria* for exhibition by crossing it with a crimson sort; all the blooms on those branches where the operation had been performed, being stained red, and not the few flowers merely on which the cross was effected. In this note, already too long, I cannot further illustrate my remarks, by recorded experiments in the various tribes upon which I have tried my hand; but I cannot leave the subject without inculcating, in the strongest manner, the observance of the rules I have laid down to prevent vexatious disappointments. If any doubts arise about the cross being genuine or effectually secured, let not the seeds be sown. Three, four, five, and even six years, must oftentimes elapse with trees and shrubby things ere the result can be judged of; and if eventually it prove a failure, or even doubtful, it is worse than labour lost, inasmuch as it may mislead. If there is no great departure from the female parent, the issue is to be mistrusted. It is singular, if well accomplished, how much of both parents is blended in the progeny. Gentlemen eminent as physiologists have read nature's laws in these matters a little differently from what my own humble experience has taught me, and assigned to the progeny the constitution and general aspect of the one parent, while they gave the inflorescence and fruit to the other. I have crossed and inverted the cross, and can venture to give no evidence on the point, except, perhaps, as to construction, to which the seed-bearer, I think, contributes most. A well managed hybrid should and will blend both parents into a distinct intermediate, inasmuch as to produce often what might pass for a new species. If the leaning be to one more than another, it is probably to the female, though this will not always be the case. Again, it is asserted that a proper hybrid—i.e., one species which is crossed with another species, which is separate and distinct from it—will produce no fertile seeds. This does not accord with my observations. Dr. Lindley has remarked very justly ('Theory of Horticulture,' p. 69), 'But facts prove that undoubted hybrids may be fertile.' My hybrid, *Veronica Balfouriana* (an intermediate between *V. saxatilis* and *V. frutescens*), seeds, I would say, more abundantly than either parent; and the progeny from its self-sown seeds I find to be of various shades of blue, violet, and red, rising in my garden, some having actually larger, finer, and higher coloured blooms than the parent bearing the seed; and I am familiar with the same result in other things. Yet I am far from asserting fertility in the produce between two members of allied but distinct genera—such, for example, as in the *Briantus*, which I have found to be unproductive, whether employed as the male or female parent. As above conjectured, its parents were far too remote in nature's own arrangement. The hybridist has a field before him ever suggestive of new modes of acting. He may try, as I have done, what may be effected under various tinted glass. My persuasion is, that I effected from a pale yellow a pure white ground *Calceolaria*, by placing the plants under blue shaded glass, by which the sun's rays were much subdued. He may also apply chemical solutions to plants with ripening seeds. Nature, in producing, as it sometimes does, plants with blooms of colours opposite to those of the parent, must be governed by some law. Why may not this law be found out? For example under what influence was the first white *Fuchsia*, the *F. Venus Victrix*, produced, the purest yet of all the race, and the source from which all the whites have been derived?"

### Garden Memoranda.

MONTACUTE HOUSE, NEAR YEOVIL, SOMERSETSHIRE.—This was built by Thomas Phelps, Esq., in the early part of the reign of Queen Elizabeth; it is about 180 feet in length, and the elevation is 65 feet to the gable points. The great chamber or gallery is 183 feet in length by 21 feet in breadth, having oriel windows at each end. The house is approached through the park on the east side, by a drive of about half a mile in length, which leads to the court of the front square, which is surrounded by a balustraded wall of Ham-hill stone. The entrance to the court is by handsome massive cast-iron gates lately put up. All the entrance gates, and even those to the flower garden are of the same pattern. Over the eastern doorway is the motto—

"Through this wide opening gate  
None come too early—none return too late."

The house is approached on the west side by a straight drive (from the Ilminster and Yeovil turnpike road), recently formed at some considerable expense, inasmuch as it involved the alteration of the turnpike and parish roads, the former of them by the change being shortened an eighth of a mile. This drive is lined by three rows of trees and shrubs. The back consists of the Deodar and Cedar of Lebanon planted alternately. The middle row contains *Arcaurica imbricata* and *Pinus insignis*; the front row is wholly composed of Irish Yews which are planted 30 feet from the edge of the carriage drive. Over the western entrance-door is the motto—"And yours, my friends." On the north side of the house is a sunken flower garden of about 2 acres in extent, which was formed about five years ago. It is surrounded by a terrace, from which the descent to the garden is by means of four flights of stairs of nine steps each, with principal walks 15 feet wide leading to the centre fountain, whose basin is balustraded, and 40 feet in diameter opposite the walks. The terrace adjoining the house is 46 feet wide, with an ornamental front parapet wall; this terrace is gravelled and terminates in a conservatory at the west end. On the south side of the mansion are the walled kitchen gardens, about 3 acres in extent, and probably of the same date as the mansion. These gardens contain a range of Vineries, 120 feet by 16 feet; two Peach-houses, two Pine-pits, each 65 feet long, Melon and Cucumber pits, &c., all warmed by hot water, in an efficient manner, by Messrs. Hannam & Gillett, of Yeovil. On the east side of the kitchen gardens, and divided from them by a young thriving Yew hedge, has been formed last winter, what may be termed the Cedar garden, being planted with Deodar, Japan, Asiatic, and common Cedars. This garden has a raised terrace round it. The walk which runs parallel with the Yew hedge terminates in a handsome summer house, the materials of which in "the olden time" formed part of the banqueting house; great care has been taken to preserve the mosses and lichens adhering to the stones in putting up this building. From this seat a view is obtained of the fountain in the flower garden, already mentioned, which fountain is in a line with this walk. Beyond the Cedar garden is a spot intended for the families of Cypress and Juniper. Mr. Pridham, the gardener, who came to this place nine years since, has exhibited great skill in disposing of the various gardens, everything having been conducted by him. The characteristic architecture of the mansion has been well supported and maintained in the various garden decorations. When he went there the only shrub of any value was a tree *Pæony* (Moutan), and the kitchen gardens had been let to a market gardener during the minority of his employer, who is in a direct line from the founder of this magnificent old mansion. R. G.

### FLORICULTURE.

THE HOLLYHOCK.—Within the last two years or so this flower has come greatly into fashion again, and well it has repaid the labour of those who have cultivated it. Like the Dahlia, it has this advantage over most other out-door plants, that a good display of bloom is almost certain to be obtained even under indifferent treatment,

provided a good plant has been planted out. Its cultivation proves to be altogether very simple. A deep soil and open situation are what it more especially wants. The moist season we have just experienced has caused it to make more than an average growth; and those we usually see 6 feet in height are 8 feet this season, with blooms proportionably large, giving them a noble and majestic appearance. Almost every shade of colour now exists in self, and there are a few parti-coloured varieties which in time will doubtless become much more numerous. In visiting the collection at the Royal Nursery, Slough, the other day, we found it just in perfection. Those that struck us as being most beautiful and of the finest form were, *Pourpre de Tyre*, a purple variety of the most approved shape, and not a very strong grower. *Safranot*, a large, bold saffron, rather coarse, but very showy; *Mrs. Foster*, rosy pink, a delicate and beautifully-formed flower; *Margaret Anne*, rich scarlet crimson, very showy; *Penelope*, large rose, with pink guard petals; *Joan of Arc*, silvery blush, fine spike; *Yellow Model*, straw sulphur; *Rosa alba*, new, a pretty mottled rose and white; *Raphael*, chocolate and white, very showy; *Lady Braybrook*, deep rose; *Eleanor*, blush suffused with pink, in the way of *Picta*; *Charles Turner*, bright red, fine spike; *Acme*, dark maroon; *Napoleon*, bluish purple and white mottled; *Queen of Denmark*, bright orange buff; *Watford Surprise*, the best of the Model of Perfection class; *Triumphant*, dull yellow; *Sulphurea perfecta*, still the best bright yellow; *Mrs. Moulding*, creamy white, delicately edged, like a *Picotée*, with deep pink, quite new in character; *Spectabilis*, mottled rose, when good, one of the best; *Purpurea*, a large bold purple; *Sir David Wedderburn* (improved), fine dark maroon; *White Perfection*, the best white, next to which is *Bella Donna*; *Rosy Queen*, new, much larger than the old variety, and finer in texture; *Charles Barron*, salmon buff; *Magnum Bonum*, black; *Walden Gem*, crimson; *Bicolor new*, light mottled purple; There were others of not perhaps quite so good general qualities, which nevertheless made a fine show, and were attractive as spikes. The best amongst them were *General Bem*, bright crimson; *Lady Dalrymple*, rosy pink; *Meteor*, bright red; *Mandarin*, orange salmon; *Rubens improved*, flesh colour; and *Pillar of Beauty*. A very large number of seedlings is not yet in bloom. The Hollyhock is well known to be difficult to propagate; here, however, they are struck in quantity. Good cuttings taken in autumn make the best plants, and are the most easily struck, especially if assisted with a gentle bottom-heat.

DAHLIAS.—We need scarcely state that these are grown by Mr. Turner very extensively, and that the greater number of plants have blooms on them already. A small forward piece was even in full flower; from this we were informed, a stand of 12 blooms was cut and exhibited on the 27th of July, and again on the 3d of August. The plants here do not average more than from 2 to 3 feet in height, which is owing to their having plenty of room between them, with the side branches tied out, which also secures them from wind; they may, however, be expected to attain a greater height yet. The flowers were large and clean; indeed, the Dahlia bloom promises to be exceedingly fine everywhere this season, the rains early in the summer having induced good growth. The tipped varieties are unusually large and exceedingly beautiful. Those in good condition, and which we expect to see extensively exhibited this season, were *Sir C. Napier*, *Annie Salter*, *Sir F. Bathurst*, *Amazon*, *Sir John Franklin*, Mr. and Mrs. Seldon, *George Villiers*, *Sir Robert Peel*, *Bob*, *Triumphant*, *Malvina*, *Queen Victoria*, *Essex Triumph*, *Sir R. Whittington*, *Princess Radzivila*, *Plantagenet*, *Fearless*, *Edmund Foster*, *Dr. Frampton*, *Exquisite*, *Lilac King*, *Robert Burns*, *Grand Duke*, and *British Queen*. The fancy-varieties, which Mr. Turner allows to carry about a third more blooms than the other kinds, are already gay. The following were very fine plants, independent of their merits as show varieties; viz., *Princess Helena*, *Emperor de Maroc*, *Duchess of Kent*, *Phaeton*, *Jenny Lind*, *Sanspareil*, *Rachael*, *Flora Mavor*, *Kossuth*, *Lilliput*, *Mrs. Willis*, *Princess Charlotte*, *Mrs. James*, *Miss Ward*, *Glorie de Kain*, *Miss Weyland*, a very dwarf kind, *Mrs. Hansard*, *Cladia*, and *Elegantissima*. Those of this class that are of good habit deserve to be much more extensively grown than they are.

FUCHSIAS.—A very large collection of these is now in flower at the Royal Nursery. Of the newer kinds, England's Glory, Duchess of Lancaster, and Lady Montague, were conspicuous among light varieties. In darks, Dr. Lindley was the best, being robust, with rich well contrasted colours, the corolla retaining its rich deep violet hue for a much longer time than is usual in other sorts; *Glory* and *Perfection* were also good. Of Seedlings there were several very promising things raised by Mr. Banks; *Vanguard*, *Magnifica*, *elegans*, and *Autocrat*, are dark varieties, which cannot fail to please; and in lights, *Charmier*, *Clio*, and *Queen of Hanover*, are distinct and good.

### SEEDLING FLOWERS.

PELARGONIUM: *W. J. S.* A very pretty variety very much in the way of *Lady Homedale*.

### Miscellaneous.

THE POTATO BLIGHT.—It has been observed that the Potato disease generally makes its appearance immediately after a night fog, which is quickly indicated by spots on the leaves and an offensive effluvia, followed by



a withered aspect of the stalks, and, ultimately, decay of the tubers. The fog seldom rises more than a few feet from the ground, and the exposure of naked legs to its action usually produces blisters and a sensation of scalding. Facts of this kind being clearly established may be the means of leading to a discovery of the proximate cause of this mysterious disorder, and teach us the application of an appropriate remedy. It is well known that the gem-like dew drop is surcharged with electricity, and that when impregnated with marsh miasmata, it becomes converted into a deadly poison, destructive to human life on inhaling by the lungs, and that it is also peculiarly injurious to cattle. Perhaps the same effects are produced on vegetable substances at particular periods of growth, by an agency somewhat similar. Should such prove to be the case in the present instance, it is obvious that fumigation is one of the most simple expedients that can be employed for decomposing the noxious vapour, and by purifying the air, neutralise its baneful influence. For the accomplishment of this desirable purpose with success and economy, there is no chemical combination with which we are acquainted preferable to common gunpowder, ignited after moisture. The union of carbon, nitre, and sulphur, in a state of combustion, is all-powerful, and when used in the manner proposed is both diffusive and pervading. The experiment should be tried in the way described, whenever the mist sets in, and repeated if necessary. Extensive gardens can with facility be subjected to the disinfecting process at a trifling cost, and the insidious enemy subdued by the exercise of a little ingenuity, attention, and skill. *Limerick Chronicle.*

**Coke Ovens and Waste Heat.**—Such is now the demand for coke, says the *Gateshead Observer*, that we hear of one single coalowner, resident in South Durham, who will shortly have 1000 ovens in full operation. It has often occurred to us that the heat of coke-ovens might, in many cases, be turned to profitable account where it is still wasted. Coke, in fact, ought only to be made where other purposes can at the same time be served. Even the gases thrown off might be burnt in aid of any requisite heat, and, in many instances, coke-ovens might be erected near villages and hamlets, so as to light them up with gas. It seems to us a strange circumstance that, in a money-making era such as this, there should still be so wasteful an apparatus as a coke-oven not a mere appendage to a pottery, gaswork, timber-drying, or other useful manufactory. *Builder.* [Why not connected with forcing-pits, &c., so as to raise the early and very profitable market crops which now come to us from the continent?]

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

CONTINUE to carry on the requisite repairs to the various plant houses and pits, that, should wet weather set in, some part of them may be ready to receive the more delicate plants, which should be housed first. If the weather is dry, however, most plants will be better out for a short time longer. The conservatory and show house will now be gay with the different varieties of Lillium lancifolium, Fuchsias, Neriums, Balsams, Achimenes, &c., in addition to a selection from the stove and Orchid house, where these latter named plants are grown. As light is now decreasing, the conservatory climbers may be pruned back, selecting those shoots for the purpose which have nearly done flowering; this will allow more light to fall on the plants below, and prove advantageous to the ripening of their wood. Vigorous growing plants, whether planted out in the open borders or kept in pots, must be liberally supplied with water. Brugmansias especially should have liquid manure to enable them to bloom in perfection. Amarlyllids, which have perfected their growth, may be placed in a dry place to winter. There is one section of this tribe, however, with elongated bulbs, which will not bear to be kept entirely without water, even when in a state of rest. These latter, with Pancratium speciosum, and fragrans, &c., should be placed on the back shelves of a Vinery, or any house of medium temperature, supplying them only with water enough to keep their foliage from dying off. Complete the potting of Chrysanthemums, and plunge them in ashes or saw-dust, to save watering. Stake neatly; and stop mildew where it appears, by dusting a little flowers of sulphur over the infected leaves; water with liquid manure freely.

#### FLOWER GARDEN AND SHRUBBERY.

Plant out the recently-struck Pinks, double Wall-flowers, and Pansies; it may be as well to keep a few of each of the two latter in pots, to have protection in winter. Antirrhinums should likewise be potted for the like treatment, as they rarely stand well in the open air throughout the winter. Plant out from the seed-beds, either where they are to remain for flowering, or to nursery beds for future transplanting, single Wall-flowers, Sweet-Williams, Dianthus, and other biennial and perennial plants raised yearly from seed. All the more choice kinds of Perpetual, Bourbon, Noisette, and China Roses, may now be propagated by cuttings of the young wood, selecting the tips of short shoots for the purpose, with the lower part somewhat ripened. A bed or two of Anemones may now be planted for early blooming; and plant in sheltered spots, and at the foot of a south wall, the common and new varieties of Russian Violet for furnishing blooms through the winter.

#### FORCING DEPARTMENT.

With the exception of now and then looking over ripe Grapes, to remove decayed berries, and stopping the lateral shoots as they are formed, there are not many directions to give in this department, as our previous instructions will suffice to carry out the late crops to perfection. Fires, especially to Vineries containing Muscat Grapes, should be made each evening, and during wet dull days, that abundant ventilation may be kept on. Vines in pots intended to fruit next season should now be closely watched, to get the wood perfectly ripened. As they have now completed their growth, liquid manure may be given pretty freely, to swell out the buds to carry next season's crop; of course the plants are kept close to the glass, and thus exposed to the full influence of light; and great care should be taken not to injure the principal leaves as the wood assumes a brown hue. Lessen the water by degrees, and allow them (if practicable), a lower night temperature. Pines in fruit will require water often, as the pots at this time will be fuller of roots than earlier in the season. Syringe each warm afternoon, and close the house afterwards. The Pines for winter fruiting will now be in bloom, and while such is the case keep the syringe from the flowers. After the suckers, &c., are potted and plunged, keep them rather close for a few days, till they begin to grow, after which fully expose them to light and air. A sowing should now be made of Lord Kenyon's or other good winter Cucumber, to allow the plants to get strong and hardy before the dull days of autumn.

#### FLORISTS' FLOWERS.

Layering Carnations and Picotees must be rapidly proceeded with; the seedlings which have been marked as possessing good properties should also be attended to. Progression is now so much the order of the day, that unless they are distinct, and improvements on existing varieties, they are hardly worth the trouble, except for border flowers. Look to the seed-pods, whether they have been cross-bred or not; as the petals decay, extract them, or they are liable to retain wet, and the seed-pod consequently rots. Plant out Pink pipings, and put in a second crop of cuttings where a large stock is required. Disbud and thin out Dahlias; give liquid-manure when required, trap insects, and shade bloom. Clean Tulip bulbs, and arrange them in their drawers, discard stained varieties, and obtain pure ones in their place. The former are rapidly disappearing from all first-rate collections.

#### HARDY FRUIT GARDEN.

It is a good plan to have a few Warrington Gooseberries, with red and white Currants, growing against north walls, as, by covering them with mats, &c., they can be kept fresh and fit for the table nearly up to Christmas, when the whole of the laying in and removal of the breast-wood is effected. The present year's bearing wood of the Raspberry may be cut away, which will help the young wood, by admitting air and light. Attend to the recently planted Strawberry beds, and keep them watered till they have fairly started, after which a mulching will be sufficient.

#### KITCHEN GARDEN.

Where the tubers of the Potato are much diseased, they should be immediately dug and boiled up, as food for hogs, for it will be useless attempting to keep them. If the haulm is much gone, and the soil heavy or wet, it will likewise be the safest plan to dig them at once, as there can be no chance of their getting better, and the ground, even yet, may be much more usefully occupied. During the week, sow early and late Cauliflower and Walcheren Broccoli; an open situation and dry soil should be preferred for the seed beds, and after an interval of ten days, a few more of each should be sown, to have the chance of a later sowing, should the earlier sown "button" during the winter, which in mild weather is sometimes the case. Sow the seed thin, that the plants may be short-legged and stocky, when they get large enough for transferring to hand-glasses, frames, &c. Endive and Cabbage Lettuce should still be planted, and sow Corn Salad, Chervil, Normandy and American Cress for winter use; substitute the red and white turnip and oval Radish for the longer kinds after this. Remove useless leaves from Tomatoes, to permit light to the fruit. Chillies under glass are subject to green-fly, fumigate when it appears. Sow a crop of Newington Wonder French Beans under a south wall; this is a valuable variety, being dwarf and bearing at an early age. All spare time should be filled up by hoeing between the various crops, dusting them occasionally on damp mornings with fresh lime, or lime and soot; this will promote the growth of the crops, and serve to keep both weeds and insects in check. Water freely, as previously advised, Cauliflowers, Peas, &c., in dry weather. Provided a sufficient quantity of droppings is prepared, a Mushroom bed may be made at once; if there is not the convenience of a Mushroom house, any shed or outhouse will serve to grow them at this season, or a bed may be made out of doors, and protected by straw or hay, which is the general plan among the market gardeners round large towns. Transplant on dry borders or slopes a good stock of Parsley, to be sheltered in the winter; and fill in the vacant spaces at the foot of south walls, for the chance of a supply of this vegetable in hard weather.

**ERRATA.**—In Forcing Department last week, 2d column, 5 lines from top, for "turned out into other beds," read, "turned out into the bed." Same column, 16 lines from top, for "and then expose their surface," read, "and expose their surface."

#### STATE OF THE WEATHER NEAR LONDON, For the week ending Aug. 18, 1853, as observed at the Horticultural Gardens, Chiswick.

August.	Moon's Age.	BAROMETER.		TEMPERATURE.				Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean.	Of the Earth 1 foot 2 feet deep.		
Friday.. 12	1	30.195	30.117	68	54	61.0	62	59	N.E. .00
Saturday 13	2	30.143	30.047	67	52	59.5	61	60	N.E. .00
Sunday 14	3	30.015	29.999	64	51	57.5	61	59	E. .00
Monday 15	4	29.994	29.929	63	46	55.5	61	58½	N. .00
Tuesday 16	5	29.780	29.164	64	54	59.5	60	58	E. .36
Wednesday 17	6	29.704	29.507	71	41	56.0	60	58	W. .00
Thursday 18	7	29.901	29.570	73	61	62.0	60	59½	S. .00
Average		29.952	29.903	67.5	49.8	58.7	60.7	59.6	

August 12—Overcast; cloudy and fine; very clear at night.  
13—Cloudy and fine; partially overcast.  
14—Overcast; fine; overcast.  
15—Cloudy and fine; overcast.  
16—Uniformly overcast; rain; heavy rain at night.  
17—Partially overcast; very fine; clear and cold at night.  
18—Slight fog; very fine; clear at night.  
Mean temperature of the week 33 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK, During the last 27 years, for the ensuing week, ending August 27, 1853.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 21	72.3	50.3	61.3	10	0.62 in.	1	1	1	1	1	1	1	1
Mon. 22	70.8	51.4	61.1	11	0.58	1	1	1	1	1	1	1	1
Tues. 23	71.3	49.1	60.2	14	0.55	1	1	1	1	1	1	1	1
Wed. 24	71.0	49.1	60.5	13	0.23	1	1	1	1	1	1	1	1
Thurs. 25	71.4	51.4	61.4	8	0.32	1	1	1	1	1	1	1	1
Friday 26	72.2	49.0	60.6	9	0.51	1	1	1	1	1	1	1	1
Satur. 27	72.6	50.3	61.5	8	1.32	1	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 21st—1835—therm. 83 deg.; and the lowest on the 21st, 1850—therm. 32 deg.

#### Notices to Correspondents.

**APPLE LEAVES:** J.H.S. We are unable to find any "blight." A few red spiders are present, and the stalk appears to be dying; if that is the disorder you refer to, then the cause of it must be sought for on the spot where the tree grows. The leaves supply no evidence whatever.

**BOOKS:** E.B. The best recent publications on the cultivation of fruit trees and fruit-bearing shrubs are Lindley's "Guide to the Orchard," and Macintosh's "Book of the Garden." The most recent work which treats of the cultivation of cotton is Dr. Royle's "Culture of Cotton in India." Porter's "Tropical Agriculture" relates to the other subjects. We know nothing of the "Colonial Magazine."

**CRYPTOMERIA:** G.W. Upon referring to our indexes you will find many notices of this plant. There is a very full account of it by Mr. Fortune, its discoverer, at p.471 of our volume for 1848.

**FIGS:** Beta. The cause of Fig-trees dropping their fruit when growing out of doors, is generally to be ascribed to badly-ripened wood and sudden cold at the fall of the leaves in autumn.

**HOLLIES:** A. Cantab. We see no reason to doubt that your Holly hedges will grow well under the circumstances described, without manure. If a couple of years hence you find the plants making no satisfactory progress, then you may give the land a top-dressing of guano and heath-mould. But we do not anticipate any such necessity.

**INSECTS:** G.W. Your Wheat aphids are more or less infested with the Wheat green-fly (Aphis avenae). They do not seem to have done much mischief to the grains. W.

**LARCH:** Lark. There is nothing in the specimens sent to throw positive light upon the disease which has attacked your plantation. Are you within reach of any manufacturer's chimney? If not, examine the soil, which may be affected in some unsuspected manner.

**NAMES OF FRUITS:** S.S. In consequence of your Cherry having travelled several hundred miles, we cannot be quite certain of its name. It has the long-pointed coarsely-serrated leaves and small round stone of the Carnation Cherry.

**NAMES OF PLANTS:** Barton. The curl-leaved Elm, a variety of Ulmus rubra.—N.Y. Appears to be Lobelia tenuior.—Breroum. 691, Vaccinium arctostaphylos; 115, Scutellaria orientalis; 244, Marrubium peregrinum; 346, Teucrium Chamaedrys; 275, Teucrium orientale.—D.S. 1, Asplenium Filix-foemina; 2, Adiantum-nigrum; 3, Adiantum cuneatum; 4, A. capillus-veneris. S.—Alpha. Sedum purpureum.

**PARNIP DISEASE:** P.J.E. We regret to say that no remedy is known for the disease now attacking this crop. It is quite analogous to the Potato rot. You might try the effect of dusting your leaves with sulphur, but we have no confidence in the measure.

**PONDERERIA:** A.H. P. angustifolia is found from New York to Carolina; a lanceolata is a more southern plant, being confined to Georgia and South Carolina.

**SALICIGLOSSIS:** J.A.T. It is evident that the colour of S. coccinea is not yet fixed, nor can it be expected to become so for some generations. What we saw formerly were exactly the colour represented in Paxton's "Flower Garden," from specimens furnished by Messrs. Henderson & Co.; yet the plants exhibited by the same firm in Regent Street this year were far less brilliant. The original was a very gay thing.

**TACSONIA PINNATISTIPULA:** N.W.G. It seldom blooms profusely, but young plants (which have occurred) in your greenhouse for four years, and has never flowered; if, we trust, an exception. It is perhaps growing too luxuriantly; if so, we should advise you to try the effect of cramping its roots, and starving it for want of water for a week or so before you wish it to flower might possibly assist in throwing it into bloom.

**TESTUDINARIA:** Milo. The finest specimen of this is supposed to be in the Royal Botanic Gardens, Kew; its age is unknown and unascertainable. No rule applies to such cases. The genus is described in Kunth's "Enumeratio Plantarum," Vol. V., or in Harvey's "Genera of South African Plants." There is no such plant as Oldenbergia grandiflora, as far as we know.

**THE NEW FOREST:** X.F.Z. We do not desire to carry this matter further for the present. Our object has been to show the effects of the past system, in order that it may be amended for the future. We see no difficulty whatever in settling the so-called rights of commoners. A short commission to hear claims and a short act of Parliament to dispose of them equitably, would put everything in order. You do not seem to be aware that the deer are at last condemned. When the commissioners' report for 1852-3, which has been forwarded to be printed, shall have been issued, we shall be able to judge how far matters are improving in the New Forest. We cannot say that we are sanguine.

**WEIGELAS:** A.H. We are uncertain how many species are known to Botanists. In the gardens we have W. rosea, Middendorffiana, amabilis, and lutea; but the last is often an alias of Diervilla lutea, and we do not know how far the others are distinct. In books also occur W. pauciflora and florida; but the latter is very nearly if not quite the same as W. rosea.

\* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

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**PERUVIAN GUANO**, the guaranteed import of Messrs. A. GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.

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**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urata, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

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Turnip Manure ... .. per ton £7 0 0  
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N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**MR. SAMUELSON'S PATENT DIGGING MACHINE**, which obtained the SILVER MEDAL at the GLOUCESTER SHOW, and the PRIZE at the YORKSHIRE SHOW at YORK, may be seen at work at Banbury and in Kent, Middlesex, Surrey, Cheshire, North Wales, Yorkshire, Berwick, Gloucestershire, Worcestershire, Leicestershire, Hertis, &c. Price 27l. 10s.

PRIZE for the eighth time at Gloucester for Samuelson's patent GARDNER'S TURNIP CUTTERS.

For references apply to Mr. B. SAMUELSON, Engineer, Banbury (successor to the late James Gardner), Manufacturer of Gardner's Turnip Cutters, McCormick's Reapers, Lawn Mowers, Kase's Force Pumps, Churns, &c.

**MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY.**—The SIXTH ANNUAL SHOW of LIVE STOCK (including POULTRY), AGRICULTURAL IMPLEMENTS, SEEDS, &c., will be held in a Field close to the London and North-Western Railway Station, at WARRINGTON, on WEDNESDAY, September 7. There will be a trial of REAPING MACHINES in some fields near Warrington the day before the Show, and a Special Prize of 10l. in addition to the sum offered in the Prize List for Implements, will be awarded to the exhibitor of the best.

Entries for this Trial and for the Show must be sent to the Secretary on or before August 31; and Prize Lists and Rules, and any other information, may be had by applying to him. Warrington, Aug. 20. HENRY WHITE, Sec.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

SATURDAY, AUGUST 20, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Aug. 26—Agricultural Imp. Society of Ireland.

THURSDAY, Sept. 1—Agricultural Imp. Society of Ireland.

It was difficult to say at present whether the progress of British agriculture is most dependent upon that of chemistry or that of mechanics. The enormous price of artificial manures on the one hand renders new fertilising compounds and discoveries of the greatest importance, while the emigration of her labourers renders the abridgment of labour by machinery a *sine qua non*. Farmers have long been accused of clinging to old things with tenacity; but the attraction of the "gold fields" will place it beyond the power of the oldest of the old school to cling much longer to our present pauper system for cheap labour; for idle ploughs in seed time, and empty villages in harvest, will make them think of "digging machines" and "reaping machines" whether they will or no. In fact, as in most other professions, there are in agriculture some who seem caught, as it were, by the "diggings at Australia" and "diggings at California" between the lines of the poet's couplet—

"Death in the front—damnation in the rear!"

a position from which they can extricate themselves only by the adoption of what they have hitherto branded as "new-fangled things." It is some consolation to think that, if our idle population emigrate to our colonies, we shall then have no poor-rates,

and that the 5,000,000l. now spent in poor-rates annually will go a good length in guano and machinery, if judiciously applied.

The economy of manure and labour is at all times an important topic, but doubly so at present, for lands improperly manured require more labour to keep them clean than when in a proper state of fertility, while improperly cultivated lands from bad implements require more manure and labour than if otherwise, and never yield such good crops when done. But important as are both divisions of the subject, how little attention has been paid to economy in either. For instance:—

Of all the kingdoms of the world, Britain ought to be the best supplied with manure within herself, and therefore the most independent of guano, while the contrary is experienced! Hence of all the kingdoms of the world she is the least economical. Facts are not wanting in proof of both these allegations. In the first place she imports more produce than any other country, and hence ought to have the greatest supply of offal for manure. What is true of individual farms is also true of kingdoms. Now the farmer who buys corn and cake in the greatest abundance has always the fruitfulness of the farm, provided he pays attention to his dunghill; and such is just the position of Britain, for she buys corn and a long list of *et ceteras* in the greatest abundance, consuming the whole within herself, and, therefore, ought to be the richest and least dependent upon foreign manures, provided she husbands the offal economically; but instead of this, there is no country which incurs such a prodigal waste; for if we take the metropolis, as one of a hundred examples, the fact is notorious, that but for the river Thames Peru would have had no guano monopoly of the Lobos Islands long ago. How many hundred millions of tons of fertilising matter have thus been removed from the capital since the days of Boadicea it were no easy matter to say, much less the increase of produce which the annual waste would produce were it applied to the soil. Britain, therefore, has not yet learned to farm her own fertilising resources economically, than which nothing could be more injurious to her agriculture.

In the second place, there is no country which pays away so much money annually for artificial manures as she does, and when done the supply falls far short of the demand of her soil. It is this extra demand and deficient supply which keeps up the price. Hence her dependence. A new discovery has just been made on the east coast of Africa of something like "20 years' supply" we are told, but unless more economical steps are taken for collecting, loading vessels, &c., than have hitherto been done, it is questionable if the additional supply from this source will have much influence upon the price.

In the other division of the subject: (1) how slow have farmers been in adopting improved machinery! and (2) how great has been the loss sustained in a labour sense! When [we examine the provinces, and compare the implements and machinery there, with the prize implements and machinery of the Royal Agricultural Society, we find that the former are upwards of one century behind the latter, generally speaking, and in some isolated cases ten! In some parts of Ireland and the Highlands of Scotland, the *loy* and *caschrom* are still to be seen in operation as they were in the patriarchal times of our forefathers; and between these rude implements and our prize ploughs and digging machines there is an anomalous variety, such as would create surprise were they to be exhibited together in our show-yards. There are no doubt a few laudable exceptions from this rule, where better things are to be found in the hands of some farmers than are to be met with in the prize list of the Royal Society. Prior to 1851 BELLI'S reaping machine was an instance of this kind, but, generally speaking, the antiquated character of implements confirms the truth of our first proposition.

It will be more difficult to convince some of the soundness of the second—the loss in labour—from the absence of proper agricultural statistics; still facts are not wanting in confirmation of it, for between the number of labourers employed and the quantity and quality of work done in the best farmed provinces of the United Kingdom, where the greatest amount of machinery is brought to bear upon the soil and its produce, and those respectively of the worst farmed districts where the least amount of machinery is called into operation, there is a wide difference in favour of our proposition. In Ireland, where less progress has been made in science, the difference is still more conspicuous, for during the last 50 years her agricultural population has been nearly equal to that of England, while her amount of produce has been only one-third! so that a loss of 200 per cent. of the produce has been sustained. In other words, with proper implements and machinery, one-third of her labourers could have

done the work, or her whole labourers three times the work. No doubt much of this difference is to be attributed to idleness, but such an argument although it may affect the mechanical merits of implements in comparison with one another, has yet practically little force in a national sense, for one of the greatest blessings of machinery is the regular continued motion which it gives to the whole industrial fabric. The differences in the number of labourers, the differences in the quantities of work performed, and the differences in the produce, are facts which speak for themselves in proof of the soundness of our proposition; and although a proper statistical report would, no doubt, exemplify a vast amount of idleness on both sides of the Channel—a result no more than might be expected from our poor-rates—yet it would also furnish startling evidence in favour of the mechanical question at issue. As a mechanical question—it is very problematical if the whole population of Britain, without excepting rank or profession, would cultivate her soil, with the implements of the eighth century, as it is now cultivated; hence the argument involved in favour of the general progress made in mechanics.

Such is a cursory glance at our subject retrospectively—prospectively it assumes a very different appearance; for, in the former, labourers and machinery were growing together as it were, while, in the latter, a general exodus is bidding fair to leave the whole work to be done by machinery. In the first, it is farming with imperfect machinery, and a supply of labourers of the lowest artistic order; in the latter, it is farming with machinery, and labourers of the highest artistic or scientific order. Thus giving more employment to machinists, converting our labourers into engineers, and conferring upon the whole operations of agriculture a more dignified and scientific character.

Such a transition is obviously a work greatly to be desired, but one of time; and if we suppose that the abridgment of labour by machinery keeps pace with emigration, no harm will be experienced; but otherwise, the result will be different. If, for instance, we reduce wages at present to 2s. per day, and the number of labourers to 1,750,000, it will give a total of 54,600,000l. in wages for the kingdom, to which may be added 5,000,000l. of poor-rates, making a total expenditure for labourers of about 60,000,000l. annually. And if we further suppose that the number of labourers are ultimately reduced one-half by emigration—that wages are doubled—that the abridgment of labour by machinery keeps pace with this reduction of labourers—and that the 5,000,000l. of poor-rates, with a reduction in the price of guano, will pay the interest on the increased investment in machinery—then farmers will sustain no loss; but if they cling to their present practice, declining to adopt improved machinery until wages are doubled (which a very slight reduction in numbers will effect), then they may pay 100,000,000l., and sustain a loss equal to the rental of the kingdom. Hence the absolute necessity of landlords and tenants doing something more than they are at present, to effect the progress of chemical and mechanical science, so as to procure improved manures and machinery; for it is because emigration exceeds the abridgment of labour that wages are rising. Were the one to keep pace with the other, no advance would take place for the same quality or description of labour.

It will appear from the following tabular statement published last Wednesday in the *Times* newspaper, that the guanoes recently discovered in the Indian Ocean are not of first-class quality—and that they will not come so directly into competition with those of Peru as is much to be desired. They correspond in composition more with the guanoes of Patagonia and Saldanha Bay. The following epitome of analyses is extracted from the valuable paper by Professor WAY in the 10th volume of the Agricultural Society's Journal:—

Name of Guanoes.	Number of Specimens Analysed.	Ammonia Per cent.	Phosphate of Lime per cent.
Peruvian	32	17.41	24.12
Ichaboe	11	7.30	30.3
Patagonia	14	2.34	44.6
Saldanha Bay	20	1.62	55.4

The value of the Peruvian guano depends chiefly upon the enormous per centage of ammonia which it contains, both ready made and forming after it has been applied in the soil; that of the Ichaboe guano depended (for here, unfortunately, we must speak in the past tense) upon the considerable proportion of its ready made ammonia; while the Patagonian guanoes, with a much smaller per-centage of ammonia, were a first-rate Turnip manure, owing to the large quantity of phosphate of lime present in them. It is in this last way that the newly discovered guanoes are likely to be useful.



The following is their composition. The number at the head of each column is that of the specimen analysed: the letters refer to Professors ANDERSON and WAY respectively, by whom these analyses were made.

	No. 1.	No. 2.	No. 3.	No. 10.		No. 11.	No. 13.	No. 14.	No. 15.
	A.	A.	A.	A.	W.	W.	W.	W.	W.
Water	4.00	8.52	13.52	14.73	14.65	1.26	1.16	7.95	3.62
Organic matter and ammonia	9.12	11.45	15.87	15.74	15.99	6.77	6.89	11.24	9.68
Phosphates	21.88	51.59	54.60	57.99	57.20	80.33	79.73	20.10	76.7
Sulphate of lime	35.41	9.29	...	...	...	7.6	8.4	42.88	4.78
Alkaline salts	8.90	10.96	8.29	9.06	9.85	6.02	3.88	9.73	1.86
Sand	21.59	8.19	2.72	2.48	2.30	4.86	7.50	8.10	3.36
	100.	100.	100.	100.	100.	100.	100.	100.	100.
Ammonia, per cent.	.77	1.31	1.16	1.85	1.82	1.19	1.11	3.82	1.87
Phosphoric acid in alkaline salts	...	...	1.31	2.47	2.87	...	...	...	...

It will be seen from this table that while all the specimens are inferior to those of Ichaboe guano formerly imported, most of them are also inferior to that from Patagonia and Saldanha Bay. There are several other points to be noticed in these analyses, —the very marked differences not only in the ammonia they contain, but in the gypsum, the phosphate of lime, the alkaline phosphates, and the water present in them are deserving of notice. It will probably be by loading from sheltered spots, by selecting the best stations, that superior quality is to be obtained, rather than by digging deeper. Rain, no doubt, as well as mere exposure, does its part in deteriorating the guano, and soluble parts of it may thus be washed downwards; but it must not be forgotten that in the slow growth of a very considerable thickness of the material, every successive layer has been alike exposed, both in point of time, and in point of force during that time, to all the deteriorating agencies which are now at work upon the surface from which the above specimens were taken. The composition, as far as known, of these guanoes must be considered as likely to cheapen phosphate of lime rather than ammonia; and however large, within probable limits, may be the importation of them, they are likely to diminish the price of bone-dust rather than that of ammonia as a manure.

It is, meanwhile, satisfactory to be assured that active measures are being taken to secure this produce of the newly-discovered islands for the use of the British farmer.

We last week referred to the sale of SHORT-HORNS which is next week to take place at Tortworth; it will, however, be a two days' sale, and a large flock of pure-bred Southdowns, a considerable herd of swine of the white Yorkshire and Cumberland breed, and a large stock of Cochins fowls will remain for disposal on the second day. The Downs are from the flocks of our best breeders, and Lord DUKE was for many years an attendant at the annual lettings of JONAS WEBB'S rams; the pigs are from the best breeders of Cumberland and West Yorkshire; the choicest animals shown at Birmingham and Smithfield were from time to time added to the number, often at extraordinary prices—the Cochins will be found equal in purity and condition to anything of the kind that has been yet offered for sale; the celebrated bird "Sir Robert" is among them, and he is surrounded by numerous descendants, inheriting, no doubt, his many virtues.

We notice among the sales of importance to agriculturists which are soon to come off, another by Mr. STRAFFORD on the first of next month, to which we may also call the attention of our readers. Mr. BUCKLEY, of Normanton Hill, near Loughborough, is, it appears, about to decline ram-breeding, and his celebrated flock, including 40 rams and 200 ewes and heaves, is about to be offered for sale. This will no doubt attract a large attendance of the leading agriculturists, especially as the pedigree of Mr. BUCKLEY'S flock is traceable more directly, and with less intermixture, we believe, than any other, up to that of BAKWELL himself, from whom not only the vast improvements in the Leicester breed—but in the practice of and attention to the breeding of our domesticated animals generally, may be said to have originated.

#### HISTORY OF SCOTTISH AGRICULTURE.

(Continued from page 491.)

Causes which led to the Improvement of Scottish Agriculture during last century.—In 1555 was passed the first enactment for making and repairing turnpike roads in Scotland, but very little advantage was derived from it, so far as farming was concerned, until it was amended in 1714; and, so slowly, even after that, did it come into effective operation, that in Mid Lothian, the metropolitan county of Scotland, no turnpike roads of any importance existed until 1751. The formation of good roads gave the death-blow to the ancient pack-horse system, and led to the introduction and general use of carts, which were then quite unknown for agricultural purposes,

although mention is sometimes made of wains or waggons in ancient charters found amongst the records of monastic institutions.

In 1723 the Society of Improvers, the embryo of the present Highland Society, was established in Edinburgh, for the encouragement and promotion of trade and

agriculture, under whose auspices several treatises on fallowing and the cultivation of artificial Grasses, Beet, and Hemp were published. Before this period, however, and shortly after the Union, Lord Belhaven had published a work on agriculture, addressed to the young nobility and gentry, in which he urged them to turn their attention to the improvement of agriculture, and in which he enforced his recommendation by a sentiment, true and noble in itself, and admirably suited to the peculiar position then occupied by those fiery youths, whose vocation being that of arms, were thus, in times of comparative peace, left without employment for their restless energies. His lordship says:—"Husbandry enlarges a country, and makes it as if you had conquered another country adjacent; and I am sure a conquest made by the spade and the plough is both more just and of longer continuance than what is acquired by the sword and bow." Such sentiments, proceeding from one of their own class, could not but exercise a powerful influence for good upon the minds of those who were in due time to become the future landowners of the country; and a noble purpose was thus presented to a class of individuals whose co-operation, of all others, was the most essential to the progress of agricultural improvement.

East Lothian, which is now so justly famed for the excellence of its agriculture, took the lead in improvement during the first half of the 18th century, and it is only but justice to repeat here, what is matter of history, that a large amount of this improvement was effected through the agency and energy of the tenantry. The whole of the land in Scotland was at that time entirely overrun with Couch Grass, Knot Grass, and every species of root weed, and absolutely teeming with their seeds, and no means were known by which these could be extirpated. This problem was solved by Mr. Walker, of Beanston, who introduced the system of summer fallowing, which he had learned from some English friends. His first attempt was made on a field of 6 acres, and was looked upon by his neighbours either as the result of insanity or insolvency. The idea of permitting land to remain for a whole year without a crop of any kind, appeared little short of heresy against Nature, and a manifest unbelief in the promise of seed-time and harvest. The experiment, however, was eminently successful, as no such crop of Wheat had ever been seen before as that which followed the Beanston bare fallow. Had it been otherwise, the sceptic and the empiricist would have sung psalms of victory over the failure of the innovation, as they are still prone to do on similar occasions in the present day; and agriculture in Scotland might have remained stationary for many years longer, for it is undoubtedly to the introduction of the means of ridding the land of its ancient tenants—the Couch and the Thistle—by a bare fallow, that the first improvement in cultivating the soil was due. So early as the year 1724, the new system of summer fallowing had so far extended as to have become general on all the clay soils of East Lothian, from which it spread into other counties, and, when introduced upon the carse clays, the effect was magical; for these old stubborn, cattle-trodden, and water-sodden soils were opened up to the genial mellowing influences of the summer's sun and drought, and their long-latent fertility thus set free.

Nearly simultaneous with the earlier stages of the summer fallow system, occurred the introduction of mills for making decorticated or pot Barley; and it is to Fletcher, of Saltoun, one of the most energetic spirits of his age, that Scotland owes her wholesome Barley broths, which soon superseded the ancient "Scottish Kail brose." Mr. Fletcher engaged the services of Mr. Meikle, a most ingenious mechanic, whom he sent to Holland in 1810, to learn the art of making pot Barley and the mode of erecting mills for the purpose. Articles of agreement were entered into between the two, by which the former bound himself to ransom his envoy, if taken prisoner, and to pay him 2s. sterling per day; and further, in the event of his dying abroad, to give his wife and children a hundred marks Scots, about 5*l.* 11*s.* sterling. Meikle not only performed his part of the contract, but he stored his mind with other mechanical ideas, which were the embryos of the winnowing machine in his own time, and of the threshing machine in that of his son's. On his return he erected a Barley-mill at Saltoun, where pot or pearl Barley was manufactured and sold under the name of Saltoun Barley. The introduction of the winnowing machine was viewed by the more ignorant portion of the farmers and ploughmen with superstitious dread, as being the result of Satanic agency; and even in later

times, when Meikle's son had succeeded in constructing a machine for threshing corn, the popular aversion to it was so intense, and so mixed up with religious feelings and selfish notions at seeing inanimate matter endowed, as it were, with a species of preternatural energy, and in the prospect of ruined families, that some of the earlier-erected threshing mills were broken to pieces or burnt to ashes, as holocausts to popular indignation.

Not long after the literary efforts of Lord Belhaven and the practical labours of Walker, Fletcher, and Meikle to improve agriculture, new workmen threw themselves into the arena. Even lawyers and physicians found time, amidst their avocations, to contribute, by precept and example, to the advancement of the science and art of agriculture. In 1730 Sir James Makgill drew attention to the propriety of employing the sweepings of the streets of Edinburgh as a manure; and Sir John Dick, of Prestonfield, the Lord Provost of the city, afterwards practically proved its value by applying it to his own fields in the neighbourhood. Sir John Dalrymple, of Cousland, some time after introduced the sowing of Turnips and other green crops in the fields, and also of Clover and Rye-grass. Add to these improvements the introduction of hollow-draining into East Lothian,\* by Lord Elibank, and Sir Hugh Dalrymple, the straightening of ridges by two farmers of the name of Cunningham, and the adoption of Turnip husbandry, by the Earl of Haddington, Cockburn of Ormiston, the Marquis of Tweeddale, and Sir George Suttie, and we have all those elements of improvement set in operation of which our present agriculture is no more than the natural expansion.

The spirit of agricultural enterprise and improvement soon spread into other districts; and, as a proof of this statement, we find that Clover and Turnips were cultivated in Berwickshire, Roxburgh, Linlithgow, Fife, and Forfar, between the years 1728 and 1750. Newer and better rotations of cropping were adopted, the land was better cleaned, the wetter portions drained, and farm-yard manure, instead of being pitched into running streams as a nuisance, as was sometimes the case, was collected with some degree of care and applied to the fallows. The year 1750 seems, however, to be pitched upon by most writers as the starting-point of that newer and better husbandry which had sprung into existence, bit by bit, during the previous half century. The aspect of the lowland counties had been gradually changing during that period, but afterwards a more vigorous attack was made on the run-rig system; farms were laid out in fields of larger size and more convenient form, ridges levelled and straightened, enclosures made, plantations sprung up for shelter, steadings were erected here and there upon better principles of accommodation; and the farmer's dwelling-house, rising a story higher, looked cheerfully and smilingly over the adjacent fields; and although the rooms were generally uncarpeted, and the walls unplastered, yet the floors were paved or boarded, and the accommodation infinitely superior to the old thatch house, with its clay floors, unglazed windows, and dirty thoroughfare running through scullery, kitchen, and sleeping room. These instances of improvement were no doubt few and far between at the time we write of (1750), and were only to be met with under a favourable combination of circumstances, where there were liberal landlords and improving tenants; but they each became centres from which radiated the powerful influences of successful experiment. Men may long resist arguments addressed to the reason, but a practical illustration, daily enforced and judiciously exhibited, carries along with it a power of persuasion that, sooner or later, tends to conviction.

(To be continued.)

#### ROYAL AGRICULTURAL COLLEGE.

##### SESSIONAL EXAMINATION.—AGRICULTURE.

Answers by Mr. WILLIAMS.

[The numbers of the following paragraphs are those of the questions in page 474, to which they are answers.]

(Continued from page 491.)

(8). *Potatoes* are planted from February to the middle of June, which, however, is a great deal too late, though often done; from the end of February to the end of March is about the best time to plant them. They can be planted on the ridge or in lazy beds; the ridge is about the best way in general to plant them. The land should be manured either in winter or at the time of planting them; the ridges are manured between, and the sets placed on it, and then covered in by the plough. When they appear, they should be harrowed, hoed, and ridged up again; from 20 to 25 bushels is the quantity sown. You may either cut them, or, if small, it is better to plant whole; each Potato has from six to eight eyes in it—always leave at any rate two or three eyes in each set. The average crop at the present time is about 70 bushels (from 30 to 200); it used to be from 400 to 800. They should be dug in October or November; and picked according to their different kinds and sizes, and stored in houses. *Cost of a Crop of Potatoes:—*

	£	s.	d.
1 Ploughing	...	0	9
2 Harrowings	...	0	1
15 tons of Dung, at 5 <i>s.</i>	...	3	15
Spreading ditto	...	0	1
Carting, &c.	...	0	5
20 bushels of Seed, at 4 <i>s.</i>	...	4	0
Cutting and Selling	...	0	2
2 Ridgings	...	0	6
Light Harrowing	...	0	6
Carry forward	...	9	0

\* Chalmers's "Caledonia."



Brought forward	...	9	0	0
2 Hoeings	...	0	6	0
Rolling	...	0	0	6
Digging and Pickling	...	1	0	0
Rents and Taxes, &c.	...	1	10	0
		11	16	6

If Potatoes are wanted very early, people plant them from November; but these would require forcing, and not answer agricultural purposes.

(9). *Expense of a Crop of Carrots per acre:—*

			£	s.	d.
1 Ploughing	...	...	0	9	0
2 Harrowings	...	...	0	1	0
1 Rolling	...	...	0	0	6
6 lbs. of Seed at 8d.	...	...	0	4	0
Drilling	...	...	0	3	6
6 bushels of Soot at 5d.	...	...	0	2	6
15 tons of Dung at 5s.	...	...	3	15	0
Spreading	...	...	0	1	6
Carting	...	...	0	6	0
Hoeing till end of July	...	...	1	2	0
Digging	...	...	1	0	0
Storing	...	...	0	6	0
Rents, &c.	...	...	1	10	0
			£9	1	0

*Expense of a Crop of Mangolds:—*

	£	s.	d.
1 Ploughing	...	0	9 0
2 Harrowings	...	0	1 0
15 tons of Dung	...	3	17 0
Ridging	...	0	3 0
6 lbs. Seed	...	0	5 0
Soaking	...	0	0 2
2 Rollings	...	0	1 0
Drilling	...	0	0 6
Hoeing and Thinning	...	0	10 0
Getting up	...	0	5 0
Storing and Carting	...	0	6 0
Rents, &c.	...	1	10 0

*Expense of a Crop of Turnips:—*

	£	s.	d.
1 Ploughing ... ..	0	9	0
2 Harrowings ... ..	0	1	0
1 Rolling ... ..	0	0	9
Artificial manure ... ..	2	10	0
Drilling ... ..	0	3	6
4 lbs. of Seed, at 6d. ... ..	0	2	0
Hoeing ... ..	0	6	0
Getting up ... ..	0	5	0
Rents ... ..	1	10	0
Storing <sup>a</sup> ... ..	0	6	0
	5	13	3

Carrots should be got up in November, the tops cut off, and then pitted. Mangold Wurzel should be got up either in the end of October or beginning of November, as the frost will rot them; they should have the leaves cut off, not too close to the bulb, and the dirt shaken off; they may then be taken and stored either in a pit or between two hurdles, and coated with straw. They are not fit to use till about January, and last good much longer than Swedes. Turnips are fit for use at the end of September or beginning of October; Swedes about the beginning of November; they are either pulled and cut for the sheep, or these are huddled on them, and they are picked afterwards: they are not so susceptible of damage from frost as Mangold Wurzel. By the preceding accounts of each crop, it may be seen that Carrots are the most expensive; they cost four times as much as Turnips for getting up; they require more hoeing and seed, and also some ashes or soot mixed with the seed, to make it drill. Next in expense comes Mangold Wurzel; the seed of which is more expensive than Turnips, and is more costly per acre. I have charged the Turnips with artificial manure, which is rather cheaper than the farm-yard dung which I have sown the Mangold Wurzel and Carrots on, as that is the way most of ours are sown this year; they also cost rather more than Turnips for hoeing.

(10). *Root crops* should be always drilled on the ridges, if the ground is not perfectly clean; in wet climates, they should also be drilled on the ridge, as, if on the flat, they get too much wet, and most likely perish. In dry climates, if the land is thoroughly clean, it is best to drill on the flat, as they then get more moisture from the soil than they do in ridges; the land cannot be cleaned if dirty on the flat. This season having been so dry up to this time (June 17), and all the weeds nearly being killed, Mr. Valentine has drilled most of his Turnips on the flat; this part of England may be considered dry. Towards Ireland and Scotland, where they are always (or nearly so) drilled on the ridges, if the ridges are rolled after being drilled, they combine the twofold good of the ridges and the flat. Nos. 40, 18, and 1 have been drilled on the flat; part of 3 and 5 has been ridged, and part of it is to be drilled on the flat; about 2 acres in No. 1 are to be ridged, to try some experiments with artificial manures. In No. 2 the Potatoes, Parsnips, and Mangold Wurzel are ridged; the Carrots are drilled on the flat.

(11). *The advantages of winter manuring* are more especially shown on stiff clay soils where long green dung is applied; it then renders it more porous and susceptible to the weather, and in the spring, when stirred up, breaks down and pulverises much more readily. The difference between winter and spring manuring can easily be seen by the ground which was manured in winter being more like garden mould, as regards fineness, than that undunged. All land, if possible, should be manured in the winter, the manure of course being ploughed in, especially on stiff clay soils. An example of this (winter manuring) can be seen in No. 2, about 2 acres in Nos. 3 and 5, and 1 acre in No. 1; in 3 and 5 the part next 2 was manured in the winter, and a

\* Seed not to be stored unless they are not to be used for some time.

great difference can be seen in it compared with the other part of the same fallow, as also in No. 1.

(12). *The common sorts of artificial Grasses* are—Italian Rye-grass, perennial ditto, Dutch Clover or white, red or broad ditto, Saintfoin, Hop Clover, Lucerne, and Cow Grass; these are the sorts in general used on arable land; Festuca ovina and Cocksfoot are more for laying down a permanent pasture.

4 lbs. of White Clover	...	...	s.	d.
10 lbs. of Red ditto	...	...	2	0
$\frac{1}{2}$ bushel of Rye Grass	...	...	5	0
Sowing	...	...	2	6
			0	6
			10	0

The above is what has been sown this season at a cost of 10s. per acre. The following are the fields in which it has been sown this season:—Nos. 8, 9, 11, 12, 29, 30, 31, and 38.

(13). *In making hay or Clover*, and other artificial pastures, the best time to cut is about one week after its having flowered. If it be cut when unripe, it will wither up almost to nothing, as it is little more than water, the woody fibre not having formed. If cut when over-ripe, it will be hard and dry, all the nutritious properties having gone out of it; it will be nothing but woody fibre, and nothing will care to eat it: but if cut when ripe, it will keep all its nutritious properties. In green Grass there is from 80 to 90 per cent. of water, in hay only 12. You can ascertain if it be fit to cut by twisting a bit in your hand the same way as clothes are wrung; if fit, it will break and be quite crisp and brittle. If you are obliged to cart hay before it is quite fit, take care to have a hole left in the middle of the stack, to prevent it heating too much. This can be done by four boards being nailed together and put in the centre, or a 4 or 5-bushel sack filled with straw being put in, and drawn up as the stack progresses; this will allow the hot air to pass out. Hay not sufficiently made should be put into small stacks. An acre of Grass in its green state weighs from 4 to 8 or 10 tons; when made into hay, it is only from 1½ to 2½ or 3 tons—1½ to 2 tons is the general thing. An acre of Grass therefore would be worth rather more; but, then, in the winter, what are you to do with your stock? You cannot feed them all on straw. You could keep more cattle on it in its green state than on the hay that would come off it; but, then, if you graze all your pastures in the summer, and have to buy hay at 90s. in the winter, you will find that it will not pay so well as it may seem. There are great chances in haymaking as well as everything else; but, then, if you do not chance these risks, you must pay the man who does, and of whom you buy your hay, for chancing them; therefore, in the long run, it will always be found best to make your own hay, and not cut your pastures to feed your cattle on them green.

(14). *The chief difficulty which stands in the way of making a Dr. and Cr. account of each field* is, you cannot ascribe a money value to a great many crops; for instance, pastures, roots, and Turnips. You may have a Turnip field which looks very well; a friend of yours comes into it, and you tell him there are 20 tons per acre—he says there are only 15. How can you know unless you pull them and weigh them? which, if you have your sheep on the field, would not pay, as you would have to cart them home and out again to the field; besides, there is no regular money value for Turnips as there is for corn—they may be worth 7s. 6d. per ton to you, while to me they might not be worth 5s. The stock which consumes any crop may be bought dear and sold cheap, and pay nothing. As also in pasture you might know how much you could take in grazing cattle for; but, then, that would be no criterion for your own, as the person to whom you may let it has to get food for them. When you consider all these things, you will find that it is not so easy as people suppose “to make a debtor and creditor account of every crop or field.” You can make it of corn, because there is a money value ascribed to it, or Carrots if you sell them; but as to Turnips and pasture, it is quite an impossibility.

Barley (Debtor).	£	s.	d.	Barley (Creditor).	£	s.	d.		
1 Ploughing ...	...	0	9	0	By 5 qrs. of Barley, at	...	7	10	0
1 Harrowing ...	...	0	0	9	30s. per quarter	...	3	12	3
1 Drilling ...	...	0	3	6	Deduct (debtor)	...	3	12	3
3 bush. of Seed at 4s.	...	0	12	0					
Harrowing ...	...	0	0	6					
Rolling ...	...	0	0	9					
Horse hoe ...	...	0	0	9					
Mowing ...	...	0	2	0					
Stacking, Thatch- ing, &c. }	...	0	6	0					
Threshing 4½ qrs. ...	...	0	7	0					
Rent, Taxes, &c. ...	...	1	10	0					
	£3	12	3		per acre, apparent profit for one year.	£3	17	9	

*Turnips cost per acre:—*

(Debtor).	£	s.	d.	(Creditor).	£	s.	d.			
2 Ploughings	...	0	16	0	Sold, 15 tons at 5s.	...	4	10	0	
2 Harrowings	...	0	1	0	Expenses	...	5	14	3	
1 Rolling	...	0	0	9						
Artificials	...	2	10	0						
Drilling	...	0	3	6						
4 lbs. of Seed, at 6d.	...	0	2	0						
Hoeing	...	0	6	0						
Getting up	...	0	5	0						
Rent, Taxes, &c.	...	1	10	0						
		5	14	3	Loss	...	...	£1	4	3

Here we see that on the Barley crop there was a profit of 3l. 17s. 9d. per acre; but on the root crop a loss of 1l. 4s. 3d. per acre; hence, on the two crops there is a gain per acre of 2l. 13s. 6d. The root crop would, of course, come first.

(15). *Management of the Sheep.*—At the beginning of the session the sheep were on Turnips in Nos. 30, 31, and 29, having hay with their Turnips; they moved

some of the forward ewes to the ewe pen, February 24, when we had our first lambs. They finished the Turnips in Nos. 30, 31, and 29 on April 5, and those in 37 on April 7; they were then put on the seeds—the doubles in 39, the singles in 33, and on the college ground a few were put on the Wheat in 34. The ewe tugs were left on the ground after the ewes in the Turnip lands for some weeks; the culled ewes were put on Italian Rye-grass in 35, and had 1 pint of corn and Peas for a fortnight before they were sold, which was at Whitsuntide. The doubles had ½ pint of corn in 39 for a fortnight; the lambs were castrated soon after Easter, and weaned on the 11th of June in No. 37; the ewes were shorn on June 7, and the tugs in May. The Downs that had early lambs were fattened off, and shorn with the ewe tugs; those that had lambs were sold with them at Malmesbury fair, except four Down ewes and six lambs; the ewes were then put on Nos. 25, 26, 24, and 35, and now are on 33. The cows were in the house till May 5, and the heifers till May 6. The Mangold Wurzel were done April 12, and the cows had hay before they were quite out; they had chaff with Mangold Wurzel steamed, and some Linseed, and cut hay and straw.

ADJOURNED TRIAL OF REAPING MACHINES.

SELECTED AT THE GLOUCESTER MEETING, ON THE FARM OF PHILIP PUSEY, ESQ., PRESIDENT OF THE SOCIETY.

In making their award, the judges regret that, after having tested the reaping machines at Gloucester upon Rye unripe, and consequently unfit for harvesting, they have now again been compelled (at this adjourned trial), from two days' extremely wet weather, to test the machines selected upon corn in such a state as under ordinary circumstances would not have been cut; they, however, have given the different reapers as full a trial as possible upon Wheat, Barley, Oats, and Beans; and, after carefully testing their merits, have unanimously awarded the Society's prize of 20l. to Messrs. Crosskill's "Bell's Reaper." They also "highly commend" Messrs. Burgess and Key's reaper, upon McCormick's principle; and they "commend" Messrs. Dray and Co's reaper, upon Hussey's principle. The judges have the satisfaction of reporting that a decided improvement has taken place in the working of the reaping machines brought under their notice; they are, nevertheless, of opinion that by a combination of certain elements which exist in the various machines exhibited, there might be produced one surpassing anything hitherto brought before the public. Such an implement might be made to unite the advantages of simplicity in construction, greater durability, lightness of draught, and reduction in price, with the thorough capability of being more easily managed by the agricultural labourer. William Fisher Hobbs, Steward of Field Implements; C. E. Amos, Consulting Engineer; Henry J. Hannam, William Woodward, and Joseph Druce, Judges. *Pusey, Berks, August 17, 1853.*

Home Correspondence.

*Is the Berberry Shrub the Cause of Blight?*—Many years since I had a great many plants of the Berberry in my shrubbery, on the side of an arable field; and my neighbour, to whom it then belonged, complained bitterly of the blight, which he said was caused by them. I had no hesitation in removing what he considered a nuisance, and I heard no more on the subject, and cannot say whether he had blighted corn afterwards or not. The land is now in my possession, and I find some of the Berberry roots have shot up again into thriving plants, and this year my Wheat, about 4 acres, is quite a spectacle, dark in the ear and the straw filthy. I send you a sample; no one has ever seen the like, and it was my determination to make it into a rick of straw, untied and not to be threshed; but I have been advised there would be danger to the horses in using it for litter, and that as blighted corn will grow, though unfit for food, my fields would all be covered with Wheat from the dungheap. I have, therefore, this day sheaved it, and put it into a rick, not to be thatched, but to be run through the machine as soon as we are at leisure. Then, again, what is blight? for on showing some of these ears to a friend, a great florist, and very quick at detecting an insect, he soon brought to light several little red insects, about the size of cotton, and which when subjected to his magnifying glass had much the appearance of a maggot out of a nut, only red. Another question is, as soon as I found the Wheat was infected, ought I not to have cut it down at once? It may be as well to mention, if you or any of your readers are curious on the point, that these 4 acres were last year in several crops—Beans, Mangold Wurzel, Swedes, and miserable Potatoes—and all differently manured—one ridge from the yard; a second the same, with lime from the kiln; a third with a large coat of ashes only. But there is no difference in this year's crop. Could the rotten Potatoes infect the whole field? In sending some communication to the *Gazette* years ago, I observed what a dreadful thing it would be if the disease, then first showing itself in the Potato, should infect the Wheat; and if the Berberry is not the cause in my unfortunate crops, I fear my apprehension is being fulfilled. The clergy are called upon at times to pray for "fair weather" or "for rain," and why not against the plague of blight? *South Hants.* P.S. Now I have pen in hand, may I remind you that no return has been made to your inquiries respecting timber made several months back. Thirty years



since, when this property was purchased, 5s. was paid for every foot of growing Oak, now 2s. 6d. could not be realised. Much timber on the Stoneham estate was sold last year for less than 1s. a foot, standing. Barn floor at the time referred to was charged me 2s. a foot; now it can be purchased for 10d., a greater fall than 100 per cent. And then the mischievous Ash, the Venus of the woods, so called for its elegance, is being rooted out of the county; but the time will very shortly come when we shall want this useful, tough wood, for agricultural instruments. Beech may be bought for 6d., Elm at 9d. per foot.

**Liquid Manure.**—You have written much upon the advantage to be derived from the use of liquid manure, and I am so fully aware of its value, that I wish for some advice as to how to manage a filthy cesspool, which receives all the slops from the house, poultry, and farm-yards. It is about 30 feet in diameter, and when it becomes very offensive, a load of lime is occasionally thrown in, and at the present time it contains a thickish compost, which may be shovelled out when wanted. The liquid runs from it into open gutters cut in many directions across the field, which soon get filled up; and from being frequently cleaned out, are now about a foot deep, and encourage a very luxuriant crop of Nettles. My idea is to fill up all the gutters, and to pump up the liquid from the cesspool upon a heap of soil, which might be carried to the spot. There is another drain from the house, which conveys everything offensive, and runs at least 300 yards through a large brick drain underground, and empties itself into a field, where it makes a swamp, growing abundance of Nettles, &c. I should much like to know how best to convert these nuisances into a substitute for guano; I have just paid a large bill for that foreign produce, though I have seen in your papers that sewerage constantly wasted at home might be made as profitable to the farmer. Any information or direction on the subject will greatly oblige K.C.L. [Let the drain empty into the cesspool, dilute well with water, and pump directly over the Grass; or keep it undiluted and throw it over compost heaps with burned earth, old tan, and charred vegetable matter of any kind.]

## Societies.

### ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

I HAVE just returned after attending the late exhibition at Killarney, and now willingly undertake to give your readers a rough analysis of the whole, in as far as it strikes me of interest to your readers generally, but to those of my own country more especially. The show in question was in my opinion one of the most if not the most important character of any I have seen in connection with this Society since its formation, but it had its drawbacks; which all such shows will ever have till the remaining reforms so urgently pressed by some of the leading members of its Council shall have been carried *in extenso*. On the late occasion the number of entries of stock of the various kinds was very considerable, also of the agricultural produce and implements of agriculture. Amongst the stock were to be found some of the finest short-horns I have ever seen; and this is not to be wondered at when men of much greater experience not only in Ireland but the sister countries—England and Scotland—can say, as they have already said, the same. Of the "other large breeds," in Herefords there was "no entry," and in Devons but five, four of which were from Lord Charlemont, and one from Lord Talbot de Malahide; these were all good. In polled Angus or Galloway there were few entries either; some of those brought forward were very fair, but none equal to what had been expected. In the class of "small and mountain breeds" the entries were pretty numerous, and the stock got forward very fair, yet by no means equal in either number or character to what was expected, or to what should have been displayed. The Society's and Towneley Challenge cups were in the case of the first well contested for, whilst in that of the second, being of more importance, the contesting animals were very limited in number but excellent in quality. The class of horses was well filled with some superior stock, whilst others shown were but so and so. Some better could have been taken on that occasion from carts at work in Killarney. I mean as to mares. Class of sheep well supplied, and the qualities of the various breeds well developed. In this class as well as in the class of short-horned and other cows, there were elicited some facts not likely to get publicity, except through the agricultural press, of great importance to Ireland. Class of swine: This far and away superior to any yet seen in Ireland at any show. Poultry in many cases most superior, but in others poor and bad indeed—this should not be. Dairy produce unusually fine and abundant as regards butter; but only very middling as regards cheese. Farm implements in great abundance, though much less than might have been expected. In this there were many novelties admirably suited to the circumstances of Ireland generally, but to those of Kerry more especially; whilst there were others splendidly got up, which though well adapted for certain farmers on certain soils in Ireland as well as in England, were of no manner of use to the locality in which they were exhibited. Farm implements have now become, and are daily becoming of more importance than formerly, and should deserve much more lengthened notice than can be given in this

cursor view. On the whole the exhibition was well got up, came off unusually well, reflecting much credit, first on the Society and its officers; secondly, on the local committee and its energetic secretary, Richard Maybury, Esq.; thirdly, on the directors of the Great Southern and Western Railway Company, but for whom this exhibition could not have taken place in Killarney this season at least—fourthly, on their architect, Mr. Darby, for his taste and judgment in designing the excellent buildings—the best ever yet seen in Ireland of the kind; and finally, above all on the company's builder Mr. Conolly, of Dublin, but for whose exertions the buildings could not have been erected in time. Nor can I pass over the deserts of the people generally of all classes who had assembled on this important occasion at that most important place, from all parts of the civilised world, by and through whom so much good conduct and kindly feeling were displayed, so few abuses committed, and so few accidents occurred in a place so densely thronged as Killarney was on this never-to-be-forgotten occasion. *Edward Carroll, No. 2, Triton Villa, Phibsborough, Dublin, Aug. 17.*

### The following is the list of prizes:—

#### CATTLE.

##### CLASS A.—SHORT-HORNED.

- Section 1.—For the best bull, 30 sovs., Lord Talbot de Malahide. This bull also obtained the gold medal as best of all the prize bulls in the yard—10 sovs., James Douglas, Drem, East Lothian.  
Section 2.—For the best bull, 20 sovs., Charles Towneley, Burnley, Lancashire.—10 sovs., Hon. L. H. King Harman, Ballymahon.  
Section 3.—For the best bull, 15 sovs., William Talbot Crosbie, Tralee.—5 sovs., Robert Holmes, Watertown, Glascon.  
Section 4.—For the best cow, of any age, 15 sovs., Charles Towneley, Towneley Park. This cow also obtained the gold medal as the best of all cows and heifers, and a first-class medal to the breeder, and the Purcell challenge cup, as the best animal in the neat cattle classes.—5 sovs., Lord Viscount Monck, M.P., Charleville.  
Section 5.—For the best heifer, calved in 1850, 15 sovs., Lord Viscount Monck, M.P.  
Section 6.—For the best heifer, calved in 1851, 10 sovs., James Douglas, Drem.—5 sovs., do. do.  
Section 7.—For the best heifer, calved on or after January 1, 1852, 10 sovs., do. do.—5 sovs., do. do.

##### CLASS B.—OTHER LARGE BREEDS.

- Section 1.—No entry.  
Section 2.—For the best Devon bull, 10 sovs., the Earl of Charlemont.  
Section 3.—For the best Polled Angus or Galloway bull, 10 sovs., A. Grierson, Ardsalla, Tipperary.  
Section 4.—No entry.  
Section 5.—For the best Devon cow, in calf or in milk, of any age, 5 sovs., the Earl of Charlemont.  
Section 6.—For the best Polled Angus or Galloway cow, 5 sovs., Adam Grierson, Ardsalla.  
Section 7.—No entry.  
Section 8.—For the best Devon heifer, calved on or after January 1, 1850, 5 sovs., the Earl of Charlemont.  
Section 9.—For the best Polled Angus or Galloway heifer, calved on or after January 1, 1850, 5 sovs., Lord Talbot de Malahide.  
Section 10.—No entry.  
Section 11.—For the best Devon heifer, calved on or after January 1, 1852, 3 sovs., the Earl of Charlemont.  
Section 12.—For the best Polled Angus or Galloway heifer, calved on or after January 1, 1852, 3 sovs., Messrs. Stavert and Fair, Castlebar, Mayo.

##### CLASS C.—SMALL AND MOUNTAIN BREEDS.

- Section 1.—For the best Ayrshire bull, 5 sovs., Charles William Hamilton, Dunboyne.  
Section 2.—For the best West Highland bull, 5 sovs., William Owen, Blessinton, Wicklow.  
Section 3.—For the best Kerry bull, 5 sovs., the Earl of Charlemont.—3 sovs., James Butler, Cahirciveen.  
Section 4.—For the best Ayrshire cow, 4 sovs., N. W. Roche, M.D., Fermoy.  
Section 5.—For the best West Highland cow, 4 sovs., Thomas H. Thompson, 95, Leeson Street, Dublin.  
Section 6.—For the best Kerry cow, 4 sovs., James Butler, Esq., Cahirciveen.—2 sovs., William Owen, Blessinton, Wicklow.  
Section 7.—For the best Ayrshire heifer, 3 sovs., Charles William Hamilton, Dunboyne.  
Section 8.—For the best West Highland heifer, 2 sovs., Captain Croker, Ballymore.  
Section 9.—For the best Kerry heifer, 3 sovs., John Dwyer, Killarney.  
Section 10.—For the best lot of two Ayrshire heifers, 3 sovs., N. W. Roche, M.D., Fermoy.  
Section 11.—For the best lot of two West Highland heifers, 3 sovs., Fitzmaurice Pratt, Dunlavin.  
Section 12.—For the best lot of two Kerry heifers, 3 sovs., John Brennan, Killarney.

THE TOWNELEY CHALLENGE CUP, VALUE 50 SOVS. [To be competed for exclusively by *bona fide* Irish tenant farmers. Given by Charles Towneley, Esq., Towneley Park, Lancashire.] For the best lot of three breeding cows or heifers, of any breed, for general purposes, in calf or milk, not less than three years of age, the property of a *bona fide* tenant farmer, John Cristy, Esq., Fort Union, Adare.

##### CLASS D.—HORSES.

- Section 1.—For the best cart stallion, 20 sovs., Silvester Rait, Rathmoyle, Edenderry.—10 sovs., George Thompson, Kilmore House, Cashel.  
Section 3.—For the best roadster stallion, 15 sovs., John Cassidy, 52, James's Street, Dublin.  
Section 4.—For the best cart mare, 10 sovs., Silvester Rait, Rathmoyle, Edenderry (Clydesdale).—5 sovs., Peter B. Mosse, Rutland House, Carlou (Clydesdale).  
Section 5.—For the best cart filly, 5 sovs., Silvester Rait, Rathmoyle, Edenderry (Clydesdale).

##### SHEEP.—CLASS E.—LEICESTERS.

- Section 1.—For the best shearing ram, 15 sovs., Frederick Founes Hamilton, Edenderry.—5 sovs., Ambrose Bole, Park Place, Tashinny.  
Section 2.—For the best two-shear ram, 10 sovs., Frederick Founes Hamilton; also the silver medal as the best ram.—5 sovs., George Spencer, Normanton House, Hinckley, Leicestershire.  
Section 3.—For the best ram of any other age, 10 sovs., George Spencer, Hinckley.—5 sovs., do. do.  
Section 4.—For the best pen shearing ewes, 10 sovs., J. S. Spencer, Hinckley, Leicestershire.—5 sovs., James Douglas, East Lothian.  
Section 5.—For the best pen of five ewes, 10 sovs., Frederick Founes Hamilton, Edenderry.—5 sovs., do. do.

##### CLASS F.—OTHER LONG-WOOLLED SHEEP, NOT QUALIFIED TO COMPETE AS LEICESTERS.

- Section 1.—For the best shearing ram, 10 sovs., Silvester Rait, Edenderry; 5 sovs., do. do.  
Section 2.—For the best two-shear ram, 8 sovs., Frederick Founes Hamilton.

Section 3.—For the best ram of any other age, 8 sovs., Silvester Rait, Edenderry.—For the second best, do. do.

Section 4.—For the best pen of five shearing ewes, 6 sovs., Rowland Champion, Doneraile.—3 sovs., do. do.

Section 5.—For the best pen of five ewes, 6 sovs., Silvester Rait.—3 sovs., Thomas Ball, Malahide.

##### CLASS G.—CHEVIOTS, OR ANY OTHER MOUNTAIN BREED.

Section 1.—For the best ram, No merit.

Section 2.—For the best pen of five shearing ewes, the Marquis of Conyngham.

Section 3.—For the best pen of five ewes, 5 sovs., the Marquis of Conyngham.—3 sovs., N. W. Roche, M.D., Fermoy.

##### CLASS H.—SOUTHDOWNS.

Section 1.—For the best ram of any age, 8 sovs., William Owen, Blessinton, county of Wicklow.

Section 2.—For the best pen of five shearing ewes, 4 sovs., Thomas Henry Marmion, Skibbereen.

Section 3.—For the best pen of five ewes, 4 sovs., William Owen, Blessinton.

##### CLASS K.—SWINE.

Section 1. For the best boar, under 18 months old, 10 sovs., William Mure, Hickson, Tralee (Berkshire).—Five sovs., J. S. Spencer, Hinckley, Leicestershire.

Section 2.—For the best boar, over 18 months and under 36 months old, 8 sovs., Richard D. Chaigneau, Benown, Athlone.—Four sovs., George Roe, Donnybrook (Berkshire).

Section 3.—For the best breeding sow, under 18 months old, 8 sovs., Alexander Davidson, The Abbey, Belfast (Berkshire).—Four sovs., Captain Croker, Ballymore House (Berkshire).

Section 4.—For the best breeding sow, over 18 months old, 5 sovs., Lord Viscount Monck, M.P. (Berkshire).—Three sovs., George Roe, Nutley, Donnybrook (Berkshire).

Section 5.—For the best lot of three breeding sow pigs of the same litter, five sovs., Lord Viscount Monck, M.P.—Three sovs., Rev. John Warburton, Kill, county Kildare (Berkshire).

##### BUTTER FOR THE ENGLISH OR LONDON MARKET.

Section I. Five sovs., to W. T. Crosbie, Ardert Abbey; 3 sovs., Pierce Creagh, Mountjoy Square, Dublin.—2 sovs., W. R. Meade, Ballymartle, Kinsale.

##### BUTTER FOR THE FOREIGN MARKET.

Five sovs., W. R. Meade, Kinsale.—3 sovs., Michael Nowlan, Kilmead, Waterford.—2 sovs., Dr. Barter, St. Anne's Hill, Blarney.

##### CHEESE.

For the best couple of new-milk cheeses, made in Ireland, of the season of 1853, not less than 20 lbs. weight each, 5 sovs., John Sills, Lake House, Moate.—2 sovs., William T. Crosbie, Tralee.

##### CLASS N.—FLAX.

For the best bundle, not less than 16 lbs. weight, of mill-scuted Flax, being an average sample of the produce of, at least, half an acre, 4 sovs., Viscount Bernard, M.P.—2 sovs., E. Smyth, Derramore, Newry.

For the best bundle, not less than 16 lbs. weight, of hand-scuted Flax, 4 sovs., Francis Buckley, Knockrow, Bandon.—2 sovs., Edward Smith, Ballinier, Bandon.

For the best half bushel of Flax-seed saved by the grower, 4 sovs., Charles Chamber, Ardrenane Annascale.—2 sovs., Edward Smith, Derramore, Newry.

##### IMPLEMENTS.

##### CLASS R.

The following prizes were given for implements best suited to the wants and circumstances of Ireland:—

1. For the implement best calculated to turn up and expose to the air and frost of winter the deepest furrow, consistent with the regularity of surface, first-class medal.

No. 1 A. A swing plough, William Graham, Dublin, first-class medal.

No. 1 B. Ball-wheel plough, Ransome & Sim's wheel plough, highly commended.

No. 1 C. Trench plough, W. Gray, Belfast, a second-class medal.

2. For the best instrument for breaking up the subsoil, capable of being worked by not more than four horses, first-class medal, Robert Gray & Son, Uddington, Glasgow, subsoil plough.

3. For the best grubber or cultivator, to be worked by two or more horses, first-class medal, Thomas Eeles, for John Ellis, Thules, two-horse grubber.

4. For the best drill grubber for green crops, first-class medal, R. Gray, Belfast.

5. For the best constructed seed harrow, first-class medal, W. P. Stanley, Peterborough.

8. For the best horse-rake, first-class medal, Barrett, Exall, & Andrews.

10. For the best drill for sowing Turnip seed, in one or in two drills, second-class medal, Thomas Eeles & Co.

11. For the best drill for sowing Turnip seed, &c., with apparatus for distributing light, portable manures, the gold medal, James Smith & Sons, Peasenhall.

12. For the best and cheapest broadcast manure distributor, first-class medal, R. Garrett & Son.

14. For the best machine for drilling grain, the gold medal, R. Garrett & Son.

15. For the best horse-hoe for cleaning between the drills of corn, R. Garrett & Son.

16. For the best machine for cleaning grain, first-class medal, R. Garrett & Son.

17. For the best machine for cutting Turnips, first-class medal, W. P. Stanley, Peterborough.

18. For the best chaff-cutting machine, first-class medal, Richmond & Chandler, per Thomas Eeles & Co.

19. For the best machine for crushing Oats, Beans, or other grain, first-class medal, William F. Stanley & Co.

20. For the best apparatus for steaming food for cattle, first-class medal, William F. Stanley.

22. For the best threshing machine suitable for large farmers, and worked by either horse or steam power, the Council's gold medal, R. Garrett & Son.

23. For the best threshing machine, suitable for small farmers, first-class medal, Ransome and Sims.

24. For the best hand churn, worked by hand, first-class medal, William P. Stanley.

27. For the best set of horse-power gearing, economically adapted to fit machines, churning-machines, &c., Barrett, Exall, and Andrews.

28. For the best machine for making drain tiles and pipes, first-class medal, G. Ingram, Dublin.

30. For the best lot of draining-tiles, second-class medal, G. Ingram, Dublin.

31. For the best assortment of hand-implements used for the farm, such as draining-tools, spades, sickles, scythes, hoes, rakes, wheel-barrows, sack-holders, &c., first-class medal, William Edmundson and Co.

32. For the best and most economical set of farm harness, first-class medal, Cornelius O'Sullivan, Tralee.

33. For the best set of swing-trees or draught bars, second-class medal, Ransome and Sims.

34. For the best and most economical iron field gate, on correct principles, first-class medal, C. D. Young and Co.

37. For the best assortment of hurdles, or other moveable fence, suited for folding sheep on Turnips, &c., first-class medal, Edward Hilt and Co., for sheep-folding hurdle.

To the subjoined implements, not classed in the Prize List, the judges recommend the following awards:—

1. Double-mould board plough, Mr. McConnell, Dunleer, second class medal.

2. Skim and broadshare plough, W. P. Stanley, Burtall, second class.



8. Turnip scuffle, Thomas Eeles and Co., second-class medal.
4. Cake breaker, W. P. Stanley, second-class medal.
5. Root grater, Messrs. Bushe and Barton, first-class medal.
6. Bean crusher, Ransome and Sims, second-class medal.
7. Intermediate motion by two-horse gearing, Ransome and Sims, first-class medal.
8. Biggs' sheep-dipping apparatus, highly commended.
9. Collection of seeds from Thomas Eeles and Co., and from Haycroft, of Cork, commended.
10. Galvanised wire garden seats, C. D. Young and Co., commended.

**ROYAL NORTHERN AGRICULTURAL.**—The progress of this Association and its influence on the agriculture of the district were illustrated the other day at its great annual meeting at Aberdeen. Sir J. D. Elphinstone, the president, spoke thus—we quote from the *Aberdeen Herald*:—There is not a county in England in which we may not learn something in the art of agriculture. There are many, indeed, in which the original modes of agriculture are not essentially varied; but in every county you have an oasis in the desert, in which there are men pushing forward agricultural improvements with spirit, power, and knowledge we do not observe in this country. We have a system here, adhered to from one end of Scotland to the other, and a most excellent one it is, based on the experience of half a century, and based on little else, because then this country was almost a savage country, and therefore we have had few prejudices to get rid of. We took new ideas as they occurred, and have raised a system, excellent in itself, there is no doubt; but I must say that the more I have studied agriculture—and I have now for 10 or 12 years been turning my attention to it—the more I see of it the more I am convinced it is an expensive science, if we take even the few improvements which have taken place in a 19 years' lease; and I will just say what are the improvements which have enabled men more successfully to cultivate the soil. Nineteen years ago my worthy friend, Captain Barclay, introduced the practice of sending fat cattle to London. At that time we drove our cattle lean over the mountains, and sold them for 5s. or 6s. a head. Now, I refer you to the show-yard to-day. We had then no furrow-drains—no guano. We grew no green crop to assist us in the period through which our Grass failed. In short, I am merely recounting a few of the appliances that have been made within the last 19 years; and if the next is equally fertile in expedients, we may still be able to double our produce as we have done. It is a very extraordinary thing to look at the returns of the exports of cattle which have gone over the quays from Aberdeen—the railway being a matter of more recent occurrence. To study the progress of these exportations shows an extension which I hope will not be checked in the course of the next 19 years; and I trust I may not descend in my opinion that this country is not the country which will suffer from anything that has taken place, or that will take place, in the science of agriculture.

Mr. Mechi seems at this meeting to have been the guest of the day, and he had several opportunities of enforcing his particular views on those assembled. The following is an extract from one of his speeches:—

They laughed when he said that he thought his town business more profitable than his country one; but he begged to say distinctly that his farming had been profitable. He had made great improvements on his land, and it was something like treble that he had now to pay, as a farmer, of increased rent, but he was happy to say that he was able to pay it; and he considered that there was one particular cause which had enabled him to do so, and he had no doubt but this same cause would render their farming more profitable. If farmers would only make an agreement with their friends in town, that all the beef, mutton, butter, and eggs which they sent in should be duly returned, after they were done with them, for the restoration and renovation of the land from which they came, they would be pursuing the plan which he adopted. They might think him a little visionary or rather far-sighted, but he saw clearly that another half century would not be permitted to elapse before the people would no longer pursue the thoughtless not to call it by a worse name, plan of allowing the very best means of reproduction to run to waste into their rivers. There was not the least bit of difficulty about it; any old woman could do it, by giving her the cylinder of the steam engines of one of our ocean steamers. There are 90,000 inhabitants in Aberdeen, and the refuse of this city, giving three persons to the acre, would fertilise no less than 30,000 acres of ground. Practical farmers know that a man with his 300 sheep upon 160 acres of ground, has no bad bargain in the way of manure. What, he might ask, became of the millions of quarters of corn which passed through the bodies of the citizens of London? He was satisfied that if the refuse of our food was turned to right account, this country might be the richest agricultural country in the world. The reason they had not attended to this hitherto was just because they had not thought of the thing. However, when a matter such as this was once brought before an Englishman's mind, it was not long before he tried it practically; and he believed that when agriculturists here once made up their mind to try this liquid manure, the thing would be done before they could say Jack Robinson. They would soon find that this manure was the very thing that unlocked the door and let them into the secret of profitable farming. His crops, of the worst soil in the county of Essex, were equal to the best crops in East Lothian; and this has been effected by sending liquid manure into the subsoil, of which farmers here were so much afraid.

At the public breakfast here, Sir J. D. Elphinstone presiding, Mr. Mechi was again one of the principal speakers. The following is an abridgment of his remarks:—We know that a great part of your fame in the north country arises from your having a moist climate, and your care in availing yourselves of it by good culture. Your Turnip culture is very perfect. But this season you have an Essex climate, and the result is, an Essex crop of Turnips. I am not sorry for it in one respect, because it enables you to see the defects of your system; in other respects, I am very sorry. But when I tell you it is common in Essex, to see a burning sun baking our clays like cast-iron, without a drop of rain for nine or ten weeks, it is impossible, in those strong clays, to grow a large crop of Turnips; but now that I have put the new system of irrigation in practice, I take care that the land shall never become baked. That sun, which was before so objectionable, becomes,

with moisture, the best friend I have got. There is no doubt that if you had had the power of irrigation this year you would have been in a much better state than you now are. This would be attended with expense; but everything in agriculture must be so. I do not think it is so much a question of expense we should attend to, as—whether it is remunerative after it is done; and, I do honestly assure you, it is remunerative. Now, supposing I tell you what it costs. I would first ask what is the price per ton of iron piping in this country? I paid 4s. 5s. per ton at Newcastle, last year, for three-inch iron pipes.—Convener Watson replied that the Commissioners of Police, as a public body, got their piping at 6s. 15s. per ton. This year it had been 6s. 10s.—Well, gentlemen, resumed Mr. Mechi, 3 yards of 3-inch piping weigh 118 pounds; and, for round numbers, we will call it a hundred-weight. Now, it requires 15 yards per acre—that is 6 hundred-weight of iron piping; and 600 yards at 6s. 6d. per hundred-weight would be 39s. That is the extreme quantity required per English acre. Then comes the question of pouring some lead into the joints, which would make a probable addition of 6d. per yard, and then the work is done so far. The other day I had a letter from Mr. Miles, of Bristol, a good practical farmer and a farmer's friend. He has adopted this principle of irrigation since he saw mine; and he wrote me a letter to say that he had done the whole of his by gravitation at the rate of 2s. per acre, which is very cheap indeed. The first year he doubled his Grass crop. He said he never saw such a crop before, and if that is true, as I quite believe it is, it is a striking illustration of the benefits of the system. But to resume my statements, I will say your piping has cost you about 45s. per acre; the rest you can calculate. At one end you have a hydrant. I have got one of these for every 11 acres; so that all you see on the farm is 15 little iron posts on 170 acres; and to these I attach, as you do to the fire-engine in your town, a gutta percha tube of 200 yards in length. At the other end you must have a forcing pump of some kind; it may be gravitation, or it must be steam. That of course is a point very easily ascertained. I have two miles of underground iron piping, and I can put on the liquefied manure, and plough it in 3 feet deep, and bring the cart home again, for three farthings a ton, a sum so ridiculously small, compared with the usual expense, that I think I may strongly recommend the plan to your notice. You have heaps to make and turn, you have your carts to drive and bring back, you have roads to mend, and there is much expense in preparing manure for Turnip crop; but in my case, supposing my bullocks deposit a hundred loads of pudding upon the boards, I fire at it in the morning with this fire-engine, then it goes in a stream to the great tank, from this it is forced in a fluid form anywhere within two miles, sinks into the ground to the very roots of the crop, and is in action 24 hours after it is dropped. You lose what you do not see, but feel most seriously. You lose your ammonia, for it is one of the most volatile things in the world, and I wish you to understand what your most eminent men will tell you—that there is nothing will dissolve your soil like ammonia. You use lime, but I assure you that the recent experiments of Professor Way, and other men of eminence, have shown that lime is secondary in its effects on the soil to ammonia. If you want to improve a bad clay, I assure you that if you take your manure as it drops from the animal, with plenty of water, and let it at once into the soil, your subsoil will be fertilised. The worst clay on your farm, which has grown nothing for years, when manured in the ordinary way, after a shower of this liquor, will grow even Rye-grass in three months. It is a chemical question—your soil is acted on by the ammonia, and is softened and made ready for ploughing. I have a field of 5 acres which used to starve a couple of cows. I sowed that field seven years ago with Oats, and put in the finest Grass seeds from Mr. Gibbs of Piccadilly. They were all choked up by the indigenous weeds, and I saw them no more. Last year, in May, I began to work it with the liquid manure, and continued through the winter, and now it is covered with the finest Grasses—I now keep 10 head of cattle and three horses on it, and they never eat it down. In root crops the same result takes place; the crop is doubled. The same result will take place in your fields as in your greenhouses and hothouses. Does not the gardener when he has heat give his plants water daily? Otherwise they would be ruined, and, therefore, I am particular in bringing these matters before you. Suppose I wanted to put guano on my field, I would put it into the tank, agitate it by an air-pump, and in a quarter of an hour you would see it pass out in a stream, going down into the subsoil to the roots of the plants. The great advantage is that you absolutely fertilise the bottom-soil, while with the plough you cannot get down above 2½ feet. I used to lose many crops by wire-worm, which is common in Essex, but no insect can stand the ammoniacal shower. The moment you see a fly on your Turnips apply your jet, and the insect must escape or die. We put on a hundred gallons a minute all day long, and all night long; we do not stop even at dinner-time. Fortunately for me, I obtained a little bog, and there I got plenty of water that now is a great source of fertility; in fact, I would not give it for 3000l., because I can make a better use of it than I could of the money. You have a farmer at Miremill, and another in Ayrshire, in your own country, who have made these experiments in a profitable manner. That they have received censure is not to be wondered at, because there never was anything new but was censured. It is natural that we should be attached to old customs, and it is proper, because,

otherwise, we might follow men who ought not to be followed; but I do think it is your duty to test it by the common rules of calculation—pounds, shillings, and pence—and to go into the question without prejudice. I have reason to know that every man who has carried out this principle has reason to congratulate himself on his success. If you follow in our steps you will not have the difficulties we had to encounter in a new undertaking, and if any or all of you like to come, or send to me, you shall have full access to my farm. I believe I was the first who attempted to send out all the manure. Last year I had 20 dead horses and some dead cows, besides the puddings, in my tank; I had 30 feet of solid stuff, and though I had air pipes at the bottom I could not lift the mass. Luckily it dropt into my head to apply the air-pump—I pumped down the air, and the solid matter was set in motion till brought within the line of suction, and that took it away. All these dead horses, except the large bones, have gone through a hole the size of my finger; and I could undertake to put you all into the tank, and in four weeks every bit of you would go through the hole (laughter). When a mass like that is brought into contact with water you can have no idea of the chemical forces that act upon it. The gas of fermentation is taken care of by the water; it does not go to air, but is laid up in store in the water to go off in the fertilising stream. Tenants who have large farms and long leases, might make such arrangement with the landlords as would give ample opportunities for putting the system in practice, and preserve uninjured the interests of both. Water itself is manure for Grasses, as is well known by those who have moist meadows, and if it were mixed with the excrements of your animals the results would astonish you. As near as I can put my expenses down, and I was pretty particular, I would say that the piping, at the former price of iron, cost 4s. 5s. per acre; the tank cost 80l.; the engine of six-horse power (four would be sufficient) 150l.; the piping cost 150l. per mile, that is 300l. for the whole farm. I would recommend having a hydrant for every 6 acres, as gutta percha tubing is six times the price of iron; the gutta percha cost 50l. Then there is the digging, &c., say 100l. for that. That comes to 680l. for the whole farm. You, gentlemen, use a good deal of straw for manure, and for litter to your animals. I have all mine on grating, and I find it answers well. Perhaps you would not like that, but I would recommend it, especially for sheep. It does well for pigs in hot weather. Bullocks do very well, and I think they would do better if the fore part, where their knees go down, were covered with a little matting. Mr. Mechi then detailed his mode of cleaning his cow-houses, and described more minutely the method of distribution of the manure. He then, in answer to Sir J. D. Elphinstone, said they required two boys and a man, whose wages would come to 26s. a week, to keep the two engines going, and put on 80 gallons a minute. One of the most important things, Mr. Mechi continued, is, that the deposits must be kept in constant agitation by a pressure of air sufficient to force any one of the company through a 3-inch hole as long as an eel (loud laughter). The great secret of profitable farming was this, to be able to grow a very large increase on a small space of ground. The great friend of the farmer is manuring, and if they double their manure, they will then have some hopes of doubling their crops.

After some conversation on the subject of his lecture, Mr. Mechi received the hearty thanks of all assembled, and so terminated the meeting of the Royal Northern Agricultural Society.

#### POULTRY.

**Vitality of Eggs.**—It is well known that eggs will keep a considerable time in milk of lime or other means of entirely excluding the atmosphere: and we have an account of some, dug out of an old wall of a sacristy near Lago Maggiore, quite sound after having been encased there 300 years. It becomes then a curious enquiry, how long the productive vitality of the eggs can exist in this state of atmospheric exclusion—whether they retain it, like toads, snakes, and cold-blooded animals, sometimes found in solid stone? Can any of your readers give or refer us to any instances, respondent to the question? *J. Prideaux.*

#### Miscellaneous.

**English Rotation of Crops.**—

“*Buckinghamshire.*—1st, Wheat; 2d, Oats; 3d, Turnips; 4th, Barley; 5th, Clover.

“*Oxford.*—1st, Wheat; 2d, Turnips; 3d, Barley; 4th, Clover; 5th, Wheat; 6th, Peas; 7th, Barley; 8th, Beans.

“*Gloucester.*—1st, Turnips; 2d, Barley; 3d, Clover; 4th, Wheat; 5th, Oats; 6th and 7th, Sainfoin.

“*Dorset.*—1st, Wheat; 2d, Rye and winter Vetches, followed by Turnips; 3d, Barley; 4th, Clover, or scarlet Trefoil and Rye, followed by Mustard, to be ploughed in, or by Rape, to be fed off; the Clover is sometimes left two years.

“*Berkshire.*—1st, Barley; 2d, Turnips; 3d, Wheat; 4th, Clover. About one-tenth of the breadth is laid down to Sainfoin for four years.

“*Surrey.*—1st, naked fallow; 2d, Wheat; then as many corn crops as the land will carry.

“*Norfolk.*—1st, Wheat; 2d, Oats; 3d, Turnips; 4th, Barley; 5th, Clover; Trefoil or Peas are sown in alternate rotations.

*Morgan's Essay on Cuernmarthenshire Agriculture.*



## Calendar of Operations.

## AUGUST.

**BERKSHIRE FARM, Aug. 13.**—The weather during last month was dry, but by no means warm for the season; indeed, the west winds were rather cold at times. Under these circumstances, the Swedish Turnips made very small progress, though other varieties did pretty well. Thinning is now nearly over, except on a few July sown breaks. The plants are somewhat blanky on strong land, and where lime was newly applied. The great heat of the present month, however, seems to have given them a stimulus, for they are rapidly improving, and Yellows are met in the drills, as well as some Swedes on lighter soils. The late weather has been extremely favourable to the destruction of weeds by horse and hand-hoes, which have been kept in constant operation, and the roots of Turnips have reached a depth at which they are comparatively secure from injury by drought. White crops look better than was expected. Wheat will not give an average return, and spring-sown is late. Barley and Oats are generally a good crop, though there are complaints about the latter from some quarters. Beans are very corny, but Peas offer a very middling prospect. This day is cloudy and cool, and the barometer rather down, which looks like rain, and a gentle shower would benefit everything, especially Turnips. If hot weather return, we shall have general harvest in a fortnight, commencing with Potatoes or early Barley. Pastures are beginning to suffer from dry weather, but the best of the season is just now, but other grasses maintain their prices. Millers seem to count upon the new Wheat; but all that is grown cannot meet the demand, with the prospect of less from abroad. J. S.

**CHESHIRE, August 17.**—The hay harvest in these parts may now be considered over, the fine weather of the last fortnight having enabled the farmers to get all home in very good condition, with the exception of what was injured by the floods. The corn harvest has partially commenced, and will in the course of a week be general throughout the county. The Wheat crop does not appear to have improved with the fine weather and is not of that uniform bright colour that we like to see at this time of the year; the ear has a ragged appearance, and must prove deficient when threshed. Oats, although laid in places, promise a fair crop. Barley is a full crop, but has sustained more injury from the heavy weather and rain during the whole of last month. Turnips and Mangold Wurzel have recovered their starved appearance, and are now looking very well. Potatoes are daily showing fresh signs of disease, and are worse than have been known for many years. The pasture lands were very much in want of rain, and will receive great benefit from the showers of last night and this morning.

**DORSET, August 15.**—We have much pleasure in stating that a great change for the better has come over the weather. The neighbourhood now looks very different from what it was three weeks ago, when all was dark and dreary in the extreme. Harvest is now in most places begun, and generally the crops look better than could have been expected. No doubt there is a drawback upon the crops throughout the county, and the average will not come up to that of ordinary years; but the sample of new corn will be superior to that of the old, as the past ten days have been bright and dry weather, and have brought the corn up to a point of maturity that could not have been expected. The deficiency will be the greatest where the land lies low and damp, where it is thinner than usual, and where there has not been the same extent of Wheat sown. In this neighbourhood the land being drier than in many places, the crop may be very little, if any, below average, if we take quality into account. The blight that threatened at one time to be very bad has turned out not so bad after all, and though there are a few grains in the ear hurt that will not recover, they will go with the tail corn, and so the sample will be left good for main stock. But much no doubt depends upon the weather that we shall have for the next three weeks. However dry it may be, there is not much fear that cattle food will be scarce. Turnips that have all the season done well have even improved since the dry weather came. But on every hand we hear that the Potatoes were never worse diseased. But if they can be kept, they are come to a greater size than they were last year, when the disease set in. And we should think that the safest way is to let them stay in the ground as long as possible, for if they keep anywhere they will there, as the good are not so likely to be hurt by the bad; but if put in store together, however carefully the diseased may be picked out there will still be some unobserved, which when they rot will be likely to destroy the rest. There may be cases where it is necessary to remove them from the ground, to make way for something else, but where they can be left they are safest. Stock are doing well, markets have given way a little, but still there is not anything to complain of in this respect. The hay made in the latter part of the season has been done well and at very little expense; so that there will be good hay for feeding purposes, and as Turnips promise well, it is not likely that stock will get very low priced. Harvest that at one time appeared to be coming late has come sooner than we expected; generally it is about eight days later than it has been for the past two years. G. S.

**ESSEX FARM, NEAR CHELMSFORD.**—We have cut and carried about 50 acres of Wheat since our last, in very good condition, although it was thought by the neighbouring farmers that we had been too precipitate in reaping; and perhaps it might be so, but now that it is carried and safely housed, and the weather exceedingly wet, we feel quite satisfied if we have erred it is on the right side. The Wheat is ripening slowly, so much so that we have been compelled to desist reaping for three days; we are now proceeding at intervals, as the weather permits, but little, however, has been done since Tuesday at noon, and it is now (Wednesday afternoon) raining heavily; the barometer is also low. We have some Barley quite ready for mowing, but as we suffered greatly last year by mowing in wet weather, we intend for the present to allow it to remain. We have been this day threshing by machine our early broad-leaved Rye for early feeding, and to-morrow shall commence ploughing, scarifying, and preparing the land cleared of Wheat for its reception. Rye requires a finely pulverised soil, and should be sown after the land has been well harrowed, and to receive only one light harrowing afterwards; it answers better, when sown broadcast, for feeding than when drilled. Two bushels of new Rye are sufficient for each acre: but Rye purchased of dealers is frequently mixed with old Rye, and then 3 bushels will not produce so good a plant. We have been hoeing Turnips and Mangold Wurzel at every interval that could be spared. The early Turnips, as well as the Mangold Wurzel, are now growing rapidly. The abundance of labourers has been beyond all precedent; the unequal period of the grain ripening, the deficiency in quantity, any late sowing of the harvest, has all tended to that end, of hundreds of poor fellows, after having travelled 25 miles from the late to the early districts, have returned after a week's fruitless search for work to their homes, dejected and penniless. We have secured about 25 tons of second-math Clover, since our last, in excellent condition. The weather is now very unpropitious, and we fear it will continue so, as every indication tends to rain, and great caution will be necessary in future harvest proceedings. Our Potatoes are completely spoiled; upwards of one-half is already spoiled of the early ones, and we fear the late ones will be worse. —Wednesday, August 17.

**SOUTH DEVON, August 15.**—The last fortnight of very fine summer weather has had a wonderful effect on the appearance of the country, as well as the progress of field operations. The hay harvest, hitherto retarded by the unsettled state of the weather, has been now completed; generally speaking, however, the crop is of the worst description, two-thirds being spoiled. The Mangold and other green crops are now being horse and hand-hoe, and appear to make rapid growth in the well-managed land; the Mangold crop, on the whole, must be considered very inferior, the

price generally given for Turnip-hoeing is 5s. and four quarts of cider per acre. The Potato crop is completely gone. The corn harvest is fairly commenced this week, and in a few days more, unless the weather changes, will become general; of the Wheat crop there are sad complaints of a blight in the ear, and in cases where the Wheat was beaten down by the late heavy rains, the ears are almost devoid of corn. Barley and Oats are more promising, although sundry hints are thrown out that the former will not turn out well as regards sample; this may, however, be compensated by quantity. The holders and purchasers of old Wheat are just now at a stand-still; about ten days since the best samples realised 64s. the quarter, now it is dull at 60s.; of course being now in few hands, it is a matter of complete speculation. Cattle and sheep still maintain high prices, both fat and store.

## Notices to Correspondents.

**ALSYKE CLOVER SEED; M. Powell.** We regret having lost the address of the gentleman from whom we obtained the information. But probably any considerable seedman can supply you or direct you.

**BOOKS: A Young Farmer.** Mackie's "Cyclopedia of Agriculture."—Zeta. We do not know any recent work on malt-making.

**BREAD: Subscriber.** Excessively large holes in the bread are the fault of the baker, and not of the flour. The yeast added acts upon the sugar of the flour, setting free carbonic acid, which is prevented from escaping by the glutinous property of the dough; and if the kneading has been thoroughly performed, it will remain equally distributed. If the heat in baking, too, be urged too quickly, the bubbles of gas will burst and unite together in larger ones—so that both of these causes operate in the way you describe.

**GIC HARNESSE; J. R. J. C. White, Liverpool Street, Bishopsgate Street, London.**

**GORSE: Correspondent.** It is hardly ever raised as a nursery crop, but sown where it is required. It no doubt may be successfully transplanted when one year old; that is, after the first season's growth, either in the end of autumn, in winter, or in spring. Moist weather in the end of September or in October will suit; but if the ground where it is intended to be grown is not thoroughly dry and moderately sheltered, there is a risk of its being thrown up or injured by frost; therefore, in such cases, it is better to transplant early in spring.

**HORSE: Chloë.** A mild dose of physic is desirable when a horse is taken from Grass. The diet from Grass to dry food should be gradual, the stable being kept as cool as possible. W. C. S.

**OPHTHALMIA: A Sub.** The disease of the eyes is not caused by the teeth; it is ophthalmia: bleeding and physic will afford temporary relief. W. C. S.

**POULTRY: Erratum.** The 2nd prize for black Shanghae chickens was carried off by W. Cust Gwynne, M.D., of Sandbach, Cheshire.

**TRIAL OF REAPING MACHINES: F. S. P. W.** You will find the report of the judges in another column. The trial is over. **YORKSHIRE AGRICULTURAL MEETING: T. H.** Some of the subjects discussed will be referred to hereafter. You are quite right, but how are we to get everything into 16 columns a week?

## Markets.

## COVENT GARDEN, Aug. 20.

The market is well supplied with both Vegetables and Fruit, and trade is tolerably brisk. Peaches and Nectarines are plentiful. English Grapes are abundant. Imports from the Continent of Potatoes, Carrots, and Artichokes are still kept up, and there are French Cherries and Apricots in the market; the latter fetch from 1s. 6d. to 3s. 6d. per dozen. English Cherries are not quite so plentiful. Greengage and Orleans Plums from the South of France fetch 4s. per basket. There is also a large quantity of foreign Pines in the market. Carrots and Turnips fetch from 4d. to 6d. per bunch. Peas are very good, at from 6d. to 1s. per quart shelled, and from 2s. 6d. to 5s. per bushel sieve. Potatoes are becoming very much diseased. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Fkignettes, Pinks, and Carnations.

**Pine-apples, per lb.** 3s to 6s  
**Grapes, hothouse, lb.** 1s to 3s 6d  
**Peaches, per doz.** 12s to 20s  
**Nectarines, per doz.** 12s to 20s  
**Apricots, per doz.** 2s to 5s  
**Plums, Orleans, p. pun.** 1s to 2s  
— Greengage, doz. 1s 6d to 2s 6d  
**Melons, each,** 2s to 4s  
**Apples, per bush,** 3s to 5s  
— dessert, per doz., 1s to 2s  
**Pears, per doz.,** 1s 6d to 4s

**VEGETABLES.**  
**Cabbages, per doz.** 6d to 9d  
**Cauliflowers, each,** 2d to 4d  
**Greens, per doz.,** 2s 6d to 4s  
**French Beans, p. hf. sieve,** 1s 6d to 2s 6d  
**Rhubarb, p. bundle,** 3d to 6d  
**Potatoes, per ton,** 40s to 100s  
— per cwt., 3s to 5s  
— per bush., 2s 6d to 5s  
**Turnips, per doz.** 3s to 4s  
**Cucumbers, each,** 2d to 8d  
**Celery, per bundle,** 9d to 1s 6d  
**Carrots, per doz.,** 6s to 8s  
**Spinach, per sieve,** 1s to 2s  
**Beet, per doz.,** 1s to 1s 6d  
**Leeks, per bunch,** 3d to 4d  
**Shallots, per lb.,** 6d to 8d

**HOPS.—BOROUGH MARKET, Aug. 19.**  
Messrs. Pattenden and Smith report that the accounts from the plantations still come conflicting; some speak of improvement in the grounds that first went into blight, whilst those latterly attacked are daily getting worse, so that on the whole the market remains firm, and the duty stationary at about 155,000l.

**HAY.—Per Load of 36 Trucks.**  
**SMITHFIELD, Aug. 18.**  
**Prime Meadow Hay** 90s to 100s  
**Inferior do.** ... 80 85  
**Rowen** ... 45 60  
**New Hay** ... 50 80  
**CUMBERLAND MARKET, Aug. 18.**  
**Prime Meadow Hay** 100s to 105s  
**Inferior do.** ... 70 80  
**New Hay** ... 45 80  
**Old Clover** ... 120 130

**COAL MARKET.—FRIDAY, Aug. 19.**  
Wallend Heugh Hall, 19s.; Wallend Hetton, 20s.; Wallend Tees, 20s.—Ships at market, 41.

**WOOL.**  
**BRADFORD, THURSDAY, Aug. 18.**—There is no increased disposition to buy English wool, and from the high prices sought by the country dealers and growers it would appear that they are unwilling to accept prices at which sales might be made. For Botany combing there has been more doing, and the market pretty well cleared. Nails and brokes are without any change. **YARNS.**—There is a fair demand for yarns, but the prices are too low to meet the price now demanded for wool; and if the raw material cannot be had on better terms, either yarns must rise or the production be lessened. **FINES.**—There is a tolerably active demand, and in the ware-

houses, for finished goods, an average business doing. The accounts from America are represented as favourable, so it is not improbable that, ere long, we may again be busy for that market.

## SMITHFIELD.—MONDAY, Aug. 15.

We have a larger number of Beasts, but still there is a deficiency of good qualities; consequently, prices are not lower; indeed, a few of the choicest have exceeded our top quotation. Sheep are more plentiful, and the demand smaller; all descriptions are lower, and several remain unsold. Lambs are selling about the same as of late. Choice Calves are rather dearer. From Germany and Holland there are 2162 Beasts, 6920 Sheep, 251 Calves, and 70 Pigs; from Scotland, 160 Beasts; and 1500 from the northern and midland counties.

**Per st. of 8 lbs.—s d s d**  
**Best Scots, Here-** ... 4 4 to 4 8  
**fords, &c.** ... 4 4 to 4 6  
**Best Short-horns** 4 2-4 4  
**2d quality Beasts** 2 8-3 8  
**Best Downs and** ... 4 10-5 0  
**Half-breds** ... 4 10-5 0  
**Do. Shorn** ... 0 0-0 0  
**Beasts, 5021; Sheep and Lambs,** 32,240; Calves, 355; Pigs, 360.

## FRIDAY, Aug. 19.

We are only moderately supplied with Beasts; trade is slow, but the prices are not lower. The number of Sheep and Lambs is not large, but fully adequate to the demand; late rates are barely supported. Good Calves are dearer; a few choice ones have nearly reached 6s. Foreign supply consists of 206 Beasts, 1980 Sheep, and 397 Calves; from Scotland, 520 Beasts; 400 from the northern and midland counties; and 90 Miltch Cows.

**Per st. of 8 lbs.—s d s d**  
**Best Scots, Here-** ... 4 4 to 4 8  
**fords, &c.** ... 4 4 to 4 6  
**Best Short-horns** 4 2-4 4  
**2d quality Beasts** 2 8-3 8  
**Best Downs and** ... 4 10-5 0  
**Half-breds** ... 4 10-5 0  
**Do. Shorn** ... 0 0-0 0  
**Beasts, 835; Sheep and Lambs,** 12,140; Calves, 607; Pigs, 315.

## MARK LANE.

**MONDAY, Aug. 15.**—The supply of Wheat from Essex and Kent this morning was again good; some of it was disposed of at a decline of about 2s. per qr. upon the prices of this day se'night; but a large portion remained unsold towards the close, although offered at a great reduction. For foreign the demand was limited and in retail, at a decline of 1s. to 2s. per qr. upon our quotations of last Monday. Barley and Peas are unaltered in value. Beans are 1s. per qr. cheaper. Oats are a slow sale at a reduction of 1s. to 2s. per qr. Holders of Barrel Flour not being inclined to submit to any reduction, there was no business doing.

**PER IMPERIAL QUARTER.**  
**Wheat, Essex, Kent, & Suffolk** 52-54 Red ..... 50-52  
— fine selected runs ..... 53-56 Red ..... 52-54  
— Norfolk ..... Red .....  
— Foreign ..... 38-41  
**Barley, grind. & distill., 23s to 26s.** Chev. 24-30 Malt. 25-29  
— Foreign, grinding and distilling 25-31 Malt. 29-33  
**Oats, Essex and Suffolk** 15-20  
— Scotch and Lincolnshire ..... 16-20  
— Irish ..... 17-19  
— Foreign ..... Poland and Brew 14-20

**Rye** ..... 29-32 Foreign .....  
**Rye-mal, foreign** ..... 33-38 Harrow. 33-38  
**Beans, Mazagan** 31s to 36s ..... 33-38  
— Pigeon ..... 34s ..... 40s .....  
— Foreign ..... 32-40 Egyptian 30-32  
**Peas, white, Essex and Kent** 30-32 Boilers 40-44 Suffolk 40-45  
— Maple ..... 35s to 38s ..... Grey 32-36 Foreign 32-45  
**Maize** ..... White ..... Yellow .....  
**Flour, best marks delivered** ..... per sack 43-50  
— 2d ditto ..... ditto 35-43 Country 35-43  
— Foreign ..... per barrel 25-28 Per sack 39-43

**FRIDAY, Aug. 19.**—The arrivals of foreign Wheat and Oats are large. To-day's market was well attended both by country and continental buyers, and extensive purchases were made by the latter, particularly of floating and f. o. b. cargoes, at prices mentioned above. Wheat on the spot, either English or foreign, was held for an advance of 1s. to 2s. per qr., but with the exception of a few cargoes taken for shipment to France, the sales were not extensive. In the value of Barley, Beans, and Peas there is no alteration. Oats are 6d. per qr. dearer. Flour brings an advance of fully 1s. per barrel.

## ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English	Qrs. 2510	Qrs. 50	Qrs. 580	1560 sacks
Irish	.....	.....	1280	.....
Foreign	27120	1620	26050	— brls

## IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
July 9	47 8	29 12	20 6	35 11	40 8	33 8
— 16	48 8	28 11	20 13	34 10	40 5	36 8
— 23	51 10	29 4	21 6	35 8	40 4	37 10
— 30	52 7	29 7	22 2	36 3	40 5	36 8
Aug. 6	53 9	29 9	22 6	37 3	40 7	36 10
— 13	53 3	29 10	22 3	34 9	41 5	36 9
Aggr. Aver.	51 6	29 5	21 8	35 9	40 8	36 7

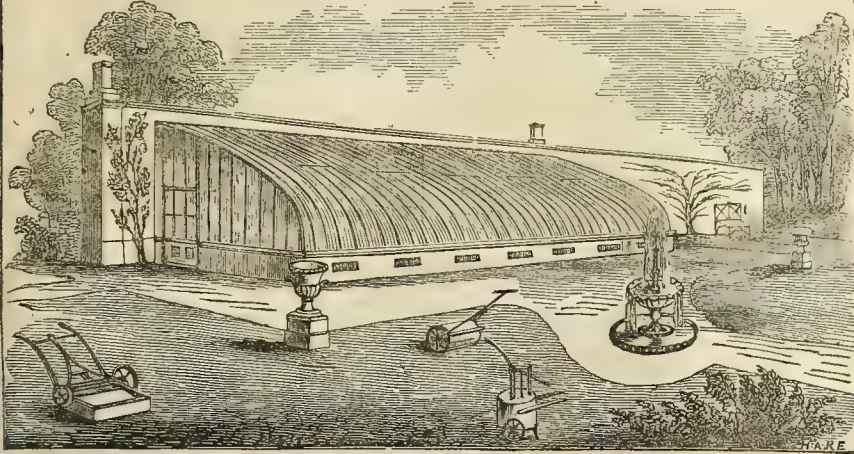
## FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	July 9.	July 16.	July 23.	July 30.	Aug. 6.	Aug. 13.
53s 2d	...	...	...	...	...	...
53 3	...	...	...	...	...	...
52 7	...	...	...	...	...	...
51 10	...	...	...	...	...	...
49 8	...	...	...	...	...	...
47 8	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, Aug. 16.**—At this morning's market there was a fair attendance of the town and country trade, and a moderate demand was experienced for Wheat, at a decline of 1d. per 70 lbs. on the prices of this day week. American Flour was in good request, and 3d. to 6d. per barrel dearer. French and Spanish Flour fully maintained their value. Oats met with a slow sale, at 4d. per 45 lbs. decline; a parcel of Irish new tawny brought 3s. per 45 lbs. Oatmeal was difficult to sell, although offered at 6d. to 1s. per load decline. Barley, Beans, and Peas were without material alteration either in value or demand. Indian Corn on the spot was decidedly easier to buy, and Galatz afloat was obtainable at 32s. 6d., and Ibraia at 31s. per qr., being a decline of 6d. to 1s. per qr. —FRIDAY, Aug. 12.—We have received scarcely any grain fresh into this port, either coastwise or from Ireland; and beyond 2000 qrs. of Wheat and 500 qrs. of Indian Corn from Odessa, we have not a single arrival from abroad since Monday last. We had a very slender attendance at market to-day. Trade for Wheat was inactive, and though holders did not press sales, the value of the best descriptions was barely maintained; secondary qualities were 1d. per 70 lbs. cheaper. We have a fair inquiry for Flour at Tuesday's prices. Grinding Barley in moderate request, and steady in value. In Beans and Peas no change. Oats are a slow sale, and Oatmeal is again 3d. per load cheaper. Indian Corn sells for feeding at late prices.



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**THE CONSERVATIVE LAND SOCIETY.**

At the Ninth Public Drawing, on the 13th inst., at the Offices, 33, Norfolk Street, Strand, amongst all the uncompleted Shareholders, not previously entitled by drawing or by seniority, the following 36 Rights of Choice on the Society's Estates were drawn:—Nos. 4680, 2293, 2532, 2512, 4686, 3243, 3244, 3245, 3355, 2860, 2861, 2862, 5, 23, 5440, 3968, 1377, 3492, 4318, 4584, 4946, 1811, 2290, 2332, 4152, 4153, 4154, 812, 951, 2600, 1110, 1111, 1112, 1786, 1296, 3201, 2332, 3983, 4502, 4503, 1579, 1580, 1581, 3993, 3032, 558, 4693, 5095, 5096, 1725, 1722, 4993, 570, 4452, 4631, 1028, 1029, 2140, 3170, 2276, 2277, 2425, 2426, 2427, 4893, 4894, 4895, 3947, 3493, 692, 862, 934, 935, 866, 4643, 906, 907, 1665, 3496, 3497, 3498.

The following six Numbers—860, 1489, 3008, 1816, 1817, and 1124—were also drawn; but the holders thereof, being in arrears, lose the benefit of this drawing.

The following Share Numbers will also be placed on the Order of Right by seniority of membership:—Nos. 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 299, 300, 302, 303, 304, 305, 306, 308, 309, 310, 311, 312, 313, 315, 320, 321, 325, 327, and 329.

The Tenth Public Drawing is fixed for Wednesday, September 7, at the Freemasons' Hall, Great Queen Street, being the Fourth Quarterly General Meeting of the Members, and the Anniversary of the Establishment of the Conservative Land Society. All Shares taken on or before that day, up to the time of placing the numbers in the wheel, will participate in the advantages of this Drawing. Applications for Prospectuses and Shares to be made to CHARLES LEWIS GRUNEISEN, Secretary.

**LANDSCAPE GARDENING REVIVED AS AN ART.**

**MR. THOROLD**, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure-grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

**TO LAND AGENTS.**

**WANTED**, at Michaelmas next, a FARM of 100 to 150 acres of mixed soil, with a portion of Meadow Land, between 30 and 50 miles from London, with a Gentle Family Residence, and near to a town or village.—Address, with full particulars, to R. J., Post Office, Stoke Newington, London.

**FREEHOLD LAND.**

**WANTED, TO PURCHASE**, from 30 to 60 Acres of FREEHOLD LAND, south or west from London.—Address, stating full particulars as to situation, price, &c., to Mr. LAMBERT, Surveyor, 4, New Basinghall Street, City.

**TO BE LET**, a capital WHEAT and STOCK FARM in Hertfordshire, 5 miles from a first-class station on the Great Northern Railway, comprising 362 acres of arable and 65 acres of pasture land. A great portion of the Land is very light and dry, lying on the chalk; that which was wet has been well drained. The House and Buildings, which are extensive, though not of modern construction, will be repaired by the Landlord, and additions will be made to them to suit the views of an improving Tenant on fair terms.

Apply to Mr. HUNBERT, Land Agent, Watford.

**TO BE LET or SOLD**, the NURSERY GROUNDS, at Maghull, near Liverpool, the property of, and many years occupied by, the late Mr. John Whalley. These Grounds are situated in a highly respectable and rapidly increasing neighbourhood; are within 8 miles of Liverpool, close to a Railway Station, by which communication can be had many times a day with that town and all parts of the kingdom; and present a peculiarly eligible opportunity to any one desirous to embark in the Nursery business.—For particulars address Mr. THOMAS WHALLEY, Maghull, near Liverpool.

**TO BE SOLD**, a FLORIST BUSINESS, with four small Greenhouses, Frames, Stock in Trade, &c. The premises are situated in one of the leading thoroughfares, about 3 miles from the City. As the price is very moderate, it will afford an excellent opportunity to an industrious man.—For further particulars, direct to A. B., 6, Church Street, Camberwell, London.

**TO BE SOLD**, a NURSERY BUSINESS, comprising a convenient Cottage, and an Acre and a half of Ground, held at an unexpired term of 81 years, with Greenhouse, Propagating House, and other conveniences, together with the Stock.—Apply at Bunfield Nursery, Bunfield Road, Clapham Rise, Surrey.

**SHROPSHIRE RAMS.**

**FOR SALE**, a number of high-bred Shropshire and Staffordshire Down Shearling RAMS and RAM LAMBS, the property of Willoughby Wood, Esq.—To be seen at Holly Bank, near Barton-under-Needwood, Staffordshire.

**TO BE DISPOSED OF**, a complete copy of the GARDENERS' CHRONICLE from its commencement in 1841 to the end of July, 1853. It is in numbers, clean, and in good condition.—Apply by letter to Miss L., care of Mrs. WILEY, News Agent, Sheffield.

**COCHIN CHINA FOWLS' EGGS FOR SALE**, from the fellow birds to those that took first prize at the Royal Agricultural Society of England's Show at Gloucester in July, and again first prize at the London Summer Show in August. Price 36s. per dozen, package included.—Apply to E. TERRY, Brewer, Walton Terrace, Aylesbury, Bucks.

**COCHIN CHINA CHICKENS**, from Prize Hens, 3 months old.—Mr. THOMAS GILBERT, Wine Merchant, Grays, Essex, has for sale 80 first-class Birds, selected from a breed of 300, at 20s., 25s., and 30s. each. Strains of Sturgeon and Potts; also Eggs at 16s. per dozen, from light-buff and extremely well-feathered Hens, sent to any part of England on receipt of a Post Office Order. A Cinnamon Cock and two Pullets for sale, price 3l. 3s.

**Sales by Auction.**

**TO GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.**

**MESSES PROTHEROE & MORRIS** are instructed by E. LAWRENCE, Esq., (who is removing to London), to submit to an unreserved Sale by Auction, on the premises, No. 14, Grove Terrace, Kentish Town, on FRIDAY, September 16th, 1853, at Twelve o'clock, the whole of the STOVE and GREENHOUSE PLANTS, consisting of fine Orchids, Gesneras, Gloxinias, Hoyas, and choice Showy Pelargoniums, fine specimen Indian Acazacs, Double Camellias, Achimenes, Epacris, Roses in Pots, Oleander, Geraniums, Correas, Kennedyas, Lilium lancifolium, Hyb. Rhododendrons, Kalmias, Andromeda floribunda, 800 yards of Box Edging; choice Standard Roses; Privet Hedges, &c. Also three newly erected Greenhouses, a capital Span-roof Pit; Hand Lights; Boxes; the erection of four Sheds; Summer House; a quantity of Bricks; an excellent Saddle Boiler; about 400 feet Hot-water Pipe; Iron Roller; Tanks; Fencing; Syringes; Barrows; Thermometers; Garden Tools; Pots, and other effects. May be viewed three days prior to the Sale. Catalogues may be obtained (6d. each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

**IMPORTANT SALE OF COCHIN CHINA, POLISH, AND OTHER POULTRY.**

**MR. STRAFFORD** has received instructions from T. H. PORRIS, Esq., of Kingswood Lodge, near Croydon, to sell by Auction, at the Bazaar, on WEDNESDAY, August 30, the whole of his Stock of COCHIN CHINA POULTRY, including his Prize Birds and about 120 Chickens of this year, Prize Silver and Golden Poland Fowls, and some Spanish of high character.—Catalogues may be had of Mr. STRAFFORD, 89, Guildford Street, Russell Square, and at the Bazaar.

**TO THE ADMIRERS OF PURE-BRED LEICESTERS.**

**MR. STRAFFORD** has received instructions from Mr. Buckley (who is declining Ram breeding) to announce to his Friends and the Breeders of Sheep that he will Sell by Auction, without reserve, at Normanton Hill, near Loughborough, on THURSDAY, the 1st of September next, the whole of the Leicester Flock, consisting of about 40 RAMS and 200 EWES and THEATS.

The purity of this Flock is too well known to require further comment, than that it is directly descended from that of Mr. Buckley's late Father, Grandfather, and Mr. Bakewell's, of Dishley, and has not been crossed by any other sheep, excepting that the last few years' Rams have been used bred by the late Mr. Burgess, of Cotgrave, and others bred from his flock by Mr. Sanday, of Holme Pierrepont. The sheep still retain that fine symmetry and quality of wool and mutton for which they have been so deservedly celebrated for nearly a century.

The Sheep may be inspected the week previous to the Sale, at Normanton Hill, which is three miles from the Kegworth station, on the Midland Railway, and about 12 miles distant from Derby, Leicester, and Nottingham.—Catalogues with particulars may be had on application to Mr. BUCKLEY, at Normanton Hill, near Loughborough; or of Mr. STRAFFORD, 89, Guildford Street, Russell Square, London.

**EXMOOR PONIES.**

**MR. JOHN GOULD** has the honour to announce that he has received instructions from F. W. KNIGHT, Esq., M.P., to offer for PUBLIC COMPETITION, on Tuesday, the 20th September next (the day previous to Barnstaple Fair), at SIMONS BATH, an EXMOOR, 40 EXMOOR PONIES; viz.: 30 Horse Ponies, from two to four years old, direct from the hills, which include 5 beautiful entire Ponies; 10 select three, four, and five years old Horse and Mare Ponies, already broken to the saddle. Some excellent Matches and Fancy Ponies will be found amongst them; but they are in general strong, with good symmetry. Also, 1 seven-year-old Cart Horse—an excellent worker; 1 two-year-old Nag Filly, by Luncheon.—The Sale will commence punctually at Twelve o'clock. Every information relative to the above Sale may be had on application to Mr. ROBERT SMITH, Emmett's Grange, Southmolton. Barnstaple, Aug. 20, 1853.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to THE EDITOR.—SATURDAY, AUGUST 20, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 35.—1853.]

SATURDAY, AUGUST 27.

[PRICE 6d.

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## ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.

Under the Patronage of Her Most Gracious Majesty the QUEEN.  
The LAST EXHIBITION of the season will take place on TUESDAY, September 6, at the Royal Surrey Zoological Gardens, in conjunction with the Metropolitan Grand Dahlia Show (open to all exhibitors), when Prizes will be awarded for the following productions—Stove and Greenhouse Plants, Specimen Plants, Roses, Dahlias, Hollyhocks, Verbenas, Cut Flowers, Pine Apples, Grapes, and Fruit in collections; also numerous Prizes offered by members for Roses, Lilliums, and Dahlias.—List of Prizes and the Rules of the Exhibition, may be obtained of J. T. NEVILLE, Secretary, Ebenezer House, Peckham, Surrey.

**DAHLIA PRIZES—OPEN TO ALL ENGLAND.**  
**MAIDSTONE HORTICULTURAL SOCIETY.**  
For the best Collection, 24 distinct varieties, 24. 2s.; second best, 12. 1s.; third best, 10s. 6d. Entrance fee, 5s.  
The above Prizes will be given at the Autumn Show, to be held on WEDNESDAY, September 7. Boxes entered for competition will be received on the arrival of the first train (South Eastern). No Exhibitor to receive two entries.—Any information will be given on application to Mr. J. G. SMITH, Hon. Sec., Week Street, Maidstone.

**A GRAND DAHLIA SHOW AND HORTICULTURAL EXHIBITION** will be held at the PITTVILLE SPA AND GARDENS, Cheltenham, on WEDNESDAY, Sept. 7, under Distinguished Patronage.—Schedules to be obtained of W. BAIN, Hon. Sec., Hurlitt Street, Cheltenham.

**VALE OF TAUNTON DEANE HORTICULTURAL AND FLORICULTURAL SOCIETY.** President, W. H. P. G. LANGTON, Esq., M.P.—The next SHOW will be held in the Vivary Park, Taunton, under the spacious marquee on WEDNESDAY, the 7th of September, 1853. Prize List for Nurserymen open to all England.

PLANTS IN POTS.			
	1st Prize.	2d Prize.	3d Prize.
For the best collection of Miscel- laneous Plants .....	£ s. d.	£ s. d.	£ s. d.
.....	1 10 0	1 0 0	0 10 0
CUT FLOWERS.			
German Asters, 24 distinct vars., two of a sort	1 0 0	0 10 0	0 10 0
Verbenas, 24 ditto .....	1 0 0	0 10 0	0 10 0
Hollyhocks, 18 ditto .....	1 0 0	0 10 0	0 10 0
Dahlias, for the best collection, number unlimited, but not less than 36 vars., dissimilar blooms —fancies excluded .....	A Handsome Silver Cup.		
Dahlias, 24 vars., dissimilar blooms—fancies excluded .....	£1 10 0	£0 15 0	
Ditto 18 vars.—fancies .....	1 0 0	0 10 0	
JOHN KINGSBURY, Hon. Sec., 10, Hammet Street, Taunton.			

**WARWICKSHIRE AND MIDLAND COUNTIES HORTICULTURAL & FLORICULTURAL SOCIETY.**  
The third and last grand Exhibition of the above Society will be held (by permission of the Jephson Garden Committee) in the Jephson Gardens, Leamington, on Tuesday, August 30, when liberal prizes will be awarded for Stove and Greenhouse Plants, Dahlias, Roses, Fruits and Vegetables, Models and Floral Devices. By permission of Lieut.-Colonel Doherty and the officers of the 13th Light Dragoons, the splendid Band of the Regiment will perform during the day. The gates will be opened at 1 o'clock. Admission, from 1 to 3 o'clock, 2s. each; after 3 o'clock, 1s. each; children half price.

**ROYAL PAVILION BRIGHTON.—Grand Floricultural and Horticultural Exhibition.** The Second Grand Exhibition, under the same distinguished patronage as the July show, will take place on WEDNESDAY and THURSDAY, September 14th and 15th, when a magnificent display of Dahlias, Hollyhocks, Fruits, Plants, &c., is anticipated.  
2000 to 3000 will be offered in Prizes for Stove and Greenhouse Plants, Fuchsias, Ferns, Ericas, Achimenes, Balsams, Cockscombs, Scarlet Geraniums, collections of Cut Dahlias, Hollyhocks, Roses, Fancies, Verbenas, devices of flowers, &c., &c.; also, for Pine Apples, Melons, Peaches, Nectarines, &c., &c. Schedules of which may be had on application to the Committee, the General Superintendent, or the Secretary.  
By the kind permission of Colonel Hall, the celebrated Band of the 1st Life Guards will be in attendance; also the celebrated German band.

THOS. ATTER, Esq.,  
Chairman of the Committee of Management.  
E. SPARY, Superintendent.  
EDWARD GARDNER, Secretary.  
Committee Rooms, Town Hall, Brighton.—Aug. 27.  
N.B. The first prize, a Silver Cup the value of 100, presented by the Brighton and South Coast Railway Company, will be given to Amateurs and Gentlemen's gardeners only, for the best 24 dissimilar Dahlia blooms—Fancies excepted in this class; also the Brighton Subscription Cup, the value of 100, being the first prize, will be given for the best collection of 8 dishes of Dahlias. Particulars of the above may be seen by reference to the schedules.—All communications to be made to the Secretary, 24, Abchurch Lane, London, E.C. 4.

## TO ADVERTISERS.

THE ADVERTISEMENT DUTY being now REPEALED, the PROPRIETORS of the GARDENERS' CHRONICLE

are happy to inform those who honour them with their Advertisements, that there will henceforward be a reduction of 1s. 6d., the full amount of duty, from the customary charge for each Advertisement.

Gardeners out of place can now insert Advertisements of not more than four lines in length for 1s. 6d. each.

**DAHLIAS.**—Upwards of Fifteen Pounds will be given in Prizes to Nurserymen and Amateurs at Newbury, on FRIDAY, September 2. Notice of competition, and payment of entrance fees, must be made on or before Tuesday, the 30th inst. For further particulars apply to the Secretaries, 9, Northbrook Street, Newbury, Berks.

## GERANIUM "BRILLIANT."

**OSBORN AND SONS** are now prepared to send out the above-named Geranium, which they consider well adapted for bedding purposes. Colour bright scarlet, habit dwarf and compact, foliage margined with white, and flowering profusely till late in the season. Price 5s. each, with the usual discount to the Trade.—Fulham Nursery, near London.

**CHOICE CALCEOLARIA, CINERARIA, & PANSY SEEDS.**

**GEORGE WHEELER** has now ready to send out Seeds of his fine CALCEOLARIA, saved from the most beautiful varieties; also CINERARIA and PANSY, of first-rate quality, each, at 2s. 6d. per packet.—Warminster, August 27.

## STRONG VINES IN POTS.

**EAGLE AND HENDERSON**, by appointment NURSERYMEN, SEEDSMEN, and FLORISTS to the Queen, beg to intimate to their friends and the trade that their stock of young Vines are very superior this season. Plants from Eyes, 2 and 3 years, 6 to 9 feet, 3s. 6d. each; Ditto, 1 year, 2 feet, 2s. each. Usual discount to the trade.  
Shrub Bank Nurseries, Leith Walk, Edinburgh.

## HOLLYHOCKS.

**WILLIAM BALLANTYNE AND SON** beg respectfully to intimate to their friends and admirers of the above noble flower, that their extensive collection is now in fine bloom, to which they invite inspection.

Dalkeith Nurseries, August 27.

## SUPERB DOUBLE HOLLYHOCKS.

**WILLIAM CHATER** invites attention to the above Flowers, of which he has a splendid Collection now in full bloom, open to the inspection of visitors on any day excepting Sundays.—Nurseries, Saffron Walden, Essex.

**JUST IMPORTED, an Extensive collection of HYACINTHS, IRISES, ANEMONES, TULIPS, CROCUSES, JONQUILS, NARCISSUS, GLADIOLI, &c., direct from Messrs. BRYON, De Boom, and other celebrated Florists in Haarlem, consisting of the most showy kinds in cultivation, and all at very moderate prices.**

For particulars, apply to Messrs. SUTTON & SONS, Seed grovers, Reading, Berks.

**EDWARD GEORGE HENDERSON AND SON**, Wellington Road, St. John's Wood, London, are now prepared to send out by post their newly-saved seed of CALCEOLARIAS and CINERARIAS. Great care has been taken in selecting the Seed, and Messrs. E. G. H. & Son can, with confidence, recommend it to produce first-class flowers equal with any named varieties.

Directions for sowing, &c., will be forwarded. Calceolaria, 1st quality, 5s.; 2d ditto, 2s. 6d. Cineraria, 2s. 6d. and 5s. packets.

## SALE OF TULIPS, ETC.

**CAREY TYSO, Florist, &c., Wallingford, Berks**, is selling off his COLLECTION of TULIPS in named assortments and single Bulbs, at from one-third to one-half of the prices of former years, in consequence of his declining their cultivation; and he will be happy to forward a Catalogue and further information on receipt of a postage label.

C. T. begs also to offer choice assortments of Florists' Flowers, as under:	£ s. d.	£ s. d.	£ s. d.
ANEMONES, 100 superb double varieties...	1 4 0	1 10 0	0 0 0
RANUNCULUSES, 100 ditto .....	2 0 0	4 0 0	0 0 0
IRISES, 25 English ditto .....	0 10 0	0 15 0	0 0 0
CARNATIONS and PICOTEES, 25 fine pairs 15	0 5 0	3 0 0	0 0 0
PINKS and PANSIES, per dozen .....	0 5 0	0 12 0	0 0 0

General Descriptive Priced Catalogues may be had by forwarding two postage stamps.

## SEEDS FOR PRESENT SOWING.

**JOHN CATTELL** begs to say he is now prepared to send out the following, post free, at the prices annexed per packet.—Calceolaria, from finest varieties, carefully fertilised, 2s. 6d. The produce from the Calceolaria Seed, sent out by J. C. in former years, having given such general satisfaction, induces him to recommend this season's sowing with the greatest confidence.—Cinoraria, from finest varieties, 2s. 6d.—Geranium, from finest Florist varieties, 2s. 6d. Ditto, from fine old Florist varieties, 1s. Ditto, from fine Fancy varieties, 1s. 6d.—Mimulus, fine mixed, 6d.—New large flowering Mignonette, 6d. This is more robust, and has a stronger scent, than the old Mignonette. Schizanthus retusus, and Retusus albus, 6d. each. 24 fine varieties of half-hardy Annuals, for early spring flowering, 5s.; 12 ditto, 3s. 24 fine varieties of hardy Annuals, for early spring flowering, 4s. 12 ditto ditto, 2s.—A remittance, or reference, from unknown correspondents is expected.

J. C. has a large stock of Bulbs of the under-named to offer to the Trade; prices may be had on application.—Tropaeolum tricolorum grandiflorum, Gladiolus Brachylepis, and the following Japan Lilies: speciosum rubrum, punctatum, and album.  
Westerham, Kent.

## DUTCH BULBS.

**CLARKE AND CO**, WHOLESALE AND RETAIL SEEDSMEN AND FLORISTS, 86, High Street, Borough, London, beg to intimate to their Customers and the Public, that they have received a splendid assortment of DUTCH BULBS, in fine condition, and solicit applications for Catalogues, which will be ready in a few days.—August 27.

## DUTCH BULBS.

**MACKIE & STEWART** beg to inform their numerous Patrons and Friends that their first importation of HYACINTHS, POLYANTHUS, NARCISSUS, CROCUS, TULIPS, ANEMONES, RANUNCULUS, and other DUTCH BULBS, has arrived in beautiful condition, and respectfully solicit early orders, so as to secure the largest and best shaped roots. Catalogues may be had on application, 10 & 11, Exchange Street, and the Nursery.—Norwich, August 27.

**HYACINTHS AND OTHER DUTCH FLOWER ROOTS.**—The Subscriber has received his importation of DUTCH FLOWER ROOTS in excellent condition. Early orders are requested; prices free on application.—CHARLES ALEXANDER, Seedsman and Florist, 32, West Register Street, Edinburgh.

**WILLIAM HAMILTON, SEEDSMAN and FLORIST**, 41, Margaret Street, Regent Street, London, begs to intimate that his CATALOGUE of BULBOUS ROOTS is now ready, and may be had on application.  
The ROOTS have arrived in excellent condition.

## FLORISTS' FLOWERS.

AURICULAS, ALPINES, POLYANTHUSES, PRIMROSES, CARNATIONS, PICOTEES, PINKS, PANSIES, &c.

**ROBERT HALL**, Alkington, near Middleton, near Manchester, Lancashire, has great pleasure in reminding his Friends and the Public that the above Florists' Flowers, &c., are this season in their usual fine, strong, and healthy condition. Priced Catalogues of the above may be had on application, enclosing a postage stamp.

**N. GAINES** has for sale a large specimen of N. CUPRESSUS GOVENIANA, 15 feet in height, beautifully grown. This plant is believed to be the largest in England. N. G. begs to say his Seedling LILUM LANCIFOLIUM are now in flower, some of them having from 80 to 90 blooms upon each bulb. Can be seen at the Nursery, Surrey Lane, Battersea.

**ROSES AND HOLLYHOCKS.**—The extensive Collections growing at the Chesnut Nurseries are now finely in bloom, where admirers of these Flowers are respectfully invited to view them. Trains of Eastern Counties Railway almost hourly to Chesnut or Waltham.

A. PAUL & SON, Nurseries, Chesnut, Herts.

**STRAWBERRY PLANTS.**—Many thousands of good strong Plants of 10 of the best kinds in cultivation, kept true and distinct, 2s. 6d. to 3s. 6d. per 100.

**HOLLYHOCKS**, saved from 20 of the best named kinds, and kept distinct, 20s. per 100, 3s. per dozen, in strong plants. Remittances are respectfully requested from unknown correspondents.  
DILLISTONE & CO., Sturmer Nurseries, Halstead.

## THE NIMROD STRAWBERRY.

**LUCOMBE, PINCE, and CO**, purpose sending out in the first week of October next, healthy plants of this much admired Strawberry. The merits of this fine fruit have been so universally acknowledged, that L. P. & Co. feel it unnecessary to enter into a long detailed account; they therefore respectfully refer to the opinion of Dr. Lindley in the Chronicle of July 23rd, page 472, and also that of Mr. Spencer in the same publication of July 30th, page 455. The stock is very limited, and, though, in order to get a large supply they ought to have kept it over another season, they have been solicited by so many persons to let it out this season, that they are unwilling to disappoint their friends. Good healthy plants, 60s. per 100. For the convenience of those who may wish to force it, or to have extra strong plants, a limited number of early layers have been put into 48-sized pots, which will be well established by the first week of October, at 6s. per 100.

Exeter Nursery, Exeter, August 27.

## NEW PETUNIA, PELARGONIUMS, ETC.

**CONWAY'S "Lady Turner,"** colour peach blossom, strongly veined with shaded edge of deep pink, having a very pretty effect. The plant is of excellent habit, and an abundant bloomer; altogether a very attractive variety for either Pot culture or Bedding purposes. Strong plants, now ready, 3s. 6d. each. Variegated Pelargoniums: Golden Chain, 2s. 6d., and Mountain of Light, 5s. each; Flower of the Day, 1s. each, or 9s. per dozen. Henderson's Kingsbury Pet (salmon colour), and Skeltoni (white), 5s. each; Beauty of the Parterre, 1s. each, or 9s. per dozen.

Fancy Geraniums, for bedding: White Unique, 3s. 6d.; Copenhagen and Nutans, 2s. 6d. each.  
Chrysanthemums: Large Flowering and Pompons, at 6s. to 9s. per dozen. Chrysanthemum Hendersoni, 9s. to 12s. per dozen.

MARY CONWAY, Earl's Court Nursery, Old Brompton.

## TO LOVERS OF CONIFERS.

**JOHN SCOTT**, of the Merriott Nurseries, Crewkerne Somerset, having had the pleasure of raising a NEW CUPRESSUS (EXCELSA, Scott), from seed imported from hills in America 8000 feet above the level of the sea, begs to offer it to the attention of the public. It is more beautiful, and far more valuable, than the far-famed C. funebris, growing, as it does, to the height of from 80 to 100 feet, and perfectly upright, with a trunk from 4 to 5 yards in circumference. The colour is a beautiful light glaucous, or sea-green, and the habit is elegant, pendulous, and graceful. Indeed it is one of the loveliest of Conifers. It grows as fast as a Larch, and the wood is said to be of the finest quality and almost indestructible. The church at Tecpan, in Guatemala, was built about the year 1524, and roofed with this wood, which is now as fresh as when first put up.

J. S. thinks, at no distant date, this tree will become as plentiful as the Larch, and add, by its grace and beautiful evergreen character, a new charm to our already charming landscapes.  
Largest size Plants, 42s. each; second size, 31s. 6d. each.



GLASS FOR CONSERVATORIES, ETC.  
**HETLEY AND CO.** supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.  
Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.  
See *Gardeners' Chronicle* first Saturday in each month.

**BARNETT, MOSS, AND Co.**, beg to call the attention of Hothouse Builders and the Trade to their Price of Strong Sheet Glass, in boxes of 100 feet, at 12s. 6d. each. Plate, Sheet, Crown, and all other descriptions of Glass always on hand.  
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Cut to any size squares, not above 40 inches long.  
Squares in boxes, 100 feet each.  
Under 6 by 4 ... 12s  
6 by 4, 64 by 44 ... 13s.  
7 by 5, 74 by 54 } under 9 by 7 15s.  
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Large Sheet of No. 16 very superior, packed in cases of 100, 200, and 300 feet, at 2½d. to 2½d. per foot.  
Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments, Fern Shades and Dishes.

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PRICES OF  
**HARTLEY'S PATENT ROUGH PLATE GLASS**, for CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTORIES, SKYLIGHTS, &c.

Packed in Crates, for Cutting-up of the sizes manufactured.		1½ inch thick.	2 inch thick.	3 inch thick.
30 inches wide and from 40 to 50 long		0 5½	0 7	0 9
Or 20 " " 50 " 70 " "		0 6	0 7½	0 9½
In Squares cut to the sizes ordered.				
Under 8 by 6		0 4	0 5	0 6
8 by 6 and under 10 by 8		0 4½	0 6	0 7
10 by 8 " 14 by 10		0 5	0 6½	0 8
14 by 10 " 1½ ft. sup., if the length does not exceed 20 inches		0 5½	0 7	0 8½
1½ ft. sup. " 3 ft. sup., or if above 20 and not above 30 inches long		0 6	0 7½	0 9
3 " 4 " 20 " 30 "	30.	0 6½	0 8	0 9½
4 " 5 " 30 " 35 "	35.	0 7	0 8½	0 10
5 " 6 " 35 " 40 "	40.	0 7½	0 9	0 10½
6 " 8 " 40 " 45 "	45.	0 8	0 9½	0 10½
8 " 10 " 45 " 55 "	55.	0 8	0 9½	0 10½
10 " 12 " 55 " 65 "	65.	0 8½	0 10	0 11
12 " 1 " 65 " 75 "	75.	0 9	0 10	0 11½
15 " 20 " 75 " 90 "	90.	0 10	0 11	1 0
20 " 25 " 90 " 100 "	100.	1 0	1 1	1 1½
25 " 30 " 100 " 120 "	120.	1 0	1 1	1 3
Quarries		0 6	...	...

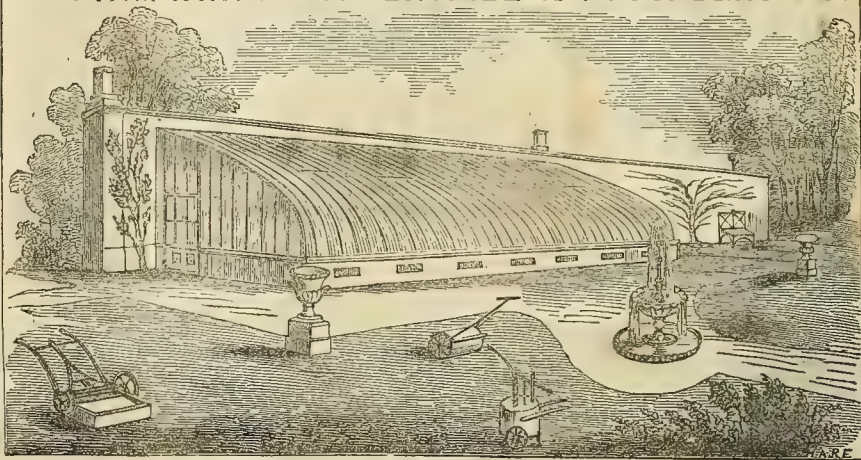
**JAMES PHILLIPS & Co.**, Horticultural Glass Merchants, 116, Bishopsgate Street Without, London.  
"There can be no question now that Rough Plate Glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of sheet or transparent glass, and it has many advantages peculiar to itself, without a single disadvantage as a set-off."—*Gardeners' Chronicle*.

**FRIGI DOMO**, patronised by the Horticultural Society and the Zoological Society, a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, 2½ yards wide, at 1s. 4d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street.—Manufacture, Royal Mills, Wandsworth, Surrey.

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Averuncators Axes  
Bagging Hooks  
Bills  
Borders, various pat-  
Botanical Boxes  
Brown's Patent Fumi-  
gator Instruments  
Cases of Pruning In-  
Daisy Rakes  
Dibbles  
Dock Spuds  
Draining Tools  
Edging Irons and  
Shears  
Flower Scissors  
" Stands in Wires  
" and Iron  
Fumigators  
Galvanic Borders and  
Plant Protectors  
Garden Chairs and  
Seats  
" Loops  
" Rollers  
" Scrapers  
Gidney's Prussian  
Hoe  
Grape Gatherers and  
Gravel Rakes and  
Sieves  
Greenhouse Doors &  
Hammers  
Hand-glass Frames  
Hay Knives  
Horticultural Ham-  
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Hoes of every pattern  
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Labels, various pat-  
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Mole Traps  
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Pick Axes  
Potato Forks  
Pruning Bills  
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" Shears  
Rakes in great  
variety  
Reaping Hooks  
Scythes  
Sickle Stones  
Shears, various  
Sickles  
Sickle Saws  
Spades and Shovels  
Spuds  
Switch Hooks  
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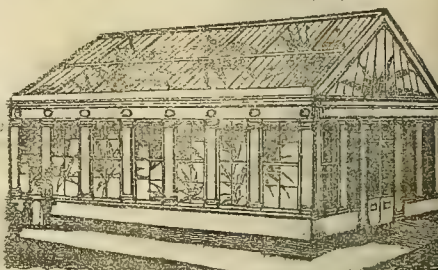
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The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.  
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The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.  
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J. WEEKS & Co., King's Road, Chelsea, London.



HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

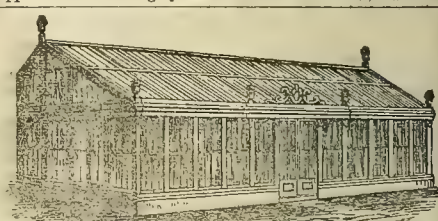
AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON**, Danvers Street, Chelsea  
London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.



HOTHOUSES, CONSERVATORIES, &c., made

and fixed complete, at a considerable reduction. CUCUMBER and MELON BOXES and LIGHTS of all sizes, made of the best materials, glazed and painted complete, kept ready for immediate use, packed and sent to all parts of the kingdom. Reference may be had to the nobility, gentry, and the trade in most of the counties in England.—JAMES WATTS, Hothouse Builder, Claremont Place, Old Kent Road, London.

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London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

WATERPROOF PATHS.—Those who would enjoy

their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 45 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.  
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.



## PICEA BRACTEATA.

**MESSRS. VEITCH AND SON, of Exeter, and the** Exotic Nursery, Chelsea, have much pleasure in stating that they have been fortunate enough to raise a limited number of Seedling Plants of the above beautiful **NEW CALIFORNIAN PINE**, of which a full description was given by Dr. Lindley, in the leading article of the *Gardeners' Chronicle* of July the 9th. The Plants are two years' Seedlings, established in small pots, price 63s. each. Specimens of the cone and foliage can be seen by visitors, at either of Messrs. VEITCH'S Nurseries.—August 27.

## ROSES.

**EDWARD DENYER** invites the attention of noble-men, gentlemen, &c., to his unrivalled **COLLECTION OF AUTUMNAL ROSES**, now in full bloom, and will continue in flower for the next three months; also Dahlias, &c. A general Nursery Stock will be seen, viz., Fruit Trees, Evergreens, Shrubs, &c., of the finest growth of all sizes. Gardens and Pleasure Grounds tastefully arranged and planted on the most reasonable terms. Orders taken for plants at this time, and delivered in November next.

Nursery, Loughborough Road, Brixton, near London.

**STRAWBERRY PLANTS.**—The under-mentioned first-rate varieties are now ready for sending out:—

Trollop's Victoria, very superior, 5s. per 100; Ajax, 20s. do.; Ruby, 20s. do.; Myatt's Surprise, 3s. do.; Myatt's Eleanor, the best and latest bearing Strawberry in cultivation, 3s. do.; British Queen, 3s. do.; Alice Maud, 3s. do.; Black Prince, very early, 3s. do.; Prolific, very fine and early, 3s. do.; Cremon's Perpetual or Double-bearing Strawberry, 3s. do.

A remittance must accompany the order, either by Post Office Order or Penny Postage Stamps, on receipt of which the Plants will be sent in hamper and package free for all orders above 5s. **EDWARD TILLY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.**

**NEW STRAWBERRY, "INGRAM'S PRINCE OF WALES,"** proved at the Royal Gardens to be the best Strawberry for Early Forcing and Fruiting in the Autumn (from forced plants), producing beautiful fruit through the months of September, October, and November. The fruit is of the first size, fine shape, and of a beautiful glossy red, flesh light red, solid, very juicy, and of exquisite flavour, 10 days earlier than the "British Queen," in the open air. The fruit will bear carriage, consequently will be a useful market variety. It is of free growth, compact habit, hardy, and very prolific. It was raised in 1849, by Mr. Ingram, of Frogmore, and now very extensively cultivated there, for forcing, out-door culture, and autumn fruiting.

**JAMES SMALL** begs to call the attention of Gardeners, Market Growers, and the public generally to the above New Strawberry, which he has propagated for sending out. Strong well-rooted Plants, 3s. per 100; 1s. 15s. for 50; 1s. for 25, box included.

Plants may be had of the following Agents in London:—**NETTING & SONS, Seedsman, 46, Cheapside; and DAW & CO., Seedsman, Moorgate Street.** A remittance required from unknown correspondents, or reference in London.

**JAMES SMALL, Nurseryman, Colnbrook, Slough, Bucks.**

**STRAWBERRIES, Four New Varieties for £1.**—**NICHOLSON'S AJAX**, very large and handsome, most exquisite flavour, unequalled as a dessert fruit, and forces well.

**NICHOLSON'S RUBY**, medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; forces well.

**NICHOLSON'S STAIN COCK** is a first-rate market fruit; colour scarlet, very large size, great bearer, and carries well; plant remarkably strong and hardy.

**NICHOLSON'S FILL-BASKET.**—Nothing can exceed this fine sort as a market fruit; it is of a very bright scarlet colour, general shape round, gets very large, but never out of shape; it is a tremendous bearer, preserves well, and will carry any distance. Plants remarkably robust and healthy.

These splendid Strawberries have been the wonder and admiration of all who have seen them; the two first for their excellence as a dessert fruit, the two latter for their abundance, size, and colour, and other good qualities as a market fruit.

These four really good varieties of Strawberries can alone be got of **Mr. W. NICHOLSON**, for 1s. per 100, or any two of the above for 12s., box included. For Office Orders made payable at Yarm, Yorkshire.—**Egglecliffe, near Yarm, Aug. 27.**

**CUTHILL'S PRINCE OF WALES AND BLACK PRINCE STRAWBERRIES.**—Strong plants will be sent out on the 15th of August.—I need not say more in their favour than that they have been in bearing from the 15th of June to the 1st of August, and all sold in Camberwell, and in pound punnets, the two sorts producing upwards of one ton weight. The same gentlemen and gardeners who judged the Black Prince seven years ago have also pronounced the Prince of Wales to be the best late Strawberry, and, like its royal parent, an enormous bearer, but much larger, and good flavoured, and will make the best of all for forcing as a late sort, and is good for preserving; 15s. per 100, or 10s. for 50. Black Prince prepared for forcing, 7s. 6d. per 100; Fine, for planting out, 6s. per 100. Extra plants allowed to the trade.

**CUTHILL'S Pamphlet on the Potato**, containing the best way of avoiding the Disease, as well as Growing Large Crops. This Treatise is found strictly on the laws of Nature. It also contains Asparagus, Seakale, Rhubarb, Strawberries, Cucumbers, Melons, &c. Price 2s., or by post, 2s. 4d. Also, **CUTHILL on Market Gardening Round London.** The first work of the kind ever published. Price 1s. 6d., or by post 1s. 8d. Post Office Orders to be made payable at Camberwell Green.

**JAMES CUTHILL, Camberwell, London.**

## LOCKSBROOK NURSERY.

**VIOLETS, PANSIES, ANEMONES, DAISIES, AND NARCISSES.**

**R. SHACKELL** begs to offer the public again this season his beautiful Seedling Violet Russian Superb; strong plants, 4s. per dozen; small ditto, such as can be sent through the post free, 3s. per dozen. Double Purple Perpetual Tree Violets, now coming into blossom, moving very well at this time of the year, making a show at once, 2s. 6d. per doz., or 10s. per 100. Old Russian Violet Plants, a very useful kind, 1s. per doz., or 5s. per 100.

R. S. has a fine stock of free blooming showy Pansies, such as will bloom pretty freely through the winter months and early spring. If purchased shortly, and planted thick in a rich light soil, would be very useful for replenishing the flower beds as soon as the frost has killed the tender summer flowers; strong well-rooted plants, with blooms on them, at 2s. per dozen, in 12 varieties, or 10s. per 100.

R. S. has also a large stock of single Anemones, sown this last spring, useful for the same purposes as before named, at 2s. per dozen, or 10s. per 100. Also a great variety of foreign Daisies, some of them very beautiful; these are useful for edging round small beds or borders, 1s. per dozen, or 5s. per 100.

R. S. has a large stock of the beautiful, sweet-scented, pearl-white Double, or Picotee-centred Narcissus, which he will render at the low price of 1d. per dozen, or 2s. 6d. per 100.

\* Hamper and package included, provided the order is not under 5s.

Any person wishing to see the blooms of the Pansies and Anemones may have permission through the post by application, enclosing 1s., for the postage.

Address **ROBERT SHACKELL, 1, Broad, Locksbrook Nursery, Bath.**

## FOR PRESENT SOWING.

**GRASS SEEDS—SEPARATE OR MIXED.**

**SUTTON AND SONS** having made it their special business to collect Natural Grass Seeds, and mixing them in proper sorts and proportions to suit the various soils of Great Britain, can supply them either separate or mixed, of the very best quality, at moderate prices.

For particulars, address **JOHN SUTTON & SONS, Seed Growers, Reading, Berks.**

## The Gardeners' Chronicle.

**SATURDAY, AUGUST 27, 1853.**

**COUNTRY SHOWS FOR THE PRESENT AND ENSUING MONTH.**—Aug. 30th: Banbury, Weymouth, and Long Buckby.—31st: Colchester, Thornbury, Wycombe, and Salisbury.—Sept. 1st: Chichester, and Hackney.—2d: Newbury.—6th: Hereford.—7th: Norwich, Clontarf, Isle of Wight, and Kelson.—8th: Oxfordshire, North Wilts, and Ireland Royal.—9th: Bury, Thirsk, and Ashford.—10th: New Swindon, and Edinburgh.—11th: Bradford, Whitby, and Rathmines.—12th: Brighton.—13th: Glasgow.—14th: Teddington, Aylesbury, Thame, and Meath.—20th: Chesham.

\* It is difficult even for those who witnessed the desolation caused by the prevalence of the Potato-murrain, in 1845, to conceive the utter despair which has seized almost all the Vine districts, from the Rhine to Madeira, in consequence of the increasing present failure of the vintage, and the prospect of entire destruction which threatens many of the most valuable vineyards. Not only do the Grapes decay long before maturity, but plant after plant is dying, in spite of every effort to ward off the mortality. At the present moment, more especially the rich districts of Portugal, on the banks of the Douro and the Upper and Lower Corgo, which supply to so great an extent the London markets, are following the fate of Madeira, and both merchants and labourers are too sensibly alive to the ruin which awaits them, unless some remedy or providential alleviation be found. Happily, however, the principals are not inactive, but are seeking for every information which may give the slightest hope of relief. We have before us a very sensible pamphlet by **Mr. QUARLES HARRIS**, addressed to gentlemen engaged in the wine trade,\* and we have just received a collection of diseased Grapes and leaves, forwarded (with laudable zeal, for when sent there was a temporary alleviation of the malady) from the Upper and Lower Corgo by **Mr. GASSIOT**, of the firm of **MARTINEZ, GASSIOT, and Co., of Mark Lane.** These present the appearances which have been so often described. The leaves and fruit are covered with *Oidium*, and as in the Madeira specimens, adverted to in Sept. 1852, there is an abundant admixture, not only of *Tricothecium roseum*, which is common everywhere, but of a charming species of *Coniosporium*, which has occurred before only on the diseased produce from Madeira. The disease was indeed quite as virulent as in the worst English specimens, and the shoots, instead of presenting a clear healthy brown, were partially or entirely black, an unfailing indication, unhappily, of unhealthy shoots the ensuing year. The Grapes are in every stage of disease from simple depauperation to downright corruption.

Though the method employed by **M. GRISON** is so efficacious when practised on a small scale, it requires too much capital for the poorer cultivators of Portugal; and the total amputation recommended by some authors is hope so long delayed as to make the heart of the needy vine-dresser sick indeed. **Mr. ROBERT THOMPSON**, however, to whom we are indebted for much of the accompanying information, writes as follows: "Bleeding the Vine, by cutting its roots, has been recommended, and instances have been adduced to prove the efficacy of this mode of treatment; but the Vine has such power of developing shoots and leaves that I cannot imagine how plethora could take place. Besides, we find weakly plants are as liable to the disease as those of full habit. It may, therefore, be concluded that the beneficial result of root pruning depends on something else. It does away with tap roots that perhaps were worse than useless from being in a dry sub-soil, and which, from being the principal feeders, have not afforded an adequate supply to the vessels connected with them. I had some Apricot trees so attacked year after year with mildew that not one fresh healthy green leaf could be found. They were taken up carefully in autumn, and the border was well trenched. The trees were then replanted, and afterwards bore a healthy foliage. The same may hold good as regards the Vine."

It appears, moreover, that the American varieties or species, when introduced into Europe, are very slightly if at all subject to be attacked; and on the contrary, that European varieties, when cultivated in the Northern States, at least of America, are so subject to mildew that no one will persist in their cultivation on a large scale, though in conservatories the sulphur system has been adopted, it is said, for

years before the disease became generally known in Europe. The Americans have had cultivators from the wine countries on the Rhine and elsewhere, who have carried with them their own varieties, concluding from the soil and climate that they should make a fortune. But in three years all their plants were swept off by the mildew.

The attention, therefore, of the more opulent Vine growers should be especially directed to the superior varieties of American Grapes, especially such as are not of a foxy flavour, and the sooner such varieties are procured the better. Orders should be immediately transmitted through safe and judicious hands, for cuttings, or what would be better still, some intelligent practical men should themselves at once proceed to America to obtain them from the source most free from suspicion, or at least procure the best which at present exist in Europe. It is true that some years must elapse before any general benefit could be derived, but if this plan holds forth no hope, there is at present little reliance on any other. It is true that the American kinds are by no means equal to the European, and less calculated for wine, as it should seem from the small product of the American vintage; but a judicious selection might be expected in good hands not to be valueless.

We have in vain inquired after the Vine mildew in the Southern states, though we have seen an imperfect specimen which had a very suspicious appearance. Unfortunately, amongst some fifteen hundred authentic specimens of the fungi of the United States described by **SCHWEINITZ**, which we have lately received, there is not any specimen of *Erysiphe necator*, which is sometimes so destructive to the fruit.

It is curious that the Grape mildew should have found its way to America from England, whereas there is some reason to believe **MORREN'S** notion that the *Botrytis infestans* of the Potato murrain travelled into Europe from America. **M. J. B.**

**NOTE.**—It will doubtless be recollected that **Signor GAMBA**, an Italian Vine-grower, reported in 1852 that he had removed the disease by cutting his Vine roots, and allowing them to bleed freely, immediately after which the disease disappeared. At a later period of the season we announced that **Mr. DELIUS** had also tried bleeding with considerable success in his vineyards at Malaga. Recent advices tell us that the practice continues to be beneficial. Not that disease wholly disappears, but it is stayed to so great an extent that full 14,000 cartons of fine Raisins will be made up where 20,000 might have been had in a healthy year. As the consumer will pay for this reduction of 30 per cent. in the crop, the grower will not be an immediate sufferer; his danger lies in the progress of the malady.

The mode pursued by **Mr. DELIUS** has been to open a hole at the foot of a Vine, and to cut through some of the principal roots, allowing them to bleed freely. The operation is performed in the month of August, when the fruit is ripe. It is obvious, however, that this plan can only affect the next year's crop, for Vines are attacked long before the fruit has grown much; in that, indeed, consists the great danger, for berries when seized upon by the mildew cease to grow and speedily burst; if ripe when disease appears, little harm is sustained.

Of this fact, if it be a general fact, we know of no satisfactory explanation. Conjecture says that the Vine is diseased because it is in a state of plethora; and that draining off its sap at the time when it is wanted to complete the season's organisation has a counteracting effect, by enfeebling the system. Half a dozen other explanations just as satisfactory might be suggested, but we regard them as premature; when the explanation of root-bleeding shall have been sufficiently repeated we shall be in a better position to speculate upon such a subject.

In our number for November 13th, 1852, the attention of our readers was called to a curious fact recorded by **M. TRÉCUL**, illustrative of the mode of growth of woody fibre, and the subject was again alluded to in that for August 6th, of the present year. Some fresh observations by the same author have lately appeared in the "Annales des Sciences Naturelles," even more strongly subversive of the ingenious theory which derives woody fibre from the superior buds. An attentive examination of the point of junction of the cortical and woody stratum, just before distinct separation takes place, exhibited a multitude of horizontal cells apparently springing from the bark, which were gradually divided by vertical septa, sometimes as many as 15 in a cell, into irregular chambers. Each of these was observed to give rise to a distinct cell, whose poles are at right angles to the mother cell, and whose extremities gradually become attenuated and wrap over those above and below, which are in juxta-position with them. It is of little consequence whether the

\* Remarks and Observations on the Vine Disease now Ravaging the Wine Country of Europe, with Recipes for its Cure, and Microscopic Examinations, executed by **THOMAS WEBB, Esq., 51, Hatto Garden. SMITH & ELDER, 1853, pp. 10, tab. 1.**



mother cells are really derived from the bark or from the most recent woody fibre, because in either case the inference is equally strong against the origin by descent from the buds above them. The most singular point about the matter is the change of direction of the poles of the new cells, but many instances might be adduced of such a change in *Cryptogams*, as for instance in the endochrome of *Strophophora*. M. Trécul's observations appear to have been made principally, if not exclusively, on *Ulmus rubra*, *Robinia pseud-acacia*, and *Paulownia imperialis*, from the latter of which the figures are taken. It is to be observed, that these views, if correct, by no means exclude the notion so strongly maintained by MIRBEL, of the development of cells from the cambium, nor do they even invalidate the rival views of GAUDICHAUD, so far as they maintain that active growth very generally commences at the base of the buds, and so extends downwards; though it is certainly opposed to those which regard woody fibre as descending from them, after the manner of roots. The whole question is most important, and we are rejoiced to see M. Trécul still working at the matter, assured that vegetable physiology must certainly profit by the discussion which it is sure to generate. M. J. B.

#### THE OAK.

WHEN a man builds a house, lays out a garden, or plants an orchard, he may reasonably expect to enjoy the fruit of his labour; but he who plants the Oak to produce timber must divest himself of all selfish gratification; his pleasure must arise from a nobler source—he plants to benefit posterity, and for the future ornament and protection of his country. How just and reasonable is it, then, that a tree whose growth is so comparatively slow, and whose ultimate value is so remote, should be planted in such soils and situations only as are adapted to its growth. How frequently do we see the Oak in private plantations, surrounded by the Spruce, the Larch, and Scotch Fir, which, in the first instance, were meant to be its nurses and protectors, but which, from neglect, have become its oppressors and destroyers, rendering even the scanty supply of food which its roots absorb from the soil a source of debility and decay, by over-shadowing and consequent deprivation of light. That all trees, in the early stages of their growth, thrive by a careful commutation of the soil, with sufficient shelter from adverse winds, &c., is a truth that need not be insisted on, but that a gradual and early exposure to those elements amid which it is eventually to attain maturity, as the only source by which a healthy and robust growth can be acquired and maintained, is also evident. Let us, however, inquire of Nature herself, whose answer, rightly understood, will never deceive us. Let us visit the forest and address ourselves to the "brave old Oak," "the monarch of the wood," whose stern and massive trunk, with wrinkled bark and rugged tortive and expansive limbs, proclaim the gravity of age; and he conclusively replies, for there are "tongues in trees," that the Oak, the "hearts of Oak" that form the wooden walls of the British Isle were never reared nor never can be by the modern effeminate nursing system. And here I would premise that my object in making these strictures is not so much to point out the best mode of planting, by which a quick return upon the original outlay may be obtained, but rather to show the necessary culture required to ensure a free and healthy growth of the Oak, so that ultimately valuable timber may be produced.

With a view to afford shelter to the Oak, I cordially agree in opinion with those who advocate planting the varieties of Fir in continuous belts of considerable breadth, and, if the plantation is large, intersecting it at regular distances, so as to afford shelter without the robbery of nourishment, and the suffocation which is so likely to occur in mixed plantations. These belts might be planted seven or eight years previous to the planting of the Oak. In the meantime, the land where the Oaks are to be planted should undergo a course of cultivation and cropping, so that the soil may become thoroughly pulverised. I would advise that the Acorns be sown and the plants reared as near to where the plantation is to be made as convenient. If an extensive plantation of Oak is to be made, it should be a work of progress, not more being planted than could be attended to during the summer and autumn following. It will ever be found the most economical mode of proceeding to have that which is done well done, and properly attended to afterwards. The hap-hazard hit-or-miss treatment to which plantations are so frequently exposed, is generally the most ruinous and unprofitable. I would plant the Oaks in rows 8 feet apart, and 8 feet asunder in the row; and, to carry out my views, I would cultivate between the rows whatever could be grown and sold to most advantage in the neighbourhood. If root crops could be grown, they are much to be preferred, as they require the necessary culture and stirring of the soil so promotive of the early growth of the Oak; for if we can only supply the roots with a due and proper supply of nourishment, light and exposure to a free circulation of air will enable the young Oak to resist the various vicissitudes of the seasons. The Willow or the Hazel may likewise be grown to advantage until such time as

the Oaks have occupied with their branches the space between the rows. The Willows, after three or four years' growth, should never be allowed to overtop the Oaks, but the strong withs that do so should be cut down every spring.

Much controversy has taken place with regard to the pruning of forest trees. The no-pruning system can only apply to those trees which are planted for ornamental purposes, but trees planted in woods or forests, for producing timber, must of necessity undergo some pruning of one sort or another; we must either thin excessively at a period before the wood can be of any value or prune judiciously, for most assuredly if a free circulation of air is not admitted, the lower branches will decay, and it is evident that it is better to remove the live branch close to the bole than to have to cut away a dead one, in the young state of the Oak; all that will be required is to shorten back those branches that contend for the mastery with the principal leader, until it is grown 15 or 16 feet high, when a few of the lower branches may be entirely removed. I have never seen an Oak tree in any situation, however favourable, that has attained the age of 50 years, or even a much shorter period, that has retained the whole of its early formed branches without decay—a proof sufficient to warrant a continuous and judicious system of pruning until we have a clear stem of from 12 to 18 feet high. The thinning of the trees should commence as the branches meet together; they will then have attained a considerable height, and will begin to repay for the labour bestowed on them. In the management of the plantation great attention should be paid to the ultimate use to which the timber is to be applied. If for the navy it ought to be surveyed from time to time by those competent to form an opinion on the subject, as it must be evident that a plantation may soon be rendered comparatively worthless by the injudicious thinning of those who are not practically acquainted with the uses to which the various forms and growth of the timber may be applied.

I here subjoin an account of the rate of growth of Oaks that have more particularly come under my notice. An acorn sown 1801 was finally transplanted on a lawn in the spring of 1819; it is now 60 feet high; the girth of stem at the ground level is 6 feet 9 inches; at 18 feet high, 5 feet 6 inches; at 30 feet, 3 feet 4 inches; it then branches off in two leading stems. It gives no indication as yet of assuming the dome-like, round head, and that massing of foliage so frequently observed in the pedunculated variety of the Oak. The soil in which it grows is a sandy loam, subsoil sand and clay, and 10 feet deep pure sand. Acorns sown in 1822 and finally planted in 1826 are now 37 feet high; girth at the ground, 2 feet 10 inches; at 10 feet high, 1 foot 11 inches; at 18 feet, 1 foot 4 inches. The ground for these was trenched 3 feet deep, and planted 6 feet apart, in rows, at the same distance. Willows were planted between the rows, but for these last 10 years they have become of no use, being overpowered by the Oaks. The soil is a strong loamy clay, and at 3 feet deep good brick earth. I prefer to gather the acorns from well grown and finely formed trees, rather than collecting them promiscuously. Tassel.

#### MANAGEMENT OF CIDER APPLE TREES.

A PRACTICAL treatise on the Rearing and Cultivation of Cider Apple trees, in Normandy, entitled "*Traité pratique de l'Éducation et de la Culture du Pommier à Cidre, dans les Départements de l'ancienne Normandie*," has been lately published by the *Cercle pratique d'Horticulture et de Botanique* of the department of the Seine-Inférieure. It contains, as we observed some weeks ago, concise instructions on the subject; and convinced that the work has a very useful tendency, we have thought it desirable to furnish our readers with a series of translations from it.

The subject is by no means unimportant. In proof of this it is only necessary to adduce the facts, that in the cider counties, in a good season many farmers clear their rents entirely by the produce of their cider trees; and hence new plantations of these are being extensively made. The strictures in the first part of the treatise in question may prevent errors in the formation of these plantations; and it will be seen, when pointed out, that many errors are as easily avoided as practised. We may add that many of the strictures as well as the instructions that follow are applicable not only to cider Apple trees but likewise to other trees.

#### PART I.

Critical remarks on various modes of cultivation which have been adopted, and are still practised as regards the Cider Apple tree.

*Formation of a Nursery.*—When a private nursery is formed for supplying plants for an orchard, it is frequently established in a very bad situation, such as the corner of a yard surrounded with Quick-hedges in which there are large trees; or even in a narrow space between the back of a building and a hedge, with the view of getting shelter, or for the sake of economy of enclosure. To save the small cost of one or two pieces of fence, a great portion of the plants is lost, because some are drawn up by the shade of buildings or of trees, and others cannot thrive on account of the ground being continually impoverished by the roots of the hedges and of the large trees which usually grow in those hedges.

*Choice of the Plants.*—A false economy often causes second or third-rate plants to be selected because of their cheapness. This is a mistake; for although plants of the second picking are not altogether to be despised, and

although occasionally some plants may be found from among them that become as good trees as those from the first; yet it cannot be denied, that of two plants of the same age, grown in the same soil, and having received the same care, but which are of different vigour, the tallest and thickest should be preferred.

*Preparation of the Plant.*—To prevent the Apple-trees from becoming tap-rooted, many prune the roots to half their length, and thus almost make cuttings of their plants, the starting of which becomes more difficult, slower, and less perfect than would be the case if the roots were preserved.

*Distance usually left between the Plants.*—It is an error to suppose that the more plants we put in a given space, the more trees really deserving the name of such, we shall have. The Apple tree, which should remain from seven to ten years in the nursery, in order to acquire the necessary strength for being finally planted, requires a great deal of air and light to develop its stem and head, and a sufficient extent of ground to allow it to form good roots. In a nursery where the plants are too close together, as, for example, 2 feet between the rows and 12 to 15 inches between the plants in the rows, we often obtain only badly rooted trees with slender drawn-up stems, no thicker at bottom than at top; or, as is most frequently the case, some trees more vigorous than the rest get the ascendancy, and stop the growth of their neighbours, which they eventually annihilate. In this case, he who has planted 1000 plants, is fortunate if he get 500 or 600 trees, we do not say very good ones, but merely passable.

*Rearing the Plants and forming the Stem.*—If a straight stem is not indispensable to the formation of a good bearing Apple tree, it is at least necessary for new plantations in straight rows; and in all cases it is more eligible. Now, to obtain straight stems requires yearly attention to pruning, pinching off, and bending to a right position, &c. These operations should be skillfully performed; but such is rarely the case. In nurseries which are not totally neglected, the shoots which come on the stem are all taken off, and that generally at too early a period. As these shoots, or more strictly speaking their leaves, were intended to increase the size of the stem, the premature destruction of the shoots, and the consequent privation of leaves, prevent robust, straight growth, and thence come those trees that have bending, weakly stems, and which are more especially too slender at the base.

*Neglect of matters relating to Grafts.*—Cleft grafting, although most used, has several defects. In order to perform the operation, the stem must be cleft from side to side, and this cleft is a chasm which the sap cannot close up in a single year. By neglecting to keep it constantly covered, the introduction of water is permitted, decay of the wood follows, and this, continually spreading towards the interior, shortens the life of the tree, and renders it more liable to be broken or uprooted by high winds, because the rottenness extends to the large roots, which, from that cause, cannot offer any resistance. Grafts are often broken by the wind or by large birds. This is another result of negligence in the grafters, who should always protect the grafts by fastening to the stock, with osier, a rod to which the young shoots from the graft could be secured as they proceed in growth.

*Formation of the Head of the Tree.*—Whether the tree has been grafted low or high, its stem should be stopped at a convenient height for the growth of the branches intended to form its head; but, instead of keeping these branches at a proper distance from each other, and only retaining a small number, and allowing them to grow to a good length, the branches are all preserved and cut very short at the end of every winter, without calculation, without forethought, and without the direction of the bud which has been pruned on having been examined.

The consequence of this improper mode of pruning is, that, after three or four years, the head of the Apple tree is a shapeless bush, the numerous and widely-ramified branches of which would hardly afford a passage for a cat, although at a later period a man must pass among them. It would be better to allow the trees to push freely, without employing the pruning knife at all upon them, than to exhaust them in this manner, by inducing them to make a number of shoots, most of which must be entirely cut off next year; for the inevitable result of this bad pruning, besides exhaustion, is to necessitate the amputation of strong branches with the saw which should have been cut off with the pruning knife when first developed; from these amputations with the former instrument large wounds result, which only heal slowly and imperfectly; and the decay of the wood arising from wounds not healed will eventually produce the same effects as the neglected clefts of grafts.

*Taking up young Trees from the Nurseries.*—We would gladly have said that the Apple trees are taken up from the nursery, but as their roots are very often cut short by the spade, or by strokes of the mattock; or, having been slightly uncovered, they are drawn violently out, so as to break all the fibres, &c., that are twisted, we are obliged to say that they are *torn up*.

Again, the plants are often left exposed to the air, which dries the fibres, if any remain; or to rain, which washes them; or sometimes, even, to the destructive influence of frost. Yet it does not require much science to know that roots intended to live and grow in the earth only must suffer by exposure to the air, to light, and to frost; and that they should remain exposed to these influences as short a time as possible.

The preservation of the leaves on the tree, if it has



been transplanted at a time when they are still in a tolerably fresh state, such as the beginning of November, likewise affects the success of the operation. At the before-mentioned period, although the leaves may only remain on the branches for a single day, the death of the small roots will be the result; because, as the leaves, from the effects of light, continue to absorb the sap contained in the tree, which latter can draw up no more nourishment from the soil; they consequently dry up all the young and tender parts, such as the spongioles and the recent shoots. It is, therefore, of the utmost importance to take off the leaves, if there are any, at the time when we transplant.

**Preparation of the Trees and Soil for Planting.**—We should never hesitate about thorough trenching and making deep holes before planting. The rapid growth of the trees will amply repay the expense. The preparation of the soil is commonly performed tolerably well, but as much cannot be said of that of the roots. Planters are often seen shortening the roots of a tree as if they could make use of the portions cut off; they call that trimming the root. Some, more careful, allow the roots to remain at full length; but there are many who, instead of spreading them out as the hole is being filled up, content themselves with throwing in the soil and treading it when the roots have been sufficiently covered. In consequence of this the flexible roots take a bad direction, by reason of the weight of the earth, and they are frequently squeezed in bundles, in which the weakest ones become hot, moist, and rotten. Another bad practice should be pointed out. It consists in introducing the earth among the roots by means of a pointed stake. Many old planters would think they planted badly if, whilst holding the tree in one hand, they had not a well-pointed stake in the other; with this they make many thrusts through the earth that is thrown on the roots, severely bruising the latter, and making many excoriations. A stake is only useful in the case of large trees which cannot be shaken, and the roots of which are too large to be lifted and directed by hand. When the stake is used, care should be taken not to injure the roots between which it is introduced.

When Apple-trees are finally planted they no longer require what are called the attentions of rearing; other operations, however, become necessary; but too frequently neglects and accidents await them.

(To be continued.)

#### ALLOTMENT GARDENS.—No. II.

In the year 1820 Mr. Wm. Paxton, of Langford Farm, near Bicester, Oxon, commenced letting small portions of ground to allotment tenants on the estates of the late Sir Gregory Page Turner, in Oxfordshire, of which large property he has for a great many years had the management. The town of Bicester was at that time quite overrun with unemployed poor; nor was the condition of the parishes adjacent different. In Bicester the overseer received for a poor's-rate a sum equal to the annual rent of the land. It therefore became imperative on the steward to devise some plan for the beneficial occupation of the people, of whom upwards of 200 were destitute of employment at one time. Among various propositions, such as spade husbandry, and allotting portions of land, the latter plan was adopted, the poor men paying for their small plots a rent equal to that of the farmers. This system acted remarkably well, giving remunerative employment to all that were idle in the town of Bicester and its neighbourhood. The size of the allotments varied according to the means and industry of the tenants, from a few rods up to 3 and 4 acres.

At the outset the poor men found much inconvenience in procuring seeds for cropping their land. Mr. Paxton, therefore, undertook to find them the seed for one season, stipulating that he should be repaid by them when the crops were harvested. The issue was, that each and all of them, amounting to many hundreds, came duly and honestly, and paid the cost of the seeds and the rent of the land, the tenants, in many cases, paying a rate of rent of their own fixing. From that period to the present the rent has been annually paid, and the tenants have had no other assistance (with this exception) that during the virulent prevalence of the Potato disease, a subscription was set on foot to supply them with seed Potatoes for planting.

By way of illustrating the benefits conferred by Mr. Paxton's system, it may be mentioned that previous to its development crime prevailed to a fearful extent in the neighbourhood; no hen roost was secure, sheep were constantly stolen, and petty burglaries were not unfrequent. The law of meum and tuum was little respected, as the farmer's hedges, Turnip fields, and other property fully testified. It was not uncommon in Bicester parish alone for 200 labourers to be out of employment at one time, and to be paid by the parish for being idle. Persons were employed to march them about the bye lanes in bodies, to keep them from doing mischief, consequently the poor rates for two or three years amounted to 25s. in the pound. Under the new system they are at present only 5s.

Men who occupied at first only a few poles of ground are now little independent farmers, cultivating 4 or 5 acres of ground, neither wanting employment nor relief; while the beer-houses have been deserted, and the landlords have complained to Mr. Paxton that through the adoption of his plan their "occupation's gone."

This system is still in full operation, and although much opposed by the farmers in the onset, they now,

convinced of its advantages, readily support it, still finding the supply of labour sufficient for the demand. The parish, the poor, and the landlord have all been gainers; the first by diminished rates, the second by his improved condition, and the last by his augmented income, being in receipt now of 30s. per acre for land which was all but valueless till improved by the industry of these poor men.

In addition to the allotment system Mr. Paxton (on his own farm), largely adopted the spade husbandry at the time I am writing of, 1835, the parish of Bicester paying him a sum of 1200*l.* to employ all the poor for one year. The result of this was, that on the year the outlay exceeded the profits by 75*l.* 14*s.* 7*d.*; but in the following year the land which was so cultivated, and which before was let for 155*l.* per annum, was divided and relet for 280*l.* per annum; thus the property was increased 125*l.* per year in value, while the burthen was taken off from the parish. Shortly after this, the amended poor-law came into operation, and rendering it unnecessary to provide work for the surplus poor, by obliging them to go to the union, it was given up. These plain facts, which I have through Mr. P.'s kindness been permitted to record, will I hope be instrumental in calling attention to this all-important subject. It is doubtless in the power of many gentlemen, who have not yet thought on the matter, to assist their poor dependents in this way, and at the same time much improve their own property. To such as have not yet given ground to their labourers, I would say, let all your regularly employed men have from 20 to 40 poles of ground, and if you have a surplus pauper population, make them at once dependent on their own resources, by letting them 4 or 5 acres of your waste ground.

Henry Bailly, C. M. H. S., Nuneham Park, Oxford.

#### MOVEMENT OF THE SAP OF TREES IN SPRING.

THE fact that physiologists differ in their opinions as to the circulation of the sap in plants, and the consequent phenomena exhibited in their economy, is, of course, conclusive evidence that the subject is not thoroughly understood. This being admitted, no apology is necessary in offering, for the consideration of those interested in the subject, some opinions, the result of facts—or, at least, what appear to the writer as facts—gleaned from recent investigation.

I have often observed in examining the stools from which Oaks have recently been cut in spring, a diversity of appearance, caused by the rising sap, which continued to exude for some time after the trees were felled. Thus, some would show that at the time of falling the tree the sap had risen exclusively through the tubes of the alburnum, and that very copiously too. Others would, on the contrary, scarcely exhibit a trace of the fluid in that portion of the bole; but immediately surrounding the pith or medullary canal, an abundant exudation would be evident. The cause of these very marked differences were for some time inexplicable to me. By following at intervals for several days the tracks of some woodmen, I found that the two appearances, as described, were not observable on stools left from the same day's cutting, or, in other words, where trees were cut yesterday, the sap would perhaps exude wholly from the sap wood; while in those from which they had only been felled a few hours, the tubes immediately surrounding the heart of the tree would alone convey the rising fluid. I was confident that these differences did not arise from causes attributable merely to the lapse of time between the felling of the trees and the period of my observation. For, in a series of visits, I found the respective appearances equally evident on the same day of the cutting of the tree.

The apparent difficulty of solving the problem was now greater than before. This, however, only stimulated me in my research. A few hours gave me a clue to the solution.

Passing near a hedge-row where the woodmen were at work, I observed them beating the bole of a tree near the base, to facilitate the removal of the bark there, previous to cutting it down. I knew well enough that this process was resorted to when the bark would not "run" well, a contingency brought about by the stagnation of the sap in that part of the tree. I knew that a change of temperature would in a few hours bring about such a contingency in a tree that previously parted with its bark with facility. Reasoning upon the facts previously gleaned, I returned to the spot shortly, and within an hour after the tree had been felled. The workmen were stripping off the bark with difficulty, except at the extremity of the branches, where the difficulty was not so apparent, and at the upper branches of the tree it parted from the wood readily enough.

On examining the stool I found but a slight trace of sap in the alburnum, but immediately around, and at a small distance from the centre of the tree, the flow was great. Several other trees cut on the same day presented similar phenomena. The cause of the bark not parting from this tree readily was accounted for by the men, and of course justly—by the frost which on the previous night had been somewhat severe for the season. On the preceding day every tree cut down barked readily enough.

Following up the investigation, I found that where the stool of a fallen tree was exuding the sap from the alburnum, the tree had been cut when the weather was favourable, and when the bark from the bole readily separated from the wood; and, on the other hand, where the vessels around the pith transmitted the fluid,

the tree had been felled after a frosty night, or when the weather was cold and ungenial.

Having gleaned thus much I entered into conversation with the men who were cutting the trees. They informed me that when the bark around the lower part of a tree separated with difficulty, it parted much more readily from the branches, especially those near the top, and *vice versa*.

Now from these facts, the inferences to be drawn appear to me to be sufficient upon which to build a theory, at once throwing light upon some of the intricacies of the vegetable economy, and also to afford a beautiful example—one among innumerable others—of the admirable compensative powers so abundantly evident in the mere organic as well as in the more elaborately organised animal kingdom.

The ordinary channel of the upward current of sap is through the tubes of the alburnum. Its progress is accelerated by warm weather and retarded by cold. If, after the progress of vegetation in spring has once set in, a retardation in the flow of sap were to accrue in equal ratios with the fluctuations of temperature incident to our variable springs, it is easy to comprehend that utter stagnation in the vital powers of plants would follow, with what results will be readily seen.

In a common-sense view of the subject this contingency is to be apprehended, but the moment that the conditions favourable for such present themselves, a compensatory power is brought into action, and the demands of the vegetating principle is still supplied. The sap, checked by its near proximity to the lowering temperature of the air, when flowing through the tubes nearest the outside of the tree, immediately seeks other channels open to it, and thus the circulation goes on unchecked, or, at least, checked but slightly.

These central tubes, a designation given to them by Mr. Knight, are known to extend uninterruptedly to the tip of the minutest branch, and through them a communication is undoubtedly established, either by subordinate vessels or cellular tissue, or both, to all parts of the tree.

It has always appeared to me that the medullary rays play a more important part in the circulating economy of plants than physiologists have hitherto given them credit for.

I am aware that the argument I have endeavoured to establish is open to apparent objections—and those weighty ones. In hollow trees no central vessels can, at least in the trunk, be present; and these, wanting the compensating power of which I spoke, cannot be brought into play. And we do not find such remains of trees destroyed by sudden death more frequently than young and vigorous specimens. These are facts that do not admit of argument, yet I do not think they can be justly urged as antagonistic to the position I have advanced.

An old and hollow tree, although yearly putting forth its leaves, and possibly producing fruit, merely exists in a morbid state. Its vegetation is feeble, and, as a general rule, year by year it approaches dissolution. Its existence is not healthy; and, on the same principle that we should not admit the phenomena of life, as exhibited in a diseased animal as natural, we ought not to allow those which are evident, either as the cause or effect of existence in a decaying tree, as data to assist us in our researches, except, perhaps, as negative evidence in the healthy economy of other individuals.

In the intricate and comparatively little known science of vegetable physiology, inasmuch as it professes to give an insight into the action of the vital principle of plants, every fact, however apparently trivial, must be important. A correct science can only be built up by the accumulation of an infinite number of isolated facts, contributed at periods, and by individuals widely distant. On this principle the present paper is written. And it is also well to bear in remembrance, that a true theory, to which some persons affect so much indifference, is not a mere visionary condition of the mind on some given subject, but that it is the principles and the grammar of a correct science previously established, *George Lovell, Bagshot.*

#### Home Correspondence.

**The New Forest.**—As your "Constant Reader" has been tempted to add a few more words on the subject of the New Forest, owing to your temperate remarks, I trust he will not be offended at a few words from an amateur forester, in answer to his last statement. I must differ in *toto* with any one who would deny to 60,000 acres of the New Forest the value per annum of as many sixpences. If the Oak, Ash, and Beech are so bad as scarcely to pay the expense of cutting, what a satire that assertion is upon the management of years. But the "Constant Reader" states that about the middle of the reign of George III. plantations were begun, say 10,000 acres at the lowest calculation; this was 60 years ago. Now I venture to affirm that such plantations, properly made and managed, should have produced for several years an average of 10,000*l.* a year. If not, they must have been improperly planted, or made upon soil unfit for the growth of trees—a very discreditable fact against the manager of the forest in those bygone days. But he further states that now—now in 1853, when people's eyes are a little opened to the gross neglect in the management of the woods and forests, that 10,000 acres are about to be planted, and then innocently asks if these, 40 years hence, will pay their expenses? Certainly not, according to the old story; but as I know by experience that 1000 acres at



30 years old will bring in 1000l. a year with decent management, I beg your correspondent to forget his sixpences, and to calculate how much in 40 years his 10,000 acres ought to produce beyond paying their expenses. I do not attempt to understand how the Crown has only a limited control over 6000 acres, seeing that 20,000 acres have been, or are to be planted. There seems to be a great jumble of forest rights; these it would be as well to have accurately defined, and if in the end the possession of the Crown in the New Forest was reduced one-half, let that half be properly managed, and it will produce timber that will pay for the cutting, and a handsome revenue to the country. I am not well acquainted with the New Forest, but I should be very happy to accept several thousand acres in a lump, from any part of it, and I would carefully plant portions, and I feel confident my heirs would have no reason to regret the outlay. *An Old Forester*

*Eschscholzia Californica*.—If the stems of the plant, particularly the flower stalks, are bruised, the presence of chloride of lime, or free chlorine, is detected at once by the peculiar smell. *T. L., Kilmarnock.* [Or ozone?]

*Diseased Agapanth*.—I enclose roots of the *Agapanthus umbellatus* in a state of decomposition. The plant, which was a large one in a tub, has looked for some time back yellow and sickly at the ends of the leaves, and given off a very offensive smell; I therefore determined upon turning it out to examine the roots, when I found them nearly all rotten and stinking; on several parts of the ball or roots were patches of a shining substance, as though caused by some gas, part of which I enclose, though I fear not in a proper state to be inspected; the plant was in nothing but good rich soil. *G. B., Rugby.* [The roots in question were in a state of putrid decay; but we found nothing that would account for it. The explanation is, we presume, to be sought in the treatment of the plant itself, which seems as if it had been suffering from strong manures, and from water lodging about its roots. The *Agapanth* likes water well enough, but not stagnant putrid water.]

*Lois Weedon Cultivation of Wheat* (see p. 533).—I have stated in my pamphlet that my plan of growing Wheat is this:—I divide my field into lands 5 feet wide. In the centre of each land I drop or drill my seed in triple rows one foot apart, thus leaving a fallow interval of three feet between each triple row. When the plant is up I trench the intervals with the fork, easily taking my spits about 3 inches from the Wheat; and at spring and during summer I clean them with the blades of the sharp-cutting horse-hoe, and keep them open with the tines of the scuffler. Every year, in short, I trench and cultivate 2 feet and a half, out of the five, for the succeeding crop, and leave the other two and a half for that which is growing. One moiety of each acre is thus in Wheat and the other moiety fallow, and the average yield of that half acre is 34 bushels, surpassing the average yield of a whole acre on the common plan. So that the object I aim at is attained it is a matter of infinite nothingness whether the Wheat crop be said to cover three-fifths of the land, or only one-half. Upon this point I do not at all insist upon others holding the same opinion with myself, but I must still be permitted to retain my belief, that the moiety of 5 feet is 2 feet 6 inches. If it be objected that the roots of the plant extend further than 3 inches into the intervals, I answer, it is quite true. It is so true, that I claim the fact as a security for never-ending success in my plan of growing Wheat. It is the very essence of the scheme, that the fallow space should be so deepened and so pulverised, that while it acts as a drain on each side of the triple row to carry off all injurious moisture, while it is constantly decomposing, and constantly absorbing nourishment from the air, it does enable the roots to interpenetrate it and take up their food, without exhausting it. Grow Wheat in rows 1 foot apart all over the field, and the yield, doubtless, in many cases, will occasionally be greater than mine. But, what then? My average yield is 34 bushels. I have had as much as 41; and this year I expect 50; and every year, on the same unmanured acre of land, I have a crop and a fallow too. *S. Smith, August 24.*

*White Marigold*.—Will any of your correspondents inform me if there is such a thing as a white common Marigold (*Calendula officinalis*)? A light orange I have seen, but a white one never; which I think odd, since we have hardly any plant in cultivation that has not produced a white variety. It would be very beautiful and attractive—as would a white Sunflower. *P. S.*

*Mangosteens*.—Should the Mangosteens at Syon Gardens form flower buds, I would recommend budding them on the lower small branches, to render the trees more easily managed under glass, and produce more fruit on a given space—as we do in espalier Apples and Pears. *P. S.*

*Garden Pots*.—Your correspondent's remarks (see p. 533) on Bristol pots, appear to me to be quite uncalled for, as I am certain that as good pots may be had from the Bristol potteries as at London or elsewhere. I have some valuable specimen plants growing in Bristol pots, which have been in use four or five years, and they are as clean as they were the day in which they were made. Now, if they had been ill burnt, this would not have been the case; the drainage is provided for by a hole in the middle of the bottom, and three holes at the edge. Water poured into them drains away perfectly—not a drop remains. Your correspondent's experience with Bristol pots must surely have been confined to the very cheap ones. *J. Bester, Clifton.*

*Captain Norton's Blasting Cartridge*.—The following

paragraph from the *Cork Southern Reporter* gives a description of my latest improvements or modifications of my percussion cartridge, to which you directed attention some few weeks back:—"The Master-General of the Ordnance having given instructions to the officers of the Royal Engineers, Captains Hadden and Sýnge, to examine and report upon the efficiency of Captain Norton's percussion cartridge for blasting, operations commenced on Saturday last, in the quarries on Spike Island, with the most satisfactory results. A description of the cartridge has already appeared in print, but as the course of practice has suggested new matter, we give the last addenda. In boring horizontally, or with an inclination downwards, clay may be met with in the narrow fork between the limbs of the block; but boring through this, solid timber is again entered in the opposite limb. After the hole is bored with the auger, its entrance should be widened for one-third the way with a rimer—this admits of the iron rammer being placed in its proper position, when the blow from the fallen block above will impel it perfectly air-tight on the head of the cartridge. By causing the wooden block suspended by a rope, or supported on an inclined plane to strike the iron rammer in a slight degree obliquely, a section of the root of a tree, or of a rock, can be separated in the direction required in like manner, and more efficiently than by the powerful leverage of a long crowbar, because the severing power of the explosion and leverage of the iron rammer act simultaneously. In blasting rocks either above or below water, a cylindrical plug of deal, or other wood, about 3 inches long, and the same diameter as the bore, may be used, the plug having on its lower end a board headed iron nail cone formed, this will be driven into the plug by the force of the blow above, and the explosion of the cartridge below, thus forming a perfect condensed tamping—the tamping and cartridge may be all in one, thus making one action or motion instead of two. The cartridge may have but one percussion cap, and that at its lower end, which need not be put on till it is to be used. They can be packed for carriage with perfect safety, and may be made water-proof by a coating of Japan varnish, such as is used in varnishing iron and other metal. Three different modifications of this cartridge were tested in the quarries on Spike Island, last Tuesday, each of which succeeded perfectly. In blasting, in the ordinary way with a clay, pounded brick, or sand tamping, if a misfire occurs, it is necessary to remove the tamping, in order to insert a fresh fuze or priming, but with the percussion cartridge, if a misfire takes place, it is only necessary to drop a short cartridge upon the one that missed fire, and the ignition of the upper cartridge will also fire that below it. The percussion appliance fitted into the wooden head, or tamping, of the cartridge, and charged with the composition that lucifer matches are primed with, is the same as that for the rifle percussion shell, illustrated by a diagram, No. 13, in Col. Beamish's appendix to Colonel Chesney's lecture on fire-arms; also in the 'Practical Mechanics' Journal' for February last; and in Captain Norton's pamphlet. The head of the cartridge is, in fact, a wooden percussion shell striking, or being struck 'point foremost.' The percussion head, or wooden tamping, may be charged by dropping a few heads of Bell's lucifers into the hollow chamber, then pouring over them about a drachm of gunpowder; the wooden plug, fitting air-tight, is then inserted, projecting about an inch; the blow on the plug ignites the charge, bursts the tamping, and fires the cartridge, something on the principle of the brass tube and piston for igniting the German amadou, or tinder. In order to prevent the block from falling off the head of the iron rammer, a deep hoop of sheet iron is secured to its lower end, so that it falls on the iron rammer like an extinguisher, or inverted bucket. Another modification of the cartridge by which it is fired in the centre, is this—half the charge of powder is poured into the hole bored in the root of a tree or a rock, a small pill-box, about the size of a hazel nut, and containing half a dozen lucifer heads of Bell's matches, together with a little fine gunpowder and pounded glass, is dropped on the gunpowder, the remainder of the powder of the required charge is then poured in, and the blow of the iron or wooden rammer crushes the pellet, and fires the charge, something after the manner of the pellet in the percussion shell explained by diagram No. 5 in Captain Norton's pamphlet." On Tuesday, the 23d, the experiments were carried on without using a triangle for suspending the wooden block, and in place of it the iron rammer had the block fixed on its head; a steel pin passed through the iron rammer, and supported it in the bore of the rock. A rope was attached to the pin, and when the men retired to a safe distance, the man who held the rope drew out the pin, when the rammer falling on the head of the cartridge fired it. This is a more simple way of causing the rammer to fire the cartridge, than that of the triangle. *J. Norton, Victoria Hotel, Cork.*

## Notices of Books, &c.

*Dr. Bushnan's account of Burton and his Bitter Beer* (Orr and Co.), is another of the ingenious forms under which Messrs. Ailsopp and Co. manage to puff their pale ale, of which devices the public must, we imagine, be by this time heartily sick.

*The Flower Grover's Guide; Stories and Tales of Animated Nature; the Bird Keeper's Guide; the Rabbit Keeper's Guide*, are trifles, published by Messrs. Dean

and Co., of Threadneedle Street, which may interest young people. What is called botany in the first of them is, however, wretched trash, and should be cancelled.

*I've been Thinking*, (a volume of the Run and Read Library), is a good American story, worth reading; edited by the Rector of Otley.

*Auerbach's Florian and Crescenz* (Chapman & Hall's Reading for Travellers), is a charming tale skilfully as well as gracefully translated.

*Lady Cust's Invalid's Own Book* (Longmans) supplies perfectly a want that has long been felt. Our cookery books abound with receipts for elaborate entertainments, solid family preparations, and all the mysteries whose results delight the senses of the healthy feeder; but the sick-room is forgotten, or treated as a place in which physic rather than delicate dishes is required. Invalids are under deep obligation to the Honourable Lady Cust for the service she has now rendered them. Twelve sorts of tea, 48 varieties of water, 45 emulsions and nutritious drinks, a couple of dozen receipts for gruel, as many for jelly, and countless contrivances in the way of puddings, broths, breads, syrups, wine, and solid food, furnish variety enough to meet the taste of the most fastidious patient. All which, we must add, are described in plain English, with a clearness and precision which leave nothing to desire.

*Price's Modern Gardener* (Dean & Co.), is a poor affair; its principal merit consisting in there being very little of it. The author's essay upon guano and its uses in gardening is a rich sample of the kind of talent brought to the composition of publications of this class.

## Garden Memoranda.

GUNNERSBURY PARK, THE SEAT OF BARON DE ROTHSCHILD.—Since we visited this place in January last, 124 feet in length of the Peach wall have been faced with glass, in the form of a narrow Peach house, with short sliding sashes on the roof, and an upright front about 6 feet high, the back wall being 10 feet in height, and the width of the house about 5 feet. The front sashes are swung by their middle on pivots, and move outwards; and additional ventilation is afforded through openings, furnished with horizontal wooden slides, in the slate panelling between the short piers which support the frontage. The interior can be warmed when required by means of a flow and return 4-inch pipe, which is led along the front, immediately opposite the little ventilators last spoken of. Two narrow shelves, one above the other, run along the whole length of the front, forming convenient places for setting Strawberries in pots on, to bring them forward a little for forcing, but more especially to keep them from wet late in the autumn, too much of which, it is well known, greatly injures them. The Peach trees are, of course, confined to the back wall, which has been plastered with cement, and furnished with a wire trellis for training them on. They have, all of them, borne excellent crops of large, beautifully ripened fruit, the greater part of which is already gathered, but still sufficient remains to keep up a supply till ripe Peaches can be had from the open wall. The trees are extremely healthy, and they have made abundance of good bearing wood for next year. It may be mentioned that it is not intended ever to force this house; the hot-water pipes are merely put in it to produce a little heat during cold nights and to keep frost from the blossoms in spring, to effect which the glass alone might be found insufficient.

The young Vines, with which all the Vineries have now been planted, are making very satisfactory progress. Such as are two years old have borne some good bunches this year, of 2 and 3 lbs. weight. Some rods in pots struck from eyes put in in March last, are very fine, measuring 2½ ins. round; short jointed, and well furnished with prominent buds. From these a good crop may be expected next spring.

Among Pine-apples, for which Gunnersbury is celebrated, the heaviest Providences that have ever been grown having, so far as we know, been produced there, we noticed some handsome fruit just beginning to colour. They were of the Providence kind, evenly and finely grown, and promising to weigh not less than 8 and 9 lbs. each. The succession plants are also very healthy and clean.

The flower garden is, as a matter of course, at this season well filled with flowering plants; but owing to the late rains, the beds generally scarcely looked so gay as they evidently have been. Tom Thumb Geraniums, *Calceolaria viscosissima* and *integrifolia*, *Lobelia lucida*, the white variegated *Alyssum*, and things of that sort, were, however, in good condition. On the east side of the lawn the bedding plants are placed in baskets—the raised handles of which, covered as they are with *Convolvulus*, *Ipomoeas*, *Maurandias*, *Lophospermums*, and *Echeveria*, serve to create variety and improve the flat appearance which is sometimes complained of in beds of low-growing plants. The marble vases along the terrace in front of the house are occupied by Tom Thumb Geraniums, which are at present literally masses of flower. They are large plants cut in in autumn and wintered dry; and thus they are kept year after year for the purpose till they have become too large for the vases, when they are thrown away and replaced by young plants. We also remarked some handsome standard Fuchsias, about 8 feet high, of the *Corallina* variety; these are treated in the same way, and every year they are reported to flower admirably. Two baskets raised on short pedestals, and filled with



F. Defiance, were extremely gay, this variety being very suitable for that kind of decoration, being of a robust habit with stout brilliant flowers standing well up above the foliage, which is large and effective. Some beds of F. Riccartoni, one of the hardiest of all Fuchsias, were likewise masses of blossom. In the shrubby border were beautiful blue Hydrangeas, that colour being imparted to them, it is believed, by merely growing them in Wimbledon loam. They formed a fine contrast with other flowers, and were certainly acquisitions.

## FLORICULTURE.

**THE CHRYSANTHEMUM.**—I need hardly say that this is a plant well worthy of general attention. Its coming into bloom during the months of November and December greatly enhances its merit, as flowers are then scarce, being the interval between the late-flowering Pelargoniums and the first show of Hyacinths and other forced flowers, and just preceding the general bloom of Camellias, Epacris, and spring Heaths. Having, for a number of years, paid considerable attention to the management of this plant, I shall give my mode in detail, adding a list of 20 of what I consider good varieties. Towards the end of March, when the plants are about 18 inches high, cuttings are selected from the most vigorous, taking the top of each, say 6 inches long. Each cutting is put into a small pot, and placed in a frame near the glass, with a slight bottom-heat. As soon as the cuttings are well rooted, they are put into larger pots, and removed to a cold frame, keeping them near the glass, and giving plenty of air. In May they are shifted into pots 9 inches across. I then place a stake to each, pinch the tops out, and arrange them out of doors, along the bottom of a paling or a wall, facing the sun. If the weather be very dry and warm, the pots are plunged to the brim among sand or gravel, and a little manure put on the top of each pot. In July they are shifted, for the last time, into pots from 12 to 15 inches across. The soil employed is very rich, consisting of vegetable and leaf mould, with a fourth part of well-decomposed manure, either from the cow-house or sheep's droppings. This is used in its rough state as broken with the spade, not sifted. They are allowed plenty of water, as I consider a check very injurious to their blooming well. In October they are brought into a Vinery or Peach-house, and the flowers thinned a little as soon as they are formed. The plants are watered occasionally with liquid manure, and get plenty of air, without which they are sure to mildew. The following are well-known varieties; but such as I am certain none will be disappointed in, viz. :—Princess Maria, Lucidum, Minerva, General Marceaux, Hardy, Queen, Vesta, Theresa, Superb-clustered Yellow, Beauty, Annie (Salter's), Queen of Gipsies, Bride, Flechier, Orlando, Nancé de Lermot, Defiance, Count de Rentzon, Duchesse d'Anmale, and Fleure de Marie. J. A.

**NATIONAL FLORICULTURAL SOCIETY, Aug. 25.**—There was an interesting meeting on this occasion, upwards of 50 of the leading nurserymen, &c., from various parts of the country being present. The chief feature of attraction was the Hollyhocks, which were numerous and very fine. **HOLLYHOCKS.**—A First Class Certificate was awarded to Messrs. Paul for Beauty of Cheshunt, a bright rose-coloured variety of great excellence, having an even well-filled centre, surrounded by a stout and good guard petal. Spike tall and good. A similar award was made to the same firm for "Lizzie," a charming delicate pink sort with large bold flowers of good form and substance; guard petals even and stout, spike long. A Certificate of Merit was also awarded to Messrs. Paul for Professor Dick, a shaded buff sort, and a Label of Commendation to the same exhibitors for Zenobia, another shaded buff kind, with a light chocolate ground. A First Class Certificate was given to Mr. Holmes, of Norwich, for Isaac Walton, a distinct kind, being French white, with a chocolate ground. It is rather under the medium size, but good in form and substance. Certificate of Merit to Mr. William Chater, for Eugene, a pale saffron variety, shaded with pink, something in the way of Triumphans, but with a better guard petal. A similar award was made to Mr. Turner, of Slough, for Mrs. Moulding, a creamy white sort delicately mottled with rose; this is perhaps scarcely so well formed as some, but owing to its distinctness of character and pleasing appearance, it cannot fail to be a favourite. Certificates of Merit were awarded to Mr. Bircham for Felicia and Sentinel; the first a deep blush sort very close in the spike, and otherwise a fair average flower; the second a large rich crimson kind, bold, but somewhat irregular; substance good. A Label of Commendation was awarded the same exhibitor for Anranita superba, a deep salmon coloured rather coarse flower. **DAHLIAS.**—A First Class Certificate was awarded to Mr. Keynes for Fanny Keynes, a well formed full-sized flower, pale yellowish buff in colour, tipped with purple. The same grower likewise received a similar award for Rachel Hawkins, a finely shaped peach coloured variety, of medium size and good substance of petal. A second class certificate was also given to Mr. Keynes for Lender, a tolerably well formed flower, deep lilac in colour, dotted and faintly striped with maroon. A good addition to its class. A second class Certificate was awarded to Mr. Turner, for Lady Mary Labouchere, a white tipped with purplish lilac, of fair form and good substance, and altogether an improvement on Miss Vase. A similar award was made to Mr. Church, of Dulwich, for Blanche, a promising creamy white sort, of good form and substance. A Label of Commendation was given to Mr. Pope, for Marvel, a yellow ground kind, mottled and striped with red. Golden Eagle, Kingfisher, and Eva, from Messrs. Holmes and Keynes, were promising, but they were not in a condition to receive any award. A first class Certificate was awarded to Mr. Bragg, of Slough, for Verberna Fair Broomed, a cheerful looking flower, bright lilac in colour, with a small rosy blotch on the upper side of the eye, and a narrow white zone beneath, the eye being small and purplish. Mr. Bragg also received a Label of Commendation for Verberna Standard, a pretty pink kind, with a light eye, the pipe being large and uniformly of the same colour. Mr. Smith, of Hornsey Road, again showed Verberna Triumphant, and one or two other promising kinds, but which were not considered in a condition to receive any award. A Certificate of Merit was awarded to Mr. Barnes, of Stowmarket, for a scarlet Gladiolus named Bowditch.

**ROSES.** *Leda.* The well in which roses in pots succeed well is two parts stiff turfy loam, broken up but not sifted, two parts

manure (road-gatherings laid by for a season, or the remains of a hotbed, not too far decomposed), and one part burnt earth. This compost should be thrown up in a heap in autumn, and turned two or three times during winter, and a little newly-slaked lime should be scattered through it, to destroy worms and grubs. For delicate varieties, such as the Chinese, &c., it may be improved by the addition of one part leaf-mould, or well pulverised manure.

### SEEDLING FLOWERS.

**CARNATIONS.** *Sub.* A very singular specimen—more so, indeed, than showy, and not very dissimilar to what is sometimes met with in large batches of seedlings. Florists do not prize such anomalies, but they serve to produce variety in borders.

**HELMINTHUS.** *B & H.* Pretty enough; but nothing very remarkable.

**HOLLYHOCKS.** *B & H.* and *J & M.* Too small, and altogether of little value; the best is No. 4.

### Miscellaneous.

**Crayons for Writing on Glass.** By R. Brunnquell.—The author prepares crayons for writing on glass, so as to enable the contents of glass vessels to be described immediately upon them in the following manner:—Four parts of spermaceti (or stearine), three parts of tallow, and two parts of wax are fused in a cup; six parts of minium and one part of potash are then stirred into it, the mass kept warm for half an hour, and then poured into glass tubes of the thickness of a lead-pencil. After rapid cooling, the mass may be screwed up and down in the tube, and cut to the finest point with a knife. A crayon is thus obtained which will readily write upon clean dry glass. *Dingler's Polytech. Journ.*, vol. cxxvii., p. 236. *Chemical Gazette.*

**Vegetable Substances used in India for producing Intoxication,** by Dr. Gibson.—The extensive use of Opium and Rice Arrack among the Chinese and Malays is too well known to require notice; also that the Burmese and Mughs are extensive consumers of spirits is a fact equally well known. On this side the Ganges the use of alcohol made from Rice-sugar, Palm-juice in its various states, from the flower of the Bassia, from the bark of Acacia Sundra, is, if not equally common, at least widely spread. The Rajpoots also, and Koles of Western India, are great Opium-eaters, and the employment of this drug in rearing children of the most tender age is universal among all classes of Indian society; and from what can be observed there seems every reason to think, not only that the moderate use of the drug is innocuous to children, but positively beneficial, in bringing them through the critical periods of dentition. In the more southern parts of Western India the spirits used are distilled from Palm-juice, from sugar in its various forms, and less frequently from the cereal grains, whereas north of Bombay and throughout Guzerat and Rajpootana the distillation from the flower of the Bassia latifolia, Roxb., is greatly the most common. This flower is collected in the hot season by Bheels and others, from the forests, also from the planted trees, which are most abundant in the open parts of Guzerat and Rajwarra. The ripe flower has a sickly sweet taste, resembling manna. Being very deciduous, it is found in large quantities under the trees every morning during the season. A single tree will afford from 200 to 400 lbs. of the flowers. The seed affords a great quantity of concrete oil, used in the manufacture of soap. The forest of Bheel population also store great quantities of the dried flowers as a staple article of food; and hence, in expeditions undertaken for the punishment or subjection of those tribes when unruly, the Bassia trees are threatened to be cut down by the invading force, and this threat most commonly ensures the submission of the tribes. In Guzerat and Rajpootana every village has its spirit-shop for the sale of the distilled liquor from the flowers; in the island of Caranja, opposite to Bombay, the government duty on the spirits distilled (chiefly from this flower) amounts to at least 60,000*l.* per annum; I rather think that 80,000*l.* is most generally the sum. The Parsis are the great distillers and sellers of it in all the country between Surat and Bombay, and they usually push their distilleries and shops into the heart of the forest which lines the eastern border and hills of those countries. The spirit produced from the Bassia is, when carefully distilled, much like good Irish whisky, having a strong smoky and rather foetid flavour; this latter disappears with age. The fresh spirit is, owing to the quantity of aromatic or empyreumatic oil which it contains, very deleterious, and to the European troops (her Majesty's 4th and 17th Dragoons) stationed in Guzerat some 30 years ago, appeared to be quite as poisonous as the worst new rum of the West Indies has generally proved to our soldiers. It excited immediately gastric irritation, and on this supervened the malarious fever so common in those countries. The regimental artificers, musicians, &c., and all whose extra means enabled them to obtain a larger supply of this liquor, were the first to be cut off; but finally the fever spared few or none, and the only effective remedial measure was found to be the removal of the European force to the more sterile semi-desert plains at Deesa, in the north-west corner of the province. To show how little is known even in India regarding the spirituous drinks of the country, I may state that the question has ere now been gravely entertained by persons high in authority as to the practicability of rendering the people compulsorily sober, by cutting down the wild Date-trees—as if these were the only source of alcoholic stimulus. I have before alluded to the Cannabis as affording a stimulating material. The use of the plant in its various forms—stalk, juice, and resin—is very widely diffused, and in many provinces (as in Seinde) a draught of the infusion forms a prelude to the daily dinner among the better classes.

The stimulus has a champagne-like transience, and is said to whet the appetite and improve the digestive powers. I should here mention that with East Indians liquor, when taken, is most commonly taken before food, and not after eating, as with us. The continued use of the Cannabis, as practised by many at all periods of the day, speedily breaks down the system; the lungs, generative power, &c., all yielding to its influence. The use of Nux vomica is confined to desperate debauchees, by whom it is had recourse to as a brace-up of decayed corporeal faculties. It is taken to the extent of even two seeds per diem, these being softened and afterwards fried in ghee or butter. *Hooker's Journal of Botany.*

**Variegated Leaves.**—It is generally admitted, and physiologists have contributed to strengthen the opinion, that the variegation of leaves is the result of some disease in the plant, which presents that modification. It is not our intention to investigate whether the above opinion is well-founded or not; but as some plants are all constantly variegated, and as others have on the same bough some leaves variegated and others not at all, we think the question naturally arises what conditions are necessary in order that the variegation of a plant may become permanent. Now, observations up to the present time have shown, that when the edges of the leaves are variegated, or in other words, when the variegation is marginal, it is usually permanent, but when it is spread over the surface of the leaf, or if it takes the form of blotches, it is nearly always variable. The blotches may cover nearly the whole of the leaf, but they may likewise entirely disappear, as is the case with the Holly, Ivy, and Euonymus when they grow luxuriantly. Only one plant, the Aucuba japonica, appears to be an exception to this general rule, and up to the present time the reason of this exception has not been discovered. If, on the other hand, we examine plants with marginal variegation the law changes, and, under whatever condition they are, the variegation is permanent; for instance, to return to the Holly and Euonymus, of which we have just spoken, the Euonymus japonicus, var. argenteus, which has its leaves bordered with white, never varies—all its leaves remain variegated. In the variety of the same tree, the leaves of which, instead of being bordered, are blotched with white, the variation is considerable. The same holds true with regard to the common Holly; in the variety the leaves of which are bordered with white, we find very vigorous plants regularly variegated; in the blotched-leaved variety we meet with leaves the whole surface of which is yellow, others only partially marked with that colour; and lastly, whole branches may be seen on which not the slightest trace of variegation can be found. These variations must have a cause; but that cause is unknown; and it is to induce physiologists to endeavour to trace it out that I have written the above. If it be discovered we may, perhaps, at the same time, find the means of fixing the variegations; and the importance of his discovery to the decoration of gardens would be sufficient to induce some experiments being made with a view to the solution of the problem. *M. Carrière, in Revue Horticole for May, 1853.*

**On Portland Arrow-root.** By Mr. T. B. Groves.—In the course of lectures on Materia Medica at the Pharmaceutical Society, delivered in the session 1850-51, by our late much-lamented professor, Dr. Pereira, he mentioned some facts relative to the manufacture of Portland arrow-root, which led me to infer that he considered it was carried on to a considerable extent by the inhabitants of the Isle of Portland. Living within a short distance of the island, I have thought it desirable to make some inquiries to ascertain to what extent it is carried on at the present time. Dr. Pereira probably derived his information principally from an article in the Transactions of the Society of Arts, vol. xv. (1797), in which it is stated, that in the year 1797 the gold medal of the Society was awarded to Mrs. Jane Gibbs, of Portland, for producing a sample of starch fit for economic purposes, from materials unfit for the food of man. The starch, or arrow-root, as it is usually called, was prepared by her by crushing in a mortar the corns of the Arum maculatum, stirring the mass with water, and straining off the liquors, from which the fecula was allowed to subside; this was again washed, and then dried. She stated, and the statement is confirmed by the then rector of the island, that she had in her possession 2 cwt. of the starch, and was ready to supply any quantity of the same whenever required, at the price of 1*l.* 6*s.* per lb. Although there is no doubt that the quantity of the starch manufactured was much greater at that time than the present, yet its manufacture was never of much importance; it is now almost extinct, and the arrow-root never seen out of the island except in the hands of the curious. From my inquiries I have learned that many years ago it was customary to crop the land only every other year, allowing it to remain fallow in the intervening period, and that in the fallow fields leave was given to the inhabitants to dig for the roots. This custom has been abandoned, and the usual system of rotation of crops introduced. The common, too, has of late years been much infringed upon by the Government for public purposes, and also by speculators for quarrying for stone. These causes have very much interfered with its manufacture—so much so, indeed, that a few years since, wishing to procure a sample for a friend, to illustrate a lecture on dietetic articles, I found it very difficult to obtain even half a pound of it. Within the last week I have ascertained that one old woman is the only person who now prepares any, and she gives as her reason for doing so, that "poor folks now-a-days are



glad to turn an honest penny anyhow." At the present time the Arum is not very plentiful in the island, although there is still a vast extent of land that will never admit of cultivation, on account of its stony character, which, doubtless, produces most of the small quantity now obtained. With the exception of the old woman previously mentioned, liberty is not now obtained to dig in cultivated fields and pastures. The Arum maculatum is commonly called arrow-root or starch-root, but the vulgar names cows and calves, and lords and ladies, are also known, though not so frequently used. The proper season for collecting the corms is when the plant has perfected its growth. This is generally in the months of May and June. Those which are collected in May yield a much less proportion of starch than those collected later. The fresh corm is extremely acrid, producing a most disagreeable tingling and pricking sensation in the mouth, when chewed. This acridity I found was not completely removed by toasting. Lindley states that the corms are edible when deprived of their acridity by boiling, but I have never known them so used. This acridity renders it necessary to bruise the corms in a stone mortar, and to avoid, as much as possible, handling them until after they have been washed. The process now employed for the separation of the fecula is the same as that described by Mrs. Gibbs. The corms yield, according to Mrs. Gibbs, 4 lbs. of fecula to the peck. My informant tells me she obtains on an average 3 lbs. from a peck of corm—more in June, less in May. During the whole season she considers 36 lbs. to be a good average quantity to obtain, and for this she asks 1s. 4d. per lb. It is highly valued by the Portlanders, who say that it is good for sick people, and looks, when prepared, very different from the arrow-root of the shops. I have compared it with Bermuda arrow-root, and find that it does not make either so clear or firm a jelly, but is perfectly inodorous, tasteless, and destitute of colour. The granules, when viewed under a microscope, appear of an irregular spherical shape, varying much in size, but are on an average much smaller than ordinary starches, except Rice starch. The hilum is not very distinctly marked, appearing plainly only in the larger granules. The Portland arrow-root is, I believe, only made in the Isle of Portland; although there is an abundance of the Arum in some of the commons near Weymouth, yet the country people do not appear to know that it is of any use. This will, doubtless, appear strange to those unacquainted with Portland; but when we consider that until within a few years the Portlanders have kept themselves as much as possible aloof from the rest of the world, even forsaking their friends who dared to marry out of the island, and not permitting a stranger to settle amongst them, we can no longer wonder that they have kept their knowledge to themselves. They are probably a race of entirely distinct origin from the inhabitants of the main land; even now they use words which are not understood by us. This arrow-root has been prepared by them from time immemorial; and it is very probable that, living on a barren island and depending principally on fish, they may have been compelled by necessity at some time to seek subsistence by preparing the corms for food. It is a singular fact, that the plant is called Arrow-root by the islanders, perhaps from its sagittate leaves. May not the Maranta arundinacea have derived its English name from the previously-known and appreciated Arrow-root of the Isle of Portland? *Pharmaceutical Journal*.

## Calendar of Operations.

(For the ensuing week.)

### PLANT DEPARTMENT.

A considerable number of Orchids may now be selected from the general stock, which, having done growing, require a temperature gradually declining, accompanied by a drier atmosphere, and with some kinds a pretty free exposure to the sun and light. Where different structures are devoted to this family, no difficulty exists in affording to each section a suitable temperature, both during their seasons of active growth and repose, and in those transitions from one state to the other, during which, perhaps, plants require the greatest care. On the contrary, where one house is made to contain a class of plants which vary nearly as much in constitution as they do in form, contrivances of all sorts must be had recourse to for accommodating them during some months of the year. Pineries, Vineries, a warm greenhouse, and spare pits, present themselves as affording room where a greater or less number of this interesting family may pass their vacation, when the more active duties of the season are over. This thinning-out of the principal house will permit of the remaining plants having more room, and enable such kinds as are coming into bloom to be brought forward to meet the eye. Shade on bright days as usual, and maintain an atmosphere sufficiently humid to keep the plants in good health without incurring the risk of over-watering the growing material and creating stagnant moisture about the roots. Where Camellias, Chinese Azaleas, and the Hybrid Indian Rhododendrons were not potted in the spring, and require shifting, the present will be the most favourable time, as the young wood is now getting somewhat firm, and the flower-buds are perceptible. As this class of plants require water very liberally, during one period of their growth, drain the pots well and use very turfy peat and sand, adding an equal portion of fibrous loam for the Camellia.

### FORCING DEPARTMENT.

As the cultivation of fruit trees in pots, was recommended in the early part of the year, and as we know that in numerous cases it has been adopted, we subjoin a few hints for management at this season. Plants, then, of the above, which have been plunged through the summer, and carefully watered, will most likely have finished their growth, and in some instances, perhaps, the wood may be beginning to ripen. They should now be taken from their quarters, and placed on a dry gravel walk, or, in fact, merely place the pots on some hard substance which will not encourage the roots to protrude through the holes at the bottom; if at the same time they could be placed near a south wall, or the south side of a building, so much the better. If the stronger shoots have not had their points pinched out already, it should be done at once; this will help the formation of fruit buds. Gradually diminish the supply of water, using liquid manure, except when the plants are very strong; this exposure to a dry and warm atmosphere, and attended with only allowing water sufficient at the root to prevent positive flagging of the leaves, will enable the wood to ripen thoroughly, and perfect a numerous crop of fruit buds for the ensuing season. Peaches, Nectarines, Plums, Cherries, and Apricots, may be fruited admirably in pots, by attending to this very simple mode of culture.

### FLOWER GARDEN.

Besides keeping every part of this department in the neatest order, the propagation of the stock for supplying next season's demand, will engross all the time and attention that can be spared. In all cases, the number of plants which it will be necessary to provide should be noted down, allowing a wide margin for contingencies, losses, &c. The earlier struck cuttings must be potted off, and after they become established, placed out of doors in an open situation, bearing in mind that all the more delicate bedding Geraniums should well fill their pots with roots before winter, or many will be lost. While propagation is proceeding, attention must be turned to the amount of winter accommodation for them, which, whether in the shape of frames, pits, or larger structures, should be got in readiness to receive them before bad weather sets in. Though more expensive in the first place, a series of brick-pits, from 5 to 8 feet wide, will be the cheapest in the end; and if heated by running a 4-inch pipe round them, mats may be dispensed with, which, considering their price of late, would of themselves soon pay for the apparatus; besides, pits of this class would be valuable during the summer for a variety of purposes.

### FLORISTS' FLOWERS.

Continue to plant out Pinks as they strike root; bearing in mind that those which are put out now in the place that they are to flower in next season, generally lace much better than those planted in the spring. We would advise our readers to gather Pink seed forthwith, allowing it to remain in the capsule or seed-vessel till wanted. Plant offset Tulips, and commence arranging the best bed for planting. Of course all careful growers have made the necessary remarks as to the state of the flowers last season, whether too high for their then position on the bed, whether stained or out of character, &c., &c. The amateur who is commencing may now have an opportunity of procuring fine sorts at a moderate cost, many extensive growers disposing of their surplus stock at very reasonable rates. We will here name a few that are fine, and should be grown by every one; and though cheap, are indispensable. In Bizarrea: Leonidas, Pilot, Charles the Tenth, Captain White, Polyphemus, and Duke of Devonshire. Bybloemens: Thalia, Musidora, Princess Royal, Queen Charlotte, Chellaston Beauty, and Maid of Orleans. Roses: Heroine, Aglaia, Catherine, Lady Jane Grey, Lavinia, and La Vandick. These are most of them fine sorts for exhibition, and, when in good character, gems on any bed.—Give Dahlias liquid manure once or twice a week, and attend to disbudding, &c.

### KITCHEN GARDEN.

Thanks to Mr. Mechi for proving on a large scale the advantages which vegetables derive from the application of manure in a liquid form. From a long experience on a smaller scale, but with the advantage of a much wider range of subjects, we can confidently affirm that he is right. When once the sewage water of towns can be brought economically to the surrounding lands and market gardens, a great improvement both in the quantity and quality of vegetables will be insured. In the meantime we wish to point out to our readers that individual houses, however small, as well as towns, have a sewerage in some shape or other, which, if conveyed to a tank, or even to a simpler contrivance, where the above would be too costly, and to which the dung of poultry, and the smaller animals, soot, &c., which can nearly always be obtained, could be thrown in, a valuable liquid compound would be obtained from substances usually thrown away, and which, when applied, (diluted of course when too strong) to growing crops in the kitchen garden, will produce a marked effect on the produce. As a matter of course, when the dung of pigs and other animals is added, the tank must be on a corresponding scale; but the first object should be to convert matters usually lost to a profitable end, leaving the bulkier manures to be used where the liquid substitute cannot be so well applied. We have been led some way into this digression by noticing that liberal waterings of the above are the best preventive of mildew in Peas, and some other crops, which at this season usually suffer

from it, acting, we presume, by inducing a vigorous and healthy growth, and thus enabling plants successfully to resist the attacks of disease. Attend to seedling and newly planted crops with water, and look over our former directions as to bringing up any arrears, which, more or less, generally occur in busy seasons. Keep a sharp eye on the larva or grub of a species of cockchafer, which at this season does considerable injury to newly planted crops by eating off their roots. Carrots and slices of Mangolds may be stuck in the ground, where the insects will attack them, and may be destroyed.

### STATE OF THE WEATHER NEAR LONDON,

For the week ending Aug. 25, 1853, as observed at the Horticultural Gardens, Chiswick.

August.	Moon's Age.	BAROMETR.		TEMPERATURE.							Wind.	Rain.
				Of the Air.				Of the Earth				
		Max.	Min.	Max.	Min.	Mean	1 foot	2 feet				
							deep.	deep.				
Friday 19	14	29.874	29.822	77	61	69.0	60	58	S.W.	.02		
Saturday 20	15	29.864	29.811	77	51	63.5	62	59	S.W.	.01		
Sunday 21	16	29.977	29.925	73	55	64.0	62	59	W.	.00		
Monday 22	17	29.968	29.911	74	54	64.0	62	60	E.	.02		
Tuesday 23	18	29.765	29.733	63	45	64.0	62	59	E.	.01		
Wednesday 24	19	29.750	29.694	66	44	55.0	60	59	E.	.00		
Thursday 25	20	29.730	29.436	66	44	60.0	59	58	S.	.23		
Average ..		29.839	29.747	70.7	52.0	61.3	61.2	59.1		.94		

August 19—Foggy; very fine; overcast; rain.  
 20—Slight rain; cloudy and fine; clear at night.  
 21—Fine; very fine throughout.  
 22—Very fine; overcast; heavy rain at night.  
 23—Slight rain; cloudy; clear and cool at night.  
 24—Dense fog; dusky haze; fine.  
 25—Overcast; slight showers; boisterous with rain at night.  
 Mean temperature of the week 1 deg. above the average.

### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Sept. 3, 1853.

August and Sept.	Average Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 28	72.4	51.1	61.7	12	0.20 in.	1	1	1	1	1	1	1	1
Mon. 29	71.1	49.2	60.2	11	0.58	2	2	2	2	2	2	2	2
Tues. 30	71.6	49.0	60.3	6	0.32	1	1	1	1	1	1	1	1
Wed. 31	70.4	48.3	59.3	13	1.31	1	1	1	1	1	1	1	1
Thurs. 1	70.4	49.0	59.7	13	1.50	1	1	1	1	1	1	1	1
Friday 2	71.3	48.3	59.8	9	0.23	1	1	1	1	1	1	1	1
Satur. 3	70.4	45.9	58.6	10	0.48	1	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 1st 1853—therm. 85 deg.; and the lowest on the 29th, 1850—therm. 32 deg.

### Notices to Correspondents.

BOOKS: *Uncle Tom. Harvey's* "Marine Algae."—W. C. There is no such book as that you inquire about. *Old Sub.* The best treatise with which we are acquainted on the cultivation of the Peach tree is contained in the current volume of the Journal of the Horticultural Society.  
 CRICKETS: *Reader.* Treacle spread about half an inch thick in the bottoms of saucers is said to make a good trap for them. They stick fast in the treacle, and are thus easily secured and destroyed.  
 GLASS: *A. B. C.* Hartley's rough plate is much better than any sheet glass whatever. We are not aware that any kind of white glass is employed for the purpose of keeping the sun away from plants.  
 GOURDS: *T. W.* Your Gourds are no doubt accidentally hybridised. The Custard Squash is used like Vegetable Marrow.  
 GRAPES: *G. S. W.* They are affected by the Grape mildew, Oidium Tuckeri.  
 GREENHOUSE: *A Lady Gardener.* Peaches are so excitable that it is impossible to keep greenhouse plants with them in winter without injuring the former, if fire-heat is used more than is necessary to exclude frost. But you do not want artificial heat beyond this, for Geraniums and such things. The same observations apply, though in a less degree, to a Vinery.  
 INSECTS: *Anon.* Thanks for the nidus from the Organ Mountains, Brazil. It is the egg-case of a small Mantis.—*J. M. D.* The larvae from the Scotch and Austrian Firs are those of the saw-fly, *Lophyrus pini* (see article on this insect, *Gard. Chron.*, Nov. 6, 1852). Those in the small box are a smaller kind of saw-fly. Could you oblige us by sending a few more of the cocoons, or yellow oval cases? as those sent were injured.—*A Devonian.* The grubs on your Pear trees are the almy larvae of a saw-fly (*Selandria ethiops*, *Gard. Chron.*, 1845, p. 524). Dust the leaves well with lime, or wash them with tobacco or lime-water.  
 KIDNEY BEANS: *B. H.* The pale yellowish potted Bean you sent is the Haricot d'Alger. The pod, as you observe, is destitute of the usual tough lining.  
 NAMES OF FRUITS: *J. E.* The Black Grape which you had for the Black Frontignan is the Black Hamburgh, the other is the White Muscat of Alexandria.  
 NAMES OF PLANTS: *Y. Z.* *Asplenium*, *Aspidium*, *Athyrium*, *Lastrea Filix-femina*, are all names of the same plant.—*Y. Z.* Roses cannot be named with certainty from blooms only—much less from a single petal; a leaf at least should always be sent with the flower.—*S. W.* *Eucharidium concinnum*.—*Devoniensis.* The orange flower is *Asclepias curassavica*, the climber is *Ipomoea quamoclit*.—*J. O.* *Eugenia jambos*, very tender.—*J. M.* 1, *Myrica laciniata*, not in flower; 2, *Spirea bella*; 3, *Pteris hastata*.—*Nonkiant.* *Rosa microphylla*.  
 POPLAR LEAVES: *E. L.* The fungus which has attacked them is constitutional with such trees. We do not apprehend any serious consequences. At all events, there is no known remedy.  
 POTATOES: *S. F. W.* We have nothing favourable to report concerning Prof. Bollmann's plan of roasting Potatoes. Most that were so prepared in the garden of the Horticultural Society have rotted. If the stalks of your Potatoes have decayed and the tubers are ripe, you had better take them up at once. Little can be gained by allowing them to remain longer in the ground.  
 PRESERVING FRUIT: *B. C.* Mr. Lovejoy states that the best way of keeping the bottles from bursting, when his mode of preserving is followed, is not to fill them with water to near the bung; not to bung them too tightly at first; and not to employ too quick a fire, but, on the contrary, to allow three-quarters of an hour for the water to get hot in.  
 SALICOSPIS: *Edward.* See last week's number, p. 536.  
 WATER LILIES: *T. A.* Much obliged by the extract; but the information it conveys is so very loose that it possesses no kind of interest among either naturalists or gardeners.  
 YEW: *Sub.* If you will refer to our Number for August 13, p. 520, col. c., you will find that your question has been answered.  
 \*As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



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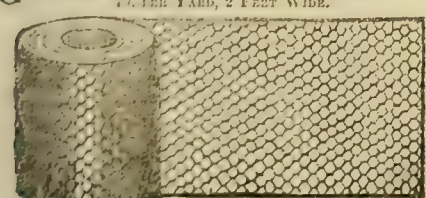
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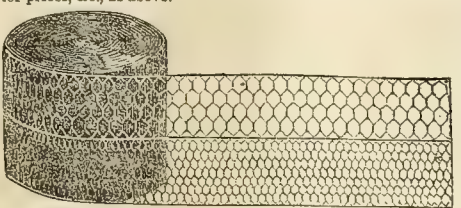
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**HENRY J. MORTON AND CO., PATENT GALVANISED IRON ROOFING WORKS**, 91, Albion Street, Leeds, Agents for **PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES**.

The **PATENT WIRE STRAND FENCING** forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



**IRON HURDLES** and all kinds of **WIRE FENCING** and Ornamental Wire Work.

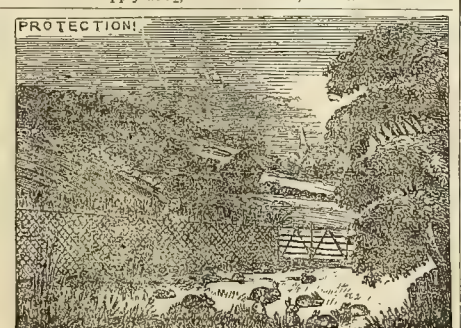
**GALVANISED GAME AND POULTRY NETTING**, very strong and neat, NEVER REQUIRES PAINTING, and cannot rust or corrode, made any width and length.

24 inches wide, 3-inch mesh, 4d., 6d., and 8d. per yard.

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**GALVANISED IRON SPOUTING**, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalt Roofing Felt, &c. Apply at 91, ALBION STREET, LEEDS.



## CHEAP AND EFFECTIVE WIRE FENCING.

Every variety of pattern, both for garden and field purposes, made to order at very reasonable prices. The wire is of first-rate quality, being selected from the most celebrated manufactory and regardless of cost. Not less than two coats of anti-corrosive mixture applied to the Net as soon as made and included in the cost price. An experience of 15 years fully warrants the Advertiser in claiming for the **Whittington Net** a large share of public favour.

Apply to Mr. **S. TAYLOR**, 2, Wotton Parade, Gloucester; or to **R. WOOLCOCK**, Whittington, near Stokeferry, Norfolk.

## STIRLING GENERAL AGRICULTURAL ASSOCIATION'S REAPING MACHINE COMPETITION.

The Competition will take place on the farm of King's Park, near Stirling, and will commence on **TUESDAY**, the 6th day of September next, at 8 o'clock forenoon.

By order of the committee,  
**WM. HUTTON.** } JOINT SECS.  
**WM. FORRESTER.**

Sterling, August 27.

## IMPROVED ITALIAN RYE GRASS.

**MESSRS. SUTTON** having selected from the several kinds of **ITALIAN RYE GRASS** the variety most productive and succulent, can recommend it with great confidence as being highly worthy of cultivation, sure to thrive in almost any soil, and producing four crops per annum.

The best time of sowing is middle of August till end of Sept. Quantity required per acre, 2 bushels. Price of New Seed just harvested 7s. per bushel.

Also **TRIFOLIUM INCARNATUM** for Early Spring Feed, 6d. per pound—20 pounds of Seed per acre.

**JOHN SUTTON & SONS**, Seed Growers, Reading, Berks.

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

**SATURDAY, AUGUST 27, 1853.**

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Sept. — 1—Agricultural Imp. Society of Ireland.

THURSDAY, — 8—Agricultural Imp. Society of Ireland.

We must very shortly refer to the returns received from our correspondents since last Saturday—relative to the probable yield of the present harvest. We have not found room to give them in full, as on the previous occasion, and have therefore been satisfied with selections, and those in reference merely to the Wheat crop in England, and the Potato crop in Ireland. The former, though somewhat improved since August 1, is undoubtedly much under the average of the past few years,—the latter seems to be a bulky crop, and though increasingly affected by disease, bids fair to yield a large produce of

healthy tubers. As regards the other crops, the returns received indicate, as those of three weeks ago did, that excepting the northern counties of Scotland, the Oat and Barley crops promise a fully average yield, which, taking into account their unusual extent, of course corresponds to an unusually large produce.

WE have to call the attention of our readers to the report in another column of the **TORTWORTH SALE OF SHORT HORNS**—an event altogether unparalleled in the history of the breed, whether for the extraordinary competition exhibited in the bidding for particular animals, or for the enormous average sum which was fetched by the 62 that were offered for sale.

Short-horn breeders have hitherto dated from **CHARLES COLLING'S** sale, on October 11, 1810, or from that of his brother Mr. **ROBERT COLLING'S** stock some seven years later; or, much later still, perhaps from the sale at Wiseton of Lord **SPENCER'S** herd, on the 11th Sept., 1846; or from the sale of the celebrated **Kirkleavington** herd on the 9th of May, 1850. These have all been great eras in the history of the Durham breed, but none of them, it may safely be said, has exceeded in importance that which has just occurred in Gloucestershire. We look back upon the first of these events as on the birthday of that more general interest which now so widely prevails in the fortunes of this undoubtedly the dominant breed of cattle in this or any other country. It was, as it were, the expiry of some patent or monopoly of immense public value, or rather the sale of it in parts to a more numerous proprietary. The results of that patient skill and perseverance exhibited for so many years by the father of short horn breeders were then distributed and scattered, and became the means, in the hands of others, of extending the improvements which he had originated. The local name became lost in the more general one, and people no longer spoke of the "Teeswater" but of the "short-horn" blood.

It is curious, however, to observe that the influence of that event still exists, and that not in the disguised or diluted form in which, after the lapse of nearly half a century, one might expect to find it—but in particular instances as intense and definitely marked as on the day when it first made itself known. The high average price that was fetched by the stock at Tortworth last Wednesday was due not merely to the number whose descent was traceable directly from Mr. **CHARLES COLLING'S** herd, but to the especial value placed upon a particular tribe descended from a particular animal in that herd. From Young **Duchess**, one of the seven heifers then sold, there has descended a family bearing her name, in which the merits of the original, due to Mr. **COLLING**, have in the hands of Mr. **BATES**, and latterly of Lord **DUCE**, been, not merely enduring, but increasing with the lapse of time, and, of course, with the number of the individuals inheriting them. The original "Duchess" fetched 183 guineas 42 years ago, and now **Duchess 59** (6 years old), of the eighth generation from her, fetches 350 guineas; **Duchess 64** (4 years old), of the seventh generation, fetches 600 guineas; **Duchess 66**, also of the seventh generation (hardly 3 years old), fetches the extraordinary price of 700 guineas; **Duchess 67**, of the ninth generation (15 months old), fetches 350 guineas; **Duchess 68**, of the eighth generation (11 months old), fetches 300 guineas; **Duchess 69**, of the ninth generation (5 months old), fetches 400 guineas; and **Duchess 70**, of the eighth generation (calved about 6 weeks ago), fetches 310 guineas. This last was the calf of **Duchess 66**, so that cow and calf fetched the altogether unparalleled sum of one thousand and ten guineas!! Besides these there were also offered for sale two bulls descended from **Duchess No. 1**—the Duke of Gloucester (nearly 3 years old) sold for 650 guineas, and the fourth Duke of York (nearly seven years old) fetched 500 guineas. Excluding one cow of this family which we have not named—as, owing to some doubts existing as to whether she would breed, she fetched but a low price—the nine animals descended from **CHARLES COLLING'S** Young **Duchess** (three of them being calves) fetched the enormous sum of 4160 guineas, averaging 462 guineas a piece.

This we need not say is far beyond anything of which records of the breed can boast in the past; and we doubt not that it is as little likely to be paralleled in the future. The short-horn breed has reached its climax at Tortworth, we do not say in intrinsic merit, or in agricultural importance, but in individual value, and as compared with that of other produce of the soil. We shall never again hear, at sales, heifers and even calves started at 100 guineas, rising to 200, 300, and even 400 guineas, in successive bids, and afterwards by steps of 50 and 25 to sums of 600l. and 700l. We believe that enterprise and energy as great, and honour as perfect,



as that of the late Earl of DUCIE, may, as now, hereafter characterise the profession, and no one can pay it a higher compliment than that—but it is exceedingly unlikely that the other causes which, with these, have brought about the results of the Tortworth sale, will long continue to exert an equal influence on the money value of the breed. American competition, for instance, cannot be expected to remain for ever at its present extraordinary intensity.

We may mention as another feature of the sale the prices obtained by the Oxford, another remarkable, family of short-horns. Oxford, 6th, a cow nearly 7 years old, fetched 205 guineas; Oxford, 11th, 4 years old, 250 guineas; Oxford, 15th, 14 months old, 200 guineas; Oxford, 16th, 3 months old, 180 guineas; and the 5th Duke of Oxford, a bull calf, 5 months old, fetched 300 guineas. So these five animals fetched 1135 guineas, or 227 guineas apiece.

The gross amount of the sale was 9361*l.* 16*s.*, the number sold was 62, thus averaging about 150*l.* 19*s.* At CHARLES COLLING's sale, 17 cows, 7 heifers, 5 heifer calves, 11 bulls, and 7 bull calves, in all 47 animals (a smaller number, and at a time of greater agricultural excitement) were sold for 711*l.* 17*s.*, averaging about 151*l.* 8*s.* At ROBERT COLLING's sale, 34 cows, 17 heifers, 6 bulls, and 4 bull calves, in all 61 animals, sold for 785*l.* 4*s.*, or 128*l.* 16*s.* apiece. Coming down to 1846, there were sold of the late Earl SPENCER's herd at Wiseton, 104 cows, heifers, and calves, and 19 bulls, in all 123; they fetched 846*l.* 5*s.*, averaging 68*l.* 17*s.* apiece. And Mr. BATES's sale at Kirkleavington, of 48 cows, heifers, and calves, and 20 bulls, fetched 67*l.* apiece. The highest prices of which the short-horn breed can boast, are those of Comet, at CHARLES COLLING's sale, 40 years ago, 1000 guineas; and the cows Countess and Lily at the same sale, 400 and 410 guineas respectively: at Wiseton, Exquisite 370 guineas, and a bull calf 225 guineas; at Kirkleavington, Duchess 59, 210 guineas, resold last Wednesday for 350 guineas: and at Tortworth, the astonishing list of prices given above.

One more comparison of the earliest and latest sales of short-horns may be allowed. Mr. CHARLES COLLING sold 29 females averaging 140*l.* 4*s.* each.

meeting of the Highland Society, Sir JOHN McNEILL, in reporting the steps which had been taken, pointed out the characteristic feature on which they all were based and on which their success had depended.

Correct agricultural statistics cannot be obtained compulsorily. "It was a curious fact," he said, "that agricultural statistics had never, so far as he was aware, in any country, been successfully collected without the co-operation of the agricultural classes. An attempt was made in France, under the reign of Louis XVI., to collect, by the power of the Government—then a despotic one—the agricultural statistics of that country; that attempt failed. In the reign of Napoleon a similar attempt was made with a like result." The only plan by which to effect this end is to enlist the agricultural classes themselves in favour of the work, and then it is sure, as in the instance before us, to attain a successful issue. How completely this was done in Scotland, where the interest taken in the subject by the Highland Society was at once a guarantee to farmers of its really practical agricultural importance, may be gathered from the fact to which Sir J. McNEILL alluded, that, out of 2002 to whom schedules were issued, only one refused to supply the information required. In other five instances the application of the enumerator, followed by that of the secretary, had been disregarded, and the information required had been obtained from third parties. With these exceptions, the whole of the returns had been voluntarily rendered. Well may the directors of the Highland Society be proud of the confidence reposed in them by the farmers of Scotland. The credit of the Society had been staked on the success of the experiment, and the intelligence, public spirit, and integrity of the tenant farmers have raised it higher than ever.

At present we have only the first results of the experiment before us, including the average of the different crops and the amount of stock. The produce per acre and per head have yet to be given in, and, when properly estimated, will furnish, by comparison with the returns already made, the gross agricultural returns of the several districts. We shall be satisfied for the present with giving the abstract of the returns for three several counties:—

portant experiments that has yet been made on its behalf.

OUR readers will have observed the report from Pusey, in last week's paper, of the judges of REAPING MACHINES. The circumstances of the trial were such as probably to favour the action of Bell's reaper; that is, they brought out the importance and value of that part of the machine in which Bell's reaper differs from the others. In a wet and tangled condition of the crop, the difficulties of removing the cut corn as it falls are necessarily increased; and the machine which was independent of manual aid for this purpose would display its superiority in this respect, especially in these circumstances. The judges, however, have no doubt arrived at a verdict which, although it might have arisen out of somewhat peculiar circumstances, would be true of the average condition of an English harvest; and we may accept their decision with the confidence due to the experience and judgment of the men who superintended the trial rather than to what may be due to the details of the trial itself. This being the case, we heartily congratulate Mr. BELL, the inventor of this machine, on the position in which at length it stands before the agriculturists both of England and Scotland. English judges have now concurred with those of the north country in awarding to his long-invented machine the position of superiority which it has all along deserved. And besides its comparative, its actual merits as a reaping machine will, doubtless, soon cause its general use in a country where labour is every day increasing in value.

There is probably this season more laid corn than was ever before known in England; but, in the majority of years, we suppose that three-fourths of all the corn grown in this country may be reaped by machines. No doubt the mere labour of cutting is but a small portion of the whole work of harvesting; but the displacing of every third or fourth man (which it is what at most it will amount to) from a work which it is now proved that a horse can do as well, and setting him to help the binders, haulers, builders, and thatchers, will be a great boon to the farmer.

We hope that one portion of the verdict at which,

#### IV.—ABSTRACT OF AGRICULTURAL STATISTICS OF THE COUNTIES OF ROXBURGH, HADDINGTON, AND SUTHERLAND, ON MAY 20, 1853.

	IMPERIAL ACRES.		NUMBER OF ACRES UNDER DIFFERENT KINDS OF CROP.															NUMBER OF ACRES NOT IN CROP.					
	Total.	Arable.	Wheat.	Barley.	Oats.	Rye	Beans and Pease.	Vetches.	Turnips.	Potatoes	Mangold Wurzel.	Carrots.	Cabbage.	Flax.	Turnip Seed.	Alternate Grasses.	Improved permanent Grass Inclosures.	Irrigated Meadows	Bare Fallow.	Sheep Walks.	Houses, Gardens, Fences, Roads, &c.	Woods.	Waste.
Roxburgh.	358,949½	146,818½	5,181½	14,615½	28,862½	14	1642½	3804	23,809	145,422½	161	62	104	24	434	44,558½	23,658½	925½	9661	186,895½	4900½	17,679½	3320½
Haddington.	149,173½	107,269½	15,339½	12,809½	16,802	46½	4809	1011½	16,260	42,46½	48½	107	15½	...	157½	26,885	6228½	87	2127½	28,630½	2586½	9313½	1660½
Sutherland	810,903½	22,022½	627½	3682	6121½	8½	89½	139½	2212½	2279½	...	14	2	1½	1	4977½	1779½	38½	23	599,710½	2290½	10,812½	176,104½
	1,319,020½	276,1104½	21,148½	31,107½	51,785½	69½	6541½	1532	42,284½	7981½	64½	114½	28½	7	202½	76,420½	31,666½	1050½	3116½	815,2374½	9777½	37,806	181,085½

The Tortworth sale contained 49 females, averaging 140*l.* 2*s.*; but of these 29 could be selected which would average upwards of 200*l.* apiece. The 18 bulls at Mr. COLLING's sale averaged 171*l.* 14*s.*; the 13 bulls at Tortworth averaged 191*l.* 18*s.* The totals, as we have said, represent an average price of 151*l.* 8*s.* over 47 head of cattle, and 150*l.* 19*s.* over 62 head of cattle. That the latter is really a higher price than the former may be concluded from the larger number over which it extends—the fact being that 47 of Lord DUCIE's cattle could be named which averaged upwards of 184*l.*

We need not add that, notwithstanding the excitement of the scene, arising from the keen competition and the many thousand spectators of it who were present, the prevailing feeling in the minds of many was the melancholy one that here at length all that remained to represent the energy and skill which the late Earl of DUCIE had brought to bear upon his agricultural pursuits, was being scattered far and wide; the results of all that intelligence and enterprise which some of us had known were being sent in many cases literally to the ends of the earth; and, excepting in the memory of spectators, and in such records as the present, would no more, collectively, be connected with the name which through them has attained so high a place in the history of the breed.

WE have now\* the satisfaction of laying before our readers the results, so far as they are yet ascertained, of the first successful experiment that has been made in this country in the collection of its AGRICULTURAL STATISTICS. Great credit is due to the Highland Society for the steadiness with which they have for many years urged the importance of this subject on the Government, and to Mr. HALL MAXWELL, their indefatigable secretary, for the energy and perseverance with which the present experiment has been prosecuted. At the late annual

\* The document from which these extracts are made was not printed in time for use last Saturday, and the information it contains was not permitted to escape until published.

	AMOUNT OF STOCK.					
	Horses.	Milk Cows.	Other Cattle.	Ewes.	Tups and Wethers.	Swine.
Roxburgh.	4975	4762	12,058	226,894	51,869	4607
Haddington.	4450	2377	7576	36,979	29,597	5580
Sutherland.	2794	6547	6045	97,666	70,504	1310
	12,219	13,686	25,679	361,539	151,970	11,497

A few references to isolated facts here brought out may be permitted:—Notice that, out of 276,000 arable acres, only 3000 are in bare fallow—that nearly one-sixth of this immense extent of land is in Turnips, and more than one-fourth in alternate Grasses—that of this very large area (430 square miles of arable land), nearly one-half is bearing food for sheep and cattle. These facts indicate a very high, intelligent, and conservative style of farming. There are in these counties only 30,000 acres of improved permanent Grass inclosure, while there are 815,000 acres of sheep-walk. It is, however, unfair to present the gross aggregate in this manner, Sutherland being a district of such entirely distinct agricultural character. Taking Haddington as a more normal instance of good Scottish farming, we have  $\frac{1}{2}$  of its arable land in Wheat,  $\frac{1}{3}$  in Barley, between  $\frac{1}{4}$  and  $\frac{1}{2}$  in Oats,  $\frac{1}{7}$  in Beans and Peas, nearly  $\frac{1}{10}$  in Vetches, between  $\frac{1}{4}$  and  $\frac{1}{2}$  in Turnips,  $\frac{1}{7}$  in Potatoes, and nearly  $\frac{1}{4}$  in Grass; as much as 2 per cent. of the whole is bare fallow; there are a pair of horses to every 50 acres of arable and 20 acres of Grass land. But in order to compare the results with their causes, so as to obtain agricultural instruction from the perusal of these returns, we need to consider them in much greater detail than this. The counties must be divided into their several districts, and the produce of each considered in connection with the natural and artificial causes to which it is due; and this we hope hereafter to accomplish. Meanwhile we may safely and reasonably congratulate the agricultural world on the successful issue of one of the most im-

MESSRS. FISHER HOBBS, C. E. AMOS, H. J. HANNAM, W. WOODWARD, and J. DRUGG arrived will not be disregarded by the inventor and patentees concerned. We mean that which refers to the union of Messrs. BELL and McCORMICK for the construction of an implement superior to that of either. Spectators, as well as judges, of the trial were convinced that the adoption of McCORMICK's cutter in BELL's machine would greatly diminish the draught and improve the action of the latter.

A DOCUMENT of some interest, in connection with the history of the LEICESTER BREED OF SHEEP, has been placed in our hands by Mr. BUCKLEY, of Normanton Hill, near Loughborough, the sale of whose flock is advertised for Thursday next. We shall make a few extracts from it, as illustrating both the direct descent of the flock from that of BAKWELL, and as indicating the enormous prices given for the hire of rams in those days. Mr. BUCKLEY's grandfather, with whom the present flock originated, purchased ewes at 62 guineas each in 1793, at the sale of Mr. PAGET, of Ibstock, one of the Disley society, who was also closely connected with BAKWELL himself. And for many years thereafter he united with his neighbours Messrs. SRUBBINS, BREEDON, and others, in the hire of rams from Mr. HONEYBORNE, Mr. BAKWELL's nephew, who had succeeded to the flock of his uncle. In those days three or four used to unite in this way and take a number of rams, so that each might have an opportunity of suitably matching his ewes, by sending a few to each. The results of Mr. NICHOLAS BUCKLEY's spirited management soon showed itself in the prices he received for his own stock, as for instance, 1000 guineas in one instance for the hire of a single ram for one season to some Lincolnshire men, one fourth share in him being reserved for himself, and also 800 and 600 guineas in two several instances to the Duke of BEDFORD.

In the document before us, which is endorsed "Mr. HONEYBORNE's account," we see many such instances as the following:—



1788	Half the price of a ram with Mr. WALKER ...	£210 0 0
1789	One-fourth of the hire of three rams, at 1005 guineas, with Messrs. BREEDON and DETTISON ...	£263 15 9
1794	One-fourth share of the hire of three rams with Messrs. BREEDON, STUBBINS, and STONE, at 1200 guineas ...	£315 0 0

This memorandum is followed by the following, indicating the hazardous and expensive character of the work:—

Should have had 75 ewes, but had only 53 in lamb, 20 of which had their produce butchered.

Again:—

1796	One fourth share of the price of four rams with Messrs. STUBBINS, BREEDON, and STONE, at 1600 guineas ...	£420 0 0
------	---	----------

A bad year, only 29 ewes in lamb.

We select these instances out of the many between 1786 and 1800 that are given, in illustration of the direct connection between Mr. BUCKLEY's flock and that of BAKEWELL; so that the sheep to be sold next Thursday will contain more probably of the direct Dishley blood than is to be found in any other flock in the kingdom.

## THE WHEAT CROP IN ENGLAND AND SCOTLAND.

As intimated in another column we have extracted from such returns as have reached us the reports having reference to the Wheat crop, on which the most important aspect of the harvest necessarily depends.

MORAY.—Near Forres Wheat is far under an average.

FORFARSHIRE.—Near Montrose Wheat is under an average. In the Brechin district it is a poor crop; at least one-fourth under an average. The temperature of the past fortnight has been high, being a Godsend to the late Wheats, of which there is abundance. Near Arbroath Wheat and Barley are now above an average.

FIFESHIRE.—In the south of the county Wheat is under an average. General harvest about 1st Sept.

MID-LOTHIAN.—Near Ratho the Wheat crop is reported as average.

DUMBERTON.—Wheat good, but little straw.

LANARKSHIRE.—Near Hamilton Wheat is reported as being under average.

AYRSHIRE.—Near Ayr it has improved since last report, though still late.

SELKIRKSHIRE.—Near Galashiels it is but little grown, but is under average.

BERWICKSHIRE, Greenlaw.—Wheat not an average.

DUMFRIESSHIRE, Vale of Annan.—Wheat same as last report, under average, and of less extent than usual.

WIGTON.—Near Stranraer Wheats are improved since last report, and, with the fine weather, the quality is likely to be good.

NORTH OF ENGLAND.—From the north we have information that the Wheat crop has improved somewhat during the fine weather, and that while in Northumberland it must be considered under average, there are localities where it is "very good."

YORKSHIRE.—The Wheat crop is reported as light, but healthy; very thin, small ears, and only half a crop; a somewhat earlier harvest than was expected. Near Leyburn: average crop, and sample bold and good. Near Richmond: On the whole under average, much of it spring sown, and will be late ripe.

LANCASHIRE.—Thin and irregular; various.

DERBYSHIRE.—Good, but below average.

NOTTINGHAMSHIRE.—Wheat, with fine weather, will be of good quality, but from the light crop, and one-fourth less sown than usual, must be from one-fourth to one-third less than an average yield. One-fourth under average, and bad in quality. Near Clifton, it is reported to be average and of fair quality.

LINCOLNSHIRE.—Near Peterborough Wheat is reported to be very good; partially blighted. Harvest now general; some Wheat in stack. There is still a good deal of backward Wheat that ripens very slowly.—Near Long Sutton straw is under average; grain average, and very little mildew.—Near Grimsby Wheats are cutting up rather better than was expected—not so heavy as the last two years, but still nearly an average.

SOMERSETSHIRE.—Grain has ripened of late very fast. Harvest has commenced, and will soon be general. What Wheat has been cut comes off light. Near Bridgewater, very deficient; one-third below average. Near Ludlow, much under average. At Little Wenlock, about half a crop.

STAFFORDSHIRE.—One-third under average.

HEREFORDSHIRE.—Near Ross Wheat is a fair average crop; not so much blighted as at first apprehended.—being cut unusually green.

WORCESTERSHIRE.—Near Upton-on-Severn I have a less favourable opinion of many of the best and early planted Wheats than I had, and am convinced Wheat is full one-third short of average.

WARWICKSHIRE.—Wheat one-third below average; ripens very slowly; complaints of blight; very deficient; much under average.

NORTHAMPTON.—No cause to alter the report on August 6. The crops of corn have ripened kindly, and the cutting of the corn is rapidly proceeding.

HUNTINGDON.—Wheat, short breadth; deficient plant; improved quality.

CAMBRIDGESHIRE.—Near Chatteris the Wheat crop is generally good, but not without a little blight and mildew. Mr. Ruston's report of the period of harvest should have been printed 15th of August, not *end*.

SURREY, near Woodbridge.—On stiff soils, clay, or marsh, Wheat is one-fourth deficient; on loamy good

alluvial soils it is 10 per cent. deficient; and on sandy and light soils 20 per cent. below the average.

ESSEX.—Wheat not an average. The threshing of new Wheat falls very far short of the estimated yield. So inferior is the Wheat on the heavy lands that great numbers of labourers who visit the hundreds of Essex at this period have suffered privation from non-employment. Under average, late and blighted; best on light soils.

BUCKINGHAMSHIRE.—Wheat one-third under average. Winter Wheats unquestionably attacked with red maggot; spring sown appears healthy, but backward.

OXFORDSHIRE.—Near Reading Wheat blighted, and not an average crop.

GLOUCESTERSHIRE.—Near Cirencester Wheat very much improved. Near Bristol barely an average crop, much is very thin on the ground; cutting has commenced. Near Gloucester Wheat is improved since last report.

MONMOUTH.—Wheat is partially blighted; two-thirds of crop; the spring sown best. Near Abergavenny crops have not in any way deteriorated since last report. Near Uske much improved with the fine weather, but does not promise an average yield, and there is nearly one-fourth less land under Wheat this year.

SOMERSET.—Much improved, but below average. Acreage of Wheat unusually small, from the wet autumn. Early Wheat deficient in the ear.

BERKSHIRE, Newbury to East Risley.—Wheat is under an average, but a good sample; the seed time extended over five months, and the harvest will extend over six weeks. Crops various; good quality, but short in quantity.

SURREY.—The Wheat crop is generally good about Godalming.

KENT.—Near St. Peter's one-fifth under average. Near Dover 4 bushels per acre under average.—Near Wingham it is reported as not half an average crop.

SUSSEX.—Near Chichester the Wheat is better than was anticipated, but still under average.

HAMPSHIRE.—As last report. Wheat cuts a very thin crop, worse than was anticipated; quantity deficient, quality good.

DORSETSHIRE.—Wheat thin and blighted, very little cut. Near Dorchester under average, and a little blighted.

DEVONSHIRE.—At Tavistock a fair crop, but injured by rust; somewhat improved by the late fine weather, still under an average crop. Dartmoor, decidedly deficient. Totness, under average and much blighted. Kingsbridge, Wheat crop far below an average.—Crediton: The early sown is a fair crop—the breadth very small; the late sown very much blighted, and the general crop very far below an average.

CORNWALL.—Near Helston Wheat crops are thin and certainly under the average. Owing to the heavy autumnal rains a great quantity of land could not be put into Wheat at all, and many acres were sown, near the coast, with spring Wheat, which promises better than the autumnal; but, on the whole, it is thought it will be a slight yield. Near Truro, below average.

## THE POTATO CROP IN IRELAND.

DONEGAL.—The Potatoes are excellent. *Thomas J. Atkinson, Cavan Garden, Ballyshannon.*

TYRONE.—Near Omagh the Potatoes are good in quality, and there is no blight.

LEITRIM.—The blight is partially on the haulm, but has not yet reached the tubers.

ARMAGH.—The Potato leaves are generally blighted, and a few of the roots are diseased, and of course more may be expected to go.

Co. DOWN, Dromore.—Disease decidedly established, but progressing slowly. Comber.—Largely cultivated this year and very fine. Disease has been slowly progressing since the 1st. The foliage has suffered a good deal, but the tubers are as yet but little affected. Near Portaferry.—Some symptoms of disease appearing on the leaves.

MONAGHAN.—Near Ballibay the Potatoes are all blighting in the stalks, but the tubers are remarkably good.

ROSCOMMON, Carrick-on-Shannon.—Potatoes never better. No disease in stalks up to the 20th August; and the crop will be fully perfect on the 15th Sept., being planted one month earlier than usual. Roscommon.—Potatoes very good; no blight.

LONGFORD, Granard.—Leaves beginning to blotch; tubers sound. Edgeworthstown.—We never had a better prospect of crops in this county, and, I may add, we have no disease in the Potato crop.

DUBLIN.—There is no appearance of disease among the Potatoes; the crop is abundant and of the best quality.—Most excellent; no symptoms of disease; crop abundant.

CLARE.—Near Killaloe the Potatoes are excellent, and no blight is seen except on leaf.

GALWAY.—Potatoes good; a little diseased.

KING'S COUNTY.—Dr. Bewley, of Clara, informs us that the leaves of the Potatoes are partially blighted, but the tubers are uninjured.

LIMERICK.—The Potatoes at present are very fine, but in some you can see traces of disease.

WICKLOW.—Blight has appeared, but in mild form, the tubers in most cases being uninjured. Bray.—The Potatoes were never better; no indication of disease.

CARLOW.—The disease has appeared in some gardens, but in general the tubers are sound and abundant.

TIPPERARY, Cahir.—Potatoes very generally diseased in leaves, haulm, and tubers, but still growing.

WEXFORD.—Potatoes growing very well; although the tops are diseased, they have done exceedingly well since I filled up your last circular, and I believe the produce will be much larger than for many years.

KERRY, Kenmare.—Leaves of the Potatoes blighted; tubers sound; best since 1845.

CORK.—Potatoes a bulky crop; stalks generally black, but few of the roots as yet.

## THE TORTWORTH SALE OF SHORT-HORNS.

Aug. 24.—The weather was all that could be desired. By noon between 2000 and 3000 spectators had assembled; and shortly after 1 P.M. Mr. Stafford, the auctioneer, mounted to his place. After a few introductory remarks, relating to the history of the herd, and to the fact that no biddings directly or indirectly would be made on behalf of the Earl of Ducie, the sale commenced. The first six or seven of the older cows went off at prices varying from 40 to 80 guineas. At length some of the Oxford and Duchess families were offered, and the biddings became bolder and more rapid; and the sums which were reached in some of the cases excited unbounded astonishment, even amongst the professional men present, who were well acquainted with the value of the stock. The amounts realised and the destination of the several lots will be seen below. Many of the high prices are due to the competition of American buyers—a competition in which it was gratifying to find that Englishmen were sufficiently unyielding, so that fewer of the lots will cross the Atlantic than was expected.

SALE OF THE SHORT-HORN STOCK AT TORTWORTH COURT, GLOUCESTER, AUG. 24, 1853.

No.	NAME.	AGE.	PRICE.	PURCHASER.
COWS & HEIFERS.				
1	Bessy	13½ years	41	Col. Cator, Bromley.
2	Stella	12½ "	35	Mr. Niblet, Bristol.
3	Challenge	10½ "	41	Do. do.
4	Duchess, 55	9 "	50	Mr. Tanqueray, Hendon.
5	Victoria	8½ "	41	Mr. Allen, Staffordsh.
6	Princess Fairfax	8 "	77	Mr. Greenfell.
7	Norwich	7½ "	50	Lord Burlington.
8	Chaff	7½ "	42	Col. Kingscote, Gloucestershire.
9	Min-trel	7½ "	100	Mr. Tanqueray, Hendon.
10	Oxford, 6th	7½ "	205	Do. do.
11	Duchess, 59	5½ "	350	Mr. Thorne, New York.
12	Manilla	5½ "	110	Mr. Foljambe, Notts.
13	Virginia	5½ "	75	Mr. Hall, Woodstock.
14	Pomp	5½ "	65	Mr. Greenfell.
15	Louisa	5 "	78	Mr. Langston, M.P., Oxford.
16	Beatrice	5 "	87	Mr. Greenfell.
17	Chaplet	4½ "	51	Mr. Langston, M.P.
18	Victorine	4½ "	46	Mr. Greenfell.
19	Horatio	4 "	30	Mr. Langston, M.P.
20	Duchess, 64	4 "	600	Mr. Thorne, New York.
21	Oxford, 11	4 "	250	Mr. Tanqueray, Hendon.
22	Florence	4 "	62	Mr. Robinson.
23	Fatima	3½ "	70	Mr. Carr, Settle, York.
24	Mystery	3½ "	200	Mr. Tanqueray, Hendon.
25	Roddie	3 "	115	Mr. Jonas Webb.
26	Flourish	3 "	71	Mr. Rich, Gloucestersh.
27	Duchess, 66	3 "	700	Col. Morris, New York.
28	Victory	2 yr. & 9 mo.	80	Maj. Blathwaite.
29	Chitzy	2 "	70	Mr. Greenfell.
30	Finance	2 "	50	Mr. Crawley, Beds.
31	China	1 "	80	Lord Faversham.
32	Bolkin	1 "	60	Mr. Robinson.
33	Lucy	1 "	40	Mr. Hall.
34	Hornet	1 "	43	Lord Howe.
35	Duchess, 67	1 "	350	Mr. Gunter, Brompton.
36	Parliament	1 "	56	Mr. Greenfell.
37	Oxford, 15	1 "	200	Lord Burlington.
38	Bibby	1 "	51	Mr. Greenfell.
39	Pride	11½ "	165	Do. do.
40	Duchess, 68	11 "	300	Mr. Thorne, New York.
41	Chance	7 "	56	Mr. Robinson.
42	Violet	6 "	48	Mr. Barthrop, Suffolk.
43	Snowdrop	6 "	120	Lord Spencer.
44	Duchess, 69	5 "	400	Mr. Tanqueray.
45	Lizzy	4 "	81	Mr. Greenfell.
46	Oxford, 16	3 "	150	Mr. Tanqueray.
47	Duchess, 70	7 weeks	310	Mr. Gunter.
48	Parade	14 days	73	Mr. Greenfell.
49	Vanquish	13 "	30	Mr. Phillips, Devonsh.
BULLS & CALVES.				
50	Duke of Gloucester	3 years	650	Mr. Tanqueray.
51	Fourth D. of York	6½ "	500	Mr. Bell, Kirkclevington.
52	Cornwall	1 yr. & 3 mo.	61	Mr. Mace, Gloucestersh.
53	Uncle Tom	1 "	37	Mr. Saunders.
54	Vampire	1 "	120	Mr. Booth, Berks.
55	Franklin	10 "	80	Mr. Miles, M.P.
56	Cheltenham	8 "	125	Mr. Jonas Webb.
57	Florian	8 "	58	Mr. Dickinson, Westmoreland.
58	Fifth D. of Oxford	5½ "	300	Lord Faversham.
59	Gloucester	4½ "	120	Do. do.
60	Francisco	4 "	150	Marquis of Exeter.
61	Norman	3½ "	100	Mr. Robinson, Berks.
62	Marquis	2 "	75	Lord Fitzwilliam.

After the sale of short-horns, that of the pigs was proceeded with; and the prices reached here were as astonishing in their way as those of the cattle: thus, "Miss Brown," a celebrated sow bred by Mr. Brown of the Heights, near Wigton, Cumberland, with six pigs by Harry, fetched 55 guineas; and one of the eight boars that were sold fetched 62 guineas. The proceedings were brought to a close before 7 P.M., and Mr. Stafford descended from his rostrum after a day's labour, in many respects, we suppose, the most extraordinary of which his profession can boast.

## HISTORY OF SCOTTISH AGRICULTURE.

(Continued from page 538.)

We come now to a new phase in Scottish agriculture, viz., the development of that literary element which Lord Bellhaven and the Edinburgh Society of Improvers had called into existence during the earlier part of the 18th century. The celebrated Lord Kaimes—one of



the law lords of Scotland—a man of a vigorous mind, great energy of character, and of a highly cultivated understanding—turned his attention to the improvement of his paternal estate in Berwickshire. In 1746 he introduced the cultivation of Turnips and Potatoes, and the fallowing of cattle upon roots. Afterwards, when practical knowledge had supplied the requisite amount of experience, he published his “Gentleman Farmer,” a work so highly esteemed that it had run through three editions before 1788. In this work there is a thorough exposure of the defects of Scottish agriculture—a better system of farming is detailed and enforced; there are also several chapters on the theory of vegetation, and a recommendation to establish a Board of Agriculture for the purpose of watching over and fostering the rural interests of the country. The latter was afterwards accomplished in a double fulfilment—first, by the formation of the Highland Society in 1784, which in its cultivation and object was a fuller development of the Improvers’ Society of 1723; and, secondly, at a later period by the establishment of the long-wished-for Board of Agriculture in 1793, under the able presidency of Sir John Sinclair, one of the greatest patrons of the art and science of agriculture that Scotland or any other country has ever produced.

Of the many earnest and energetic agricultural improvers of the last century, none stand so conspicuously forward as this extraordinary man; and as any history of Scottish agriculture, as it existed during his lifetime, would be imperfect which ignored his exertions, a short notice of his career will not be out of place in the present article. Sir John was born at Thurso Castle, in Caithness, the very *ultima thule* of Scottish territory, on the 10th of May, 1754. In his earlier years he received the best education which his native country could afford, and he afterwards studied at Oxford. At the close of his college curriculum, he studied both for the Scottish and English bar, and passed his examinations in a manner so distinguished as to elicit from one of his Edinburgh examiners the avowal that he knew more of law than any of them. He did not, however, practise at either bar, but turned his attention in the direction of agricultural improvement. Caithness, his native county, was then in a deplorable state of physical degradation from the want of proper modes of farming, and there were neither roads, bridges, nor fisheries. Scarcely a farmer owned a wheel cart, and burdens were conveyed on the backs of women, 30 or 40 of whom might be seen in a line carrying wicker creels.\* Sir John applied for and obtained a grant from Government of small sums derived from the balances of forfeited Scotch estates, to be apportioned to all landed proprietors who should raise an equal sum for the improvement of their estates, a plan which, although politically improper, was practically advantageous to the whole country in its then wretched condition. While doing this for others, however, Sir John set a good example of self-reliance and liberality in his own locality, by constructing new roads, bridges, and mills, laying off large farms on his own estate, draining and enclosing these, and assisting the tenants to procure Turnips, Clover, and Rye-grass seeds, and also importing improved breeds of cattle solely at his own expense. But his exertions were never confined to his own county or country; he established the British Wool Society, and imported Merino sheep from the royal flocks of Spain, and introduced the Cheviot breed of sheep into Scotland. He entered Parliament, and by his subsequent exertions on behalf of the welfare of the realm, he was summoned to Downing Street by Mr. Pitt, the Prime Minister, who addressed him in the following complimentary terms:—“Sir John, there is no man in the country to whom Government is more indebted than to you; and if you have any object in view, I shall attend to it with pleasure.” A better opportunity for gratifying ambition or advancing self-interest never before presented itself to any man, and had Sir John been a place-hunter or pension-seeker, the most extravagant wish he could have formed might have been complied with in some shape or other; but he sought neither place nor preferment, and replied to Mr. Pitt’s justly-merited eulogium and offer of Government aid, by modestly stating that “the reward most gratifying to his feelings would be the institution of a great national corporation, to be called ‘The Board of Agriculture.’” When the motion was brought before Parliament it encountered considerable opposition from several of the honourable members; and, amongst others, the brilliant Richard Brinsley Sheridan brought the powerful artillery of his wit and raillery to bear against it, but it was ultimately carried by a majority of 85, mainly through the warm advocacy of Sir John Sinclair, and a grant of 3000*l.* per annum was voted. The Board was established in 1793, and in the course of a year afterwards Dr. Anderson, himself an eminent agricultural writer, bears this testimony to its efficiency:—“That a greater number of authentic facts respecting the agricultural and internal economy of the country had been printed by its agency than was ever before obtained in any other country, since the beginning of time.” The agricultural reports of many of the counties of England and Scotland, obtained at the expense of the Board, completely opened up the question of the existing state of agriculture at the time, and, by showing its strength and its weakness, pointed out the means of increasing the one and removing the other.

In 1790 Sir John first proposed to publish a statistical account of Scotland, by the co-operation and instru-

\* Pennant.

mentality of the clergy of the Established Church, who, from their connection and individual acquaintance with the several parishes under their charge, were excellently circumstanced for carrying the project into execution. In 1791 Sir John, in the capacity of editor, published the first volume of the “Statistical Account of Scotland,” containing the statistics of four parishes. Considerable opposition was experienced in carrying on the work, but the indomitable perseverance of the editor overbore and surmounted all obstacles, and the publication proceeded, and was finally completed in 21 volumes in the year 1798. The 14th volume was destroyed by an accidental fire in the printer’s office; but, nothing daunted by this catastrophe, Sir John urged the authors to re-commence their labours anew, and ultimately the breach was repaired. It is remarked, by a recent writer† of a short but interesting account of the life of Sir John Sinclair, that “during the seven years, seven months, and seven days’ ceaseless labour and anxiety, occupied in the compilation and publication of the ‘Statistical Account of Scotland,’ its editor received 20,000 letters!” and to the physical labour of reading these, must be added the difficult and often delicate task of arranging, correcting, and abbreviating the contributions of 900 individuals, many of whom naturally rebelled at the excisions to which their laboriously compiled manuscripts were remorselessly but necessarily subjected. Had the then Archbishop of Canterbury not shrunk from the idea of lifting the veil from the tithe-ridden parishes of England, that country might have had a statistical account similar to that of Scotland, for Sir John Sinclair no sooner had finished the one than his indefatigable industry and patriotism prompted him to propose the other, but, unfortunately, class interests were stronger than public benefits.

To enumerate all the literary labours and amelioratory projects of Sir John Sinclair would fill volumes, and form the most complete history of the revival of agriculture in Britain during a period of more than half a century that probably could be compiled; but in this article there is only space for a very cursory glance at the more prominent points of interest.

Sir John, although eminently practical in all his labours for the benefit of agriculture, was among the first to perceive the great advantages which would result from calling in the aid of science. Practice, *i.e.* the mere doing of what others have done before us, or what we ourselves may have added to the general stock, however safely it may be followed under similarity of circumstances, is essentially empirical, and as such is circumscribed by the narrow limits of individual experience, whereas science generalises, combines, and harmonises the facts of nature and the discrepancies of art, and is essentially suggestive in its teachings. Acting upon this view, Sir John Sinclair engaged the services of the celebrated Sir Humphrey Davy to deliver lectures on the Chemistry of Agriculture before the Board of Agriculture. Imperfect as some of Davy’s views appear to be, when judged of by the analytical accuracy of the present day (itself yet far from perfection), they yet served to dispel many of the crude and absurd ideas that then prevailed among practical men regarding the composition of soils and the nature and action of manure, and it is to this eminent chemist that we owe the introduction of one of the most powerful elements of knowledge that has as yet been brought to bear upon the practice and theory of agriculture. Men are yet to be found who sedulously ignore the good which chemistry has effected in agriculture, and who, in their search for definite proofs of its successful application, entirely overlook the great flood of light which it has shed upon the general subjects of manures, soils, and the process of vegetation. However much modern sceptics may affect to undervalue the triumphs of chemistry in relation to agricultural art, and on the other hand to laud the objective operations of empirical knowledge, yet the connection of the one with the other is too well established to be dissolved by the citation of isolated instances of discrepancy or contrariety. Sir John Sinclair stands forward in his day as the worthy apotheosis of the science and art of agriculture. Not only did he foster the one by enlisting the services of the most eminent chemist of his day, but he also encouraged the other by applying for and obtaining a parliamentary grant of 1000*l.* as a reward for the labours of Elkington, the celebrated deep drainer; and setting on foot a public subscription for Meikle, the inventor of the threshing-mill, which ultimately mounted up to 1500*l.* Neither did he forget the services of James Small, the improver of the Scotch swing plough, who also experienced substantial proofs of the kindness and consideration of this private as well as public benefactor. Nor were Sir John’s benevolent exertions confined solely to agriculture and agricultural improvers, for we find commercial enterprise, scientific research, and literary talent, all occupying a share of his liberality. It was mainly through his efforts that the merchants of Manchester and Glasgow were enabled to ride out the commercial storm of 1793. For this purpose he forestalled the tardy aid of a parliamentary loan, by raising many thousands of pounds on his own responsibility, in order to prevent those great commercial marts from going to ruin. Several scientific and literary men also obtained, through his public representations and private generosity, that reward to which their genius entitled them. His own contributions to literature, in the shape of books, pamphlets, and letters on industrial art, political economy, morals, and science, compose a library of no small extent, and form a com-

† Chambers’s Tracts.

plete history of the progressive improvement of Great Britain during his time. Born in 1754, he lived through the most stirring and perilous times that history makes us acquainted with; and he died in 1835, after a life of public usefulness and private worth, which will make his name a household word for many generations, not only in his native country, but in the whole of the United Kingdom.

(To be continued.)

### Home Correspondence.

*Growing Wheat without Ploughing.*—We have been asked by the writer of it to make the following extract on this subject, from the *Chelmsford Chronicle*:—Some two or three years ago the writer of these lines was travelling through Cambridgeshire; he met with a gentleman in the train, who seemed to be a farmer, and said to him, “There is a person living in the same parish that I do (meaning himself) who grows Wheat for several years following; he does not sow a quarter so much as the other people, and he never ploughs, digs, nor scarifies his land, and yet he grows more than his neighbours.” The gentleman said, “Do you believe that?” “Yes, sir.” “Then I don’t.” The same story was told a farmer travelling to Norwich last year (with the exception of growing Wheat three more years, and averaging five quarters per acre). He laughed significantly, and said, “Ah! There is not one lie in a hundred true.” Therefore if farmers will not believe their ears, I should like this year before the Wheat is carted they should try two other organs which they possess, *viz.* their eyes. If the writer’s purse were as long and as well lined (and his head too) as Mr. Mechi’s he would feel proud to give a general invitation; but then his house would not hold the people if his farm would. Visitors should bear in mind that this land is not suitable for Wheat; it is subject to grow Twitch-grass and Thistles, black Grass and Landbine, besides growing about ten thousand times ten thousand young Ash trees, and surrounded by 50 trees per acre. ‘Tis a general proverb that medical doctors disagree; the same may be said of agricultural doctors. There are three of these living in Essex. I will not mention their names, as they may not wish to increase their practice. One doctor says, “To be sure this man grows a great deal of Wheat per acre, but then he does not know the cause, or the reason why he grows so much. I can tell him. ‘Tis because he is a miller and feeds his horses with bran (made mostly from Wheat), and this bran, after going through a certain process, is carried on the land, and it has almost as much power as the philosopher’s stone, as it turns what is sown to Wheat.” The next doctor says, “I’ve seen the land, and there is a river or brook runs beside it; the bottom of the brook runs like a sieve, and feeds the roots of the wheat, and water being the proper manure for wheat—(though some farmers not knowing this are simple enough to drain their land)—this is the great secret.” The last doctor says, “Certainly the brook is the cause, but then ‘tis the top not the bottom of it. ‘Tis the exhalations, the mists, the vapours, the clouds, the fogs that rise from this brook and settle on this land—that’s the true cause.” ‘Tis a wonder these fogs do not occasionally break bounds and get into other people’s fields as well! J. D. P., Colne Engaine.

*The Potato Crop, county Longford,* is so luxuriant, and the yield is so large, that, let the disease now affect them when it may, we may calculate on a full average acreable crop; the breadth of ground under Potatoes is also so wide that, unless they become more severely affected than from present appearances and probabilities we can expect them to be, we may expect a sufficiency for the general consumption of the country, and we may reckon that the market price from the general digging till seed time will not exceed 3*d.* a stone; at this price as food they will be equivalent to Indian meal at 1*s.* 2*d.*, and they will be preferred. But we must bar exportation. The general aspect of the Potato fields, notwithstanding the partial discolouration of the leaves, is a rich deep green. Under some peculiar conditions, and among the more advanced, some patches more intensely affected are to be discovered, but the stems are yet but rarely blighted, and very rarely indeed is found a diseased tuber. My Ash-leaved Kidneys planted 25th March on Saturday showed scarcely a spotted leaf; on Monday very many of the leaves were blackened, but they had not a diseased tuber. J. M. Goodiff.

*The Berberry Shrub.*—A correspondent in No. 34 complains of his Wheat and Straw being blighted, and thinks it might be caused by that pretty and ornamental shrub the Berberry; I can safely say that he must not attribute this disaster to anything connected with this tree, having grown it for years, and under just the particular circumstances he describes. I have an ornamental belt round my garden, bounded by a dwarf-wall, where several of these pretty shrubs are grown, and at this time in beautiful berry. Opposite to this plantation, divided by a road 20 feet wide, leading to my farm I have 10 acres of land where I grow a variety of me valuable plants; I have 1 acre of Talavera Wheat, from seed shown at the Great Exhibition 1851, for which I gave 1 sovereign per bushel, in great perfection, and which bids fair to rival its prototype; I have also a plantation of Zea Maize, Indian Corn, looking well, about a quarter of an acre of black Barley, and the same quantity of skinned Barley, a very delicate cereal, and many other things equally interesting, not one of them blighted or injured from any cause. Indeed this 10 acres I devote to new varieties and experiments



of different manures, and have for some years done the same, always having my pretty graceful Berberry: your correspondent must impute his misfortune to some other cause. *Amicus.*

**Pig breeding Farm.**—When many thousands of miles distant from old England, I was much pleased to see in the *Agricultural Gazette* an "Estimate of a Ram breeding Farm;"—now that I have returned and am about to convert my "sword into a ploughshare," would you or some of your good-natured polite readers be good enough to favour us with some data for a Pig breeding Farm. Most of us have seen cattle, sheep, horses, &c., &c., bred on a large scale, but I have never seen a farm appropriated exclusively to breeding and rearing (not fattening) swine. No stock now pays better, and select breeds may always command a brisk sale everywhere. To begin moderately, suppose we say twenty sows; what land would be requisite, and how should it be cultivated? For store pigs, I have heard Jerusalem Artichokes highly praised. Several breeds have been recommended to my notice, such as the Berkshire, Essex, Neapolitan, China, Cumberland, Buriton, and the variety known by the name of its chief breeder, Mr. Fisher Hobbs. I have an advertisement in your journal this week for a farm, I care not much of what extent, from 50 to 200 acres if a desirable one, and it is my intention to get gradually into Pig breeding on a large scale, as I gather experience. My gardener declares a good sow will pay more in a year under good management than a cow. Think of this, and the difference in first cost! I confess, novice as I am in these matters, such startling statements puzzle me, so I resolved to have the question fairly debated, if through your kindness you grant me permission to see it launched in your columns. These are times when farmers should stick together, and help each other, as they may materially do by freely communicating the results of their experience. If a farmer will prosper he must be a thinking, calculating experimenter; to do only as our fathers did, though they did well, is to retrograde, and this free-trade forbids. In conclusion, I shall say a word about implements, and their cost. I am maturing a plan, which those friends to whom I have mentioned it are pleased to say is likely to be very favourably received. I shall however reserve this for a future communication, merely hinting that it is based on a system which has proved eminently successful in other matters. *Agricola.*

**Wheat after Vetches.**—I have always noted down anything curious relating to agriculture, and many years ago I was assured by a gentleman that in a field of Vetches, one half cut up for cattle, and afterwards manured, the other half left for seed, and not manured, and sown with Wheat, the crop in that part left for seed was by far the best. I told this to Farmer Giles, who laughed heartily at gentlemen farmers; but about 10 years afterwards he inquired if I remembered a story I gave him regarding Vetches, and how he ridiculed my information. Now, says he, I am convinced your friend was right, and if you will look at such a field you will see an example of it. How beautiful is candour, and how seldom do we meet with such an instance of it! But this story leads to this inquiry: if the land be so much benefited by sun and air, how is it that the shade of the Vetches can be so useful? The leaves no doubt drop, but putting that against the coat of manure, how stands the balance between shade and sunshine?—Receipt for killing Twitch Grass and all sorts of weeds: Sow three or four bushels of Vetches per acre, and they will stifle everything on the land, and be a very profitable crop. *South Hants.*

## Reviews.

*Quarterly Journal of Agriculture, and Transactions of the Highland Society.* W. Blackwood and Son, Edinburgh.

The July number of the "Quarterly Journal of Agriculture, and Transactions of the Highland and Agricultural Society," comprises, the former five articles, and the latter seven, which we shall briefly notice in the order they appear.

The first is a continuation of the subject of "Agricultural Architecture and Engineering," by Mr. Burn. Various kinds of walls for buildings are given, the advantages and disadvantages of each being pointed out, such as hollow walls of stone or brick—"jerry" work, &c. Unburnt bricks are noticed at some length, as cheap, durable, and drier than burnt ones, being less absorbent of wet. Good cottages for labourers may be erected at from 10*l.* to 20*l.* of such materials, preferable to mud hovel. Equally favourable mention is made of walls of "hand-rummed earth" or "pisé," as being better than the mud and wooden hovels at present so common for farm labourers. Wooden skirting boards are condemned as a "nidus for vermin," and all sorts of filth, and "terro-metallic or other skirting tiles" recommended. The paper is one of a long series, and concludes with supplementary observations on various improvements in house drainage made since the first was written, promising in subsequent numbers to discuss the topic of iron-roofing, covered with zinc, for agricultural structures.

The second is "The Farmer's Note-Book," always an interesting paper, and which at present contains two valuable communications—the one from Dr. Voelcker, Agricultural College, Cirencester, on "The Composition and Nutritive Value of Different Kinds of Green Food," and the second by M. M. Milburn, Esq., Thirsk, on "Finger and Toe in Turnips."

Chemistry is daily becoming of more importance to agriculture; and the experimental researches in the laboratory at Cirencester, on the following plants used as food in a green state, will be gratefully received by all capable of appreciating their value. We state the 18 examples "arranged according to the two great classes of alimentary substances," tabularly thus:—

NAMES OF PLANTS.	Water.		Nitrogenised or flesh-producing matters.		Non-nitrogenised or heat and fat forming substances.		Inorganic matter, or ash.		Per cent.	
	Natural state.	Dried 212 F.	Natural state.	Dried 212 F.	Natural state.	Dried 212 F.	Natural state.	Dried 212 F.		
1. Red Clover, <i>Trifolium pratense</i> ...	80.640	3.608	18.64	13.784	71.17	1.970	10.19	100,000	100,000	
2. White Clover, <i>Trifolium repens</i> ...	83.65	4.52	28.31	10.20	62.09	1.57	9.60	100,000	100,000	
3. Yellow Clover, <i>Medicago lupulina</i> ...	77.570	4.451	20.00	15.949	71.09	2.000	8.91	100,000	100,000	
4. Alsike Clover, <i>Trifolium hybridum</i> ...	76.670	4.825	20.69	10.445	70.49	2.060	8.82	100,000	100,000	
5. Bokhara Clover, <i>Melilotus</i> ...	81.300	3.281	17.55	13.529	72.33	1.890	10.11	100,000	100,000	
6. Lucerne, <i>Medicago sativa</i> ...	73.41	4.40	16.56	19.11	71.86	3.08	11.55	100,000	100,000	
7. Sainfoin, <i>Onobrychis sativa</i> ...	77.320	3.512	15.50	17.488	76.87	1.730	7.63	100,000	100,000	
8. Vetch, <i>Vicia sativa</i> ...	82.16	3.58	20.00	12.74	71.37	1.54	8.63	100,000	100,000	
9. Plantain, <i>Plantago lanceolata</i> ...	80.790	2.481	12.94	14.899	77.55	1.830	9.51	100,000	100,000	
10. White Mustard, <i>Sinapis alba</i> ...	57.400	3.287	26.12	7.273	59.65	2.040	16.19	100,000	100,000	
11. Leaves of Prickly Comfrey, <i>Symphitum asperum</i> ...	88.400	2.712	23.37	6.898	59.49	1.990	17.14	100,000	100,000	
Stems of ditto ...	94.74	0.69	13.06	3.81	72.49	0.76	14.45	100,000	100,000	
12. Rape, <i>Brassica napus</i> ...	87.030	2.762	21.310	8.578	66.257	1.610	12.433	100,000	100,000	
13. Italian Rye-grass, <i>Lolium italicum</i> ...	20.770	2.801	14.87	14.389	75.09	1.980	10.04	100,000	100,000	
14. Flower of Califlower, <i>Brassica botrytis</i> ...	88.600	3.514	33.50	6.702	58.60	0.854	7.60	100,000	100,000	
Leaves of ditto ...	89.01	3.61	32.43	6.53	59.67	0.85	7.46	100,000	100,000	
15. Cabbage, <i>Brassica oleracea</i> ...	86.28	4.75	34.68	7.10	51.68	1.87	13.64	100,000	100,000	
16. Mangold Leaves ...	91.960	1.764	22.019	4.984	61.912	1.292	16.069	100,000	100,000	
17. Tops of Swedish Turnips ...	88.367	2.087	17.944	7.250	62.320	2.296	19.736	100,000	100,000	
18. Turnip Tops, Norfolk Bell ...	91.284	2.456	28.175	4.740	54.386	1.520	17.439	100,000	100,000	

The other paper is from a series of experiments made in the years 1851 and 1852, for the purpose of obtaining evidence, positive or negative, on anbury, a disease which has given rise to a vast amount of discussion. Experiments, when properly conducted, are always valuable.

The third is on the "Rights of the Landlord and Incoming Tenant," a subject now engrossing the attention of the Legislature, and must continue to do so until a thorough reformation of our territorial laws is made. The paper is partly practical and partly theoretical and suggestive. Examples are quoted, proving our present entail laws unfit for the object for which they were framed, and showing that when borrowed capital is invested in improvements, such as draining, returning redeeming interest, it is not a burden but the reverse. Drains, buildings, &c., are subject to tear and wear, hence it is proposed that the lender of the last capital invested in such shall have the precedence of all others, because his investment is the most valuable. Other expedients are suggested to encourage and facilitate the investment of capital in agriculture, one of the most important of Mr. Caird's propositions as Commissioner for the Times, such as a modification of the Hypothec Law of the sister country, limiting its operation to the annual produce of the farm, thus affording tenants also an opportunity of raising capital more readily by means of cash accounts with their bankers. A maximum theory of rent is also suggested, *i. e.*, that landlords, instead of letting their farms under value, in the hope of tenants increasing them, increase their value themselves, and let them accordingly. Practically, it is proposed to take the statistics of the away-going crop by actual weight and measurement, and to regulate the rent accordingly, the out-going tenant being entitled to remuneration for increase, if any, but damages for decrease. Were such the law, in the absence of stipulation, it would certainly oblige landlords either to execute the permanent improvements, or else bind the tenant by strict covenant to do so, a course which would be beset with many difficulties, for the latter would always find it his interest to offer the former redeeming interest, such as would enable him to borrow the capital more profitably, should he not have it himself, hence the practice which would follow. The communistic theory involved in the Irish measures now before Parliament, of giving the tenant a right, in common with the landlord, to execute the permanent improvements, is thus avoided.

The actual measurement of the away-going crop, or the periodical crops of yearly tenants, so as to settle rent, involves a very important statistical doctrine, for were such generally reduced to practice, it would afford practical data for determining the intervening periods or crops also.

The fourth paper shows the fiars [average] prices in Scotland for 1852; and the fifth, tables of home and foreign markets, &c. Figures are always an interesting study.

The Transactions open with the usual preliminary notice to Vol. VI., showing the state of the Society, which is highly satisfactory, with one solitary exception—the resignation of the editor.

The second is a valuable paper, giving a description and tabular view of a series of experiments with special manures, for which a premium of 20*l.* has been awarded to Mr. Main, Whitehall, Mid-Lothian. There are six tables—the first containing 12; the second, 9; the third, 4; the fourth, 9; the fifth, 13; and the sixth, 7 experiments—showing an amount of detail which would not have been easily otherwise comprehended. To enter upon the merits of the several experiments therefore is out of the question in our present narrow limits; the award of the Society is a sufficient guarantee in this respect. Artificial manures are daily becoming of more importance, and the object of the experimenter may briefly be stated in his own words thus:—"I was anxious, in a simple and practical way, to gain some knowledge of mineral and ammoniacal manures, as they affect our staple crops. The results are so far satisfac-

tory, and have been found useful in guiding my subsequent practice. I can only hope they will be accepted in the spirit in which I conducted them, and that they will prove useful to others."

The third is also a prize essay (prize of the value of 20*l.*), but on "Farm Steadings," by Mr. James Cowie, Kincardineshire. The object in view is thus stated:—

"Economy of erection with sufficient accommodation and systematic compact arrangement to ensure comfort to the stock, to economise labour in attending upon them, and to save waste in provender." Two plans with specifications for mason, carpenter, and slater work are given; both have been reduced to practice and found successful. They comprise boxes, stalls, and covered yards for stock, open yards being excluded. There is a manure tank for 4000 gallons, the liquid from which is mentioned as having been wholly absorbed by the manure in the sheds last winter, thus proving that the stock might have been in feeding boxes under cover (not hammels with open yards in front), thereby saving the expense of tank and pumping, and also a large escape of effluvia we presume. The steadings erected, however, have this to recommend them beyond their present merits, that the whole interior for cattle can be converted into feeding boxes at pleasure.

A third prize essay of 10*l.* "On Drain-tile and Pipe Machines" follows. The paper gives an account of the different machines which have been laid before the public. It is not concluded and therefore we shall resume our observations on it. The fifth and sixth papers exhibit tabular lists of ploughing matches and seed competitions, and the last "Proceedings in the Laboratory," by Dr. Anderson. The number (41st) is thus a valuable one in both departments.

The second volume of Black's new edition of the *Encyclopædia Britannica* is rich in valuable articles of rural as well as general interest. "Agriculture" by Mr. John Wilson, and "Agricultural Chemistry" by Prof. Anderson, are two essays of standard merit. The opinions of the former as regards education, coming as they do from a most intelligent practical farmer, are too important not to be quoted at length.

"But the mere possession of capital does not qualify a man for being a farmer, nor is there any virtue inherent in a lease to insure his success. To these must be added probity, knowledge of his business, and diligence in prosecuting it. These qualifications are the fruits of good education (in the fullest sense of that term), and are no more to be looked for without it than good crops without good husbandry. Common school instruction will, of course, form the groundwork of a farmer's education; but to this should be added, if possible, a classical curriculum. It has been the fashion to ask, 'Of what use are Greek and Latin to a farmer?' Now, apart from the benefit which it is to him, in common with other men, to know the structure of language, and to read with intelligence the literature of his profession, which more and more abounds in scientific technicalities, we believe that no better discipline for the youthful mind has yet been devised than the classical course which is in use in our best public schools. Of this discipline we desire that every future farmer should have the advantage. But the great difficulty at present lies in finding appropriate occupation for such youths betwixt their fifteenth and twentieth years. In many cases the sons of farmers are during that period put to farm labour. If they are kept steadily at it, and are made proficient in every kind of work performed on a farm, it is a good professional training as far as it goes. The more common one—at least as regards the sons of the larger class of farmers—which consists of loitering about without any stated occupation, attending fairs and markets, and probably the race-course and hunting-field, is about the most absurd and pernicious that can well be imagined. Such youths are truly to be pitied; for they are neither inured to bodily labour nor afforded the benefits of a liberal education. It need not surprise any one that such hapless lads often prove incompetent for the struggles of life, and have to yield their places to more vigorous men who have enjoyed the benefit of 'bearing the yoke in their youth.' Unless young men are kept at labour, either of mind or of body, until continuous exertion during stated hours, confinement to one place, and prompt obedience to their superiors have ceased to be irksome, there is little hope of



their either prospering in business or distinguishing themselves in their profession. Owing to the altered habits of society, there is now less likelihood than heretofore of such young persons as we are referring to being subjected to that arduous training to bodily labour which was once the universal practice; and hence the necessity for an appropriate course of study to take its place. Many Scottish farmers endeavour to supply this want by placing their sons for several years in the chambers of an attorney, estate agent, or land-surveyor; partly in order that they may acquire a knowledge of accounts, but especially for the sake of the wholesome discipline which is implied in continuous application and subjection to superiors. It is also common for such youths to be sent to Edinburgh for a winter or two, to attend the class of our accomplished Professor of Agriculture, and perhaps also that of Chemistry and the Veterinary College. This is well enough in its way; but yet there is wanting in it an adequate guarantee that there is real study—the actual performance of daily mental work. The Agricultural College at Cirencester appears to come more fully up to our notion of what is needed for the professional training of farmers than any other institution which we yet possess. We shall rejoice to see such opportunities of instruction as it affords multiplied in Great Britain. After enjoying the benefits of such a course of training as we have now indicated, young men would be in circumstances to derive real advantage from a residence with some experienced practical farmer, or from a tour through the best cultivated districts of the country. We are well aware that what we have now recommended will appear sufficiently absurd to the still numerous class of persons who believe that any one has wit enough to be a farmer. But those who are competent to judge in the case can well afford to smile at such ignorance. They know that agriculture is at once an art, a science, and a business; that the researches of naturalists, chemists, geologists, and mechanicians are daily contributing to the elucidation of its principles and the guidance of its practice; and that while its pursuits afford scope for the acutest minds, they are relished by the most cultivated ones. As a business it shares to the full in the effects of that vehement competition which is experienced in every other branch of industry, and has besides many risks peculiar to itself. The easy routine farming of the olden time is gone for ever; and without a good measure of tact, energy, and industry no man can now obtain a livelihood by it. It were well that all this were better known; for nothing has been more common than for parents who have sons that are too dull for scholars, or too indolent for trade, to put them to farming; or than for persons who have earned a competency in some other calling to covet the (supposed) easy life of a farmer, and to find to their sorrow a harassing and ill-requited one.

The alphabetical arrangement in the present volume reaches as far as Anatomy; of the admirable plates, a dozen are devoted to agriculture alone.

### Calendar of Operations.

#### AUGUST.

ABERDEENSHIRE, Aug. 18.—The year 1853 is likely to be long remembered by the Aberdeenshire farmer, and is already associated in the minds of men with 1800 and 1826, two seasons of severe pressure, which brought down the prices of stock to a very low figure. All our grain crops are light and defective, some tolerable patches of Wheat and Barley (or rather Bear, or Bigg), are to be seen, but these taken together do not form much above one-tenth of the staple grain produce of the county, which is Oats. As to this crop, after less, though thin and scanty, may prove not above 25 per cent. under an average; but, after Turnips, the fodder in many fields resembles hair rather than straw, and the grain will be a half short of a fair yield, so that if we have three-fifths, or 60 per cent. of an average grain crop, it is all that present appearances will justify us in expecting. The dry sunny weather which we have recently had is bringing harvest near; in the earlier parts of the county it will be general a fortnight hence, and there are few who will not commence by the second week of September. Our sowing and pinching point, however, is the state of the Turnips. In many fields, notwithstanding repeated sowings, hardly a plant is to be seen; many other fields are half planted, and a considerable proportion of the plants which there are is cankered and sickly. Even with a favourable autumn, we cannot look for this invaluable esculent, the stay of our farmers' prosperity, being above half a crop. For the last two months we have had much fine genial weather, but previously, dry scorching easterly winds prevailed so long that the soil was drained of its usual moisture, and had come to resemble a sieve, so that the showers which we have since had have never stuck. Indeed, the first hearty rain which fell in Aberdeenshire, after three months of parching drought, was on June 24. Potatoes are generally flourishing; in many cases alarmingly so, carrying back the thoughts to 1846. Early and Regents are already in general use, are rich, and of good quality. No well authenticated case of disease has yet come to our knowledge, and if our mysterious visitant keep at a distance we shall have enough and to spare.

BORDER OF THE FENS, Aug. 20.—The Wheat crop this year has been a long time ripening where the plant is healthy; it has also ripened irregularly, so that in many fields you see large patches left standing several days after the bulk is cut, and in the best fields other patches come to a premature maturity, the consequence of partial blight, showing our complete dependence upon the weather at the very critical time of two or three weeks preceding the harvest. Fenny districts and loamy soils are highly favoured this year, for only a few miles west in Huntingdonshire the Wheat crop is a failure, so that if you ask a farmer of heavy land how fast he progresses in cutting corn, he replies "I have none to cut;" even some weeks since, when apprehensions were expressed of a scarcity of labour, a person said "You may soon have all our men, for we shall have nothing to do; a week will clear our harvest." And so it has turned out, for instead of corn spilling as it did last year for want of hands to cut it, this year the men are thankful to obtain employment. Nevertheless, good prices are given for reapiers, from 9s. to 16s. per acre; for mowing Wheat 8s. is the common rate, and mowing seems to grow in favour. You by that means clear your land at once, and it is ready for sowing immediately, so that surface weeds and germinate before the first ploughing is done. The objections to mowing are that the sample is not so clean, it is not so readily threshed, and it takes up more room in the barn or stack. We have hardly got over our Turnips a second time to clear away the weeds which will continue growing. Potatoes also require

weeding again; for all green crops, and for eddishes, the weather has been particularly suitable. Complaints are made of intervals of failure, in both Turnips and Coleseed, one from fingers and toes, the other from fly. Store beasts seem to be still in great demand, although the trade has been quieter for the last week or two. At a recent bullock fair held at Wisbech, it was reported that stock met a readier sale, and at higher prices than have been witnessed for 30 years. Whatever data this opinion may be based upon, it at all events shows that this is a season of great activity, and no doubt a considerable stimulus will be given to the production of stock. Wherever circumstances are favourable to the management of a breeding herd or flock, more calves are being raised, more heifers will be reserved, and we notice that ewes command a very high figure; pigs also repay the breeder well, when those of four or five months old realise above a sovereign each, which they will do now on any market day. The hay harvest is only just completed, and although the crops on meadows and washes may be considered totally lost this year, and though much of the Clover and highland hay has been spoiled, yet the produce has been great; and in this neighbourhood, if the condition of the stacks be not first rate, yet the quantity saved will, we think, be nearly equal to an average. Good hay fetches rather a high price, and oil-cake is on the advance. On the other hand, Beans and Barley seem likely to yield well, and with a good crop of Oats, and supposing the straw to be secured in sound condition, we hope to have plenty of food for stock for the ensuing winter. J. W., Peterborough.

### Notices to Correspondents.

BOOKS: A Young Farmer. Professor Low's "Elements of Practical Agriculture," Stephen's "Book of the Farm," Blackie's "Cyclopedia of Agriculture."

EARLY SOWING, EBBW: Leicester. It was published in an early volume of the English Agricultural Journal. We are not aware if it has received separate publication. Mr. Milburn's address is, Thirsk, Yorkshire.

LIQUID MANURE CARTS: K W asks our correspondent "C," who, under the head of "Italian Rye Grass," p. 523, mentions a plan for carrying out liquid manure, and having a light cart above the tub for loading back with the Grass, if he would kindly explain the plan a little more fully, so that a country workman could make a similar cart; as he finds practically, though the Grass must be brought home, there is a constant excuse for not taking out the liquid manure, which his plan, besides the saving of labour, would obviate.

MANGOLD WURZEL: Constant Reader. We believe that such experiments as have yet been made, indicate the unexpected conclusion that you may remove some of the under leaves without injuring the growth of the bulb. It should be done cautiously in September and October.

NEW-FOUND GUANO: Subscriber, and I. You will find references made to it at pages 490 and 537.

### Markets.

#### COVENT GARDEN, AUG. 27.

The market continues to be well supplied with both Vegetables and Fruit, and trade is tolerably brisk. Peaches and Nectarines are plentiful. English Grapes are abundant. Imports from the Continent of Potatoes, Carrots, and Artichokes are still kept up, and there are French Cherries and Apricots in the market; the latter from 1s. 6d. to 3s. 6d. per dozen. English Cherries are nearly over. Greengages and Orleans Plums from the South of France fetch 4s. per basket. There is also a large quantity of foreign Pines in the market. Carrots and Turnips fetch from 4d. to 6d. per bunch. Peas are still very good. Potatoes are better in quality, but the demand for them is not quite so good. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonette, Pinks, and Carnations.

#### FRUIT.

Fine-apples, per lb., 3s to 6s  
Grapes, hothouse, p. lb., 1s to 3s 6d  
Peaches, per doz., 12s to 18s  
Nectarines, per doz., 12s to 18s  
Apricots, per doz., 2s to 5s  
Plums, Orleans, p. pun., 1s to 2s  
Greengages, per pun., 1s to 2s

Melons, each, 2s to 4s  
Apples, per bush, 3s to 5s  
Dessert, per doz., 1s to 2s

#### VEGETABLES.

Cabbages, per doz., 6d to 9d  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 3s 6d to 4s  
French Beans, p. h. f. sieve, 1s 6d to 2s 6d  
Rhubarb, p. bundle, 3d to 6d  
Potatoes, per ton, 40s to 100s  
per cwt., 3s to 5s  
per bush, 2s 6d to 5s  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 2d to 8d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 6s to 8s  
Spinach, per sieve, 1s to 2s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

#### HOPS.—BOROUGH MARKET, AUG. 26.

Messrs. Pattenden and Smith report that Hops are progressing on the whole, rather more favourably; still they are in a backward state, consequently the duty remains at about 155,000l., and the market in the same healthy state as for some time past.

#### HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 25.  
Prime Meadow Hay 90s to 100s  
Inferior do. ... 80 85  
Rowen ... 50 60  
New Hay ... 50 60  
CUMBERLAND MARKET, Aug. 25.  
Prime Meadow Hay 108s to 115s  
Inferior do. ... 75 100  
New Hay ... 50 80  
Old Clover ... 120 130  
WHITECHAPEL, Aug. 25.  
Fine old Hay ... 100s to 105s  
Inferior do. ... 90 95  
New Hay ... 75 80  
Inferior do. ... 35 60

#### WOOL.—BRADFORD, THURSDAY, AUG. 25.

YARNS.—There is a fair demand for yarns, but the prices are too low to meet the price now demanded for wool; and if the raw material cannot be had on better terms, either yarns must rise or the production be lessened.

PIECES.—There is a tolerably active demand, and in the warehouses, for finished goods, an average business doing. The accounts from America are represented as favourable, so it is not improbable that, ere long, we may again be busy for that market.

WOOLS.—There is no increased disposition to buy English wool, and from the high prices sought by the country dealers and growers it would appear that they are unwilling to accept prices at which sales might be made. For Botany combing there has been more doing, and the market pretty well cleared. Nails and brokes are without any change.

#### SMITHFIELD.—MONDAY, AUG. 22.

The number of Beasts is very large, and consequently there is a depression in the trade, notwithstanding choicest descriptions are not much lower; several inferior kinds remain unsold. Sheep and Lambs are more plentiful, and the demand is smaller. Prices for the former are about the same as of late, but Lambs are lower. Trade is rather worse for Calves. From Germany and Holland there are 2253 Beasts, 7450 Sheep, 252 Calves, and 60 Pigs; from Scotland, 300 Beasts, and 1700 from the northern and midland counties.

Per st. of 8 lbs.—s d s d Per st. of 8 lbs.—s d s d  
Best Scots, Here- Best Long-wools... 4 4 to 4 8  
fords, &c. ... 4 4 to 4 6 Do. Shorn ... 0 0 0 0  
Best Short-horns 4 0 4 4 Ewes & 2d quality 3 8 4 0  
2d quality Beasts 2 6 3 6 Do. Shorn ... 0 0 0 0  
Best Downs ... 4 4 4 5  
Half-breds ... 4 10 5 0 Calves ... 3 8 4 8  
Do. Shorn ... 0 0 0 0 Pigs ... 3 0 4 4  
Beasts, 5299; Sheep and Lambs, 30,910; Calves, 347; Pigs, 350.

#### FRIDAY, AUG. 26.

The supply of Beasts is larger than on this day week; the demand has also increased, consequently trade is rather better. The best qualities are readily disposed of at an advance of 2d. per 8 lbs., and other kinds met with a fair sale. The number of Sheep is smaller, and prices, on the average, have improved. Lambs are also rather more in request, but the season for them is nearly over. Calves are not selling quite so well as of late. From Germany and Holland there are 284 Beasts, 1850 Sheep, and 499 Calves; and from Spain, 52 Beasts and 630 Sheep; the number of Milch Cows is 85.

Per st. of 8 lbs.—s d s d Per st. of 8 lbs.—s d s d  
Best Scots, Here- Best Long-wools... 4 4 to 4 10  
fords, &c. ... 4 4 to 4 8 Do. Shorn ... 0 0 0 0  
Best Short-horns 4 2 4 4 Ewes & 2d quality 3 8 4 2  
2d quality Beasts 2 6 3 6 Do. Shorn ... 0 0 0 0  
Best Downs ... 4 4 4 5  
Half-breds ... 5 0 5 2 Calves ... 3 6 4 5  
Do. Shorn ... 0 0 0 0 Pigs ... 3 0 4 4

#### MARK LANE.

MONDAY, AUG. 22.—The supply of Wheat from Essex and Kent to this morning's market was moderate, including about 500 qrs. of new, the condition of which was fair, quality variable, weighing from 60 to 63 lbs. per bushel. The whole was disposed of at an advance of 4s. per qr. upon the prices of this day se'night. Foreign must also be noted 3s. to 4s. per qr. dearer, but this improvement was reluctantly paid, and the chief business done at it was in low qualities. Barley brings fully last week's prices. Beans and Peas are unsold in value. Oats meet a good inquiry, at an advance of 6d. to 1s. per qr. The top price of Flour is raised 4s. per sack; barrels are in good demand, and 1s. to 2s. dearer.

PER IMPERIAL QUARTER. s. s. s. s.  
Wheat, Essex, Kent, & Suffolk... White 52-60 Red 52-58  
— fine selected runs... ditto 55-63 Red 54-60  
— Talavera ... Red ...  
— Norfolk ... Red ...  
— Foreign ... 41-61  
Barley, grind. & distil., 23s to 26s... Chev. 24-30 Malting 25-29  
— Foreign... grinding and distilling 25-31 Malting 29-33  
Oats, Essex and Suffolk ... 16-21  
— Scotch and Lincolnshire... Potato 21-24 Feed 16-21  
— Irish ... Potato 20-23 Feed 18-20  
— Foreign ... Poland and Brew 17-23 Feed 16-21  
Rye ... 29-32 Foreign ...

Rye-meal, foreign ... 33-38  
Beans, Mazagan... 31s to 35s... Tick 33-38 Harrow ... 33-38  
— Pigeon... 34s to 40s... Wind 32-40 Egyptian 30-32  
— Foreign ... Small 32-40 Egyptian 30-32  
Peas, white, Essex and Kent... Boilers 40-44 Suffolk 40-45  
— Maple ... 35s to 38s... Grey 32-36 Foreign 32-45  
Maize ... White ... Yellow ...  
Flour, best marks delivered... per sack 43-50  
— 2d ditto ... ditto 35-43 Country 35-43  
— Foreign ... per barrel 27-30 Per sack 40-44

FRIDAY, AUG. 26.—The arrivals of Foreign Wheat this week have been good; we have also received 7290 barrels and 300 sacks of Flour. The morning being wet, factors commenced by asking a considerable advance upon the prices of Monday, which buyers were unwilling to comply with, and only a limited business resulted at an improvement of 2s. per qr. upon our quotations of that day. In floating cargoes of Wheat from the Mediterranean, being generally held above the views of purchasers, there is but little doing. There is no alteration in the value of Barley, Beans, and Peas. Oats, with the exception of Russian qualities, bring a slight advance. Barrel Flour sells at an improvement of 1s.

#### ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	1620	—	140	1440 sacks
Irish ...	—	—	2520	—
Foreign ...	17620	420	12310	7290 brls

#### IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
July 16	49 8	28 11	20 11	34 10	4 5	36 8
— 23	51 10	29 4	21 6	35 3	4 0	37 10
— 30	52 7	29 7	22 2	36 3	4 0	36 3
Aug. 6	53 9	29 9	22 6	37 3	4 0	36 10
— 13	53 3	29 10	22 3	34 9	4 1	36 9
— 20	51 1	29 7	22 0	34 10	4 11	34 9
Aggr. Aver.	52 0	29 6	21 11	35 6	4 0	36 6

#### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	July 16.	July 23.	July 30.	Aug. 6.	Aug. 13.	Aug. 20.
53s 9d	...	...	...	...	...	...
53 3	...	...	...	...	...	...
52 7	...	...	...	...	...	...
51 1	...	...	...	...	...	...
51 10	...	...	...	...	...	...
49 8	...	...	...	...	...	...

#### LIVERPOOL, TUESDAY, AUG. 23.—At this morning's market

there was a good attendance of the town and country trade, but few buyers from a distance. A large business, chiefly speculative, was done in American Wheat and Flour, at an advance of 6d. per 70 lbs. on the former, and 1s. 6d. to 2s. per barrel on the latter article. Sack Flour was comparatively neglected, but may be quoted 1s. per sack dearer. Old mealings Oats were steady in value, but new were 1d. to 2d. per 45 lbs. lower. Old Oatmeal was rather more saleable, and 3d. per load dearer, whilst new being more plentiful declined 1s. per load. Barley, Beans, and Peas were without change in value or demand. Indian Corn on the spot met with a retail demand, at late rates. Floating cargoes, however, were more inquired for, and slightly dearer. FRIDAY, AUG. 19.—This morning the trade does not continue so active, still we have a good consumptive demand for Wheat generally, at the extreme rates of our last market day, which in some instances were slightly exceeded; holders were very firm, or more business might have been done. Flour in fair demand, an advance of 6d. per barrel being maintained. Barley very scarce; only low qualities offering. Mad and Beans unaltered in value or demand. Oats are dull, and the few parcels at hand of new Irish are 1d. per bushel cheaper. Oatmeal almost without inquiry to-day. Indian Corn on the spot neglected, but several further transactions in cargoes reported.



## PERMANENT EDGINGS FOR GARDEN WALKS.

**HOGG'S EDGING TILES** are now ready for delivery, and as all orders will be executed during the autumn and winter in the same rotation as received, they should be forwarded without delay.

These Tiles are more ornamental, more durable, and considerably cheaper than Box or any other edging. They resist the action of the atmosphere, are impervious to frost, do not harbour slugs, and most effectually relieve the walks of water. They are easily laid down, and are so peculiarly fixed that the borders may be cultivated without disturbing them. Each Tile is 1 foot long, and the price is 13s. per 100.

A prospectus may be had by enclosing a postage stamp to Mr. ROBERT HOGG, 13, Giltspur Street, London, to whom all orders are to be addressed.

A remittance will be required from unknown correspondents before orders are executed.

## MAW'S ENCAUSTIC TILE PAVEMENTS.

The time-tried durability of this admirable production of Medieval Art, being altogether independent of the extremes of damp or dryness, renders them as desirable for Private as for Public Buildings. They are especially appropriate for Entrances, Halls, Passages, Verandahs, Baths, Conservatories, Fire-places, &c. for various purposes, and in addition to their choice collection of Medieval Patterns, M. & Co. are executing an admirable series of original designs in the Italian, Greek, Saracenic, Domestic Tudor, and Elizabethan styles. Their new Book of Patterns and Arrangements, with Prices, &c., will be forwarded post free on application to Maw & Co., Encaustic Tile Works, near Broseley, Shropshire.

## PRIZE CHURN. (Butter made in 10 minutes).—The

Prize of 3*l.*, offered by the Royal Agricultural Society for the best Churn, was awarded, at the last Gloucester Show, to ANTHONY'S PATENT AMERICAN CHURN. It made in 10 minutes, from the same quantity and quality of cream, 4 lbs. 6 oz. of butter from 4 quarts of cream; while the others tried in competition with it made only 3 to 4 lbs. This Churn has taken the Prize at all the Meetings where it has been exhibited, and is considered the best Churn now in use.—Apply to BURGESS & KEY, Implement Dealers, 103, Newgate Street, and 52, Little Britain, where a numerous assortment of Chaff-Cutters, Oat-Brainers, and other implements, may be seen.

## SIR WILLIAM BURNETT'S DISINFECTING

FLUID.—GREAT REDUCTION OF PRICE.—The merits of this Fluid, invented by Sir W. BURNETT, M.D., F.R.S., &c. &c., for the Disinfection of Sick Rooms, Clothing, Linen, &c.; the Prevention of Contagion, the Preservation of Animal Matter from Putrescence, the Purification of Bilge-water, Cesspools, Drains, Water-closets, &c., are now so well known to the public as to render comment unnecessary.

Sold at the Office, 18, Cannon Street, City, London; and by Chemists, Shipping Agents, and others throughout the United Kingdom, in imperial quart bottles at 2s. 6d.; in pints at 1s. 3d.; and in bulk at 6s. per gallon.

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tinues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out at their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, enclosing 13 new postage stamps, to Dr. BLENKINOP, 11, Exeter Change, Strand, London.

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ALLIABLE REMEDIES FOR THE CURE OF WOUNDS AND SORES, &c. Mr. JOHN WOOD, of Dighton, Taverham, had grazed his skin with an iron hoe some months ago, the place ultimately turned itself into an angry wound, which instead of healing, in proportion to his becoming alarmingly worse; and although he used every available remedy, it was feared by himself and friends that amputation of the limb would be the only means of saving his life; however, he commenced using Holloway's Ointment and Pills, which had a marvellous effect, and in the course of a month completely healed the wound and restored him to health.—Sold by all Druggists, and at Professor Holloway's Dispensary, 241, Strand, London.



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MESSRS PROTHEROE & MORRIS are instructed by E. LAWRENCE, Esq., (who is removing to London), to submit to an unreserved Sale by Auction, on the premises, No. 14, Grove Terrace, Kentish Town, on FRIDAY, September 16th, 1853, at Twelve o'clock, the whole of the STOVE and GREENHOUSE PLANTS, consisting of fine Orchids, Gesneras, Gloxinias, Hoyas, and choice Showy Pelargoniums, fine specimen Indian Azaleas, Double Camellias, Achimenes, Epacris, Roses in Pots, Oleanders, Geraniums, Correas, Kennedyas, Lilium lancifolium, Hyb. Rhododendrons, Kalmas, Andromeda floribunda; 800 yards of Box Edging; choice Standard Roses; Privet Hedges; and three newly erected Greenhouses, a capital Span-roof Pit; Hand Lights; Boxes; the erection of four Sheds; Summer House; a quantity of Bricks; an excellent Saddle Boiler; about 400 feet Hot-water Pipe; Iron Roller; Tanks; Fencing; Syringe; Barrows; Thermometers; Garden Tools; Pots; and other effects. May be viewed three days prior to the Sale. Catalogues may be obtained (6d. each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

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This Mr. Austen was a very useful man in his generation, and spent all his time in Oxon. to his death, A.D. 1676, in planting Gardens there and near it, in grafting and raising Fruit trees, &c. He was a Staffordshire man born; but died in his house in the Parish of St. Peter in the Baylie, in Oxon., and lies buried in the Church there. He had been a practiser in Gardening and planting of Fruit trees 50 years.

ANT. WOOD, *Athenæ Oxon.* vol. ii. f. p. 101.

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Office, 16, Wellington Street North.

## ILLUSTRATED SPORTING PAPER.

**THE FIELD,** of Saturday, Aug. 27, 1853, Published in time for the Early Morning Trains, contains:—Coxes Regatta, drawn by Dutton; King's Lynn Roads Regatta; Talkin Tarn Regatta; Rowing; Rowing and Cricketing in Ireland; the Turf; by the Flying Dutchman; Full Report of Egham, Derby, Guildford, and Boulogne-sur-Mer Races; Ruby's Report of West Australian, Sittingbourne, and Rataplan; Life of a Race Horse, Chapter X.; Robbery at Lord Denman's; Case of Mr. Wilkinson; Cab Cases; Surrey Zoological Poultry Show, drawn by Harrison Weir; Law and Police; Assize Intelligence; Amusements; Great Yarmouth Poultry Show, drawn by Winter; Markets; Correspondence; all the News of the Week.—Price 6d.—Office, 4, Brydges Street, Covent Garden.

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**EVERY MAN HIS OWN BREWER.**—Practical Instructions by which any Man can brew his own Beer, of a strength and flavour equal to the best London Porter, at an expense of 4d. per gallon, and Stout at 5d. per gallon. No skill or brewing utensils required. Sent free on receipt of 24 postage stamps, by MR. C. CLARKSON, many years practical private brewer, 9, Avery Row, New Bond Street, London.

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A. HINTON, Proprietor.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitechapel, in the City of London; and published by them at the Office, No. 3, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to THE EDITOR.—SATURDAY, AUGUST 27, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 36.—1853.]

SATURDAY, SEPTEMBER 3.

[PRICE 6d.

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**TEDDINGTON ROYAL HORTICULTURAL SOCIETY.**—The 17th Annual Exhibition of the above Society will take place in the Gardens of the Clarence Inn on **THURSDAY, 15th September.** Admittance, 1s. Children, half-price. Gardens open at 1 o'clock.

## TO DAHLIA GROWERS.

**NORFOLK AND NORWICH HORTICULTURAL SOCIETY.**—The DAHLIA SHOW will be held at ST. ANDREW'S HALL, NORWICH, on **WEDNESDAY** next. Amongst others, Prizes of 5l., 3l., and 2l. will be offered for 24 dissimilar Dahlia Blooms (Fancies excluded), open to Amateurs, being Subscribers, and Nurserymen in the United Kingdom. No entrance fee. **ARTHUR PRESTON, Hon. Sec.** Norwich, September 3.

**VALE OF TAUNTON DEANE HORTICULTURAL AND FLORICULTURAL SOCIETY.** President, W. H. P. G. LANGTON, Esq., M.P.—The next SHOW will be held in the Vivary Park, Taunton, under the spacious marquee on **WEDNESDAY, the 7th of September, 1853.** Prize List for Nurserymen open to all England.

## PLANTS IN POTS.

	1st Prize.	2d Prize.	3d Prize.
For the best collection of Miscel- laneous Plants.....	£ s. d. 1 10 0	£ s. d. 1 0 0	£ s. d. 0 10 0
<b>CUT FLOWERS.</b>			
German Asters, 24 distinct vars., two of a sort	1 0	0 10	
Verbenas, 24 ditto.....	1 0	0 10	
Hollyhocks, 18 ditto.....	1 0	0 10	
Dahlias, for the best collection, number unlimited, but not less than 36 vars., dissimilar blooms —fancies excluded.....	A Handsome Silver Cup.		
Dahlias, 24 vars., dissimilar blooms—fancies excluded.....	£1 10	£0 15	
Ditto 18 vars.—fancies.....	1 0	0 10	

**JOHN KINGSBURY, Hon. Sec.**  
10, Hammet Street, Taunton.  
Sept. 3, 1853.

**ROYAL PAVILION BRIGHTON.**—Grand Flori-  
cultural and Horticultural Exhibition. The Second Grand  
Exhibition, under the same distinguished patronage as the July  
show, will take place on **WEDNESDAY and THURSDAY,**  
September 14th and 15th next, when a magnificent display of  
Dahlias, Hollyhocks, Fruits, Plants, &c., is anticipated.  
200l. to 300l. will be offered in Prizes for Stove and Greenhouse  
Plants, Fuchsias, Ferns, Ericas, Achimenes, Balsams, Cocks-  
combs, Scarlet Geraniums, collections of Cut Dahlias, Hollyhocks,  
Roses, Pansies, Verbenas, devices of flowers, &c., &c.; also, for  
Pines, Grapes, Melons, Peaches, Nectarines, &c., &c. Schedules  
of which may be had on application to the Committee, the  
General Superintendent, or the Secretary.

By the kind permission of Colonel Hall, the celebrated Band of  
the 1st Life Guards will be in attendance; also the celebrated  
German band.

**THOS. ARTER, Esq.,**  
Chairman of the Committee of Management.

**E. SPARY, Superintendent.**

**EDWARD CARPENTER, Secretary.**

Committee Rooms, Town Hall, Brighton.—Aug. 27.  
N.B. The first prize, a Silver Cup the value of 10l., presented  
by the Brighton and South Coast Railway Company, will be  
given to Amateurs and Gentlemen's gardeners only, for the best  
24 dissimilar Dahlia blooms (Fancies excepted in this class);  
also the Brighton Subscription Cup, the value of 10l., being the  
first prize, will be given for the best collection of 8 dishes of  
Fruits. Particulars of the above may be seen by reference to  
schedules.—All communications to be made to the Secretary,  
address, 45, Lavender Street, Brighton.

## SEEDS FOR PRESENT SOWING.

**JOHN CATTELL** begs to say he is now prepared to  
send out the following, post free, at the prices annexed per  
packet.—Calceolaria, from finest varieties, carefully fertilised,  
2s. 6d. The produce from the Calceolaria Seed, sent out by J. C.  
in former years, having given such general satisfaction, induces  
him to recommend this season's sowing with the greatest confi-  
dence.—Cineraria, from finest varieties, 2s. 6d.—Geranium, from  
finest Florist varieties, 2s. 6d. Ditto, from fine old Florist  
varieties, 1s. Ditto, from fine Fancy varieties, 1s. 6d.—Mimulus,  
fine mixed, 6d.—New large flowering Mignonette, 6d. This is  
more robust, and has a stronger scent, than the old Mignonette.  
Schizanthus retusus, and Retusus albus, 6d. each. 24 fine varieties  
of half-hardy Annuals, for early spring flowering, 5s.; 12 ditto, 3s.  
24 fine varieties of hardy Annuals, for early spring flowering, 4s.  
12 ditto ditto, 2s.—A remittance, or reference, from unknown  
correspondents is expected.

J. C. has a large stock of Bulbs of the under-named to offer to  
the Trade; prices may be had on application.—Tropaeolum trico-  
lorum grandiflorum, Gladiolus Brechehyensis; and the following  
Japan Lilies: speciosum or rubrum, punctatum, and album.  
Westerham, Kent.

**FOR SALE,** Two Hundred clean and healthy  
PINE PLANTS of the leading sort, half of them Fruiting,  
and the remainder in succession.—For further particulars enquire  
of **MR. LAING, Nurseryman, Beverley.**

## TO ADVERTISERS.

### THE ADVERTISEMENT DUTY being now REPEALED, the PROPRIETORS of the GARDENERS' CHRONICLE

beg to announce that there will henceforward be a reduction of  
1s. 6d., the full amount of duty, from the customary charge for  
each Advertisement.

Advertisements of Gardeners out of Place, of not more than  
four lines in length, 1s. 6d. each.

## LOBELIA ST. CLARE.

**JAMES LAKE, NURSERYMAN, &c., Bridgewater,** begs  
to inform the Public that his Stock (about 700) of the above  
beautiful plant is now in bloom, a spike of which will be sent to  
any one on application. Strong old plants, 3s. 6d. each; smaller  
plants, 18s. per dozen. Orders taken for next spring at 12s. per  
dozen. The usual allowance to the Trade.—Sept. 3.

## STRONG VINES IN POTS.

**EAGLE and HENDERSON,** by appointment  
NURSERYMEN, SEEDSMEN, and FLORISTS to the Queen, beg  
to intimate to their friends and the trade that their stock of  
young Vines are very superior this season. Plants from Eyes,  
2 and 3 years, 6 to 9 feet, 3s. 6d. each; Ditto, 1 year, 2 feet, 2s.  
each. Usual discount to the trade.  
Shrub Bank Nurseries, Leith Walk, Edinburgh.

**EDWARD GEORGE HENDERSON and SON,**  
Wellington Road, St. John's Wood, London, are now pre-  
pared to send out by post their newly-saved seed of CALCEO-  
LARIAS and CINERARIAS. Great care has been taken in  
selecting the Seed, and Messrs. E. G. H. & Son can, with confi-  
dence, recommend it to produce first-class flowers equal with any  
named varieties.  
Directions for sowing, &c., will be forwarded. Calceolaria,  
1st quality, 5s.; 2d ditto, 2s. 6d. Cineraria, 2s. 6d. and 5s. packets.

**MESSRS. J. AND H. BROWN, Albion Nursery,**  
Stoke Newington, London, will forward to any part  
12 ORCHIDEA, choice species and good plants, including  
DENDROBIUMS, ONCIDIUMS, STANHOPEAS, CYPRI-  
PEDIUMS, BRASSIAS, VANDAS, &c., 30s. to 40s. per dozen.  
Catalogues of General Nursery Stock by post.—Sept. 3.

**HYACINTHS AND OTHER DUTCH FLOWER  
ROOTS.**—The Subscriber has received his importation of  
DUTCH FLOWER ROOTS in excellent condition. Early orders  
are requested at prices in an application.—**CHARLES ALEXANDER,**  
Seedsmen and Florist, 32, West Register Street, Edinburgh.

**ROSES AND HOLLYHOCKS.**—The extensive  
Collections growing at the Cheshunt Nurseries are now finely  
in bloom, where admirers of these Flowers are respectfully invited  
to view them. Trains of Eastern Counties Railway almost hourly  
to Cheshunt or Waltham.  
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good strong Plants of 10 of the best kinds in cultivation, kept  
true and distinct, 2s. 6d. to 3s. 6d. per 100.

**HOLLYHOCKS,** saved from 20 of the best named kinds, and  
kept distinct, 20s. per 100, 3s. per dozen, in strong plants. Remit-  
tances are respectfully requested from unknown correspondents.  
DILLSTONE & CO., Sturmer Nurseries, Halstead.

## DUTCH BULBS.

**MACKIE & STEWART** beg to inform their nume-  
rous Patrons and Friends that their first importation of  
HYACINTHS, POLYANTHUS, NARCISSUS, CROCUS,  
TULIPS, ANEMONES, RANUNCULUS, and other DUTCH  
BULBS, has arrived in beautiful condition, and respectfully  
solicit early orders, so as to secure the largest and best shaped  
roots. Catalogues may be had on application, 10 & 11, Exchange  
Street, and the Nursery.—Norwich, Sept. 3.

## CHOICE FLOWER SEEDS,

FOR SOWING IN SEPTEMBER.  
PANSY, saved from 100 of the best vars., by name, 2s. 6d. per pkt.  
POLYANTHUS, do. 50 do. do. 2s. 6d. "  
DAISY, do. 50 of the new Belgian do. do. 1s. 6d. "  
ANTIRRHINUM, do. 20 best named varieties... 1s. 0d. "  
ANEMONE, from the most showy and brilliant kinds, 1s. "  
The above, per post, free.—Postage Stamps received in payment.  
YOEUELL & Co., Royal Nursery, Great Yarmouth.

## NEW PELARGONIUMS.

**JOHN DOBSON'S** Descriptive Catalogue of Mr.  
Beck's new and beautiful Seedlings, which will be sent out  
in October next, is now ready, and will be forwarded on receipt  
of one stamp; it also contains every other choice variety raised  
by Foster, Hoyle, and others, at reasonable prices.

J. D. has now ready a good stock of the following, which will  
make good plants for exhibition next season:—Pansies, 6s. to 30s.  
per dozen; Pinks, 6s. to 24s. per dozen; Cinerarias, 6s. to 24s.;  
Cineraria Seed, 1s. 6d. per packet; Calceolaria Seed, 2s. 6d. per  
packet; Pansy, 1s. per packet.  
Woodlands Nursery, Isleworth, Middlesex.

## IMPORTANT TO NOBLEMEN & GENTLEMEN.

**LARGE RHODODENDRON ARBOREUM.**—The  
Subscriber begs to offer for sale the celebrated specimen of  
the above noble species of Rhododendron, so much admired in his  
establishment. The plant is in luxuriant health, and offers a  
rare opportunity to parties wishing to possess themselves of a  
fine specimen for the Conservatory. It stands 14½ feet high, and  
12 feet through. The extensive Collection of Hardy, Hybrid, and  
named varieties, comprehending all that is good and worthy of  
cultivation, are this season in unusually fine condition. The  
stock of Forest Trees, for the approaching planting season, is  
large and fine, particularly one and two years' transplanted  
Native Scotch Fir, Larch, and Spruce. Prices on application.  
THOMAS MATHESON, Stanwell Nursery, Bonnington, Edinburgh.

## BEGONIA ZANTHINA.

YELLOW FLOWERED BEGONIA, OR ELEPHANT'S EAR.

**ARTHUR HENDERSON and Co.,** now offer, at  
One Guinea per plant, the above very beautiful BEGONIA,  
the entire stock of which is now in their possession. It is re-  
markable for the large, full, almost golden yellow flowers, tinged  
with red at the back, which contrast well with the ample foliage,  
of a deep glossy green above, and with the fine red at the under-  
side of the leaf.

N.B.—Introduced by Mr. Booth, from Bonton, and flowered by  
Mr. Nuttall, Rainhill, Preston, Lancashire. Figured in the  
Botanical Magazine, No. 4683, November, 1852.

Pine Apple Place, Edgware Road, London.

**NEW DUTCH ROOTS, HYACINTHS, &c.**—  
A large importation of fine roots, from one of the first houses,  
is hourly expected. Descriptive Catalogues can be had on applica-  
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Merchants, Plymouth.

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exchanging Specimens with any Collector in the North of  
England, Ireland, Scotland, Wales, &c.—Communications to be  
addressed to J. MILES, Hurlstapton, Sussex.

**A NEW HARDY CUPRESSUS, FROM THE HILLS  
OF INDIA,** FORMING A MAGNIFICENT EVERGREEN  
TREE, 80 FEET IN HEIGHT.—Strong 1-year old Plants from  
Seed, established in single pots, 63s. per dozen. The above is  
quite new to Europe, and is not yet named.  
CEDRUS DEODARA, two years from Seed, in single pots,  
35s. per 100.  
YOEUELL & Co., Royal Nursery, Great Yarmouth.

**DICKENSON'S ITALIAN RYE-GRASS SEED**  
is now ready for delivery; 7s. per bushel for present pay-  
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## DUTCH BULBS.

**DAWE, COTTRELL, and BENHAM** (Successors  
to FREDERICK WARNER), beg to inform their friends and  
patrons that they have received their first importation of  
Hyacinth, Crocus, Anemone, Narcissus, Ranunculus, and other  
Dutch Bulbs, in fine condition, and respectfully solicit early  
orders.—Catalogues on application.  
3, Laurence Pountney Lane, and 36, Moorgate Street, City.  
(Established at 28, Cornhill, 1720.)

**JUST IMPORTED,** an Extensive collection of  
HYACINTHUS, IRISES, ANEMONES, TULIPS, CRO-  
CUSES, JONQUILS, NARCISSUS, GLADIOLI, &c., direct  
from Messrs. BYVOET, De Boon, and other celebrated Florists in  
Holland, consisting of the most showy kinds in cultivation, and  
all at very low prices.  
For particulars apply to Messrs. SUTTON & SONS, Seed  
growers, Reading, Berks.

## THE NIMROD STRAWBERRY.

**LUCOMBE, PINCE, and CO.,** purpose sending  
out in the first week of October next, healthy plants of this  
much admired Strawberry. The merits of this fine fruit have  
been so universally acknowledged, that the L. P. & Co. feel it  
unnecessary to enter into a long detailed account; they therefore  
respectfully refer to the opinion of Dr. Lindley in the *Chronicle*  
of July 23rd, page 472, and also that of Mr. Spencer in the same  
publication of July 30th, page 485. The stock is very limited,  
and, though, in order to get a large supply they ought to have  
kept it over another season, they have been solicited by so many  
persons to let it out this season, that they are unwilling to dis-  
appoint their friends. Good healthy plants, 60s. per 100. For  
the convenience of those who may wish to force it, or to have  
extra strong plants, a limited number of early layers have been  
put into 48-sized pots, which will be well established by the  
first week of October, at 6l. per 100.  
Exeter Nursery, Exeter, Sept. 3.

## DUTCH FLOWER ROOTS AND FRUIT TREES.

**HUGH LOW and CO.** beg to inform their friends  
and the public, that they have just received their annual  
importation of DUTCH BULBS, consisting of all the choicest  
varieties, and which they are proud to say are of the very best  
quality. They would at the same time inform their friends that  
their stock of Standard and Dwarf Trained and Standard and  
Dwarf Maiden Fruit Trees are exceedingly fine, and can be  
warranted true to name. Their collection of autumn and winter  
flowering Heaths are very extensive and will be found well  
worth the attention of purchasers. H. L. & Co. will have great  
pleasure in showing their general stock to any friends who may  
favour them with a call. Omnibuses from the Royal Exchange  
every quarter of an hour, and from the Green Man and Still,  
Oxford Street, every hour during the day, each of which pass the  
Nursery.—Clapton Nursery, London, Sept. 3.

## MAW'S ENCAUSTIC TILE PAVEMENTS.

**MAW & Co's** BOOK OF DESIGNS of this Durable and  
Beautiful Production of Medieval Art, in every style suitable for  
Churches, Entrance Halls, Passages, Conservatories, and every  
description of Private as well as Public Building, sent post free.  
Designs to any given dimensions and estimates without charge.  
Samples at list prices, or returnable if carriage paid.  
BENTLEY'S Encaustic Tile Works, near Broseley, Shropshire

## WATERPROOF PATHS.

Those who would enjoy  
their Gardens during the winter months should construct  
their walks of PORTLAND CEMENT CONCRETE, which  
are formed thus:—Screen the gravel of which the path is at  
present made from the loam which is mixed with it, and to every  
part of clean gravel add one of sharp river sand. To five parts  
of such equal mixture add one of Portland Cement, and incorpo-  
rate the whole well in the dry state before applying the water.  
It may then be laid on 2 inches thick. Any labourer can mix  
and spread it. No tool is required beyond the spade, and in 48  
hours it becomes as hard as a rock. Vegetation cannot grow  
through or upon it, and it resists the action of the severest frost.  
It is necessary as water does not soak through it, to give a fall  
from the middle of the path towards the sides.  
Manufacturers of the Cement, J. B. WHITE & BROTHERS,  
Millbank Street, Westminster.



ESTABLISHED MORE THAN 100 YEARS.  
**THOMAS MILLINGTON**, Importer and Dealer in  
 GLASS for CONSERVATORIES, GREENHOUSES,  
 GARDEN FRAMES, and DWELLINGS.

WAREHOUSE, 87, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, Squares in boxes, 100 feet each.  
 not above 40 inches long. Under 6 by 4 ... 12s  
 6 by 4, and 6 by 4 1/2 ... 13s.  
 16 ounces ... 3d. per foot. 7 by 5, 7 1/2 by 5 1/2 } under 9 by 7 15s.  
 21 ounces ... 4d. " 8 by 6, 8 1/2 by 6 1/2 }  
 26 ounces ... 5d. " 9 by 7, 8 by 8, 12 by 9, 12 by 10 } 20s.  
 32 ounces ... 7d. " 13 by 10, 14 by 10, 15 by 10 }  
 Large Sheet of No. 16 very superior, packed in cases of 100,  
 200, and 300 feet, at 2 1/2d. to 2 3/4d. per foot.  
 Improved Patent Rough Plate from one-eighth to 1 inch thick.  
 Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses,  
 Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as  
 well as every description of Window Glass now manufactured.  
 Glass Shades, round, oval, and square, for Clocks and Ornaments,  
 Fern Shades and Dishes.

**BARNETT, MOSS, AND Co.**, beg to call the attention  
 of Hothouse Builders and the Trade to their Price of Strong  
 Sheet Glass, in boxes of 100 feet, at 12s. 6d. each. Plate, Sheet,  
 Crown, and all other descriptions of Glass always on hand.  
 East London Plate Glass Company, 45, Leman Street,  
 Goodman's Fields.

GLASS FOR CONSERVATORIES, GREENHOUSES,  
 PIT FRAMES, ETC.

**JAMES PHILLIPS AND Co.** have the pleasure to  
 hand their present prices of Glass for Cash:—

SHEET SQUARES. In Boxes of 100 feet.		CROWN SQUARES. In Boxes of 100 feet.	
Under 6 by 4	£ s. d.	Under 6 by 4	£ s. d.
6 by 4, and 6 1/2 by 4 1/2	0 12 6	6 by 4, and 6 1/2 by 4 1/2	0 8 6
7 " 5, — 7 1/2 " 5 1/2	0 13 0	7 " 5, — 7 1/2 " 5 1/2	0 12 6
8 " 6, — 8 1/2 " 6 1/2	0 15 0	8 " 6, — 8 1/2 " 6 1/2	0 14 0
9 " 7, — 10 " 8	1 0 0	9 " 7, — 10 " 8	1 0 0

Larger sizes, not exceeding 40 inches long.  
 16 oz. from 3d. to 3 1/2d. per square foot, according to size.  
 21 oz. " 3 1/2d. to 5d. " " "  
 26 oz. " 3d. to 7 1/2d. " " "

Squares for Orchard Houses, on Mr. Rivers' plan, 20 by 15, 20  
 by 14, 20 by 13, and 20 by 12 always on hand. Cases of Sheet  
 Glass, size about 40 by 30, 16 oz. to the foot, 21. 2s. per Case of 200  
 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes,  
 Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates,  
 Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for  
 Ornaments, Fern Shades, and every article in the trade.  
 Horticultural Glass Warehouse, 116, Bishopsgate Street  
 Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES,  
 PIT FRAMES, ETC.

**HETLEY AND CO.** are supplying 16-oz. Sheet Glass  
 of British Manufacture, packed in boxes, containing 100  
 square feet each at the following REDUCED PRICES for cash.  
 A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 100 feet
From 6 by 4	Under 6 by 4	at 1 1/2d.	is £0 12 6
7 " 5	" 7 " 5	" 2d.	" 0 16 8
8 " 6	" 8 " 6	" 2 1/2d.	" 0 18 9
9 " 7	" 9 " 7	" 3d.	" 1 0 10
10 " 8	" 10 " 8	" 3 1/2d.	" 1 2 11

Larger sizes, not exceeding 40 inches long.  
 16 oz. from 3d. to 3 1/2d. per square foot, according to size.  
 21 oz. " 3 1/2d. to 5d. " " "  
 26 oz. " 3d. to 7 1/2d. " " "

**PATENT ROUGH PLATE "THICK CROWN" GLASS**, and  
**PATENT PLATE GLASS** for Horticultural purposes, at  
 reduced prices, by the 100 square feet.

**GLASS TILES AND SLATES** made to any size or pattern,  
 either in sheet or Rough Plate Glass.  
 Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass  
 Milk Pans, Glass Water Pipes, and various other articles not  
 hitherto manufactured in Glass.

**PATENT PLATE GLASS**.—The present extremely moderate  
 price of this superior article should cause it to supersede all  
 other inferior window glass in a gentleman's residence. No  
 alteration connected with the sash is required.

**GLASS SHADES**, as ornamental to, and for the preservation of  
 every description of goods susceptible of injury by exposure.  
 Prices, since the removal of the excise duty, reduced one-half.  
 List of Prices and Estimates forwarded on application to  
**JAMES HETLEY & Co.** 35, Soho Square, London.

TO AMATEUR GARDENERS,  
 LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

**PATENT GLASS TUBES**, Iron  
 Coated with Glass, Gutta Percha, Com-  
 binated ditto, Patent Flexible India Rubber  
 Tubing, and every other Hose for Watering  
 Gardens. The Hydraulic Ram, Fire, Garden,  
 and every other kind of Pump, Sluice Cocks,  
 Hydrants, High Pressure Cocks, and all other  
 articles to be had, Wholesale and Retail, of

**FREEMAN ROE,**

HYDRAULIC ENGINEER,

70, Strand, and Bridgefield, Wandsworth.

**STEPHENSON AND PEILL**, 61, Gracechurch Street,  
 London, and 17, New Park Street, Southwark, Manufacturers  
 of Copper Cylindrical and Improved Conical Iron BOILERS,  
 and Conservatory and Hothouse Builders, either in Wood or  
 Iron, respectfully call the attention of the Nobility, Gentry, and  
 Nurserymen to their simple but efficacious method of warming  
 Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of  
 the highest respectability can be given, and full particulars  
 furnished on application.

**WARNER'S PATENT FARM AND COTTAGE**  
 PUMPS.

Cast-iron Pumps for the use of Farms,  
 Cottages, Manure Tanks, and Shallow  
 Wells. £ s. d.  
 Patent Pump ... 1 15 0  
 Patent Pump, with 15 feet of lead  
 pipe attached, and bolts and nuts  
 ready for fixing ... 3 0 0  
 Larger sizes if required.

They are much used for supplying Hot,  
 Forcing, and Plant Houses, from under-  
 ground Water Tanks, and can be readily  
 fixed under the stage.

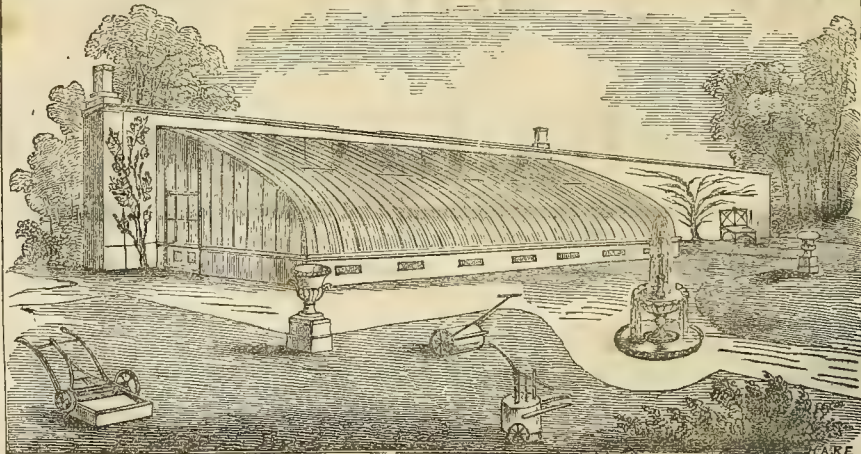
May be obtained of any Ironmonger or  
 Plumber in Town or Country, or of the  
 Patentees and Manufacturers,

**JOHN WARNER & SONS,**

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire  
 Engines, &c.

**COTTAM & HALLEN. ENGINEERS. FOUNDERS ETC**



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A New Show Room devoted entirely to Articles of Horticulture.

ILLUSTRATED CATALOGUES UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
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**IRON HURDLES, STAINED WIRE FENCING, GAME NETTING, &c.**

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EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

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**BAKER'S FOUNTAINS.**

THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.

**MESSRS. BAKER** can confidently recommend their  
 FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the  
 most simple, efficient, and economical; they are easily filled, no  
 screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts,  
 8s. And at 3, Half-moon Passage, Gracechurch Street.

WARMING BY HOT WATER.

**CONSERVATORIES, HALLS, STAIRCASES,**  
**CHURCHES AND SCHOOLS, SHOPS, WAREHOUSES,**  
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**BENHAM & SONS**, 19, Wigmore Street, London.

DRAWING-ROOM STOVES.

THE LARGEST AND BEST SELECTION OF  
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 rooms, Bed-rooms, &c., always on view.  
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**FLAVEL'S PATENT KITCHENER,**

AN EXCELLENT COOKING APPARATUS,  
 which obtained the Prize Medal, with Special Appropriation.  
**BENHAM & SONS**, 19, Wigmore Street, London.

THE COTTAGERS' STOVE

Is capable of Roasting, Baking, Boiling, and Steaming  
 100 lbs. of Meat, and 100 lbs. of Potatoes, with a consumption of  
 only 10 lbs. of Coals. It is made in two sizes, and with open or  
 close fire, as desired.

Small size ... £2 10s.; with Boiler ... £3 5s.

Large size ... £4 10s.; with Boiler ... £5 5s.

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HORTICULTURE IN ALL ITS BRANCHES.



**J. WEEKS & Co., King's Road, Chelsea,**



HOthouse BUILDERS.

The Nobility and Gentry  
 about to erect Horticultural  
 Buildings, or fix Hot-water  
 Apparatus, will find at our  
 Hothouse Works, King's  
 Road, Chelsea, an extensive  
 variety of Hothouses, Green-  
 houses, Conservatories, Pits,  
 &c., erected, and in full  
 operation, combining all  
 modern improvements, so  
 that a lady or gentleman  
 can select the description of  
 House best adapted for  
 every required purpose.

The HOT-WATER AP-  
 PARATUS (which are  
 efficient and economical) are  
 particularly worthy of at-  
 tention, and are erected in  
 all the Houses, Pits, &c., for  
 both Top and Bottom Heat,  
 and in constant operation.

The splendid collections of  
 Stove and Greenhouse  
 Plants are also in the highest  
 state of cultivation, and for  
 sale at very low prices. Also  
 a fine collection of strong  
 Grape Vines in pots, from  
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Plans, Models, and Estimates of Horticultural Buildings; also  
 Catalogues of Plants, Vines, Seeds, &c., forwarded on application.  
**J. WEEKS & Co., King's Road, Chelsea, London.**



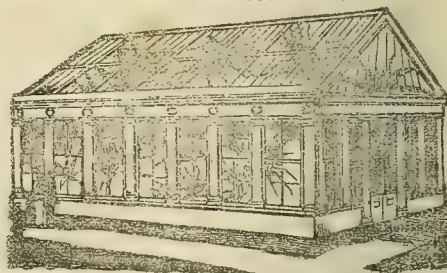
**LUCOMBE, PINCE, AND CO., HORTICULTURAL**  
 BUILDERS, Exeter Nursery, Exeter.

PLANS and ESTIMATES for every description of Horticultural  
 Structures.—N.B. Manufactory adjoining the Nursery.

**GREEN AND HOT-HOUSES** made by machinery,  
 at **J. LEWIS'S HORTICULTURAL WORKS**, Stamford Hill,  
 Middlesex. Sent to all parts of the United Kingdom. These  
 buildings are warranted of the best materials, and put together  
 in a superior manner. Being manufactured by steam-power, they  
 are considered the cheapest and best made in England. 1 1/2-inch  
 Greenhouse Lights, at 3d. per foot; 2-inch, at 4d. per foot. The  
 Trade and Merchants sending Sashes to Australia supplied at  
 wholesale prices. List of Prices by enclosing two postage stamps.

**HORTICULTURAL BUILDING AND HEATING**  
 BY HOT WATER.

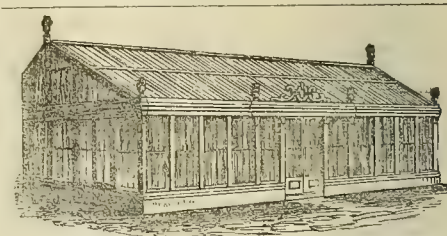
AT THE LOWEST PRICES CONSISTENT WITH GOOD  
 MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON**, Danvers Street, Chelsea,  
 London, having had considerable experience in the con-  
 struction of Horticultural Erections, which, for elegance of  
 design, good materials, and workmanship, combined with  
 economy and practical adaptation, cannot be surpassed by any-  
 thing of the kind in the country, are in a position to execute  
 orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility,  
 Gentry, and London Nurserymen; and to all by whom they have  
 been favoured with orders, they can with the greatest confidence  
 give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most  
 approved and scientific principles, for all purposes to which the  
 application of Heating by Hot Water can be made available.



**HOHOUSEs, CONSERVATORIES, &c.**, made  
 and fixed complete, at a considerable reduction. CUCUM-  
 BER and MELON BOXES and LIGHTS of all sizes, made of  
 the best materials, glazed and painted complete, kept ready for  
 immediate use, packed and sent to all parts of the kingdom.  
 Reference may be had to the nobility, gentry, and the trade in  
 most of the counties in England.—**JAMES WATTS**, Hothouse  
 Builder, Claremont Place, Old Kent Road, London.

**FRIGI DOMO**, patronised by the Horticultural  
 Society and the Zoological Society, a Canvas made of pre-  
 pared Hair and Wool, a perfect non-conductor of Heat and Cold,  
 keeping, wherever it is applied, a fixed temperature. It is  
 adapted for all horticultural and floricultural purposes, for pre-  
 serving Fruits and Flowers from the scorching rays of the sun,  
 from wind, and from attacks of insects and morning frosts. To be  
 had in any required length, upwards of 2 yards wide, at 1s. 4d.  
 per yard run, of **E. T. ARCHER**, Carpet Manufacturer, 451, Oxford  
 Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.



## PICEA BRACTEATA.

**MESSRS. VEITCH AND SON**, of Exeter, and the Exotic Nursery, Chelsea, have much pleasure in stating that they have been fortunate enough to raise a limited number of Seedling Plants of the above beautiful *NEW CALIFORNIAN PINE*; of which a full description was given by Dr. Lindley, in the leading article of the *Gardeners' Chronicle* of July the 9th. The Plants are two years' Seedlings, established in small pots, price 63s. each. Specimens of the cone and foliage can be seen by visitors, at either of Messrs. Veitch's Nurseries.—Sept. 3.

**LORD KEYNOR'S FAVOURITE** is the best and most productive CUCUMBER for winter cultivation, price 2s. 6d. per packet, or 30 penny postage stamps.—**EDWARD TILLY**, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

**STRAWBERRIES**, Four New Varieties for £1.—**NICHOLSON'S AJAX**, very large and handsome, most exquisite flavour, unequalled as a dessert fruit, and forces well. **NICHOLSON'S RUBY**, medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; forces well. **NICHOLSON'S CAPTAIN COOK** is a first-rate market fruit; colour scarlet, very large size, great bearer, and carries well; plant remarkably strong and hardy.

**NICHOLSON'S FILL-BASKET**.—Nothing can exceed this fine sort as a market fruit; it is of a very bright scarlet colour, general shape round, gets very large, but never out of shape; it is a tremendous bearer, preserves well, and will carry any distance. Plants remarkably robust and healthy.

These splendid Strawberries have been the wonder and admiration of all who have seen them; the two first for their excellency as a dessert fruit, the two latter for their abundance, size, and colour, and other good qualities as a market fruit.

These four really good varieties of Strawberries can alone be got of Mr. W. Nicholson, for 11. per 100; or any two of the above for 12s., box included. Post Office orders made payable at Yarm, Yorkshire.—Egglecliffe, near Yarm, Sept. 3.

## LOCKSBROOK NURSERY.

VIOLETS, PANSIES, ANEMONES, DAISIES, AND NARCISSUS.

**R. SHACKELL** begs to offer the public again this season his beautiful Seedling Violet Russian Superb; strong plants, 4s. per dozen; small ditto, such as can be sent through the post free, 3s. per dozen. Double Purple Perpetual Violets, now coming into blossom, moving very well at this time of the year, making a show at once, 2s. 6d. per doz., or 10s. per 100. Old Russian Violet Plants, a very useful kind, 1s. per doz., or 5s. per 100.

**R. S.** has a fine stock of free blooming showy Pansies, such as will bloom pretty freely through the winter months and early spring. If purchased shortly, and planted thick in a rich light soil, would be very useful for replenishing the flower beds as soon as the frost has killed the tender summer flowers; strong well-rooted plants, with blooms on them, at 2s. per dozen, in 12 varieties, or 10s. per 100.

**R. S.** has also a large stock of single Anemones, sown this last spring, useful for the same purpose as before named, at 2s. per dozen, or 10s. per 100. Also a great variety of foreign Daisies, some of them very beautiful; these are useful for edging round small beds or borders, 1s. per dozen, or 5s. per 100.

**R. S.** has a large stock of the beautiful, sweet-scented, pearl-white Poeticus, or Pheasant-eyed Narcissus, which he will render at the low price of 4d. per dozen, or 2s. 6d. per 100.

\* Hamper and package included, provided the order is not under 5s.

Any person wishing to see the blooms of the Pansies and Anemones may have specimens through the post by application, inclosing stamps for the postage.

Address **ROBERT SHACKELL**, Florist, Locksbrook Nursery, Bath.

## KNAP HILL NURSERY, WOKING, SURREY.

**WATERER AND GODFREY**, Nephews and Successors to the late **HOSSEA WATERER**, respectfully invite the attention of parties engaged in planting to the following list:—*Araucaria imbricata*, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

*Cryptomeria japonica*, 2, 3, 4, 5, 6, and 8 feet.

*Cedrus Deodara*, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

*Cedar of Lebanon*, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

*Cupressus macrocarpa*, or *Lambertiana*, 2, 3, 4, 5, 6, and 8 feet, all from seed.

" *Governiana*, 2 to 3 and 4 feet.

" *Funebris*, 2 and 3 feet.

" *thyoides variegata*, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We have a large quantity.

*Juniperus Bedfordiana*, fine plants, 3, 4, and 5 feet.

" Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.

" *repandus*, 3, 4, 5, to 8 feet.

" Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.

" *Virginiana*, the Red Cedar, 4, 5, 6, and 8 feet.

*Taxodium sempervirens*, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.

" Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.

" Gold Striped, 1, 2, and 3 feet.

" do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

" *elegantissima* (new striped), standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.

" *Davallia*, or Weeping Yew, fine standards.

*Pinus Douglasii*, 3, 4, 5, and 7 feet; a few magnificent plants, 10 to 12 feet high.

" *insignis*, 2, 3, 4, 5, 6, and 7 feet; all from seed.

" *canadensis*, 3, 4, to 6 feet.

" *canadensis* (Hemlock Spruce), 3, 4, and 6 feet.

" *maritima*, 3, 4, 5, 6, and 8 feet.

" *Menziesii*, 3, 4, 5, and 8 feet.

" *cephalica*, 3 to 4 feet.

" *Pinus*, large and handsome, 3 and 4 feet.

" *Nordmanniana*, from seed, 15 feet; a few larger, 2 feet.

" *novae-angliae*, with perfect heads, about 15 feet; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

*Thuja Arbor vite*, American, 3 to 6 feet. We recommend this plant for hedges.

" *Wartiana*, 3 to 6 feet, one of the few really hardy and most useful evergreens.

" *aurea*. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

*Woodstock* clipped, 1, 2, and 3 feet. This is a very distinct and beautiful plant of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of all sizes. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who stand planting during the forthcoming season.

## FOR SEPTEMBER.

**EDWARD GEORGE HENDERSON AND SON**, Wellington Road, St. John's Wood, London, will commence sending out in October the following superior Flowers of the CINERARIAS and FANCY GERANIUMS which have been flowered two years in succession in their Nursery, and consequently can recommend them with confidence as flowers of great merit.

## FANCY GERANIUMS.

**CONSTANCE**.—Lower petals white with violet rose blotch, upper petals deep maroon with wide margin of white, distinct and novel; a first-rate flower. 21s.

**EMPRESS OF FRANCE**.—Fine pale rose belted with white, lower petals of fine form with belting of rose. 10s. 6d.

**ILLUMINATOR**.—Bright rosy crimson upper petals, with bright spot on lower petals, very free flowerer, fine habit, first-rate exhibition variety; good truss. 10s. 6d.

**LADY HUME CAMPBELL**.—Very bright vivid crimson, with white centre, remarkably free flowerer, first-rate exhibition variety, good habit. 15s.

**MARY HOWITT**.—Upper petals maroon crimson, with clear broad margin of clear white, lower petals belted with crimson; stiff fine shaped petals, of greater substance than any other fancy Geranium. 15s.

**THE OCEAN QUEEN**.—Rich bright crimson, the lower petals nearly covered with large blotch of crimson, excellent trusser, very free and healthy growth. 10s. 6d.

## FIRST-CLASS CINERARIAS.

**EMPRESS EUGENIE**.—Clear white, with violet crimson edging, purple disc; fine. 10s. 6d.

**NOVELTY**.—Damson, with light disc, large novel coloured flower, rich and very showy. 10s. 6d.

**PICTURATA**.—Clear white, with deep edging of rosy purple, lavender disc; the finest Cineraria in cultivation. 10s. 6d.

**LORD STAMFORD**.—White, finely edged with light porcelain blue, fine petals, superior flower. 10s. 6d.

If the set is taken one of another variety will be presented gratis.

## SECOND-CLASS CINERARIAS.

**ADVANCER**.—Clear white, with blue edging, light disc, fine Rosalind flower. 7s. 6d.

**ESTELLE**.—Large white, with puce edging, purple disc, free abundant flowerer. 7s. 6d.

**ETOILE DE VAISE**.—Clear white, rosy plum edging, grey disc, good size, abundant flowerer. 7s. 6d.

**LABLACHE**.—Deep blue, dwarf and fine. 7s. 6d.

Or 21s. the set.

## FOR PRESENT SOWING.

## GRASS SEEDS—SEPARATE OR MIXED.

**SUTTON AND SONS** having made it their special business to collect Natural Grass Seeds, and mixing them in proper sorts and proportions to suit the various soils of Great Britain, can supply them either separate or mixed, of the very best quality, at moderate prices.

For particulars, address **JOHN SUTTON & SONS**, Seed Growers, Reading, Berks.

## The Gardeners' Chronicle.

## SATURDAY, SEPTEMBER 3, 1853.

## MEETINGS FOR THE ENSUING WEEK.

THURSDAY, Sept. 6—Royal South London. .... 1 P.M.

THURSDAY, — 8—National Horticultural. .... 3 P.M.

COUNTRY SHOWS FOR THE PRESENT MONTH.—6th: Hereford.—7th: Maidstone, Taunton, Norwich, Cheltenham, Isle of Wight, and Kelson.—8th: Oxfordshire, North Wilts, and Ireland Royal.—9th: Bury, Thirsk, and Ashford.—10th: New Swindon, and Edinburgh Dalhousie.—11th: Bradford, Whitby, and Rathmines Dalhousie.—14th: Brighton, Berwick, and Glasgow.—15th: Teddington, Aylesbury, Thame, and Meath.—20th: Chesham.

THE SPECIES of plants, like those of animals, appear to be eternal, so far as anything mundane can deserve that name. There is not the smallest reason to suppose that the Olive of our days is different from that of NOAH; the *Asa dulcis* stamped upon the coins of Cyrene still flourishes around the site of that ancient city; and the Acorns figured among the sculptures of Nimroud seem to show that the same Oak now grows on the mountains of Kurdistan as was known there in the days of SARDANAPALUS. There is not the slightest evidence to show that any species of plant has become extinct during the present order of things. All species have continued to propagate themselves by seeds, without losing their specific peculiarities; some appointed law has rendered them and their several natures eternal.

It would seem moreover that, with the exception of annuals and others of limited existence, the lives of the individual plants born from such seed would be eternal also, if it were not for the many accidents to which they are exposed, and which eventually destroy them. Trees and other plants of a perennial nature are renovated annually; annually receding from the point which was originally formed, and which in the nature of things must perish in time. The condition of their existence is a perpetual renewal of youth. In the proper sense of the word decrepitude cannot overtake them. The Iris creeps along the mud, ever receding from the starting point, renews itself as it advances, and leaves its original stem to die as its new shoots gain vigour; in the course of centuries a single Iris might creep around the world itself, if it could only find mud in which to root. The Oak annually forms new living matter over that which was previously formed, the seat of life incessantly retreating from the seat of death. When such a tree decays no injury is felt, because the centre which perishes is made good at the circumference, over which new life is perennially distributed. In the absence of accidents such a tree might have lived from the creation to this hour; travellers have even believed that they had found in the forests of Brazil living trees that must have been born in the days of HOMER. But here again inevitable accidents interfere, and the trees are prevented from being immortal.

Species, then, are eternal; and so would be the

individuals sprung from their seeds, if it were not for accidental circumstances.

But plants are multiplied otherwise than by seeds. The Hyacinth and the Garlic propagate naturally, not only by seeds, but also by the perpetual separation of their own limbs, known under the name of bulbs, their bulbs undergoing a similar natural process of dismemberment; and so on for ever. The Potato plant belongs to the same class. Another plant bends its branches to the ground; the branches put forth roots, and as soon as these roots are established the connection between parent and offspring is broken, and a new plant springs into independent existence. Of this we find familiar examples in the Strawberry and the Willow. Man turns this property to account by artificial processes of multiplication; one tree he propagates by layers, another by cuttings planted in the ground. Going a step further he inserts a cutting of one individual upon the stem of some other individual of the same species, under the name of a bud or a scion, and thus obtains a vegetable twin.

It is not contended, for there is nothing to show, that these artificial productions are more short-lived than either parent, provided the constitution of the two individuals is in perfect accordance. There is not the smallest evidence—it has not been even conjectured—that if a seedling Apple tree is cut into two parts, and these parts are reunited by grafting, the duration of the tree will be shorter than it would have been in the absence of the operation.

It is nevertheless believed by many that the races of some cultivated plants have but a brief duration, provided they are multiplied otherwise than by seeds. No one indeed pretends that the Garlic of Ascalon has only a short life, although it has been thus propagated from the time when it bore the name of Shummin, and fed the labourers at the Pyramids; nor do we know that the bulb-bearing Lily has been supposed to have less inherent vigour than if it were multiplied by seeds instead of bulbs. It is only among certain kinds of plants that exceptions to the great natural law of vegetation are supposed to exist. It is thought that although the wild Potato possesses indefinite vitality, yet that the varieties of it which are brought into cultivation pass their lives circumscribed within very narrow limits; and the same doctrine has been held concerning fruit trees. The great advocate of this view, the late Mr. ANDREW KNIGHT, rested his case upon the disappearance of certain kinds of Apples and Pears, once to be found in the orchards of Herefordshire, but now no longer to be met with. This he ascribed to cultivated varieties being naturally short-lived, and to an impossibility of arresting their gradual decay by any process of dismemberment; and following out this theory he strongly urged the necessity of renewing vitality by continually raising fresh varieties from seed. It is difficult to comprehend what train of reasoning led to this speculation. We know that wild plants may be propagated by dismemberment for an indefinite period; we know that when such wild plants spring up from seed the dismembering process still goes on and still without exhibiting symptoms of exhausted vitality; and yet if a plant grows in a garden, and is brought under the direct control of man, the power is thought to be lost, or so much impaired that indefinite multiplication no longer becomes possible. Can this be true? Most assuredly the cases adduced in support of the doctrine are susceptible of another explanation, perfectly consistent with the general laws of vegetation.

That renewal by seed will not restore what is called exhausted vitality, was sufficiently proved by the experiments with Potatoes after the blight made its appearance. We were assured by an ingenious writer in one of the daily papers that the constitutional power of the Potato was on the decline; in other words, that the lives of individuals was approaching their end; that the blight arose in consequence, and that a certain remedy would be the renewal of the existing races by sowing seeds. Hundreds joined eagerly in what proved to be the vain pursuit. A worthy armorer at Solingen even published an elaborate pamphlet in support of the idea. *Sein neyr Sangesweth*—no more famine—was his audacious motto—a prediction wofully falsified by the result, for the seedling Potatoes were, if possible, more diseased than their parents.

So many persons, however, disregarding what we presume to think the preponderating weight of evidence to the contrary, still continue to look upon the question as one open to further discussion, that a learned German Scientific Society has determined to make it the subject of further and more elaborate examination.

A committee appointed under the Demidoff foundation in Berlin, has just announced that a prize of 30*l*. (200 thalers) is offered for the best essay



upon the duration of life in plants propagated otherwise than by seed. The question to which competitors must address themselves may be thus freely translated:—"Is the life of an individual plant, in its widest sense, that is to say, of a plant itself raised from seed and then propagated otherwise than by seed (by cuttings, layers, buds, grafts, &c.), unlimited in duration, and destructible only by accidental or external unfavourable circumstances, before the extinction of the species itself? or is the life of such individual limited, and to a certain definite extent shorter than the duration of the species?"\*

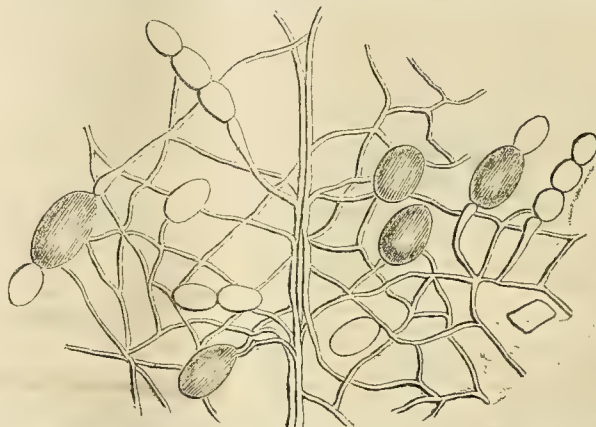
Competitors are expected to give, in addition to any unpublished cases, the fullest possible collection and examination of published facts relating to the degeneracy or total extinction of seedlings, preserved and propagated otherwise than by seed, and more particularly of seedling fruits cultivated in Europe, viz., Apples, Pears, Quinces, Medlars, Plums, Cherries, Apricots, Peaches, Almonds, Figs, Mulberries, the different kinds of Orange, Olives, Walnuts, Filberts, Grapes, Gooseberries, Currants, Raspberries, and Strawberries; and the sources from which the facts are taken must be stated. Attention must also be paid to the circumstances under which the degeneration of the plants reported on occurred; the climate and soil in which they grew, the treatment and care they received, so far as these can affect the answer to be given to the question, and any evidence relating to them which can be found.

It is announced that the essays for the prize may be written in English, French, German, Italian, or Latin, and must be delivered before the 1st of March, 1854, to Dr. NEES VON ESENBECK, the president of the Academy of Naturalists at Breslau. Each essay must have a motto prefixed, and in an accompanying envelope the name of the writer must be given. The result of the award is to be made known in the *Bonplandia* newspaper of the 17th June, 1854, and the successful essay will be printed in the *Transactions of the Academy Naturæ Curiosorum*. Full particulars will be found in the *Allgemeine Gartenzeitung* for the 30th July, of the present year.

Since it is obvious that no special experiments can now be instituted for the purpose of testing this theory, the attention of the essayists will necessarily be confined to a diligent accumulation of evidence, and to the conclusions which it renders necessary. We dare say the proposal will find respondents among men of leisure who have access to large libraries, and we venture to hope that they will be able to settle so vexed a subject. We trust they will take care not to confound the duration of natural seedlings with that of vegetable mules, which is a wholly different question.

A VERY interesting pamphlet has lately been published by AMICI (translated in the last number of the "Journal of the Horticultural Society" of London), in which he has described a very peculiar fruit as produced by the Grape mildew; so peculiar indeed that EHRENBURG has proposed for his plant the name of *Circinobolus Florentinus*, thus referring it to a new and undescribed genus; (*Botan. Zeitung*, 1853, p. 16.) It is well known that the early stage of every species of *Erysiphe* is identical in structure with that of *Oidium*. It is not, however, a necessary consequence that there is no autonomous species of *Oidium*, and as no sporangia had been discovered in the Vine mildew, there was no hesitation in referring it immediately to the genus *Oidium*, when it was first named *O. Tuckeri* in this Journal. A figure of the Hop mildew was exhibited by Dr. PLOMLEY at the Crystal Palace in 1851, in which he represented certain joints of the little necklaces of spores as giving rise to sporangia, as described in our Journal, July 26th, 1851. Now this is precisely what AMICI has figured in the Vine mildew, though it is remarkable that the bodies into which the joints are converted, as observed by AMICI, did not contain asci, but merely minute naked spores. Late observations, however, of M. TULASNE, who is every day throwing fresh light on the true structure of fungi, shows that in several species of *Erysiphe*, and probably in all, not only are there ascigerous sporangia, but others (pycnidia) which are sporophorous. The bodies, therefore, figured by AMICI must be considered as pycnidia, and though no one has confirmed Dr. PLOMLEY's observations,

those of AMICI must be considered as highly corroborative, and render it probable that the organisms figured by Dr. PLOMLEY, though their existence has been called in question (*Gardeners' Chronicle*, 1851, p. 582), were in reality pycnidia. There are many mycologists who still doubt the intimate connection of the *Oidium* and *Erysiphe*, but the figures published by Mr. BERKELEY in this Journal (April 12th, 1851) place the matter beyond question, provided only they are thought worthy of faith. It is true that M. TULASNE has not found the pycnidia produced by a transformation of the joints of the moniliform threads, but there are so many



anomalies amongst these curious productions, that we ought not to be unreasonably startled by slight differences. We annex a copy of a portion of AMICI's plate. M. J. B.

#### MANAGEMENT OF CIDER APPLE TREES.

(Continued from page 549.)

**Tree Guards.**—Many proprietors at the present time go to the expense of posts, two, three or four of which they join together with cross-pieces. This is unquestionably the best mode of protecting the trees against cattle and wind, but it is not everywhere adopted. In many places guards are employed that injure more than they protect the trees, and which cannot in any case maintain them against the action of the wind.

With the view of preserving them from the shock of axes, shafts, horses' collars, &c., the stems of the young Apple trees which are in tilled ground are completely and closely twisted round with straw ropes to the height of 4½ feet. The bad effects of this guard, which in nowise prevents the trees from being thrown down when they get a severe shock, are to cause strangulations of the stem, and, above all, to deprive it of the free access of air and light, which are always of great benefit to the young bark; and lastly, beneath the straw covering various insects that are hurtful to vegetation breed in perfect security.

**Leaning Trees.**—Many Apple trees, especially in the fields, lean to one side from the effects of the wind; and in our part of the country they lean so much over from the west, that a stranger, if he were lost, could find the right direction by merely looking at the stems of these trees. The majority of them have been thus blown aside for want of a post guard, to which they might have been fixed, or the tree might have been kept upright by means of some sods piled against the stem on the side opposite to the direction of the wind.

The neglect of these precautions renders the trees disagreeable to the eye, obstructs cultivation, and makes them more liable to be overthrown by high winds.

**Suckers.**—Trees often throw up suckers which absorb the sap to no profit, but, on the contrary, to the injury of the head of the tree. Common sense would teach us to uncover these suckers to the place where they originate, and then cut them off close, so that they may not again spring up; but this is not the usual way of going to work.

The most careful pass a spade between the stem of the tree and the suckers; then striking vigorously, they wound the former, and by breaking and tearing away the suckers from the roots, wounds are formed, which, in healing, absorb a portion of sap which would have gone to promote the growth of the tree. But still more frequently no attention is paid to the removal of these suckers, the care of stopping their growth being left to the cows and sheep.

In arable land bruises and tearing of the bark by axes, plough beams, collars of horses, &c., are of frequent occurrence, because the ground is worked as near as possible to the tree, in order to have less to dig. These wounds and cankers continually recurring, if they do not directly kill the trees, soon stop their growth, diminish the produce, and shorten their existence.

**Gathering the Fruit.**—This is also a frequent cause of injury to the trees. Instead of waiting till the Apples are sufficiently ripe to detach themselves by the branches being shaken, either by a person up in the tree, or by one on the ground with a hooked stick, they are often gathered too soon, and as they do not readily part, the branches are struck with poles. By thus bringing down the fruit, many fruit-spurs and leaf-buds which would possibly become flower-buds, are likewise broken off.

**Modes of keeping the Fruit.**—If the quality of the cider depends on the fitness of the instruments and vessels used, on the temperature, on the manner of crushing and pressing the Apples, as well as on the fermentation of the juice, it also greatly depends on the mode adopted in preserving the fruit, on its state of ripeness, and on the mixture of particular varieties in certain proportions. If the growers only knew how much rain deteriorates Apples that are laid in heaps out of doors for want of sufficient buildings to protect them, they would construct very cheap sheds by means of straw mats, formed and supported with rods, in order to preserve the fruit from this drenching, which, being repeated, doubtless takes away part of the juice, especially when

they are ripe or nearly so. If this fact were not acknowledged, I would say to the unbelieving, "Put a sound and nearly ripe Apple in a glass of pure water, and leave it there for seven or eight days; after that time you will find that the water is of a reddish tint, and the Apple almost without flavour. Now, how can this be explained, if not by the fact, that a part of the juice of the Apple has passed through the pores of the skin, and diffused itself in the water; whilst the latter has taken the place of the juice and penetrated into the flesh of the fruit. Apples, therefore, should be gathered in dry weather and afterwards sheltered from rain. The custom of mixing together different kinds of Apples is also injurious, for the following reasons. The different sorts, although gathered at the same time, do not afterwards acquire, in equal periods, the same degree of maturity, and some

keep longer than others after being fully ripe. The consequence is, that whilst waiting for the ripening of the later sorts, the others rot, and no one, I should suppose, will venture to say that the pulp of rotten Apples can give a juice fit for making good cider. Occasionally, to avoid this evil, the Apples are crushed too soon, and those that are not ripe only yield a colourless juice, which is very liable to become acid. It is, therefore advantageous to separate the sorts, because each heap being composed of equally ripe fruit, we are not exposed to the danger of crushing green or decayed Apples with those of which the colour and perfume indicate a perfect degree of maturity. This is not the only advantage derived from keeping each sort separate, for by adopting this plan we can mix any sort in proper proportions so as to obtain cider of the best quality. Those well acquainted with cider-making know, by experience, that if a certain sort of Apple were employed by itself, it would produce a sour, pale cider; and, on the other hand, that another sort would yield thick, syrupy juice, which would clarify with difficulty, or would even become dark by the action of the air; but by mixing these two sorts of Apples, a cider of very good quality is obtained. It would be difficult to generalise the principles on which we should make mixtures of the varieties of Apples with the view of improving the quality of the cider, because the nature of the soil, the aspect, and the age of the trees greatly affect the quality of the juices of fruits, and also because it is almost impossible to know the identity of varieties, the names of which vary according to the locality.

This important part of cider-making cannot therefore have any light thrown on it without repeated experiments made by good practical observers. We know that intelligent cultivators manage well in this respect, but no one has yet thought of assisting his brethren by publishing those modes of proceeding which are the results of his own experience; and this is much to be regretted. The action of frost also injures the quality of cider, and late Apples are nearly always kept, if not out of doors, at least in buildings readily penetrated by cold. In this case we can easily prevent the frost from affecting the Apples, by covering the heap with a layer of straw from 8 to 10 inches in thickness, which is again covered with damp cloths, such as waggon tilts, &c. This simple and easy protection is neither new nor unknown, but it is too seldom made use of.

We will not continue further our strictures on the neglect and bad treatment of which the Apple trees are too generally victims. Although this enumeration is far from being complete, we think that we have said enough to show the advantage there would be in taking better care of this tree, which is in Normandy what the Vine is in the countries more favoured in point of climate. To manage better than is generally the case is neither attended with more difficulty nor with greater expense, as we shall endeavour to show in the following part of this manual.

(To be continued.)

#### HARDENBERGIIAS.

THESE are, for the most part, free growing profuse blooming plants, which are so admirably adapted for the decoration of the greenhouse or conservatory during the spring and early summer months, as to make it worth while to grow them in pots for that purpose. Cultivated in this way, it is no difficult matter to have some of the species in flower early in March, or to retard them till May; and if plants are prepared for early blooming, by ripening the wood well in autumn, and keeping them cool during the early winter months, very little excite

\* This, at least, is what we take to be the meaning of the German announcement, the original of which is as follows:—

"Sitz die Lebenstauer aus Samen erzeugter und durch ungeschlechtliche Fortpflanzung (Sprossbildung oder Absteiger irgend welcher Art) vermehrter Gewächse, d. h. des Pflanzen-Individuums im weitesten Sinne (im Sinne Galle's) eine untergeordnete, nur zufällig oder durch äußere Ungunst der Verhältnisse vor dem Aufhören der Species selbst erfolgende, oder ist dieselbe eine beschränkte, der Dauer der Species innerhalb bestimmter Grenzen untergeordnete?"



ment will be needed in order to flower them even in February.

Plants obtained at the present season from a nursery may be placed in a cool airy part of the greenhouse, where they may remain during the winter, and will require little attention beyond a proper supply of water, unless they are pot-bound when received, in which case they should have a small shift and be kept rather close for a month or six weeks, in order to induce the roots to strike into the fresh soil. Early in March, or as soon after as convenient, place them in a moist growing temperature of about 45° at night and 55° by day, where they will soon start into growth. Have an eye to the state of the roots, and have soil, &c., in readiness for shifting, such plants as may have well filled their pots with healthy roots, but defer shifting generally until the roots require pot room, and be careful to have the balls and fresh soil in a moist healthy state before repotting the plants. A slight increase of temperature, with a corresponding amount of moisture in the atmosphere, will be found beneficial for fresh potted plants, in inducing active growth, and avoiding the necessity of giving much water to the soil until the roots can lay hold of it. When the plants start into vigorous growth, a liberal supply of water at the root will be necessary, and air should be admitted freely on every favourable occasion, avoiding, however, cold drying currents, and during the early part of spring the plants should occupy a position where they will receive all the light possible. Towards the middle of May remove them to a cold pit, which will form a very suitable situation for them during the summer months. A slight shade thrown over the glass for a few hours in the forenoons of bright days will be of great service to them; but this should be used sparingly, and should be of such material as will merely break the force of the sun's rays, without darkening the pit. Too much air can hardly be given, except when dry parching winds prevail, when the lights should be raised on the sheltered side, shading the glass to keep down the temperature if necessary, and on mild settled nights the lights may be left off, so as to give the plants the benefit of the night dew. Maintain a moist atmosphere by sprinkling the plants overhead with the syringe on the mornings and evenings of bright days, and if the pots stand on a bed of coal ashes, keep the latter frequently watered.

A second shift will probably be necessary in the case of vigorous growing specimens early in June; this should be afforded them before the roots get matted, and strong plants will bear a liberal shift at this season. They will require some means of support, and whether trellises or stakes are used, it will be necessary to commence training before the shoots get entwined, otherwise they will be troublesome to undo, and will probably sustain injury in the operation; any gross shoot should also be stopped, in order to equalise the growth and secure well furnished specimens. When the weather becomes cool in autumn discontinue syringing over-head, and keep the atmosphere drier, with a view to ripen the young wood; and when the weather becomes unsettled remove them to a light airy part of the greenhouse, which will be a proper situation for them during the winter and spring months, when they should be carefully watered, giving a liberal soaking when necessary, and no more until it is wanted.

When in flower they should occupy a cool airy situation, and if they can be screened from the mid-day sun the blossoms will retain their beauty longer; where large specimens are wanted without loss of time, however, it will be advisable to cut back the shoots so as to remove most of the flowering wood, and to start the plants into growth early in spring, allowing them no other season's growth before permitting them to bloom. And full grown specimens, after flowering, will require to be cut back rather severely, well thinning out the weaker shoots; they should be kept under glass until they start into growth, when they may be removed to a shady part of the plant ground, and inured to exposure to the open air, where they will make sufficient growth during the summer months. With a small shift every season, or every alternate one, and careful watering, &c., giving weak clear manure-water occasionally, they will last for several years. Young plants are easily obtained either by means of cuttings of short-jointed pieces of young wood, when about half ripe, treated in the ordinary way or by seeds, which are produced freely, and afford a ready means of getting a stock of young plants, and it is advisable to be prepared with these rather than to retain old ones after they cannot be afforded sufficient fresh soil to keep them in vigorous health.

For soil take good rich turfy peat and nice sandy loam, in the proportion of about two of the former to one of the latter; and after breaking up the turf into small pieces, and selecting the best, add a liberal mixture of sharp sand, broken potsherds, or small pieces of charcoal, to insure the free percolation of water through the mass after the fibre has become decayed. *Alpha.*

### Home Correspondence.

*Loss for Pine Pits.*—I have glazed two large fruiting pits, 40 feet long each, with Hartley's glass, and the plants have done well for the time they have been in it, from which I conclude that it is excellent for summer months. As I shall build another large pit in spring for fruiting off Pines, in December, January, February, and March, I beg to ask your

opinion whether Hartley's rough plate or the German sheet glass would be best for this purpose. Many intelligent persons (who have had no practice with the rough plate) think it would be too dark for winter, as Pines in fruit want all the light and sun they can get, to ripen and flavour the fruit well at that season. You will, I have no doubt, understand what I mean; I wish to know whether a winter fruiting Pine pit should be glazed with the German sheet or rough plate glass. *W. Jackson, Scruton House, Bedale, Yorkshire, Aug. 29.* [Still use Hartley's rough plate.]

*Orange Gourds.*—Our climate is too boisterous for the Orange Gourd to succeed on upright trellis-work, as we see it abroad; but to those who wish to see this beautiful object out of the kitchen-garden I recommend a plan which I have this year adopted, and which looks very well; it is that of placing one or two of these Gourds in a flat basket, such as nurserymen send out plants in. Place this basket simply on the lawn, and surround it with rocks or clinks, very shelvingly, or it will not look well; the intervals between the rocks to be filled with moss. The beautiful orange contrasts admirably with the rough substance on which it lies; an old stump of a tree would do equally well. *Experto crede.* *A Subscriber.*

*Variiegated Leaves.*—*M. Carrier* (see p. 551) could not have selected a worse example of the fixedness of variegation than the variegated variety of *Euonymus japonicus* in any of its characters, whether blotched or margined. Here it only requires to be cut back or made to grow freely to make variegation the exception not the rule, as verified by the specimen inclosed. The effects of locality, climate, and soil, are too little studied or understood to warrant our using the term never, when alluding to any freak of vegetation. I dare say some will affirm that fine purple or scarlet Brompton or Queen Stocks never become mottled, still I have read that at Redleaf they are so changed; and here all sorts are subject to the same transformation towards the close of the season. Even Strawberries of the most distinct sorts, planted out and treated in the usual way for a few years, so degenerate and change that they cannot be identified by the best judges. *N. M. T.*

*Bugainvillea.*—The following is a plain statement of the mode in which I have treated this plant, which I raised from a cutting about eight years ago. The plant from which I got the cutting had not flowered; it was a strong rampant growing creeper, I think from 20 to 25 feet high, spreading a considerable width, just the thing I wanted in order to make some appearance in a new house; but being obliged to have the most of our stove creepers growing in pots after it had attained a certain size, of course it had to undergo a severe root-pruning every year in order to allow a renewal of the soil; it has been treated in this way for these four years past. This spring I used the knife more freely than formerly in cutting out the strong young wood; being trained up a rafter and permitted to spread on each side, it was occupying more space than I thought it deserved. This, *i. e.* the pruning root and top, I think is the secret of its having flowered, for I observe that the blossoms have been produced from wood of last year's growth, of from 3 to 5 inches long. My plant is at present growing in a pot 18 inches deep, and 16 inches wide. The height of the plant is 14 feet; the greatest breadth upon the rafter about 22 inches. It has been a beautiful object for more than a month; we had 100 flowers upon it, the number of flowers upon each shoot varying from one to five. *James Napier.* [This *Bugainvillea* is one of the finest plants in cultivation. It looks like a climber covered with crimson Hops. But few have the skill to flower it.]

*Winton's Steel Fork.*—This is the best tool that has come under my notice for forking and loosening the ground between crops, in order to allow the free admission of air, heat, and rain, to their roots; indeed, where the soil is at all loose and friable, it is used here in preference to the spade for digging and trenching. I should say that, when better known, the above tool will quite supersede the spade for many purposes, particularly in gardens where the soil is not of a very stiff and tenacious character. *James Russell, the Hyde, St. Albans.*

*Hypericum calycinum.*—Seeing in the Synopsis of the British Flora, a doubt expressed as to this *Hypericum* being a native, I beg to inform you that it grows apparently wild on Harlestone Heath, about four miles from this town; the heath has been planted with Firs within the present century, and under the shade of these it grows in profusion, covering probably an acre of ground. *George Lightwood, 18, Bouverie Street, Northampton.*

### Foreign Correspondence.

*HOUSTON, TEXAS, September 27, 1852.*—I cannot refrain from tendering some information to your Paper, and, if agreeable, my best services with reference to your suggestions as to the grafting of European Vines on robust American stocks in your Number of the 21st ult. (see p. 531, 1852.) In this neighbourhood an opinion prevails that the European Grape cannot under any circumstances be successfully cultivated, but this opinion I hope to find erroneous, inasmuch as I believe it to be founded in entire ignorance of the soil in which it delights, and on an impression that the climate and soil of this country can work impossibilities, and that pruning, and other means of husbanding the energies of a plant are here perfectly unnecessary. In this locality a native Grape known as the Mustang, or wild Grape, grows with extreme luxuriance, both on the

sandy banks of streams and the heavy alluvial soil of the prairies; and although it does not attain in this neighbourhood to so large a size as it does on the Brazos, it is still to be met with from 6 to 9 inches in diameter, over-topping the highest trees, and bearing an enormous quantity of fruit, worthless for the table, but good, as I have proved, for wine. On the Brazos, six weeks since, the woods were stated to be perfectly blue in appearance from the immense quantity of fruit which had ripened, even under the shade of a dense foliage. It is entirely free from mildew, and to prevent its appearance on European varieties, and to secure a luxuriant growth, I intend in the coming season to make use of it largely as a stock, for I have proved that it unites most freely with the scion, so much so, that a cutting of this year's wood attached to a Mustang stock during the last week of May, had in a period of from 50 to 60 days not only taken, but had been followed up by such a vigorous growth that I counted 37 joints from the point of insertion. The following statement on this same subject by a Mr. Lincicum, appeared a few weeks since in the *Galveston Journal*:—"We have in our highly favoured country many delicious, healthy, indigenous fruits, particularly in the Grape family, many of which are of fine flavour, and quite large, bear cultivation well, and might be made, with small expense, a source of much wealth and comfort. Our native Grape will flourish well almost without attention; all that is necessary is sufficient space and protection from cattle. But the foreign varieties, on their own roots, do not thrive well in our black and limy soil. They become diseased and die out in a few years. Amongst these are many varieties, very delicious and suitable for the table. These varieties are available, notwithstanding their want of thrift in the prairie soil, by a very cheap and simple process. In my experiments, the following has resulted very favourably." Take a healthy cutting from the last year's growth, from the kind of Grape vine you wish to propagate, and by the common wedge process, engraft it on a thrifty Mustang Grape vine. The wedge graft is so simple that a description of the process may be considered superfluous. However, any time between the 10th and 20th of February, prepare your grafts, having two or three buds to each slip, cut the upper ends even and smooth and the lower ends into a true wedge—your knife should be sharp—then cut off the top of your stock vine, within 2 or 3 inches of its root, split it down through the centre, low enough to receive the wedge of your graft, push in your wedge on one side of the stock, sap to sap, and downwards until the cut of the knife on the graft disappears. You may insert two grafts in the same stock if it is large enough. Then wrap a strip of wet domestic carefully around all, with sufficient firmness to hold the graft in its place; after which raise the earth around it so as to cover the stock, leaving the buds of the graft only above ground. I have, however, inserted grafts 3 feet above ground, and they grew very well, but they require more protection and are more liable to be shaken out of place. The above is the process of engrafting to the Mustang Vines that may be found already growing about your premises. I have two grafts which I inserted into thrifty Mustang stocks on the 15th of last February; they have each run over 200 feet already, and are still growing rapidly. One of these grafts put forth a cluster 7 inches long, and matured 93 large Grapes. They are a bright red, transparent Grape, very rich and delicious; they were brought to the country, I think, by the Germans. I have another graft of the Black Sweetwater Grape, which, at the expiration of 17 months from the time I inserted it into the Mustang Vine, had matured half a bushel of fine large Grapes, much better flavoured, as I think, than when growing on their own roots. When it is desired to have them grow where there are no Mustang roots, as in the regular form of a vineyard, it is easily effected by selecting from the woods as many thrifty young Mustang Vines as you like; having them as large as your finger with good roots, top them off to about 12 inches, carry them to your lot, insert and wrap your grafts properly, and then plant them in such manner as to let your graft buds rise just above the surface of the ground at the desired point in your vineyard. The hole in which they are planted should be large and pretty well supplied with manure, fully rotted. Rotten logs, or other decomposed vegetable matter is best. The Mustang Vine will, however, flourish very well in almost any kind of soil. It is a strong hardy Vine, and will live to a great age. Grafts from the good varieties growing on healthy Mustang roots, will, after the fourth year, if properly dressed and cared for, produce from 10 to 15 bushels of clusters apiece. Twenty such Vines would supply the wants of a large family. They will bear abundantly the second year, but that injures the Vines, and the greater part of the clusters should be clipped off. They may, on the third year, be permitted to mature half their clusters—one to each fruit-bearing joint. There is no actual necessity for putting up expensive frames for the Vines to run upon. Any kind of a stake sufficiently strong and durable to support the Vine during the time of its fruiting is good enough. It is best for the Vines to fall and remain on the ground through the winter. Then, about the middle of February, or before the sap begins to run, prune your Vines, stick up your stakes at the proper places to receive the branches, and with the raveling of cotton bagging tie the branches to the stakes. A yard of bagging will tie up 500 Vines. Now, all this is so simple, so cheap, and so easily done, that three or four



years hence there will be no plausible excuse for the man who has no Grapes on his table—when I pay him a visit." J. H. S. Stanley.

## Societies.

**BRAMLEY HORTICULTURAL AND FLORAL.**—This Society commenced its operations about twelve months ago. Its originators were a few working men, shareholders in the Bramley Allotment Gardens, who formed themselves into an association for the promotion of cottage gardening. The principal inhabitants of the town were visited to solicit subscriptions and to enlist their co-operation, and the result was satisfactory. The first exhibition of fruits, flowers, and vegetables was held on the 18th ult., in the National School Rooms. The show was open for competition to all cottagers and amateurs in the township. The large room presented a magnificent appearance. The committee were indebted to R. Nickols, Esq., who furnished from his conservatory a variety of choice plants, which contributed to enhance the general effect. A miniature winter garden, belonging to Mr. Bolton, was an object of much curiosity. During the day there was a continual stream of visitors, including the principal inhabitants of the neighbourhood. The whole passed off with great *éclat*. A number of prizes was awarded, and two extra prizes were given—one by Mr. Turner, of the Belle Vue Gardens, consisting of a metal tea-pot, for the best tray of vegetables, viz., two heads of Celery, 20 pods of Peas, 20 pods of Beans, six Potatoes, two white Cabbages, and 12 spring-sown Onions; this was won by F. Chapman, sen. Mr. H. Tuke, gr. to Mr. Nickols, also offered half a pound of tea for the three following vegetables, viz., two red Celery sticks, two Cauliflowers, and a dish of Peas; this was given to F. Chapman, jun. At the close of the day's proceedings the members dined together, when votes of thanks were offered to all friends of the Society, and officers elected for the ensuing year.

## Reviews.

*On the Culture and Commerce of Cotton in India and elsewhere.* By J. Forbes Royle, M.D. F.R.S. Smith & Elder, 8vo, pp. 607.

CAN Great Britain be supplied with Cotton by India? This is one of the greatest of questions, to which Dr. Royle's important work is intended to form a reply in the affirmative. That amidst such a variety of soils and climates as our Asiatic possessions offer, many situations can be found as suitable for the growth of this indispensable textile material as New Orleans itself, no one acquainted with the relations between vegetation and climate can for an instant doubt. Given a certain amount of light, heat, and moisture, with a suitable soil, there must necessarily result a certain product, identical with that obtained wherever the same amount of light, heat, moisture, and the same kind of soil are found, provided sufficient skill is brought to the grand point of good cultivation.

Indian Cotton, as such, finds little favour in the eyes of the Lancashire manufacturers. Even its low price will not induce a great demand. Its short staple renders it unfit for the iron claws of a machine, however suitable it may be for the delicate fingers of an Asiatic. And its fowlness, owing to slovenly picking and packing, diminishes seriously the price it would otherwise secure. Dr. Royle's statistical returns show in fact that in 1845 no more than 180,000 bales of Indian Cotton were imported, against nearly a million and a half of American uplands.

To remedy this state of things, and in order to render Indian Cotton more deserving the favour of English consumers, the East India Company has for some years past been directing the attention of its officers to this truly national subject. Abundant funds have been supplied, improved machines have been sent to India, as well as experienced American planters, highly intelligent officers have had charge of the trials; and still the result has fallen far short of what sanguine persons had anticipated. It has been supposed that inveterate customs, national habits, fixed prejudices, local difficulties, and all that *vis inertia* which marks the Hindoo population, would be overcome by the importation of a few paid agents and some first-rate Cotton gins. In Europe we fondly imagine India to be a conquered country—to be ruled as easily as an English county. No mistake can be greater. The rulers have been subdued; Asiatic princes have given way before European soldiers, but the ruled are what they ever were. Dr. Royle points this out in a very striking manner:—

"In addition," he observes, "to the difficulties of a physical nature, nothing seems more unaccountable than the opposition thrown in the way of improvement by the natives themselves; for instance in the experiments of 1833, when the cultivators 'had the option allowed them of paying their revenue in Cotton, or of receiving a fair remunerating price (about 20 per cent. above the market price) for the quantity sold to Government,' no success was obtained, and the failure was attributed 'to the influence of the principal merchants of Dharwar, with whom it was at first proposed to contract for the supply of Cotton cleaned on the new plan,' and who refused to 'co-operate in what they conceived to be innovations on established usages and customs.' So Mr. Shaw, when asked before the Cotton Committee (Q. 3819), whether the ryots had any reluctance to

change the native for the American plant, replied 'Yes; a ryot has the greatest disinclination to every kind of innovation; it is not only that he has a disinclination to change, but it is not to the interest of the Brahmin part of society to allow of any innovation.' And again (Q. 3825), they oppose 'any improvements of any sort, even the introduction of a new assessment; they opposed that in the Southern Mahratta country, where it has been carrying on for years; the great opposition was from the Brahmins.' So we have lately been informed by Dr. Cleghorn, who is a careful and intelligent observer, and who is most zealous for the improvement of Indian products, that having obtained seeds of the New Orleans Cotton plant from Dr. Wight, of Coimbatore, he distributed them among the villagers of Mysore. He found the Brahmins discouraging the cultivation, as it would cause the disappearance of the native plant, and that, therefore, 'the evil eye' would be upon all their efforts. To ensure the truth of their prophecy, men in blanket cloaks were sent out into the fields at night, and were seen rooting up the young plants."

Nor is this all—even the native traders set themselves in array against beneficial changes. The object of these people being to keep the peasant-growers in a state of abject dependence on themselves, it is of the highest importance to their interests that no government measures should be allowed to elevate the condition of the ryots; and accordingly, when the Indian Government removed certain transit duties, which were thought to be oppressive to the peasants, these traders objected to the measure—"because having no previous payments to make, the cultivators were enabled to take their produce to whatever market they pleased, and thus to escape from their grasp."

It is clear, then, that the difficulty with Indian Cotton is not one of cultivation, but of social habits and petty local interests.

It is no mere matter of opinion that fine Cotton can be grown in India. Cotton of very excellent quality has been grown over and over again. Some Tinnivelly Cotton was, for example, thus reported on:—

"We have already noticed the arrival here, per 'Aurora,' from India, of 60 bales of native indigenous Cotton, grown at Tinnivelly, and consigned to Mr. Hugh Fleming, secretary of the Manchester Commercial Association, by order of the Board of Directors of the East India Company, for sale. This Cotton was purchased of the native ryot growers, and cleaned at Tinnivelly, under the superintendence of Mr. Finnie, an American Cotton planter, who was sent thither to superintend the culture, picking, and cleaning of Cotton. It is a fine, clean, bright Cotton, and thought well of by the manufacturers. Of the 60 bales, 30 were saw-ginned (Whitney's American gin), and 30 churkaed. The latter had a little better staple than the ginned; but the whole was so clean, and of so good a colour, that the entire quantity was disposed of in two lots, one of 50, and the other of 10 bales, both at the same satisfactory price of 5*d.* per lb. This, for native Cotton, is a very striking result."

It is superfluous to say that what has been once accomplished may be repeated when circumstances are the same. Samples have in fact been produced in Dharwar, one of the districts peculiarly favourable to the growth of Cotton, of such excellent quality that the American planters sent out from England pronounced some of it to be "quite equal to New Orleans Cotton." Mr. Bazley, the President of the Manchester Chamber of Commerce, in his very instructive lecture on Cotton, makes the striking statement that "a piece of ground of only the extent of our English county of York would, if of suitable soil, and in a genial climate, yield more Cotton than the existing extensive consumption of Great Britain requires." We are unacquainted with the area of the Dharwar district above alluded to; but it is preposterous to suppose that our Indian possessions cannot furnish the area of Yorkshire fit for Cotton growing.

We are persuaded, after a careful perusal of the evidence collected by Dr. Royle, that the Cotton difficulty in India is not one of cultivation. By suitable means, into which we cannot here enter, there can be no manner of doubt that a boundless supply of excellent Cotton could be raised in India. A few clever English gardeners would soon discover the mode of growing such a crop as well as an American Georgian. Half a dozen years might be required for the apprenticeship, but then the difficulty would be gone—so far as growing the Cotton is concerned. But it does not appear to us to be so much a question of skilful cultivation as of social influence. However inveterate the habits of the natives may be, they would certainly change before the all-powerful solvent of self-interest. Show a Dharwar or Candeish ryot that he can make more money, with certainty, by one way of Cotton growing than another, and he will soon disregard such influences as now operate upon him. Brahmins can no more contend with the breeches pocket interest than Irish priests.

But it is not a government that can produce the necessary changes; and least of all an Indian government. Men of science may suggest, gardeners may execute, directors may patronise, but all will be useless unless a very different class of agents appears in the field. The work must be done by the Manchester gentlemen themselves, for in their hands alone is success certain. We entirely agree with Dr. Royle, "that nothing short of the presence of European agents in the interior of the districts will have any great or permanent effect in rousing the ryot and in counteracting 'the baneful influence' of the present race of middlemen, or in supplanting the indigenous Cotton." Those

agents must be instructed by manufacturers, and act in their interests; they must be conversant with the wants of Lancashire, and continually apprised of the price of the article in the English market. In this way the grower would get the real value of his produce; it would be seen that good Cotton brings more money than bad, and that price rises with quality; improved cultivation would then be speedily manifested. As things now are, the grower has no sensible interest in securing good Cotton, because the native middleman carries off his profits.

In conclusion, we would invite attention to the following business-like statement of Dr. Royle:—

"American Cotton is, however, that which is most valued by the manufacturers of this country, and is also the kind which is most profitable to the cultivator in districts where the climate is suitable. Repeated experiments having been made by the East India Company during a series of years, to introduce the culture of American Cotton into India, and without any permanent effects being produced, it has been inferred that failures will follow the present or any future attempts. But in former experiments good Cotton was produced, and there is no reason to believe at a greater comparative cost than in the present experiments, while in some districts the American plants then introduced have become so naturalised as to be taken for indigenous kinds, and the staple, after so many years of acclimation, has been considered nearly equal to that of New Orleans Cotton. The present experiments might have resulted in failure, if it had not been for the determined perseverance with which they have been carried on in districts where there appeared no sufficient physical obstacles to success, as in Dharwar, Belgaum, Candeish, Coimbatore, and Tinnivelly. In these districts Cotton has been grown from American seed, which has been highly valued by manufacturers as well fitted for their purposes, and has been bought by them at prices which have been amply remunerative, both to cultivators and to importers. The cost, as shown in the details given under the heads of Dharwar and Coimbatore, was not more than for native Cotton, that is, about 3½*d.* a pound, laid down in Liverpool. The price realised has never been less than this sum, even before the Cotton had attracted attention; since then it has frequently sold for 6*d.* and 6½*d.*, and of late for 7*d.* and 7½*d.* The profits realised by Government, even upon the comparatively small quantities, have in the Dharwar district nearly balanced the cost of the experiments. Merchants could no doubt have realised larger profits; but in future the cultivators will expect to share more largely in the better prices arising from the increased value of this Cotton in the English market. The extent to which the cultivation has been carried, in consequence of the encouragement held out, first by Government, and lately by the agents and orders of merchants, is so considerable, that it is expected that not less than 9000 bales of American Cotton will be sent through Dharwar to this country in the present year. In Belgaum and Candeish the culture is also extending. In the Madras Presidency, however, the natives have taken but slowly to the culture of American Cotton. But the presence of European agent would remove their prejudices, and as the Cotton is better, and the expenses not greater than in Dharwar there is sufficient encouragement both for cultivator and for merchants."

## New Plants.

(THE appearance of "Paxton's Flower Garden" induced us to discontinue the insertion of any account new plants in these columns. That work having ceased to be published, the want of a medium through which the public can acquire information respecting novelti is again felt. We therefore intend to give our readers weekly, from this time forward, some short account one or more of the plants which are new in gardens, are called so, and about which cultivators are likely to take an interest.)

1. STANHOPEA TRICORNIS, Lindl. *Folia Orchidacea*, No. 16.

This species derives its name from the lip having only the customary pair of horns which spring from the side of the lip of the genus, but also a third which projects from the middle of the lip towards the point. During the present summer it has twice flowered w Mr. Loddiges, at Hackney. The blossoms, although not brilliantly coloured and diversified by rich blot spots, are extremely fragrant, emitting an odour i that of a ripe Apricot dashed with vanilla. They m sure nearly 5 inches across when fully expanded. T general tint is a uniform delicate pale yellow, or st colour, except that the petals and lip near the end stained with a dull Apricot hue. On either side of lip, at the tip of each basal angle, is one rich vivid yel spot. It is in all respects a charming plant, with foliage and pseudo bulbs of *S. oculata*, as we are formed. Mr. Loddiges' plants were bought at on Warcewicz's sales, and are reported to have t collected on Chimborazo.

## Garden Memoranda.

**HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GR**  
—In the greenhouse near the Orchard-house we obse a beautiful specimen of *Tritonia aurea*, a Cape bulb brought into notice two or three years ago by Me Backhouse, of York. It produces great panicle bright orange flowers, which are extremely hands and it certainly well deserves extensive cultivation



altogether it is unquestionably one of the gayest autumn greenhouse plants we have. It is, however, very subject to red spider, which must be assiduously looked after, or the beauty of the plant will be much impaired. The large *Lælia superbiens* in the curvilinear stove promises to flower even better this year than it did last, making its blossoming annually now a matter of certainty. It has thrown up nine spikes, some of which are already upwards of 2 feet in length. The Cavenish *Musa* is also beginning to fruit in this house.

Among new plants not mentioned in our last report are *Nycteria selaginoides*, a small white-flowered *Erius*-like annual with an orange eye, and a new *Torenia* with violet and white blossoms from M. Van Houtte, of Ghent. The latter is, however, not so large or pretty as *T. asiatica*. The white variety of *Impatiens platypetala* is a promising plant, which will doubtless become a favourite for winter flowering, its pure white blossoms being very attractive. An *Impatiens* from Dr. Royle has likewise been raised, as has also an Indian *Scabiosa* from Dr. Wallich. In the propagating house was a new *Mimulus* called *caerulea*; but as yet nothing further can be said of it than that it is a distinct looking kind. We also remarked a three leaved Virginian Creeper (*Ampelopsis Roylei*) which it is said will be hardy. It comes from the East Indies. Several plants from the East India Company have likewise been raised from seeds; and it may also perhaps be worth mentioning, that Mr. Jeffrey's *Pinus* and other seeds from Oregon are progressing satisfactorily, though slowly.

In one of the stoves a specimen of *Pancratium speciosum* was beautifully in flower. This, we understood, had been lately presented to the Society by Lady Wharcliffe. *Govenia Gardneri*, presented by Lord Ashburn, was also in blossom. It is a Brazilian species.

Among hardy border plants, we must not forget to mention *Platycodon chinensis*, a fine example of which is now in flower in the garden. Its blue blossoms, which are produced in profusion, and individually almost as large and handsome as those of the Russell *Lisianthus*, make it a plant well deserving of extensive cultivation.

In the large conservatory the showy *Hedychium Gardnerianum* is just beginning to produce its noble heads of flowers, which will last in perfection many weeks. The Orange-blossomed *Cestrum* (*C. aurantiacum*) is also coming finely into bloom. This and the red *Brugmansia* are plants, or rather small trees, which are indispensable for large houses, for by periodically pruning them *hard* in some of them may be had in flower nearly the whole year round. The fine trees of the latter which this house contains have just been closely pruned and washed with a mixture of soft soap, sulphur, tobacco water, and loam, with a view to keep down insects. The *Sobralia macrantha*, planted out in the bed, still continues to thrive, and produce its large purple blossoms.

In the arboretum the alteration in the *Rhododendron* clump, as marked out by Dr. Lindley, about a month ago, is now being proceeded with in good earnest. The turf is being stripped off, and the surface soil removed, to permit of the ground being made up to the required height, when, after being spread out and exposed to the influence of the atmosphere during the interval, it will be returned for the purpose of planting the shrubs in. Several small trees and shrubs which are intended to be moved late in the autumn have had a trench taken out round them, so as to partially root-prune them, replacing the soil loosely. This will afford the trees an opportunity of making fresh rootlets before they are moved, and thus diminish the chances of their not succeeding.

The fruit on the Peach wall in the orchard department is later this year than usual; it is now, however, beginning to colour, and some sorts, as the Acton Scott, are nearly ripe. This Peach was raised by the late Mr. Knight, and is a very useful early variety, of middle size, coming in before the Grosse Mignonne, which is considerably larger. The Balgown Nectarine is also worthy of attention, being a vigorous grower, and a sure bearer, weather in spring permitting. Some of the fruit measures 3 inches in circumference. It is certainly one of the best of the large melting Nectarines. The fruit on the tree in Cottam and Hallen's Peach frame is scarcely so forward as that on the open wall; the open end of the frame has, therefore, within the last few days, been closed up with "Frigi domo," but this, we believe, forms no part of the original design.

Both the flowering plants and fruit trees in Mr. Ewing's glass walls are succeeding admirably. Figs grow well, and even promise to ripen fruit in them this year. The Peaches, too, on a tree of considerable size, which was moved and put in, are now swelling pretty well for a tree so recently transplanted. Tomatoes also produce finely in them, and their fruit is free from disease, which is not the case with the crops outside. The long violet-fruited *Aubergine* is ripening beautifully, although it has always been thought that this variety required more moist heat than these walls could be expected to furnish. *Capsicums*, too, both the large Tomato sort and the common kind, fruit in great perfection in these contrivances, whose trial in the garden has as yet been very satisfactory.

In the curvilinear Vinery we noticed the *S. American Saracha viscosa* in fruit; the latter is bright red, conical in shape, surrounded by a large pale-green calyx, and rather larger than a Cherry. The plant itself is a rampant growing annual, which requires about the same treatment as a *Capsicum*. This house also contained a Black Hamburgh Vine, worked on one of the jardy wild American sorts, with a view to discover

whether this stock will or will not give our cultivated Grapes a constitution able to resist mildew.

A few Apples of the Early Harvest variety have been gathered and placed in the fruit-room. This is one of the best of early Apples, being very productive, rich, and brisk in flavour. The walls and ceiling of the fruit-room are being whitewashed with lime without size, as it is thought the latter has a tendency to encourage mildew.

Concerning "Trix's manure," which was stated by the inventor to keep Potatoes free from disease, we have to report that the trial of it in the garden has failed to effect that object; for Potatoes planted in it are already quite as much diseased, at least in the haulm, as others beside them not so treated. What the tubers may be remains to be ascertained; for they are not yet ripe enough to harvest.

Sowings of late Peas made on the 4th of August last are progressing favourably; the sorts are Auvergne, Dickson's Early Favourite, and one or two other sorts. Some sown on the 17th of June last are now in full bearing. Knight's Tall Marrow, sown on the 10th of last March, has furnished young Peas all the summer, and even now tender pods can be gathered from it. This still proves to be one of the very best tall Peas we possess.

As regards other vegetables, we may just mention that the Early Ulm Savoy is already fit for use, and that it is tender and good even before frost comes. The merits of this Savoy cannot be too widely known, as we are sure none who try it will be disappointed in it. It may be planted as thickly as Coleworts; therefore a large number of heads can be obtained off a small piece of ground, and if they are not cut too low down the stem when taken for use, the latter will reproduce quantities of small knobs or heads, which are as good to eat as Brussels Sprouts. The Chou de Milan très Hâtif frisé de Würsing is also a good large kind to succeed the Ulm, and well curled.

## FLORICULTURE.

FLOWERING CHRYSANTHEMUMS IN SMALL POTS.—I have had great success in cultivating the Chrysanthemum in the following manner:—About the middle of June I select strong cuttings of Pompon and the short-growing Chinese varieties, make them short, and strike them quickly in heat, either in a thumb pot or three or four round a larger one, to be turned out when struck, and carefully potted singly in large 60-sized or 3-inch pots, placing them in a close cold frame, shaded from the sun for three or four days, in order to set the roots in motion. As soon as the roots reach the sides of the pots, those struck in thumbs should be shifted into the same size (large 60's), treating them like the others. Inure them gradually to the air, and after a day or two leave the lights off altogether, sprinkling the plants overhead night and morning, to prevent the sun turning the lower leaves yellow. As soon as they want shifting, which will be in about three weeks, use 5-inch pots, and treat them as before, with liberal sprinklings overhead. They will now of course take up more room; place the pots quite close on a bed of coal-ashes, with a board turned against the outer row, to prevent drying too quickly. The advantage of giving them two shifts is, that as soon as roots reach the sides of the first pots they begin to break back, and by shifting them the shoots grow stronger than if put into 5-inch pots at once, and they are not so apt to break two or three shoots at the top, and leave three or four joints at the bottom bare. In about three weeks after shifting, the plants will touch each other, and, if not allowed more room, they will draw up leggy; place them 3 inches apart each way, in order to allow a circulation of air among them, and at the same time the pots will be kept partially shaded by the plants; by treating them thus, you will obtain plants from 6 inches to 15 inches high, according to the habit of the variety, with blooms down to the pot, the cutting leaves being still upon them. The best soil for them is two parts turfy loam and one part good dung from an old hotbed; if the loam is heavy a little road or other grit may be used. When the buds are formed a little clear liquid manure may be given with advantage, and at no time must the plants be allowed to suffer for want of water. *F. Bester, Clifton.*

PROPERTIES OF A FINE CARNATION AND PICOTEE.—The following extract from a recent Number of "Hovey's Magazine of Horticulture" may not be uninteresting, showing, as it does, how far our notions of perfection in these flowers agree with those of our transatlantic brethren. The writer says—"The value of a Carnation is estimated by the brightness of its various tints and hues, and by the formation and construction of the petals. The colour, whether in bizarre, flake, or Picotee, should be clear, rich, intense, brilliant, and distinct, and the ground a pure white, of which each petal should have its due proportion (say nearly one-half) without a speck, blotch, or tinge of any sort; but plain or self-coloured leaves are accounted a great defect. The distribution of colour in stripes should be nearly equal, and proportionate in every petal, commencing at the extreme edge, gradually and evenly diminishing in breadth as they approach the base or just enter the calyx, where they should terminate in a fine point. A flake should not have less than three divisions or stripes on each petal, a bizarre not less than five; but too many in either do not add to their beauty or perfection, broad petals with broad stripes having much the finest appearance. A flake is distinguished

by having one colour in stripes upon a white ground—as scarlet, purple, rose, or pink; a bizarre, by having two colours in stripes upon a white ground, and which ever colour predominates it gives the name of the class to the flower—as scarlet, crimson, pink. A perfect Picotee is distinguished by the colour being confined to the margin or edges of the petals; in other respects as 'the Carnation.' Some have a regular stripe or solid marking round the edges; others a series of little narrow stripes blended together in one; and each is equally beautiful. But their marking should not run down the petals, or the white up through the edging of them; they should be perfectly white, and even round the edge of every petal in the bloom. The stem of the Carnation should be moderately strong and upright, and free-growing plants are very desirable. The footstalks should be elastic, of a proportionate length, and sufficiently strong to support the blooms. The calyx or pod should be at least an inch long, not so full as to require a bandage to prevent its bursting on one side, and of sufficient substance and firmness to support the narrow bases of the petals in a close circular body. The petals should be large and broad, and the nearer they approach to roundness the better, with a sufficient degree of firmness and elasticity to preserve a buoyant position, the bloom being without a wrinkle and perfectly smooth on the edge; they should also possess a slight disposition to cup, but not to curl abruptly, on the outer edge; for that fault in Picotees would almost hide their marking, and the delicately fine transparent texture and crystalline appearance so distinguishable in some Carnations is in the highest degree desirable. A narrow reflexed or flimsy-petalled flower is highly objectionable. The outside petals or guard-leaves should be the largest and strongest, which ought not to fall much below a horizontal position, and each row of the inner petals should rather diminish in size as they approach the centre of the bloom, where they should be rather inclining to upright. The number of petals should be about 18 to 25, and these should form an elegant circular flower when viewed from the crown, and if seen from the side present the upper half of a globe, or the half of an ellipsis or oval; and they should be disposed with the greatest regularity alike all round, to show the beauty and perfection of every petal. The bloom ought not to be much less than 3 inches in diameter. It can hardly be expected to meet with all these qualities in any single bloom; but the flower that approaches nearest the description here given will be considered the most perfect Carnation."

### SEEDLING FLOWERS.

ASTERS: *B P & Co.* Next week.

DAHLIAS: *G. B.* Colour an excellent rich deep crimson, which is the only recommendation the flower has; for it is too coarse and open in the petal, and the outline is also defective.—*P.* A very regularly formed flower, buff-ground, heavily mottled with deep-lake, with distinct tip of the ground colour on each petal; of medium size; substance good. *X.* Bushy, with a lilac tinge; small. *W.* Tip not distinct enough for the fancy class; petals too upright. *E.* deep lilac; centre confused, and petals disposed to be ribbed. *O.* a bold rich yellow, but a little coarse. *F.* clear light yellow, and desirable on account of its colour.

### Miscellaneous.

Flowering of the *Paulownia*.—The flowering of the *Paulownia* (*Ki-ri*), in the spring of this year, is certainly one of the most singular phenomena of this very irregular season. The buds were formed in October, last year, as usual, and after having undergone all the vicissitudes of the winter and the action of late spring frosts, they were believed by most gardeners to have been killed, but towards the end of May part of them opened, not according to the habit of the tree, on branches divested of foliage, but on shoots already covered with young leaves, where the fresh green was mixed with the amethyst blue of the flowers, each of which reminds one by its form and development of some of the finest *Gloxinias*. Those who possess the *Paulownia* will no doubt be interested in knowing something of the tree raised from the first seed imported from Japan, which was entrusted to M. Neumann, by M. Coussy. This parent of all the *Paulownias* in Europe is at this time (June 7th) covered both with leaves and flowers, which exhale a peculiar perfume like the scent of the Violet and Mignonette combined. Since the *Paulownia* decorates our groves, at present so poor in plants having blue flowers, why is it that no attempt has been made to obtain from seed a *Paulownia* that shall always flower in the months of June in the climate of Paris, and thus have the flowers and the leaves out at the same time? If nurserymen paid as much attention to the raising of seedling varieties as florists, it is probable that we should already have had a race of *Paulownias* which would come into flower at the development of the shoots of the first or of the second sap; in the latter case we would have an autumn flower which would be extremely precious, and the cultivator who could furnish our groves with a *Paulownia* flowering in September or October, would certainly be well repaid for the time he spent in obtaining it. The experiment is worthy of trial; it may be attempted by any one who has a garden and frame at his disposal. The seeds of the *Paulownia* were so abundant last year that many were left ungathered. Let us not forget that over all France to the south of the Loire, and even in the climate of Paris, the *Paulownia* may be very well grown for other purposes besides ornament. Its wood, at once solid and light, is valuable for cartwrights' work. In Japan, all the ploughs are made of the wood of the *Ki-ri*; and this tree is, for that reason, preferred to all others for ornamenting and shading the sides of the main roads. Why should we not make it serve the



same purposes after having modified it by culture? *A. Ysabean, in Revue Horticole, July 1.*

**Breeding of the Nightingale in Captivity.** By H. Hanley.—Being of opinion that any bird which breeds in this country in a wild state might, by studying its habits, be brought to do so in a state of captivity, I made preparations during the winter of 1844 for trying the nightingale, which I considered to be the most retired in its habit of any of our summer visitants. I had a cage made, 4 feet long by 3 feet high, the back, ends, and top solid, with a wire front, in which I placed a small Scotch Fir tree, planted in a flower-pot; to each end of the cage I attached a common-sized canary's breeding-cage, communicating with the large cage by a hole about 4 inches square. I broke a new birch broom, and filled up the cages at each end, to make them resemble as near as possible the bottom of a thick hedge, and then put in a plentiful supply of withered Oak-leaves and moss, of which the nightingale forms its nest, covering the fronts of the two small cages with green glazed calico; I placed the cages high up against a wall facing a landing window. The following spring, that is, about the latter end of April, 1845, I directed a bird-catcher (Blake, of John-street, Tottenham-court-road), who goes to Watford every season to catch nightingales, to bring me a cock and hen bird which had paired naturally; he did so, and fortunately they mated off very readily. By "mating off," I mean that such birds as live on insect food will not peck at dead food until taught to do so, which is effected by enclosing meal-worms in a small glass tube, corked up at each end, and then placing the tube in their food; on pecking at the worm the beak slips off the glass amidst the food, which they swallow, and will afterwards go to it without the aid of a tube. On finding my birds feed freely in the small cage, in which until then I had confined them, I turned them into the place I had fitted up for them, and was much gratified, about a week afterwards, to observe the hen bird flying about with an Oak-leaf in her beak. She made her nest in one of the small cages at the end of the large one; laid four eggs, of which she hatched and brought up three young ones. During the time she was sitting, the cock sang as well and as loud as I ever heard one in a wild state; when the young were excluded he left off singing, and was most assiduous in assisting to feed and rear them. *Proc. Zool. Soc. June 10, 1851; Annals of Natural History.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

In arranging plants in their winter quarters, on no account allow them to be placed too closely together. It should be borne in mind, that but very few plants have as yet perfectly ripened their wood; and, consequently, as that process is still going on, such will require the air to play freely around them. Plants, too, are now-a-days expected to bear examining on all sides, and it is impossible to obtain bushy, compact specimens if they touch each other. On flat stages a few may here and there, be elevated on inverted pots, to give a little relief to the mass of green. As by placing the plants thinner, room may not possibly be found for all, a selection of the oldest or worst-formed plants should be set aside to make room for choicer things; and as cut flowers are always in request, the above may be found useful to keep for that purpose; and may be wintered in Vineries, pits, &c., where they will not interfere with other arrangements. Unless the weather continues dry, Orange trees, if at all large, will soon require housing, as the heavy rains have saturated them to excess; and a low night temperature will turn the foliage to a sickly yellow, which frequently remains throughout the winter. Before removing them to their winter quarters any that require additional root room should have fresh pots or tubs, the present being the most favourable time for the operation. As a compost for the Citrus tribe, French gardeners use a mixture of loam, peat, and rotten dung, in a state of black mould; we have, however, found them to thrive well in yellow turfy loam and thoroughly rotten cow-dung, mixing a portion of broken charcoal through the mass. One thing, however, should be strictly attended to, and that is drainage, which, if imperfect, will soon produce ruinous results; they will likewise thrive all the better for being rather under than over potted. Such as do not require a complete shifting should have their drainage examined, and the state of the soil as regards dryness noted, that their winter treatment may be regulated accordingly. Directly Japan Lilies, Gladioli, and plants of like habit have done blooming, remove them to the foot of a south wall to ripen their growth; water them moderately till their tops show signs of decay, when they may be laid on their sides till potting time. The earliest struck Pelargoniums should now be potted off, exposing them on all occasions to the weather, except during heavy rains; the older plants first cut back, which have made shoots an inch or two in length, should now be shook out of their old soil, the roots trimmed, and repotted in smaller pots; if they can be plunged in a slight bottom heat till the roots get a start, it will help them. To have a late bloom of Fuchsias, let a portion of the stock have their young wood cut back about one-half; if these are placed in a little extra heat they will break again, and go on blooming till Christmas. Continue shifting Cinerarias, Chinese Primroses, Calceolarias, Humeas, and other seedling plants for next season's blooming.

#### FORCING DEPARTMENT.

Continue fires to late Vineries, as the Grapes now swelling will require them this damp weather, to allow for a proper ventilation; the same will be required in Vineries containing ripe Grapes, which, to make them keep well, must be kept perfectly dry, beyond which, however, in this case, heat is not necessary, as, when once ripe, the cooler they are kept, consistently with keeping the leaves healthy, the longer they will keep without shrivelling. Remove decayed berries, before they infect the adjoining ones, and stop any laterals that may push after this, immediately they are seen. PINES, we may suppose, are all potted or planted, and for the present watch carefully the bottom-heat, which may get overhot at this season very suddenly; particularly if much fresh material has been added to the beds when turned over. When such is the case, the plunging material should be loosened and brought away from the sides of the pots, that the heat may escape without injuring the roots. Provided the bottom heat is steady, the plants will soon start away vigorously, and will require water once or twice weekly, increasing the supply as the pots become filled with roots; at the same time expose the plants fully to the sun, and allow them a large proportion of air, making fires (when such can be done), to allow of free ventilation on wet days. MELONS, if grown by fire-heat (and they are hardly worth the trouble of growing after this without it) must have a moderate heat kept up, by lighting the fires each afternoon, and continuing them in the morning, according to the state of the weather, aiming at a temperature between 68° and 75°, independent of solar heat. Fertilise the blooms as they open, and keep the Vines thin, that the foliage may have the advantage of the sun's rays. Keep the bottom-heat steady at 85°; water cautiously as the days decline, and keep the house carefully ventilated. CUCUMBERS.—The first crop may now be put in the house for autumn supply, or turned out into large pots, or boxes; or may be placed on the shelves or kirbs of the Pine house. When trained close to the glass they will fruit abundantly, in a temperature regulated to the growth of Pines. Cucumbers will grow with less light than Melons, and when grown together in the same house this should be taken into consideration.

#### FLOWER GARDEN AND SHRUBBERY.

As the value of plants for flower garden decoration must depend in a great measure on the length of time each kind will continue in perfection, a second inspection should be made at this season, and the habit, state of bloom, and general adaptiveness for flower-garden display, carefully noted; this will enable you to draw pretty correct conclusions as to the properties of the plants in use for grouping, &c.; and will furnish data on which to form the arrangement for future operations. New things, at the same time, should likewise have their properties carefully looked, particularly anything likely to prove an acquisition. Very much of the effectiveness of a well arranged flower-garden depends, not so much on the number or variety of plants employed as on the judicious selection of proper colours, and their harmonious arrangement; hence the caution required not to introduce a colour, or (what amounts to nearly the same thing) a plant with bad habit into an arrangement where perfection is expected, as it would evidently destroy the effect of the whole.

#### FLORISTS' FLOWERS.

**HOLLYHOCKS.**—These deservedly fashionable flowers may now be propagated by cuttings of the side shoots, or those taken from the crown of the plant. Mark seedlings, and also propagate those of novel colour or beautiful form. Plant out seedlings which have not already been done, in rows for blooming next season. Continue to make beds of Pinks and Pansies; the weather has been highly favourable for their establishment. Give Auriculas and Polyanthus a careful look over. Offshoots of the former, if carefully removed and planted round the side of a pot, will, by being kept in a close frame for a short time, become speedily established. It often happens that these beautiful flowers are somewhat neglected during the summer months. Should the weather be very hot during the present month, which is very probable, the plants will require still to remain in a situation shaded from its direct influence. Dahlias will be in their glory now; carefully tally seedlings. It often happens that the weakest and latest blooming are the best, therefore try those again which give any evidence of good points. The more robust and coarse may be discarded, as their character is determined.

#### KITCHEN GARDEN.

We gave directions for earthing up Celery in a former Calendar; but as a succession of this useful vegetable is always desirable, a portion only should be done at one time, at least for the present. As winter approaches, the whole may be taken in hand, as the longer the earthing up of the late crops is delayed, the better.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending Sept. 1, 1853, as observed at the Horticultural Gardens, Chiswick.

August and Sept.	Moon's Age.	TEMPERATURE.									Wind.	Rain.
		BAROMETER.		Of the Air.					Of the Earth.			
				Max.	Min.	Max.	Min.	Mean.	1 foot 2 feet deep.	deep.		
Friday.. 25	29.268	29.116	66	51	58.5	60	58	58	S.	.49		
Saturday 26	29.502	29.205	68	47	55.0	59	58	58	S.W.	.01		
Sunday 27	29.748	29.624	66	45	55.5	59	57	57	S.W.	.02		
Monday 28	29.349	29.303	67	43	55.0	59	57	57	S.W.	.00		
Tuesday 29	29.372	29.396	68	47	57.5	58	57	57	S.W.	.00		
Wednesday 30	29.851	29.597	67	51	59.0	58	57	57	S.W.	.05		
Thursday 1	29.727	29.625	63	51	57.0	58	57	57	S.	.20		
Average ..	29.706	29.602	65.7	47.8	56.7	58.7	57.4	57.4		1.34		

August 26—Very boisterous; frequent heavy showers; boisterous, with rain at night.  
— 27—Cloudy and boisterous; slight showers; clear at night.  
— 28—Fine; clear and very fine; clear at night.  
— 29—Overcast and fine; very fine; clear and cold at night.  
— 30—Very fine throughout.  
— 31—Very fine; slight rain at night.  
Sept. 1—Cloudy and fine; very heavy rain commenced at noon; light-ning at night.  
Mean temperature of the week 52 deg. below the average

#### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Sept. 10, 1853.

Sept.	Average Barom.	Average Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
							N.	NE.	E.	SE.	S.	SW.	W.	NW.
Sunday 4	70.1	48.1	39.6	43.8	12	0.38 in.	1	1	1	1	1	1	1	1
Mon. 5	69.8	48.5	39.2	44.0	13	0.70	1	1	1	1	1	1	1	1
Tue. 6	69.9	46.7	38.3	42.6	12	0.55	1	1	1	1	1	1	1	1
Wed. 7	69.1	45.6	36.8	41.5	11	0.55	1	1	1	1	1	1	1	1
Thurs. 8	68.2	48.4	38.3	43.3	11	0.65	1	1	1	1	1	1	1	1
Frid. 9	68.4	49.6	38.9	44.0	12	1.09	1	1	1	1	1	1	1	1
Satur. 10	69.4	47.8	38.6	43.5	15	1.27	1	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 5th, 1815, and 1815 and 1846—therm. 83 deg.; and the lowest on the 6th, 1850—therm. 30 deg.

#### Notices to Correspondents.

**BOOKS: Strawberry-leaf.** We learn that the publication of Mr. Seemann's "Botany of the Herald" has been delayed by some accident to the plates; but that in October will be published three numbers, completing the Flora of Panama, and the first volume of the work.

**CALLA: J.R.E.** This plant will thrive beautifully in a stream of running water. You should put it out in May, when frosts are all gone. If you plant it deep enough, it will even survive a winter without protection. Graft the Fuchsia when the wood is firm, as it is now; or you may use herbaceous grafting, if you understand it.

**CONIFERS: T.G.R.** It is uncertain whether the Cupressus of Guatemala is *C. thurifera* or *Uthensis*; but it is probably the former, and tender. We have no reason whatever to doubt the statement that its timber is of excellent quality, and we know that the tree grows fast; but we cannot deceive ourselves so much as to expect timber from it in this country. Possibly the south-west of Ireland may suit it.

**DOMESDAY BOOK: De Bohun.** We are not aware that there is any translation of the whole work. There is an edition in two vols. folio, 1783; an introduction to it was published by Sir H. Ellis, in 1833; its difficult passages were translated, with notes, &c., by Kalham, in 1783; a translation of it, as regards the counties of Middlesex, Hertford, Buckingham, Oxford, and Gloucester, was published by Bowden in 1812. An edition, so far as relates to York, Lancashire, Westmoreland, Cumberland, Derby, Nottingham, Rutland, and Lincoln, was published in 1809; an index to the whole work was published by the Record Commission, in 1811-16. For such works, and for further information, you had better apply to some law bookseller; Butterworth, in Fleet Street, for instance.

**EMIGRATION: G. Sandys.** Circumstances are wholly changed, and we now advise all who can exist at home to stay there. You may be "hard pushed" at —, but you will very likely be starved at Melbourne.

**GRAPES: M.T.** There is not the slightest objection to hipping the roof; but have the hip in glass by all means, and not in any opaque material. Smoke fumes, if well constructed and carefully managed, will do all that you appear to want. — S.— Although we cannot record to say that the work done for ourselves by Mr. J. Weeks of the King's Road, Chelsea, has been entirely to our satisfaction. But we could say the same of others.

**GREENHOUSES: A Young Beginner.** We prefer span roofs. You may have your Vines roots outside. What we do not comprehend is your reason for having one end glazed with Hartley's rough plate and the other with sheet glass. Use the former, by all means, in both cases, and on the south as well.

**INSECTS: H.** The objects sent are the eggs of some moth, apparently the swallow-tailed moth, *Oruptyx sambucaria*. — J.M.B. The small black insects on your cankered Pear shoots are the *Acarus corticis* of De Geer. (See *Gardeners' Chronicle*, 1843, p. 356.) Washing the bark with turpentine or gas-tar water will be advantageous, as well as the plan you allude to. — W.B. The few insects which we found on the Oaks were the common Wheat Aphid (*A. avenae*). They will do a certain amount of injury to the crop, but it is too late for them to be objects of alarm on this account. W.

**MEALY BUG: A.M.** A dry atmosphere has the greatest tendency to generate the mealy bug; but it propagates too fast under any circumstances. The only mode of getting rid of this pest, is continual brushing, sponging, and washing, with a mixture of tobacco-water and soft soap.

**NAMES OF FRUITS: T.W.** The two Apples you sent are not known; they possess no merit. No. 2 bears considerable resemblance to the Colville rouge d'été, but is more acid. If the trees are good, you will do well to head them back in December, and graft them with some really good sort in spring.

**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to bear in mind that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. Some of the answers which follow will explain what we allude to. It is now requested that, in future, not more than four plants may be sent us at one time. — W.R. The plant which you think is a hybrid between a Bean and a Vetch, is the *Vicia Narbonensis* of Linnaeus, a well known South of Europe plant. — W.C. 1, *Filago germanica*; 2, *Silene inflata*; 3, *Vicia sylvatica*; 4, *B. H.* 1, *Secale cereale*, common Rye; 2, *Pheum pratense*; 3, *Agrostis spica venti*; 8 and 15, *Agrostis vulgaris*; 12, *Agrostis alba*; 14, a variety of ditto; 5, *Triticum caninum*; 7, *Lolium italicum*; 9, *Dactylis glomerata*; 10, *Arundo Phragmites*; 4, *Alopecurus agrestis*; 13, *Ammobium alatum*. — Mary. Seem to be fragments of *Oxalis crenata*. — C.F. Your Laurel-leaves are overrun with the common *Lepraria viridis*, which is not a fungus, but is usually regarded as a Lichen. It does no harm. — C.P.C. 1 and 2, *Asplenium Filix-femina*; 3, *Lactuca Filix-mas* 4 and 5, *L. dilatata*. S.—*J.D.M.* *Asplenium Filix-femina*, variety crispum; a monstrosity first found in Ireland. S.

**TURNIP SEED: S.M.N.** We will not permit our pages to be disgraced by the advertisements of notorious swindlers in seed. — J.M. Isabal, by which we suppose Ipsabal to be meant, is in the Gulf of Dulce, in the state of Guatemala, south of the British possessions in Honduras, and therefore on the eastern, not western, coast of America. This Isabal is well known to all traders with Central America. — M.B. First Tuesday in October. \*As usual, many communications have been received too late and others are unavoidably detained till the necessary inquiry can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



**PERUVIAN GUANO.**  
**CAUTION TO AGRICULTURISTS.**—  
It being notorious that extensive adulterations of this ANURE are still carried on,  
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AS THE ONLY IMPORTERS OF PERUVIAN GUANO, consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.  
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**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6s. per ton; also **CORN MANURE** for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

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**EDWARD PURSER**, Secretary.  
**LONDON MANURE COMPANY**, Bridge Street, Blackfriars.

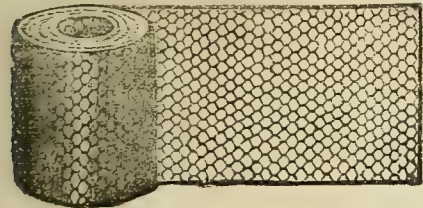
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**PRIZE** at Gloucester (the eighth time) to **SAMUELSON'S** improved **GARDNER'S TURNIP CUTTERS**.

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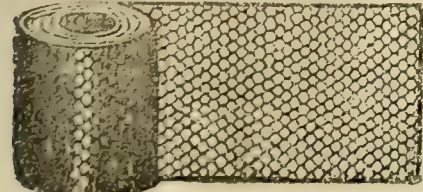
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7d. PER YARD, 2 FEET WIDE.



	Galvan- ised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 "	6½ "
2-inch " extra strong "	12 "	9 "
1½-inch " light "	8 "	6 "
1½-inch " strong "	10 "	8 "
1½-inch " extra strong "	14 "	11 "

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Manufactured by **BARNARD & BISHOP**, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

**CHEAP WIRE GAME & POULTRY NETTING.**  
5d. per running yard.  
**GALVANISED DITTO**, 7d. per running yard, 2 feet wide.



	Galvanised.	Not Galvanised.
24 in. wide, 2 in. mesh, 7d. per yard.	...	5d. per yard.
30 in. " 2 in. " 9d. "	...	6½d. "
36 in. " 2 in. " 10½d. "	...	7½d. "
48 in. " 2 in. " 1s. 2d. "	...	10d. "

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dublin Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to **T. H. FOX**, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

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The **PATENT WIRE STRAND FENCING** forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



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All Entries for the Christmas Show of Fat Stock, &c., must be returned to the **HONORARY SECRETARY** on or before **SATURDAY**, the 5th of **NOVEMBER**, 1853.

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N.B.—It is particularly requested that all letters connected with the Exhibition, or on the Club's Business, may have the words "**SMITHFIELD CLUB**" written on the outside, in addition to the Honorary Secretary's name and address.

#### IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

**SATURDAY, SEPTEMBER 3, 1853.**

**MEETINGS FOR THE TWO FOLLOWING WEEKS.**

THURSDAY, Sept. 8—Agricultural Imp. Society of Ireland.  
THURSDAY, — 15—Agricultural Imp. Society of Ireland.

**AGRICULTURE** is in a state of revolution. Not metaphorical; we are not going to chaunt the old strain about four-foot drains, deep ploughing, high manuring, thin seeding, low hedge-rows, Scotch carts, liquid manure tanks, and all the other *crambe repette*, that has so edifyingly re-appeared any time these fifteen years, to delight the younger branch of the bucolic community with a sort of conspiracy against the elder. No; when we say revolution we

mean revolution—actual, literal, visible to the natural eye.

There is to be no more ploughing. Ploughs are to be put down, by Act of Parliament; like smoky furnaces. Henceforward forking is the dodge, "rotatory forking"—"even with six or eight horses, it is cheaper and infinitely more effective than the plough." If anybody laughs, he is to be given in charge to the rural police; and whoever cries "Speed the Plough," for the future, is to be indicted at Quarter Sessions for a misdemeanour.

This may seem rather a strong dose, to be taken all at one gulp; but if we are to keep our place ahead, as active journalists, of the agricultural movements and intelligence of the day, we really don't know how to reduce it. And if a few words of explanation may serve to ease the passage down, we will ask our readers' patience for the task.

It may be remembered that two or three years ago, there appeared in this Journal an occasional essay or two upon the subject of cultivation by steam power. The writer therein endeavoured to show that the effort to achieve this much desired object by the hitherto attempted method of yoking ploughs to a steam-engine was not only erroneous in principle but in practical conflict with all existing applications of steam power, wherever it had been substituted for manual or animal labour. The paddle or screw of the steam-ship, the driving wheel of the locomotive, and other familiar instances of the kind were adverted to, as affording presumptive evidence that if the genius of the steam-engine were allowed a voice in the matter, instead of regarding it as a mere agent to be harnessed to whatever work the farmer was accustomed to associate with the idea of cultivation, it would certainly appear that *circular motion* was the plan for which it showed a marked preference. And having ascertained this fact, it then became time to return to the other side of the problem, and see how far the act of cultivation was found compatible with such a mode of action. This naturally led to the question, what is cultivation?—in what does it consist? The enquiry was one of that novel and startling class to the habituated minds of the farmer and the gardener, that it had almost an air of impertinence. Since "Adam delved and Eve span" never did upstart theory propound an interrogatory so presumptuous. What! had mother Earth been annually vexed with spade and plough some six thousand years, to be subjugated in her old age to give a *definition* of cultivation!—to be pestered after all for 'a reason!' If definitions grew wild in the ditches, and reasons were as plenty as blackberries, not 'a reason' would she give, on compulsion or suggestion, from field or garden!

Still, cultivation must be *something*. If you cannot tell us what it is, viewed as a *result*, yet surely you can tell us what it consists in, as a *process*? It must be the *doing* of some act or process, in order that some result, mechanical or chemical, or both, may be produced. Grant the result to be of compound nature, chemical as well as mechanical; still the *act* of cultivation can itself be but mechanical: and if the plough and spade can both perform it, and the hoe more anciently than either, each after their respective fashion, there was obvious admission at hand already that the act itself is so far independent of the agent that there are already *two*, nay *three* modes of accomplishing it, three distinct and separate ways of arriving at the *same end*. "Come! your reason, Jack! your reason!"

After much labour of cross-examination we contrived to extract from our reluctant witness that cultivation consisted, first of *Inversion* of the soil, secondly of its *disintegration*, or *Comminution*, as mere mechanical acts; and thirdly of what is included under the term *Aération*, the last being not so much an act as a result, but one so necessary, that any mere mechanical process of treatment which did not fulfil it, would leave unsatisfied the great element upon which Fertility mainly depends.

We then called back our first witness; and we put to the Steam-engine this question. Can you or can you not invert, disintegrate, and in so doing aerate, a layer of soil from 6 to 12 inches deep; and if so, how do you propose to do it; at the same time moving yourself along the surface of the land as you accomplish the first and principal task?

And the answer was; 'The Mole does it *underground*; a harder task still: yet "he turns up some pretty cultivation!" The circular-saw does it *through* a five-inch Oak plank, a tough soil to bite; yet he chews his morsels pretty small, and *leaves them behind him as he goes*: they do not clog him much after they have felt his tooth,—they are glad enough to get away! The paddle of the steamer does it, when 'ploughing' in another element: the Rabbit does it, the Fox does it, the Dog does it! pursuing each other in everlasting series, by Nature's



own everlasting teaching: and what they can do, I think I can do: for, I find that in every instance mentioned—the claw, the tooth, the paddle and the paw—the line described is *part of a circle*, and there I recognise my favourite mode of action, to wit the circular. Thus I am led to believe that, if you'll let me go to work in *my own way*, I can cultivate a field, as well as spin a thread or embroider a waistcoat. So spoke the Genie of Steam.

Now there is such a thing in human nature as what may be termed the Gregarious Propensity. Men shall only smile from ear to ear, aye! and from year to year, at your first announcement of a fact, or evolution of an argument; and call you all manner of witty names, and impale your ideas on the point of their harangues at public meetings, and bring down "shouts of derisive cheers" upon thoughts that through long years have made you forget your food by day and your sleep by night, till they had become to you dearer than the smiles of infant offspring, more solemn and sacred than the silver locks of parental age: yet shall these men—when the thought has rested in their minds awhile and grown familiar, and been re-echoed in their hearing a time or two at second hand, these very men shall go and bleat about as 'fully admitted by all thinking men' a version of your tale so overlaid and inflated, that you shall find yourself sponsorially pledged to propositions enough to make your head ache, such as these—"ALL cultivation should be circular!" "The doom of the Plough is sealed; Rotatory forking is the thing! Even with six or eight horses—&c. &c."

Stay, stay! you answer: hold hard, whatever you do! *Festina lente!* The Plough has the experience, the solid and confirmed experience of the whole human race; *Aratrum expellas Furca, tamen usque recurret!* it is stamped, proof-marked, with the attestation of ages upon it, as the eldest, primest, best, most true, and most economical application of horse-power to the culture of the soil that hand can make or mind conceive. Hold hard, I say! For Heaven's sake don't halloo so loud till you are out of the wood.

Oh! we know all you can tell us about the plough. "Ye Britons venerate, &c.," but we have changed all that now. Hurra, for circular cultivation! So let us beat our ploughs into "rotatory forkers," and *ted* up the soil, like so much stubborn hay, dropping it behind, tops and bottoms uppermost, anyhow; and there you are with your field *cultivated* in half the time, at less than half the cost!

Is not this enough to make one "split oneself, and go to buffets with the other half?" Can it be necessary to shew that (whatever the exactions of the steam-engine) the plough is as congenitally true, as *absolute* to the horse as the spade to the hand! Does any one in his sober senses anticipate that what the sagacity of human practice has proved through the test of ages, what the instinctive economy of toil has eliminated from the fiery alembic in which the sweat of man and horse has been seething, drop by drop, through centuries of hard-bought trial, can be *dis-proved*, now, by the hasty hand that refuses to CÆSAR the things that are CÆSAR'S, and puts a mongrel "*circulating medium*" at the tails of horses, to tumble the soil into a confusion that shames the very name of *cultivation*?

Yet so it is, and so it ever will be. The birth of an idea is a painful birth; long and slow is its gestation, and many the sharp pang and throe that attend its all-but-still-born entrance into being. It drags on a dwindled existence, an object of ridicule or indifference, or at best, of silence: for men are faint-hearted of belief till they can believe in company. By-and-bye a voice or two is heard: the 'idea' has grown bigger, wider, louder—not better. Then the chorus begins to swell, and that which was at first too small to see, too insignificant to appreciate, is now too large to recognise: its proportions are exaggerated, its distinctness lost, its outline distorted, by the confusing voice of numbers. It has become the caricature of its former self: and its own parent rejects the grotesque changeling, disfigured by the hands that ignored it as it was, in its true self and features, and accepts it in its false and shapeless effigy.

It is true that circular, or, (to speak more accurately,) cycloidal cutting, is the mode by which the Steam-engine must cultivate. But it is not true to suppose that 'Rotatory Forging' is either an efficient, an accurate, or an economic application of Horse-power, or, though fortified by a thousand 'patents,' will for equine cultivation supersede the specific and demonstrable superiority of the plough. C. W. H.

A KEEN SPIRIT OF NATIONALITY—undoubtedly one of the many admirable features in the character of our Scottish neighbours—is a very good thing at any time.

It is an especially good thing when proper occasion for the exhibition of it occurs, and Scotchmen are not slow to make whatever show or use of it may be possible. We do not now refer to the knotty discussion which, as is well known, has for some time been raging on a point of immense importance in heraldry, connected with the national arms of Scotland.

It is to the *agricultural* use and abuse of the feeling that we would now direct attention. It appears that "a good portion of the ground in Scotland has been drained and subsoiled to the depth of 14 inches, but in England"—so far as "H.," a correspondent of the *North British Agriculturist*, has observed—"they plough only 2½ to 4 inches!" The inference is that "our friend Mr. MECH, who has so kindly been giving us, at Aberdeen, the advice to mind our subsoil, may with great propriety give it to those at home." Well! so he does; there are few, at all events at this end of the island, who do not know that. We by no means agree in "H.'s" opinion as to the character of English ploughing, or indeed in the general impression which his communication conveys as to the relative *status* of English and Scottish agriculture. And proudly as East-Lothian may stand upon the facts which the recent statistical inquiry has proved of her farming, we believe that Lincolnshire, when a similar inquiry shall be made in reference to its agricultural produce, will take the precedence of it as regards its produce—certainly of meat, and, perhaps, also of grain. But whatever be the relative position of Mr. MECH'S neighbours and those of Mr. "H." in point of agricultural intelligence, we do not see what that has to do either with the soundness or the fitness of any particular piece of advice he may have presumed to offer.

Still less can another criticism in which this writer has indulged at Mr. MECH'S expense be allowed to stand unquestioned. It seems that "these improvements"—alluding to the liquid manuring adopted at Tiptree—"which Mr. MECH thinks so new are all old in Scotland;" and so, of course, there was a second reason why he should not have presumed to open his mouth at Aberdeen.

The assertion is proved generally by the fact that "it is the practice with many housewives in Scotland who have a kitchen-garden to apply all the refuse of the house to the greens and Gooseberry bushes with profit." (!) And more particularly Mr. MECH is informed "that all that he is doing has been done before (with the exception of the steam and pipes) at Deanston and other places."

The Deanston experiment, however, bore no resemblance whatever to that at Tiptree. The former was an illustration of the value of *sewage* manure, which is an altogether different matter. Mr. MECH'S system relates to the management of the ordinary manure made on the farm—its merits depend, first, upon the economy (which is still matter of discussion) of the mode of application; and, secondly, upon the greater efficiency (about which, we suppose, there can be no doubt whatever) of manure in that liquid form to which he converts the whole of it.

Now, whether or not the idea of thus converting the whole of the farm-yard manure into the liquid form were original with Mr. MECH, we do not know; we do know that it was, at any rate, also original with Mr. SMITH of Deanston, and probably many years before it was entertained by the owner of Tiptree. So long ago as the time of the Bristol meeting of the English Agricultural Society, we remember conversing with the late Mr. SMITH in reference to this very subject; and, with that confident foresight which characterised him, he ventured to foretell the time when on every farm the manure, solid and liquid, would be mixed, diluted, and pumped to a cistern built on a higher level, from which, through subterranean pipes, its own weight would enable the even and easy distribution of it over the land. But this idea Mr. SMITH did not live to see realised. Whether Mr. MECH was the first even to carry it out we do not happen to know—the dates are not before us, but we rather think that Myremill employed its subterranean pipes, and its steam-engine and force-pump, before Tiptree, though we do not think that in the former case they were at first used for the distribution of both solid and liquid manure, which is the characteristic point in Tiptree management. But, however this may be—whoever may have taken precedence as regards the idea, and whoever may have the precedence as regards the practical development of that idea, the merits and the reputation of Mr. MECH as an agricultural teacher, which "H." would assail, remain the same.

Practically it is the case, and theoretically so it ought to be, that men award both their gratitude and the proofs of it less to thinkers than to workers, more to the men who force an idea into practice and make it known and useful than to those to

whom the original conception of it may have been due. The doctrines taught by Lord Bacon, to which the immense progress in art and science of the last century is owing, may be found suggested and expressed in writings earlier than his; but they constitute the *Baconian* philosophy nevertheless, and men have universally given the credit of them to the man who taught and illustrated them with such success. The relations between electricity and magnetism have been known for nearly a quarter of a century, and it was HANS CHRISTIAN ØRSTED, of Copenhagen, who first observed and explained the deflection of the magnetic needle in the presence of an electric current; but the electric telegraph is but a few years old, and WHEATSTONE, COOKE, and others are the men who receive the credit and rewards of its invention. The influence of pointed conductors upon the electric fluid was known to FRANKLIN, and he first showed that lightning was electricity, and that pointed electric conductors were thus a true security against the thunderstorm, and yet no one is surprised to learn that among the votes of the past session is one to Sir WILLIAM SNOW HARRIS, for his application of this discovery in naval architecture, and for the preservation, thus due to him, of life and property on the sea.—Our excellent contemporary, the *Mark Lane Express*, lately amused its readers with a quotation which praised Mr. MECH in the same sentence with H.R.H. PRINCE ALBERT and his Grace the DUKE OF RICHMOND: we have doubtless exposed ourselves to its ridicule for the still higher companionship we have claimed for him; but the parallels we have drawn, and the illustrations which they furnish of his claims on our respect are just and truthful notwithstanding.

The practice of converting farm-yard dung into liquid manure, and distributing it by subterranean pipes, which is, we believe, destined by-and-bye to effect an immense alteration in agricultural practice, is *not* old either in Scotland or anywhere else; and if it were, the more shame for those who, as in the case of the reaping machine, would be again obnoxious to the charge of allowing an undoubtedly useful invention to remain so long in use in their midst without being able more generally to perceive its merits. But Mr. MECH'S claims upon our gratitude are not affected by the date of the practice he recommends. It is for the energy, good-nature, tact, and ability with which he pushes the most recent ideas, with which he leads the vanguard or even the forlorn hope of agricultural progress, into every quarter, obtaining entrance for it into company from which others would be excluded, into even citadels of agricultural prejudice—otherwise impregnable; it is for qualities such as these already usefully employed for British agriculture, and which were all well illustrated in the speeches lately made at Aberdeen, and criticised by "H.," that we claim for Mr. MECH the respect and good-will of our readers.

And let us add that, though speaking thus, we are not partisans of Tiptree. The history of that farm, when it shall be written in detail, will contain many an amusing passage illustrative of rapid change of opinion, and as sudden changes in farm management—changes, it must be admitted, proving not only the honesty which thinks and acts together, but to some extent the fickleness which, while it lasts, destroys one's confidence in a leader. It is, however, of Mr. MECH'S services as a teacher, and not of his farm management or present plans, that we now speak. If the latter had been our subject, we should have ventured to protest against the spirit in which, some weeks ago, they were described in the *North British Agriculturist*. And for this, having been over the farm but a few days before the writer of that report, we should have been perfectly prepared. It is certainly well that those who undertake to guide public opinion on the details of any art be careful how they disregard the dictates of long experience and the warnings of the past; but it is even *better* that they be always ready to cheer on the sanguine active man to whom the progress of the art is due—and it is not to the credit of an agricultural journal when one who is distinguished for the hearty and good-natured, the frank and cordial spirit by which all his agricultural proceedings are characterised, is criticised in its columns as if he were some under-handed, knowing tactician, who had been all along aiming at over-reaching and duping those who have been induced to pay him a visit.

#### ROYAL AGRICULTURAL COLLEGE.

SESSIONAL EXAMINATION.—AGRICULTURAL CHEMISTRY. [Replies by MR. STEWART to questions on this subject, for which see page 474.]

(1). CLAYS are soils of a stiff, heavy, non-porous nature, containing a larger per centage of alumina; some of them are extremely unfertile, while others, under judicious treatment, form some of the best soils for agricultural purposes. There are a great number of



different varieties, but all in a greater or less degree possess the properties of tenacity and retentiveness, and are, for the most part, of a stiff, cold, heavy character. Marls are generally extremely good for agricultural purposes, mechanically and chemically. They contain more lime than clays, and generally a larger amount of phosphoric acid. They are not so stiff, and are generally much less expensive to work. On the whole, they form one of the best classes of soils for agricultural purposes. Loam soils also justly bear a high character for agricultural value. They generally contain most of the constituents of the food of plants, and their physical properties are generally very good. The value of alluvial soils principally depends on the large amount of organic matter they contain; and for agricultural purposes they are of great value. Calcareous soils contain for the most part an immense preponderance of lime, and physically are generally of light nature, and are frequently good agricultural soils, though inferior in value to the fore-mentioned three. Silicious soils are, as their name implies, of a light, sandy, extremely porous nature, of but little agricultural value. There are, however, many other soils of a mixed character, the value of which frequently depends very much on their situation and physical condition. The only real way, however, to determine exactly the agricultural value of any particular soil is by chemical analysis; and by this the substance in which any soil is deficient may at once be discovered and its want supplied, which will be found a much cheaper method than applying an expensive manure, when the infertility may be remedied by a single substance.

(2). The value of many alluvial soils for agricultural purposes depends chiefly upon the large amount of organic matter they contain; and hence the great benefit derived by applying quicklime to them, which assists the decomposition, and renders the constituents more fit nourishment for plants, especially when young.

(3). One of the principal physical characters which influence the fertility of soils, is its porosity and power of retaining the valuable constituents and liquids passed through it; also its power of absorbing ammoniacal and other gases, &c., its state of division, number of stones, &c., all considerably affect its value. A good soil will of course be neither too quickly dry nor will it retain water long. The physical characters of a soil, the property or non-property, as the case may be, of winter manuring, are questions too large to be entered on here.

(4). The probable functions of humus in the soil are, to assist the decomposition of organic matters in the soil; to supply carbon and hydrogen to the plant; and more particularly to nourish the seed while germinating, and the plant while young. This we may learn from the observation of the evident provision of nature in placing a pericarp round the seed, as in Apples, where it is apparent that the pericarp or flesh of the Apple on rotting would form a natural bed of humus for the preservation and nourishment of the seed and plant when young.

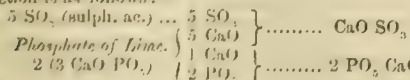
(5). One of the chief reasons in support of the view that plants derive organic matter from the atmosphere is the fact that carbon and oxygen, two of the principal organogens, are given off in large quantities from the human body, and are absorbed by plants. It is also known that plants will grow in a soil where no organic matter exists—also that they will grow in water—also that they never fail from want of inorganic matter; all of which prove that their organic part is derived from the water, though not necessarily that none is taken from the soil.

(6). Superphosphate of lime is generally prepared for agricultural purposes from either bones or coprolites. Bone phosphate is generally considered the most valuable on account of the nitrogen which it contains—but that prepared from coprolites is most generally used on this farm—the preparation of which is accomplished in this way:—the coprolites, ground to a fine powder, are placed in a wooden tub, or on a bed of ashes (bone phosphate best on ashes) and one-third of their weight of water is added to them, and well mixed up; after this has been left 3 or 4 hours  $\text{SO}_3$  (oil of vitriol), one-third of the weight of the coprolites, should be sprinkled over them, and the whole well mixed and left to dry for 2 or 3 days, when it may be applied.

The expense of making a ton of superphosphate in this way is about 4*l.* :—

3 tons of coprolites	...	...	...	26	0	0
1 ton of $\text{SO}_3$	...	...	...	7	0	0
1 ton of water	...	...	...	0	0	0
Carriage	...	...	...	1	0	0
Grinding	...	...	...	1	10	0
Mixing	...	...	...	1	10	0
5 tons	...	...	...	£17	0	0

There is not, however, quite 5 tons of the superphosphate, as a good deal of the water disappears. Although this mixture can thus be made for less than 4*l.*, it costs 5*l.* per ton, and a better article is also ensured. The commercial price of bone phosphate is from 6*l.* to 10*l.*. The object of making the superphosphate, instead of applying coprolites alone, is to render phosphoric acid ( $\text{PO}_3$ ) and lime ( $\text{CaO}$ ) existing in them of some use, by making them soluble. The chemical action is as follows:—



Thus, superphosphate from coprolites is a mechanical mixture of gypsum, biphosphate of lime (soluble in water), and tribasic phosphate of lime (insoluble in

water), left undecomposed; and hydrofluoric and carbonic acids are given off during mixing, noxious gases from fluoride and carbonate of calcium—especially in superphosphate from coprolites. Guano is good to be applied with it.

(7). Soot contains a large amount of  $\text{N H}_3$  ammonia as sulphate, the sulphuric acid of which is formed from iron pyrites in coal; it also contains a good deal of carbon, &c., and consequently is a good quick-acting manure.

(8). A farmer will be guided in the application of farmyard or artificial manure by circumstances, such as position of farm, position of field to be manured, &c. A chemical analysis of the soil also will show him whether the application of a single substance will not be of as much benefit at a cheaper rate as an expensive manuring with farmyard manure: this has frequently been the case. In applying artificial manures, however, it is necessary to know exactly what substances you are applying, whether quick or slow acting—whether good for young plants or not. It is also necessary to know the exact nature of the soil, that you may apply the substances in which it is deficient. It is very necessary to know the length of time which must elapse before a particular manure will begin to act, otherwise you may bury your capital in the ground for years before benefit will be derived. The nature of the particular manures should also be studied to know at what time of the year to apply them, and whether broadcast or by the drill, though, as a general rule for quick-acting manures, drilling is the best, as it brings them into more intimate communion with the seeds, and hastens their action. Their chemical composition and their value, as computed by a table of Dr. Voelcker's, is about the best guide to the propriety of their application.

(9). Shoddy, or the refuse of wool manufactories, is a slow-acting forcing manure, best applied to young plants. It contains much ammonia, &c., and may well be applied as a top-dressing for young Wheat. It is also well adapted for one of the constituents of a compost heap.

(10). In a ton of guano are 358½ lbs. of ammonia:  $\frac{£10}{358\frac{1}{2}} = 6\frac{1}{2}$  d. per lb. for  $\text{N H}_3$ . This is the price of ammonia in guano, at 10% per ton. In the sulphate, costing 15*l.* per ton, as obtained from gas-water, the price will be ascertained by the following calculation:  $\text{N H}_4 \text{ O SO}_3$  is the symbol of sulphate of ammonia;  $\text{N H}_3$  that of ammonia:—

Equiv. of		Equiv. of		lbs. in ton.	
$\text{N H}_4 \text{ O SO}_3$	:	$\text{N H}_3$	:	17	: 2240
66	:	17	:	2240	: 577
$\frac{£15}{577}$	:	$\frac{£10}{358\frac{1}{2}}$	:	6½ d.	per lb. for $\text{N H}_3$

Although  $\text{N H}_3$  in sulphate of ammonia is cheapest, still guano is best to be bought; as there are other substances besides for the money. *Osmond Stewart.*

## HISTORY OF SCOTTISH AGRICULTURE.

(Concluded from page 556.)

BEFORE leaving the period of the last quarter of the 18th century, it would be an oversight to omit mentioning the great agricultural wonder of the time, the successful invention of the threshing-mill, which gave an entirely new direction to the mechanics of farming. The first permanently successful threshing-machine is said to have been erected in the year 1788 by Mr. Meikle, son of the inventor of the winnowing-machine, to Mr. Stein, of Kilbergie. This mill was the model upon which all the beater-drum threshing-mills of Scotland were subsequently made. Flail machines and rubbing machines had been tried long before, but the ancient reign of old king "flail" did not receive its death-blow till Meikle's beater-drum commenced its revolutions at Kilbergie in 1788. From the time that cattle labour gave place to that of horses, and the flail was superseded by the threshing-mill, may be dated the introduction of that peculiar system of farm economics which, by reducing the expenses of labour and cultivation to a minimum, created and let loose a new capital, for the further improvement of the soil and the erection of farm buildings.

As we approach towards the end of the 18th century we find a host of active measures in operation for the improvement of Scottish agriculture, yet we would greatly err were we to attribute the sole merit of originating these means of improvement to the individuals whose names have already been mentioned in connection with the development of agriculture in Scotland, for it must be well known to all students of the subject that light first broke in upon the Cimmerian darkness of Scottish agriculture from the southern side of the border. Jethro Tull had, many years before the period to which reference is made, published his celebrated work on drill husbandry, in which he showed the advantages of the row culture of grain and green crops. After him arose the equally celebrated Arthur Young, whose agricultural tours supplied a vast repository of agricultural facts, often badly arranged, but always faithfully stated, for contemporary and subsequent writers to work upon. The knowledge of green-crop husbandry and the cultivation of Clover and Rye-grass all came from the south, and so also did fallowing and draining. So good a use, however, did the Scotch owners and occupiers of land make of their acquired knowledge of English practices, that by the end of the 18th century they had far outstripped their teachers in the application of their own principles to farm practice, especially as regards the drill husbandry of green crops and the economy of labour. They had, moreover, esta-

lished a system of leasing land, which is admirably adapted to promote good farming, as it enlisted on its side and developed those qualities of prudence and economy for which the Scottish character has been noted from time immemorial; while at the same time it supplied the highest motives for exertion and industry in a perfect security of tenure, of such permanency as to afford most of the pleasures and privileges of personal possession, without the onerous duties of ownership. *J. H.*

## THE MUTTON MANUFACTURE.

THOUGH there is every probability of the most favoured kinds of sheep, as they have been viewed or late, going downwards in public estimation, because they did not grow the kind of mutton which sells best in the market, yet still all our great agricultural societies adhere to them as the best kinds. The Leicesters are at the head of every prize list; and though the great improvements in the Southdowns have given them of late a much higher range in public estimation, and they are supposed to be a local rather than a general breed, still they are gradually advancing in public favour. Mr. Lawes instituted a series of inquiries as to the abstract food and increase in weight of these sheep in themselves, and also as compared with the Hampshire Downs, assuming the Sussex Down to be the type of the original South Down sheep. The latter is the breed of Mr. Jonas Webb, R. Ellman, and the Duke of Richmond: the former is a heavier frame and larger weight, and is also a fatter and more early mature sheep than the latter. One disadvantage was, that they had to be fed on dry food; they had oil-cake and Clover chaff. At first they had food supplied in given quantities, and proportioned to their weight. The quantity given per day to the Hampshires was 1 lb. of each; while to the Sussex Downs it was only three-fourths of a lb. of each per day. The former weighed 113½ lbs., and the latter only 88 lbs. Swedes were also given *ad libitum*, but from quantities previously weighed. The sheep were fed for 26 weeks; the Hampshires consumed 1249 lbs. of oil-cake, 1120 lbs. of Clover-hay, and 16,995 lbs. of Swedes, and the increase of live weight was 428 lbs. So much for the large sheep. The smaller, or Sussex Downs, in fact, consumed 965 lbs. of oil-cake, 926 lbs. of Clover-hay, and 12,445 lbs. of Swedes, and gave an increase in live weight of 324 lbs. To put it in a more striking light, it required, to produce 100 lbs. increase in live weight, the following quantities of each kind of food in the Hampshires:—

	lbs. oz.
Oil-cake	394 0
Clover-hay	259 12
Swedes	3941 0

Or a total food of all kinds ... 4494 12

Whereas the Sussexes required, to produce 100 lbs live weight, the following quantities:—

	lbs. oz.
Oil-cake	314 4
Clover-hay	304 3
Swedes	4086 0

Or a total food of all kinds ... 4704 7

The Sussex sheep required, therefore, in 26 weeks, 20 lbs. 4 oz. more oil-cake, 44 lbs. 7 oz. more Clover-hay, and 145 lbs. less Swedes, to produce 100 lbs. live weight, or about 7 per cent. more oil-cake, 17½ per cent. more Clover, and 3½ per cent. more Swedish Turnips, for the same result. The taste indicated a difference in the animals: the Sussex sold at about 3*s.* 2*d.* per stone of 8 lbs., the Hampshire only 2*s.* 10½*d.* per stone; and after paying their way, and allowing for the purchased food, the cake and hay, the 40 Hampshire sheep left a profit, as well as the increase, of 6*s.* 7½*d.*, and the Sussex of 6*s.* 0½*d.* per head. The oil-cake is, however, reckoned at only 6*l.* 15*s.* per ton—a price we are afraid it seldom can be bought for—and the Clover-hay at 4*l.* per ton. Nothing is charged for attendance. As far, therefore, as this was a paying speculation, neither seemed to answer. The Swedes, the attendance, the washing, shearing, and other et-ceteras, would diminish the profit to less than nil; but this was hardly the object of Mr. Lawes. As an experiment, it required that care and control which it is most desirable to give in ordinary experience, and therefore ought not to be taken as an invariable conclusion; but it may go so far as to demonstrate that it may not be always the best to drive too far for the increase of artificial food. The 40 Hampshires consumed 49½ tons of Swedes, and the Sussex only 36 1-10th. The latter were, however, much the smaller, and more would be consumed to the acre. Mr. Lawes, however, puts the case in another light. He says, "Suppose, then, that in both cases 100 tons of Swedes had been eaten, we should have had consumed with them, and paid for by the increase of the animal—

	Oil-cake, lbs.	Clover, lbs.
By the Sussex sheep	17,374	and 16,576
By the Hampshire	16,470	and 14,767
	904	1909

That is to say, in consuming 100 tons of Swedes (and the dry foods), Sussex sheep would, according to our experiments, have given the increase from 904 lbs. more oil-cake and 1909 lbs. more Clover than the Hampshires. To have consumed the quantities of food supposed above, however, in 26 weeks, there would have been required 80 Hampshire and about 110 of the Sussex sheep."

Now, this is what we have considered as the real position of the sheep-feeder in our previous article. The larger sheep make more flesh. From a given area of ground they consume less food for the mutton



and fat they elaborate and deposit; but being worth less per pound it is really an advantage, in money matters generally, as regards the production of fat and mutton, to graze the inferior kind. Though the cases experimented upon by Mr. Lawes do to a certain extent make out the principle we laid down, still it admits of exceptionable features. The large sheep in the north are the improved ones. It is the reverse with the Downs—the small are the improved. And this only strengthens our position. It takes the Sussex Downs out of the category of unimproved breeds, and thus places the smaller sheep in a position of undue advantage. It is a very serious question whether the farmer will go on, and how long, growing an unpopular kind of mutton. Alas! for the luxury of the age.

Mr. Lawes has carried on his plans, and subjected the Cotswold to the same course. Having, however, originally intended them for a comparative trial with the New Oxford, but without success, he tried the 50 sheep alone, on different qualities of food, and subjected them to a comparison (as to their fattening tendency), with the two kinds of Downs he had before tried. He commenced with the flock selected by Mr. Garne, on October 24, and fed them on Turnips in the field until November 21, when he put them on boards or rafters, and then fed them on oil-cake, Clover-chop, and as many Swedes as they could eat. The same proportion of dry food was allotted to the Cotswold in proportion to their weight, which was 113½ lbs. average per animal. The food at first given was 1 lb. per day each of Clover chaff, and the same of oil-cake. Near the conclusion of this experiment the oil-cake was increased by one-half. The average weight, on December 1 was 119 lbs. 14 oz.; but there was a difference between the greatest weighted animal of 146 lbs., and the smallest 103 lbs., which showed how vast a variation there may be in a lot pretty nearly equal in appearance. Mr. Vernon Harcourt showed that great differences of produce would take place in the same field in various parts similarly treated; and Mr. Lawes' experiments show the same results. In the first month of the experiment, after the weighing alluded to, the increase was in a margin from nil to 22 lbs.; nor could previous weight, or any other element, account for the difference. The weekly average gained per head was 3 lbs. 10 4-14ths oz. during the month. In the second month the extreme variations of increase were 1 lb. against 22 lbs.; but it is very remarkable that it was not the one which had been the greatest gainer the preceding month, or increased the most, nor *vice versa*. Though it eventually happened that the one which gained the most was that which realised the greatest amount at the end of the experiment. The average gain in this month was less, being on 3 lbs. 3 7-12ths oz. per head per week. In the third month the greatest increase was again 22 lbs., and the smallest 3 lbs.; and it is again remarkable that the one which gave the smallest increase in the second month was that which progressed the most in the next. The average grain fed, however, to 3 lbs. 6 16ths oz. per week. In the fourth week the lowest increase was again 3 lbs., and the highest 28 lbs.; the latter being the one which stood highest in the second month. The average increase was 3 lbs. 5 oz. per head per week. Without pursuing the subject further, we may say that the final mean weight, without wool, was 174 lbs.; the highest weight, 214 lbs., and the lowest weight, 147 lbs. The highest average increase per week was, as we stated, the one before particularly referred to, which averaged 4 lbs. 7 oz.; the lowest average being 1 lb. 14 oz., and the general average 3 lbs. 2½ oz. The increase in 20 weeks per 100 lbs. of live weight took 259 lbs. 11 oz. of oil-cake, 219 lbs. 1 oz. of Clover-hay, and 3608 lbs. of Swedes. Now, the comparison with the Downs of the two kinds before referred to is as follows:—The

Cotswolds gained, per week	...	3 lbs. 2½ oz.
Hampshire Downs	...	2 lbs. 12 oz.
Sussex Downs	...	2 lbs. 13 oz.

But there was a difference in the food. The Cotswold consumed more food—more of every kind than the Sussex Downs; and more, though very slightly, of all but the Clover-hay, than the Hampshires. But then they had a large frame, and produced greater results. Taking the 100 lbs. increase, for instance, as the test, as it ought to be, the result is in every way in favour of the Cotswold, as the following will show:—

	Cotswolds.	Hampshires.	Sussex.
Oil-cake	...	239½ lbs.	314 lbs.
Clover-hay	...	219 lbs.	304 lbs.
Swedes	...	3601 lbs.	4086 lbs.

The increase in weight per 100 lbs. was about 2 per cent. greater with the Cotswolds.

The "balance-sheet," always so satisfactory, is not here of the same consequence as the experiment. It is not likely, when the animals are so confined and often weighed, that so much can be defined as clearly to make profit a guiding element. The cost of his sheep he makes 66½ 10s.; the quantity of purchased food consumed by oil-cake and Clover-hay, 29½ 6s. 5½d.—a total of 95½ 16s. 5½d.; while the proceeds of the sale were 92½ 3s. 7½d., a small difference of 3½ 12s. 10d. in the lot, with the manure, for the risk, return for capital, land crop, and Swedish Turnips; but they were sold at a "heavy" market, and thus may partly account for the loss. There is one curious fact in this and the preceding experiments which we cannot help noticing. Mr. Lawes observes that there is some general uniformity observable in the quantities of food in their fresh state, consumed by all the three kinds of animals, per 100 lbs. live weight weekly. "But when the quantities of the respective foods are calculated each to their contents of

dry substance, it is found that the total quantity consumed to a given weight of animal, within a specified time, is all but absolutely the same for the three breeds." Now, this opens to our view a wide field of the most difficult and delicate investigation. Are all breeds to be considered so nearly similar, that they take, per 100 lbs. live weight, nearly the same amount of dry food per week? Of the three dissimilar kinds—at least, two of them—this seems to be correct. How far it is so of the other breeds, time only will decide. But is the farmer to say that they are therefore all alike to him? No such thing. Take the Sussex Down, for instance: it consumed 9 or 10 ounces per week per 100 lbs. weight more of Clover-hay than the Cotswold; but it consumes several less Swede Turnips. Now, in some localities, and to some farmers, Turnips are difficult and Clover-hay easy of attainment. Here a class of sheep is indicated, which, if this experiment is an invariable test, will answer his purpose. Besides, weight for weight calculated dry, vegetable matter differs in price very materially; and as this is the real question with the farmer, may he not some day be able to apportion his kind of sheep to his description of food, and thus make profit? We hope so, or what will become of him? *Mr. Milburn on Sheep and Shepherding.*

### Home Correspondence.

*Royal Agricultural Improvement Society Show in Killybeg in 1853.*—In the pithy, and so far as it went excellent, notice of the above-named society's show, sent you by Mr. Edward Carroll, there are a few typographical errors which, in justice to all concerned, I hope you will allow me in his absence to correct. First, as regards Devon stock: instead of five, there were eight entries, six by Lord Charlemont, through his steward, Mr. Brady, and two by Lord Talbot de Malahide, now one of the most leading Irish stock breeders; secondly, by the repeated insertion of the word Kilkenny, instead of Killybeg; and thirdly, by giving the name "Darby," to Frederick Darley, Esq., the great Irish architect, the only living pupil of the immortal Francis Johnston, the founder of one of the most important institutions in Ireland, namely, the Royal Irish Academy. You will, I hope, excuse this, as will, I hope, Mr. Carroll, when it meets his eye. *J. C., Dublin.*

*Lois-Weedon Cultivation of Wheat.*—I beg respectfully to remind the author of "A Word in Season" that he writes for the instruction and guidance of those who adopt his system. It was not a "matter of infinite nothingness" to me that I was misled by the statement that one-half of the land was to be cropped; it put me to trouble and expense. Two other persons were also misled; one was saved from falling on a large scale into the mistake by personal instruction from Mr. Smith—the other had his difficulty removed by visiting Mr. Smith's farm; I was set right by the diagram in the last edition of the "Word in Season." It is not a matter of opinion we contend for, but a matter of fact. If I were to plant a field of Wheat in rows one foot apart, hoe up two rows together, leave three, and so forth, I should have Mr. Smith's quantity left; will he say that I hoed up half the crop? Again, every row of Wheat planted a foot apart, occupies 1 foot 6 inches on each side of the plant. Why are the two outside rows to be allowed only 9 inches? If the ground be trenched, it is in the winter, the surface only is moved afterwards; and what is to hinder the plant from taking possession of the 6 inches? The experiment of planting the Wheat without moving the ground except by the hoe, is to try one system by the side of the other; as yet, this has the advantage, but we shall see which does best in the long run. I am not prepared to affirm that 2 feet 6 inches is not the moiety of 5 feet; but I do affirm that Mr. Smith plants three-fifths of his land, *J. C. C., Long Wittenham.* [We cannot see the importance of this discussion. The fact is, that Mr. Smith occupies a whole acre with Wheat, although only half is tilled, for no doubt the lateral rows of his strips take great advantage of the rich mass of earth in the fallows which they border. As Mr. Smith's last edition renders future misunderstanding impossible, we think this little skirmish may as well be put an end to.]

*Pig-Breeding Farm.*—A correspondent, "Agricola," under this head asks for information. I live in a pig-breeding district. I advise him not to begin on too large a scale—the pig market is very variable. He must take care to breed the pig that is bought in the district; here the old Berkshire is the only pig for which there is a ready sale, the best sort of any other kind would not go off freely. I have tried Jerusalem Artichokes, but I never could make the pigs eat them. *J. C., Berkshire.*

*Saving Corn in Damp Weather.*—A field of white Oats, near Plymouth, was cut wet, and the weather continuing the same, was at last stacked in layers, with dry straw between. On taking abroad the rick, the grain was found in excellent condition, not sprouted nor damaged in any way. And what answered with so precarious a grain as white Oats, will stand a better chance with Wheat, or even Barley. In this way thousands of acres might have been saved, which have been left to sprout on the ground; and where straw is all used up, other dry stalks, or even shavings, might answer. Where no dry straw, &c., are to be had, it may be dried in sheaf; either by a simple kiln, as in Russia, &c., described in British Husbandry, vol. ii., p. 206; or without the risk of fire, by lime, as follows:—if the rick be made hollow, with the grain turned inward, a sufficient

quantity of fresh quicklime placed within, and then all closed in from bottom to top, and covered over to exclude the external air, the lime will rapidly dry the air within, which will as rapidly draw moisture from the corn, and so continue until the corn is dry, or the lime fully slaked. And as quicklime will absorb about one-third its weight of water, a ton of lime will take between 6 and 7 cwt. of water, and thus probably dry 6 or 7 tons of corn and straw. For all this water must come from the corn, if the external air be well excluded, and the lime raised from the soil by a bed of stones, gravel, or straw. The lime must not, of course, touch the corn; and therefore room should be left for it to swell in slaking and for turning it over, to slake all through, and a sort of doorway must be left on the side of the rick, which can be opened for putting in the lime, and for turning it over, but must be closed up immediately, and kept close, except at such moments. *J. Prideaux.*

*Manure for the Wheat Crop.*—The Royal Agricultural Society of England having, by the offer of a high reward (for a manure, equal, or superior, to Guano), acknowledged the necessity of a supply of such a material to the farmer, beyond that which can be produced upon his own farm, has induced me to lay before you the results of some experiments on the growth of Wheat, by the application solely of an artificial combination of the various chemical bodies of which a crop of Wheat is presumed to deprive the soil. My present object is to extend these experiments, by endeavouring to induce the agriculturist, at the approaching seed time, to try for himself; feeling perfectly confident, from my own success, that under similar circumstances, he will have every reason to be satisfied with the result. The experiments which are alluded to were conducted by myself, on the farm of the late Mr. William Stickney, of Ridgmont, near Hull, an extensive and eminent practical and experimental agriculturist. Though a series of various experiments, with artificial manures, were made from the year 1833 to 1845, it was not until the autumn of 1842 that the experiments I am about to describe were commenced. The principal object at that time was to determine the possibility of producing a crop of Wheat several years in succession from the same ground, and that by the application entirely of artificial manures. The analysis of Sir Humphrey Davy, of the chemical constituents of Wheat, was taken as the basis of the composition of the manure to be applied. The portion of land selected for the experiment consisted of a strong clay loam, of very indifferent quality, about 6 inches deep, having a strong clay subsoil. The land had been drained, I believe, in 1840. This land, in the usual course of husbandry, was sown in the spring of 1841, with a crop of Talavera Wheat, after a crop of Turnips which had been carted off. The yield of this crop I did not ascertain. With the Wheat was sown Rye-grass, for a crop of seed, which crop, a very indifferent one, was reaped in the summer of 1842. Rye-grass, for seed, upon this kind of land, is considered fully equivalent to a crop of Wheat. The Rye-grass having had a small quantity of farm-yard manure spread over it, was ploughed up in the autumn of 1842, and sown with Wheat. It was upon a portion of this land the first experiment was commenced with the artificial manure. A patch near the centre of the field, exactly 112th part of an acre, was selected. The seed was sown in drills, the artificial manure being applied in the drills at the rate of 2 cwt. to the acre. The yield of Wheat from this piece of ground in 1843 was at the rate of rather more than 3 quarters 6 bushels to the acre, while the average yield of the rest of the field was not more than 2 quarters 3 bushels to the acre; thus giving an increase of 1 quarter 3 bushels. In the autumn of 1843, immediately after the crop of Wheat had been removed, the land was prepared for another crop of Wheat, by merely hoeing over the surface to the depth of about two inches, and leaving it in this state for about four weeks that the seeds of weeds might have time to germinate, before again sowing the next crop. The crop of 1844 was sown in October, 1843, in drills, in the same manner as before, but this year the artificial manure at the rate of 3 cwt. to the acre was applied. The yield of this crop was at the rate of 4 quarters 2½ bushels to the acre, being within half a bushel of 2 quarters more than the average yield of the field in 1843. The rest of the field this year was sown with beans. After removing the crop of Wheat the same mode of destroying weeds was adopted as before, just sufficient mould being obtained to cover the seed corn in the drills. The crop of Wheat for 1845 was sown in October, 1844, with an application at the rate of 3 cwt. per acre of the artificial manure, and the yield of this crop, although much damage had been done by birds, was at the rate of 5 qrs. 2½ bush. to the acre being 2 qrs. 6½ bush. more than the average yield of the field in 1843. The rest of the field was summer fallow this year. From this period my profession carried me into pursuits and situations, where it was impossible for me to carry on the experiments, and from that time they were discontinued. The materials used in the composition of the manure were partly manufactured by myself, and partly purchased at retail prices from the druggist; care being taken to obtain them pure, and to approximate as nearly as possible to the chemical constituents of the Wheat plant. The manure obtained in this manner was very expensive, more so than at that time would have justified its recommendation for general adoption. In one thing I was perfectly satisfied; I had entirely succeeded in the production of several crops of Wheat in succession, upon land which was well known, under ordinary culture, to be incapable of such production. Since the period when these experiments



were undertaken, considerable alteration has taken place in the manufacture and production of several of the materials which I then employed, so much so that the cost of the artificial manure, applied at the same rates as to the experiments in question, would not now be more than 30s. to 35s. per acre. From my experience and accurate observations of the effects of this manure, I can, with the greatest confidence, recommend its application for Wheat, and have no doubt it would answer equally well for Rye, Oats, and Barley. The manure, being in the state of a powder, may be easily applied by drill, and that, I have no doubt, would always be found the best mode of application. I am anxious that as many experiments should be made in the following season as possible, upon land not previously manured, or even after the Wheat crop of the present year, the latter being the best test of its capabilities. In any experiment you may make, I would respectfully advise minute attention to every circumstance attending it, of which remarks and memoranda should be made; the manure is entirely prepared under my own inspection, and warranted to be composed of the same constituents, as nearly as possible as those employed in the experiments; the cost in London and at all the principal seaports and first-class railway stations in the kingdom, is 8s. per bushel for cash. Four bushels to the acre I consider a sufficient quantity, where no other manure is applied; this ought, however, to be determined by the quality and condition of the land. *R. Allen Stickney, Assoc. Inst. C. E., 48, Bedford Row, High Holborn.* [The above has been sent us in the form of a printed letter, accompanied by a card advertising the sale of the manure referred to. It is however, accompanied by a certificate of the genuineness and trustworthiness of the report it contains, signed by so many well-known names that we do not hesitate to publish it.]

*Italian Rye-grass.*—It will grow on strong land; and the plan I adopt may be worth attention, particularly to small farmers like myself, who may have a few sheep. With the spring corn I sow one acre with pure seed, feed it off early; cut the second growth for seed; let it lie for a few days, thresh it out on a wattle in the field, cart the haulm pretty green to the hayloft, or make it, as I did this year, into a stack close to the wattle, saving the expense and trouble of carriage; and as barn floors are then unemployed, the seed must be laid out thin, and turned over occasionally, or it will heat and be spoilt. From one acre I have a ton of hay and 4 sacks of seed, well worth 5s. a bushel. The plant is now grown well for feed again. Take this one acre, first feed worth 20s., seed, 4l., hay or haulm, 50s., present plant, to make it even, say 10s.—altogether 8l. an acre. As I have more than once adopted this plan, and have been fortunate in the weather, I have been well satisfied, and shall continue the practice. Observe, the wattle is placed on trestles in the middle of the acre on a cloth, and the hay brought by women on forks, as fast as the two threshers can beat it off. I have said I am satisfied with the result, my calculation being 4 rents, at 25s. an acre, 5l.; and as I do not know what a fallow is, and seldom grow Turnips, it may be difficult to find any field in my occupation, the produce of which is not of that value. To return to the Rye-grass: three acres I sowed last spring, as you mention, in a plant of Wheat mixed with Clover, and have twice made it into hay this year, and now have a capital bit again; but I am convinced it had better have been sown with spring corn, as the Wheat stubble, when reaped and not mown, spoils the first cut of hay, and, besides, the men complain so much of its turning the edge of the scythe, that a neighbour here always pays 6d. an acre more for mowing Grass on stubble. It has occurred to me that this would be a profitable Grass in permanent meadow, because, as it ripens so soon, it would shed its seed before the other plants would be ripe, and thus produce an endless succession. I intend this week to roll in some of this year's seed on my Barley stubble, where only Clover was sown in the spring. *Delta.*

#### POULTRY.

LONDON ON THE "SURREY SIDE" has at length had its Poultry Show at the Zoological Gardens. The locality is admirably adapted for such an exhibition, and the liberal prize-lists, with the care taken of the birds, gave guarantees that were responded to by the best amateurs in England, who sent their birds for competition. The show was held in large tents, and possessed the novelty of a fountain playing in the centre. The arrangements were generous, and the proprietor, Mr. Tyler, told the judges that as it was his *debut* in the poultry world, and he was consequently uninitiated, he placed himself in their hands, and empowered them to order anything they thought conducive to the well-doing of the birds entrusted to him. There were 566 competing pens in the different classes, comprising many of the best birds in England. In the adult pens the time of year was plain in faulty plumage, and evident lack of condition. After the duties of the spring and breeding season, and while in moult, they are not fit for exhibition, and for this reason the main interest at this time will always be in the chicken classes. In making these remarks, we would not be thought to hold with those who say this is the wrong time of year, because we believe it offers the inducement for early maturity, which is, after all, one of the principal merits in poultry. The chief prize takers were Captain Hornby, Messrs. Adkins, Fairlie, and Rawson. The following prize list furnishes particulars. Mr. Fairlie had a pen of excellent adult Cochins, with which he took a first prize. Mr. Eason showed

four chickens of unusual merit, that had the same honour awarded to them. Mrs. Lydia Stow took first prize with adult Spanish. Captain Hornby showed a perfect cock in the chicken class, and Mr. Simons of Birmingham claimed precedence for one cock and pullet. The Dorkings were very good indeed, and among the prize takers were Captain Hornby (two), the Hon. Mrs. D. Astley (two), the Hon. and Rev. Noel Hill, Messrs. Potts, Robard, and Breavington. Mr. Jennens of Mosely, took all the prizes for white Dorkings. The perusal of the catalogue will show there was no lack of competition, as most of the celebrated names in the different classes will be found in it. For a first show, it was an excellent one, and certainly holds out promise, seeing it is to be repeated, of an annual treat. With the exception of the white Cochins China adult, and the white Dorking, every class was well represented. A pen of gold-spangled Hamburgs, belonging to Mr. G. C. Adkins, was unusually good. The competition in silver-spangled was very great, and there were excellent Bantams of all descriptions. The geese were good, but not heavy, and again the white ones carried off the prizes from their grey brethren. The show of Aylesbury ducks was perhaps the best ever seen. The "other varieties" were in force, Emu fowls, Auconas, Chamois, Polands, Andalusians, white bearded Polands, Dumfries, Ptarmigans, and lastly Brahma Pootras, all gained prizes. Some of the latter were better than those lately exhibited. We are glad of it, as there would seem to be a disposition to make this class the refuge for any Cochins China fowl of doubtful colour. There was a sale by auction of the prize and commended birds, or we should say, it was intended there should be a sale. The birds were put up, but few, if any, were sold. We should think the sale by auction had received the *coup de grace*. The judges were Edward Hewitt Esq., Birmingham; J. H. Catling Esq., King Street, Portman Square; and Mr. John Bailly, Mount Street, Grosvenor Square.

**POULTRY: E. V.** In answer to your questions, it is hard, without seeing the birds, to say whether a judge is justified in withholding all the prizes from a class or classes. If the birds are without merit, he is not only justified in doing so, but it is his duty. Birds that have before had first prizes awarded to them, by competent judges, should not be passed over, unless they had so suffered in health, condition, and plumage, that their merit had disappeared. I think in my experience I have never seen whole classes disqualified, unless it has been where there was no competition, and the class was represented by one inferior pen. I have seen the Polands of which you speak; it was in January last, and they were then among the best birds of the breed I ever saw.—*O. V. C. H.* I hardly know how to answer your questions—as it is a personal thing. I believe the book published by myself to be the most useful, and the least tiresome to read.—*E. D. H.* Give your Spanish cock a table-spoonful of castor oil, and then feed well on bread and strong ale, and roasted mutton chopped very fine. He must be kept in a dry place secured from draught. If the Cochins China chicken were mine I would kill it; it will never be cured. *J. Bailly, 113, Mount Street.*

#### Miscellaneous.

**Plough versus Rotary Forking Machine.**—Mr. Meehi has lately written a letter to the *Times*, introducing to notice a newly invented machine, "which by a happy and most simple combination of horse and steam power, will—and I pledge my agricultural reputation for it—not only deeply, cheaply, and efficiently pulverise the soil, but at the same time sow the seed, and leave all in a finished condition. It will also, by a simple inversion, cut and gather corn without any rake or other complication; while both in cultivation and harvesting its operation will be continuous and without stoppage." We hope to be able next week to describe it more in detail.

**Experiment on Drainage at different depths.**—The land is strong red clay—the subsoil red or white clay, with some beds of bluestone at intervals, and at various depths. There is no spring water on this farm, and my object in draining it is, that the surface water shall pass off as quickly as possible, to enable me to work the land soon after rain, without injury to it, and that the growing crops may not be perished by the rain-water remaining long in the soil. Having drained similar land in nearly every year since 1825, my opinion was decidedly in favour of 30 inches depth, but I wished others to be convinced, and accordingly I stated in November, 1849, to the Agricultural Society of this county (Notts), that I would have a field drained at three different depths. This was done in February, 1850; the field is 8 acres, and contains 15 furrows, so that there were five for 2 feet; five for 2½ feet; five for 4 feet. The lands are all of the same width, between six and seven yards. The field was sown with Barley in 1851, seeds pastured in 1852, and the same this year. There has been no perceptible difference in the crops or appearance, and after rain, contrary to the received opinion, the shallow drains begin to run before the others. *Mr. Milward, in English Agricultural Journal.*

#### Calendar of Operations.

##### AUGUST.

**THE HIGHLANDS, August 30.**—Cereals in the north are now approaching maturity, and in many instances the earlier fields have been cut. With few exceptions these crops are not up to an average in either corn or straw, and in some districts they are light. This is especially the case where soils are either of a gravelly or silty nature, the early summer drought having acted injuriously on both. Peas are generally a good crop, and potatoes, all over the country, have as yet a most luxuriant aspect. In most fields the taint is appearing, but making such slow progress that the ungainly one thinks it the effects of a frosty night, while all believe the disease will be less virulent than formerly. In support of this opinion, a practical gardener (Mr. McIntosh, Invergary) informs me he observed the

incipient symptoms, the usual rusty spots on the stem underground, nearly two months ago, but as yet has met with very few tainted tubers; whereas, in by-gone years, he invariably found the tubers much sooner and more severely affected after seeing the first signs of the disease. Turnips, as elsewhere, are an irregular crop, bad in some places, pretty good in others, and best when early and carefully laid down. Pastures, on hill and dale, have not been so good as usual throughout the season, in consequence of the ungenial spring. Stocks, however, look well. Grouse and all sorts of game are very abundant, and sportsmen are making great bags daily. Tape-worm and diseased birds, so rife of late years, are scarcely heard of. Salmon fishing in the beginning of the season generally not up to former years; but in July and the earlier part of the present month, a great run of grilse, and a considerable sprinkling of old fish, have afforded the angler excellent sport. *P. R. L.*

**SOUTH HANTS: Aug. 27.**—Since August 16 there has been rain: on Tuesday week it fell continuously for 12 hours. On the 18th and 19th there were showers; on the 23d it rained very heavily all night, and on Thursday and Friday, the 25th and 26th, it poured in torrents day and night, accompanied by tremendous gales, which acted as if they would blow the standing corn out of the ground, and the words of the poet are verily applicable to the present season and these southern coasts. Virgil says—

"Why should I sing autumnal stars and skies;  
What storms in that uncertain season rise?  
When birds begin to reap and bind the field,  
All the wild war of winds have I beheld  
Rise with unmitigated rage at once, and tear  
And whirl 'th' uprooted harvest into air.  
Oft in one deluge of impetuous rain  
All heaven's dark concave rushes down again,  
And sweeps away the crops and labours of the swain.  
The swelling streams overwhelm the ploughman's toil,  
The tossing seas in furious eddies roll!"

Such has been the weather during the present week, and agriculturists may take Virgil's Georgics in their hand, and derive consolation that they alone are not the sole sufferers in these destructive visitations. The Oats and Barley are sadly cut up, and the Wheat also which remains standing. The after share of Clover, of which much has been long cut, will not be worth much. The Barley it has been impossible to turn, and the swathes being full of Clover it becomes a very serious matter. Turnips have had abundance of rain, and these winds tend to their growth. All operations on the farm are suspended; the chief occupation will be turning Barley and Peas, examining sheaves and stocks. The weather having been cold, no sprouted corn as yet has been observed. *Q. R. S.*

**WESTER ROSS, Aug. 30.**—This month has been lowering throughout; the ripening of the crop has progressed but slowly, and, consequently, harvest operations were not commenced so early as a few weeks ago we anticipated. On the 23d, we began cutting, and had two fine harvest days. On the 25th rain began to descend, and ever since, at intervals, a great deal has fallen; to-day, however, the clouds have again disappeared, and harvest operations are set to in right earnest. The scythes have now come into more general use, and this year I have four scythes daily plied. By these there are about six acres cut per day, at an expense of somewhat under 4s. per acre. Corn that is mowed can be carted a few days earlier to the stackyard than what is cut with the sickle, as it is more open in the sheaf and the wind gets more freely through it. Harvest is now general; and having now come to handle the crop, I have nothing of what I formerly reported to alter; although there are some fine fields of Wheat to be found, generally it looks thin, and the head is small, yet, being well filled, it will produce a good sample, and thresh out well according to its bulk. Barley is a fine crop, and Oats are fair. The rain that has interrupted for a few days harvest work came most opportunely for the Turnips. Thin and irregular as the earlier sown ones were, the scythe has the later sown ones were in their progress, these seasonable rains and genial weather have given elasticity to their step, and now the Turnip fields are beginning to present a beautiful green appearance. When guano was first applied to Turnips their rapidity of growth was such as was apt to lead a person to suppose that they had got into the hands of an Indian juggler; how happens it that, now, when guano is applied in larger quantities, their growth is so alarmingly slow? Is it because the guano now received is greatly inferior? or is it that it cannot do such wonders in land that has been repeatedly guanoed? I incline to think that our guano now is inferior; for, although applied to land that has never had guano before, its operation is very tame. Or it may be that Turnips grown repeatedly extract from the soil those substances which are imperatively necessary for their growth, and consequently leave the land, unless again supplied by manure with the Turnip growing substances, and which, perhaps, guano alone cannot supply, quite unable to supply the cravings of the next Turnip crop. Potatoes are keeping sound and healthy. It would be about as difficult this season to get Potatoes bad to eat, as it was last year to get good ones. Our last Muir of Ord market was the dullest one, both for sheep and cattle, we have had for a long time. Besides a falling in price there were few buyers, and the greater number of the lots exhibited returned unsold. At that time the weather was dry, Grass was scarce, Turnips looked ill; but, with fine weather and improving Turnips, we will look for our late high prices, with an active demand.

#### Notices to Correspondents.

**ANGAMOS GUANO: A Constant Sub.** It is a deposit of recent formation, and is no way peculiar except in being above the average richness in ammonia, and somewhat whiter in colour. But a few cargoes have been imported; it is collected by hand at considerable expense. We quote from Prof. Way's paper on guanoes in the 10th volume of the English Agricultural Society's Journal.

**BONE-DUST FOR PASTURE: E. M. says,** "In your paper of the 2d of April you have an article signed W. B. Booth, recommending bones as a top dressing for Grass land, but he does not say whether half-inch bones, bone-dust, or dissolved bones are to be used." Perhaps Mr. Booth will explain himself further. As to weeds, we have no suggestion to offer beyond that of hoeing them up, perseverance in pulling them up, removing the leaf, &c. The blossom of Coltsfoot must be gathered in early spring.

**DEER PARKS: J. Stewart.** You will not hurt the deer by sowing guano over the Grass. You need not sow over the whole extent at once, and might let a wet day or two elapse before sowing; the seed will be better.

**DISEASE IN PIGS: J. M.** The cause, we imagine, is connected with the diet, although somewhat mysterious. A post mortem examination should be made. We would recommend an occasional dose of linseed oil, by way of preventive—from 2 to 4 oz. I would suggest the following, when the disease is observed: Tincture of opium, 1 drachm; spirit of nitrous ether, 2 drachms, to be mixed with 2 ozs. of warm water. But above all, if the pig is fat enough, the butcher's knife. *W. C. S.*

**LORD DUCIE'S SALE: X. The "Duke of Gloucester" sold for 650 guineas.** We have seen a commission to purchase it extended to 1200 guineas. The whole result of the two days' sale is as follows:—Forty-nine cows and heifers, 6807l.; 13 bulls, 2494l. 16s.; total, 93,001l. 16s. Thirty sows, 534l. 9s.; 8 boars, 1874l. 10s.; total, 38,722l. 8s. Seventy-nine lute sheep, 2170l. 6s.; 18 rams, 3264l. 10s.; total, 97,2602l. 15s. Sixty-four Cochins fowls, 3104l. 4s. Total, 12,927l. 3s. We may mention that the sire of the "Duke of Gloucester," namely the "Grand Duke," was sold a few weeks ago, to Mr. Thorne, of New York, for 1000 guineas.



GRASS: *Atkinson & Bell*, Messrs. Lawson recommend for pasture and cover in woods and plantations—

Name of Grass.	Light Soils.	Medium Soils.	Heavy Soils.
	lbs.	lbs.	lbs.
<i>Agrostis vulgaris</i> ...	1	1	1
<i>Aira caespitosa</i> ...	2	2	3
<i>Arrhenatherum avenaceum</i> ...	2	3	5
<i>Brachypodium sylvaticum</i> ...	2	3	3
<i>Bromus giganteus</i> ...	3	3	3
<i>Dactylis glomerata</i> ...	2	2	2
<i>Festuca elatior</i> ...	2	2	2
<i>Holcus mollis</i> ...	1	1	1
<i>Lotus major</i> ...	2	2	2
<i>Milium effusum</i> ...	2	2	2
<i>Phleum pratense</i> ...	1	1	1
<i>Poa nemoralis</i> ...	2	2	2
" <i>sempervirens</i> ...	2	2	2
" <i>trivialis</i> ...	2	2	2
	304	334	37

SOCIETIES: *O. L.* The subscription to the English Agricultural Society is 12. a year, to the Highland and Irish Societies it is the same—or a smaller sum (we believe 10s. a year) to tenant farmers. The charges, to members, for analysis by the chemist of the English Agricultural Society are as follow:—

1. An opinion as to the genuineness of a manure in the market ... £0 5 0
2. Determination of ammoniacal matter, or earthy phosphates ... 0 10
3. Ascertaining the proportion of lime in a soil ... 0 6 6
4. Ascertaining the proportion of magnesia in a soil ... 0 10 0
5. Ascertaining the proportion of lime and magnesia ... 0 15 0
6. Analysis of limestone or marl ... 1 0 0
7. Partial analysis of a soil ... 1 0 0
8. Complete analysis of a soil ... 3 0 0
9. Letter asking advice on one topic ... 0 7 6
10. Letter asking advice on more than one topic ... 0 10 0
11. Analysis of oilcake, dung, or any animal products ... 1 0 0
12. Analysis of oilcake, in reference to oil, &c. ... 1 10 0
13. Determination of amount of carbonate or sulphate of lime in water ... 1 0 0

All members wishing to avail themselves of these privileges have to place themselves in direct communication with Prof. Way, the consulting chemist to the Society, whose address is No. 23, Holles Street, Cavendish Square, London.

## Markets.

### COVENT GARDEN, Sept. 3.

The market is well supplied with both Vegetables and Fruit, but trade is not very brisk. Peaches and Nectarines are plentiful. English Grapes are abundant. Importations from the Continent of Potatoes, Carrots, Artichokes, and Tomatoes are still kept up; the latter fetch from 2s. to 3s. per dozen. There are also French Apricots in the market, at from 6d. to 1s. per dozen. English Cherries are nearly over. Greengages and Orleans Plums from the South of France fetch 4s. per basket. Carrots and Turnips fetch from 2d. to 4d. per bunch. Peas are still very good. Potatoes are improving in quality. Mushrooms continue scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonette, Pinks, and Carnations.

### FRUIT

Pine-apples, per lb. 3s to 6s  
Grapes, per lb. 1s. to 3s 6d  
Peaches, per doz., 4s to 10s  
Nectarines, per doz., 3s to 8s  
Apricots, per doz., 1s to 3s  
Plums, Orleans, p. pun., 1s to 2s  
— Greengage, per pun., 1s to 2s  
Melons, each, 1s to 3s  
Apples, per bush, 3s to 5s  
— dessert, per doz., 1s to 2s

### VEGETABLES.

Cabbages, per doz., 6d to 9d  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 2s 6d to 4s  
French Beans, p. hf. sieve, 1s 6d to 2s 6d  
Rhubarb, p. bundle, 3d to 6d  
Potatoes, per ton, 40s to 100s  
— per cwt., 3s to 5s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 2s to 2s 6d  
Cucumbers, each, 2d to 3d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 3s to 4s  
Spinach, per sieve, 1s to 2s  
Beet, per doz., 1s to 1s 6d  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

### HOPS.—BOROUGH MARKET, Sept. 2.

Messrs. Pattenden and Smith report that the accounts from the plantations speak of the serious injury the Hops have sustained from the effects of the late storms. The mould is also said to be increasing rapidly in Mid Kent. Market improving and duty declining.

### COAL MARKET.—FRIDAY, Sept. 2.

Eden Main, 22s. 3d.; Wallsend Haswell, 23s.; Wallsend Hetton, 23s.; Wallsend Stewarts, 23s.; Wallsend Tees, 23s.—Ships at market, 97.

### HAY.—Per Load of 36 Trusses.

Prime Meadow Hay 90s to 100s  
Inferior do. ... 50 80  
Rowen ... 60 80  
New Hay ... 60 80

### CUMBERLAND MARKET, Sept. 1.

Prime Meadow Hay 105s to 112s  
Inferior do. ... 78 95  
New Hay ... 40 84  
Old Clover ... 120 130

### WHITECHAPEL, Sept. 1.

Fine old Hay ... 100s to 105s  
Inferior do. ... 90 94  
New Hay ... 74 78  
Inferior do. ... 38 50

### WOOL.—BRADFORD, THURSDAY, Sept. 1.

Wool.—There is great difficulty in getting wool from the growers and country dealers, who are evidently seeking prices beyond what can be realised here, and consequently the supply coming to market is not abundant. There is no disposition on the part of the spinners to buy, and altogether the trade is flat. Nails and brokes are without change since our last.

YARNS.—There is much complaining of the high prices sought for wool, compared with what can be realised for Yarns, and at no price has this branch of the trade been more dispirited than at present.

PIECES.—There is a fair but not average business doing for August. The merchants are generally working from their early-bought goods, and where orders run out they want to renew on old terms, which are impossible to be met; for on Cotton alone, since the spring, the advance is a serious item. There is a strong feeling in favour of lessening the quantity brought to market.

SMITHFIELD.—MONDAY, Aug. 29.  
We have a fair supply of Beasts, but not so large as on Monday last. The demand is good, and prices on the average have improved. The number of Sheep is unusually small for the time of year, consequently they are quickly disposed of at an advance of fully 2d. per 8 lbs. and in some instances rather more. Lamb is much more wanted; a few choice ones are saleable. Good Calves are not plentiful; they are rather dearer. From Germany and Holland there are 1503 Beasts, 2530 Sheep, and 291 Calves; from Spain, 620 Sheep; from Scotland, 240 Beasts; and 1800 from the northern and midland counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Here-  
fords, &c. ... 4 8 to 4 10  
Best Short-horns 4 4—4 6  
2d quality Beasts 3 0—3 8  
Best Downs and  
Half-breeds ... 5 0—5 4  
Do. Shorn ... 0 0—0 0  
Beasts, 4800; Sheep and Lambs, 22,150; Calves, 350; Pigs, 368.

### FRIDAY, Sept. 2.

The supply of Beasts is more than equal to the demand. The choicest kinds are not much lower, but many inferior qualities remain unsold. We have a large supply of foreign, but very few English Sheep; trade is dull, and prices are lower than on Monday last. There is very little demand for Lamb. Calves are rather lower. From Germany and Holland there are 384 Beasts, 4000 Sheep, and 564 Calves; 400 Beasts from the northern and midland, and 75 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Here-  
fords, &c. ... 4 6 to 4 10  
Best Short-horns 4 4—4 6  
2d quality Beasts 2 8—3 6  
Best Downs and  
Half-breeds ... 5 0—5 2  
Do. Shorn ... 0 0—0 0  
Beasts, 1079; Sheep and Lambs, 11,170; Calves, 744; Pigs, 315.

### MARK LANE.

MONDAY, Aug. 29.—The supply of Wheat from Essex and Kent to this morning's market was good, but comprised very little new. The whole was disposed of at an advance of 2s. to 3s. per qr. upon the prices of this day's night. Foreign met a most limited demand, at 2s. improvement upon our quotations of last Monday. Some business was done in floating cargoes at 54s. to 56s. for Ghirka. Barley and Peas bring an advance of 1s. per qr. Beans are unaltered in value. Oats, with the exception of Russian, are 6d. to 1s. per qr. dearer. The top price of town-made Flour is raised to 60s. per sack; and barrels sold at an improvement of 1s. to 2s.

PER IMPERIAL QUARTER.  
Wheat, Essex, Kent, & Suffolk ... White ... 52—62 Red ... 53—58  
— fine selected runs ... ditto 56—66 Red ... 56—62  
— Norfolk ... Red ... —  
— Foreign ... 44—66  
Barley, grind. & distill., 23s to 26s. Cheve. 24—40 Malting 25—38  
— Foreign, grinding and distilling 25—32 Malting 29—33  
Oats, Essex and Suffolk ... 17—21  
— Scotch and Lincolnshire ... Potato 22—24  
— Irish ... 21—29  
— Foreign ... Poland and Brew 17—24  
Rye ... 29—32 Foreign ... —  
Rye-meal, foreign ... —  
Beans, Mazagan ... 31s to 36s ... Tick 33—38 Harrow. 33—38  
— Pigeon ... 34s—40s ... Winds. — Longpod. —  
— Foreign ... Small 32—40 Egyptian 30—32  
Peas, white, Essex and Kent ... Boilers 40—44 Suffolk 40—45  
— Maple ... 35s to 38s ... Grey 32—36 Foreign 32—45  
Maize ... White ... — Yellow ... —  
Flour, best marks delivered ... per sack 53—60  
— 2d ditto ... ditto 45—53 Country 45—53  
— Foreign ... per barrel 32—32 Per sack 42—46

FRIDAY, Sept. 2.—The arrivals of English grain this week have been small, of foreign more moderate than of late. The market this morning opened with an improved inquiry for foreign Wheat and Flour, both on the part of speculators and millers, but was checked by the increased demand of factors, and only a moderate business resulted, in some instances at an improvement of 1s. per qr. and barrel. English we are unable to quote higher. Barley is in fair demand, at fully Monday's prices. There is no alteration in the value of Beans and Peas. Oats sell freely at extreme rates. The business done in floating cargoes of Wheat from the south of Europe has been at about the prices of this day week.

### ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 1620	Qrs. 40	Qrs. 110	940 sacks
Irish ...			300	
Foreign ...	10980	5750	12960	2650 bbls

### IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
July 23 ...	51 10	29 4	21 6	35 3	40 4	37 10
— 30 ...	52 7	29 7	22 2	36 3	40 5	36 3
Aug. 6 ...	53 9	29 9	22 6	37 3	40 7	36 10
— 13 ...	53 3	29 10	22 3	34 9	41 5	36 9
— 20 ...	51 1	29 7	22 0	34 10	40 11	34 9
— 27 ...	48 6	29 6	22 0	33 8	41 1	36 6
Aggreg. Aver.	51 10	29 7	22 0	35 4	40 9	36 6

### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	July 23.	July 30.	Aug. 6.	Aug. 13.	Aug. 20.	Aug. 27.
53s 9d ...	...	...	...	...	...	...
53 3 ...	...	...	...	...	...	...
52 7 ...	...	...	...	...	...	...
51 1 ...	...	...	...	...	...	...
51 10 ...	...	...	...	...	...	...
48 6 ...	...	...	...	...	...	...

LIVERPOOL, TUESDAY, Aug. 30.—At this morning's market there was a good attendance, and the town and country trade and several buyers from a distance, who showed much unwillingness to submit to the high pretensions of holders, and the business done in Wheat and Flour for consumption was quite of a retail character, at an advance, however, of fully 6d. per 70 lbs. 1s. 6d. per barrel, and 1s. per sack on the prices of this day week. Old Oats, with a moderate retail sale, maintained their value, but new were slightly easier to buy. Old Oatmeal was held for more money, but on new a slight reduction was submitted to. Barley, Beans, and Peas met with a good demand for feeding, at full prices. Indian Corn on the spot was also in request for feeding, at an advance of 6d. to 1s. per qr.—FRIDAY, Aug. 26.—At this morning's market there was a good attendance of buyers, and a brisk demand was experienced for Wheat and Flour, at an advance since Tuesday of 3d. to 4d. per 70 lbs. on the former, and 6d. to 1s. per barrel on the latter article. Oats and Oatmeal were without change in value or demand; as were also Barley and Peas, while Beans were 6d. per qr. dearer. Indian Corn on the spot met with more attention than for some time past, and may be quoted 6d. per qr. dearer, prime flat yellow American bringing 32s. per qr. In floating cargoes few transactions took place.

### PERFUMERY DEPARTMENT.

METCALFE, BINGLEY, AND CO. beg to inform their customers and the public in general that, having purchased the lease and Perfumery business of the house adjoining their own, they now carry on the MANUFACTURING PERFUMERY BUSINESS in all its branches, and are, in addition to METCALFE'S Astringent Tooth Paste, &c., Proprietors of the following preparations for the Hair:—Dunlop's Medicated Balm, also his Medicated Pomade, Robinson's Nutritive Cream, Young's Purified Animal Oil, &c., and are Importers of Foreign Perfumes, J. M. Farina's Eau de Cologne, &c. The quality of the different articles prepared by M. B. and Co., will, they feel assured, obtain the same character for superiority that they have so long had for their Brushes.—At METCALFE, BINGLEY, and Co.'s only Establishments, 130s and 131, Oxford Street, London, second and third doors from Holles Street.

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**TO BE DISPOSED OF,** about 100 yards of fine GARDEN BOX, of 7 or 8 years' growth.—Apply to Mr. SKINNER, Custom House, West India Docks.

#### BRAHMA POOTRA FOWLS.

**THE BRAHMA CHICKENS** that obtained the FIRST PRIZE at the SURREY POULTRY SHOW, were some of Dr. GYNNÉ's birds, that took the First Prize at the London Summer Show, Baker Street, and a portion of those sent by Mr. SHEEHAN, in "The Cottage Gardener," August 4th, in reporting the London Summer Show, not only made illiberal remarks respecting the BEAUTIFUL Fowls, but stated—"Dr. Gynne's Chickens are neither like their parents nor like those exhibited by Mr. Sheehan." Both these statements were proved to be incorrect; in the first place, Dr. Gynne's parent birds and chickens are exactly alike (so are mine); and next, Dr. Gynne's and my chickens are so much alike that the one could not be told from the other; this was proved the pen that took First Prize at the Surrey Gardens, and my four birds that were unsuccessful at Baker Street took First Prize at Yarmouth.

As to the Editor's remarks, and the statement of a correspondent respecting Brahmas, in "Cottage Gardener," August 25, I think I may say that I shall be able to answer all they stated.

Whether the Brahmas be a distinct variety, or only a variety of Shanghai, I care not (although I firmly believe them to be, as stated by Dr. Bennett, United States, viz., that they are a distinct variety, recently imported from the Brahma Pootra Valley, India) for it is certain they are all that can be wished for; they surpass all other fowls in size; also as layers and sitters; and as to plumage, that is most beautiful. The only motive a few persons can have for endeavouring to denounce them is, they do not themselves possess any.

W. B. SHEEHAN, Underhill House, Barnet.

#### BRAHMA POOTRA FOWLS.

**MR. W. B. SHEEHAN, Underhill House, Barnet,** begs to state that he has for disposal two parcels of BRAHMA CHICKENS. No. 1 parcel: a Cockerel, bred by the Queen (a guarantee will be given), and two pullets by Mr. Sheehan's Hyder Ali. No. 2 parcel: a Cockerel by Mr. Sheehan's Tippoo Saib, and two pullets by Hyder Ali; this arrangement will prevent all chance of breeding in-and-in.—The six birds will be on view Monday and Tuesday, 5th and 6th inst., at the American Daguerreotype Portrait Gallery, 385, Oxford Street. Hyder Ali and Tippoo Saib are two of the finest Brahma Cocks in this country.

#### BRAHMA POOTRA FOWLS.

**MR. W. B. SHEEHAN, Underhill House, Barnet,** begs to state that he has obtained the pair of beautiful Brahmas that were sent by Dr. Bennett (United States) to Mrs. Hosier Williams, Shrewsbury, having purchased them from Mr. Bowman, Penzance; these, with the pair he before possessed (one of the pairs sent by Dr. Bennett expressly to be exhibited at the Metropolitan Show), will enable him to cross so that all chance of breeding in-and-in will be obviated. Mr. S. is perfectly aware that spurious birds have been sent to this country under the title of Brahmas, and which have caused persons not to entertain so high an opinion of the true Brahmas as they so justly deserve; but if they were to see some genuine birds they would be of a different opinion, as it is evident that those persons who speak disparagingly of them have never seen any pure Brahmas. The Brahmas that Mr. S. now possesses, and those that he is importing, he can guarantee are pure, and he can also show where the mangle called Brahmas that have been sent to this country came from, and how they were got, and which the American agricultural journals so properly denounce. At Earl Ducie's sale of Poultry, a gentleman purchased for Mr. SHEEHAN some of the choicest lots, viz., Beauty, &c., and also chickens bred by his lordship from the renowned Sir Robert, Beauty, Lily, &c., which, when added to his already extensive stock, will enable him next season to show Cochon China Chickens equal, if not superior, to any yet seen.

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#### TO GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

**MESSES PROTHEROE & MORRIS** are instructed by E. LAWRENCE, Esq., (who is removing to London), to submit to an unreserved Sale by Auction, on the premises, No. 14, Grove Terrace, Kentish Town, on FRIDAY, September 16th, 1853, at Twelve o'Clock, the whole of the STOVE and GREENHOUSE PLANTS, consisting of fine Orchids, Gesneras, Gloxinias, Hoyas, and choice Showy Pelargoniums, fine specimen Indian Azaleas, Double Camellias, Achimenes, Epacris, Roses in Pots, Oleanders, Geraniums, Corraas, Kennedys, Lilium lancifolium, Hyb. Rhododendrons, Kalmias, Andromeda floribunda; 800 yards of Box Edging; choice Standard Roses; Privet Hedges, &c. Also three newly erected Greenhouses, a capital Span-roof Pit; Hand Lights; Boxes; the erection of four Sheds; Summer House; a quantity of Bricks; an excellent Saddle Boiler; about 400 feet Hot-water Pipe; Iron Roller; Tanks; Fencing; Syringes; Barrows; Thermometers; Garden Tools; Pots, and other effects. May be viewed three days prior to the Sale. Catalogues may be obtained (6d. each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

#### VALUABLE NURSERY AND GARDEN GROUND AT LOUTH, LINCOLNSHIRE.

**MR. THOMAS JACKSON** will sell by AUCTION, at the King's Head Hotel, in Louth, on MONDAY, the 19th day of September, 1853, at 7 o'clock in the evening, subject to such conditions as will be then produced, unless previously disposed of by private contract, of which due notice will be given, all that FREEHOLD PIECE OF GROUND, used as a Garden or Nursery, containing 5 acres, 1 rood, 7 perches, more or less, with the Cottage or Tenement, Seed House and Buildings thereon, and a Glass and Brick Pit, 23 yards long, situate near the River Head in Louth, and fronting the Road leading to Cockerington, now in the occupation of the owner, Mr. John Usher. The stock of Forest and Fruit Trees, Shrubs, and Agricultural produce may be taken at a valuation. The Land is in a good state of cultivation, and has been occupied as a nursery for 30 years; is well adapted both as regards situation and soil for the cultivation of Garden produce, and being the only nursery in or near Louth, is well worthy the attention of Gardeners and Florists. Immediate possession can be given.

Fair particulars may be obtained on application to Mr. USHER, the owner, Louth; Mr. DUNCAN HARRIS, Seedman, 109, St. Martin's Lane, London; to the Auctioneer; or to Messrs. HOLDEN & SONS, Solicitors, Hull.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLER EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to THE EDITOR.—SATURDAY, SEPTEMBER 3, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 37.—1853.]

SATURDAY, SEPTEMBER 10.

[Price 6d.

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## TO ADVERTISERS.

### THE ADVERTISEMENT DUTY being now REPEALED, the PROPRIETORS of the GARDENERS' CHRONICLE

beg to announce that there will henceforward be a reduction from the customary charge for each Advertisement of 1s. 6d., the full amount of duty taken off by the Government. Advertisements of Gardeners out of Place, of not more than four lines in length, 1s. 6d. each.

#### LOBELIA ST. CLARE.

**JAMES LAKE, NURSERYMAN, &c., Bridgewater, begs** to inform the Public that his Stock (about 700) of the above beautiful plant is now in bloom. A spike of which will be sent to any one on application, by their paying the carriage thereof. Strong old plants, 3s. 6d. each; smaller plants, 18s. per dozen. Orders taken for next spring at 12s. per dozen. The usual allowance to the Trade.—Sept. 10.

**ROSES AND HOLLYHOCKS.**—The extensive Collections growing at the Cheshunt Nurseries are now finely in bloom, where admirers of these Flowers are respectfully invited to view them. Trains of Eastern Counties Railway almost hourly to Cheshunt or Waltham.

A. PAUL & SON, Nurseries, Cheshunt, Herts.

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**MACKIE & STEWART** beg to inform their numerous Patrons and Friends that their first importation of **HYACINTHS, POLYANTHUS, NARCISSUS, CROCUS, TULIPS, ANEMONES, RANUNCULUS,** and other **DUTCH BULBS**, has arrived in beautiful condition, and respectfully solicit early orders, so as to secure the largest and best shaped roots. Catalogues may be had on application, 10 & 11, Exchange Street, and the Nursery.—Norwich, Sept. 10.

#### HYACINTHS, DUTCH BULBS, ETC.

**HENRY GROOM, Clapham Rise, near Loudon,** by Appointment Florist to HER MAJESTY THE QUEEN, and to his MAJESTY THE KING OF SAXONY, begs to say that he has received his usual supply of **HYACINTHS and DUTCH BULBS**, in very fine condition. His Catalogue of Bulbs, &c., will be forwarded on application.

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**H. MAY** begs to offer the under-mentioned **DUTCH BULBS**, imported direct from Haarlem, which are received in fine condition. Per dozen. **Hyacinths**, fine named sorts, double red, white, blue, and yellow 6s. Do. single do. do. 6s. Do. mixed double do. do. 4s. **Narcissus**, Grand Monarque and Primo Citronier ... 4s. Do. Soliel D'or and double Roman ... 3s. **Tulips**, single and double Duc Van Thol ... 1s. Best mixed **Ranunculuses**, 10s. per 100; best Scarlet **Anemones**, per 100 ... 12s. **Jonquils**, **Crocus**, **Gladioli**, **Cyclamens**, and **Lilies** equally low. Address, **HENRY MAY**, The Hope Nurseries, Bedale, York.

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#### NOTICE TO NURSERYMEN.

**TRANSLANTED FRUIT STOCKS.**—We, the undersigned Cultivators of Fruit Stocks, beg to inform the Trade that the following prices will be charged during the ensuing season:—

Muscle Plum ... per 1000 30s.	Cherries ... per 1000 30s. to 35s.
Common do. ... " 40s.	Pears ... " 40s. to 50s.
Brussels do. ... " 35s.	Crabs ... " 30s.
Brompton or Mignonne, ... 40s.	Paradise ... " 50s.
White Pear Plum ... 40s.	Quince ... per 100 8s.

**WATERER & GODFREY**, Knap Hill, Woking, Surrey.  
**DONALD & SON**, Goldsmith Nurseries, Woking, Surrey.  
**GEORGE JACKMAN**, Woking Nursery, Woking, Surrey.

#### TO LOVERS OF CONIFERS.

**JOHN SCOTT**, of the Merriott Nurseries, Crewkerne, Somerset, having had the pleasure of raising a **NEW CUPRESSUS (EXCELSA, Scott)**, from seed imported from hills in America 8000 feet above the level of the sea, begs to offer it to the attention of the public. It is more beautiful, and far more valuable, than the far-famed **C. funebris**, growing, as it does, to the height of from 50 to 100 feet, and perfectly upright, with a trunk from 4 to 5 yards in circumference. The colour is a beautiful light glaucous, or sea-green, and the habit is elegant, pendulous, and graceful. Indeed it is one of the loveliest of Conifers. It grows as fast as a Larch, and the wood is said to be of the finest quality and almost indestructible. The church at Tecpan, in Guatemala, was built about the year 1624, and roofed with this wood, which is now as fresh as when first put up. J. B. thinks, at no distant date, this tree will become as plentiful as the Larch, and add, by its grace and beautiful evergreen character, a new charm to our already charming landscapes. Largest size Plants, 42s. each; second size, 31s. 6d. each.

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#### BEGONIA ZANTHINA.

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**N.B.**—Introduced by Mr. Booth, from Bouton, and flowered by Mr. Nuttall, Rainhill, Preston, Lancashire. Figured in the *Botanical Magazine*, No. 4683, November, 1852. Fine Apple Place, Edgware Road, London.

#### STRAWBERRIES.

**FOUR NEW AND DISTINCT VARIETIES.** **NICHOLSON'S AJAX**.—Very large and handsome, most exquisite flavour, unequalled as a dessert fruit, and forces well.

**NICHOLSON'S RUBY**.—Medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; also a good forcer.

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These splendid Strawberries have been admired by all who have seen them; the two latter for their surpassing excellence as a dessert fruit; the two latter for their size, colour, abundance, and other good qualities as market fruit.

Gentlemen, Amateurs, and Market Gardeners wishing to possess these valuable Strawberries, can now be supplied with well rooted Plants, by **WILLIAM NICHOLSON** only, at 1s. per 100; or 25 each of any two sorts for 12s., box included. Post Office orders made payable at Yarm, Yorkshire. Egglecliffe, near Yarm, Sept. 10.

#### FINE NEW FRUIT.

#### THE NIMROD STRAWBERRY.

**LUCOMBE, PINCE, and CO.** respectfully inform the public that they possess the entire stock of this much admired **NEW STRAWBERRY**, and purpose sending out strong healthy plants of it in the first week of October next, at 3s. per 100.

The great superiority of the Nimrod Strawberry has been acknowledged by many competent judges. Doctor Lindley pronounces it to be "superior to the British Queen—sweeter and richer." See *Gardeners' Chronicle*, of this year, July 23d, page 472. —Mr. Spencer, of Bowood, a first-rate authority in all that appertains to Horticulture, also speaks very highly of it in the same publication, July 30, page 485.

The following description will convey some idea of its quality: Colour bright scarlet; size considerably above the average; flesh juicy, melting, richly flavoured; shape oblong, or rather conical; skin firm, dry, highly varnished, owing to which properties it packs and carries well; thoroughly hardy, having stood uninjured last winter, where the British Queen was destroyed; very prolific, and forces exceedingly well.

**N.B.** For the accommodation of those who may wish to force it, or to have extra strong plants capable of producing a good crop early next season, some of the first layers have been put into 48-sized pots, in which they will be very strong and well established in October, at 6s. per 100.

The stock is very limited, and though, in order to get a large supply, L., P., & Co. ought to have kept it over another season, they have been solicited by so many persons to let it out this season, that they are unwilling to disappoint their friends. The Exeter Nursery, Exeter, Sept. 10.

#### BASS and BROWN'S NEW AUTUMN CATALOGUE.

is now complete. Copies supplied free for three penny stamps each. It contains a large number of the *New Plants at reduced prices*, comprising Geraniums and Cinerarias, of the best new varieties of October last, with finest of the older varieties; Azalea Indica, 50 varieties of the choicest; the best new Fuchsias, Verbenas, and Petunias; new and select Stove and Greenhouse Plants; Plants selected for Winter and Early Flowering; Roses, in select collection, of about 300 best; new and select Hardy Shrubs and Climbers, Conifers; new and other best Chrysanthemums, Hollyhocks, Hardy Herbaceous and Rock Plants, collection of new Dwarf Rock Cistus, Choice Fruits, &c.

The **BULB and ROOT STOCK** consists of **Gladioli** in upwards of 100 superb varieties, choice **Ranunculuses**, **Anemones**, superb collections of English, German, and other Iris, fine imported Dutch **Hyacinths**, **Narcissus**; Early, Double, and Late Tulips; **Crocus**, **Lilies**, **Ixias**, with a large collection of other roots. The Catalogue also contains a list of a few **SEEDS FOR AUTUMN SOWING**, comprising Geranium, Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Hollyhock, &c. &c., which have been carefully saved from our own superb collections, and can be highly recommended.

#### CHRYSANTHEMUMS.

A large stock of strong bushy plants for flowering this autumn. 12 best new large flowering varieties of last season ... 12s. 0d. 12 best new Lilliputian varieties of do. ... 12s. 0d. 60 splendid varieties, including the above ... 40s. 0d. 40 splendid varieties, 30s.; 25 do. ... 17s. 6d. Our importation of Dutch Roots comprises collections of the best and most favourite sorts, and are very fine.

Goods (not under 20s.). Free to all the Stations in London; and with orders of 40s. and upwards, Plants and Roots gratis to compensate for long carriage.

**BASS and BROWN**, Seed and Horticultural Establishment, Sudbury, Suffolk.

**NORTH LONDON FLORICULTURAL SOCIETY.**—The **DAHLIA and MISCELLANEOUS EXHIBITION** of this Society will be held at **HIGHBURY BARN TAVERN**, Highbury, on **TUESDAY**, September 20. The **CHRYSANTHEMUM EXHIBITION** on **THURSDAY**, November 24. For Schedules, &c., apply to Mr. C. P. LOCHNER, 13, Great Carter Lane, Doctors' Commons, London.

**DAHLIA EXHIBITION OF THE SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.**—The **FIFTH FLOWER SHOW** of the above Society will take place at the **Horns Tavern, Kennington**, on **TUESDAY**, 20th of September, when Prizes will be awarded for the following productions, viz. **DAHLIAS and FANCY VARIETIES, HOLLYHOCKS and SEEDLINGS**, in addition to which Prizes are offered for Dahlias, to Honorary and Non-Members. Also for six pots of **LILIUM LANCIFOLIUM**, the Silver Linnaean and Albert Medals. Lists of Prizes, &c., may be had at the Horns Tavern, Kennington; or of Mr. W. DENYER, Nurseryman, Loughborough Road, Brixton; and of the Honorary Secretaries, Mr. JOHN BUSHELL, Lower Kennington Lane, and Mr. WILLIAM TRAHAR, 5, Kensington Gore.

**ERITH PIER HOTEL and GARDENS.**—A **GRAND HORTICULTURAL EXHIBITION and FLORICULTURAL FETE** will take place on **TUESDAY**, September 13th, 1853, in the spacious grounds of the Erith Gardens, when numerous Prizes will be given for Plants, Dahlias, Roses, Cut Flowers, Fruits, and Cottagers' Vegetable Productions; Certificates of merit will also be awarded for Seedlings of any kind, improved Garden Implements, &c., &c. Open to all England. No Entrance Money required. Flowers, &c., for competition, must be in the Gardens by 11 o'clock on the morning of the Show. A first-class Military Band will be in attendance. The Gardens will be opened at 2 o'clock to subscribers and others holding tickets, at 2s. 6d. each; at 4 o'clock the public will be admitted at 1s. each. Refreshments will be provided in the Gardens and in the Pier Hotel adjoining.

**THE GREAT FLORAL EXHIBITION**, under the immediate patronage of His Highness, the **DUKE OF NASSAU**, will take place in the Winter Gardens at **Piebrich-on-the-Rhine**, from the 1st to the 15th of April, 1854.—Programmes and Lists to be obtained gratis, at the Office of this Paper. **THELEMAN, Director.**

**ROYAL PAVILION BRIGHTON.**—Grand **Floricultural and Horticultural Exhibition.** The Second **Floricultural Exhibition**, under the same distinguished patronage as the July show, will take place on **WEDNESDAY and THURSDAY**, September 14th and 15th next, when a magnificent display of Dahlias, Hollyhocks, Fruits, Plants, &c. is anticipated.

2001. to 3000. will be offered in Prizes for Stove and Greenhouse Plants, Fuchsias, Ferns, Ericas, Achimenes, Balsams, Cockscombs, Scarlet Geraniums, collections of Cut Dahlias, Hollyhocks, Roses, Pansies, Verbenas, devices of flowers, &c., &c.; also, for Pines, Grapes, Melons, Peaches, Nectarines, &c. &c. Schedules of which may be had on application to the Committee, the General Superintendent, or the Secretary.

By the kind permission of Colonel Hall, the celebrated Band of the 1st Life Guards will be in attendance; also the celebrated German band.

**THOS. ATTREE, Esq.,** Chairman of the Committee of Management.  
**E. SPARY, Superintendent,**  
**EDWARD CARPENTER, Secretary.**  
Committee Rooms, Town Hall, Brighton.—Sept. 10.

**N.B.** The first prize, a Silver Cup the value of 10l., presented by the Brighton and South Coast Railway Company, will be given to Amateurs and Gentlemen (Fancies excepted in this class); also the Brighton Subscription Cup, the value of 10l., being the first prize, will be given for the best collection of 8 dishes of Fruits. Particulars of the above may be seen by reference to schedules.—All communications to be made to the Secretary; address, 45, Lavender Street, Brighton.

**WHITE GLOBE OR WHITE NORFOLK TURNIP SEED.**—Farmers or Seed Growers having Four or Five Quarters to Sell, grown this past summer, may state cash price to X., Office of this Paper.

#### AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his **NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c.**, is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South Western Railway, and 3 miles from Blackwater, 8 1/2 miles Eastern Railway.



## NEW AND CHOICE HARDY ORNAMENTAL PLANTS,

SELECTED FROM THE GENERAL STOCK OF

# STANDISH AND NOBLE,

## NURSERYMEN, SEEDSMEN, & LANDSCAPE GARDENERS,

### BAGSHOT, SURREY.

FOR detailed Descriptions of all HARDY CONIFERS, and of the principal EVERGREEN SHRUBS and TREES adapted for cultivation in English Gardens, as well as for directions for their proper management, we beg to refer to our "Practical Hints on Ornamental Plants and Planting," published by Messrs. Bradbury and Evans.

A few names in the following list are preceded by an Asterisk; the plant so indicated is not Hardy.

## CONIFERÆ.

The nomenclature is from Dr. Lindley's "Catalogue of Coniferous Plants," published in the fifth volume of the "Journal of the Horticultural Society." The same has been followed in our "Practical Hints."

	Each.—s. d.	s. d.
<i>Abies atlantica</i> ...	2	6 to 10 6
" <i>archangelica</i> , a very interesting plant, in the way of <i>A. pyramis</i> , but its leaves are longer and thicker, and its general appearance more robust ...	3	6 — 10 6
" <i>Brunoniana</i> ...	2	6 — 5 0
" <i>cephalonica</i> , one year from seed ...	1	0 —
" " larger plants ...	3	6 — 5 0
" <i>Deodara</i> , 1 to 3 ft. ...	1	0 — 5 0
" " var. <i>robusta</i> , a distinct variety, with stronger habit and larger leaves than the species ...	10	6 — 21 0
" " var. <i>viridis</i> has the graceful habit of the species, but the foliage is of a bright lively green ...	10	6 — 21 0
" <i>Douglasii</i> ...	1	0 — 10 6
" <i>Jezeensis</i> .—From the description of this tree given by Mr. Fortune, its discoverer, on its introduction, as well as from the appearance of an imported specimen now growing in our nursery, we can recommend it as a distinct and ornamental tree of the first class. The colour of its foliage is a bright lively green, and the cones, which it produces in profusion, are of a rich purple, the contrast of which forms a highly ornamental object. It grows upwards of 100 feet high, and is perfectly hardy in this country ...	21	0 — 5 0
" <i>Menziesii</i> ...	1	6 — 5 0
" <i>nobilis</i> ...	7	6 — 21 0
" <i>Nordmanniana</i> , a magnificent tree, and should be in every collection ...	7	6 — 15 0
" <i>obovata</i> ...	3	6 —
" <i>orientalis</i> , a highly interesting species, and deserves to be more generally planted. It is very distinct ...	2	6 — 5 0
" <i>pendula</i> ...	2	6 — 5 0
" <i>Pinsapo</i> . For a single specimen on a dressed lawn no Pine is so well adapted as this ...	1	0 — 31 6
" <i>Pindrow</i> ...	3	6 — 10 6
" <i>Webbiana</i> ...	3	6 — 10 6
<i>Araucaria imbricata</i> , one year's seedlings, per 100 ...	30	0 —
" 6 to 9 inches ... each	1	0 —
" 12 to 18 inches ... each	3	6 — 5 0
" 18 to 24 inches, handsome specimens ...	5	0 — 7 6
<i>Biota orientalis</i> var. <i>compactum</i> . This very handsome plant is remarkable for preserving its peculiarly rich green tint through the most severe weather ...	5	0 — 21 0
" <i>intermedia</i> ...	2	6 — 5 0
" <i>pendula</i> ...	3	6 — 10 6
<i>Cephalotaxus Fortunei</i> (male). A fine and very hardy tree. During severe frosts and scorching winds, when most other evergreens lose their crisp appearance and become browned, this preserves both wholly unaffected. Its leaves often grow more than 3 inches long, the branchlets measuring 7 inches across ... each	21	0 —
" (female). Equally hardy with the last, and differs only in its more rigid habit, and stiffer and smaller leaves ...	21	0 —
" <i>pedunculata</i> ...	5	0 —
<i>Chamaecyparis spherioidea variegata</i> ...	3	6 — 10 6
<i>Cryptomeria japonica</i> , 1 to 7 feet high ...	1	0 — 7 6
" var. <i>nana</i> , a dwarf compact growing bush, suitable for a single plant on a lawn ...	7	6 — 21 0
" " var. <i>viridis</i> , differs in no respect in its habit from the species, but its foliage is of a more lively green, which colour it preserves throughout the severest weather ...	10	6 —
<i>Cupressus funebris</i> , handsome seedling plants of this unique tree, 1 to 4 feet ...	2	6 — 21 0
" from cuttings, 1 foot ...	1	0 —
" <i>Goveniana</i> , 1 to 5 feet ...	2	6 — 10 6
" <i>macrocarpa</i> , 1 to 3 feet ...	1	6 — 5 0
" <i>thurifera</i> var. <i>elegans</i> , 1 to 4 feet ...	1	6 — 5 0
<i>Fitz-Roya patagonica</i> ...	10	6 — 42 0
<i>Glyptostrobus heterophyllus</i> ...	5	0 —
<i>Juniperus chinensis</i> , 2 to 3 feet ...	1	6 — 2 6
" <i>Bedfordiana</i> ...	1	0 — 5 0
" <i>communis arborescens</i> , 2 to 3 feet ...	1	0 — 1 6
" " 3 to 4 feet ...	2	0 — 2 6
" <i>echiniformis</i> ...	3	6 — 10 6
" <i>excelsa</i> , 1 to 2 feet ...	2	6 — 5 0
" <i>macrocarpa</i> ...	2	6 — 5 0
" <i>phoenicea</i> ...	2	6 — 5 0
" " var. <i>malacocarpa</i> ...	2	6 —
" <i>recurva densa</i> ...	10	6 — 21 0
" <i>spherica</i> . A handsome tree, grows 50 feet high in China ...	21	0 —
" <i>virginiana</i> , 2 to 6 feet ...	0	6 — 3 4
" " var. <i>argentea</i> ...	5	0 —
" " <i>glauca</i> ...	5	0 —
<i>Libocedrus chilensis</i> . This fine tree has proved to be superlatively hardy. It combines every quality desirable in an ornamental plant; beauty, distinctness of character, and a constitution to bear the most severe weather. It is also a very rapid grower. No collection should lack a specimen, each	1	6 — 10 6

	Each.—s. d.	s. d.
<i>Pinus Cembra</i> , 2 to 3 feet ...	1	0 to 2 6
" <i>Ayacuahuite</i> ...	7	6 —
" <i>californica</i> ...	10	6 — 21 0
" <i>excelsa</i> ...	1	0 — 5 0
" <i>Fremontiana</i> ...	42	0 —
" <i>insignis</i> , 1 to 4 feet ...	2	6 — 10 6
" <i>llaveana</i> ...	1	0 —
" <i>Lambertiana</i> ...	5	0 — 10 6
" <i>Montezuma</i> ...	7	6 — 10 6
" <i>muricata</i> ...	3	6 — 21 0
" <i>monticola</i> ...	5	0 — 10 6
" <i>ponderosa</i> ...	7	6 — 10 6
" <i>radiata</i> ...	21	0 —
" <i>tuberculata</i> ...	21	0 —
<i>Podocarpus coriacea</i> ...	3	6 — 5 0
" <i>chiliana</i> ...	21	0 — 42 0
" <i>multigera</i> , a new and beautiful plant from Chili, perfectly hardy and distinct; a great acquisition to our hardy plants ...	21	0 — 42 0
" <i>montana</i> ...	5	0 — 10 6
" <i>macrophylla</i> ...	10	6 —
<i>Retinospora ericoides</i> ...	3	6 — 21 0
<i>Salisburia adiantifolia</i> (seedlings) ...	2	6 —
<i>Saxea Gothaea conspicua</i> ...	10	6 — 42 0
" <i>gracilis</i> , is distinct and unique. It has long slender flexible branches, and is a very rapid grower ...	31	6 — 63 0
<i>Sequoia gigantea</i> , 1 foot ...	1	0 —
" " 2 feet ...	2	0 —
" " 3 feet ...	3	6 —
" " 4 feet ...	5	0 —
" " 5 to 6 feet ...	7	6 — 10 6
<i>Taxodium distichum</i> ...	1	6 — 2 6
<i>Taxus adpressa</i> ...	2	6 — 10 6
" <i>baccata</i> , var. <i>Dovaston</i> , a handsome weeping variety ...	2	6 — 5 0
" " (Standards) ...	5	0 — 10 6
" <i>baccata</i> , var. <i>stricta</i> ...	1	0 —
" " var. <i>lutea</i> ...	2	6 — 7 6
" " var. <i>ericoides</i> , an interesting variety, received by us from the Continent. It has the foliage of a Heath, with the habit of the Irish Yew ...	21	0 — 42 0
" <i>fastigiata</i> (Irish Yew), 2 to 4 ft. ...	1	0 — 2 0
" <i>monstrosa</i> , a new and interesting dwarf variety, with foliage like <i>ericoides</i> , but with a spreading habit ...	21	0 — 42 0
<i>Thuja plicata</i> , var. <i>Wareana</i> ...	0	6 — 2 6
<i>Torreya taxifolia</i> ...	10	6 — 21 0
<i>Abelia uniflora</i> ...	6	6 — 40 6
<i>Andromeda floribunda</i> ...	2	6 — 5 0
" <i>formosa</i> ...	5	0 — 10 6
<i>Arbutus Crooni</i> .—The flowers of this variety are very large and beautiful, resembling those of <i>A. rubra</i> in colour, but much larger. They are produced in abundance from October till Christmas ...	7	6 —
" <i>magnifica</i> , a very hardy and handsome shrub, which, for beauty of growth, is not surpassed by any of the genus ...	5	0 —
<i>Azalea amona</i> .—A species introduced from the north of China. It is perfectly distinct from any other known <i>Azalea</i> , each flower appearing like two corollas, one within the other, exactly after the manner of a hosi-n-hose <i>Polyanthus</i> . The flowers are of a bright rose purple, and are produced in the greatest profusion, small young plants, in 60-sized pots, often bearing from 15 to 20 flowers each. For forcing, or for cutting for bouquets, no plant can excel this, and it is perfectly hardy ...	5	0 — 21 0
" <i>marciiflora</i> , a double white variety, the flowers resembling those of the plant from which it takes its name. It is a great novelty, very handsome, and a very free bloomer ...	10	6 —
" <i>vittata</i> , Carnation striped ...	3	6 — 10 6
" <i>Fortuni</i> , striped and spotted ...	3	6 — 10 6
" <i>punctata</i> , Carnation striped, and spotted ...	3	6 — 10 6
" <i>rosea</i> , beautifully striped with rose colour ...	3	6 — 10 6
** The four last-named <i>Azaleas</i> , viz., <i>vittata</i> and its varieties, are first-rate plants for decorative purposes. They flower very early, and in the greatest profusion.		
" <i>Glory of Sunning Hill</i> , a fine double variety, resembling in the form and colour of its flowers those of <i>Nerium splendens</i> ...	3	6 — 5 0
" <i>Ghent varieties</i> , in collections, per dozen ...	30	0 — 42 0
<i>Berberis Darwinii</i> ...	2	6 — 10 6
" <i>fascicularis hybrida</i> ...	2	6 —
<i>Buxus</i> , species from China, long leaved ...	7	6 —
" " round leaved ...	7	6 —
<i>Cerasus ilicifolia</i> ...	5	0 — 7 6
<i>Chamaerops</i> , a hardy Palm, from China ...	10	6 —

	Each.—s. d.	s. d.
<i>Daphne Cneorum stricta</i> ...	1	6 —
" <i>Delahayana</i> ...	1	6 to 3 6
" <i>Fioniana</i> ...	1	6 — 3 6
" <i>hybrida</i> ...	1	6 —
" <i>japonica</i> ...	1	6 — 2 6
<i>Embothrium lanceolatum</i> , a new and magnificent (probably) hardy shrub, from the mountains of Chili, bearing a profusion of bright scarlet flowers ...	42	0 —
<i>Forsythia viridissima</i> , a valuable plant for its early blooming qualities. In February and March it is covered with bright yellow flowers, forming a striking and beautiful object in the shrubbery border; strong blooming plants ...	1	0 — 3 6
<i>Ilex aquifolium variegata</i> , in great variety ...	1	6 — 3 6
" <i>balcanica</i> ...	2	6 — 5 0
" <i>clisata</i> ...	2	6 — 5 0
" <i>cornuta</i> , one of the most remarkable of the genus. Its general habit is very picturesque, to which the peculiar form of its very dark green leaves contributes in a great degree. They are often 4 inches long, by 3 inches broad, and are furnished with three strong spines at the end, which, as the leaves become old, lengthen, turn up their edges, and assume the appearance of horns; hence the specific name ...	21	0 —
" <i>furcata</i> , a very handsome species, and quite distinct from any other Holly in cultivation ...	7	6 — 21 0
" <i>laurifolia</i> ...	3	6 — 5 0
" <i>latispina</i> ...	5	0 — 10 6
" <i>diphyrena</i> ...	2	6 — 5 0
" <i>latifolia</i> ...	2	6 — 5 0
" <i>Maderiensis</i> ...	1	6 — 3 6
" <i>microcarpa</i> .—The leaves of this recently-introduced species have a purplish tinge when young, but are of a deep green when full grown. They are fleshy, quite smooth on both sides, entirely destitute of prickles, about 2½ inches long, and of an ovate form; an entirely distinct species ...	7	6 — 21 0
" <i>myrtifolia</i> ...	2	6 —
" <i>ovata</i> ...	5	0 — 10 6
" <i>Sheppardii</i> ...	1	6 — 5 0
" <i>scotica</i> ...	1	6 — 5 0
" <i>stricta</i> ...	2	6 —
<i>Jasminum nudiflorum</i> ...	1	0 — 2 6
<i>Kalmia latifolia</i> , fine plants ...	1	0 — 2 6
" <i>myrtifolia</i> ...	5	0 — 10 6
<i>Lapageria rosea</i> ...	10	6 — 21 0
<i>Laurus regalis</i> ...	10	6 — 21 0
<i>Ligustrum japonicum</i> ...	1	6 — 2 6
<i>Lonicera fragrantissima</i> ...	3	6 —
" species <i>N. China</i> ...	5	0 — 10 6
* <i>Lycopodium Willdenowii</i> ...	2	6 — 5 0
<i>Magnolia glauca</i> ...	2	6 — 5 0
* <i>Mitrasia coccinea</i> ...	1	6 — 2 6
<i>Quadrifida heterophylla</i> ...	5	0 —
<i>Quercus Ilex</i> ...	0	6 — 2 6
" <i>Fordii</i> ...	2	6 — 5 0
" <i>inversa</i> ...	21	0 —
" <i>Lucombeana</i> ...	2	6 — 5 0
" <i>sclerophylla</i> ...	21	0 —
" <i>Zan</i> . This very fine tree deserves to be more generally planted. It has all the characteristics of the English Oak, with the addition of evergreen foliage ...	3	6 — 5 0
<i>Rhodoleia Championii</i> ...	21	0 — 63 0
<i>Spiraea callosa</i> , a new and handsome species, producing a profusion of rich lake flowers. A fine shrubby plant ...	2	6 — 5 0
" <i>prunifolia floribunda</i> ...	1	0 — 2 0
" <i>Reevesiana floribunda</i> , a new and handsome species with white flowers ...	10	6 —
<i>Skimmia japonica</i> . The hardness of this fine evergreen is now established beyond question, and we have no hesitation in recommending it as a plant, in praise of which too much cannot be said. It is of compact, shrubby habit, and its leaves are of the richest green. In spring it is covered with large heads of exquisitely scented flowers, which give place in autumn and winter to clusters of deep red berries. It has no rival as a hardy ornamental evergreen ...	15	0 — 21 0
<i>Symplocos japonica</i> , a new shrub from Japan, with leaves about the size of those of the Sweet Bay, bearing scarlet berries, much used by the Japanese for decorating the shrines of their idols ...	21	0 —
<i>Viburnum plicatum</i> ...	7	6 — 10 6
" <i>macrocephalum</i> , a handsome evergreen shrub. The flower heads are remarkable for the immense size they attain, often measuring 10 inches diameter ...	21	0 —
<i>Weigela rosea</i> ...	1	0 — 5 0
<i>Wistaria sinensis</i> ...	1	6 — 2 6
" <i>alba</i> ...	21	0 —

## SPRUCE FIRS.

Having a large stock of this tree, all of which are well rooted and in excellent condition to transplant, we are enabled to offer them in quantities at the following low prices:—

2 to 3 feet, very bushy, per 100 ...	15s. 0d.
3 to 4 feet do. do. ...	30s. 0d.
4 to 5 feet do. do. ...	50s. 0d.

FOR CONTINUATION OF CATALOGUE SEE NEXT PAGE.



## STANDISH AND NOBLE'S CATALOGUE—Continued.

## HARDY RHODODENDRONS.

WITH THEIR COLOURS, TIME OF FLOWERING, AND PRICES.

The prices affixed are for single plants, but when a dozen or more are ordered, a considerable reduction will be made; and it will only be necessary to give the number attached to each sort, and thus save the trouble of writing the name.

\* Those to which no numbers are affixed will not be included in the above-mentioned reduction.

No.		MAY.	JUNE.	PRICE.
				s. d.
129	Abd-el-Kader ... ..	26	5	0
11	Album elegans, fine blush ... ..	2	3	6
8	Antagonist, deep purple red ... ..	27	5	0
8	Auro-robura, fine crimson ... ..	27	5	0
35	Album grandiflorum, very large white ... ..	27	5	0
90	Albion, rosy red, finely spotted ... ..	29	5	0
166	Alexandrina, pure white, free bloomer, and very dwarf ... ..	26	7	6
51	Antonio, rosy red, shaded ... ..	27	5	0
	Aureum superbum, yellow ... ..	27	5	0
114	Betsy Trotwood, bright rosy lake, compact truss, large flower ... ..	1	10	6
155	Barber of Seville, pale rose, shaded, black spots, fine foliage ... ..	27	5	0
6	Blandyanum, deep rosy crimson ... ..	26	7	6
16	Bride, pure white, variegated foliage, very dwarf, free bloomer ... ..	28	10	6
	Broughtoni ... ..	28	5	0
18	Bridesmaid, pure white, variegated foliage, very dwarf, free bloomer ... ..	15	10	6
25	Bouquet de Flore, deep purplish-rose, black spots ... ..	25	5	0
112	Caucasicum pictum ... ..	25	3	6
15	Cyanum, purplish-lilac ... ..	2	2	6
27	Capitatum, rosy-crimson, black spots ... ..	20	5	0
136	Cliveanum, peach colour, fine truss, good for forcing (April 15) ... ..	3	6	
34	Coriaceum, pure white, fine foliage ... ..	26	5	0
49	Constellation, deep rose ... ..	20	3	6
	Catawbiense, rosy lilac ... ..	2	6	to 1s. 6d.
	" hybrida, rosy-lilac, in many shades ... ..	2	6	to 1s. 6d.
53	" robustum, purplish-blush ... ..	2	2	6
62	" flore-pleno, lilac-rose, double flowers ... ..	2	2	6
78	Coccineum, scarlet ... ..	25	5	0
79	Compacum, scarlet, compact truss ... ..	25	5	0
95	Cerito, deep purplish-rose colour ... ..	27	5	0
113	Cinnamomeum Cunninghami, white, and much spotted ... ..	25	10	6
122	Compeer, purplish-rose colour, fine spots ... ..	1	5	0
23	Delicatissimum, waxy blush ... ..	1	2	6
	Duc de Brabant, greenish white, tinged with rose, much spotted with brownish red; it is very handsome, and remarkable for the length of time it remains in bloom ... ..	21	0	
7	Elegans, deep rose, fine truss, very free bloomer ... ..	27	5	0
32	Erectum, rosy-crimson, fine truss ... ..	27	7	6
127	Etoile de Flandres ... ..	27	7	6
168	Faustine, rosy-lilac, double flowers, continues a long time in bloom ... ..	1	3	6
73	Fairy Queen, white, tinged on the margin of the petals with pink ... ..	20	7	6
39	Flos pictum ... ..	20	2	6
26	Guttaum, faint blush, finely spotted with green and red spots ... ..	10	2	6
41	Giganteum, large flower, deep rose, immense truss ... ..	15	5	0
96	Glabosum, rosy-lilac, fine compact truss ... ..	20	3	6
164	Gulnare, blush, very large pyramidal truss ... ..	25	10	6
99	Geranioides, rose, with black spots in the throat, resembling the blotch in a Geranium ... ..	2	5	0
60	Helena, rosy-red, very good ... ..	25	5	0
110	Hyacinthiflorum, rosy-lilac, double flowers ... ..	1	2	6
53	Humboldt, deep rose, white throat ... ..	27	5	0
132	Harley Luttrell, rosy red ... ..	1	5	0
44	Iantho, rosy-crimson, spotted ... ..	30	5	0
50	Illuminator, deep rose, large flower, fine form ... ..	15	5	0
68	Incomar, deep rose colour, good truss, white blotch, and spotted ... ..	1	5	0
60	Ivanhoe, deep claret, free bloomer ... ..	20	5	0
20	Lucifer, very bright scarlet ... ..	5	0	
159	Menziesi rosy-pink, yellow blotch, large and good flower ... ..	2	10	6
21	Meteor, fine rosy-crimson ... ..	25	5	0
124	Maculatum ... ..	5	0	
128	" nigrum superbum ... ..	5	0	
22	Mullimaculatum, pinkish-white, much spotted ... ..	1	2	6
43	Maid of Saragossa, rosy-red, fine form ... ..	26	7	6
45	Mrs. Hemans, white, shaded with pink, yellow spots ... ..	30	5	0
65	Metaphor, rose colour, smooth petals, fine form and truss ... ..	27	5	0
	Miss Glyn, pale rose, shaded ... ..	25	7	6
118	Mrs. London, rich carmine-rose, shaded, spotted on all the petals ... ..	1	7	6

In addition to the Plants above named, we can supply all kinds of Nursery stock. Catalogues may be had on application. Designs and Working Plans for Gardens, and Garden Structures of every description; charges for which, as well as for personal attendance, may be known on application.

Geometric Flower Gardens being now so much in fashion, we are induced to say here that gentlemen wishing to adopt the style, may, by forwarding to us the outline and dimensions of the spot to be appropriated, with such other instructions as may seem necessary, be furnished with a working plan at a charge of from one to two guineas.—BAGSHOT, SURREY, Sept. 10.

## A NEW HARDY CUPRESSUS, FROM THE HILLS

OF INDIA, FORMING A MAGNIFICENT EVERGREEN TREE, 50 FEET IN HEIGHT.—Strong 1-year old Plants from Seed, established in single pots, 6s. per dozen. The above is quite new to Europe, and is not yet named.

CEDRUS DEODARA, two years from Seed, in single pots, 3s. per 100.

YOUNG & Co, Royal Nursery, Great Yarmouth.

## IMPORTANT TO NOBLEMEN &amp; GENTLEMEN.

## LARGE RHODODENDRON ARBOREUM.—The

Subscriber begs to offer for sale the celebrated specimen of the above noble species of Rhododendron, so much admired in his establishment. The plant is in luxuriant health, and offers a rare opportunity to parties wishing to possess themselves of a fine specimen for the Conservatory. It stands 144 feet high, and 12 feet through. The extensive Collection of Hardy, Hybrid, and named varieties, comprehending all that is good and worthy of cultivation, are this season in unusually fine condition. The stock of Forest Trees, for the approaching planting season, is large and fine, particularly one and two years' transplanted Native Scotch Fir, Larch, and Spruce. Prices on application.

THOMAS MITCHELL, Stanwell Nursery, Bovingdon, Edinburg.

## No.

## MAY.

## JUNE.

## PRICE.

## s. d.

## 67

## Madame Sontag, white, shaded with pink on the edges ... ..

## 25

## 5

## 0

## 145

## Nivaticum, white, with yellow blotch ... ..

## 1

## 2

## 0

## 24

## Nell Gwynne, bright rosy-red, compact truss, spotted, shining foliage ... ..

## 22

## 3

## 6

## 2

## Nobleanum bicolor, deep rose, white throat, green spots on the white ... ..

## 1

## 5

## 0

## 117

## Norma, white, shaded with pink ... ..

## 25

## 5

## 0

## 52

## Original, blush, variegated foliage ... ..

## 10

## 3

## 6

## 13

## Pamela, deep blush ... ..

## 20

## 21

## 0

## 75

## Pastor, very deep bright rose, with a large cluster of chocolate spots on the back petals, resembling the blotch of a Geranium ... ..

## 1

## 31

## 6

## 19

## Pictum, pinkish-white, much spotted ... ..

## 2

## 2

## 0

## 28

## Perspicuum, shaded, white ... ..

## 1

## 2

## 6

## 42

## Pulchellum, rosy-pink, white throat ... ..

## 27

## 5

## 0

## 161

## Picturatum, brilliant rose, much spotted ... ..

## 1

## 10

## 6

## 60

## Portia, shaded blush, very large truss ... ..

## 25

## 5

## 0

## 14

## Queen Victoria, deep claret purple, fine truss ... ..

## 25

## 5

## 0

## 3

## Raeanum, rosy-crimson, black spots, free bloomer ... ..

## 25

## 5

## 0

## 130

## Reedianum ... ..

## 20

## 5

## 0

## 163

## Rosalie, deep blush, compact, truss very beautiful ... ..

## 15

## 10

## 6

## 56

## Roseum argenteum, deep rose, white anthers, very curious ... ..

## 1

## 5

## 0

## 137

## Sir Walter Scott, pale rose, shading to white, black spots ... ..

## 20

## 5

## 0

## 4

## Standishi, violet-crimson, black spots, free bloomer ... ..

## 20

## 5

## 0

## 46

## Sabrina, rosy-lilac, spotted, large flowers, and very large truss ... ..

## 27

## 7

## 6

## 83

## Sir Isaac Newton, deep shaded plum colour, very large truss ... ..

## 1

## 7

## 6

## 84

## Sir John Franklin, deep claret ... ..

## 26

## 5

## 0

## 121

## Sappho, rosy-crimson, purple shaded ... ..

## 27

## 5

## 0

## 133

## Speculator, deep rose, white throat ... ..

## 20

## 5

## 0

## 134

## The Fair Carrow ... ..

## 20

## 5

## 0

## 144

## The Gem, fine blush, tipped with the brightest rose, buff spots ... ..

## 23

## 21

## 0

## 172

## The Gid, rosy-lilac blotch of brown spots, large flower and truss ... ..

## 2

## 5

## 0

## 5

## Towardi, rosy-lilac, spotted, fine shape, the largest and most perfect flower in cultivation ... ..

## 27

## 7

## 6

## 74

## Titania, deep red, base of the petals white ... ..

## 25

## 5

## 0

## 10

## Vervaekeanum, lilac, larger truss of double flowers ... ..

## 1

## 3

## 6

## 127

## Vesuvius, blood-red, fine form, large flower ... ..

## 20

## 21

## 0

## 167

## Vivid, deep bright rose colour ... ..

## 27

## 7

## 6

## 165

## Zuleika, delicate rose-coloured blush ... ..

## 27

## 7

## 6

## The greater part of the Rhododendrons named in the above list, especially those the flowers of which vary in colour from rose to deep crimson and claret, are seedlings raised by us, and are later bloomers, and in every way more hardy than any in the same class yet offered to the public, possessing as they do all the hardiness of the American kinds, with the richness of colour so much admired in the Indian species. In addition to the above, we possess a large stock of fine Standards, of nearly all the new kinds, from three to five feet in height, all worked on hybrid Catawbiense, perfectly straight in their stems, and with fine symmetrical heads. The price of such plants will vary from one to five guineas each. If a selection from the dwarfs is entrusted to us, we can supply such from 12 to 4 guineas per dozen.

## SIKKIM RHODODENDRONS.

Of each of the kinds named below we have a good stock. We also possess other rare species, and can offer collections of 24 distinct sorts, from 5 to 10 guineas. There is no doubt of their perfect hardiness. During the past winter, we exposed a number of young plants, including the beautiful Edgeworthi, without the slightest protection, and they were perfectly uninjured. The plants we have to offer are very fine; the largest, we believe, in the trade.

Each—s. d.	s. d.
Alpinum, shrubby ... ..	5 0 to 10 6
Alpinum, red ... ..	5 0 to 10 6
Eruginosum ... ..	5 0 to 10 6
Anthopogon ... ..	3 6 to 5 0
Aromaticum ... ..	5 0 to 10 6
Barbatum ... ..	5 0 to 10 6
Ciliatum ... ..	3 6 to 10 6
Calyculatum ... ..	5 0 to 10 6
Campylocarpum ... ..	5 0 to 10 6
Cinnabarinum ... ..	5 0 to 10 6
Campbelli ... ..	10 6
Edgeworthi ... ..	5 0 to 42 0
Folius cordatis ... ..	5 0 to 10 6
Falconeri ... ..	5 0 to 42 0
Fulgens ... ..	5 0 to 10 6
Glanceum ... ..	3 6 to 7 6
Glanceum naumum ... ..	3 6 to 7 6
Lanatum ... ..	5 0 to 10 6
Lepidotum ... ..	3 6 to 5 0
Lanceolatum ... ..	5 0 to 10 6
Niveum ... ..	2 6 to 10 6
Thompsoni ... ..	5 0 to 10 6
Wightii ... ..	10 6
Wallichii ... ..	3 6 to 10 6

## LORD KEYNON'S FAVOURITE is the best and

most productive CUCUMBER for winter cultivation, price 2s. 6d. per packet, or 3s. penny postage stamps.

EDWARD TYLEY,

Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

## DUTCH FLOWER ROOTS AND FRUIT TREES.

HUGH LOW and CO. beg to inform their friends and the public that they have just received their annual importation of DUTCH BULBS, consisting of all the choicest varieties, and which they are proud to say are of the very best quality. They would at the same time inform their friends that their stock of Standard and Dwarf Trained and Standard and Dwarf Maiden Fruit Trees are exceedingly fine, and can be warranted true to name. Their collection of autumn and winter flowering Heaths are very extensive and will be found well worth the attention of purchasers. H. L. & Co. will have great pleasure in showing their general stock to any friends who may favour them with a call



appeared so vast that until the data were thoroughly examined, the statement appeared incredible.

The same author proceeds to state that the de-oxidation of carbon and hydrogen from carbonic acid and water, effected by the solar light on the green parts of plants, is a mechanical effect of radiant heat. In virtue of this action, combustible substances are produced by plants, and its mechanical value is to be estimated by burning them, and multiplying by the mechanical value of the thermal unit. Taking from LIEBIG'S "Agricultural Chemistry" the estimate 2600 pounds of dry Fir-wood for the annual produce of one Hessian acre, or 26,910 square feet of forest-land, which is at the rate of 4208 pounds or nearly 2 tons per English acre, and assuming, as a very rough estimate, 4000 thermal units centigrade as the heat of combustion of dry Fir-wood, the author finds 550,000 foot-pounds, or the work of a horse power, for 1000 seconds, as the mechanical value of the mean annual produce of a square foot of the land; and taking  $50^{\circ} 34'$ , that of Giessen, as the latitude of the locality, he estimates the mechanical value of the solar heat which, were none of it absorbed by the atmosphere, would fall annually on each square foot of the land, at 530 millions foot-pounds; and infers that probably  $\frac{1}{1000}$  of the solar heat which falls on growing plants is converted into mechanical effect.

"When the vibrations of light thus act during the growth of plants, to separate, against forces of chemical affinity, combustible materials from oxygen, they must lose *vis viva* to an extent equivalent to the statical mechanical effect thus produced, and therefore quantities of solar heat are actually put out of existence by the growth of plants, but an equivalent of statical mechanical effect is stored up in the organic products, and may be reproduced as heat by burning them. All the heat of fires obtained by burning wood grown from year to year is in fact solar heat reproduced." And so, we may accordingly add, must be the heat derived from the combustion of at least the portions which have had a vegetable existence, of wood-coal and other matters.

Professor THOMSON has concluded, and with reference to an equivalent conclusion by Sir JOHN HERSCHEL, that "*Heat radiated from the sun* (sun-light being included in this term) *is the principal source of mechanical effect available to man.* From it is derived the whole mechanical effect of animals working, water-wheels worked by rivers, steam engines, and galvanic engines, &c. Vegetation is the great support of animal power, but vegetation could not be maintained without the action of the sun's rays, received directly or indirectly. Without such powerful evaporation caused by the sun's rays, as we have endeavoured to exemplify, the rivers would soon lose their general source. And it has been already stated that combustible materials, without which steam-power could not be generated, are stores of solar heat.

We have endeavoured to give some idea of the immense power of solar radiation; and although we admit that its general operation is beyond the reach of human control, yet in particular cases, within their respective spheres of action, both horticulturists and agriculturists may advantageously direct their attention to the subject. For instance, the former would avoid watering at a time, and in a manner that would render nearly all the water he supplied liable to be carried off by evaporation before it could reach the principal roots of his plants; and the farmer, knowing the effects of radiation on a moist surface, would hesitate before he flooded, say four acres with manure water, at the risk of losing a hundred tons of it, together with its portion of ammonia, by evaporation. R. T.

WE lately invited attention to the singular fact that the American varieties of VINE, which belong to a different species from the European, are not affected by MILDW, either in Europe or their native country. Last week, a highly interesting letter from Texas threw further light upon this subject. The Vines of America have not, however, at present received much attention in Europe. Count ODART in his "Ampelographie Universelle," of which a second edition appeared in 1849, and which treats of all the most esteemed varieties, mentions only four, and to two only of these, the Catawba and Madeira, he attributes any good qualities. A variety, however, distinguished by its large broad leaves and Raspberry flavour, is rather widely cultivated in Switzerland, extending even into Italy, and known by the name of Isabelle. This with the two varieties named above was referred by RAFINESQUE, in 1830, to his *Vitis proliferans*, and is mentioned by ASA GRAY, under the name of *Isabella Grape*, in his "Manual of the Botany of the Northern United States of America," published in 1848, as a form of *Vitis Labrusca*, improved by cultivation. Both the Catawba and Isabella Grapes are in many

English collections, as well as other varieties of *Vitis Labrusca*, and are certainly worth a trial, at least as stocks.

It is a curious fact, however, that the mildew in Switzerland has been confined almost entirely to the Vines which run up to a considerable height, or cultivated *en treille*; those, on the contrary, which are kept low, or *en ceps*, have in general escaped. This does not appear to have been the case in other districts, as far as we have heard. It is to be observed, too, that the art of wine making has lately made great advances in America. The German emigrants have introduced better methods of cultivation and wine-making, so that in a few years it is expected that the produce of the vintage will be far more important than at present. Many varieties of Vine, distinguished by particular names, were enumerated by RAFINESQUE a quarter of a century since, and it is asserted that some excellent wines even then were made in America, both from red and white Grapes, though so sparingly as to be entirely confined to home consumption. A good deal of information on the subject, extending to sixty pages, will be found in RAFINESQUE'S "Medical Flora of the United States," and the same matter we believe was published the same year in a separate form, under the title of "American Manual of the Grape Vines and the Art of making Wine." M. J. B.

#### PENTAS CARNEA.

THIS desirable plant, though not of very recent introduction, is deserving of especial notice, on account of its excellent habit of flowering long and freely, and also because it is exceedingly easy to manage. Its numerous trusses of delicate rose-coloured blossoms will be found very useful where cut flowers are much wanted.

The best time for propagating young plants is during spring or the early part of summer. The cuttings should be taken off when 2 or 3 inches long, with a bit of the old wood attached. These should be inserted in a well drained pot filled with a light sandy compost, and afterwards placed in a close hotbed, frame, or pit where a warm atmosphere and a little bottom-heat can be obtained; in this situation, with due regard to watering, shading, &c., in a few weeks the cuttings will become well rooted, when they may be potted singly into 3 or 4-inch pots, and replaced in a warm situation as near the glass as possible. A temperature of from  $60^{\circ}$  to  $65^{\circ}$  will suit them well. With favourable weather a gradual increase of air should be given, shading slightly in bright weather, if necessary, and syringing overhead on sunny afternoons. As they advance in growth, the principal shoots should be topped, and the plants repotted as the pots become filled with roots, observing that they should be topped a few days before or after potting, so as not to check the progress of roots and branches at one time. If cuttings are rooted early in spring, by July they should be good compact bushes, in 9 or 10-inch pots; if now large enough to suit the purpose of the cultivator, they may be allowed to flower, by discontinuing the stopping. As the flower shoots advance, a little attention is requisite to tying-out or otherwise supporting them in an erect position. When in bloom the plants may, if required, be removed to a cool situation, when, if protected from cold winds, they will continue a long time in beauty.

After flowering, I place them in a cool dry house, and during winter give only sufficient water to keep the foliage in health; towards February or March, or earlier if required, I remove them to a warm house, previously pruning the branches into a compact form. When they have started into growth the roots should be examined, and, if necessary, a shift given into larger pots. Stopping may now be continued only as long as it may be desirable to increase the size of the plant, which will be in flower in six or seven weeks after the last stop. If pruned back after the flowers are faded, a second and third crop of blossoms may be obtained during the summer, and on the approach of autumn the plants should be thrown away, in order to make room for more young and vigorous stock.

The soil best adapted for the growth of this plant is a mixture of equal parts turfy loam, peat, and well decomposed cow-dung; the two former should be broken small, and the latter sifted through a fine sieve; when mixed together, a liberal supply of sharp sand and some small pieces of charcoal should be added. The latter is a useful fertiliser, and assists in keeping the drainage in proper condition. Green-fly or thrips are the only pests to which this plant is liable, and both are easily destroyed by timely application of the usual remedies. Alpha.

#### NEW REMEDY FOR THE VINE DISEASE.

(From the *Monitore Toscano*, August 11, 1853.)

THE commission entrusted with the investigation of the disease prevalent amongst the Vines, assembled, by invitation of the Brothers Majoli, at S. Donato, in the Val di Botte, in the Department of Empoli, to witness the effects of their detergent. The commission were of opinion that the mildew or mouldiness, by which the Grapes had been attacked, had been completely destroyed upon all those bunches which, during the preceding days, had been washed with a liquid prepared by the Messrs. Majoli; and they also certified that this complete destruction of the malady occurred

in the case of all those clusters which, being more or less infected with cryptogamic disease, were, in their presence, immersed in the aforesaid liquid and slightly agitated in it. They also certified that upon all those Grapes which had been thus treated several days before, and which exhibited evident signs of having suffered from the disease, the mildew had not been reproduced, and the berries appeared to have increased in size, and to have in no way suffered from the action of the detergent fluid employed by the Messrs. Majoli.

The commission, having been privately informed of the composition and the mode of preparation of the detergent, undertook to discover both the principles to which the aforesaid substance more especially owed its efficacy and the most simple and economical mode of preparing it.

They certified that the liquid they had seen used destroyed the mildew upon the Grapes, without injuring them at the same time, but that it remained to be proved whether the mildew would be reproduced after a time, and whether the organic injury the berries had received before their immersion in the liquid was sufficient to cause their subsequent failure, notwithstanding the disappearance of the fungus by which they had been attacked. They further declared the discovery of the Brothers Majoli to be worthy of serious attention, and to be both economical and easy of application; and they expressed a hope that the inventors would obtain a reward, which they had well merited, as soon as time and facts should have made manifest the advantages which cultivators would derive from the expedient proposed by them.

This result of the inquiry of the commission, given and subscribed the 20th day of July, 1853, at S. Donato, is published by the Inspector-General of the Royal Possessions, in the *Monitore*, of the 26th ult., together with the recipe for preparing the detergent of the Messrs. Majoli.

At the public assembly of the Royal Academy of the "Georgofili," on the 7th of August, the commission (no longer pledged to secrecy) gave the results of their experiments—results which will be registered in the Proceedings of the Academy; but for the good of the public the commission think it right here to make known their conclusions (view of its efficacy), in order to remove the uncertainties, mistakes, and contradictory opinions which prevail amongst cultivators, in consequence of experiments carelessly performed, improperly prepared materials exposed for sale, and unsuitable conditions for experimentalising correctly.

It too frequently happens that experiments thus made lead to false inferences, or wrong conclusions, and we all know how easily this happens when anything is hastily and universally tried—then the public mind is occupied with prejudices, errors, and the anxiety occasioned by important interests.

Every soap in which there is an excess of potash and fatty matter becomes, in consequence of that excess, and by the minute division of the free fatty matter, a detergent for Grapes, and it does not injure them when dissolved in a proper quantity of water. The volatile oils, which increase its efficacy as a detergent, render it injurious to the Grape itself, if used in too great a proportion. Tobacco, sulphur, and alkaline sulphurs are useless by themselves. An excellent detergent is thus made:—

Take two bottles of equal measure (4.56 litres) of strong soap lie, from the soap-boiler's, or prepare it by lixiviating with water a mixture of ashes and quicklime newly slaked. You may also obtain it by mixing the potash of commerce (common potash) with quicklime and water. But this liquid, however made, must reach 25 degrees of the alkalimeter.

Weigh 10 lbs. (3.40 kilogr.) of soft soap, and 10 lbs. of fresh sweet lard. Mix the lard and the soap-lime, without heat, by long and careful agitation, and when you have obtained a perfectly homogeneous liquid, add by degrees the soft soap, taking care that it is dissolved and thoroughly incorporated (mixed) with it. Having done this, pour in 10 ounces of gum-water, and agitate the composition briskly for a long while; this composition, which will be very thick, must be dissolved in good rain water (such as is suited for cooking vegetables, and which will make good soap-suds), and if it easily melts and produces good suds, you may consider the preparation finished; if not, go on agitating the water until this result of your labours is attained.

It being probable that this composition will be spoilt by keeping, it ought to be prepared shortly before it is used. To make use of it you have only to dilute the solution with 6.84 litres of water, of the quality already indicated, for at most every pound of the detergent; try its effect upon a portion of the Vine which is only slightly affected, and at the end of a day and night observe whether the epidermis of the berries be shrivelled or discoloured.

If the destruction of the fungus be incomplete, it will argue that the detergent liquid is too weak, and you will strengthen it by dissolving a little more of the preparation.

Should the berry be discoloured you will infer that your liquid is too strong. All the diseased Grapes can be freed from the fungus which attacks them by being simply immersed and slightly agitated in the detergent liquid duly prepared; but many of those which have been diseased for a length of time have sustained organic injury, the consequences of which cannot be averted by the mere destruction of the disease. The prolonged action of the fungus creates an alteration of the tissues of the plant, the Grape cannot progress to maturity, and the berries inevitably burst. When the fungus has



been speedily exterminated, these injuries have not occurred, and in such cases the application of the detergent will be most useful. As far as we can judge from the short time which has elapsed, the diseased Grape may be saved by the detergent, but there is no certainty of success when the remedy is applied late. Delivered from the parasite, which has been preying upon its juices, the Grapes resume their vital functions, and increase in size. But, as their bulk increases, their skin having lost its elasticity, they burst. The medicated ones burst even more rapidly than those that have not been doctored, generally speaking, because they are no longer in a state of atrophy, and their growth is no longer retarded by the parasitic fungus. On this account many persons who may apply the detergent to those Vines in which the disease is far advanced, still consider it injurious, because many of those thus medicated will rapidly burst.

The commission, as regards the continuance of the efficacy of the detergent, and the preservation of the medicated Grape, do not pretend to predict anything more than they have had the opportunity of observing, and they wish to employ in their judgment the greatest possible reserve. Yet they wish to give publicity to their opinion, that the proposed detergent can be of great use if properly prepared, rightly administered, and above all carefully applied at the first appearance of the disease. To strengthen its preservative action, it is proposed to dissolve in the detergent fluid a sufficient quantity of clay or *mattajone*, which, adhering to the Grape after the liquid has destroyed the fungus, may efficiently prevent its reproduction. Present experience justifies these hopes. Finally, the commission exhort cultivators not to be discouraged, if, in the state to which our Grape Vines are at present reduced, they do not seem to derive any great advantage from the detergent. Let us try the experiment upon those which are slightly affected, let us try it upon the healthy Vines, let us see if it is not rather a preservative than a remedy, let us acquire practice in the use of it, and information concerning its effects, so that the coming year may be freed from the scourge which now devastates our vineyards. The fear of its recurrence ought to induce us to try the effect of the detergent for washing the branches after the pruning season, and sprinkling the stocks and buds of the Vine wherever practicable, due care being taken that the fluid is properly diluted, so as not to destroy the tender vegetation (of next year's buds). Signed *C. Ridolfi*, President of the Royal Rural-Economy Society of *Georgofili*; *G. B. Amici*; *Em. Bechi*; *Ant. Savagnoli*; *L. Ridolfi*; *A. Targioni*, Secretary. Florence, Aug. 8, 1853.

#### CULTIVATION OF SILENE COMPACTA.

This is a biennial, which has been in cultivation since 1829, but not successfully; for it suddenly turns yellow and dies at the time of flowering. To prevent this, M. Decaisne recommended me to follow a certain mode of culture, which has proved successful this year. I obtained plants 3 feet high, and decorated with 40 clusters of flowers, in pots 9 inches in diameter; of 35 plants, grown in pots and subjected to the experiment, not a single one was sickly, whilst three others which I grew in the usual way, for the sake of comparison, died at the time of flowering.

The following is the practice I adopt:—I sow the seeds in the open ground at the end of September or beginning of October. As soon as the plants have pushed five or six leaves, I prick them out along the front of a south wall or under a cold frame; I give them very little water, and they get air whenever it is requisite—in which particular I am guided by the hygrometric state of the air. Towards the end of March I take pots of from 7 to 9 inches in diameter and fill them with rich, well-worked garden soil, mixed with old plaster, so that the roots find a very permeable, calcareous medium. I then pot the plants, putting one or two in each pot according to their strength; I afterwards plunge the pots up to the rim in the ground, in order to prevent the sun from heating the roots too much, for, if such were the case, tap-rooting would be the consequence.

In this way, about the beginning of July, I obtain plants with compact clusters of beautiful rose-coloured flowers. *Delahaye*, in *Revue Horticole*, July 16, 1853.

#### ENTOMOLOGY.

##### THE MUSHROOM GRUB.

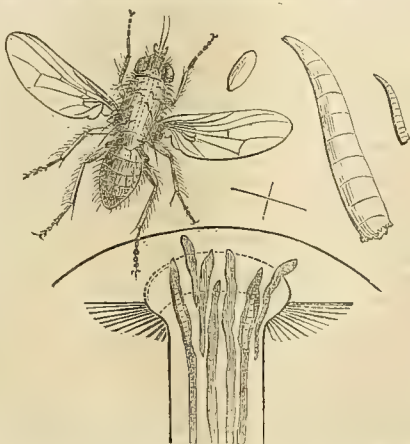
THE immense number of insects, not only of distinct species, but also of individuals belonging to the various species of the great genus *Musca* of Linnaeus, may be considered as comprising at least half of the entire order of two-winged flies, or *Diptera*. The common house fly, the blue-bottle fly, the fly of the cheese and bacon hopper, the Onion fly, the Lettuce fly, the Celery fly, the Holly-leaf fly, the Wheat fly (*Chlorops lineatus*), the Orange fly, and various other species which have from time to time been illustrated in our pages, belong to this family in its restricted state, after the removal of the species composing the extensive family of *Syrphidae*, which Linnaeus also described as *Musce*. The habits of this very great mass of species is very varied; for although most of the species above-mentioned are vegetable feeders (this fact being, indeed, the cause of their description in a work devoted to horticulture and agriculture), yet many of the species are carnivorous and great numbers feed upon other insects.

The voracity of many of the species of *Muscidae* is also very great; indeed, their chief office in nature seems

to be the removal of matter, both animal and vegetable, which has already performed its own appointed offices. Hence, when Linnaeus affirmed of *Musca vomitoria*, "Tres muscæ consumunt cadaver equi, æque cito ac Leo"—three *Muscæ* consume the carcase of a dead horse as quickly as a lion—he only expressed the natural function in nature of the majority of the species of these flies.

Of vegetable productions which would, were it not for the offices of insects, become the most obnoxious to mankind, in their dying and putrifying state, the various kinds of fungi, *Boleti*, *Agarices*, and allied plants, probably would occupy the first rank. Their soft texture, as well as their strong and decided flavour, render them especially inviting to a great number of different kinds of insects, and although we may be induced to grumble at finding a fine and tempting Mushroom or Truffle burrowed into by an insect, we must not overlook the infinite benefit which is afforded in the general economy of nature by these fungivorous flies.

On the present occasion we purpose to confine our remarks to a single species of *Muscidan*, which at this season of year infests the common edible Mushrooms, the larvæ or grubs of which burrow up the stem and into the fleshy portion above the gills, rendering them of course unfit for the table. About the middle of August last year, of a number of Mushrooms gathered in the neighbourhood of Chiswick, in the open ground, I found a great many thus infested, and when the rapid growth of the Mushroom is taken into consideration, the equally rapid growth of these maggots will also be evident, thus confirming the observation of Linnaeus, quoted above. The larvæ, when full grown, are about half an inch in length, of a white colour, with the body



cylindrical, but tapering gradually towards the head, the other extremity of the body being truncated; the head is retractile, terminating in a point, and armed with a pair of curved horny hooks, capable of much motion, attached to strong muscles, with which the insect rakes or tears the substance of the Mushroom, upon which it subsists. The hinder extremity of the body is furnished with several small tubercles, arranged round the circumference, in the middle of which the two spiracles or breathing pores are placed. The larva is destitute of legs, but possesses considerable powers of worm-like motion. When full grown it gradually contracts in length and dilates in width, assuming an oval form, and acquiring a chestnut colour, nearly destitute of articulation, and within this case the real pupa or nymph of the insect is formed. The individuals which I placed in a glass jar remained in the pupa state all the winter, and appeared as flies in the following May. They are very similar to the common house fly in form and general appearance, but the body is clothed with longer bristles, and the head and thorax is of a leaden-grey colour, the former with a ferruginous patch in the middle of the face, whilst the extremity of the scutellum, the abdomen, thighs, and shanks are of a clay colour. I presume there are several generations of this species during the summer months, and that those which deposit their eggs in the Mushroom in August are not the identical individuals hatched in May; probably, also, in a state of nature the August grubs would have hatched to flies in September, so as to have been succeeded by one or more generations in the past year.

The insect is the *Cenosis fungorum* of Meigen, and its transformations were observed by De Geer, who has given figures of the different states in the sixth volume of his memoirs. He observed that the larvæ occasionally devour each other, a small one attacking one of larger size, into the body of which it thrusts the horny hooks of its mouth, which caused the victim to make all sorts of contortions to dislodge its enemy, the latter, however, retained its hold, thrusting its hooks still deeper into the flesh and detaching small portions, which it ate. In the following spring he found two kinds of flies dead in the vase in which he had placed the larvæ, some were like the small house fly, with the body and legs entirely black, these had their bodies nearly entirely gnawed to pieces, whilst the other kind of flies, with luteous bodies and legs (evidently the same as those which I obtained), were entire. Hence he considers it possible that the black flies were the real destroyers of the Mushroom, and that the luteous ones had been produced from the larvæ which attacked the other larvæ. This observa-

tion, to have due weight, must be founded on the idea that the perfect flies with the luteous bodies were as insectivorous as the larvæ which he had observed, and that they had eaten or gnawed the bodies of the black flies. But I do not think these *Muscidans* are insectivorous in the perfect state, whilst the fact of my having reared scores of the luteous flies from the Mushrooms, and no black ones, completely disproves De Geer's observation.

I can suggest no remedy to prevent these flies attacking Mushrooms in the open ground, beyond that of cutting off and burning the stalks of such as are infested. In regular Mushroom beds some good would certainly result by fixing threads daubed over with bird-lime, over the beds, as the flies would settle upon them and thus be destroyed. *J. O. W.*

#### Home Correspondence.

*Grape Mildew*.—At the present moment, any fact, however trifling, which bears upon the Vine disease, is interesting, and I therefore beg to record the following in your journal. Mr. William Kemball, the principal tenant of the Rev. Copinger Hill, of Buxhall, near this town, has a Sweetwater Vine trained to a mud-wall, in his garden, and extending, I should say, 8 or 10 yards in length, by about 7 in height, the aspect being S. E. by E. Upon this Vine there was a large crop of Grapes, which went on very well until a few weeks ago, when the mildew appeared—each bunch, and the stems, and leaves, being covered with *Oidium*. The fruit is of course all destroyed, with the exception of two bunches on a small branch, which had grown into the luxuriant foliage of a neighbouring Apricot tree. This bunch, and the two bunches of Grapes, are perfectly healthy. I think this fact is curious, and interesting in several points of view, trifling as the incident is in itself. In the first place, as to the mode in which the spores of the *Oidium* find their way on to the parts of the plant which they attack. Although there may be some reason for the doctrine, that the spores of the *Puccinia* do, in some cases, find their way into the Wheat stem through the spongioles of the root, I think (but I confess my experience and knowledge of the subject are very limited) that the law is by direct application from the surrounding atmosphere. Granting this, how do we account for our exception, in the case I have detailed? The atmosphere will circulate with almost perfect freedom among the leaves of the Apricot, as over the rest of the Vine. The application of spores would therefore be nearly as perfect in one case as the other. But there is a fact which strikes the mind at once, while thinking about the *modus operandi* of the Apricot leaves. I mean the known influence of branches of trees in "keeping off" the frost from our wall-fruit. There is, then, a certain condition of the atmosphere in respect to moisture, temperature, and perhaps electricity, essential to the production of the Vine fungus; and analogy deduced from the case I have related would lead to the inference that, moisture being granted and electricity assumed, the necessary temperature is one below the usual average of the time of year, and that the Apricot leaves, by preventing radiation, kept the Vine branch in a constant temperature too high for the growth of the *Oidium*. In the second place, if the theory I have ventured is wrong, the fact is undoubted, and it will be quite worth while another year to test its value by experiments on a larger scale. A few Birch or Spruce branches scattered here and there through a wall tree is a very easy and practicable operation, and at all events is worthy of trial. Last year I had some young Vines in my greenhouse attacked with mildew, and I adopted the sulphur remedy recommended in your journal, taking great care to rub it well into the stems of the plant, where perhaps the spores for next year take refuge. This year I have not had a vestige of mildew in my house. The Grape mildew, the Potato disease, the Bean and Clover disease, the cholera—all, in my mind, point out a fact, with which I have long been impressed, viz., that our climate is undergoing a slow, but certain change. Our winters are milder, and our summers colder, than they were in the days of "our early youth." Hence arises the great puzzle of our new diseases in animals and plants. The conditions are such as we have never before experienced—how, then, can we understand results? There is no opprobrium upon science in neither understanding nor being able to remedy inflections which are probably part of the scheme of Nature, and the mysteries of which may ever be removed from human knowledge. *C. R. Bree*, *Stricklands, Stowmarket, Sept. 5, 1853.*

*Anacharis alismastrum*.—On Friday the 19th ult, I found this formidable water-weed in a pool about three miles up the river Severn from Worcester, which is, I believe, the first time it has been discovered in the valley of the Severn. How it got there I cannot imagine. In the *Worcestershire Chronicle*, published to-day (Aug. 31), will be found an account of the plant, with which I furnished them. I enclose a specimen of the *Anacharis*, from the above place. The pool is very near, but not connected with the Severn, except by flood. *Thos. Baxter*, 1, Castle Place, Worcester.

*Vine Stocks*.—Two years ago I inarched a branch of a Hamburg on a Nice Vine. The Hamburg has made a very vigorous shoot, and this year has produced several bunches of fruit, but they are very much shrank and badly coloured; whereas the parent (Hamburg) has ripened fruit, well swelled and well coloured. The Nice, although a healthy Vine to all appearance, has ways produced shrank berries in considerable numbers



If, therefore, the Nice Vine has a bad effect on the fruit of a sort worked on it, some other healthy and vigorous growing variety might have a beneficial effect, producing well swelled and well coloured Grapes. The Barbarossa might possibly be a good stock on which to work the tender kinds of Vines. Is the Mustang Vine from Texas being propagated in the gardens at Chiswick? If not, I shall be glad to know where I can obtain it; for it is very annoying to a gardener, after bestowing much care and expense upon his Grapes, not to be able to gratify his employer with constant good crops. The subject is surely worthy of investigation. *S. B., Elton Manor.* [Apply for the American wild Vines to any of the great nurseries.]

*Nurserymen's Catalogues.*—The late Mr. Loudon, in his "Gardeners' Magazine," often resorted to the botanical and other inaccuracies which then existed in nursery and other lists, and to the paucity of correct botanical knowledge generally amongst the leading establishments of the time in which he lived. It will not be difficult to prove that though many and great improvements are constantly being effected in every department of horticulture, we are at a stand-still in this the very science to which we are indebted for the foundation and subsequent developments of gardening, furnishing us, as it does, with information concerning the locality and peculiar attributes of every subject belonging to the vegetable kingdom. A nursery catalogue is often the only tangible evidence of the existence of the establishment, and for that evidence to create a favourable impression, it is to the interest of the proprietor that it be correct. The number of correct catalogues are few, compared with the many that are wanting in this essential particular. I have examined nine lists of plants and seeds, and only found three out of that number entirely free from errors, and of these two were catalogues representing the stock of two of the most eminent firms near London, containing hundreds of botanical names, and many of them hard to pronounce; consequently the merit of having spelled them correctly was the greater. The result showed that the smaller the catalogue the larger is the number of mis-spelled names which it contains. In one list, out of 170 botanical names there were 30 wrongly spelt, which is nearly 20 per cent of inaccuracies. Among the errors were the following:—*Teucrium pyrenanacea*, *Zauschneria*, *Saxifraga oppositifolia*, *Cruci(a)nella*, *Trapaemium Lob(b)ianum*, *T. Hoc(o)kerianum*, *Sedum sa(e)angulare(e)*, *Hemerocaulis*, *Ly(a)the(y)rus*, *Lytherum*, *mo(e)ssoleucum*, *oc(h)roleuca*, &c. In one seed list *Broccoli* was spelt *Brocoly*, *Borecole*, *Burcole*; a new *Lychmis* was spelt *dioica* *alba plena* for *dioica*. Let it not be forgotten that the catalogue, whether right or wrong, indicates the botanical calibre of the establishment it represents; the fact of their often being referred to as an authority is a sufficient inducement for the nursery or seedsmen to study its botanical character. *R. Miles, Kingsdown, Sept. 3.* [We wish we could contradict this statement, which is rather within than beyond the truth.]

*Diseased Taxodiums.*—We had several promising young plants of *Taxodium sempervirens* in different parts of the grounds at this place, varying from 3 to 10 feet in height, and previous to the last winter they grew very strongly, but they were all more or less injured by the frost we had in March last, and after the severe weather had passed by I cut out the dead wood, and after that they pushed vigorously. Early in July, however, the young shoots were attacked with mildew, in the shape of white spots, which after a few days would turn brown; and then the shoots began to droop and die, as will be seen by the specimens I send you, and most of the plants we have got are killed back to the leading shoot, and two are quite dead. I have pointed the matter out to several gardeners in this neighbourhood, and none of them ever saw instances of such an evil before. Can you kindly tell me what is the cause of it? *W. H. D.* [They were fatally injured in the winter, and never recovered, except in appearance.]

*Orchard Houses.*—In reference to my former communications (see pp. 742, 1852, and 293 of this year), in regard to a new plan for the better arrangement of fruit and kitchen gardens, I shall now endeavour to give some idea of the cost of a span-roofed house of a size sufficient to grow Peaches and Nectarines equal to the demand of any ordinary family, and to compare it with the cost of a wall required to produce nearly a corresponding quantity of fruit. I can say, from experience, that a house 100 feet in length would grow fruit in greater abundance, of a finer quality, better flavoured, and with greater certainty than a wall three times the length. A house of this size, built of the very best materials, would cost little more than 200*l.* It might be divided into three compartments, the first being appropriated to early forcing, the second and third coming in in ordinary succession; and in this way an ample supply of Peaches could be had regularly throughout the season. Now, the great evil of a Peach wall is, that, even when the wood is tolerably well ripened, the season favourable, and the crop good, there is a glut of fruit at one time during the season, and all is soon over. The house which I purpose substituting for the wall would obviate this disadvantage. In this part of the country, a brick wall 100 yards in length, 10 feet high, 14 inches thick, and with stone coping, would cost about 200*l.*; but then there would be the uncertain seasons to contend with, and against which even extra coping, canvas screens, netting, &c., afford scarcely any protection. I have taken the Peach and Nectarine as an

example, but there are other fruit trees which stand as much in need of protection, in order to secure well-ripened wood and a good crop of fruit as these; as for instance, Apricots, Cherries, Plums, Figs, &c. Those trees have failed in some places this season, not so much, as I think, from a cold spring as from unripened wood. In the above calculation I have not included the proposed divisions and heating apparatus, which would add to the expense. *James Russell, Gardener to Lieut.-Col. Ames, The Hyde, St. Alban's, Sept. 6.*

*Sea-side Shelter.*—I beg to send you a letter from the Earl of Leicester's forester, relating to the Evergreen Oak and other trees that will withstand the sea breeze. So neglected, yet so important a plant as the Evergreen Oak ought to be brought prominently before the public, for it forms excellent shelters where nothing else will live. I believe that it would thrive on the top of those chalk cliffs facing the sea, where scarcely anything else could exist. With regard to *Araucaria Brasiliensis*, mentioned by Mr. Gorrie, there are some curious facts; in three letters I have received from different places, it is stated to have stood too many years. Can this be the true *Brasiliensis*, or may it not turn out to be what is thought by some to be the variety *Ridolfiana*? *John Standish, Bagshot.* The following is the letter alluded to:—Our *Pinetum* is rather in an infant state, but it contains almost all the hardy and half-hardy sorts which are to be got. In May, 1851, we planted out a collection of what is considered half-hardy Pines and other trees in a sheltered situation, on a dry, gravelly soil, and none of them seem the least affected by the winters; we have a plant of the *Araucaria Brasiliensis* which has stood the last five winters, without protection, in a sheltered situation, and is doing well. I find that the *Araucaria imbricata* stands the sea breeze very well, and I think it will form a valuable acquisition to the list of sea-side plants. For extensive planting in our most exposed situations facing the sea, we plant *Pinus Laricio*, *austriaca*, *Pinaster*, *sylvestris*, &c.; but the best sea-side tree we have got, and which is certainly the finest feature in this park, is the *Quercus Ilex* or Evergreen Oak; it does best here upon a dry, chalky soil, and the more exposed to the influence of the sea the better it seems to thrive. I measured a few to-day, the dimensions of which may not be uninteresting to you. No. 1 is 49½ ft. high; circumference of stem 18 in. from the ground, 18 ft. 6 in., 7 ft. from ditto, 13 ft. 3 in.; diameter of ground covered by tops of tree, 72 ft. No. 2 is 74 ft. high; circumference 3 ft. from the ground, 3 ft. No. 4 is 80 ft. 6 in. high; circumference of stem 3 ft. from the ground, 7 ft. 11 in., and we have thousands ranging from 30 to 75 ft. in height. Our *Lucombe's Oaks* are young, but they appear to stand the sea-breeze very well when they have been planted on exposed places. The common Yew does very well. Notwithstanding the cold name which the sea-side part of this county (Norfolk) has, and cold it certainly is, I believe with getting up a proper shelter, with the above-named and other trees, we might have any plant that could be grown in the warmest counties of the kingdom. We have also a collection of Pines and other rare trees on an estate of Lord Leicester's, called Fulmoston, about 12 miles from the sea, but the tender sorts do not seem to stand so well there as at Holkham. *Archibald Gorrie, Holkham.*

## Societies.

ENTOMOLOGICAL, September 5.—J. O. WESTWOOD, Esq., F.L.S., &c., in the chair. Among the donations received since the last meeting were the new volumes of the publications of the Smithsonian Institute, the Society of Arts, the Natural History Society of Liege, &c., as well as three cases of magnificent butterflies from Central America, presented by Mr. Stevens, of Bogota. The new part of the Society's Transactions (vol. 2, part 6), with two coloured plates of the transformations of small Lepidoptera, was also announced as ready for distribution; and the attention of the meeting was directed to the first part of a new work by M. Jekel, of Paris, entitled "Fabricia Entomologica," remarkable for having the text entirely written in lithograph by the author, for the sake of cheapness. Mr. F. Bond presented a number of fine specimens of *Pyrallis farinalis*, taken in an outhouse attached to a crushing-mill in Cambridgeshire. A letter was read from M. Candez, of Liege, requesting the communication of specimens of *Elatridæ*, upon which family he is preparing a monograph. Mr. F. Moore exhibited various Coleoptera and Lepidoptera, from New Brighton, including an apparently new species of *Anomala*, distinct from *A. Frischii*. Mr. Weir exhibited specimens of the rare moth, *Coleophora Wockeella*, and the case formed by its larva; also the case of the larva of another species which resides within the capsules of *Silene inflata*; also *Tortrix dumetana*, taken near Lewes; Mr. Edwin Shepherd, beautiful specimens of *Cynaeda dentalis* (which had been immersed in turpentine, and then covered with pipe-clay, to prevent them from greasing) and *Coleophora vulneraria*, from the coast near Dover; and Mr. S. Stevens, a curious variety of *Limenitis bilbilla* from St. Osyth; and a new species of *Simaethis*, from Arundel. Mr. Westwood mentioned that he had reared a species of *Coleophora* from a larva found on *Asparagus*. A note was read from Mr. Edleston, offering specimens of the beautiful *Plusia bractea* to the members; he also exhibited a specimen, to the eyes of which several authors of the Honeysuckle were attached; Mr. Wing, specimens of *Ypsolophus verbasellus*, a new British

species from Norfolk; and Mr. Douglas, *Gelechia brizella* from Brighton. The last-mentioned gentleman also described the larvæ of a small moth found in the leaves of the Dogwood, which is remarkable for being entirely destitute of prolegs. Mr. Stainton also exhibited illustrations of the natural history of several species of Microlepidoptera. A note was read from Mr. Weaver, on the habits of *Lasiocampa Callunæ*, observed in Perthshire; and one by Mr. John Scott, on the capture of *Gelechia cerealella*. Mr. Westwood mentioned that he had successfully adopted the plan of driving the bees out of the hive (from which he had desired to take a portion of the honey) by inverting it and covering it with an empty hive, and then beating the sides of the full hive, without employing either fungus, sulphur, or chloroform.

## Notices of Books, &c.

*Bradshaw's Illustrated Hand-Book for Travellers in Belgium, on the Rhine, and through portions of Rhenish Prussia.* London: Bradshaw. Square 12mo. Pp. 159. Maps and illustrations.

THE failure of Mr. Murray in his attempt last winter to obtain an injunction for an alleged piracy of the "Hand-Book for Switzerland," may perhaps embolden others to make what the Vice-Chancellor was pleased to call "a certain use" of the excellent travelling manuals published by the former gentleman. Whether one work is legally speaking a piracy of another may in any given case be extremely doubtful; but whether morally speaking an unfair use is made by one person of the materials collected by another at considerable expense and trouble may be very clear; and we have no hesitation in saying that the editor of this "Bradshaw" has in our opinion made such a use of a well known "Murray." The following passage shows that the editor has not, moreover, been very skilful even in abridging; at pp. 95, 96, under the head of Bonn, we find "the subjects" *i.e.* taught at the University "are Philosophy, Medicine, Jurisprudence, and Theology, in the three former of which Linnæus and Cuvier are prominent, and Wickliffe, Luther, Calvin, St. Jerome, Ignatius Loyola, and other fathers, both Protestant and Catholic!" Misprints abound; but we hope, for the sake of those, if any, who may be unfortunate enough to take the present hand-book as their guide, that errors are not so frequent in the railway time-tables as elsewhere. The woodcuts are well drawn, but coarsely engraved, and badly printed; they seem to be familiar to us from having appeared in some other work. Errors, moreover, which we suppose we must in courtesy call typographical, but which are certainly very discreditably abundant. We therefore scarcely need add that "Murray's Hand-Book" is infinitely preferable in every way to this slovenly compilation.

## New Plants.

2. *CRYPTOMERIA LOBBIANA.* *Allgem. Gartenzeit.* July 23, 1853.

UNDER this name is published the fine variety of *C. japonica*, imported by Messrs. Veitch and Co., from Java, whither the Dutch brought it from Japan. It is a more vigorous growing plant than Fortune's Chinese seedlings, with firmer, thicker, and finer leaves; nor has it the tendency to become brown or to die at the end of its shoots, which is so common in the ordinary *Cryptomerias*.

3. *NIPHEA ALBO-LINEATA*; *var. reticulata.* *Van Houtte, Flore des Serres*, t. 823; *aliàs* *N. argyreneura*, *Planchon.*

A very pretty stove herbaceous plant, forming a good recruit for the regiment of variegations which the nurserymen are raising. According to Mr. Van Houtte's figure and Dr. Planchon's statement, the dark green leaves are completely traversed by a well defined network of pure white, which gives them a charming appearance. The flowers are white, the size of a Cowslip, and unimportant, though neat and pretty. We are told that the present variety came up in the mould of a box of live plants, sent from New Grenada to Mr. Linden, by his collector M. Schlim.

4. *CATTLEYA ELEGANS, Morren, Annales de Gand*, t. 185. *Bot. Mag.* t. 4700.

This brilliant and very rare species has just flowered with Mrs. Lawrence. It has long slender clavate terete stems, each bearing one very long obtuse leaf. The flowers grow in pairs (?), or perhaps in greater number, from within a green spathe, which in the "Botanical Magazine" is represented as long as the peduncle, but in the specimen before us is scarcely more than rudimentary. The sepals and petals are a clear vivid uniform rose colour, with an expansion of about 5 inches; the latter being about twice as broad as the former. The lip is cucullate and regularly 3-lobed, with some elevated lines along the middle; its convolute part is almost colourless; the ends of the lateral lobes, which are very much rounded and deeply separated from the middle one, have a broad rich crimson stain within the edge; the middle lobe is somewhat cordate, with a wedge-shaped base, wavy, broader than long, exactly as in the lower figure in the "Botanical Magazine." The blossoms emit a rather pleasant aromatic odour.

This is reported to be a native of St. Catharines, in Brazil, whence also came the still more beautiful *Lælia purpurata*. We must add that this too is a *Lælia*, if



the mere number of pollen-masses shall definitively separate the genera *Cattleya* and *Laelia*. The pollen-masses, although 8, are not however of equal size in this species, but 4 are quite small, and lodged in very shallow sockets in front of the anther.

### Garden Memoranda.

THE NEW CRYSTAL PALACE AT SYDENHAM.—Although some portions of the extensive operations in the park connected with this great undertaking are progressing rapidly towards completion, yet a very great deal has still to be effected before the whole of the ground-work is finished. The two terrace walls, which are of Bath stone, with circular niches in front and handsome balustradings on the top, are both built, and some of the statues which are to ornament the corners of the bastions have been procured and are ready for setting up. The narrow Grass slope, between the basement of the palace and the level of the first terrace, is completed, and the terrace itself might soon be made ready for gravelling. The second terrace, which is to be laid out in beds on Grass, intersected in various directions by gravel walks, has been put into form, the basins for the fountains with which it is to be ornamented are being excavated, and the pipes laid for supplying them with water. The main central walk leading from the principal transept through the two terraces has been put into shape as far as where the first great fountain in the park is to play, and the balustrading along the top of the lower terrace wall has been continued down the sides of this walk as far as it is raised, and round the fountain till it terminates in two neat piers a little below the latter. The slopes from the base of the stone-work down to the level of the surrounding ground have been turfed, which has the effect of setting off the white stone with which the terrace walls are formed to great advantage. All along the terrace walls the little piers, which are 24 feet apart, are to be surmounted by vases filled with flowering plants, and we understand that beds of Mignonette and other sweet smelling flowers are to be scattered plentifully along the grassy bank below the first terrace, so as to yield an agreeable perfume to visitors looking over the wall on the magnificent gardens below, with their delightful groups of ornamental shrubs, flowers, and fountains. A large tract of ground lying between a natural knoll, or little hill, on the west side of the first great fountain in the park, and the front of the terrace gardens, has been laid down in turf, or sown with Grass seeds, and completed; and several of the broad walks in this part of the grounds have been made, and rough gravelled. Various well arranged clumps have also been formed and planted, chiefly with shrubs bought in at Messrs. Loddiges' sale; and altogether this side of the park, with its finely undulating surface and broad glades of Grass, begins to assume an interesting and finished appearance. On the top of the eminence, or little knoll, just mentioned, we believe some sort of colonnade is to be raised, from which views of the grounds can be obtained; but by far the best view, both of the park and the extensive and beautiful valley beyond it, will be that from an open colonnade which is to be formed round the front of the palace itself. A few circular beds have been made round some of the pieces of lawn which have been finished; but they have not been planted. A large quantity of bedding plants have, however, been bought in, and are planted out in nursery "lines" merely to forward their growth a little, preparatory to their being housed for the winter. Before leaving this part of the grounds, we may just mention that the palace station, into which not only the west-end railway but also that from London Bridge is to run, is being formed close on the western boundary of the park at a little distance from the palace, between which and the station there is to be a glass covered way, so that the contents of the building may be inspected without inconvenience, during all kinds of weather. If we pass down the line of the great central walk which is to lead to the bottom of the park, decorated as it is intended to be on either side with flowers and shrubs, and alive with fountains and waterfalls, we find great operations going on; but nothing is as yet so far advanced as to convey any correct idea of what it is ultimately intended to become. We learned from Mr. Milner, however, that the main walk, after passing round the first basin and fountain, will proceed in the direction of Penge Church, till it terminates in another circular basin and series of fountains, whose equals will only be found at Chatsworth itself. To give some idea of the magnificence of the display that may be expected to be found here, we may mention that the centre column of water will rise 230 feet in height; around that will be four fountains, each 120 feet in height, and these again will be surrounded by 16 others, each 72 feet in height. Nor is this all; there are other groups as grand, besides multitudes of smaller decorations of a similar character, which in themselves will doubtless be worthy of Sir Joseph Paxton's experience in such matters. On the south-east side of the great fountain just described will be a lake covering 5 acres of ground; other ornamental water will chiefly consist of two streams either side of the principal walk, just below the first fountain. These are to be each 450 feet in length, and will be fashioned into cascades, which will fall into broader pieces of water on the right and left of the walk, and lying at right angles to it, each 1000 feet long. These two latter pieces will each contain fountains of great power and beauty, so that there will certainly be no want of decorations of this kind, which tend so much to set off

pleasure-grounds to advantage. The towers from which the fall for the fountains is to be obtained are nearly erected. They stand at each end of the building, which they equal in height, and the water is to be forced up them by means of steam power from a reservoir, which covers more than 2 acres of ground and is 12 feet deep. It will thus be seen that the gardening operations connected with this great undertaking are yet very far from being finished, and that the directors have much yet to do before all that we have mentioned shall have been completed. Beyond the dress ground will be the open park, the Anerley side of which, where there is a considerable extent of thicket, will probably be converted into a kind of gypsy ground, by forming walks through the wood; but not otherwise materially altering its natural character. This will afford an agreeable and cool retreat from the heat of a summer's sun, which we have unfortunately had too little of this year.

## FLORICULTURE.

CULTURE OF PERPETUAL CARNATIONS.—These highly fragrant flowers were first brought into notice a few years ago by some of our great London nurserymen; and although they have been greatly admired by those who have cultivated them, they are not nearly so generally known as they deserve to be. They do not, certainly, possess the fine markings of the summer-flowering kinds; but, if inferior in point of variety of colour, they are equal with them in respect to fragrance. Very little artificial treatment is required to have this class of Carnations in flower at any season; so that, aided by a moderate number of plants, we may enjoy the fragrance of the Carnation the whole year round. The plants have a somewhat sub-shrubby habit, and a tendency to produce flowers upon the ripened young wood, irrespective of season; and they submit to stopping as frequently as may be necessary in order to retard their blooming, and this without any injury to their ultimate flowering. A little practical experience may, however, be necessary to enable the cultivator to judge as to the proper time at which plants intended to supply blossoms at a certain period should receive their final stopping; and as this depends very much upon circumstances, such as temperature, the general health and vigour of the plants, &c., it is difficult to obtain the desired knowledge otherwise than practically; a season's experience and careful observation will, therefore, prove the best means of surmounting this difficulty. Such being the case, I will merely give an outline of the general culture proper for these plants. I will suppose that a few plants of various colours have been purchased, and that these are ready to furnish cuttings of moderately firm pieces in spring. The cuttings may be prepared in the usual way, removing them at a joint where the wood is firm, but not hard; after trimming, plant in light sandy soil, in thoroughly drained pots, cover with a bell-glass, and plunge the pots in a mild bottom-heat, say 65°. If attended to with water, and guarded from damp by frequently wiping the glasses, they will soon root, and may then be potted singly into 4 or 5-inch pots. It will be necessary to keep the plants in a somewhat close moist atmosphere, until fully established, after potting. As soon as they have become rooted and made some growth, pinch out their tops, in order to induce them to throw-out shoots. It will be advisable to keep the plants in a temperature averaging from 50° to 60°, till the season when this will be supplied by a cold frame. When the plants have filled their pots with roots, they may be shifted into their flowering-pots, the size of which should be regulated by the time when it may be desirable to have them in bloom. For such as may be intended for flowering during autumn, 7-inch pots will be sufficiently large; some for winter use may receive 9-inch pots; and a portion for spring flowering, and for forming large specimens, may have 10-inch pots. They may remain during summer in the cold frame, and they will require no further attention than the ordinary routine of watering, stopping, and staking. As regards stopping, this should be deferred in every case until the growth is well matured; for if the plants are stopped while the buds are soft and in a dormant state, the foremost eyes only will break, and there will be but little gained as respects securing a compact bushy habit; moreover, as already intimated, the stopping must be regulated by the period at which the plants may be wanted to produce blossom, and the temperature at which they can be kept, &c. As a general hint regarding this part of their management, I may remark that plants intended to furnish a supply of flowers in November, should not be stopped later than July. During their growth they must be freely exposed to light and air; but after the flower-buds are formed, they may, if necessary, be kept close, and subjected to a higher temperature, in order to have them in flower at the desired time. When the weather becomes cold and damp, they must be removed to the greenhouse or to a pit, where they can receive a little artificial heat; but unless in the case of plants which may have been stopped late, in autumn artificial heat will be unnecessary, as they will bloom in the greatest perfection in a temperature of about 45°. It is better to have the growth completed during autumn, and to keep the plants in a cool, airy part of the greenhouse, until the flowers may be wanted, than to stop very late, and depend upon artificial heat, which should only be given in the case of a few plants intended for flowering late in spring. While

in blossom, they may be placed in the sitting-room, the conservatory, or wherever their fragrance may be most acceptable. The old plants may either be thrown to the rubbish-heap, or if kept cool, cut back, and grown for flowering another season, they will form large specimens with but little trouble. For soil, use rich loam and thoroughly rotted manure, in the proportion of two parts of the former to one of the latter, to which add a quantity of clean, sharp sand, sufficient to render the compost light and porous. J. S.

NATIONAL FLORICULTURAL SOCIETY, Sept. 8.—First-class Certificates were given on this occasion to Dahlias Marvel (Pope), an orange-yellow sort, mottled and striped with bright red; and to Beauty of Slough (Brage), a well-shaped flower with a bluish ground-colour, and mottled lacing of crimson purple. A Certificate was awarded to Dahlia Margaret (Dodd), a useful-looking variety with a canary ground-colour, and a mottled lacing of rosy purple tipped in the centre of the petal with green. Dahlia Kingleader (Holmes) received a first-class Certificate for its general good properties; it is ruby-red in colour. Dahlia Primrose Perfection (Keynes) received a Certificate. It will be a useful flower; the centre and form are good, and it is large and showy. Dahlia Mrs. Rawlings is promising; but the blooms sent were not in good condition. Rachael Rawlings and Fanny Keynes were shown, and fully maintained their former good character. Hollyhook Pearl (Chater) received a first-class Certificate. It is a delicate blush with a paler guard petal. Hollyhook Glory of Cheshunt (Paul), had a Certificate. It is a primrose coloured, well-shaped flower, which cannot fail to be useful.

AT THE SYDENHAM SHOW, which was held on Thursday, the 1st of September, certificates were awarded to the following Dahlias:—Rachael Rawlings (Keynes), 1st class; Topsy (Keynes), 1st class; Leader (Keynes), 1st class; Eva (Keynes), 2d class; Prince Alfred (Wyness), 1st class; Marvel (Pope), 2d class; Lady Emma (Windsor), 2d class. Three blooms of Pope's Gum of the Season were also exhibited, but no award was made, the Society requiring six blooms. A first-class certificate was awarded to Mr. Robinson, for a seedling Verbena named Mrs. Daniel Tyssen.

### SEEDLING FLOWERS.

CHINA ASTERS: *B. Page & Co.* The specimens of M. Vilmorin's Asters which you have sent us are extremely beautiful, and fully maintain the opinion which we formerly gave of them in our volume for last year. The petals are long and broad, and in most instances finely incurved, like those of a Chrysanthemum, which the flowers, indeed, generally very much resemble. Among them we have violet and rose-coloured varieties, edged on the petals with white; whites as large and double as the best white Chrysanthemum, and rose purple, and other selfs equally good. All of them are full in the centre, very double, and large in size, and if we can get them to flower as well in this country, they will certainly be acquisitions.

DAHLIAS: *E. A.* Full report of those exhibited at the Surrey show will be given next week.

### Miscellaneous.

On the Composition of Beet-root, by A. Robicrre.—In the department Loire Inférieure the opinion is entertained that the loam soil of the west is unsuited for the cultivation of Silesian Beet. Some persons infer this to be the case from the unsuccessful experiments recently made by sugar manufacturers. Others ascribe the circumstance, that in Brittany Beet rich in sugar can only be obtained with difficulty, to the large quantity of chloride of sodium present in the soil of that district. The author has investigated this subject from a technical point of view, and has at the same time endeavoured to ascertain whether, as regards the per centage of sugar, there is any difference between Beet grown upon a soil rich in potash and that grown in the neighbourhood of Valenciennes. The Beet which he procured from the latter locality were of two kinds, which are distinguished in France as varieties—*collet vert* and *collet rose*. Comparative analyses were made of these and the same kinds of Beet from the farm of M. Derrière, near Nantes. Peligot's mode of examination was adopted; 100 parts of Beet, in slices cut from various parts of the root, were dried in a water-bath, and extracted with very weak alcohol (1 per cent.). The loss of weight gives the per centage of sugar. This result is certainly a little too high, as some minute quantity of a mucilaginous saccharine substance is likewise dissolved. The author considers, however, that this may be disregarded. The albumen and pectine are determined together with the lignine. The ashes (obtained by calcination in a muffle) from the Beet grown on the loamy soils of the Loire inférieure and from the neighbourhood of Valenciennes both contained equal quantities of chlorine. The percentages of ash were 0.63, 0.70, 0.80. From the results contained in the following table, the author comes to the conclusion that the Silesian Beet may be advantageously cultivated in the Loire Inférieure; and further, that the Beet grown near Nantes does not contain any substance calculated to render the extraction of the crystallisable sugar difficult:—

Names of the Varieties of Beet examined, and their Place of Growth.	Time at which they were Harvested.	Quantity of dry substance in 100 parts of Beet.	Per centage of Water.	Per centage of Sugar.	Per centage of Lignine, Albumen, and Pectine.
Collet Rose—Valenciennes	End of Sept., 1852	13.40	86.60	7.64	5.76
Collet Vert—Valenciennes	End of Sept., 1852	14.60	85.40	7.40	7.20
Collet Rose—Nantes	Commencement of Oct.	12.80	87.20	8.24	4.56
Collet Vert—Nantes	Commencement of Oct.	10.96	89.04	7.24	3.72
Collet Vert—Nantos	November	14.00	86.00	9.32	4.08
Yellow German Beet	November	13.07	86.93	10.05	3.05
Common Beet	November	11.05	88.95	...	...
Silesian Beet—near Nantes	October	14.00	86.00	5.00	9.00

Comptes Rendus, xxxvi.; Chemical Gazette.

The Slippy Elm-bark.—*Unius Falcis*.—The bark of this tree is extensively used in the United States, and has lately been ordered in this country. The inner bark is the part employed. It is a demulcent, and is recom-



mended in diseases of the mucous membranes. Infusion of the Slippery Elm bark:—The bark bruised, 1 ounce; boiling water, 1 pint. Macerate for two hours and strain. To be used freely as a demulcent.—*U.S. Ph. Mr. Ure* has found a poultice of the Slippery Elm bark beneficial. It is made by stirring the powder in a sufficient quantity of hot-water. It is a soothing application to irritable ulcers, &c. *Pharmaceutical Journal.*

## Calendar of Operations.

(For the ensuing week.)

### PLANT DEPARTMENT.

THE decline of summer-flowering plants will point out the necessity of looking more closely to those which are intended to supply a floral display during the autumn and winter. The reserve stock of subjects which have been grown on for this purpose will by this time be nice bushy plants, and from having been latterly exposed to a full share of light and air, will be in a favourable state for blooming after a few weeks' introduction to the stove; or a part of them may remain in an intermediate house and brought forward as required. Let the stock of Begonias have another shift, if not already in pots sufficiently large. Keep the plants thin, that their foliage may be kept from injury. To the above a few more common things may be added. *Bignonia capensis* and *Plumbago capensis* are both valuable autumn blooming plants, the latter almost indispensable for cut flowers. The tall varieties of *Lobelia*, and such plants as *Salvia patens* and *splendens*, assist in making a show through the autumn. Attend to *Chrysanthemums*; water freely with liquid manure. As we are not writing for florists, good specimens should be aimed at rather than fine individual blooms. The earliest started winter-flowering Heaths and Epacris should now be placed under glass, as it will forward their blooming—give air, however, freely. The potting of *Hyacinths*, *Narcissus*, &c., for forcing should now be done at once; in selecting the bulbs, take the firm compact ones in preference to those of larger size, if they are soft and spongy, as the blooms will be finer; about equal portions of good soft loam and decayed leaf-mould, with silver sand, will be the best soil for potting the bulbs, if for forcing; but well-decomposed cow-dung must be substituted for the leaf-soil, when the bulbs are intended for late flowering. After potting, place them on a dry bottom and cover the pots 2 or 3 inches deep with old tan or ashes, preserving them at the same time from heavy rains; under this treatment they will fill their pots with roots, and will be in readiness for forcing when wanted.

### FORCING DEPARTMENT.

EARLY VINERY.—Where Vines are intended for very early forcing, they should be pruned immediately, as the sun heat is yet considerable; the canes, after being pruned, should be shaded from the sun, exposing them only by night; before evening well syringe with cold water—this, by inducing a state of rest, will enable the Vines to break stronger hereafter. Provided the earliest crop of Grapes is to be obtained from pots, the plants (supposing the wood completely ripe) should be taken to a north wall to remain till wanted for forcing; prune them back to the desired length, but allow any leaves remaining to fall of their own accord. PEACH HOUSE.—The early house will by this time have the wood in a forward state of ripeness, which may be known by applying the hand to the shoots, when the leaves will be easily detached, showing they are no longer of service. The shoots may, therefore, be brushed over with a light besom, which will bring off all the ripest leaves; and by repeating this two or three times, a clearance will be effected of the leaves on the ripe wood. The few left on the ends of the shoots may remain for a short time longer, as we are averse to pulling any off by force. When the trees are divested of the leaves the sun and air will have free access to the shoots, and will assist considerably the ripening process; we hardly advise the sashes being removed for a few weeks yet, but all the air possible should be given the houses, to carry out the above conditions before removing them. Strawberries for forcing will now be growing freely; remove runners from them as they appear; liquid manure will be useful, and a full exposure to light, to assist which, keep the plants thin; the present month should be taken advantage of, to get the plants strong, with their pots well filled with roots, when there will not be much danger of a crop next season, if ordinary care is taken.

### FLOWER GARDEN.

The waning beauty of the flower garden must be compensated for by extra attention to neatness and order; decayed blooms and straggling growths must be daily removed, to insure the requisite high keeping. At the same time the Grass must be kept well under by the scythe, and the gravel at all times firm and even, by rolling, that nothing may interfere with the perfect keeping of the whole: remove Annuals past their best, and fill up the vacant beds with Anemones, Hyacinths, and other spring flowering bulbs and plants; where the beds are exhausted, add a good portion of fresh loam, rotten cow-dung, and sand; cut off the decayed blooms from hardy Heaths and other shrubs as they go out of bloom, and prune in straggling shoots with the garden shears; if this is done annually, these charming plants may be preserved many years in a compact form. In this neighbourhood many forest trees are already getting into the "sere and yellow leaf" of autumn, and the

Beech in exposed places is likewise becoming "bronzed," preparatory to taking a deeper tint of autumn colouring; and as several kinds of trees will soon begin shedding their leaves, the Grass lawns near trees should be kept down close before the leaves fall, as it is mown with difficulty afterwards.

### HARDY FRUIT GARDEN.

The earliest Apples and Pears should be gathered as they ripen. Early fruit is more particularly the better for being gathered a few days before it ripens on the tree—as, in the latter case, it usually turns mealy directly. Protect Peaches, Nectarines, Plums, and Figs from wasps. Peaches and Nectarines should likewise be gathered a day or so before they are quite ripe, and placed in a room of medium temperature, where they will ripen more regularly than if allowed to ripen on the tree, and be higher flavoured as well. Get the fruit room in order for holding fruit as it may be gathered, and see that all the shelves, drawers, &c., are clean and dry before fruit is deposited therein. Water Alpine Strawberries with manure water, and the new Strawberry plantations in dry weather.

### KITCHEN GARDEN.

The favourable change in the weather will enable the hoe to be brought to work between growing crops, both to cut down weeds, and to loosen the surface soil, which the recent heavy rains have in some instances battered to the consistency of a gravel walk; at the same time a piece of good rich land, in a somewhat sheltered situation, should be well dug over, for planting with the first crop of spring Cabbage; a liberal dressing of manure should be applied; and as we have before adverted to the advantage crops derive, more especially those intended to grow through the winter, from being planted on deeply trenched land, we need not repeat the advice. Winter crops of vegetables, as Cauliflowers, Spinach, Onions, Lettuce, &c., must have every encouragement to get them on. Keep them clear of weeds, and occasionally dust them over with soot, which is an excellent manure for a top dressing. Now that the weather has become dry, late Peas, Cauliflowers, Lettuce, and Celery, should be well watered with liquid manure. Continue to take up and dry Onions for storing away. If Lettuce are required through the winter, the present will be the proper time to plant a few pits or frames with the true Paris and brown Cos, which is the hardest to stand the winter, but not so valuable as the Paris Cos for salads. At the same time a frame may be sown with a good hardy Cabbage Lettuce: the lights may remain off till frosty nights occur, when they may be placed on—allowing, however, air during the night, to prevent damp. A pit or two should likewise be appropriated to late French Beans; such as have been growing Melons through the summer will serve, by merely forking over the soil, and adding a little leaf-mould to make it lighter. If such pits are heated by hot-water pipes, the advantages will be greater, as fires can be applied as winter approaches.

### STATE OF THE WEATHER NEAR LONDON.

For the week ending Sept. 8, 1853, as observed at the Horticultural Gardens, Chiswick.

Sept.	Moon's Age.	TEMPERATURE.								Wind.	Rain.
		BAROMETER.		Of the Air.			Of the Earth				
		Max.	Min.	Max.	Min.	Mean	1 foot.	2 feet deep.			
Friday..	3.2	29.863	29.710	60	42	51.0	59	57	N.	.44	
Saturday	4.3	30.291	30.093	62	49	55.5	57	56	N.	.00	
Sunday	5.4	30.418	30.272	65	53	59.0	57	56	N.E.	.00	
Monday	6.5	30.373	30.304	68	50	59.0	57	56	N.E.	.00	
Tuesday	7.6	30.280	30.219	68	43	56.0	57	55	N.E.	.00	
Wednes.	8.7	30.108	30.017	67	43	55.0	57	55	N.E.	.00	
Thursday	9.8	29.937	29.904	64	48	54.5	57	55	N.	.00	
Average ..		30.154	30.074	64.8	46.5	55.7	57.2	55.7		0.44	

Sept. 2—Overcast; much overcast and heavy rain at night.  
3—Clear; overcast and fine; very clear.  
4—Fine; very fine; overcast.  
5—Fine; cloudy and fine; clear and fine.  
6—Very fine; clear at night.  
7—Overcast throughout.  
8—Cloudy and fine; overcast; much overcast.  
Mean temperature of the week, 3.4-10th deg. below the average.

### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending Sept. 17, 1853.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 11	68.22	46.81	57.51	9	0.46 in.	2	3	1	1	4	4	8	4
Mon. 12	67.14	44.85	56.00	9	0.49	4	4	1	2	1	4	10	1
Tues. 13	67.22	45.62	56.42	10	0.40	2	3	5	1	2	5	6	3
Wed. 14	66.51	46.74	56.62	13	0.84	1	2	6	3	2	5	5	3
Thurs. 15	66.74	45.85	56.29	13	0.63	0	4	4	2	6	1	5	5
Friday 16	67.88	47.51	57.70	10	0.50	2	5	4	1	2	1	4	1
Satur. 17	68.39	46.65	57.53	10	0.50	1	3	5	1	2	1	4	3

The highest temperature during the above period occurred on the 12th, 1841, and 17th, 1843—therm. 84 deg.; and the lowest on the 17th, 1840—therm. 29 deg.

### Notices to Correspondents.

BEES: A E wishes to know if there is any way of preventing wasps from entering beehives and abstracting the honey; the bees seem too supine to protect their stores from attack. If any correspondent can suggest any mode of defence, "A. E." will be much obliged. Her beehives are on Nutt's principle.

BOOKS: T O. There is not one word of truth in the booksellers' statement that Lindley's "School Botany" is all sold, and not procurable. It can be obtained by every country bookseller who has credit with his London agent. Persons who give false answers to inquiries of this sort are not unfrequently men whom the trade is not anxious to deal with.

BRISTOL POTS. We think that enough has been said upon so local a subject as this. If the people at Bristol are satisfied with their potters, we have no wish to render them discontented.

CONSERVATORIES: G P. Experience proves that iron houses become hot and cold more rapidly than wooden ones; but the former is unimportant, provided ventilation in abundance is provided; and the latter only demands a little more fuel and

attention. For large structures iron must be used, unless Sir Joseph Paxton's rib and furrow roof is employed. For small buildings, the appearance of which is not very important, we think wood preferable.

FRUIT TREES IN POTS: W M. Cuyar. Take the fruit trees you turned out of their pots some time since, and repot them in a size larger pot. This should be done at once if the leaves are falling. In potting, take care not to injure the young roots protruding from the old ball. After potting, the plants should be plunged again in their former position for a month or six weeks, as that will help to establish them in their new shift. Afterwards remove them to a northern aspect to winter, carefully protecting the pots by plunging the pots and mulching the surface. Let them remain there till they are wanted for forcing. Your Figs may be placed in a spare Viney not at work, or in a shed or out-house. They only require protection from severe frosts. The Vines in your Viney may be pruned at once, after the leaves have fallen; the sooner the better.

FUCHSIAS: J A. One of the singular, but not uncommon monstrosities to which the cultivated varieties are subject. The plants which produce such things are over-fed.

GOLD FISH: Old Sub. If you will consult our former volumes, you will find many useful hints on the management of gold fish, more especially in those for 1844 and 1845. As to food, nothing is found to answer better than Biscuit (either Abernethy's or Captain's) thrown into the water in which the fish is kept.

HEATING: W C. If your Pine-pit is only intended for nurseries and succession plants, we should think that you will have heat enough from a 4-inch hot-water pipe put up as you propose. For the covering of mats we should, however, substitute "Frigi domo," which is warmer and more durable than mats, and also less expensive.

HERBACEOUS PLANTS: Sub. We cannot venture to answer your question without knowing something of the rules of the society to which your plants are to be exhibited. They should furnish you with all the information you want.

INSECTS: Anonymous. Your caterpillar is that of the common dagger moth (*Acronycta tridens*); it feeds on leaves of the Plum and other trees.—J M C. The insect sent is a female *Sirex Gigas* (see *Gardeners' Chronicle*, 1850, p. 517, for figure and description); it lives in its early stages in Pine wood.—A Gardener. The minute insects found in the soil in the neighbourhood of diseased Potatoes, like one of the small species of spring-tailed insects, *Pedura fimbriata* (*Gardeners' Chronicle*, 1847, p. 321), common in richly manured land.—Anon. Thanks for the silken tissue; it appears to be the web of the small ermine moth, *Yponomeuta Padella*. W.

LAGESTREKIA INDICA: Sub. This beautiful stove plant is very difficult to flower. It requires to be wintered in a cool house, and started in a plant stove early in spring, after pruning it in, hard, reducing the old ball, and potting it in a mixture of sandy loam and well rotted dung or leaf-mould. When in bloom it may be removed to the conservatory, and will last a month. A little manure-water will assist it very much after it shows flower.

MANURE: E H. If you are unable to procure manure in sufficient quantity, and do not wish to use guano, then your best course is to preserve your leaves, moved & placed in a soft garden rubbish of all kinds, throw it into a hole to ferment as it accumulates, and if you find the process too slow, water the mass with a solution of pearlash or caustic potash. Add to the mixture wood-ashes, house slops, and any animal matter that is attainable. Should the smell become offensive, you may keep that down by the addition of peat charcoal, or even by a layer of earth. It is, however, difficult to give explicit directions for such an operation as this in the absence of a full knowledge of your means and real wants.

MEDLAR STOCK: Leyton. You may use this for Thorns or for Pears; but it is not a good one.

MELON FRAMES: G W. As you put the question, the answer must necessarily be, too much heat or sunlight. Cold would not produce a success under the circumstances described.

MILDEW: C M. Your crystallised sugar, overrun with red and white threads, was examined immediately on its arrival. The coloured threads were certainly the produce of some animal, the uncoloured as certainly the mycelium of some mould, but without fruit. After some time, however, the mycelium put forth fertile threads, which proved to be those of *Aspergillus glaucus*, a mould which grows everywhere; the point of curiosity in the present case being how it could establish itself on such crystals, binding them together into one mass. The ground and dried Chicory also presented the same mould, together with a small quantity of some *Mucor* and *Ascopora* in a condition which made it impossible to determine the species. M. J. B. Names of Plants. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—X Y Z. A downy-leaved state of *Angelica sylvestris*.—W H. Why, your "specimens" are most wretched morsels, not in flower. The Pine looks like a morsel of a Pinaster. No. 5, which you call a sort of Willow, is a *Staphylea trifolia*; and your No. 1 *Deutzia* is some *Lonicera*. You should study a little elementary botany. You might as well call a pheasant a frog.—Alpha. *Acropera Lodigesi*.—M C. *Collomia grandiflora*. The seeds, when placed in water and watched, are most remarkable microscopical objects.—Inquirer. *Allium descendens*, and a bit of what we take for *Rudbeckia fulgida*. We are unacquainted with the reasons that have led to the proposition of the genus *Crococissia*.—A D. *Eria convarillarioides* and *Dinema polybulbon*.—J W L. *Gentiana campestris*.—C N R. *Lantana Cammaria*, a stove plant.—G H F. *All Aspidium aculeatum*. S.—*Aspis*. 1, 2, and 3, *Lastrea spinulosa*; 4, L. *Filix-mas*; 5, L. *dilatata*; 6, L. *spinulosa*. S.—A E V. *Begonia fuchsoides*.

NURSERY WORK. Patterson. Your inquiry is not such as is susceptible of an answer. The quantity of "trees" that can be raised on an acre of ground depends on the kind of trees and the length of time they are to remain. If you are acquainted with nursery work, you do not need advice; if you are not familiar with it, you would do better to let it alone.

OAK LEAVES: H R L. They are affected by two different kinds of galls called spangles. Both are the work of insects, some account of which will be found in our volume for 1843, p. 52. †

POTATOES: J Y. Brechin. Your Potato stalks are covered and filled with *Sclerotium varium*, a fungus which is very commonly found in decaying stems which have copious pith, as the Sunflower, Jerusalem Artichoke, Potato, &c. The *Sclerotium* is consequent on decay, and in this instance appears to be merely a condensed form of *Botrytis capitata*, Fr., of which you will find a figure in the volume of the *Gardeners' Chronicle* for 1847, p. 356. We have repeatedly seen Potato stems in the condition in which you send them, and have similar specimens from Scotland. M. J. B.

PRESERVING FRUITS: G G. Mr. Lovejoy's mode appeared in our Number for April 16 (of the present year), p. 244. †

VINES: Tirydail. It is impossible to say what ails your Grapes. The spots will probably spread much more, judging from the state of the berries sent. Something has killed the skin; but we suspect it is something operating from within, not from without. We see no trace of mildew threads at present.

MISC: T F. Please send your advertisement to the Office, and we will inform you the price.—F C. A Post-office order may be made payable to James Matthews, at the Strand Office.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,  
**ANTONY GIBBS AND SONS,**  
 AS THE ONLY IMPORTERS OF PERUVIAN GUANO,  
 Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, **ANTONY GIBBS AND SONS** think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO**, the guaranteed import of Messrs. **ANTONY GIBBS AND SONS**, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.

WILLIAM INGLIS CARNE, 10, Mark Lane, London.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urate, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

**PERUVIAN GUANO**, guaranteed the genuine importation of Messrs. **A. GIBBS & SONS**. A constant supply of **LINSEED** and **RAPE CAKE**. **EDWARD PURSER**, Secretary.  
 LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**MANURES**.—The following Manures are manufactured at Mr. Lawes' Factory, Deptford Creek:—  
 Turnip Manure ... .. per ton £7 0 0  
 Superphosphate of Lime ... .. " 7 0 0  
 Office, 69, King William Street, City, London.  
 N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**SEWAGE CHARCOAL MANURE**.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the **SEWAGE MANURE WORKS**, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt., ready money only, and in quantities not less than a ton, will be delivered at the London Terminus of the Railroads free of charge for cartage.

It may also be had from Messrs. **G. GIBBS & Co.**, 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

**SAMUELSON'S PATENT DIGGING OR FORKING MACHINE**, which obtained the **SILVER MEDAL** of the Royal Agricultural Society at Gloucester, 1853; 5l. 6s. Prize of the **YORKSHIRE SOCIETY**; and 5l. Prize of the **CLEVELAND SOCIETY**; capable of cultivating 5 acres per day with four or six horses, may be seen at work at Banbury, and in Kent, Middlesex, Surrey, Cheshire, Yorkshire, North Wales, Berwick, Gloucestershire, Worcestershire, Leicestershire, Herts, &c.

To meet the demand of **SMALLER OCCUPIERS** where horse power is limited, Mr. SAMUELSON has constructed an implement equal to 3 or 3½ acres per day, with a draught of three or four horses only. Price 27l. 10s. and 24l. 10s. respectively, at Banbury.

**PRIZE at Gloucester** (the eighth time) to **SAMUELSON'S** improved **GARDNER'S TURNIP CUTTERS**.

Manufacturer of **McCormick's Reaper** (highly commended at Pusey), **Anthony's Churns** (3l. prize at Gloucester), **Liquid Manure Pumps**, **Chaff Cutters**, **Crushing Mills**, **Lawn Mowers**, &c.  
**B. SAMUELSON**, Britannia Works, Banbury.

**WINTON'S PARKES' CELEBRATED STEEL DIGGING FORKS** never bend, strain, nor break, but retain their sharp points to the last, requiring no repair.

Mr. Mechi says:—They answer admirably in breaking our heavy clays, and mixing the soil in an extraordinary manner, and facilitate labour quite 20 per cent.

**BURGESS & KEY**, 103, Newgate Street, and 52, Little Britain, London Agents, and also Agents to all the principal Implement Manufacturers in the Kingdom.

## PRIZE CHURN.

**ANTHONY'S PATENT AMERICAN**.—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—**BURGESS & KEY**, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron **BOILERS**, and Conservatory and Hot-house Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

## WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.

Patent Pump ... .. 1 15 0

Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required.

They are much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers.

**JOHN WARNER & SONS,**

8, CHURCH STREET, LEWIS STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

**FRIGI DOMO**, patronised by the Horticultural Society and the Zoological Society, a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 4d. per yard run, of **E. T. ARCHER**, Carpet Manufacturer, 451, Oxford Street, London.—Manufacturer, Royal Mills, Wandsworth, Surrey

**TANNED NETTING**, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Serim Canvas, for Wall Fruit.

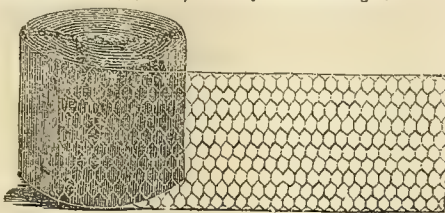
At **EDGINGTON & Co.**'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark; and at Brunswick Street, near the East India Export Dock, Poplar, where may also be seen erected Emigrant Tents in great varieties, on their latest improved principles.

**HENRY J. MORTON AND CO., PATENT GALVANISED IRON ROOFING WORKS**, 9½, Albion Street, Leeds, Agents for **PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES**. The **PATENT WIRE STRAND FENCING** forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



**IRON HURDLES** and all kinds of **WIRE FENCING** and Ornamental Wire Work.

**HENRY J. MORTON AND CO.**, 9½, Albion Street, Leeds. **GALVANISED GAME AND POULTRY NETTING**, very strong and neat, NEVER REQUIRES PAINTING, and cannot rust or corrode, made any width and length.



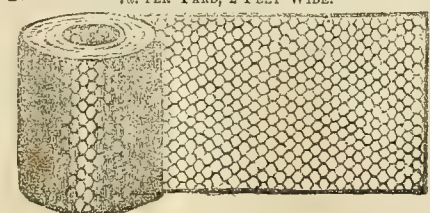
24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.

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**GALVANISED IRON SPOUTING**, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

**Galvanised Iron Liquid Manure Pumps**, **Water Cisterns**, **Troughs**, and all kinds of **Iron Work**, **Asphalte Roofing Felt**, &c. Apply at 9½, ALBION STREET, LEEDS.

**GALVANISED WIRE GAME NETTING**.—7d. PER YARD, 2 FEET WIDE.



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2-inch mesh, light, 24 inches wide ... 7d. per yd. 5d. per yd.

2-inch " strong " ... 9 " 6½ "

2-inch " extra strong " ... 12 " 9 "

1½-inch " light " ... 8 " 6 "

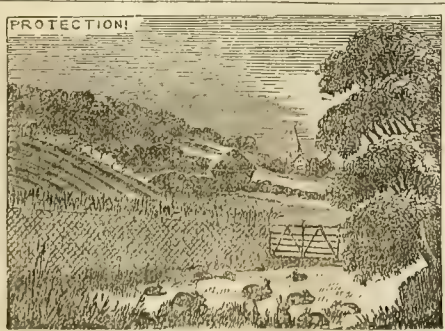
1½-inch " strong " ... 10 " 8 "

1½-inch " extra strong " ... 14 " 11 "

All the above can be made any width at proportionate prices.

If the upper half is a coarse mesh, it will reduce the prices one-fourth. **Galvanised Sparrow-proof Netting** for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by **BARNARD & BISHOP**, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.



**CHEAP AND EFFECTIVE WIRE FENCING**.—

Every variety of pattern, both for garden and field purposes, made to order at very reasonable prices. The wire is of first-rate quality, being selected from the most celebrated manufacturing mixture applied to the Net as soon as made, and included in the cost price. An experience of 15 years fully warrants the Advertiser in claiming for the Whittington Net a large share of public favour.

Apply to **MR. S. TAYLOR**, 2, Wotton Parade, Gloucester or to **R. WOODCOCK**, Whittington, near Stokeferry, Norfolk.

## LAND DRAINAGE.

**MR. JOHNSON** (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five Shillings per acre; or if under 30 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

## LAND DRAINAGE.

**MR. BAILEY DENTON'S TABLES OF COST**, &c., price 1s. 4d. Sold by **METCHUM**, Parliament Street.  
**MR. BAILEY DENTON'S WORKMAN'S A LEVEL**, price 1l. 10s. Sold by **JONES & Co.**, High Holborn, London.

## ROYAL PANOPTICON OF SCIENCE AND ART, LEICESTER SQUARE.

**MR. HOLMES** commenced a **CLASS OF PRACTICAL CHEMISTRY** in the Laboratory of this Institution on September 1, for medical students, gentlemen amateurs, or gentlemen wishing to investigate any particular branch of chemical science. A separate Class for Ladies, and a Juvenile Class in the morning. Also, on the same day, Mr. HOLMES commenced his Course of Agricultural Chemistry, embracing simple practical methods of analysing soils, manures, &c., and instructions in the application of chemical science to the general routine of farming operations.—Applications for terms to be made to Mr. HOLMES, at the Institution.

**COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE**, 37 and 38, Lower Kennington Lane, Kennington, near London.  
 Principal—**J. C. NESBIT**, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuit of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College.

The terms and other particulars may be had on application to the Principal.

The next term will commence on the 1st of October.

**TO AGRICULTURAL PUPILS**.—A Gentleman

living in one of the best cultivated districts of Scotland has a vacancy for two or three Boarders. A better opportunity for acquiring a thorough knowledge of practical Agriculture in all its branches seldom offers.—Apply to A. B., Office of this Paper.

**AGRICULTURAL PUPIL**.—An Agriculturist, residing in a delightful district of North Devon, has a **VACANCY** for a Gentleman as a **PUPIL**. The Advertiser, who has long been accustomed to take pupils, can give and expects references of the highest respectability.—Direct to X. X., Post Office, Instow, Barnstaple, Devon.

## SMITHFIELD CLUB FAT CATTLE SHOW.

All Entries for the Christmas Show of Fat Stock, &c., must be returned to the **HONORARY SECRETARY** on or before **SATURDAY**, the 5th of **NOVEMBER**, 1853.

Prize Sheets, specifying the Classes, Prizes, and Medals (which amount to nearly 800l.), and the necessary **PRINTED FORMS** of Certificates for Entry, to be had on application to

**B. F. BRANDRETH GIBBS**, Honorary Secretary,

CORNER OF **HALF-MOON STREET**, Piccadilly, London.

N.B.—It is particularly requested that all letters connected with the Exhibition or on the Club's Business, may have the words "**SMITHFIELD CLUB**" written on the outside, in addition to the Honorary Secretary's name and address.

## HITCHIN AND HOME COUNTIES DOMESTIC POULTRY ASSOCIATION.—OPEN TO ALL ENGLAND.

The Second Annual Exhibition of this Society will be held at the Corn Exchange, Hitchin, on the 18th, 19th, and 21st of November, 1853, when Prizes amounting to upwards of 80l. will be offered for public competition.

Hitchin is a first-class station on the Great Northern Railway, 30 miles from London; at which station is a Junction with the Cambridge and Eastern Counties Railway. Regulations and Prize Lists may be had on application to the Secretary, by enclosing two Postage Stamps. Entries for Exhibition close on the 1st of November. Admittance to the private view on Friday, November 18th, by a 5s. card (not transferable), which will be available for the three days of Exhibition. And on Saturday, the 19th, and Monday the 21st, 1s. each.

**SAMUEL GOODWIN**, Secretary.

The Directors of the Great Northern and Eastern Counties Railways have agreed to run Cheap Trains on the occasion, and to give free passage to all Poultry for the Exhibition (at owner's risk), and to carry back free all that is unsold.

**THE BIRMINGHAM EXHIBITIONS OF STOCK AND DOMESTIC POULTRY**.—The Fifth Great Annual Show will be held in **BINGLEY HALL**, Birmingham, on the 13th, 14th, 15th, and 16th of December next.

**PRIZE LISTS** and any further information may be obtained from **JOHN MORGAN, JUN.**, Secretary.

Offices—39, Bennett's Hill, near the News Room, Birmingham

## IRELAND.

**AN OFFICER**, lately on the Staff of the Army, well acquainted with Farming and Stock Management, as well as with Building and Engineering works, would willingly take the management of some Irish Estate. Although he would expect reasonable remuneration, yet employment is his great object.—Letters addressed to the Editor of this Paper will be communicated to him.

## The Agricultural Gazette.

**SATURDAY, SEPTEMBER 10, 1853.**

**MEETINGS FOR THE TWO FOLLOWING WEEKS.**

**THURSDAY**, Sept. 13—Agricultural Imp. Society of Ireland.

**THURSDAY**, — 22—Agricultural Imp. Society of Ireland.

It is a matter of every-day observation to those who have opportunities of obtaining a correct knowledge of the fact that the difficulty experienced in procuring good saddle horses is increasing every year, or rather that it has increased in a progressive ratio during the last few years. The paucity of stallions adapted for breeding roadsters was strikingly shown at the late meeting of the Royal Agricultural Society at Gloucester, and was indeed quite discreditable to a country whose boast has been the possession of the best horses in the world. This evil is felt not only by those who require riding horses merely for the purposes of relaxation, but is experienced also by those whose business it is to purchase horses for her MAJESTY'S cavalry—so much so, indeed, that it



has called forth a little publication, entitled "The Deteriorated Condition of our Saddle Horses,"\* written evidently by one whose military reminiscences show him to be a cavalry officer of considerable experience in her MAJESTY'S service. Fully alive to the importance of the subject, both in a national and agricultural point of view, we offer no apology for bringing the work and the subject before the attention of our readers. The writer commences by pointing out the rarity of good saddle horses, as shown in the display made at the various fairs, and the effect of this on the cavalry, observing that a cavalry horse is required to carry 20 stone, including the rider and appointments. He then notices the causes which have led to their previous excellence and their present deterioration. The former he assigns to the patronage given to the turf, and the stout horses that were formerly bred, in order to contend successfully for the heavy tasks they had to perform, such as races of six miles with heavy weights. The deterioration of our saddle horses he ascribes, on the other hand, to the almost exclusive attention now bestowed on speed, the short races that are run, and the very early period at which young horses are brought to the post. After alluding to the evil arising from allowing the distances to be curtailed for the Queen's Plates, he proposes that these bounties should be increased in amount, and given only for such distances as four and five-mile heats at least, and allowing no diminution of weight on the ground of age. He contends that liberal bounties would bring such horses forward as would be capable of contending in such races, and afterwards of improving the breed of saddle horses throughout the country. In order to obtain such horses, the writer advises that we should resort to the Arab horse, to whose merits he devotes the third chapter of the work. In the fourth, he points out the form and action of good saddle horses, and acknowledges that it would be impossible to produce horses with agreeable action and high breeding, yet capable of carrying such weights as 20 stone; but this could be done, he says, by the aid of a cross with a lower but stronger breed of horses, thus producing the finest cavalry horses in the world. Our author, however, falls short at this most important point, for he does not tell us where this lower and stronger breed is to be found. He does not inform us whether he alludes to the English cart or the heavy Flanders breed—he does not say whether he would seek for mares or for stallions amongst them; but he leaves us in these matters altogether in the dark, although he devotes a chapter to the consideration of "the close analogy between the principles which should guide us in breeding saddle horses and those which have succeeded in breeding other domesticated animals."

Now, whilst freely acknowledging the importance of the subject, and the magnitude of the evil complained of, and believing likewise that it is matter well deserving the consideration of the Government, we are of opinion that the remedies proposed (founded as they are on conjecture rather than fact) would fall utterly short, and fail in producing the intended result. The great evil complained of is the difficulty of procuring good saddle horses equal to heavy weights. Now, such animals when full grown ought not to be less than 15½ to 16 hands high, and furnished in every respect in proportion to this height. Now, surely, to obtain such a breed we should not resort to little Arab horses—well adapted, no doubt, for breeding handsome ponies or carrying the spare Bedouin, with his light equipments, long distances through the desert, but which would sink into the earth under the ponderous weight of a Life Guardsman fully appointed. Let us seek in the parent, at any rate, some portion of the qualities demanded in the offspring. A larger and wider frame is required; let us take care that either the sire or the dam, or both if possible, possess these requisites, and possess likewise with them the other qualifications required for a hack, such as good, deep, oblique shoulders, flat legs with ample span, and strong fetlocks with the proper angle of obliquity. The evil to which attention is called is great, we admit, but it is not without a remedy; but, before stating our views on this matter, let us, for the sake of elucidation, glance at the cause of the evil.

Now, the main object which most breeders of horses have in view is the same which influences the exertions of breeders of other descriptions of stock, that is—*profit*. If Arab horses or Shetland ponies, or even mules, would pay best, they would breed these animals; but this not being the case, they consult the wants of their purchasers, a large number of whom require handsome carriage horses for the London market, and for which high prices are given, whilst others wish for well-bred hunters for which large sums are offered, and particularly if

they are adapted for carrying heavy weights. Now, when 50% to 100% can be realised for these young animals, it will not answer the breeder's purpose to raise coarser horses for such sums as 25%, the Government contract price, or even a few pounds more for good hacks; consequently, the latter are altogether neglected. These observations apply to the regular breeding districts; but what is the case through the country generally, and amongst farmers who breed perhaps one, two, or three colts a year? As long as a mare is fit for other purposes she is kept at work, but when she gets old, or fortunately lame before she gets old, she is devoted to the stud; and with these mares the ordinary breeder must be contented with such horses as Providence sends him, for he will not think of going out of his way to seek them. He has his choice between two descriptions of horses, which almost alone the ordinary districts supply—that is, a second-rate thorough-bred horse, or a cart horse; and, unless the mare happens to be unusually good, he breeds either a weed or a mongrel, according to the aristocratical or democratical choice he happens to make. Sometimes, however, he has the choice of a tall, leggy Cleveland horse; but as for a well-bred weight-carrying animal—perfect as a hunter and accomplished as a hack, the most useful animal in the world—he may seek for such a horse, but he cannot find him. Such horses are unfortunately castrated and sold for good prices, whilst the females are also doing their parts in hard servitude, instead of being devoted to the stud. It is the thorough-bred and the cart stallion which are most frequently found; in fact, they often travel together under the same ownership, on the same principle probably that we find WOMBWELL'S menagerie usually accompanied in its peregrinations by the minor attractions of the wonderful dwarf or the extraordinary pig, the one to attract the shillings and the other to take care of the pence. The cart horse, besides his own proper work, is often called upon to exercise his powers where his better-bred companion has sweated himself in vain. Sometimes, however, the cart horse is put to light mares, to improve the size of the offspring; and the blood horse to the cart mares, for the purpose of imparting more breed and activity, the result being (very frequently in the latter instance) that we have the cart mare's body with the blood horse's legs; and, in the former, the light carcass of the thorough-bred with the large head of the cart sire—exhibiting in each case the result of an ill-assorted union, and affording the best possible proof that the parents were paired but not matched.

In the breeding of other animals, such as sheep and oxen, almost equal care is bestowed in the selection of both sexes. The best of each are reserved for breeding purposes; in the horse this is almost entirely neglected. The too frequent custom of castrating almost every half-bred horse indiscriminately before either his merits or demerits can be proved, and of keeping every useful mare in active work so long as her limbs are clean and sound, and her constitution in a vigorous condition, are, in our opinion, the principal causes of the deterioration of our saddle horse; and a reversal of this system must be the main feature in every successful plan proposed as a remedy. With these views, we reserve for a future article some practical suggestions by way of remedy for the growing evil to which this writer has so properly called attention. *W. C. S.*

THERE is but one principle which is generally allowed to regulate the arrangement of FARM BUILDINGS—and that is the need of economising labour. The food comes from the field—it is separated, prepared, perhaps cut and cooked—the animals under shelter are fed and littered—their manure is carried out to where it, too, may be prepared for use. This is a regular sequence of events and operations, hinging the one upon the other, and the buildings in which they are severally carried on are connected so as that to the labour done in each there shall be as little addition as possible connected with the transmission of either means or results from one place to another. And this economy of the labour carried on within the several buildings is the only principle which has hitherto regulated the arrangement of them.

But there are two essential principles which ought to be borne in mind. One undoubtedly is the need of economising labour—the other is the need of superintending it. In a plan put forth some years ago by Viscount TORRINGTON, this latter principle was in some measure kept in mind; and the window of the farmer's business room was made to look directly into the large covered space in which all the processes of feeding and of preparing food were conducted. Whether this was an advisable mode of carrying it out we do not now stop to inquire; we merely assert the soundness of the principle as an introduction to the following communication with which we have been favoured on the subject:—

"As of late years a considerable portion of agricultural business is the stall-feeding of cattle, and the use of machinery subservient to this and other farm-yard purposes, it may be well worth considering whether the present arrangement of homesteads be such as to facilitate supervision of the business going on. Investigation would show that in most cases the superintendent has no other means of assuring himself of the vigilance of his subordinates than by going in amongst them from building to building; and hence it would appear that the inspection principle might often be adopted with advantage for farm buildings no less than for manufacturing purposes. This principle emanated from the late Brigadier-General Sir SAMUEL BENTHAM; it is simply that of stationing the superintendent in a central situation, placing the operations to be overlooked circularly around him, and in disposing of the windows of the building or buildings to be inspected in such a manner as that the various operations going on may be visible to him, though he himself might be more or less concealed from the observed. In one of the General's still existing drawings, the superintendent's lodge being in the centre, a number of buildings under his control are placed radially around the central structure, though at some distance from it; in another of his drawings the half of a circular building is shown, the inspector's study being in the middle of the chord; these plans suggest a manner in which farm-yard buildings might be made appropriate to their several uses, and at the same time enable the farmer, or the superintendent, from his office and habitation to witness the general proceedings of the homestead, thus sparing him often the loss of time consequent on the need of having to enter each particular building.

A farm yard on the inspection principle may be supposed to be the half of a circle of, say 400 feet diameter, the exterior circumferential line of that half circle being partly enclosed by the ends of five buildings, each of them 40 feet wide [or of a greater number of smaller width], partly open to the yard; with four intermediate spaces between the buildings. These spaces, though no more than 12 feet 6 inches at the yard, would of course have increased breadth, according to the length to which the intervening structures might be extended lengthwise, they always radiating from the central point—the buildings themselves being more or less open, or glazed at the two ends at least, so that the whole interior might be well lighted from end to end, and, so to speak, transparent. For convenience in use, and economy in erection, these buildings might be two or more storeys high, and where desirable their other floors connected one with the other by light bridges, such as would not intercept a view of the intermediate spaces. The buildings would of course be appropriated as most convenient for the various uses of the farm; but details of this nature are forborne, the present object being merely to furnish a general idea of the mode by which the inspection principle might be carried out at a farmery.

To facilitate inspection at times of leisure as well as of sedentary business, the farm house would be placed at the middle of the chord of the semicircle, the farmer or superintendent's study, his office and his business rooms, looking to the farm-yard; by erecting the floors of these apartments at a height intermediate between the floors of the first and second storeys of the five farm buildings, a sight into both these storeys is obtainable from one floor of the central observatory. Even the superintendent's bed-chamber might be on the farm-yard side of the house, the principal apartments looking on the other front. This, the principal front, as it might be termed, exempt from noise and from all business of the farm, would be more or less embellished, according to the tastes and wealth of the inhabitants. It would admit of even luxurious decoration, hiding the farm-yard, while the ground in front to any extent might be laid out in lawn, flower-beds, with any amount of accompanying shrubbery or arboretum.

According to Sir SAMUEL'S plans, inspection need not be limited to the homestead; in one of them an observatory is designed at the top of the central building, from which views were obtainable of operations carrying on at a distance.

It is evident that only a general supervision of transactions is obtainable from such a centre as is above suggested, but in extensive undertakings the master cannot be everywhere at the same moment, therefore must necessarily trust to subordinates—it may be hoped trustworthy ones—but as "the eye of the master" is admitted to be no less efficacious in farming than in other concerns, subordinate overlookers would under the inspection principle feel that that eye might, without their knowledge, be constantly upon them.

The isolation of farm-yard buildings, as above suggested, evidently diminishes risk of their destruc-

\* Published by T. Hatchard.



tion by fire. Even were they connected with each other by bridges, these might be so constructed as to be easily removed, or they might be made of combustible materials—of cast-iron, for instance, paved with tiles or slates.

#### REVOLUTION AND PROGRESSION.

THE remarks of your editorial correspondent "C. W. H.," are too distinctly allusive to me and to my recently published letter in the *Times*, to permit my passing them by in silence. It is no light matter to incur the displeasure of the witty and talented chronicler of the *Clay Farm*, and I am, therefore, the more anxious to set myself (if not my opinions) right with him, to mitigate his wrath and soften down his censure. I am quite sure he will admit that we all have a right to our own opinions, although, of course, when made public they are obnoxious to criticism or censure. Well, then, it does appear that my opinion that the forking machine was, even with horse-power, cheaper and more effective than the plough, has caused an immense boiling over of indignation from its most inveterate enemy. I will not consider it necessary to dissect too minutely either the "animus" or verbiage of the article, beyond disclaiming the "impaling of the writer's ideas," or the "bleating," lamb-like, after their mamma. In fact, to tell the truth, I never once thought, when speaking and writing on this subject, either of "Talpa" or his charming *Chronicles*. If I were to find fault with the spirit of this article, it would be on its vain assumption that no two persons in 21 millions could happen to think alike, and draw similar conclusions on one particular subject. Nor have I had any desire to "withhold from 'Talpa' that which is 'Talpa's.'"  
 Explanations are always disagreeable—but sometimes necessary. Well, the day after my "gathering," arrived a Mr. Romaine, who presented to me the following letter of introduction:—

"St. Hilaire, Canada East, June 9, 1853.

"SIR,—A great admirer of your courage, energy, and perseverance, and a firm believer in your disinterested public spirit, I am about to take a liberty, and introduce to your notice a young man, by name Romaine, from this province, who is proceeding to England with the model of an implement for deeply stirring up and pulverising the soil, to be worked by steam. It has been examined at Quebec by practical mechanics and farmers, and so highly thought of that the Government has been induced to advance a small sum of money to enable its maker to have its merits tested in England. I have recommended Mr. Romaine, before putting himself in the hands of implement-makers, to take the opinion of some disinterested persons, with a good knowledge of these matters. If there is nothing new in his scheme, or something radically wrong, it will be better for him to return home at once without going to any greater expense; if, on the contrary, it is pronounced to be good, let him by all means follow it up, and have an implement made and exhibited at the Royal Agricultural Society's meeting at Gloucester. Trusting to your well-known liberality and anxious desire to advance the science and practice of agriculture by every means in your power, I am emboldened to ask you to examine this model, and give the young man your candid opinion of its merits, and your advice as to further proceedings.—I remain, sir, your obedient servant, T. EDMUND CAMPBELL, "President of the Board of Agriculture of Lower Canada."

After a very long examination of the plans, models, and other documents, I came to the conclusions which I expressed in my letter to the *Times*. Those conclusions may be right or may be wrong, time will show, but they are my sincere opinions. Those models and those drawings were made in North America long before "Talpa's" articles appeared in print; on this point, if necessary, abundant affidavits can be obtained; and because a man of thought and genius happened to be working out practically ideas somewhat similar, but, in my opinion, far more comprehensive than those of "Talpa," am I to be held up to editorial censure or ridicule, in an article sensitively self-laudatory?

Very shortly! I hope to present in your columns diagrams of the machine; until then, it will be useless to enter upon long arguments about friction, leverage, &c. Suffice it to say, that you cannot have agriculturally useful revolution without progression. If Winton's fork is preferable to the spade, because it has less frictional area, then the same principle holds good with the fork as compared with the plough. Why the horizontal movement of horses should not be applied to a revolutionary machine, I cannot understand. All our Crosskill's rollers, carts, &c., must, on this principle, be erroneous, as well as our private conveyances.

A host of tormentors, grubbers, broadshares, Finlayson harrows, and other machines, testify to the incompetence of the plough as a cultivator—as a grave-digger and under-taker to weeds and rubbish, it may lay some useful claims, but sore are its criminalities in slicing and squeezing poor mother earth, until her powers of breathing are well nigh destroyed.

In conclusion, although sorry to shock the self-esteem of "Talpa," I must mention that Mr. Samuelson, with his usual candour and liberality, told me, the other day, at Mr. Pusey's, that the idea of the forking machine was suggested to him by my letter in your columns about Winton's forks.

My frequent correspondence with inventors teaches me the humbling truth that many minds think alike; and, if I dare venture to advise "C. W. H.," I would say, in the words of the Chameleon—

"When next you talk of others' views,  
 'Tis not others' as well as you."

J. J. Mechi, Sept. 5th, 1853.

[Having many inquiries, it may be interesting to mention that Mr. Romaine is superintending the manufacture of one of his machines for my use. In five or six weeks I hope it may be in operation, either to fail or succeed. I shall, as usual, give the agricultural world notice, and an opportunity for its inspection. I have

taken upon myself the responsibility of the first machine, on public grounds; having failed in getting others to do so on equitable terms to the worthy inventor.]

#### THE ROTARY FORKING MACHINE.

THE editorial position to which you admit the contributions of "C. W. H.," and the rank which he has acquired as a popular writer on agricultural topics, induce me to notice the article bearing his signature in your *Gazette* of last week. Your contributor, after a passing smile at some expressions of our sanguine friend Mr. Mechi, enters upon a long disquisition, in which the following appear to be the leading ideas:—

1st. He assumes that the attention now directed to rotary cultivating machines is the result of his writings on steam cultivation; and that what he calls the "gregarious propensity" of our nature has induced us to overtake and rush past him and the truth, and to plunge into the absurd.

2dly. He assumes, as an axiom needing no proof, that, so long as we use horse-power, the plough is the most economical instrument of cultivation "that hand can make or mind can conceive."

3dly. He assumes, also as an axiom, that the inversion of the soil is a necessary part of the act of cultivation, and implies that his steam-rasping or sawing machine will invert it.

And lastly. He asserts that the rotary forkers drop the soil, "tops and bottoms uppermost, any how," and "tumble the soil into a confusion that shames the very name of cultivation," ending with a sneer at patentees, which, I think, he will admit on reflection is of questionable taste.

The first of these assumptions is at once refuted by the long list of rotary pronged machines, more or less successful, beginning with Morton's of Leith, nearly 30 years old, down to Josiah Parkes's, all of which preceded the publication of his views on the subject of cultivation. The refutation is important, not as it affects the claim of this or that individual to priority of invention, but inasmuch as no good could arise from the mechanical efforts of men who should really stand in the ridiculous position of endeavouring to realise with horse power an imitation of the ingenious but somewhat chimerical steam cultivator, which he sketches so graphically in his "*Chronicles*." The rotary forking machine is not merely antecedent to, but it is quite distinct from, the steam cultivators of "C. W. H." of Usher, and of Stephen Brown.

Secondly. It is not an axiom that the plough is wedded to the horse, and as a proposition it is incapable of proof. There are, no doubt, advantages attending the rectilinear motion of the plough in respect to animal traction, but there are other and, generally speaking, more important advantages in the "tedding" action of a rotary forking machine. His declamation about the "fiery alembic in which the sweat of man and horse has been seething for centuries," is quite beside the question. It might as well be said of manual labour that, because the power of a man is most economically exerted in raising a weight, therefore it is not more advantageous under certain circumstances in applying it to a crank; or because the "fiery &c." was so long in favour of winnowing between two barn doors, therefore the rotary winnowing machine must not be used except in conjunction with steam power.

Thirdly. The necessity of inverting the soil is not an axiom, nor a proposition that can be proved. It may have been requisite so long as there was no other mode of exposing the bottom soil to the air than by bringing it up; and it is still necessary whenever the object is to bury the vegetation growing at the surface. At such times the plough or the spade must be used; neither the rotary fork nor the steam cultivator will completely invert it any more than "the circular saw" does the sawdust "in going through a 5-inch Oak plank" (where, by-the-bye, it abrades about one-twelfth of an inch in breadth, and, in doing so, absorbs 4-horse power). But inversion is not necessary for decomposing the constituents of the soil when it is left so hollow that the air and water can penetrate it in all directions. Moreover, "C. W. H." must know that, even according to the present recognised practice of our best and most economical farmers, the plough is to a great extent replaced by tools which do not invert the soil.

Lastly. The description he gives of the state in which the soil is left by a forking machine is simply incorrect, in proof of which I appeal to the experience of those who are using it daily, and to the Editor of the *Gazette* himself, who has seen it in operation.

I will not on this occasion re-state in detail what are really the peculiar advantages of the forking machine. Its use is extending not only amongst amateurs, but in the hands of old-fashioned practical farmers, men not likely to pay the price of seven or eight ploughs for a tool that merely "tumbles the soil into confusion;" but I will disclaim, once for all, in print, as I have repeatedly done by word of mouth, the idea that the forking machine will, in all cases, replace the plough, or that it is intended as a substitute for the "steam cultivator."

Whenever an attempt shall be made to reduce the latter to practice, the difficulties and incongruities of the task will become apparent to those who, like "C. W. H.," cannot be expected to appreciate them now; and how soon or late so ever the steam engine may be made useful in the cultivation of the soil, the horse forking-machine will not have been without value to the farmer, if in the meantime it shall have assisted the

agriculturist to deepen his soil, and to weed and pulverise it more thoroughly than he can do with his other tools. B. Samuelson.

#### REAPING MACHINE COMPETITION AT STIRLING.

THE Stirling General Agricultural Association lately offered a premium of 30 sovereigns, to which the Gargunnick Farmers' Club agreed to add 10, for the best reaping machine, to be tested near Stirling. As this is the first time a premium of any amount has been offered for reapers by any Scottish Agricultural Society, it naturally excited a very great deal of interest.

The competition came off on Tuesday last, on the farm of King's Park, possessed by Mr. Peter Dewar. It was originally intended that the competition should commence at 7 o'clock in the morning, but none of the machines made their appearance by that hour, and the start was delayed till half-past 9 o'clock. The various morning trains brought very large numbers of farmers and others, and by an early hour the field where the competition was to take place presented a scene of the greatest activity. By the hour of starting the numbers had increased immensely, and at one period of the day there could not have been fewer present than 6000 persons. Besides these, large numbers of persons crowded the heights of the park around. The sun shone out brilliantly, and the spectacle was one of the most animated description.

Twenty-one machines were entered for competition, from all parts of the country, and it was anticipated that out of that large number something new or improved in regard to construction might be got. Such was not the case, however. Out of all those entered, only six came forward in good time, and one more (Bell's) arrived at the last moment, making in all seven machines. The following are their respective names, and their numbers according to lots which were drawn before starting.

- No. 1. Mr. Cochrane's Bell's improved.
- No. 2. Mr. Hope's (Stirlingshire) Bell's improved.
- No. 3. Mr. McCormick's, managed by Mr. McKenzie.
- No. 4. Mr. McLaren's Dray's Hussey.
- No. 5. Mr. Robertson's (Bowhouse) Bell's Crosskill.
- No. 6. Mr. Hussey's own; one horse.
- No. 7. Mr. Bell's own Crosskill, managed by Mr. Love.

Among those on the field we observed the Duke of Buccleuch, the Marquis of Tweeddale, Lord Kinnaird, Mr. Cardwell, President of the Board of Trade, Lord Abercromby, Mr. Forbes of Callander, M.P., Mr. Hay, of Duns Castle, Sir Wm. Gibson-Craig, and many others. The Rev. Patrick Bell, the original inventor of the reaping machine, was on the field throughout the day, and so was Mr. Charles McCormick, the American patentee. Mr. Pusey, who intended being present, was, we are sorry to learn, detained in Edinburgh by indisposition.

Into the fields where the competition was to take place, the public were admitted by tickets, the price being 2s. 6d., and agricultural labourers at 1s. Considerably more than 100% was taken at the entrances during the day.

The first trial was made on a field of Oats, coarse soil, and nearly level. The field was well adapted for machine reaping, if we except the fact that the grain was slightly laid. The whole of the machines were ordered to start at once; most of them went off in fine style, except No. 1, Mr. Cochrane's Bell's, which had the revolving bands of the rolling web made of gutta percha, which was found not to answer at all. It did, however, start at last, but speedily came to a stand-still, and was, after one or two ineffectual attempts to cut, removed from the field. Each of the machines had in this field an equal portion of grain to cut. Those which were most observed and most thought of were Bell's own No. 7, and McCormick's No. 3.

No. 2, Mr. Hope's Bell's, made fair work, but with frequent stops. It was evident that the labour to the horses was very great.

No. 3, Mr. McCormick's, started in excellent style, cutting to admiration. The stubble was very smooth and regular, and there was no stoppage, save from the restiveness of the horses, which were unmanageable, and by plunging broke the pole after the first furrow had been cut. The pole was hastily repaired, and the horses changed, when the machine did its work beautifully, cutting rapidly and clean. The great defect of the machine is undoubtedly the fact of its not being self-delivering. A very general opinion was expressed that if the self-delivering principle were applied to it it would be in all respects as good a machine, if not better, than Bell's, as it at present stands. It would thus save the weight of two men, who are seated on the machine, and must add greatly on heavy land to the labour of the horses.

No. 4, Mr. McLaren's Hussey, by Dray and Dean, made very bad work, was often stopped, and once or twice had to go over the stubble already cut, to clean before continuing to cut its portion. Its work was also very slovenly done, and in some parts where the crop was a little laid it was cut nearly through the middle of the stalk.

No. 5, Mr. Robertson's Bell's improved, made some excellent work, but had to stop repeatedly to put the gearing in order. After this was accomplished it did its work in an excellent manner.

No. 6, Mr. Hussey's own one-horse machine, made good work, but was far too heavy for one horse. It did not choke up so often as the other specimens of Hussey's No. 4, but was very inferior to Bell's or McCormick's, in the style of cutting.



No. 7, Mr. Bell's own, attracted a very large amount of attention. It went off in good style, and with few stoppages accomplished its work. The work was for the most part excellent, except once or twice when something went wrong, when the grain was tossed or torn out in a very unworkmanlike fashion. It is worthy of notice in regard to this machine, that it seemed least of any to fatigue the horses. We understand that every other machine on the field had a change of horses save this one, and the longer it wrought the more efficiently did it accomplish the work. It reaped its portion of its field of Oats in less time than any of the others, McCormick's being rather longer, to be accounted for partly by the fact we have stated, that the pole of McCormick's machine gave way.

The second trial took place on the same field, and public favour was again divided between Bell's and McCormick's machines, which both did the work in excellent style. All the others were decidedly inferior.

A field of Wheat was next selected for trial without being prepared. The grain was in capital condition for machine reaping, being mostly standing and very thick.

No. 5, Mr. Robertson's Bell's, was ordered to make an opening through the field, which it did in good style, and without choking. Bell's own followed, and it, as well as almost all the others, made better work by far at the Wheat than the Oats. McCormick's then went up and down the field, cutting in excellent style. The two last mentioned seemed evidently to attract most attention, and to be the greatest favourites.

A field of Barley was then selected for trial, and Bell's was ordered to open it up. It was followed by Robertson's Bell's, which unfortunately came to a stand-still for some time, owing to one of the cutters having got loose. McCormick's followed, doing excellent work, but the drawback of the manner of taking out the cut grain was more manifestly apparent than ever. All the machines we noticed of Bell's construction cut the Barley in a far better style than any other grain, swathing down the grain in a very beautiful manner on one side. This distinctive feature of Bell's appeared to greater advantage here than on any of the other fields, and appeared to excite universal admiration.

The fifth trial was on a field of Beans, very strong, and was decidedly the best test of the working capabilities of the machines. Bell's opened up the field in good style, and without any stoppage to speak of. No. 2 followed, and made very indifferent work; McCormick's succeeded with little better success. No. 5 started too soon, and overtook McCormick's, and both passed up the field nearly abreast. We could not help thinking that if two men had been employed with scythes on this field, as there were two guiding the machines, that they would have made superior work, and certainly as rapid, as any of the machines which passed up the field. The machines then went back to the Barley field, to allow the public to see them working, and two of them again returned to the Beans, in order further to test their powers before the judges.

The judges were Mr. John Wilson, Edington Mains; Mr. George Hope, Fenton Barns; Mr. James Stirling, C.E., Edinburgh; Mr. Young, jun., Burntisland; Mr. John Lockhart, factor, Dunmore; Mr. Peter McEwen, Blackdub; Mr. William Henderson, farmer, Craigarrill; and Mr. Alex. Young, factor, Keir. After full consideration, they made the following award:—"The subscribers having dispassionately examined the several reaping machines this day exhibited, are of opinion that the first prize should be awarded to Bell's No. 7, and the second prize to Mr. McCormick's."

Great praise is due to the committee for the arrangements, which were in most respects satisfactory. Where there was any remissness, we thought, was in allowing many parties to get into the field without tickets, arising, no doubt, from there being too few parties to prevent entrance at the gates. The secretary, Mr. Hutton, was assisted in keeping order and regularity by Mr. Hall Maxwell, the secretary of the Highland and Agricultural Society; Mr. Nicholson, of Carnock; and Mr. Glover, of Lanrick Castle.

About 100 gentlemen sat down to dinner, after the competitions, in Campbell's Golden Lion Hotel; John Stirling, Esq., of Kipperdarie, occupied the chair.

The usual toasts were cordially responded to, and the chairman proposed the health of her Majesty's Ministers and Mr. Cardwell.

Mr. Cardwell returned thanks in a short speech, in which he referred to the manner in which the wishes of Government had been met in obtaining agricultural statistics from three counties of Scotland, the results of which he had had the pleasure of laying before the House of Commons. He eulogised the farmers in those counties for coming forward with such promptitude to give the information required; and expressed a hope that agricultural information would soon be as easily and accurately procured as information from the Custom House, or any other department of Government service. He concluded by proposing "the commercial and manufacturing interests," to which Mr. Wilson of Bannockburn returned thanks.

The Highland and Agricultural Society was then proposed by Mr. Forbes, M.P., and acknowledged by Mr. Hall Maxwell, the secretary.

Prosperity to the Stirling Association, and a number of local and general toasts followed; and after spending a pleasant evening the meeting broke up.

## Home Correspondence.

*Harvest Prospects and Operations.*—I am aware that, if this communication be destined to produce any present good results, it ought to have been made some weeks ago. As it is, however, I may hope that, prospectively, it will prove beneficial. Irrespective of the many difficulties with which farming had to contend (in consequence of unfavourable weather during October, November, and December, 1852), whereby the autumnal seeding was prevented or greatly retarded, the operations of last spring also were rendered equally perplexing; hence, though it is admitted that much excellent corn is already secured, great and unwonted irregularity still prevails, and many crops remain so green and immature that they cannot be housed before the end of this month. If we compare the harvest of 1848 with that of the present season, it will appear that the great damage of the former year was occasioned by the frequent rains which fell during the whole month of August, by which vast breadths of fine Wheat remained in shock during three weeks, soaked to the centre, and the ears matted together by growing roots. In the present year the first part of August was auspiciously fine, though not brilliantly sunny. The rains which have since fallen in considerable volume have been meliorated in their effect by intervals of three or four fine days, which have obviated much of the anticipated evil; in fact, the Diary of August, now before me, counts 24 days without rain. There are two methods by which corn may be housed or protected during a dripping or changeable summer. The first and best is the following:—Experience has taught us that if the weather of June be settled and dry about the turn of days—that is from the 20th to the 24th, or St. John's day—a fair summer may be pretty safely anticipated. If on the contrary, June be wet—as it was in 1852, or become so, as it did in the present year at the 12th or 13th day—a fair warning of future evil in store is given, and the farmer ought resolutely to prepare his barns and rick-yard, so as to receive his Wheat as it is cut and sheaved, daily or at every fine interval; for the corn ought to be entirely ripe before it is touched by the reapers. Thus it was secured in perfection by Mr. Hewitt Davis in 1848. A wet season had been foreseen and provided for in every way; the crop of Wheat was fine and extensive—labourers in sufficient number were engaged—operations were rigidly supervised—the corn was cut short (leaving the stubble higher than the weeds), and carried off in detail. I saw this fine Wheat in rick many months after, and a finer specimen could not be desired. It is true that if Wheat can safely enjoy field room in plenty, the flour may be more abundant; but, in case of emergency, it is better to harvest an entire crop in safety than to incur the hazard of a great loss in point of quality. The second method—long practised in the upper midland and northern counties—consists in employing the hooding or covering sheaf. For Wheat, eight sheaves are placed in two ranks closely converging at their tops, over which two others are opened and spread out as covers, the ears downward. Oats should be hooded; because if left till fully ripe, much seed is lost by shedding; the shocks generally are formed of only four sheaves, covered by a fifth, inverted. I had much to say on the loss of a hay crop, but space is not given at this time; and I therefore beg to refer the reader to an article on the subject which appeared as a secondary leader in the *Daily News* some weeks since; it spoke volumes, and ought to be perused by every farmer of meadow-land throughout the kingdom. *J. T., Croydon, Sept. 3.*

*Agricultural Statistics.*—Had Mr. Milner Gibson in 1848 followed out my plan, as urged upon him by R. G. Porter, his bill would have passed into a law at that period. I think the quantity of old Wheat in the farmers' hands is large—probably two months' consumption—although the quality was indifferent last year, the yield was great. The spring sown Wheats in this district have all been struck with mildew within the last 10 days. *Samuel Sandars, Hemel Hempstead, Aug. 28.* The following is a copy of my suggestions for agricultural statistics:—Suggestions for Agricultural Statistic Returns in Great Britain, to be annually made on the 21st day of November, in each year.—To appoint an intelligent agriculturist as inspector for each county. The parish officer who collects the assessed taxes shall be required to send out the blank forms to each farmer in his parish, which forms shall be filled up within 14 days, and returned to the collector, under a penalty of 40s. The collector shall forward such returns to the inspector on or before the 12th day of December, and he shall be paid 1s. by the parish officers for every return certified as received by the said inspector. (The whole charge on the county of Herts would be 95*l.*) The inspector shall, on the receipt of such returns, within 10 days enter them in a proper book, in following numbers, for each parish; and afterwards adding together the gross produce of the whole number of parishes, he shall forward the results to the Board of Trade. Thus a single line or column will give the annual growth of corn, &c., of the whole county. The inspector must carefully look over the returns, analyse and condense the information, comparing them with the reports of the previous year, and forward his opinion on the same to the Board of Trade; and he must further point out any increase or decrease in the quantities of corn and wool, &c. The number of counties in England, Wales, and Scotland, is 85; but some of the larger counties might require division, and the returns be upwards of 100. On the Board receiving the return

from the inspectors (by the 21st or 24th of December), a clerk might add them together, and have them ready for inspection in a few hours. The Board of Trade would further have annually to supply the inspectors with a book, and the blank forms of the returns. In Hertfordshire there are 135 parishes, and the number of farmers 1900: the entering of the returns, &c., and the annual survey of the growing crops, and all other duties, would not occupy the inspector more than 10 or 14 days; and a salary of 50*l.* or 60*l.* a year would be a fair remuneration. The total expense of obtaining these important returns will probably annually cost the Government about 8000*l.* to 10,000*l.* The inspector might, if deemed desirable, make a personal survey of the growing crops of corn in a considerable portion of his district a week previous to the maturity of the Wheat crops. Let the Liverpool plan be adopted, which has proved unerringly correct for the last 25 years, and the Government would then be in early possession of the prospects of the coming harvest. Spackman's statistics give the number of farmers as per census of 1842; 1*s.* each return is 15,105*l.*; which, according to my suggestion, should be paid from the poor rates,—if it were paid by the Government the entire cost would be some 25,000*l.* a year.

*Return of the number of Acres of Land in my occupation in this Parish, and their respective modes of Cultivation from the 21st of November, 1852, to 21st of November, 1853.*

TOTAL OCCUPATION 365 ACRES.

Corn Crops.	ACRES.	Pasture, Meadow, and Woods.	ACRES.
Wheat, winter sown	40	Clover and Artificial Grasses	25
Wheat, spring sown	20	Meadow and Pasture	60
Rye	—	Hops	—
Barley	40	Woad	—
Oats	60	Other crops	10
Beans and Peas	20	Woods	20
Other Grain	—	Common waste land	—
Fallows	20		
	200		115
Root or other Crops.			
Turnips	30	TOTAL	
Potatoes	10	Corn crops	200
Carrots, Beet-root, Tares and Vetches, Flax.	10	Root crops	50
	50	Pasture, Meadow, &c.	115
		Total	365

Return of the Acreage of Wheat for next Crop.	ACRES.	Return of the Quantity of Old Wheat (if any) in Granary or in Stack, 1st Sept., the present year	QBS.
Winter Wheat	50	...	...
Spring Wheat (probably)	15	...	...
	65	...	502

*Report of the supposed Yield and Weight per Bushel of the present Year's Crops of Wheat and Barley.*

WHEAT.	BARLEY.
Full crop ... .. Yes.	Full Crop ... .. Yes.
Average ... ..	Average ... ..
Short ... ..	Short crop ... ..
Weight, (about) 63 lbs. per bushel.	Weight, (about) 51 lbs. per bushel.
General Report of the following Crops.	
Hay and Clover, are they an Average crop?	Full crop? ... ..
	Short? ... ..
Potatoes ... ..	Average crop? ... ..
	Short? Yes. ... ..
Turnips ... ..	Average crop? ... ..
	Full crop? Yes. ... ..
	Short? ... ..

*Return of the Number of Horned Cattle, Horses, Sheep, and Swine in my possession at the date of this Return, and the Number bred on my Farm within the 12 months.*

Stock on hand.	months old.	Bred on the Farm.	Number of
Horned Cattle 30	40	—	Fleeces of
Horses ... 14	2	—	Wool clip
Sheep ... 200	150	—	the present
Swine ... 20	50	—	year ... 200

I certify that the above return is correct to the best of my knowledge and belief, Signed \_\_\_\_\_

Parish of \_\_\_\_\_ County of \_\_\_\_\_

The return must be filled up, and may be sealed and returned to me on or before the 1st day of December next, under a penalty of 40 shillings; and if so sealed, the name of the person making the return must be written on the cover or outside of the form returned.

Signed, W. Sears, Collector of Returns.

For the Parish of Hemel Hempstead.

November 21st, 185 .

*Contents of Cesspool.*—In the *Agricultural Gazette* of the 20th ult. I observed "K. C. L." will feel obliged by any one giving information as to the practicability of converting the contents of a cesspool into a substitute for Peruvian guano. I will venture to say, if "K. C. L." has courage to purchase a few tons of charred peat, such as accompanies this letter, and the parcel of manure contained in the boxes, marked and numbered as per box, he may convert the contents of his pools into a substitute similar to those I have sent, and approaching in worth to guano. *Thos., Commander Royal Navy, King's Lynn.* [The specimens of manure mixed with charred peat were perfectly disguised. No smell was perceptible.]

*The Barley Crop, Isle of Thanet.*—In reporting the growth of Barley to be an "average," I should like you to understand that the extra breadth sown this year was reckoned, to make up the deficiency of the crop per acre. And I am sorry now to be obliged to add, that in gathering the Barley we find it thinner on the ground, and the grain smaller than we expected; indeed, we are frightened at the amazing breadth of land it is needful to clear to fill the barns. The Potatoes are rotting most fearfully; and upon the whole things are wearing a somewhat gloomy aspect. *James Smeed, St. Peter's.*

*Wheat, to Sow.*—Having turned our attention, these last two seasons, to the growth of Wheat, experience



proves to us that three essential points are necessary for sowing it, in order to insure full crops, viz., early, thin, and singly. The end of August or beginning of September is the most proper time for sowing it, though the impracticability of doing so on a large scale at this season of the year is admitted; yet, to obviate such an impossibility, we sow on reserve ground for transplanting in October. From 10 to 15 rods will suffice to raise plants for 1 acre, and from 3 to 6 quarts of seed are sufficient to sow it, according to the thickness it may be deemed proper to plant it, which we would leave to the will or fancy of the growers, though we hold it our opinion that from 9 to 12 inches apart is the most proper distance it should be grown, to secure full crops. We, however, claim credit for sowing and planting it early and singly; and, to avoid arrogance on our own part, we earnestly entreat our agricultural friends to adopt it, at least on a small scale, in order to prove our inerrability of the practice. Our experimented three plants from single grains on 1 yard of common land, which had not been manured or stirred for a twelvemonth, and were surrounded by another later crop of Wheat, and within 4 yards of a large Apple tree, were sown (not transplanted) at the end of August, have fully answered our sanguine expectations, and have actually produced 256 ears, averaging 50 kernels in each ear, and equal to nearly 10 quarters per acre, from the extreme small quantity of  $\frac{1}{2}$  pint of seed. The stubble of these three plants is for inspection, if requested. We attribute this great production solely to sowing very early, singly, and thin.—*Note.* About 260 ordinary full-grown ears (of course, not abortive ears like this year's general produce) will be found equal to 1 quart nearly. *Hardy and Son, Seed-growers, Maldon, Essex.*

## Reviews.

*The Civil Engineers' and Architects' Journal*, for August, 1853. R. Groombridge & Sons.

THERE is a detailed report by Mr. Page, C.E., in this number, on the Croydon sewerage inquiry, which contains some references and statements of agricultural importance. There are three particulars which deserve especial notice—the bearing of irrigation with liquid manure on health—the influence of the size of pipes on their power to keep themselves clear—and the liability of pipes to breakage. Small pipes, it has been found at Croydon, fail to clear themselves, as it was supposed they would do: and this, more especially in reference to the channels by which the liquid-manure of the stables and cow-houses is to find its way into the tank, deserves to be kept in mind. It is not of so much importance in the case of ordinary land drainage; for, in such cases, when the work has been properly done, the water does not contain matter in suspension. Mr. Page gives instances of the fracture of earthen pipes; and we have before us a reference to a Government investigation upwards of 50 years ago, in connection with the Plymouth Dockyard Works, where the water was conveyed in earthen pipes, and they were continually breaking in the streets, though placed at a considerable depth below the surface. This was attributed, as that at Croydon is, to the jar of carriages above. We do not know how far farm experience tallies with this—and perhaps the smaller pipes employed in land drainage are safe from this risk of breakage—but the remark seems to point out the need of strengthening main drains, either by the use of stronger material, or in some other way, where they cross roads on which there is much traffic.

But what is perhaps of most importance is the bearing of the Croydon experience upon health. We are inclined to think, however, that it is one relating more to suburban farming than to ordinary agriculture; except in this respect, that that which causes unhealthiness indicates waste of useful material. Probably the safest way to ensure against this waste is to dilute amply with water; diluted solutions of ammonia lose much less of it by evaporation; and, in drained lands, the greater bulk of water ensures the more rapid transmission of it into the substance of the soil, where it is placed in a position of more immediate usefulness, while it is, at the same time, under still closer custody.

*Agricultural Labourers as they were, are, and should be in their Social Condition.* By the Rev. H. Stuart, A.M., Minister of Oatthlaw. W. Blackwood and Sons, Edinburgh and London.

An address delivered to a general meeting of the Forfarshire Agricultural Society, June 1853, and published at the request of the association. It is a very valuable contribution to the literature of its important subject, and deserves a much more detailed examination and report of its contents than we are at present able to give. We hope, hereafter, to return to the work, and review it particularly, and with care.

*The Poultry Keeper's Guide; Practical Methods of Breeding, Rearing, and Feeding, &c. &c.* By J. M. Moffatt.—*Horsekeeper's Guide; Practical Directions to Gentlemen and Tradesmen for Keeping and Managing Horses, &c. &c.* By J. Mills, M.V.C.S.—*Dog Pancier's Guide.* By J. Rogers.—*The New Pigeon Keeper's Guide, containing Particular Accounts of the valuable sorts of Pigeons, &c.* By J. Rogers.

THESE are a set of cheap little books or pamphlets on their several subjects, published by Dean and Son,

Threadneedle Street, and, on a cursory examination, apparently deserve our recommendation.

## Calendar of Operations.

### SEPTEMBER.

DORSET, Sept. 5.—Since our last report we have experienced very changeable weather; in some places it has been very rough, and a good deal of rain has fallen. Harvest has been kept back very much, but still we do not think that much damage has been done. A great proportion of the Wheat has been got in in fair order, and at present there is a prospect of fine weather, which, if it continues eight or ten days longer, will place us beyond danger. There is not much Barley harvested yet, and it will not come so quickly fit, owing to the Clover having got on very strong among it. We have seldom had a better prospect of Clover than at present; although the season has been very rough at times the Barley has stood up well, and consequently will turn out better in every respect than could have been expected. Oats are mostly secured, and are a heavy crop. Turnips still continue to do well, and are now generally covering the ground; and with a little fine weather to get in the Barley, the straw of it will be much better than last year, so that we have reason to believe that there will be abundance of keep for all rough stock, and prices that have for some time been high are likely to continue so. Dairy produce has been in active demand, at higher rates than for some years. Fresh butter of good quality has not been below 11d. per lb.; and cheese, which in this county is made from skim-milk, has ranged from 28s. to 36s. per cwt. Dorset cheese contracts rather unfavourably with that made in Gloucester or Cheshire, but its butter will not suffer in comparison with that from any other county. Every kind of fat stock commands a good price. Cattle about 11s. per score; Down mutton, 7d. to 8d. per lb.; veal, 6d.; and pork about the same: all in good demand. Work horses are very dear and scarce. Surely it will be worth while for our local agricultural societies to give a little encouragement to their breeding. Hitherto very little has been done in that way, and why this should be the case we can hardly perceive; for surely, when 40l. or 50l. have to be given for a good cart-horse, it might be worth while to turn a little more attention to their rearing. Fancy has had too much to do in the matter; and although some are has been exercised in selecting the horses, little or none has been spent upon the mothers. If a mare is old, lame, or blind, or refuses to work, she is turned to breeding; and the result is, that there is much danger of being deceived in purchasing. Perhaps it is that we are soon to have the cart-horse set aside, and have steam in his place. G. S.

## Notices to Correspondents.

ANTS: J. H. S. Cut open and spread the heaps during winter. Water with gas-water.  
COWS: *Ballandine* will find the information he is in search of in Mr. Haxton's little book "How to choose a good Milk Cow." A good cow may yield 6000 pints per annum. Further particulars next week.  
DRUMHEADS: H. Sown now and transplanted in early spring they will be ready by Midsummer next.

## Markets.

### COVENT GARDEN, Sept. 10.

The market continues to be well supplied with Vegetables and Fruit, but trade is not very brisk. Out-door Peaches and Nectarines are now plentiful. English Grapes are abundant. Pears consist of Jargonelle, Beurré d'Amanlis, and Bon Chrétien. Imports from the Continent of Potatoes and Tomatoes are still kept up; the latter fetch from 2s. to 3s. per dozen. There are also French Apricots in the market, at from 6d. to 1s. per dozen. English Cherries are over. Greengate and Orleans Plums from the South of France fetch 4s. per basket. Carrots and Turnips fetch from 2d. to 4d. per bunch. Peas are still very good. Potatoes are improving in quality, and are advancing in price. Mushrooms continue scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Cyclamens, Mignonette, Pinks, and Carnations.

Pine-apples, per lb., 3s to 6s  
Grapes, both house and lb., 1s to 3s 6d  
Peaches, per doz., 2s to 7s  
Nectarines, per doz., 2s to 6s  
Apricots, per doz., 1s to 3s  
Plums, Orleans, p. pun., 1s to 2s  
— Greengate, per pun., 1s to 2s  
Melons, each, 1s to 3s  
Apples, per bush, 3s to 5s  
— dessert, p. hf. sieve, 2s to 4s

### VEGETABLES.

Cabbages, per doz., 6d to 9d  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 2s 6d to 4s  
French Beans, p. hf. sieve, 1s 6d to 2s 6d  
Potatoes, per ton, 30s to 120s  
— per cwt., 3s to 5s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 2s to 2s 6d  
Cucumbers, each, 2d to 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 3s to 4s  
Spinach, per sieve, 1s to 2s  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

### FRUIT.

Pears, per doz., 1s to 3s  
Figs, per doz., 1s to 2s  
Lemons, per doz., 1s to 2s  
Oranges, per doz., 2s to 3s  
— Seville, p. 100, 14s  
Almonds, per peck, 5s  
— sweet, per lb., 2s to 3s  
Filberts, p. 100 lbs., 60s to 70s  
Walnuts, per 100, 1s 6d to 2s  
Nuts, Barcelona, per bush, 20s

### HOPS.—BOROUGH MARKET, Sept. 9.

Messrs. Pattenden and Smith report that the demand for Hops continues good, and prices well maintained. The duty still remains stationary, at from 155,000, to 160,000. Weather too cold and wet for the Hops, which continue in an unusually backward state.

### COAL MARKET.—FRIDAY, Sept. 9.

Hollywell, 25s.; Carr's Hartley, 23s. 6d.; Hartings Hartley, 23s. 6d.; Wallend Gosforth, 25s.; Wallend Stewarts, 26s.; Wallend Tees, 26s.—Ships at market, 62.

### HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 8.  
Prime Meadow Hay 90s to 105s  
Inferior do. ... 50 80  
Rowen ... 50 60  
New Hay ... 50 80

### CUMBERLAND MARKET, Sept. 8.

Prime Meadow Hay 105s to 114s  
Inferior do. ... 80 95  
New Hay ... 40 84  
Old Clover ... 118 130

### WOOL.—BRADFORD, THURSDAY, Sept. 8.

WOOL.—There is to be very great inactivity in the purchase of wool for consumption. The spinners positively assert they cannot make their own, and are now working more closely than usual, the price being acting as a barrier. Noils and shorts are not plentiful, and command good prices.

### SMITHFIELD.—MONDAY, Sept. 5.

There is a good average supply of Hides. Trade is not so good as it has been, and prices generally are lower. The trade for Sheep is better than on Friday, and about the same as on Monday last. An early clearance was effected. Good Calves are in request, at fully Friday's quotations but trade is very dull for

inferior descriptions. From Germany and Holland there are 2321 Beasts, 7040 Sheep, and 278 Calves; from Scotland, 130 Beasts; from Ireland, 100; and 1900 from the northern and midland counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 4 6 to 4 8	Best Long-wools—s d s d
Best Short-horns 4 4—6	Do. Shorn ... 0 0—0 0
2d quality Beasts 2 8—3 8	Ewes & 2d quality 4 0—4 4
Best Downs and Half-breeds ... 5 2—5 4	Do. Shorn ... 0 0—0 0
Do. Shorn ... 0 0—0 0	Lambs ... 4 6—5 4
Beasts, 5161; Sheep and Lambs, 26,100; Calves, 355; Pigs, 260.	Calves ... 3 6—4 8

### FRIDAY, Sept. 9.

The supply of Beasts is small, consequently they are pretty readily disposed of at Monday's rates. The number of Sheep is not large, but the trade is exceedingly dull. There being a very scanty attendance of buyers, several lots remain unsold. Lambs may be now considered nearly out of season; only a few choice ones are saleable. The Calf trade is scarcely as good as on Monday last. From Germany and Holland there are 295 Beasts, 2870 Sheep, and 471 Calves; 350 Beasts from the northern and midland counties, and 95 Milch Cows.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 4 6 to 4 8	Best Long-wools—s d s d
Best Short-horns 4 4—6	Do. Shorn ... 0 0—0 0
2d quality Beasts 2 8—3 8	Ewes & 2d quality 3 8—4 2
Best Downs and Half-breeds ... 5 0—5 2	Do. Shorn ... 0 0—0 0
Do. Shorn ... 0 0—0 0	Lambs ... 4 6—5 4
Beasts, 951; Sheep and Lambs, 9,570; Calves, 667; Pigs, 335.	Calves ... 3 8—4 8

### MARK LANE.

MONDAY, Sept. 5.—The supply of English Wheat at this morning's market was good, but comprised very little new; and although offered at the terms of this day se'night, remained unsold towards the close of the market. The demand for foreign was very limited, and on the few retail sales that were effected, last Monday's prices could not be exceeded; holders, however, appeared careless of selling. Flour in some instances brings an improvement of 1s. per barrel upon the prices of this day week. Of new white Mustard seed there were about 300 qrs. at market, which being held beyond the views of the manufacturers, remained unsold at a late hour. Barley brings an advance of 1s. per qr. Beans unsold in value. There were a few new white Peas at market, which were sold at 50s. per qr.; Maple and Grey are 2s. per qr. dearer. We have a large arrival of Oats, and to effect sales of Archangel it was necessary to submit to a decline of 6d. per qr.; other qualities are unsold in value.

PER IMPERIAL QUARTER.	s. d.	Red	s. d.
Wheat, Essex, Kent, & Suffolk ... White	52—62	Red	53—65
— fine selected runs ... ditto	55—66	Red	56—62
— Norfolk	—	Red	—
— Foreign	44—66	—	—
Barley, grind. & distil., 30s to 34s...Chev.	38—41	Maltin	35—39
— Foreign, grinding and distilling	25—33	Maltin	—
Oats, Essex and Suffolk	17—21	—	—
— Scotch and Lincolnshire...Potato	22—24	Feed	17—21
— Irish	21—23	Feed	19—20
— Foreign	17—24	Feed	16—22
Rye	29—32	Foreign	—
Rye-meal, foreign	—	—	—
Beans, Mazaan...31s to 36s	33—38	Harrow	33—38
— Figeon...34s—40s	32—40	Longpod	—
— Foreign	32—40	Small	30—32
Peas, white, Essex and Kent...Bollers	45—50	Suffolk	—
— Maple...38s to 42s	37—40	Foreign	38—46
Maize	—	Yellow	—
Flour, best marks delivered...per sack	53—60	—	—
— 2d ditto	45—53	Country	45—53
— Foreign	30—33	Per sack	42—46

FRIDAY, Sept. 9.—The arrivals of foreign grain this week include 77,010 qrs. of Wheat, and 116,180 qrs. of Oats; a large portion of the former having been sold ahead to millers, the quantity offering on the market is less than might have been expected. Holders being indisposed to allow of any decline in price the business done was limited, but where it was necessary to clear cargoes coming on demurrage the sales were at a reduction of 1s. per qr. upon the prices of Monday last, or about 2s. below the highest rates realised. The business in floating cargoes was dull, and excepting a cargo of Egyptian sold at 40s. per qr. arrived, we did not hear of any transactions. Barley, Beans, and Peas are firm, at Monday's prices. Oats are 1s. per qr. cheaper but there is a good trade at the reduction. Flour is held at late rates.

### ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
Qrs.	4350	80	2040	8070 sacks
English	120	—	1060	—
Irish	77010	6870	116180	— brls
Foreign	—	—	—	—

### IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
July 30	52 7	29 7	22 2	36 3	40 5	36 3
Aug. 6	53 9	29 7	22 6	37 3	40 7	36 10
— 13	53 3	29 7	22 6	37 3	40 5	36 9
— 20	51 1	29 7	22 0	34 10	40 11	34 9
Sept. 3	48 6	29 6	21 6	33 8	41 1	36 6
Aggr. Avar.	51 7	29 10	22 4	34 10	40 11	36 4

### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	July 30	Aug. 6	Aug. 13	Aug. 20	Aug. 27	Sept. 3.
53s 9d	...	...	...	...	...	...
53 3	...	...	...	...	...	...
52 7	...	...	...	...	...	...
51 1	...	...	...	...	...	...
50 4	...	...	...	...	...	...
48 6	...	...	...	...	...	...

LIVERPOOL, TUESDAY, Sept. 6.—At this morning's market there was a good attendance of the town and country trade who showed little disposition to make purchases in the face of fine weather and the dull accounts from Mark Lane; consequently where sales were pressed from the quay a reduction of 3d. to 4d. per 70 lbs. on Wheat, and 1s. per barrel on Flour had to be submitted to. Holders of stored parcels, however, did not lower their pretensions very materially. New Oats and Oatmeal with a slow sale, at late rates; but old Oatmeal was in fair request, at very full prices. Barley and Peas, being extremely scarce, brought rather more money; but Beans were without alteration. Indian Corn was in good request for feeding, at from 32s. to 33s. per qr. for yellow, and 34s. to 35s. per qr. for white.

FRIDAY, Sept. 2.—The arrivals coastwise and from Ireland since Monday are scarcely worth naming. At this morning's market there was rather a limited attendance of buyers, and the transactions in Wheat have been confined to consumers, and a moderate business done at Tuesday's rates; speculators, however, generally acted on the reserve, though some quantity of this grain might have been placed at a slight concession in price. There is no quotable variation in the value of Flour. Barley is scarce and inquired for, and Beans are in fair request at our full quotations. Oats and Oatmeal move slowly at former rates. Indian Corn is in demand, and rising in value.



## BRAMAH POOTRA FOWLS.

MR. W. B. SHEEHAN, Underhill House, Barnet, begs to state that he has a few pairs of these truly beautiful Fowls for disposal. Mr. S. will feel great pleasure in showing old Brahmas and their Chickens, by an appointment being made the day prior. Barnet is only 30 minutes' journey by the Great Northern Railway, and Underhill is not more than eight minutes' walk from the Station.

American Daguerreotype Portrait Gallery, 385, Oxford Street.

**SPANISH AND COCHIN CHINA FOWLS**, at reasonable and various prices.—Apply, enclosing directed envelope, to the Rev. T. PRATER, Middleton Stoney, near Bicester.

**COCHIN CHINA CHICKENS**, from 7 to 18 weeks old, the property of an Amateur. Pullets light buff, mostly quite clear-necked; the Cockerels are very light and well feathered. Bred from hens purchased of Messrs. Fletcher & Gilbert, Kensington, and Mrs. George. The Cock a splendid son of Mr. Fletcher's celebrated bird Phoenix. Price 30s., 40s., 50s. a pair, and upwards, delivered in London.—Address, Mr. R. E. GIBBS, Betchworth, Surrey.

**COCHIN CHINA CHICKENS**, from Prize Hens, three months old.—Mr. THOMAS GILBERT, Wine Merchant, Grays, Essex, has for sale 80 first-class Birds, selected from a breed of 300, at 20s., 25s., and 30s. each. Strains of Sturgeon and Potts; also Eggs at 16s. per dozen, from light-buff and extremely well-feathered Hens, sent to any part of England on receipt of a Post Office Order. A Cinnamon Cock and two Pullets for sale, price 3l. 3s.

## BOARD OF TRADE.—DEPARTMENT OF SCIENCE AND ART.

INSTRUCTION IN ART, General and Special, as afforded at the CENTRAL SCHOOL at MARLBOROUGH HOUSE, Pall Mall, London. The School consists of

I.—A MODEL SCHOOL.  
II.—SPECIAL CLASSES FOR TECHNICAL INSTRUCTION.

III.—A TRAINING SCHOOL FOR TEACHERS.  
ART SUPERINTENDENT—RICHARD REDGRAVE, R.A.

The AUTUMN SESSION will commence on MONDAY, the 3d of October, 1883, with an INTRODUCTORY LECTURE by Mr. REDGRAVE.

1. The Courses of Instruction are intended to impart systematically a knowledge of the scientific principles of Art, especially in its relation to the useful purposes of life. A limited application of those principles is demonstrated with the view of preparing students to enter upon the future practice of the Decorative Arts in Manufactories and Workshops, either as Masters, Overseers, or skilled workmen. At the same time, instruction is afforded to all who may desire to pursue these studies without reference to a preparation for any special branch of industry. Special Courses are arranged in order to train persons to become Masters of Schools of Art, and to enable Schoolmasters of Parochial and other Schools to teach Elementary Drawing as a part of General Education concurrently with writing.

2. The Lectures and Classes for Instruction comprehend the following subjects:—

## GENERAL COURSE FOR MALE STUDENTS ONLY.

A. Freehand, Model, and Elementary Mechanical Drawing, Practical Geometry and Perspective, Painting in Oil, Tempera, and Water Colours. Modelling. The Classes for Drawing, Painting and Modelling, include the Figure from the Antique and the Life, and Artistic Anatomy. Class Lectures, Teaching and Practice, daily, in the morning and evening. Fee 4l. the Session, or part of a Session. Head Master, Mr. Burchett. Assistants, Messrs. Herman, Walsh, Denby, and Willis.

B. The General Evening Instruction is limited to advanced Drawing, Painting, and Modelling, including the Figure. Qualified Students, formerly registered at Somerset House, may be admitted by the Head Master, at a fee of 1l. 10s. for the Session, or part of a Session. Others pay 2l. each Session.

## TECHNICAL COURSES.

C. Practical Construction, including Architecture, Building, and the various processes of Plastic Decorations, Furniture, and Metal Working. Public and Class Lectures, Teaching and Practice, morning and evening. Fee 4l. each Session. Evening Course only, fee 2l. for Male Students only. Lecturer and Superintendent, Professor Semper.

D. Mechanical and Machine Drawing, Class Lectures with evening teaching and morning practice. For Male Students only. Fee 2l. each Session. Superintendent, Mr. W. Binns.

E. Surface Decoration, as applied to Woven Fabrics of all kinds, Lace, Paper Hangings, &c. Public and Class Lectures, Teaching and Practice at all times. Fee 4l. each Session. An afternoon class for Females only, Fee 2l. An Evening Class for Male Students only, Fee 2l. Lecturer and Superintendent, Mr. Octavius H. and Class Lectures, Teaching and Practice, daily, in the morning and evening. Fee 4l. each Session. Superintendents, Mr. Simpson and Mr. J. C. Robinson.

G. Wood Engraving, Public Lectures, daily Teaching, and Practice for Female Students only. Fee 4l. Superintendents, Mr. Thomson and Miss Waterhouse.

H. Lithography, Chalk, Pen, and Colour. Daily Teaching and Practice for Female Students only, Fee 4l. Superintendents, Mr. Brookes and Miss Channon.

## PUBLIC LECTURES.

On Natural History, by Professor E. Forbes; on Metallurgical Processes, by Dr. Percy; on the History of Ornamental Art, by Mr. Wornum, Librarian; on the Objects and Uses of the Museum, by Mr. J. C. Robinson, &c. Admission to each Lecture, 6d.

3. The Instruction for the general Students is carried on daily, except on Saturdays. The Annual Sessions, each lasting five months, commence on 1st October and 1st March, and end respectively on 28th February and 31st July.

4. Students may matriculate for a period of three years upon paying 20l. in one sum on entrance, or three annual payments of 10l. They are entitled to attend all Public and Class Lectures, the general and technical Courses, to receive personal instruction, and to practice in the School at all times; they have also access to the Museum and Library. At the end of the Session they may pass an Examination, and have the privilege of competing for Scholarships, varying from 10l. to 30l. a year in value.

5. Occasional Students are at liberty to attend only the particular Courses for which they enter, and have admission to the Museum, Library, and Public Lectures.

6. A CLASS FOR SCHOOLMASTERS AND PUPIL TEACHERS will meet every Tuesday and Thursday Evenings, and on Saturdays. Pupil Teachers under inspection of the Council of Education pay a Fee of 10s. for the Session of five months. Schoolmasters of Parochial Schools, &c., may enter the Schoolmasters' Class, and pay a Fee of 5s. Superintendent of the Training teaching, and Elementary Instruction, Mr. Burchett; Assistant, Mr. Bowler.

7. A Register of the Students' attendances is kept, and may be consulted by Parents and Guardians.

8. The SCHOOL FOR THE FEMALE STUDENTS passing through the General Course is at 37, Gower Street. Superintendent, Mrs. M. I. An; Assistants, Miss Gann and Miss West.

For Prospectuses, and further information, apply at the Offices, Marlborough House, Pall Mall, London.

HENRY COLE, }  
LYON PLAYFAIR, } Joint Secretaries.



## IMPROVED GRASS-CUTTING &amp; ROLLING MACHINE.

ALEXANDER SHANKS & SON, MACHINE MAKERS, Arbroath, Forfarshire, respectfully solicit notice to their IMPROVED GRASS-CUTTING and ROLLING MACHINE for Lawns, the complete success of which, and its acknowledged excellence and superiority over all other machines of the kind, have now been fully established.

Testimonials and further particulars will be immediately franked on application.

## TO THE AGRICULTURISTS OF IRELAND.

L'ESTRANGE'S FARMING IMPLEMENT FACTORY, FOUNDRY, AND IRON WORKS, SMITHFIELD, DUBLIN.

WILLIAM GRAHAM, Sole Proprietor of the above old-established Manufactory, begs most respectfully to return his grateful thanks to Noblemen, Gentlemen, and the Agricultural Public, for the marked continuance of that support which the establishment has hitherto enjoyed for the last 70 years, and to inform them, from the increased press of business, and ever anxious to attend with punctuality to all orders entrusted to him, he was reluctantly compelled to abandon his intention of exhibiting, at the Killarney Show, his THRESHING MACHINES, the superiority of which is so well known in this country; the season being just now in for the use of the above machines, every exertion shall be made to have all orders executed in the shortest possible time.

THRESHING MACHINES, from one to six-horse power, made entirely of wrought and cast iron, with or without straw shakers, applicable to horse, water, or steam-power.

OAT AND BEAN BRUSHERS, by hand, or to attach to machinery.

WINNOWER MACHINES, do. do.

HAY AND STRAW CUTTERS, do. do.

DRY CHAFF CRUSHERS, do. do.

CHURNING MACHINES, by hand, or horse-power.

TURPIN SOWING MACHINES, single and double drill.

CORN SOWING MACHINES, on a very simple and effectual construction.

IMPROVED WROUGHT IRON BEAM PLOUGH, No. 3, best adapted for general purposes, light enough in draught for two horses, and sufficiently strong for three or four horses.

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W. G. also begs to call attention to the late trial of ploughs, &c., &c., that took place, first, in a field at Malahide, for best work, afterwards at Killarney, for lightness of draught; the merit and superiority of those ploughs have not been decided on by a mere glance in the show-yard, as on former occasions; but it is happy to say that the Royal Agricultural Society of Ireland has brought those implements into the field, to test the superiority of the one over the other, which is the only way of coming at their actual merit. The judges had a dynamometer on the field, to test the draught of the ploughs, which is a very essential point. The implements tried consisted of ploughs, from the most eminent manufacturers of England, Scotland, and Ireland, and can now fearlessly assert, that his plough has been awarded the head prize, and judged far and away superior to all others both as to practical results, lightness of draught, strong and simple in construction; and, as a further proof, received extensive orders from both the English and Scotch judges, &c., before leaving the field of operation.

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Sold at the Office, 18, Cannon Street, City, London; and by Chemists, Shipping Agents, and others throughout the United Kingdom, in imperial quart bottles at 2s. 6d.; in pints at 1s. 3d.; and in bulk at 6s. per gallon.

CAUTION.—The only genuine Disinfecting Fluid is sealed over the cork with the inscription, "Sir Wm. BURNETT'S Disinfecting Fluid," and accompanied with numerous testimonials of the highest order, and instructions for its use.

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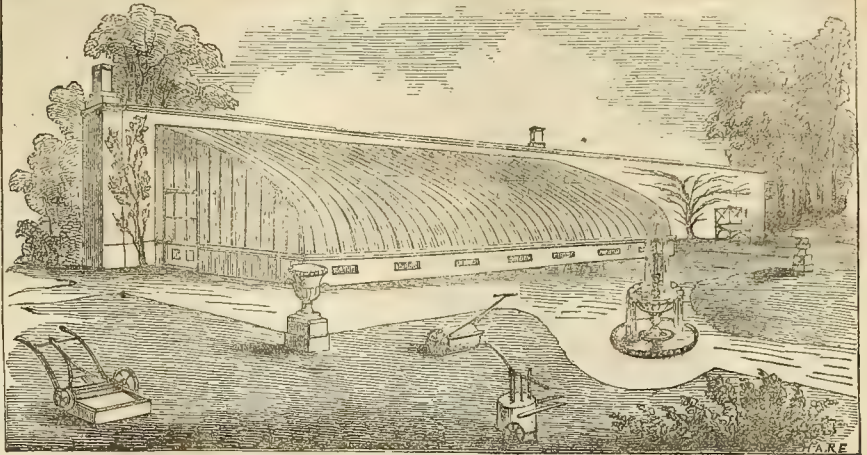
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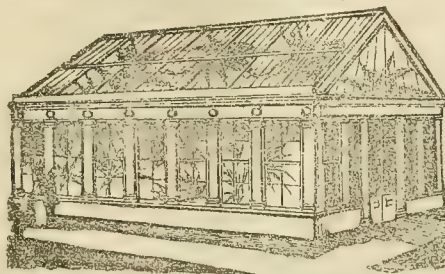
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Packed in Crates, for Cutting-up of the sizes manufactured.	3/4 inch thick.	3/8 inch thick.	1/2 inch thick.
30 inches wide and from 40 to 50 long } Or 20 " " 50 " 70 " } " " " above 70 " }	s. d. 0 5 1/2 0 6 0 0 6 7 1/2	s. d. 0 7 0 0 8 0 0 9 1/2	s. d. 0 9 0 0 10 0 0 11 1/2
In Squares cut to the sizes ordered.			
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14 by 10 " 12 1/2 ft. sup., if the length does not exceed 20 inches .....	0 5 1/2	0 7	0 8 1/2
1 1/2 ft. sup. " 3 ft. sup., or if above 20 and not above 30 inches long .....	0 6	0 7 1/2	0 9
3 " " 4 " 20 " 30 .....	0 6 1/2	0 8	0 9 1/2
4 " " 5 " 30 " 35 .....	0 7	0 8 1/2	0 10
5 " " 6 " 35 " 40 .....	0 7 1/2	0 9	0 10 1/2
6 " " 8 " 40 " 45 .....	0 8	0 9 1/2	0 10 1/2
8 " " 10 " 45 " 55 .....	0 8 1/2	0 10	0 11
10 " " 12 " 55 " 65 .....	0 9	0 10 1/2	0 11 1/2
12 " " 1 " 65 " 75 .....	0 10	0 11	0 1
15 " " 20 " 75 " 90 .....	0 10 1/2	0 11 1/2	0 1 1/2
20 " " 25 " 90 " 100 .....	0 11	0 12	0 1 1/2
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"There can be no question now that Rough Plate Glass is the  
most beautiful, as well as the most useful, kind of glass that  
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of sheet or transparent glass, and it has many advantages  
peculiar to itself, without a single disadvantage as a set-off."—  
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price 30s. each; small size, 15s. TAYLOR & FRANKS, 8, George  
Yard, Lombard Street, London. Twenty Gallons of Pure Water  
per diem. All mineral and noxious matters entirely separated  
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**YOUTELL AND CO.** have now to offer a splendid collection of the above, in strong healthy plants, comprising the following fine varieties, at 12s. per dozen:—Walden Gem, Mr. C. Barron, Princess Alice, Commander-in-Chief, Snowflake, Rosea Alba, Flower of the Day, Venosa Rubra, Formosa, Magnum Bonum, Princess Royal, Black Prince, Eclipse, Obscura, Perfection, Rosea Rubra, Fireball, Maiden's Blush, Lilac Perfection, Queen, Comet, Mulberry Superb, Princess Helena, Conspicua, &c.

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## CHRYSANTHEMUMS FOR EXHIBITION.

**YOUTELL & Co.** are now sending out a very choice collection of the above, comprising the Large-flowering and Pompones or Lilliputian varieties; they are confidently offered as being the very best of the recent introductions, and which will not fail in giving satisfaction to the purchaser. **STRONG PLANTS,** for flowering this autumn, 12s. per dozen.

**CAMELLIAS,** of the finest kinds in cultivation, strong plants 1 to 14 foot high, well furnished with flower buds, 21s. and 30s. per dozen.

Orders of 2L. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery.—Royal Nursery, Great Yarmouth.

## LOCKSBROOK NURSERY.

**VIOLETS, FANSIES, ANEMONES, DAISIES, AND NARCISSES.**

**R. SHACKELL** begs to offer the public again this season his beautiful Seedling Violet Russian Superb; strong plants, 4s. per dozen; small ditto, such as can be sent through the post free, 3s. per dozen. Double Purple Perpetual Tree Violets, now coming into blossom, moving very well at this time of the year, making a show at once, 2s. 6d. per doz., or 10s. per 100. Old Russian Violet Plants, a very useful kind, 1s. per doz., or 5s. per 100.

R. S. has a fine stock of free blooming showy Pansies, such as will bloom pretty freely through the winter months and early spring. If purchased shortly, and planted thick in a rich light soil, would be very useful for replenishing the flower beds as soon as the frost has killed the tender summer flowers; strong well-rooted plants, with blooms on them, at 2s. per dozen, in 12 varieties, or 10s. per 100.

R. S. has also a large stock of single Anemones, sown this last spring, useful for the same purpose as before named, at 2s. per dozen, or 10s. per 100. Also a great variety of foreign Daisies, some of them very beautiful; these are useful for edging round small beds or borders, 1s. per dozen, or 5s. per 100.

R. S. has a large stock of the beautiful, sweet-scented, pearl-white Poeticus, or Peasant-eyed Narcissus, which he will render at the low price of 4d. per dozen, or 2s. 6d. per 100.

\*<sup>a</sup> Hammer and package included, provided the order is not under 5s.

Any person wishing to see the blooms of the Pansies and Anemones may have specimens through the post by application, on inclosing stamps for the postage.

Address **ROBERT SHACKELL, Florist, Locksbrook Nursery, Bath.**

## FOR SEPTEMBER.

**EDWARD GEORGE HENDERSON AND SON,** Wellington Road, St. John's Wood, London, will commence sending out in October the following superior Flowers of the CINERARIAS and FANCY GERANIUMS which have been flowered two years in succession in their Nursery, and consequently can recommend them with confidence as flowers of great merit.

## FANCY GERANIUMS.

**CONSTANCE.**—Lower petals white with violet rose blotch, upper petals deep maroon with wide margin of white, distinct and novel; a first-rate flower. 21s.

**EMPERESS OF FRANCE.**—Fine pale rose belted with white, lower petals of fine form, with edging of rose. 10s. 6d.

**ILLUMINATOR.**—Bright rose crimson upper petals, with bright spot on lower petals, very free flowerer, fine habit, first-rate exhibition variety; good truss. 10s. 6d.

**LADY HUME CAMPBELL.**—Very bright vivid crimson, with white centre, remarkably free flowerer, first-rate exhibition variety, good habit. 15s.

**MARY HOWITT.**—Upper petals maroon crimson, with clean broad margin of clear white, lower petals belted with crimson: stiff fine shaped petals, of greater substance than any other fancy Geranium. 15s.

**THE OCEAN QUEEN.**—Rich bright crimson, the lower petals nearly covered with large blotch of crimson, excellent trusser, very free and healthy growth. 10s. 6d.

## FIRST-CLASS CINERARIAS.

**EMPRESS EUGENIE.**—Clear white, with violet crimson edging, purple disc; fine. 10s. 6d.

**NOVELTY.**—Damson, with light disc, large novel coloured flower, rich and very showy. 10s. 6d.

**PICTURATA.**—Clear white, with deep edging of rose purple, lavender disc; the finest Cineraria in cultivation. 10s. 6d.

**LORD STAMFORD.**—White, finely edged with light porcelain blue, fine petals, superior flower. 10s. 6d.

If the set is taken one of another variety will be presented gratis.

## SECOND-CLASS CINERARIAS.

**ADVANCER.**—Clear white, with blue edging, light disc, fine Rosalind flower. 7s. 6d.

**ESTELLE.**—Large white, with puce edging, purple disc, free abundant flowerer. 7s. 6d.

**ETOILE DE VAISE.**—Clear white, rosy plum edging, grey disc, good size, abundant flowerer. 7s. 6d.

**LABLACHE.**—Deep blue, dwarf and fine. 7s. 6d.

Or 21s. the set.

## NEW FORCING PELARGONIUMS,

## QUEEN OF FEBRUARY, AND WELLINGTON.

**J. AND W. GILL, FLORISTS, &c., Denbigh Road,** Westbourne Grove, West Bayswater, beg to offer the above Seedling Pelargoniums. Where early flowers are required, they are highly desirable plants, having been ordered by several Nurserymen and Gardeners who saw them in bloom. **QUEEN OF FEBRUARY** was exhibited on 1st March last, and awarded a Certificate of Merit by the Horticultural Society. It is of a dwarf compact habit, colour rosy pink, with a dark blotch on the upper petals, and flowers freely through the months of February and March. **"J. & W. GILL** have obtained a very valuable seedling named **Queen of February**, which proves to be the best variety hitherto used for winter blooming. It blooms admirably from Jan. to May, and will be found a valuable acquisition."—*Flori-cultural Cabinet.* **WELLINGTON** was exhibited on 5th April, and was much admired. It is a very strong grower, with immense flower trusses; colour a dark rosy crimson, and as profuse as Alba multiflora. "I should say that this is a seedling from the Queen of Roses, by the pollen of a high-coloured variety; the father has improved the colour, therefore this will form a very strong and useful kind."—*Mr. Beaton, Cottage Gardener.*

See also reports of the Hort. Soc. Meetings in the *Gardeners' Chronicle* of March 5, and April 9; also to Mr. Beaton's remarks in the "Cottage Gardener" of March 17, and April 21.

Strong plants, of each kind, 10s. 6d. each; a very extra strong cut down plants, 15s. each. The usual discount to the trade when three are taken. Also, at 1s. 6d. per plant, or 15s. per dozen, Gauntlet, Selina, and Alba multiflora. Forwarded Carriage Free to any of the Railway Stations in London.

Post Office orders, payable at Paddington, are respectfully requested from unknown correspondents.

## HYACINTHS, TULIPS, NARCISSI, CROCUS, ETC.

**JAMES CHARTRES AND CO.** beg to inform the nobility and gentry that they have imported a large and very choice stock of the above, which have arrived in fine condition.

J. C. & Co., having made express arrangements with the first Growers in Holland, to have all their Roots selected of Finest Quality, feel confident they will give the highest satisfaction to all who may favour them with their commands.

Catalogues may be had on application at 74, King William Street, City, London.—Sept. 8.

## DUTCH BULBS, ETC.

**BAINBRIDGE AND HEWISON** (successors to the late JAMES EDWARD), beg to inform their friends and the Public, that they have received their importation of **HYACINTHS, NARCISSUS, CROCUS, ANEMONES, TULIPS, &c.** in fine condition, a Catalogue of which may be had on application; they beg to offer at the same time the following new and choice plants:—

Each—s. d.	Azalea indica, good kinds, s. d.
<i>Ascyranthus splendens</i> 5 0	per doz. 50 0
<i>Balsamina latifolia alba</i> 1 0	Camellias, p. doz., 36s. to 100 0
<i>Begonia Prestoniensis</i> 5 0	Geraniums, good kinds, per dozen 9 0
<i>Cissus discolor</i> 2 6	Geranium, Kulla, each 5 0
<i>Ageratum aureum variegatum</i> , fine, for bedding 2 0	Greenhouse plants, p. doz. 9 0
<i>Fuchsia Vesta</i> (Patterson) 2 6	Pansies, good show kinds, per dozen 9 0
—Duchess of Lancaster 2 6	Herbaceous plants, per dozen 6s. to 9 0
—Gloria (Banks's) 2 6	Good Double Hollyhocks for borders, per doz. 4s. 1 0
<i>Philox Spenceri</i> , fine 2 0	
<i>Ruellia maculata</i> 2 6	
<i>Cantua dependens</i> 1 0	

Bridge Street, York, Sept. 1853.

**NEW ZEALAND FERNS.**—The Subscriber has just received a large case of upwards of 60 FIRST-CLASS FERNS, from Wellington, collected by an eminent British Botanist.—To be sold entire by **ROBERT KENNEDY**, Bedford Conservatory, Covent Garden, London.

**HIGHBURY BARN TAVERN.**—The beautiful Gardens attached to the above Tavern are open daily, and can be ENGAGED for FETES, GALAS, HORTICULTURAL and POULTRY EXHIBITIONS, &c. The rooms are admirably adapted for first-class Concerts and Balls. Wedding Breakfasts and Private Dinners executed with elegance and despatch. Wines of the first class only. **A. HINTON, Proprietor.**

## TO NURSERYMEN.

**TO BE LET,** for such a Term of Years as may be agreed on, with entry at Candemas next, the **LOREBURN NURSERY GROUNDS**, situated at the TOWNHEAD OF DUMFRIES, belonging to Mr. Adam Newall, and presently occupied by Mr. Thomas Kennedy and Mr. John Moffat. The grounds, which extend to 12 acres imperial, or thereby, are well known to be of the best description for Nursery purposes, and they are fenced by stone and lime walls, and well adapted for training Fruit Trees.—For particulars apply to Messrs. JACKSON & SYMONS, Writers, Dumfries.—September 10.

## TO NURSERYMEN, GARDENERS, &amp; FLORISTS.

**TO BE LET, STONEHOUSE CROFT NURSERY,** Maxwell Town, Dumfries, with Dwelling House, Seed Shop, Greenhouse, &c. Entry at Martinmas. As the present tenant is retiring from business, the Stock may be had at valuation.—Apply to Mr. JAMES BOGIE, the present tenant; or to Messrs. JACKSON & SYMONS, Writers, Dumfries.

## COUNTY OF TIPPERARY.—BARONY OF LOWER ORMOND.

**TO BE LET,** from the 29th of September, the following Lands, viz.:—

Ballylina, West Farm, containing	140 Acres, Irish.
Matthew's Farm (part of Ballylina W.)	58 do.
Castleview Farm	118 do.
Ballylina, East Farm	80 do.
Lismalin Farm	200 do.
Ballynahinch Farm	82 do.
Bullock Park, or Kilcunahmore	230 do.

These Farms are on the Estate of Lord Ashdown, and are situated about nine miles from Portlanna and Roscrea. Except the last mentioned, they are all suited for Tillage under the five course rotation; there are good Slated Houses on some of them, and any other buildings, which may be reasonably required, will be erected by the Landlord.

Mr. JAMES EGAN, the Steward, at Sopwell Hall, near Shinrone, will show these Farms.

**FARMS TO LET,** in Middlesex, 14 miles from London, with excellent roads and good markets. One of 550 acres, of which about 300 are meadow and pasture, the remainder arable; and one of 75 acres, which is half arable and half meadow; the in-come is moderate.—Apply to **DAVIS & VIGERS, Agents, Frederick's Place, Old Jewry.**

## ORANGE TREES.

**FOR SALE,** a decided bargain, Six Fine Healthy ORANGE TREES, with square Oak boxes, with shifting sides, nearly new. The Trees are 7 feet high above the boxes. Price 12 guineas.—Apply to **WILLIAMSON & SONS, Upholsters, High Street, Guildford.**

**FOR SALE,** Two Hundred clean and healthy PINE PLANTS of the leading sorts, half of them Fruiting, and the remainder in succession.—For further particulars enquire of **MR. LAING, Nurseryman, Beverley.**

**FOR SALE,** by a gentleman who is altering his Garden, several hundred yards of first-rate BOX; also a few pure **COCHIN CHINA CHICKENS**, from the Straits of Pinchard, Potts, &c.—For particulars apply to **MR. H. COPLAND, Broomfield Place, Chelmsford, Essex.**

## Sales by Auction.

## COCHIN CHINA FOWLS.

PERIODICAL SALE BY AUCTION, ON TUESDAY, SEPTEMBER 20.

**MR. J. C. STEVENS** begs to announce that the next Periodical Sale of FANCY POULTRY will take place at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 20th September. The **COCHIN CHINA FOWLS** and **CHICKENS** entered are many of them very choice, from the yards of J. Fletcher, Esq., Kensington; Rev. J. G. Hodgson, Croydon; Mr. J. Jecks, Norwich, &c. &c. Catalogues will be forwarded on the receipt of a stamped directed envelope, enclosed to **MR. J. C. STEVENS, 38, King Street, Covent Garden, London.**

## ORCHIDS.

**MR. J. C. STEVENS** will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, Sept. 23, at 12 for 1 o'clock, a COLLECTION OF ORCHIDS, comprising *Cattleyas Acklandia*, *Citrina*, *Leopoldi*, and *Superba*; *Barkeria elegans*, quite new and splendid *Epipedium* sp. like *vitellium*, *Odontoglossum citrosum roseum*, *O. nebulosum*, *Oncidium albo violaceum* and *tigrinum*, and many other rare and choice species deserving the attention of amateurs.—Catalogues are preparing, and will be forwarded in due course.

## TO GENTLEMEN, NURSERYMEN, FLORISTS, &amp; OTHERS.

**MESSRS PROTHEROE & MORRIS** are instructed by **E. LAWRENCE, Esq.** (who is removing to London), to submit to an unreserved Sale by Auction, on the premises, No. 14, Grove Terrace, Kentish Town, on FRIDAY, September 16th, 1853, at Twelve o'clock, the whole of the STOVE and GREENHOUSE PLANTS, consisting of fine Orchids, Gesneras, Gloxinias, Hoyas, and choice Showy Pelargoniums, fine specimen Indian Azaleas, Double Camellias, Achimenes, Epacris, Roses in Pots, Oleanders, Geraniums, Correas, Kennedys, Lilium lancifolium, Hyb. Rhododendrons, Kalmias, Andromeda floribunda; 800 yards of Box Edging; choice Standard Roses; Privet Hedges, &c. Also three newly erected Greenhouses, a capital Span-roof Pit; Hand Lights; Boxes; the erection of four Sheds; Summer House; a quantity of Bricks; an excellent Saddle Boiler; about 400 feet Hot-water Pipe; Iron Roller; Tanks; Fencing; Syringe; Barrows; Thermometers; Garden Tools; Pots, and other effects. May be viewed three days prior to the Sale. Catalogues may be obtained (6d. each, returnable to purchasers) on the premises; or the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO LIBRARIANS, FANCY DEALERS, AND OTHERS.

A Valuable and judiciously selected Library of French and English Books by the best Authors, Engravings and Fancy Goods, Show-cases, Shop Front, Doors, &c.; likewise the erection of a small Greenhouse, with some Cacti and Aloes.

**MESSRS. PROTHEROE AND MORRIS** are instructed to Sell by Auction, on the Premises, by order of the Proprietor, W. DENNIS, 1, Adams' Place, opposite Arthur Street, King's Road, Chelsea, on MONDAY, Sept. 10, at 11 for 12 o'clock, all the carefully selected French and English Books in first-rate condition. Amongst the English will be found the works of Bulwer, Cooper, Disraeli, James, Capt. Marryat, Sir Walter Scott, Mrs. Gore, Mrs. Trollope, &c.; in the French, the works of Balzac, Alexandre Dumas, Comtesse Dash, Paul Féval, Gondricourt, Alphonse Karr, Paul de Kock, Pigault Lebrun, Soulié, Souvestre, George Sand, &c. The Fancy Goods comprise the usual assortment of goods, suitable for presents, such as Work-boxes, Fancy Baskets, with ornamental leather leaves, Scent Cushions, Boxes for Handkerchiefs, Penholders and Pen-wipers, &c. A collection of curiously cut Ornaments in cardboard, &c. Wire Vases for flowers, and a variety of other articles.—May be viewed three days prior to the sale. Catalogues may be had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

## IMPORTANT AND FINAL SALE.

## NORBITON NURSERY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. Smith to submit to an unreserved Sale by Auction, on the Premises, Norbiton Nursery, Kingston, Surrey, on THURSDAY, Sept. 22, and following days, at 11 o'clock each day, in consequence of the lease expiring at Michaelmas, the whole of the justly celebrated hybridised NURSERY STOCK, consisting of White, Scarlet, and other varieties of Rhododendron arboreum; many thousand hardy Scarlet and Yellow Hybrids, including some very first rate, with the original large Yellow, beautifully furnished with bloom buds; Dr. Hooker's Sikkim varieties; also the valuable Greenhouse Plants, comprising Camellias and Azalea indica, well set with bloom buds, Lilium lancifolium, in variety; together with a capital Span-roof Greenhouse, with Cylinder Boiler and Cistern, about 200 feet of Hot-water pipe, Bricks, &c.; several one, two, and three-light Boxes, a number of Hand Lights, of sizes; Nest of Seed Drawers, Desk, capital Carpenter's Bench, Garden Pots, Barrows; Hornbeam, Box, and other Hedges, Compost, and sundry effects.—May be viewed one week prior to the sale, and Catalogues may be had, 6d. each (returnable to purchasers), on the premises; or the principal Seedsmen in London, and of the Auctioneers; American Nursery, Leytonstone, Essex.

## VALUABLE NURSERY AND GARDEN GROUND AT LOUTH, LINCOLNSHIRE.

**MR. THOMAS JACKSON** will sell by AUCTION, at the King's Head Hotel, in Louth, on MONDAY, the 19th day of September, 1853, at 7 o'clock in the evening, subject to such conditions as will be then produced, unless previously disposed of by private contract, of which due notice will be given, all that **FREEHOLD PIECE OF GROUND**, used as a Garden or Nursery, containing 5 acres, 1 rood, 7 perches, more or less, with the Cottage or Tenement, Seed House and Buildings thereon, and a Glass and Brick Pit 23 yards long, situate near the River and a Glass and Brick Pit 23 yards long, situate near the River Head in Louth, and fronting the Road leading to Cockerington, now in the occupation of the owner, Mr. John Usher. The stock of Forest and Fruit Trees, Shrubs, and Agricultural produce may be taken at a valuation. The Land is in a good state of cultivation, and has been occupied as a nursery for 30 years; is well adapted both as regards situation and soil for the cultivation of Garden produce, and being the only nursery in or near Louth, is well worthy the attention of Gardeners and Florists. Immediate possession can be given.

Fair particulars may be obtained on application to **MR. USHER**, the owner, Louth; **MR. DUNCAN HAIRS**, Seedsman, 109, St. Martin's Lane, London; to the Auctioneer; or to Messrs. HOLDEN & SONS, Solicitors, Hull.

## SALE OF PLANTS.

**MR. CRAGG** has the honour to inform the Public that he has received instructions from **W. B. WAINMAN, Esq.** to submit by AUCTION, at the White Lion Inn, Kilwick, near Skipton, on WEDNESDAY, the 21st September, 1853, the entire COLLECTION OF PLANTS, all of which will be removed from Carhead for the convenience of sale, and are in the most healthy condition, consisting of Orchidaceous, Stove, Greenhouse, Half hardy, and other plants in pots; amongst which will be found many new and valuable varieties, particularly *Dendrobium Dalhousianum* and *Devonianum*, the scarce *Vanda furva*, and the scarce *Maxillaria ramosa*; some excellent specimens of Stove and Greenhouse Plants, Camellias, Azaleas, Cinerarias, &c. &c. Also, some fine young plants in pots of Sikkim-Himalaya Rhododendrons; likewise several thousands four-year old Hybrid Seedling Rhododendrons (in boxes), raised from the Scarlet Nepal and Cinnamomum varieties; together with a number of Test-scented China and other Roses for forcing; 40 Vines in pots, from eyes, one, two, and three years old; 250 tins of Strawberries for forcing, and a fine plant of *Hakea Victoria*.

Catalogues will be ready for delivery on the 14th inst., and may be had of the Auctioneer, at his Offices, in Skipton, or of Mr. ASBOTT, the Gardens, Carhead, near Skipton, by transmitting six Postage Stamps. The whole will be on view at 10 o'clock on the morning of sale, when none but parties in possession of Catalogues will be admitted. The Sale to commence punctually at 1 o'clock in the afternoon.

Trains arrive at the Kilwick Station from Leeds and Bradford, at 10.2 a.m., 11.12 a.m., and 1.2 p.m.; and depart at 6.55 p.m. and 7.53 p.m. And the East Lancashire and North Western Trains arrive at 10 a.m. and 2.13 p.m., and depart at 6.9 p.m.

Printed by **WILLIAM BRADBURY**, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and **FREDERICK MULLIST EVANS**, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London, and published by them at the No. 1, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to this Editor.—SATURDAY, SEPTEMBER 10, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 38.—1853.]

SATURDAY, SEPTEMBER 17.

[PRICE 6d.

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## TO ADVERTISERS.

### THE ADVERTISEMENT DUTY being now REPEALED, the PROPRIETORS of the GARDENERS' CHRONICLE

beg to announce that there will henceforward be a reduction from the customary charge for each Advertisement of 1s. 6d., the full amount of duty taken off by the Government.  
Advertisements of Gardeners out of Place, of not more than four lines in length, 1s. 6d. each.

## CAMELLIAS, ETC.

**CHANDLER AND SONS, NURSERYMEN**, Wandsworth Road, Surrey, continue to supply good Plants of CAMELLIAS, well set with flower-buds, 30s. to 42s. per dozen. CHRYSANTHEMUMS, bushy Plants of the best sorts, large and dwarf varieties, for flowering this autumn, 12s. per dozen. A good assortment of Dutch Bulbs just imported. Fine Hyacinths, from 6s. to 12s. per dozen. Narcissus, Tulips, &c.

## LOBELIA ST. CLARE.

**JAMES LAKE, NURSERYMAN**, &c., Bridgewater, begs to inform the Public that his Stock (about 700) of the above beautiful plant is now in bloom, a spike of which will be sent to any one on application, by their paying the carriage thereof. Strong old plants, 3s. 6d. each; smaller plants, 1s. 6d. per dozen. Orders taken for next spring at 12s. per dozen. The usual allowance to the Trade.—Sept. 17.

## PERRY BARR NURSERY, NEAR BIRMINGHAM.

**JOHN MOORE AND SONS** beg to announce that they have purchased the entire stock of Stokes's Fuchsia, "Duke of Wellington," and will be happy to send flowers to applicants forwarding nine postage stamps. Descriptions and opinions will appear in future advertisements.  
Plants will be ready in April next, at 10s. 6d., with the usual discount to the trade.—Sept. 17, 1853.

**A NEW HARDY CUPRESSUS, FROM THE HILLS OF INDIA**, forming a MAGNIFICENT EVERGREEN TREE, 80 FEET IN HEIGHT.—Strong 1-year old Plants from Seed, established in single pots, 63s. per dozen. The above is quite new to Europe, and is not yet named.

**CEDRUS DEODARA** two years from Seed, in single pots, 35s. per 100.

**YOUELL & CO**, Royal Nursery, Great Yarmouth.

**SUPERB PEA.—The "NOVEMBER PROLIFIC"** supercedes all other varieties, yielding a crop of extraordinary abundance, stand the severe weather better than any other. It is of the richest flavour, and may be sown from November to July without missing a crop, price 1s. 6d. per quart; to be had from **WILLIAM HAMILTON** (late of Chesapeake), Seedsman and Florist, 41, Margaret Street, Cavendish Square (first door from Regent Street).  
N.B.—A large assortment of Hyacinths, Tulips, Crocus, Narcissus, and other flowering roots, a priced Catalogue of which may be had free by post for two stamps. The Catalogue also contains a descriptive and very excellent list of Roses, together with the best Carnations, Picotees, Fruit trees, &c.

**STANDISH AND NOBLE'S CATALOGUE** for the present season is now ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Sept. 17.

## ROSE CATALOGUE, ETC.

**MESSRS. LANE AND SON, NURSERYMEN**, Great Berkhamstead, Herts, beg to inform their patrons that the undermentioned descriptive CATALOGUES may now be had. General Rose Catalogue for two postage stamps; Tree and Shrub and Fruit Catalogue for two ditto; Azalea Indica, Camellias, Hollyhocks, &c., for one ditto.

The Hardy Rhododendrons are fine; the Araucaria Imbricata, Cedrus Deodara, the Ficus, with all other Evergreen and Deciduous Plants, are remarkably healthy, forming fine specimens, giving immediate effect, and well worthy the attention of Planters.  
Fruit Trees established in pots are well set with bloom buds, many of the trees having had a good crop of fruit this season.  
**FINE SELECTED STANDARD ROSES.** Per Doz. 18s. to 24s.  
Ditto DWARF and DWARF STANDARDS " 10s. to 16s.  
Ditto DWARF ROSES, two of each sort " 6s.  
**MIXED DWARFS**, without names " Per 100 30s.

## FLOWER ROOTS DIRECT FROM HOLLAND.

**H. MAY** begs to offer the under-mentioned **DUTCH BULBS**, imported direct from Haarlem, which are received in fine condition. Per dozen.  
Hyacinths, fine named sorts, double red, white, blue, and yellow 6s.  
Do. do. single do. do. 6s.  
Do. mixed double do. do. 4s.  
Narcissus, Grand Monarque and Primo Citronier " 4s.  
Do. Soliel D'or and double Roman " 3s.  
Tulips, single and double Duc Van Thol " 1s.  
Best mixed Ranunculuses, 10s. per 100; best Scarlet Anemones, per 100 " 12s.  
Jonquils, Crocus, Gladiolus, Cyclamens, and Lilies equally low.  
Address, **HENRY MAY**, The Hope Nurseries, Bedale, York.

## NOTICE TO NURSERYMEN.

**TRANSLATED FRUIT STOCKS.**—We, the undersigned Cultivators of Fruit Stocks, beg to inform the Trade that the following prices will be charged during the ensuing season:—

Musclic Plum	per 1000	30s.	Cherries	per 1000	30s. to 35s.
Common do.	"	40s.	Pears	"	40s. to 50s.
Brussels do.	"	35s.	Crabs	"	30s.
Brompton or Mignonne	"	40s.	Paradise	"	60s.
White Pear Plum	"	40s.	Quince	per 100	8s.

WATERER & GODFREY, Knap Hill, Woking, Surrey.  
DONALD & SON, Goldworth Nursery, Woking, Surrey.  
GEORGE JACKMAN, Woking Nursery, Woking, Surrey.

## TO THE SEED TRADE.

### "LEPTOSIPHON LUTEUM" (FOR AUTUMN SOWING.)

**MESSRS. VEITCH AND SON** beg to announce that they are now prepared to supply excellent Seed of the above beautiful new Annual, which was sent them direct from California by Mr. Lobb, and is at present solely in their possession. It has been exhibited at Chiswick and Regent's Park during the past season, and at both places Prizes were awarded it. It was proved to be quite as hardy as the other Leptosiphons, and produces a very striking effect. It is also well adapted for growing in pots and boxes for ornamenting the Conservatory. Prices forwarded on application.

N.B. The quantity being limited, Messrs. V. & S. can only guarantee to supply the first orders.—Exeter, Sept. 17.

**ROSES AND HOLLYHOCKS.**—The extensive Collections growing at the Cheshunt Nurseries are still finely in bloom, where admirers of these Flowers are respectfully invited to view them. Trains of the Eastern Counties Railway almost hourly to Cheshunt or Waltham.

Priced descriptive Catalogues are now ready, and will be forwarded free by post for two postage stamps.

A. PAUL & SON, Nurseries, Cheshunt, Herts.

## NEW ROSES FOR 1853-54.

**A. PAUL AND SON** beg to offer the following New Roses, the entire Stock of which is at present in their possession.

**PRINCESS ALICE**, Moss (Paul's). Flowers blush pink, centres large and full, produced in great abundance; buds well mossed. This variety introduces a new style among Moss Roses, having the deep centre and pale edges of the Celestial Rose; the growth is very vigorous, and it quickly forms an unbranched tree, the branches well clothed with handsome foliage. It has received Certificates from the National Floricultural Society, and the North Wilts Horticultural Society, the only places where exhibited for a Prize, and is figured in the "Florist" for September. Strong Plants in November. 10s. 6d. each.

**VIVID**, Hybrid Bourbon (Paul's). Flowers vivid crimson, petals of good substance, containing a great body of colour, which imparts to the flower a rich velvety appearance. The flowers are of medium size, not large enough for an Exhibition Rose; but being an abundant bloomer, of vigorous growth and handsome foliage, this is highly recommended as a brilliant dark pillar or climbing Rose; and whether grown as such or as a standard, it produces a rich effect in the Flower Garden. Certificate from the National Floricultural Society. Plants in November. 7s. 6d. each.  
See also Rose Catalogue, just published.  
Nurseries, Cheshunt, Herts, September 17.

## THE NIMROD STRAWBERRY.

**LUCOMBE, PINCE, AND CO.** respectfully inform the public that they possess the first stock of this much admired **NEW STRAWBERRY**, and purpose sending out strong healthy plants of it in the first week of October next, at 3s. per 100.

The great superiority of the Nimrod Strawberry has been acknowledged by many competent judges. Doctor Lindley pronounces it to be "superior to the British Queen—sweeter and richer." See *Gardeners' Chronicle*, of this year, July 23d, page 472.—Mr. Spencer, of Bowood, a first-rate authority in all that appertains to Horticulture, also speaks very highly of it in the same publication, July 30, page 485.

Colour bright scarlet; size considerably above the average flesh juicy, melting, richly flavoured; shape oblong, or rather conical; skin firm, dry, highly varnished, owing to which properties it packs and carries well; thoroughly hardy, having stood uninjured last winter, where the British Queen was destroyed; very prolific, and forces exceedingly well.

N.B. For the accommodation of those who may wish to force it, or to have extra strong plants capable of producing a good crop early next season, some of the first layers have been put into 48-sized pots, in which they will be very strong and well established in October, at 6s. per 100.

The stock is very limited, and though, in order to get a large supply, L., P., & Co. ought to have kept it over another season, they have been solicited by so many persons to let it out this season, that they are unwilling to disappoint their friends.

The Exeter Nursery, Exeter, Sept. 17.

## BASS AND BROWN'S NEW AUTUMN CATALOGUE

is now complete. Copies supplied free for three penny stamps each. It contains a large number of the New Plants at reduced prices, comprising Geraniums and Cinerarias, of the best new varieties of October last, with finest of the older varieties; Azalea Indica, 50 varieties of the choicest; the best new Fuchsias, Verbenas, and Petunias; new and select Stove and Greenhouse Plants; Plants selected for Winter and Early Flowering; Roses, in select collection, of about 300 best; new and select Hardy Shrubs and Climbers, Conifers; new and other select Chrysanthemums, Hollyhocks, Hardy Herbaceous and Rock Plants, collection of new Dwarf Rock Cistus, Choice Fruits, &c.

**THE BULB AND ROOT STOCK** consists of Gladiolus in upwards of 100 superb varieties, choice Ranunculuses, Anemones, superb collections of English, German, and other Iris, fine imported Dutch Hyacinths, Narcissus; Early, Double, and Late Tulips; Crocus, Lilies, Ixias, with a large collection of other roots. The Catalogue also contains a list of a few SEEDS FOR AUTUMN SOWING, comprising Geranium, Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Hollyhock, &c. &c., which have been carefully saved from our own superb collections, and can be highly recommended.

## CHRYSANTHEMUMS.

A large stock of strong bushy plants for flowering this autumn. 12 best new large flowering varieties of last season ... 12s. 6d.  
12 best new Lilliputian varieties of do. ... 12s. 6d.  
60 splendid varieties, including the above ... 40s. 6d.  
40 splendid varieties, 30s.; 25 do. ... 17s. 6d.  
Our importation of Dutch Roots comprises collections of the best and most favourite sorts, and are very fine.  
Goods (not under 20s.) Free to all the Stations in London; and with orders of 40s. and upwards, Plants and Roots gratis to compensate for long carriage.

**BASS AND BROWN**, Seed and Horticultural Establishment, Sudbury, Suffolk.

## DAHLIA EXHIBITION OF THE SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.

The FIFTH FLOWER SHOW of the above Society will take place at the Horns Tavern, Kennington, on TUESDAY, 20th of September, when Prizes will be awarded for the following productions, viz., DAHLIAS and FANCY VARIETIES, HOLLYHOCKS and SEEDLINGS, in addition to which Prizes are offered for Dahlias, to Honorary and Non-Members. Also for six pots of LILIU LANCIFOLIUMS, the Silver Linnean and Albert Medals. Lists of Prizes, &c., may be had at the Horns Tavern, Kennington; of Mr. W. DEXTER, Nurseryman, Longborough Road, Brixton; and of the Honorary Secretaries, Mr. JOHN BUSHELL, Lower Kennington Lane, and Mr. WILLIAM TRABAR, 5, Kensington Gore.

## NORTH LONDON FLORICULTURAL SOCIETY.

The DAHLIA and MISCELLANEOUS EXHIBITION of this Society will be held at Highbury Barn Tavern, Highbury, on TUESDAY, September 20. The CHRYSANTHEMUM EXHIBITION on THURSDAY, November 24. For Schedules, &c., apply to Mr. C. P. LOCHNER, 13, Great Carter Lane, Doctors' Commons, London.

## THE GREAT FLORAL EXHIBITION, under

the immediate patronage of his Highness, the DUKE OF NASSAU, will take place in the Winter Gardens at Pieblich-on-the-Rhine, from the 1st to the 15th of April, 1854.—Programmes and Lists to be obtained gratis, at the Office of this Paper.

THELEMAN, Director.

## HIGHBURY BARN TAVERN.

Gardens attached to the above Tavern are open daily, and can be ENGAGED for FETES, GALAS, HORTICULTURAL and POULTRY EXHIBITIONS, &c. The rooms are admirably adapted for first-class Concerts and Balls. Wedding Breakfasts and Private Dinners executed with elegance and despatch. Wines of the first class only.

A. HINTON, Proprietor.

## HYACINTHS, DUTCH BULBS, ETC.

**HENRY GROOM**, Clapham Rise, near London, by Appointment Florist to HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that he has received his usual supply of HYACINTHS and DUTCH BULBS, in very fine condition. His Catalogue of Bulbs, &c., will be forwarded on application.

## DUTCH BULBS.

**EVAN PAUL, NURSERYMAN AND SEEDSMAN**, begs to inform his patrons and friends, that he has just received from Messrs. V. Schertzer & Sons, of Haarlem, a superior assortment of DUTCH FLOWER ROOTS, in fine condition. Early orders are respectfully solicited.  
42, Queen Street, Derby.

## CUTHILL'S PRINCE OF WALES AND BLACK

**PRINCE STRAWBERRIES.**—Very fine strong plants of Prince of Wales at 15s. per 100, or 10s. for 50; Black Prince at 5s. per 100. See former Advertisements. Also, CUTHILL'S Pamphlet on the Potato, &c., price 2s., or by post, 2s. 4d.; also, his Market Gardening Round London, 1s. 6d., or by post, 1s. 8d. Post Office Orders to be made payable at Camberwell Green.

JAMES CUTHILL, Camberwell, London.

## DUTCH HYACINTHS, for Forcing, single and

double, at 4s. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR COBBETT'S Italian and Foreign Warehouse, 18, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

## LORD KEYNON'S FAVOURITE is the best and

most productive CUCUMBER for winter cultivation, price 2s. 6d. per packet, or 30 penny postage stamps.

EDWARD TILEY,

Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

## A. VAN GEERT, NURSERYMAN, Ghent, Belgium,

begs to inform Amateurs and Nurserymen that his General CATALOGUE of PLANTS is just published, which may be had on application to his Agent, Mr. R. SILVERHEAD, 5, Harp Lane, Great Tower Street, London.

## CHOICE FLOWER SEEDS.

**FINE** impregnated CALCEOLARIA SEED, saved from the best collection in England, 2s. 6d. per packet; fine selected HOLLYHOCK SEED, warranted from Chater's sowing, 1s. 6d. per packet; CINERARIA SEED, from fine named varieties of 1852, 1s. 6d. per packet; ANTI RHINUM SEED, saved from the best kinds, per packet, 1s. 6d.; AQUILEGIA or COLUMBINE, from a collection of the best sorts, 6d. per packet.  
HENRY MAY, the Hope Nurseries, Bedale, Yorkshire.



## NEW SHANGHAI PEACH.

GEORGE DAVIS begs to inform his friends and the public that he can supply Maiden Plants, in November next, of the above extraordinary PEACH, at 21s. each; Buds, 10s. 6d. each. The Stock being very limited, early orders alone will secure Plants. The above splendid Peach was introduced from China, in 1851, by the late Henry Wynch, Esq., of Liverpool; and it is stated by those who have visited Shanghai that it attains an enormous size, each fruit weighing at least 1 lb.

GLOXINIA WILSONI, 10s. 6d. each. This splendid Gloxinia is figured in the July number of Harrison's "Floricultural Cabinet;" the Editor of which justly observes, "All the Gloxinias are handsome, but the variety now figured stands pre-eminently majestic above all others which we have seen."

AZALEA STANLEYANA, 15s. each. This Azalea is a bright deep rose colour, with brown spots on the upper petals, and for form, size, and substance is superior to anything before the public. G. D. deems it sufficient to say, with respect to its merits, that no one has accepted his proposals for competition at Regent Street, as stated in the *Gardeners' Chronicle* of August 13, 1853.

Stanley and Green Lane Nurseries, Old Swan, Liverpool.—Sept. 17.

## FOR SEPTEMBER.

EDWARD GEORGE HENDERSON AND SON, Wellington Road, St. John's Wood, London, will commence sending out in October the following superior Flowers of the CINERARIAS and FANCY GERANIUMS which have been flowered two years in succession in their Nursery, and consequently can recommend them with confidence as flowers of great merit.

## FANCY GERANIUMS.

CONSTANCE.—Lower petals white with violet rose blotch, upper petals deep maroon with wide margin of white, distinct and novel; a first-rate flower. 21s.

EMPRESS OF FRANCE.—Fine pale rose belted with white, lower petals of fine form with belting of rose. 10s. 6d.

ILLUMINATOR.—Bright rosy crimson upper petals, with bright spot on lower petals, very free flowerer, fine habit, first-rate exhibition variety; good truss. 10s. 6d.

LADY HUME CAMPBELL.—Very bright vivid crimson, with white centre, remarkably free flowerer, first-rate exhibition variety, good habit. 15s.

MARY HOWITT.—Upper petals maroon crimson, with clean broad margin of clear white, lower petals belted with crimson: stiff fine shaped petals, of greater substance than any other fancy Geranium. 15s.

THE OCEAN QUEEN.—Rich bright crimson, the lower petals nearly covered with large blotch of crimson, excellent trusser, very free and healthy growth. 10s. 6d.

## FIRST-CLASS CINERARIAS.

EMPRESS EUGENIE.—Clear white, with violet crimson edging, purple disc; fine. 10s. 6d.

NOVELTY.—Damon, with light disc, large novel coloured flower, rich and very showy. 10s. 6d.

PICTURATA.—Clear white, with deep edging of rosy purple, lavender disc; the finest Cineraria in cultivation. 10s. 6d.

LORD STAMFORD.—White, finely edged with light porcelain blue, fine petals, superior flower. 10s. 6d.

If the set is taken one of another variety will be presented gratis.

## SECOND-CLASS CINERARIAS.

ADVANCER.—Clear white, with blue edging, light disc, fine Rosalind flower. 7s. 6d.

ESTELLE.—Large white, with puce edging, purple disc, free abundant flowerer. 7s. 6d.

ETOILE DE VAISE.—Clear white, rosy plum edging, grey disc, good size, abundant flowerer. 7s. 6d.

LABLACHE.—Deep blue, dwarf and fine. 7s. 6d.

Or 21s. the set.

## KNAP HILL NURSERY, WOKING, SURREY.

WATERER AND GODFREY, Nephews and Successors to the late HOSER WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6, and 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet all from seed.

Goveniana, 2 to 3 and 4 feet.

Funerbris, 2 and 3 feet.

thyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.

Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.

repandus, 3, 4, 5, to 8 feet.

Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.

Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.

Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.

Gold Striped, 1, 2, and 3 feet.

do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

elegantissima (new rippled), standard. The golden Yews are very ornamental, and we have a large quantity of fine plants.

Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5, and 7 feet; a few magnificent plants, 10 to 12 feet high.

insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.

cambræ, 3, 4, to 6 feet.

Canadensis (Hemlock Spruce), 3, 4, and 6 feet.

morinda, 3, 4, and 6 feet.

Menziesii, 3, 4, 6, and 8 feet.

cephalonica, 3 to 4 feet.

Pinus, large and handsome, 3 and 4 feet.

Nordmanniana, from seed, 14 foot; a few larger, 2 feet.

mobilis, stout plants, with perfect heads, about 14 foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.

Wareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.

aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 14, 2, and 3 feet. This is a very distinct and beautiful plant of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

## ROSES.

T. RIVERS has just completed his descriptive Catalogue of Roses for the present season, which will be sent free per post on application to all known correspondents; strangers enclosing two postage stamps will be supplied with a copy post free. In this Catalogue, only the most select Roses are inserted, and it will be found an efficient guide to the amateur. A descriptive Catalogue of Fruits will shortly be ready. Nurseries, Sawbridgeworth, Herts, Sept. 17.

## GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES AND SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, AND GLASS SHADES, to JAMES HETLEY & Co., 35, SOHO SQUARE, LONDON.

See *Gardeners' Chronicle* first Saturday in each month.

## TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, &amp; SANITARY WORKS.



PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combined ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE,

HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

## GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

SHEET SQUARES.	CROWN SQUARES.
In Boxes of 100 feet.	In Boxes of 100 feet.
Under 6 by 4	... .. £ 8 6
6 by 4, and 6 1/2 by 4 1/2	... .. £ 10 0
7 by 5, 7 1/2 by 5 1/2	... .. £ 11 0
8 by 6, 8 1/2 by 6 1/2	... .. £ 12 0
9 by 7, 9 1/2 by 7 1/2	... .. £ 13 0
10, 14 by 10	... .. £ 14 0

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3 1/2d. per square foot, according to size.

21 oz. " 3 1/2d. to 5d. " " "

26 oz. " 3 1/2d. to 7d. " " "

Squares for Orchard Houses, on Mr. Rivers' plan, 20 by 15, 20 by 14, 20 by 13, and 20 by 12 always on hand. Cases of Sheet-Glass, size about 40 by 30, 16 oz. to the foot, 21s. 2s. per Case of 200 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoy's Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for

Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

## ESTABLISHED MORE THAN 100 YEARS.

THOMAS MILLINGTON, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.

WAREHOUSE, 87, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long.

16 ounces ... 3d. per foot.

21 ounces ... 4d. " "

26 ounces ... 5d. " "

32 ounces ... 7d. " "

Large Sheet of No. 16 very superior, packed in cases of 100, 200, and 300 feet, at 2 1/2d. to 2 3/4d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured.

Glass Shades, round, oval, and square, for Clocks and Ornaments, Fern Shades and Dishes.

WINDOW BLINDS of every description, Bird-cages, Aviaries, and Wire Work of all kinds, for Game and Garden Fencing, and Fancy Articles.—W. RICHARDS, late Copland's Manufactory, 370, Oxford Street, London.

## BAKER'S FOUNTAINS.

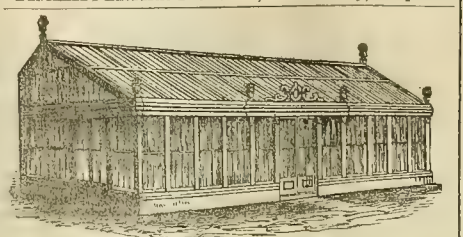
THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.

MESSRS. BAKER can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

## MAW'S ENCAUSTIC TILE PAVEMENTS.

MAW & Co.'s BOOK OF DESIGNS of this Durable and Beautiful Production of Medieval Art, in every style suitable for Churches, Entrances Halls, Passages, Conservatories, and every description of Private as well as Public Building, sent post free. Designs to any given dimensions and estimates without charge. Samples at list prices, or returnable by carriage paid.

BENTHALL'S Encaustic Tile Works, near Broseley, Shropshire.



## HOTHOUSES, CONSERVATORIES, &amp;c., made

and fixed complete, at a considerable reduction. CUCUMBER and MELON BOXES and LIGHTS of all sizes, made of the best materials, glazed and painted complete, kept ready for immediate use, packed and sent to all parts of the kingdom. Reference may be had to the nobility, gentry, and the trade in most of the counties in England.—JAMES WATTS, the House Builder, Claremont Place, Old Kent Road, London.

## WARMING BY HOT WATER.

CONSERVATORIES, HALLS, STAIRCASES, CHURCHES AND SCHOOLS, SHOPS, WAREHOUSES, &c., warmed on the most improved and economic principles. BENHAM & SONS, 19, Wigmore Street, London.

## DRAWING-ROOM STOVES.

THE LARGEST AND BEST SELECTION of Stove-Grates, Fenders and Fire-irons, for Drawing-rooms, Dining-rooms, Bed-rooms, &c., always on view. BENHAM & SONS, 19, Wigmore Street, London.

## FLAVEL'S PATENT KITCHENER.

AN EXCELLENT COOKING APPARATUS, which obtained the Prize Medal, with Special Appropriation. BENHAM & SONS, 19, Wigmore Street, London.

## THE COTTAGERS' STOVE

Is capable of Roasting, Baking, Boiling, and Steaming 100 lbs. of Meat, and 100 lbs. of Potatoes, with a consumption of only 10 lbs. of Coals. It is made in two sizes, and with open or close fire, as desired.

Small size ... .. £2 10s.; with Boiler ... .. £3 5s.

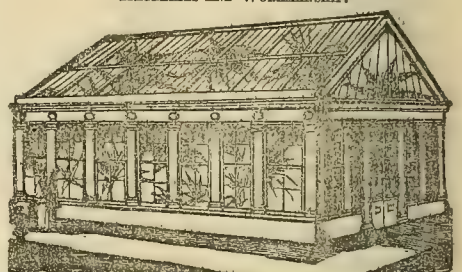
Large size ... .. £4 10s.; with Boiler ... .. £5 5s.

BENHAM & SONS, 19, Wigmore Street, London.

GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. 14-inch Greenhouse Lights, at 3d. per foot; 2-inch, at 4d. per foot. The Trade and Merchants sending Sashes to Australia supplied at wholesale prices. List of Prices by enclosing two postage stamps.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



## GRAY AND ORMSON, Danvers Street, Chelsea,

London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

## HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,



## HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sort.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.

FRIGI DOMO, patronised by the Horticultural Society and the Zoological Society, a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, in 4s. 6d. per yard run, of E. T. ARCEB, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.



## G. H. BUNNEY, NURSERYMAN, &amp;c.,

Stratford, Essex, and Bedford Conservatories, Covent Garden,

BEGS TO OFFER THE FOLLOWING, THE SELECTION BEING LEFT TO G. H. B.:-

	s.	d.
70 Azalea indica, 70 sorts ...	3	10 0
50 Do. 50 ...	3	0 0
25 Do. 25 ...	1	17 6
12 Do. 12 ...	1	0 0
Large Specimen Azaleas, fit to exhibit, 21s. to 105s. each.		
12 Achimenes, 12 sorts ...	0	9 0
6 Aplexis, 6 sorts ...	9s.	to 15 0
100 Camellia, 100 sorts ...	10	0 0
50 Do. 50 ...	6	0 0
25 Do. 25 ...	3	0 0
12 Do. Fine blooming plants ...	1	10 0
Large Camellias, from 6 to 12 feet.		
12 Correas, 12 sorts ...	0	18 0
12 Cactus, 12 ...	0	12 0
25 Epacris, 25 ...	2	10 0
12 Do. 12 ...	1	10 0
6 Gardenias, 6 sorts ...	0	9 0
20 Gloxinias, 20 sorts ...	1	0 0
50 Show Geraniums, 50 sorts ...	2	0 0
25 Do. 25 ...	1	5 0
25 Fancy Do. 25 ...	1	10 0
12 Scarlet Do. 12 ...	0	6 0
4 Lilium lancifolium, 4 sorts ...	0	10 0
7 Maranta, 7 sorts ...	2	10 0
10 Stove Passionflowers ...	1	1 0

## ORCHIDEOUS PLANTS.

	s.	d.
ACANTHOPHIPIUM s. d.		
bicolor ...	10	6
ARIERIS odoratum, 15s. to 6s. 6d.		
" vires ...	6	0
" Brookii ...	6	0
" crispum ...	6	0
" affine ...	4	0
odoratum majus, 21s. to 42 0		
ANETHOCILUS		
setaceus ...	21	0
" argenteus ...	3	6
" Lowi ...	42	0
" intermedius ...	21	0
" xanthophyllus ...	21	0
ACINETUM Barkeri ...	10	6
ASPASIA epidendroides ...	10	6
BIFRENARIA aurantiaca ...	10	6
BRASSIA lanceana ...	7	6
" caudata ...	10	6
" maculata ...	7	6
" verrucosa ...	15	0
" major ...	15	0
BRASSIA VOILA glauca ...	10	6
BARKERIA Skinneri ...	15	0
" melanocaulon ...	21	0
" spectabilis ...	31	6
CATTLEYA Skinneri ...	15s.	to 42 0
" crispata ...	15s.	to 42 0
" granulosa ...	21	0
" Mossiae ...	10s. 6d.	to 42 0
" Forbesi ...	5	0
" intermedia, violet lip ...	21	0
" citrina ...	21s.	to 42 0
" candida ...	15	0
" labiata ...	42	0
" crassa purpurea ...	21	0
CAMAROTIS purpurea ...	10	6
CALANTHE veratrum ...	5s.	to 7 6
" folia ...	5s.	to 7 6
" vestita ...	21	0
CYRTOCHILUM		
maculatum ...	10	6
" hastatum ...	21	0
CECYLENE cristata ...	21	0
" fuliginosa ...	10	6
DENDROBIUM nobile ...	5s.	to 21 0
" Pierardi ...	3	6
" pulchellum ...	3	6
" densiflorum, 21s. to 42 0		
" mesochatum ...	15	0
" Jenkinsoni ...	15	0
" formosum ...	21s.	to 42 0
" macrophyllum, 10s. 6d.		
" speciosum ...	5	0
" fimbriatum ...	10	6

A large collection of Cinerarias, Chrysanthemums, Verbenas, Fuchsias, Lobelias, Lychinis, Petunias, &c.; also a collection of Rhododendrons, Hardy Azaleas, Andromedas, and other American Plants. Evergreens, flowering Shrubs, Fruit Trees, Forest Trees, &c.—Letters are requested to be directed to Stratford.

## NEW HOLLYHOCKS.

A. PAUL & SON, NURSERYMEN, Cheshunt, Herts, beg to offer the following New Hollyhocks, which have obtained First Prizes wherever exhibited:-

AGRICOLA (PAUL'S), salmon pink, lively, distinct, and beautiful, producing a fine effect on the spike; begins flowering at 14 inches from the ground. 7s. 6d.

ANNIBAL (PAUL'S), claret, lavender bluish edges, very large; a bold and distinct flower; a little rough, but the best of its colour. 5s.

BEAUTY OF CHESHUNT (PAUL'S), light rosy red, large and very smooth; perfect shape and fine spike. The best Hollyhock known. First Class Certificate from National Floricultural Society. 10s. 6d.

FLAMBEAU (PAUL'S), rich luminous red, of a distinct shade, large and very fine. 10s. 6d.

GLOEY OF CHESHUNT (PAUL'S), clear golden yellow; the finest of its colour. 10s. 6d.

LIZZY (PAUL'S), clear peach, very large, smooth, and finely formed; a magnificent flower. First Class Certificate from National Floricultural Society. 10s. 6d.

PROFESSOR DICK (PAUL'S), bronzy salmon, very close; perfect shape. Certificate from National Floricultural Society. 10s. 6d.

PINK MODEL (PAUL'S), clear pink, fine large flower. 5s.

WHITE GLOBE (PAUL'S), white; exquisite shape; very large and close, producing a spike like "WALTERS GEM." First Class Certificate from National Floricultural Society; ditto from Royal South London Floricultural Society. 10s. 6d.

ZENITHA (PAUL'S), fawn, claret base; rather pockety, but clear, new, and distinct; very desirable till a better of the colour be obtained. 7s. 6d.

N.B.—The set of ten, if ordered together, will be charged 4l. A free pack of Healthy Plants of all the best varieties grown near at hand. A priced Descriptive Catalogue forwarded free by post for one postage stamp.

Respectfully submitted, price 1s., "AN HOUR WITH THE HOLLYHOCK," by WILLIAM PAUL.

## ORCHIDEOUS PLANTS.

	s.	d.
ONCIDIUM lanceanum, s. d.		
" Papilio ...	15s.	to 42 0
" bicallosum ...	15	0
" roseum ...	15	0
" Wentworthianum ...	15	0
" ornithorhynchum ...	10	6
" deltoideum ...	5	0
" pubes ...	10	6
" macrochilon ...	10	6
" reflexum ...	5	0
" sphacelatum ...	15	0
" crispum ...	21	0
" leucocilium ...	15	0
" pulvinatum ...	21	0
" Philisianum ...	31	6
" divaricatum ...	21	0
" Harrisoni ...	10	6
" stramineum ...	10	6
" phymatocilium ...	31	6
" pumilum ...	5	0
" barbatum ...	10	6
" Suttoni ...	10	6
ODONTOGLOSSUM		
" grande ...	15	0
" pulchellum ...	10	6
" citrosium ...	21	0
" Insleyi ...	15	0
PHYSURUS pictus ...	15	0
PLEIONE maculata ...	15	0
" Wallichiana ...	15	0
PHAIUS Woodfordi ...	5	0

## FERN S.

	s.	d.
ADIANTUM Capillus- s. d.		
" Veneris ...	1	6
" cuneatum ...	1	6
" hispidulum ...	1	6
" lucidum ...	2	6
" trapeziforme ...	5	0
" formosum ...	2	6
" venosum ...	2	6
" macrophyllum ...	5	0
" concinnum ...	5	0
" Fovianum ...	5	0
" varium ...	3	6
" Brazilianense ...	3	6
" assimile ...	2	6
" chinensis ...	2	6
" Moritzianum ...	2	6
" pedatum ...	2	6
ASPIDIUM trifoliatum ...	3	6
" pungens ...	2	6
" molle ...	1	6
" augescens ...	2	6
" semulum ...	2	6
" striatum ...	3	6
" falcatum ...	2	6
ASPLENIUM flabellifo-		
" lium ...	1	6
" odontites ...	5	0
" Shepherdii ...	2	6
" radicans ...	1	6
" marinum ...	2	6
" canariense ...	3	6
" eburneum ...	2	6
" cicutarium ...	5	0
" bulbiferum ...	2	6
" Nidus ...	5	0
ANEMIA fraxinifolia ...	2	6
ACROSTICHUM flabelli-		
" forme ...	3	6
" repens ...	2	6
BLECHNUM jamesens ...	2	6
" obtusum ...	2	6
" polydiodites ...	2	6
" angustifolium ...	2	6
" orientale ...	2	6
CASSEBEERA hastata ...	1	6
CENOPTERIS vivipara ...	3	6
CHILIANTEUS micro-		
" phyllis ...	2	6
CYSTOPTERIS Dick-		
" soni ...	3	6
DIPLAZIUM pubescens ...	1	6
" circinale ...	2	6
DAVALIA Dicksoni ...	2	6
DOUGHERTII sagitta-		
" folia ...	3	6
DARPA odontites ...	3	6
FAGEKIA prolifera ...	3	6
GYMNOGRAMMA deal-		
" bata ...	2	6
" ochracea ...	1	6
" chrysophylla ...	2	6
GONIOPHELIUM		
" menisicifolium ...	2	6
GONOPTERIS fraxini-		
" folia ...	3	6
HEMIONITIS palmata ...	3	6
LYCOPODIUM caesium ...	1	6
" denticulatum ...	1	6
" stoloniferum ...	1	6
" ciliolate ...	2	6
" apodem ...	1	0
" caesium arboreum ...	3	6
" umbrosum ...	2	6
" verticillatum ...	2	6
" apothecium ...	1	6
" Schotti ...	1	6
" cordatum ...	1	6
" cuspidatum ...	1	6
" Willdenovianum ...	3	6
" plumosum ...	3	6
" Lincianum ...	1	6
" lepidophyllum ...	2	6
" Poppigianum ...	2	6
NEPHRODUM exaltatum ...	2	6
NOTHOCHLENA dis-		
" tans ...	2	6
" profusa ...	2	6
POLYPODIUM aureum ...	1	6
" Catharinae ...	2	6
" Phyllitidis ...	2	6
" Lappathifolium ...	2	6
" glaucum ...	2	6
" bifforme ...	2	6
" criatum ...	2	6
" PTERIS serrulata ...	1	0
" chinensis ...	1	6
" allosorus ...	2	6
" misor ...	2	6
" tremula ...	1	6
" stenophylla ...	2	6
PLATYLOMA cordata ...	2	6
" rotundifolia ...	2	6
TECTARIA coriacea ...	2	6

NEW & CHOICE FUCHSIAS, VERBENAS, CINERARIAS, GERANIUMS, HOLLYHOCKS, CHRYSANTHEMUMS, ETC., AT VERY REDUCED PRICES.

WILLIAM RUMLEY AND SONS are now sending out the under-named in fine strong plants, hamper included, or free by post, for prepayment, viz.:-

FUCHSIAS.—Purchaser's selection from the following best new varieties of 1853, 18s. per dozen, 6 for 10s. 6d., or 2s. 6d. each; our selection, 15s. per dozen, or 6 for 9s. viz.:-Beauty, Brilliant, Dr. Lindley, Duchess of Lancaster, England's Glory, Glory (Banks), Incomparable, King Charming, Lady Montague, Lady E. Cavendish, Lady Franklin, Mrs. Patterson, Perfection, Purple Perfection, Premier, The Queen, Vesta, &c.

VERBENAS.—The following best new varieties of 1853, 20 for 15s.; 12 for 10s. 6d., or 6 for 6s., viz.:-Garland, Orestes, Middlesex Rival, Discount, Glory, Elizabeth, Mrs. Kirkpatrick, Vesta, Purple King, Lady Franklin, Danecroft Beauty, Purty, Madame Lemonier, Princess Marianne, Madame Barnes, Madame Bouchariat, Madame Ivory, Madame Rougier, Madame Pommeroy, Monsieur Deront, Mdle. Gonet, Fulgorie, Luciane, Souvenir d'Ivry, &c.

CINERARIAS.—The following 12 best new varieties of 1853, for 18s., 6 for 10s. 6d., or 2s. 6d. each, viz.:-Kate Kearney, Loveliness, Charlotte Marguerite d'Anjou, Echanton, Hebe, Syrian, Prince, Rosalind, Duke of Wellington, Agnes Wakefield, Admiration, and Charles Dickens. The following extra fine varieties 10s. 6d. per dozen, or 6 for 6s. viz.:-Alba Magna, Gustavus, Mr. Sidney Herbert, Mrs. Sidney Herbert, Mrs. Charles Kean, Marianne, Magnum Bonum, Nonsuch, Orpheus, Queen of Beauties, Rosy Morn, St. Clair of the Isles, Surprise, Unique, Village Queen, &c.

GERANIUMS.—Purchaser's selection from the following extra fine varieties, 15s. per dozen, or 6 for 9s.; our selection, 9s. to 12s. per dozen, viz.:-Monteith, Ganymede, Painter Improved, May Queen, Generalissimo, Isis, Nectar Cup, Flavia, Village Maid, Beauty of Montpellier, Magnificent, Conspicuum, Grenadier, Gem, Ocellatum, Prince of Orange, Rowena, Aspasia, Christabel, Nonsuch, Echanton (Foster's), Beatrice, Constance, Belle of the Village, Virgin Queen, and Windsor Castle, &c.

HOLLYHOCKS.—The following first-rate varieties, in fine strong plants, 10s. 6d. per dozen, or 6 for 6s., viz.:-Caroline, Walden Gem, Village Maid, Watford Surprise, Bella Donna, Magnum Bonum, Comet, Mr. C. Baron, Conspicuum, Elegance, Eclipse, Rosy Queen, Marquis of Breadalbane, Commander-in-Chief, Venosa Kabra, Queen, Princess Helen, Delicata, Spectabilis, Atorubens, Maiden's Blush, Climax, Formosa, Splendens, Enchantress, Mulberry Superb, &c.

CHRYSANTHEMUMS.—The following superb new varieties, 9s. per dozen, or 6 for 6s., viz.:-large-flowered varieties:—Alcibiade, Astrolabe, Baron Clement, Chevalier Damage, Christopher Colombe, Delicata, Giralda, Léon Faucher, Léon Leguay, Nell Gwynne, Poudre d'Or, Protée, Rautonette, Triomphe du Nord, Versailles Défiance, &c. LILLIPUTIAN VARIETIES:—Ariadne, Beauty of Toulouse, Bouquet Parfait, Cacardo, Cybele, Dame Blanche, Drine Drine, Etincelle, Henderson, La Vapeur, Madame de Merieux, Medee, Quasimodo, Sathaniel, Tacite, Tolson d'Or, Triomphe Uranie, &c.

Geranium Willmore's Surprise, 2s. 6d. each; Tropaeolum Hockerianum and Triomphe de Gand, 1s. each; Plectranthus concolor picta, and Balsamina latifolia alba, 1s. each; Luculia gratissima, 2s. 6d. to 3s. 6d. each.

The above will be forwarded immediately on receipt of a Post Office Order made payable at Richmond.

Gilling, near Richmond, Yorkshire.

## The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 17, 1853.

THURSDAY, Sept. 22—National Floricultural, 3 P.M.

COUNTRY SHOWS FOR THE PRESENT MONTH.—20th: Chesham, Barnley, and North London Dabla.

We are told in the daily papers that the trade in Ground-nuts has become one of very great importance in Western Africa, the barbarous tribes there having taken to cultivating their land instead of occupying themselves with slave hunting. It is said that 900,000 bushels of this commodity have been received in the present year; that the trade has increased of late at the rate of 20 per cent. per annum, and that the amount is still rising. What is the Ground-nut thus suddenly risen into such importance as to attract the serious notice of merchants?

The plant which produces it is a little annual, with oblong leaves growing in fours, and rather large yellow Pea-flowers rising a little way above ground. Botanists call it *Arachis hypogæa*. The plant is one of a class which bury their pods in the earth, when they ripen, instead of raising them into the free air. In order to effect this the flower-stalk, after the flower has passed away, gradually curves downwards, and at length forces its end perpendicularly into the soil, along with the very young pod which is seated there. Having buried itself sufficiently deep, the pod then begins to swell, and when ripe becomes an oblong, rugged, pale brown fruit containing about two seeds, as large as the kernel of a Hazel nut. Such pods are common in collections of unusual fruits; the French call them *Pistache de terre*, in allusion to their resemblance to Pistachio nuts.

At the present day the Arachis is found in a state of cultivation all over the hottest part of the tropics. It is, nevertheless, almost certain that, like Maize, Tobacco, and Pine-apples, it was unknown till the discovery of America, and that every region in the old world where it is now grown owed it to Brazil. So that we have in this plant a further example of the rapidity with which vegetables will take possession of soils when the climate is suitable.

Sometimes the Arachis is eaten; but we agree with M. POITEAU, who has lately published an account of the plant, in regarding it as a very indifferent variety of the nut kind, whether raw or roasted. Its great value is caused by the abundance of oil which it contains. Olive oil, largely employed in dressing woollen cloths, has become too dear for manufacturing purposes. Olive trees have

## AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE OF RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections. Together with a Treatise on their successful management.

The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

## STRAWBERRIES.

## FOUR NEW AND DISTINCT VARIETIES.

NICHOLSON'S AJAX.—Very large and handsome, most exquisite flavour, unequalled as a dessert fruit, and forces well.

NICHOLSON'S RUBY.—Medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; also a good force.

NICHOLSON'S CAPTAIN COOK.—A first-rate market fruit; colour scarlet, very large size, great bearer, and bears carriage well; plants remarkably strong and hardy.

NICHOLSON'S FILL-BASKET.—Nothing can surpass this fine sort as a market fruit; in colour it is of a very bright scarlet; general shape round, gets very large, but never out of shape; excellent for preserving; a tremendous bearer, and will bear carriage a great distance. Plants very robust and healthy.

These splendid Strawberries have been admired by all who have seen them; the two latter for their surpassing excellence as a dessert fruit; the two latter for their size, colour, abundance, and other good qualities as market fruit.

Gentlemen, Amateurs, and Market Gardeners wishing to possess these valuable Strawberries, can now be supplied with well-rooted Plants, by WILLIAM NICHOLSON only, at 1s. per 100; or 2s. each of any two sorts for 12s., box included. Post Office orders made payable at Yarm, Yorkshire.

Egglecliffe near Yarm, Sept. 17.



of late years been unproductive and are disappearing from some of the Italian states; they are now, moreover, reported to be attacked by some kind of mildew, so that a good substitute has become a matter of first necessity. Such a substitute has been found in Ground-nut oil, or oil of Arachis. According to DUMAS it was a house at Marseilles that first thought of importing this substance. Eight or ten years ago 4 or 5 kilos were imported by way of experiment; and so great was the success which attended it, that in 1852 the imports into France amounted to the enormous quantity of 70 million kilos (about 70,000 tons) a figure beyond even that of sugar.

We know little of the cultivation of this plant, except that it requires a temperature much above that of any country north of Lyons. According to GIRARDIN and DUBREUIL it requires good, alluvial soil, or even sandy land which is well watered, and has been heavily manured. In the month of May it is dibbled in lines, so as to leave the plants a foot apart in all directions. As soon as the flowers appear the plants are earthed up, and this is continued as long as growth continues. When the temperature falls to 58° the Arachis ceases to grow, its leaves turn yellow, and it may then be dug. Each acre should yield about half a ton of seed. These produce from 34 to 60 per cent. of good oil fit for burning or for cloth dressing, but not eatable. The cake is very rich in nitrogen, and makes excellent manure; but it is poor in phosphates.

We notice the plant thus at length in the belief that it may prove a profitable crop in all our tropical colonies where there is moisture enough to suit it. In Spain and Algiers it is found to rank among the more advantageous objects of field cultivation.

We have now before us, by the kindness of Dr. PLONLEY, a drawing of the Hop-mould which was made by himself in 1850, and which accords so exactly with AMICI's figure lately reproduced in our columns, that we have not thought it necessary to have it engraved. We have, too, this morning, specimens of Hop-mould from the neighbourhood of Maidstone, forwarded by the same gentleman, which show the *pycnidia* exactly as he has represented them, agreeing precisely with those in the Grape-mould from Milan, published by RABENHORST under the name of *Ampelomyces quisqualis*, CESATI. The oblong bodies with which they are filled, are on an average about  $\frac{1}{100}$  of an inch long, whereas those in the Grape-mould, though they reach that size, are mostly smaller. It is observable in AMICI's figure that the lowest joint of the thread is always transformed into a *pycnidium*, and this accords with our own observations, both in the Grape and Hop-mildew, though the transformation is not confined to one joint of the necklace. The transformation is precisely analogous to that which takes place in the threads of the genus *Antennaria*.

As regards the functions of these bodies, nothing certain can at present be affirmed. The joints of the Oidium state of the Hop mildew readily germinate. Dr. PLONLEY, however, has observed that these joints, both in the Hop and Grape-mildew, in many cases, even when remaining of their normal size, and not transformed into *pycnidia*, contain a number of minute oblong bodies, which germinate in a few hours when kept moist between two glass plates, sending forth, at one or both of their poles, a colourless thread, like a pollen tube; and even where the joints do not burst, the oblong bodies which they contain germinate *in situ*, and protrude their sprouting threads through the walls of the mother cells. It does not appear that AMICI has seen the contents of the *pycnidia* germinate. TULASNE, moreover, has observed organisms precisely like the normal sporangia in *Erysiphe*, as regards external appearance, which bear naked bodies, like the spores of *Phoma*.

The whole subject is surrounded with difficulty, but is full of interest. AMICI, like Dr. PLONLEY, has lately found the *pycnidia* in other kinds of mildew besides that of the Vine. M. J. B.

THERE is enough resemblance between the climate of Antwerp and London to render trials of the HARDINESS OF TREES in the former city interesting to the English. We therefore feel sure that the following abstract of a report from Mr. VAN GEERT to Mr. VAN HOUTTE, on the effect of last winter upon his unprotected evergreens will be read with interest. Mr. VAN GEERT states that his soil is sandy and thoroughly drained. For the sake of better comparison, we have arranged his results in an order different from that in the *Flore des Serres*, where the original is found.

I. PERFECTLY HARDY. — *Araucaria imbricata*, *Arbutus Unedo*, *Aucuba japonica*, *Berberis dulcis*, *Buxus balearica*, *Cephalotaxus Fortunei*, *mas*; *Cerasus Laurocerasus angustifolia*, *colchica*, and *stricta*; *Cerasus Lusitanica*, *Cotoneaster buxifolia*

and *microphylla*; *Crataegus Pyracantha* with white fruit; *Cryptomeria japonica*, *Daphne Cneorum* and *Laureola*; *Elæagnus reflexa*, *Jasminum nudiflorum* and *officinale*; *Berberis aquifolium* and *intermedia*; *Phillyrea oleaefolia* and *serrata*; *Photinia serrulata*, *Quercus Fordi* and *Ilex*; *Saxo-Gothaea conspicua*.

II. LEAVES BROWNED, OR KILLED, BUT NO FURTHER INJURY SUSTAINED. — *Celastrus punctatus*, *Cerasus caroliniana*, *Corynocarpus laevigatus*, *Crataegus Pyracantha*, *Cupressus funebris*, *Daphne Delhayana*, *Euonymus japonicus* and its variegations, *Ilex Perado*, *castaneaefolia*, *cymosa*, *Dahoon*, *Denhami*, and *vomitoria*; *Jasminum triumphans*, *Ligustrum japonicum*, *Magnolia grandiflora* and its varieties, *Berberis Fortunei* and *glumacea*, *Quercus heterophylla*, *Rhamnus Alaternus* and its varieties, *Smilax laurifolia* and *rotundifolia*, *Stranvesia glaucescens*, *Viburnum Tinus* and its varieties, with *lucidum* and *pubescens*.

III. BRANCHES PARTLY KILLED, BUT AGAIN PUSHING. — *Ardisia japonica*, *Azara dentata* and *integrifolia*, *Benthamia fragifera*, *Callicarpa japonica*, *Escallonia canescens*, *floribunda*, and *grandiflora*; *Garrya macrophylla*, *Kadsura japonica*, *Laurus nobilis*, *Philopodium rigidum* (?).

IV. KILLED. — *Barleria buxifolia*, *Berberis pangerangensis* (?), *Cleyera japonica*, *Colletia horrida*, *Crataegus reticulata*, *Decumaria barbara*, *Elæagnus macrophylla* and *undulata*, *Escallonia caracasana*, *macrantha*, *rubra*, and *stenopetala*; *Euonymus citrifolius*, *Garrya laurifolia*, *Ilex gigantea*, *Rhamnus californicus*, *Viburnum Awafuki*.

This report is dated July 10, 1853.

#### MANAGEMENT OF CIDER APPLE TREES.

(Continued from page 564.)

*Choice of the Situation and Soil for a Nursery.*—The situation of a nursery should be sheltered from high winds, but at the same time it should not be so near any plantation of large trees as to be in danger of its soil being invaded by their roots. If the soil at our disposal is argillaceous, compact, and gently sloping towards the south, that situation is the best of any; but if the soil is light and dry, a level surface, with a northern exposure, is to be preferred. In strong land, having a flat surface, and a clayey or impervious subsoil, the trees become infested with lichens or moss; in sandy or gravelly soils they languish, and in many cases the extremities of the shoots die off every year; whilst they are subject to chlorosis (yellowness) in soils that are too calcareous, that is to say, containing much chalk or carbonate of lime. From what has been stated, it will appear that the nature of the soil and aspect are not matters of indifference with regard to the success of a nursery. When the trees from a nursery are intended to be planted in its own neighbourhood, the fittest soil to establish it on is that which approaches nearest in its nature to that of the greater part of the ground in the locality, because the young trees will not find any change in the elements of their nutrition when they are transplanted, and this greatly assists their taking root. For a seedling nursery, a soil rather light than strong is generally preferred; but for a training nursery, land which has a greater degree of tenacity, or that contains a greater proportion of clay than of sand, is the most proper; if it is not calcareous the addition of marl would be beneficial.

Having made choice of the situation, we must proceed to trench the whole of the ground. This operation should be performed at a dry time of the year, such as August, September, or October, in order to avoid spoiling the ground by working it when wet. The surface should be left rough, that the ground may be ameliorated by exposure to air and light, and that it may become more friable.

Fourteen to sixteen inches is a sufficient depth for the trenching of a seed nursery, because the plants do not remain long in it; and 20 inches would be a good mean for a training nursery, for if the trenching were very deep it would cause the trees to become tap-rooted, and they would not readily take root when transplanted.

Whatever be the depth adopted in trenching, the different layers of earth should be mixed, in order to obtain a soil as nearly homogeneous as possible; but if we operate on pasture land the turf should be placed at the bottom of the trenches. Compost and manure should be employed with discretion when they are judged necessary. Animal and vegetable manures, reduced to the state of a finely divided mould, or humus, suit the seedling nurseries perfectly well, because these moulds, being plentifully spread and well incorporated with the soil, to the depth at which the seeds should be sown and put forth their roots, facilitate, and even induce, quick germination and a more satisfactory development. But a training nursery should not be thus treated. Manure, especially hot stable dung, should be only very sparingly applied, because nothing has a greater tendency to produce canker on young Apple trees than too rich, too highly manured, or too moist ground.

Although there may be no advantage in raising the Apple trees ourselves which we intend to put into the nursery, and although we may often do better by purchasing the quantity of plants that is required, still we think it necessary to say a few words on the manner of sowing the seeds, because some persons have plants from vigorous trees, which are in various respects

remarkable, and from which they hope to obtain good varieties, with the view of advantageously replacing those that become more and more diseased and unproductive.

*Preparation and Sowing of the Pips.*—The pomace of Apples is taken and rubbed between the hands in a tub of water, so as to separate the pulp from the pips. After allowing the water to remain a short time to settle, the contents of the tub or other vessel are poured off, so as to get clear of the pomace and bad seed. The pips that are at the bottom of the vessel are the only ones that should be made use of. They should be well dried, and kept in a dry place till they are sown. The sowing should be made immediately the hard frosts are over, because the seed of the Apple, like that of the Pear, does not long retain its germinating power.

The ground having been well prepared, divided, and sufficiently manured with decayed manure, drills are made about 1 inch in depth, and from 7 to 9 inches apart. (The plough and harrow are not employed in these sowings, except when they are made on a very extensive scale, as in some communes of Rumoi.) The seeds are then put in the drills, and are covered by a rake. If the ground is dry, it is made firmer with the roller or the back of a spade.

We may also sow broadcast, but weeding is performed with greater difficulty; and the stirring of the soil, which is so beneficial and easy in the rows, is nearly impossible in broadcast sowings.

In whichever way the sowing has been made, the ground, if of small extent, should be covered with decayed manure, or with fine litter, so as to keep the soil moist, and prevent the surface from drying and cracking. We may sometimes succeed by merely spreading the pomace upon the ground, to which it serves as a dressing, and forking it in, together with the pips it contains.

When the young plants are some one or two inches high, the weakest are thinned out, if possible, in the evening before rain; but failing that, the ground should be watered, in order to consolidate it about the roots.

The culture, during the growing season, consists in weeding and frequent stirring of the ground, in order to keep it loose.

When the plants are one year old they are chosen for the training nursery; for Apple trees selected at that age are preferable to older ones.

*Transplantation and Choice of the Plants.*—In order to obtain the plants with all, or nearly all, their roots, an open trench must be made. The strongest should not be pulled up by the hand, as is frequently the case, because a part of the roots would be broken and left in the earth. In general the plants should not be taken up until we are ready to plant.

At the same age, the stoutest plant, not the tallest, is the best, that is, one which has the best roots and that has had the most air and light in the nursery, because not having been crowded and drawn up by its neighbours, such plants have thicker and stronger stems, their roots are also more numerous and spreading. This shows us that it is hazardous to sow too thickly, as the plants produced would be slender and unprovided with lateral roots.

*THE TRAINING NURSERY.*—*Time of planting, preparation of the roots.*—*Distance between the plants.*—In light soils, as well as in those of moderate tenacity, planting should be performed immediately after the leaves have fallen in November, or the beginning of December; but in argillaceous soils which require to undergo the ameliorating effects of frost and thaw, it is considered preferable to plant in February or March, as the excess of wet in winter might prove injurious to the roots.

The preparation or dressing of the roots consists in shortening them a little, and also in taking off the extremity of the tap root, if there is one.

The distance between the plants should be the same every way; but the necessity of turning the soil to account, and maintaining an easy access between the rows, as well for air and light as for the workmen, generally causes more space to be left between the rows than between the plants in the row.

As the rearing of Apple trees, till fit for planting out, usually occupies from eight to nine years, 40 inches between the rows and from 20 to 24 inches between the plants in the rows, appear to be sufficient. By this arrangement, air and light penetrate much more easily along than across the rows. In determining the direction of the rows, the nature of the soil should also be considered. In light soils, where it is requisite that the trees should protect each other from drought and from the heat of the sun, the direction of the rows should be from east to west; whilst in wet cold soils, the rows should run from north to south, in order that the noon-day sun may penetrate between them and warm the ground.

*Mode of Planting.*—Having traced the direction of the rows, we proceed to plant either with the spade or dibber. Planting with the dibber is only suited to plants having tap-roots. The spade is in every respect preferable; it allows us to lay the roots in their natural position, and to cover them with the finest of the earth.

Unless the stem is very tall and slender, it is never shortened the same year that the transplantation takes place. In this case, the third of the stem, or one-half at the utmost, is cut off, in order that it may grow upright; but at the same time a sufficient number of buds is left to produce plenty of leaves, as these encourage the tree to take root by elaborating the sap for the production of numerous small roots.

(To be continued.)



## BOSSIAEAS.

SOME of the species of Bossiaea deserve to be classed with the most beautiful of our greenhouse plants, and are indispensable in every well furnished collection. All the sorts are profuse bloomers and not difficult to cultivate, but they are subject to the attacks of red spider, which must be carefully guarded against, for if once it obtains a settlement it is afterwards eradicated with much difficulty, and it soon disfigures the most vigorous specimens.

If healthy plants are obtained at the present season, they will require merely the ordinary treatment of greenhouse plants during the winter, but if they are found to be pot-bound they should be afforded a small shift, and be placed in the closest part of the house for a month or so, in order to induce the formation of fresh roots. It is, however, advisable to avoid shifting at this season, and unless they are suffering from want of pot-room it will be better to defer the operation till spring. Young plants should then be encouraged to start into growth early, so as to secure a long season. Therefore about the beginning or middle of March, place them where the temperature may average about 45° at night and from 55° to 60° by day, with a circulation of air, and keep the atmosphere as moist as can conveniently be done. Have soil in readiness, and as soon after placing them in growing circumstances as possible shift such as may have filled their pots with roots, but be careful to have the balls in a nice moist healthy state when the operation is performed, and keep rather close and warm, maintaining a moist atmosphere after potting, until the plants appear to have taken to the fresh soil. When fairly established in their fresh pots, admit air freely on every favourable occasion, and see that they are placed near the glass, and where they will be fully exposed to light and sunshine. Give a gentle syringing on the mornings and afternoons of bright days, but this should be done after watering the soil, otherwise there is danger of being deceived, the soil appearing moist when beneath the surface it is dry. If red spider should make its appearance, the plants should be laid upon a clean mat, in such a position as to allow of well washing the under side of the foliage without saturating the soil, and repeat this every other day until this pest is fairly overcome. It is advisable to use tepid water, and also to repeat the washing occasionally, although there may not be any evident necessity for doing so, for in this matter more especially than in any other, a preventive is certainly better than a cure.

As soon as the weather becomes sufficiently mild to allow of managing the plants in a cold frame without exposing them to a lower temperature, move them there, which will be a more congenial situation for them than a house where the temperature is kept up by artificial heat. The treatment here during the summer season will consist in giving free admission to air; a slight shade on the forenoons of bright days, and a proper supply of water to the soil, with a liberal use of the syringe. Some attention will, however, be required to accommodate the plants properly, should cold parching winds occur immediately after they are placed in the frame. In this case raise the light on the sheltered side, keep down the temperature by shading, and if necessary, shut up close at night, covering the glass with a double mat. During fine, warm weather, the lights may be left off at night, and the plants will be greatly improved by exposure to the night dews. Vigorous growing examples will probably require a second shift early in summer, and this should be attended to whenever it is necessary. A comparatively liberal shift may be given this time, but in this be guided by circumstances. Beyond a stake for the support of the leading shoot, and pinching out the points of any branches which may take a decided lead, hardly anything will be necessary in the way of training. Discontinue shading and syringing overhead as soon as the heat of summer is over, and let your aim after this be to ripen the wood, and prepare the specimens for winter.

When cold damp weather sets in, remove them to their winter quarters, which should be a light airy situation, near the glass in the greenhouse, and water cautiously while the plants are in a dormant state. If large specimens are desired at once, it will be necessary to grow the plants a second season before allowing them to flower; and in this case they may be treated the second year just as recommended for the first, except that it will be necessary to cut back the shoots, so as to maintain a dwarf compact habit. Specimens intended for flowering should be allowed to remain in the greenhouse, where they will bloom from the middle of April to the end of June, and the blossoms will remain longer in perfection if the plants are screened from the mid-day sun. After blooming, cut the shoots back sufficiently to ensure a compact plant, and as soon as growth commences, give a moderate shift, removing them to the plant ground as soon afterwards as the roots may appear to have laid hold of the fresh soil.

All the varieties seed freely, and cuttings of the half-ripe wood root with little difficulty, but nevertheless those who can obtain well-managed Bossiaea from the nursery will save nothing by attempting the propagation of these plants.

For soil take good turfy peat and light sandy turfy loam in the proportion of five of the former to one of the latter, and add a liberal quantity of sharp silver sand, broken potsherds, or lumpy bits of charcoal, in order to ensure percolation of water through the mass after the decay of the fibre has taken place. *Alpha*.

## Home Correspondence.

*Gomphrena Amaranthus*.—A new annual called by this name was highly spoken of last spring. I should like to hear what any of your readers think of it. I grew it, and consider that our Thistle is as superior to it as the finest China Aster is to the worst common Daisy. People may be deceived once by new humbugs and bad seed, but not twice. Some one making a speech at Sheffield a few days ago said, the British manufacturer, by making an inferior article and giving it a superior finish, got an article of very inferior quality passed off in the market; but as people were getting their eyes open to the deception, the foreigner would cut out the British manufacturer entirely. It will be the same with the British seedsman, who recommends his seeds as something very fine, and when proved they turn out trash. This spring I procured some China Aster seed advertised as being first-rate; it has turned out trash. At the same time I got some seed of China Aster from Paris, which, with the same treatment, has turned out first-rate. The French seed was the same quantity and half the price. I wonder if the English seedsman thinks that next year I and my friends will send to him for seed in preference to the French seedsman. *A. L.* [There is no such plant as *Gomphrena Amaranthus*; the name is an imposition as well as the seed.]

*Onions*.—A crop of Onions grown here, in ground prepared according to the directions given by me at p. 165 of the current year's volume, has been taken up, and from their being of a large size, averaging 11 inches in circumference, curiosity led me to weigh some of them. Two beds, each measuring 32 feet in length by 4 feet in width = 256 square feet, weighed 3 cwt. 83 lbs., which is at the rate of 31 tons, 16 cwt., 63 lbs. to the statute acre. Supposing them to be worth a penny a pound, the value of 1 acre would be equal to 297l. 1s. 3d. The sorts were the White Spanish and Globe. *Francis Symons, Carclew, Cornwall.*

*Sawdust as Manure*.—An individual very fond of flowers, tried to improve their condition by applying old decayed sawdust to their roots; it was so well decomposed that it had the appearance of black mould, but it proved injurious to the plants wherever it was used, although it was nearly 20 years old; it was chiefly the sawdust of Fir wood. *P. Mackenzie.*

*Orchard Houses*.—I think that Mr. Russell's communications (see p. 582) should not be allowed to pass unnoticed. Although an orchard house must be a great acquisition to a garden, yet to dispense with wall trees entirely, in my opinion, would be nothing gained. When I walk round my garden and see a quantity of healthy Peach and Nectarine trees about 10 years old, with on an average 8 dozen fruit on each, it is not easy for me to condemn them. For four seasons past my crop has increased from 4 dozen the first year to the present number. It is true a little trouble has to be taken to guard the blooms in early spring, but for my own part I never use canvas or netting, and the walls here have been well furnished with fruit on all sides. Mr. Russell speaks of a glut of Peaches at one time; but if the trees have been well selected a succession may be kept up over six weeks even in the open air. Our Pears, too, are a good crop, and I find no difficulty in ripening some of the best kinds in this the North Riding of Yorkshire. Easter Beurré, Beurré Diel, Glout-Morceau, Marie Louise, and many others, are quite at home on the walls here, and likely to produce better fruit than in a house. Suppose we plant a Pear tree under glass; we then consider it out of place, and must resort to artificial means to render it fruitful; in the first place it is made to grow vigorously, in order to make a fine tree in a short time; secondly, the roots are cut off to make it produce flower-buds, and if the operation is not judiciously performed when the tree is young, all the fruit drops off without swelling, the first season. Should this not be the case, the produce is small, and ripens prematurely; or to prevent this a greater quantity of water is required at the roots, and then the fruit is deficient in flavour. It may certainly be necessary to root-prune some of the strong-growing Pears planted against walls in the open air, but still this very seldom happens; for the tree has its space to fill up, and long before half the work is done many of the kinds are in their best bearing state. Again, if we dispense with walls, where are we to find well sheltered borders for early vegetables, winter salads, &c.? Having a large family to supply, the borders are to me of the greatest importance. I am in favour of orchard houses, but to substitute them for walls in large establishments, I consider, would be running to extremes. *Thorp Perrow, Bedale.*

*How to convert Coppice into Orchard Ground*.—I have a piece of ground adjoining my kitchen garden, which has always, for aught I know, been a coppice. It lies well to the sun, sloping gently from the garden fence to the south and east. The eastern extremity lies low, and the ground that rises again is, and will continue to be a plantation, which serves to shelter my garden from the east and north. I am preparing to reduce this coppice to garden, or rather orchard ground, for the growth of eating Apples, and I want to ask if some of your authorities will give me their advice as to my proceedings. The soil is clayey, running down to the stone brash. 1st. Should I drain, and if so, how deep? 2d. I have burnt the super soil of the lower parts of my kitchen garden with good effect; would such a process be advisable? 3d. What is the best mode of planting, training, and grafting my trees, &c.? 4th. What sorts do you recommend? 5th. Again, 5th. Shall I cultivate the soil

between the rows of trees, and how long should such cultivation continue, and what is it best to grow? It is all rough at present, not fully cleared, but I hope this winter to get the soil in such a state, that I must determine on draining or not. I live 30 miles south of Bath, in a cider country. *Jack.* [We hope some correspondent will favour us with a practical reply to this enquiry.]

*Variegated Plants*.—In your paper of the 27th of last month, p. 551, M. Carrière, speaking of variegated leaves, says, "If we examine plants with marginal variegation, the law changes, and under whatever condition they are, the variegation is permanent." The inclosed leaves are from a *Rhododendron* plant, which is variegated, and I should consider the variegation to be marginal, yet there are upon the same plant many leaves of a dark green healthy colour, and about double the size of those that are variegated; in some cases where the branches fork, the one half of the fork has variegated leaves and the other the common green leaves. Will the dark purple spot on the leaves of *Coleus Blumëi* be reckoned a diseased part of the leaves? [No.] This season I found a plant of the common Nettle of a dwarf habit, with leaves marked somewhat similar to the *C. Blumëi*, but the ribs of the leaves on the underside were much longer than they are commonly met with in the Nettle leaf. *P. Mackenzie.*

*Anacharis alsinastrum*.—In reply to your "correspondent, who announces (at p. 581 c.) the discovery of this pest "in a pool about three miles up the river Severn from Worcester," and "how it got there cannot imagine," I would observe that, in the letters which I published last year on this remarkable plant, I stated that "when once introduced it would, in a few years, inoculate any connected water system, from one end to the other;" and I added that "if any one would take the trouble to look at a good map of England, it would appear clear that there was hardly a spot so well calculated as a centre from which to inoculate our English rivers as Rugby or the Watford Locks, near the Crick railway station," (these being the places in which it was then found in profusion). "From such a point, situate at an altitude above the sea of 350 feet, and very nearly at the line of watershed which divides England into the river basins of the Severn on the west, the Trent on the north, the Ouse on the east, and the Thames on the south, a few detached springs, travelling different ways, would enter the Severn through the Avon, *via* Rugby and Warwick," &c. &c. Now, assuming, in the first place, that no mischievous botanist residing at Worcester has converted the before-mentioned "pool" into a botanic garden for the nonce, it is not improbable that the weed may have "entered the Severn through the Avon, *via* Rugby and Warwick," as suggested, and been carried up the river by boats or timber to Worcester; or it may have entered above Worcester by some branch of that intricate net-work of canals which connects the Trent with the Severn, and covers with its reticulations the country round Wolverhampton and Birmingham. I do not know whether the *Anacharis* has yet been found in that neighbourhood, possibly it would take a long time to reach that quarter, owing to its great altitude above the sea; but so sure as there co-exists water communication and canal traffic between one part of England and another, depend on it the inoculation of the whole from any part is only a question of time. Now I am writing on the subject, I should like, through your journal (interesting alike to botanists as to horticulturists and farmers, from its happy mode of blending abstract science with useful art, and making them each illustrate and assist the other), to invite such of your readers as are botanists (and they must be many) to be good enough to communicate to me, by post, say in the course of the next month, all the localities in their respective neighbourhoods in which they know the plant is at the present moment to be found; such a census would show us the progress the enemy has already made, and similar returns in future years would further indicate, with unmistakable clearness, the "march" of the invader through the United Kingdom. *Wm. Marshall, Ely, September 13.*

*Vitality of Plants*.—It is surprising what efforts some plants, or parts of plants, will make to save, as it were, their lives, when disease or serious accidents befall them. A branch of a Gooseberry trained against a wall became diseased near the ground, and began to die upwards gradually, but the top of the branch made a struggle for life, and threw out roots into the wall between the joints of the bricks, and in that dry situation found some means to support itself; the dead wood was cut out and the living part left near the top of the wall, and there it remains a living plant. *P. Mackenzie.*

*Dried Potato Sets*.—In the *Chronicle* of the 13th August were inserted some observations with experiments of mine on the planting of dried Potatoes, agreeably to Professor Bollmann's plan. With me the experiment has not sustained his experience, for every plant shows in leaf and haulm as much of mildew as Potatoes do that have not been so desiccated. Nor has my experiment of stimulating the plants at a late period of growth been attended with better success; they became affected at the same period, and as badly as others which had not been so treated. My Ash-leaved Kidney Potatoes, under three different forms of treatment, have all become affected at the same period, and to the same degree, with mildew; and this, although in one of them the Potatoes were planted three weeks before the others. Of these a drill was planted, highly manured, the end of March, and three weeks afterwards others were



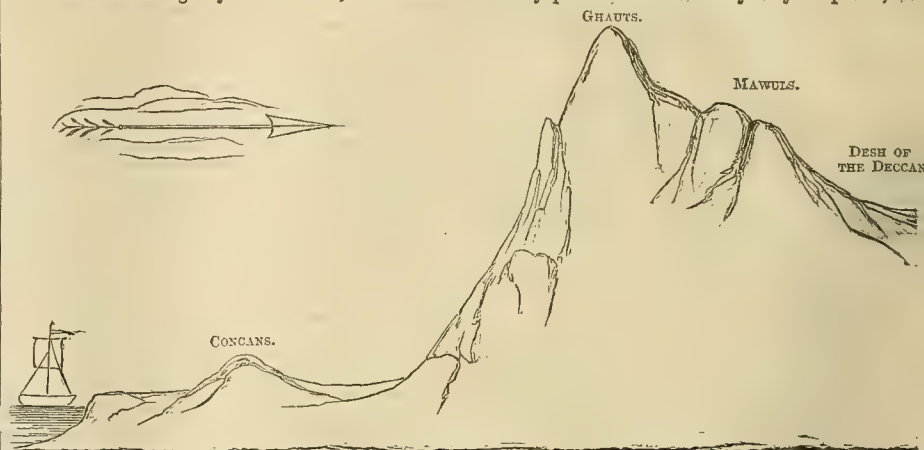
planted in double rows manured only with bog mould (the ground had been manured and cropped with Cabbage last year), some of these when in blossom received a good dressing of dung, which was covered from every second interval so as to form narrow ridges of two rows each. Except on the supposition that the spores of the fungus, or the incipient cause of whatever else it may be that effects the destruction of the Potato, reposes in the tuber, I cannot see how the drying of the seed tubers, or submitting them to any other process, can protect the Potato; and I think this very doubtful indeed. It may derive some support from the rust that early appears, as has been stated in the *Chronicle*, on the stem, immediately below the surface, and which I also saw; and at the same time thought very suspicious, in 1846; and this opinion may also be more strongly supported by the fact of no previous indication of disease being observed in 1845 on the leaves or stems, while a general destruction of the tubers took place after they were dug out and stored. And again, also, that some sorts of Potatoes longer and more effectually resist the disease. However, all these phenomena may have occurred without being observed; but, if my recollection is perfect, I saw in 1845 patches of prematurely withered plants, then, however, exciting no attention. But if this destruction of the Potato originate in the leaves, by the deposition of the spores of mildew on them, which I must think is a better sustained hypothesis, we cannot suppose any drying of the tuber can prevent the lodging of these spores, or after their deposition deprive the fungi of the moisture essential to their growth. I see at certain periods alternately later and earlier in their annual appearance, but regular as the sun in his course, the undersides of the leaves showing mildew spots, then the leaves and the leaf stems become dried up, and then, generally, the plant stems show black spots, brittle and dry; shortly after the tubers begin to show mildew spots, the whole proceeding on to putrefaction. The peculiar smell emitted from the diseased fields seems to be that of the putrefaction of a peculiar vegetable substance. I can well imagine that a parasite drawing the proper elements of its own construction from a plant shall cause a disturbance in the remaining elements, and a consequent deleterious combination of them which shall effect the decay of the plant. If we are to treat the disease as arising from mildew, our efforts, rather than being directed on the tuber, should be applied to effect the destruction of the spores, and, when they have struck, that of the mildew; and, possibly, when neither of these things are done, the supplying the plant with those elements of food which the parasites deprive it of, so as to maintain a healthy equilibrium in it and aid its vitality in the efforts which it ever appears to make. In this neighbourhood (Granard) the leaves of the Potatoes are very much blackened, and the tubers are becoming diseased, but very slowly. The crop is so abundant that we can afford to lose some; and indeed swine and fowl will be able to consume as many of them as may not be fit for man's food. *J. M. Goodiff.*

### Foreign Correspondence.

CLIMATE OF INDIA.—(Nassiet, April 1st, 1853).—I have been very unlucky in having been stationed since I arrived in India, in non-orchidaceous countries. First, Deesa, on the edge of the Great Desert; then Scinde, on the other side of the Desert—both countries remarkable for the predominance of *Acacia arabica*, which is no companion of Orchids, nor do they dwell together. In Scinde there was only one Orchid, *Zeuxine bracteata* (Wight's *Icones*), growing in the cold weather only, under Tamarisk bushes or in batches of Sugar Cane. In Beloochistan I found also only one Orchid, an *Eulophia*, growing in marshy ground, in the Gundava Pass, and which I have reason to believe is the plant from whose nodules a starch is prepared, used instead of glue and paste by shoemakers and carpenters, in Afghanistan. It is mentioned by travellers, but I have no books at hand now to give references, being on a tour. And here I am now in the Deccan, which to my surprise turns out to be the hills of Scinde; plus a monsoon rain, and plus the presence, in the back ground, of the lofty Ghauts, on whose crest so much rain falls that springs of water remain all the year. The Deccan about here is elevated 2000 feet, and has 16, 20, 25 inches of rain, while the Ghauts, ten miles off, have 100, 150, and 200. In fact they stop it all.

The monsoon wind and rain blow across the narrow Concan and deposit lots of rain there, 50, 80, 120 inches, and then meeting the long range of the Ghauts, are robbed by the crests, and little is left for the Desh or level country of the Deccan; and thus it is that you might find *Gutierrezia*, *Laurine*, *Zingiberaceae*, *Orchideae*, *Begoniaceae*, if you botanised on the Ghauts in the rains. In the Mawls these would cease, but still plenty of vegetation; as you pass inwards and eastwards, you would come to *Acacias*, *Euphorbia nereifolia*, *Boucerosias*, *Capparis aphylla*, *Indigofera*, *Tephrosias*, *Balanites Aegyptiaca*, and all those peculiar plants which delight in a hot dry atmosphere, and which are referable generally to two types—the twiggy and leafless—or the fleshy and leafless. So I can get you no Orchids at present, for they not only do not grow (except one or two terrestrial ones) about here, but they refuse to live in the open air—I mean in the Dapoorree and Heura Gardens about Poona, for I believe further south about Belgaum and Dharwar the climate is far more moist and agreeable, and there they may succeed. In the rains here it is

very agreeable; the hills turn rapidly green, the tufts of Grass sprout out, the little annuals come up, the air is refreshing, the sun obscured by clouds, and could we have this all the year it would be very pleasant. But in September the rain ceases, and almost before our eyes the green carpet of vegetation turns brown and crisp under the desiccating rays of the sun, now untem-



pered by moisture and clouds. Upon this in December comes the cold weather and completes the destruction. Then in March the hot season returns, and till the beginning of June it is trying weather, with hot, dry winds, and not any moisture to alleviate. *S.*

### Notices of Books, &c.

*The Family Tutor and School Companion* is not very fit for schools, unless its general information is more accurate than the Botany in a number (68) now before us. *Aster Tradescanti* is not *A. Tradescantia*; there is no such genus as *Tigrida*, although we have a *Tigridia*. *Gentiana Amarella*, not *amarella*, is not enough a garden plant to be introduced among familiar objects. The roots of *Colechicum* have no medicinal value, although the corms have. For the young, minute accuracy is indispensable; however slight the information offered, it should be exact.

In a skilful *Analysis of Deep Well Waters*, by Messrs. Clarke and Medlock, we find the following remarkable statement:—"A striking feature in the foregoing analyses is the almost complete identity of the water from the sand and that from the chalk in the well at Westbourne Park. This circumstance proves that the so called chalk-water supply to the deep wells of London is not entirely confined to that stratum. The great similarity between the Westbourne and Russell-Square waters, and the levels at which they stand in the wells being the same, show that both wells are supplied by the same water-stratum. These waters also agree very closely in composition with the water of Trafalgar Square. On comparing the analysis of the Hanwell water with those of the deep well-waters of London, the difference between them is comparatively trifling, showing an evident connection between them, notwithstanding the great difference of level at which the Hanwell water stands as compared with the wells of London. This would seem to indicate the existence of a basin to the west of London, the water in which stands at a much higher level than the water under London, and from the overflowing of which the deep wells of the metropolis derive a considerable portion of their supply. We are indebted for this suggestion to Mr. Henry Marten, who examined the district for the West London Water Works Company."

*A Sermon on the Education of the Poor*, by the Rev. J. A. Emerton, D.D. (Longmans), being published in aid of the funds of the Brentford National Schools, is thus removed from the pale of criticism. The following passage is the best we can find:—"This leads me to the subject which it is my duty more particularly to place before you—the education of the children of the poor in your national schools. We may be ready to acknowledge the claims which our poorer brethren have upon us, to give them that wisdom and knowledge which will prepare them to perform efficiently the duties of this mortal life. And when we look abroad and see the wonderful changes which are going on around us—the poor, by the recent discoveries of wealth in our Australian colonies, raised as the psalmist expresses it, from the dunghill, and suddenly become princes—the stories of Eastern fable suddenly become realities—the earthen cups changed into vessels of gold—the homely fare changed into luxurious indulgence—the dust of the earth transformed into golden grains, and consider that this is but the commencement of mightier events; we may feel that we ought to do something, if possible, even in a temporal view, for those who may have the opportunity of availing themselves of those treasures which may be hereafter laid open to them, that they may not waste the talent which is committed to them in prodigality and folly, but be enabled to raise themselves and those around them in the scale of society, and take that place of usefulness and greatness which their acquired riches will enable them to occupy. When, too, we see the vast discoveries that have been made in the arts and sciences, many of

them by the children of the poor, we may be led to think that we ought, as far as possible, to cultivate that intellect which may be destined for the highest expansion—but of one thing we must be quite sure, that it is our duty to give them that wisdom and knowledge which will direct and guide them aright in every position in which they may be placed, and

enable and induce them to make use of all the other advantages which they may possess, in promoting the glory of God and the well-being and happiness of their fellow men; for this is the only true wisdom, the only true knowledge. This is that wisdom of which Solomon himself speaks, when he says, 'Wisdom is the principal thing, therefore get wisdom: and with all thy getting, get understanding. Exalt her, and she shall promote thee—she shall bring thee to honour when thou dost embrace her.'"

*Illustrations of Orchidaceous Plants*, No. I., edited by T. Moore (Willis), contains five coloured plates of the genus *Stanhopea*, republished from the "Botanical Register," and an account of the species of that genus, in preparing which the editor has made use of the "*Folia Orchidacea*" much more freely than either custom or good taste can sanction.

### New Plants.

5. *SOBRALIA FRAGRANS*.  
*S. humilis*, glaberrima; caule pedunculato aneipitibus, spatha bifida carinata diphylla herbacea nunc foliacea, floribus parvis parum apertis, labello lobo medio cuneato bilobo lacero lateralibus obsoletis integerrimis, venis 9 lacero-cristatis.

This curious and most distinct new species, has flowered with Robert Hanbury, Esq., at his seat at Poles, near Ware. It is scarcely a foot high, with very smooth rather fleshy leaves, perfectly naked, with a short keeled sheath. The stem is two-edged, as also is the peduncle, which bears at the end a pair of unequal herbaceous keeled spathes, which even grow into leaves. The flowers are in pairs, about 1½ inch long; the sepals externally dull, dirty, purplish green, and keeled; the petals are thin, flat, lanceolate, and pale yellow; the lip is of the same colour, but of a brighter yellow, with the middle lobe deeply fringed, and furnished with 9 lacerated crests.

The flowers have no beauty, but are represented to emit a most delicious smell. We are unacquainted with the native country of the plant.

6. *GYMNOPSIS UNISERIALIS*.—Hooker, *Icones Plantarum*, t. 145.

This has been cultivated for some years in botanic gardens, but merits a place among ornamental species. Its spreading habit reminds one of *Ximenesia*, another ornamental plant of the same family; but the flowers are distinguished from those of all other known Composites by the strong odour of Jasmine which they exhale. It thus furnishes a singular instance of a species having sweet-scented flowers in the immense order of Composites, among which, however, we find so many genera with scented leaves.

*Gymnopsis uniserialis*, a native of the plains of Mexico and Texas, is an annual, with numerous branches much sub-divided, spreading, cylindrical, covered with white adpressed hairs slightly tubercled at the base. Leaves stalked, alternate, oval or deltoid, acuminate, irregularly and sharply toothed, three-nerved at the base, the upper side having very short rigid hairs, the under side covered with numerous adpressed hairs, which give it a whitish appearance. The flower-heads stand at the extremities of long scabrous peduncles, which are thickened at the top. The involucre is composed of five or six lanceolate, entire leaflets, of the same nature as the leaves, diverging or reflexed, distant; from the axils of these spring great neuter, oval, yellow, ligulate, entire rays, with numerous nervures, velvety beneath and resting on an abortive bald ovary. The grains are black when ripe, and present no other trace of pappus than a row of extremely short hairs.

This *Gymnopsis* is cultivated like so many other Composite plants. The seeds are sown in the open ground in a good aspect, or in frames, to be pricked out at the end of April. The flowers appear in September. *Decaisne in Revue Horticole*, July 16, 1853, abridged. This seems to be an annual well worth obtaining from Paris.



**Garden Memoranda.**  
MESSRS. E. G. HENDERSON'S NURSERY, WELLINGTON ROAD, ST. JOHN'S WOOD.—The gayest house here at present is that filled with Japan Lilies, all the finer varieties of which are now in full bloom. Great numbers of them are seedlings, which are improvements, both in form and marking, even on *Lilium l. speciosum* itself. The plants are, for the most part, small, but being very profusely in flower, they produce a really striking effect. Among Fuchsias here, none surpassed the Duchess of Lancaster, a kind with pure white tubed sepals, the latter reflexing beautifully, and showing to advantage the pretty rosy pink corolla. It is a late bloomer, and is certainly one of the very best of its kind. We also saw several promising dark sorts; and of these we hope to give some account hereafter. In the stove was a pink Gloxinia with inverted bell-shaped flowers, like those of *Fyflana*. The bottom of the bell is thickly covered with minute crimson dots on a white ground, and the deep pink of the throat shades off into a lighter hue as it approaches the top, while the outside of the flower is of a paler colour still. It is named *pecta magnifica*. In this and other stoves were various variegated plants, of which there are great numbers, and among them was a fine specimen of variegated apple bearing a fruit about one-third grown. The variegations are marginal, and about a quarter of an inch broad, rendering the plant, independently of its fruit, which will of course not come to much, a very handsome object. In the same house an *Echites*, said to be called *Pelleri*, was in bloom. The flowers are a bright yellow and very beautiful, and the plant being a good grower, will doubtless be an acquisition. There was also in this stove another continental *Echites*, called *prisoni*, a robust kind, with handsome leaves nearly round in length, and 4 inches broad; it was not, however, in flower.  
The open grounds here have been extremely gay all summer, but the cold nights and wet weather were lately having some somewhat impaired their beauty. Many of the taller growing Gladioli, which have been very fine here, are however still in perfection. A row of *Gandavensis* planted 2 feet apart, and running the whole length of the nursery, has even now a gay and striking appearance; and in a border a little distance in it the following excellent sorts are still good, viz., *Madame Georgeon*, a bright rose self; *Brenchleyensis*, very brilliant kind; *Wellington*, rosy crimson, with yellowish throat; *Splendidus*, delicate fawn striped purple; *Fanny Rouget*, a dwarf rosy salmon with deeper centre; and *Madame Conder*, fiery crimson. These are all good sorts, which, being late flowerers, can scarcely be too extensively cultivated. Of *China Asters* we have had a fine display. They consist, for the most part, of the charming kinds with white edged petals, sent out about two years ago by M. Vilmoren, of Paris. Those here approach nearest the perfection of the grown in France of any we have seen. They are stated to have been sown in pots last April, and in heat, hardened off a little, and then potted out. Some for seed have, however, been in pots all along plunged in the ground, so that in the weather gets unfavourable they can be taken indoors to ripen. In new *Verbenas* there appears to be but little improvement on existing kinds; following are, however, worth attention, viz., *Brilliant*, rosy scarlet, with a white eye; *Souvenir d'Evry*, a way of *Auricula*, but rather better; *Bouquet d'ait*, shaded crimson; *Pompey*, lavender blue; *Inde*, purplish rose, with a light eye; *Vulcan*, plum, edged with crimson; *Ganymede*, rich crimson, with a white eye; *Madame de Stael*, cerise, with a yellow eye; *lateri*, intense velvety crimson; *Azarine*, pale blue, and one which will be very useful, on account of its distinct colour; *Madame Modeste*, carmine; *Madame Thurel*, a lively violet shaded crimson, with a light eye; *Madame Rougier*, delicate bluish, a cream-coloured eye, surrounded by a rosy belt; *Madame Raivier*, orange scarlet; and *Madame de nery*, pink, with a crimson centre. These, with or two seedlings (one of which is creamy white), are what are most worth naming. Among *rhinums* none beats the *Carnation-Striped* *sonni*, and we noticed a pretty sky-blue *delum* of the same name. Among *Chrysanthemums* are still out of doors, some of the *Pompones* have been in bloom some time. The plants are fully grown, and covered with foliage to the very top of the plant. *Perpetual Carnations* are also just coming down, in which condition they will continue all winter. Among them are bulbs marked with only pure whites, scarlets, purples, yellows, and mottled and striped flowers; and, requiring as little attention, no garden should be without a collection of them. They keep a house gay all the year, and are exceedingly useful for cutting for bouquets. Among bedding *Calecharias*, a dark coloured named *Matchless* is worthy of notice; and of *Sultana*, *Compacta*, and *Wellington* here are all in flower. Among reddish browns, *Shanklyana* is the most useful. Of other bedding plants, *Bouvardia aurantiaca* is to be useful; in colour it is almost a

plants should be potted into 8-inch pots, or if seedlings they should have been pricked out into the same sized pot about the middle of August; and as seedlings grow quicker than offsets, they will bloom about the same time. The second week in September would be a good time for potting them into 4-inch, and the stronger plants into 5-inch pots, and in a month hence give them their final shift—the former into 5-inch, and the latter into 6-inch pots. The roots will quickly fill the pots, consequently they will require a plentiful supply of water, for if stunted in this respect while growing, they will lose the best of their foliage, on which their fine appearance so much depends, and what would have been flowering shoots will degenerate and become "broody" and be entirely worthless for blooming purposes. The soil I have found them thrive best in consisted of two-thirds good turfy loam, one-third rotten dung thoroughly decomposed, and a little rough sand; pot firmly, and drain the pots well, from first to last a good cool pit in a sunny aspect will both grow and bloom them. *R. M., Kingsdown, Bristol.*

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY, Sept. 6.—This, the last of the Society's meetings for this year, was well attended, and as an exhibition it was considerably better than the autumn display of 1852, both as regards the quality and quantity of the subjects brought forward. Miscellaneous collections of plants were plentiful and good, but the chief feature was of course the Dahlias, some of the specimens of which were exceedingly fine. We noticed Sir Charles Napier, Duke of Wellington, Miss Caroline, Lilac King, Plantagenet, Sir Robert Peel, Sir J. Franklin, Queen of Beauties, Queen of Lilies, Essex Triumph, Bob, Sir F. Bathurst, and Amazon, in excellent condition. The newer kinds do not appear to be quite so large, perhaps as Dahlias exhibited a few years ago, but they are much closer in the petal, deeper, and certainly, to our taste, much more beautiful. The first stands were deservedly much admired. The awards were as follow:—Amateurs, 24 blooms: 1st, Mr. J. Robinson, Pimlico, with Duke of Wellington, Admiral, Essex Triumph, Thames Bank Hero, Bob, Sir C. Napier, Scarlet King, Imbricata, Malvina, Miss Caroline, Cobden, Nepaulese Prince, Sir R. Whittington, Absalom, Red Gauntlet, Fearless, Sir R. Peel, Scarlet Gem, Mr. Herbert, Sir F. Bathurst, Annie Salter, Triumphant, Shyllock, and Morning Star; 2d, Mr. James, Stoke Newington, with the following varieties, in addition to the sorts named in the first stand, viz., General Faucher, El Dorado, Yellow Standard, Mr. Selden, Sir J. Franklin, John Davis, G. Glenn, Mrs. G. Bacon, Edmund Foster, and Louise Glenn. 12 Blooms: 1st, Mr. Battie of Erith, with Duchess of Kent, Sir J. Franklin, Sir E. Peel, Duke of Wellington, Barmad, Sir C. Napier, Queen of Whites, Bob, Elizabeth, Sir F. Bathurst, Fearless, and Sir R. Whittington; 2d, Mr. Holmes, Hackney, with Sir R. Whittington, Mrs. G. Bacon, Sir C. Napier, Duke of Cambridge, Wellington, E. Foster, G. Glenn, Sir F. Bathurst, General Faucher, J. Davis, Cobden, and Mr. Selden. Fancy varieties—12 blooms in 8 varieties: 1st, Mr. J. Robinson, with Mrs. Hansard, Phaeton, Gloire de Kain, Triumphant, Duchess of Kent, Empereur de Maroc, Maid of Lodi, Floral Beauty, Laura Lavington, and Flora Ivory; 2d, Mr. Edwards, of Holloway, with Mrs. Hansard, Gloire de Kain, Rachel, Laura Lavington, Mrs. Willis, Reine de Belges, Saracen, and Miss Compton. Nurserymen—24 blooms: 1st, Mr. Turner, of Slough, with Bob, Mr. Selden, Queen of Lilies, Sir J. Franklin, Malvina, Thames Bank Hero, Sir C. Napier, Amazon, Duchess of Kent, Miss Caroline, E. Foster, Princess Radzivil, Miss Peers, Mr. Herbert, Sir R. Peel, Exquisite, General Faucher, the Day, Empereur de Maroc, Rose of England, Essex Triumph, Sir F. Bathurst, Wellington, and Queen of Whites; 2d, Mr. Keynes, of Salisbury, with Negro Queen of Whites, Morning Star, Mrs. Selden, Mr. Selden, Beauty of Kent, General Faucher, Miss Caroline, Louise Glenn, Malvina, Douglas Jerrold, Sir F. Bathurst, Model, Queen of Yellows, Capt. Warner, Admiral, Exquisite, Wellington, Magnificent, Lilac King, and Sir C. Napier. Fancy Dahlias, 24 blooms, 15 varieties: 1st, Mr. Turner, with Gloire de Kain, Laura Lavington, Phaeton, Claudia, Duchess of Kent, Zebra, Elizabeth, Princess Charlotte, Lady Grenville, Mrs. Willis, Kingfisher, Kossuth, La Peon, Miss Ward, Spectabilis, Princess Helena, Attraction, and Reine de France; 2d, Mr. Keynes, with Mrs. Hansard, Laura Lavington, Rachel, Mrs. James, Flower of the Day, Empereur de Maroc, Gloire de Kain, Triumphant, Unanimity, Elizabeth, Phaeton, Princess Charlotte, Duchess of Kent, Spectabilis, Nancy, Reine de Belges, Lady Grenville, and Wonderful. In the seedling tent there was a large number of flowers, the majority of which were inferior in quality to those already out; there were, however, a few first-class blooms. Those selected by the censors for certificates were Fanny Keynes (Keynes), pale yellow, tipped with rosy purple, large, and of fine form; Rachel Rawlings (Keynes), peach lilac, of a very delicate shade, and exquisite in form; Kingleader (Holmes), a deep ruby rose, of the finest symmetry; Slough Beauty (Bragg), bluish white, strongly tipped with crimson, full size, good outline, but centre a little confused. There were several good fancy seedlings, which also had Certificates. *Admiration* (Green), white, edged with scarlet, is very attractive; colour well distributed, flower full size. *Leader* (Keynes), a heavy striped flower, full of good size and shape. *Topsey* (Keynes), white and purple, an improvement on *Elegance* (Keynes). *Marvel* (Pope), orange, striped and mottled with red; novel. King of Yellows was also shown in good condition, as was likewise Wyness's Princess Royal, which is an attractive flower. Fair Rosamond and Incomparable *Verbenas*, shown by Mr. Bragg, were fine flowers, as were also Forget-me-Not, Angelina, Triumph, Electra, and Nobilissima, from Mr. Smith, of Hornsey. Hollyhocks were confined to a stand of Seedlings, from Messrs. Paul, who had beautiful examples of the following, viz., *Conspicua* improved, Zenobia, Laura, Flambeau, Pink Model, Sir R. Peel, Lizzie, Prof. Dick, White Globe, and one or two others. Some good specimens of Japan Lilies came from Messrs. Over, Barnes, and Gaines, and there was a nice collection of China Asters from Messrs. Fraser, of Lea-bridge Road Nursery.

SEEDLING FLOWERS.  
HOLLYHOCK: W. R. B. Golden Nugget is new in colour, good in substance, and as far as we can judge from a single bloom a little braced, well formed. We should have liked better, however, to have seen a spike of it.

**FLORICULTURE.**  
CULTURE OF THE CINERARIA.—In order to produce blooming plants in small pots early in February, get of the winter season, the offsets from stock-

Ash tree will be placed in the *Materia Medica* amongst other medicinal plants at present in use as therapeutic agents. Several physicians in France have employed these in the treatment of gout and rheumatism, with a considerable amount of success, and at the present time they are engaged in carrying out their experiments with them, and in further investigation as to the medicinal properties and uses of the leaves of this plant, with a view to ascertaining with accuracy their value as remedial agents in the diseases above mentioned. As might be expected from the part of the plant employed (the leaves), the form of the medicine is that of infusion, prepared by means of boiling water, which is then strained, and subsequently sweetened to taste. *Pharmaceutical Journal.*

*Leschenaultia formosa*.—This beautiful and continuous-blooming greenhouse plant, when well-grown, is surpassed by few; and a little extra attention bestowed upon it will amply repay the cultivator for his trouble. First, procure a nice healthy bushy plant to begin with; examine the roots, and if found in a healthy state, shift into a larger well-drained pot. Prepare for it some rough fibrous light peat, mix with it half the quantity of sharp silver-sand and some rubbly charcoal; when potting, care must be taken not to press the soil down too close, as the roots are of a fleshy nature, and delight in soil where they can extend themselves with freedom. When potted, the plants can be removed either to a cold frame or the greenhouse, where they will soon begin to make rapid growth. Should the weather be bright and sunny, shade them from the mid-day sun; this may be continued through the summer, as they delight in a partially shaded situation. I have seen many plants that have been exposed to the sun become brown in their foliage and unhealthy, and very rarely ever afterwards make good specimens, even under the most favourable treatment. Keeping them close, and shading them for several hours in the day for some time after they have been fresh potted, encourages them to start into growth freely; sprinkle them over their tops in the afternoon before the sun is too powerful, and remove the shading altogether as they advance in growth. Give them a little air by raising the lights behind them and increase the quantity as they become established in their new pots; if they succeed well, they will soon require another shift, which should be given them before the season is too far advanced. Any loose straggling wood that may present itself should be removed, to make the plant bushy and symmetrical in form, and the bloom should be continually picked off them, until they are of sufficient size to form nice specimens, when they may be allowed to bloom. By keeping three or four, a succession of fine blooming plants may be obtained, without allowing either plant to continue too long in flower, which would weaken and ultimately exhaust them; but by keeping a succession of plants, and allowing one to bloom only a certain time, and removing the flower-buds from the others, until they are in their turn required to bloom, will always insure a good succession; and as soon as the plant that has been in flower for some time is succeeded by another, remove all the blossoms from it, and start it into growth, in order to make it ready to take its turn again with the others. It will be found necessary to look diligently after the green-fly, as these plants are very subject to their attacks; and unless looked after very minutely, they would escape the notice of the naked eye, being of the same colour as the foliage. Many plants have been totally destroyed by these pests before the cause was ascertained; and I should advise, whenever an opportunity offers, i.e. when fumigating any other plants, to remove them to the house that is to be smoked, which will prevent them from being attacked, and keep them clean and healthy. When the time arrives for placing them in their winter quarters, a nice light airy situation should be selected for them as near the glass as can be obtained, keeping them turned round every three or four days, to prevent their drawing to one side. Turning often will cause them to make good-formed handsome regular plants; and great care must be taken in watering them during winter, as there are few plants with which I am acquainted that are more impatient of water at that season than the *Leschenaultia*. Little more remains to be done until spring arrives, when they should be again examined at their roots, in order to ascertain whether they require another shift; if found to be in want of such, choose the plant that is required for blooming first, and withhold the potting from it until it has performed its duties, and is succeeded by another; it can then have another pot, picking off all the bloom and buds that are perceptible, and starting it into growth. By this practice there need not be a month in the year in which one of the plants may not be finely in bloom; and as they advance in growth, a little weak manure-water will be found of the greatest benefit to them, in invigorating them; apply it twice every week while they are in bloom, but withhold it throughout the latter part of autumn and the dull days of winter. *W. Barnes, in Turner's Florist, Fruitist, and Garden Miscellany.*

*New Applications of the Wood and Leaves of Coniferous Plants*.—It may be termed a fortunate occurrence, that at a time when the Coniferae have become such universal favourites, and fairly occupy that position in our gardens to which their curious appearance, their strange habit, and their singular foliage entitle them, it should have been discovered that they possess some additional useful properties besides those previously known, proving them to deserve in every respect attention. The increase of literature and international communication has, of late years, produced so great a demand for paper, that rags

**Miscellaneous.**  
*The Leaves of the Ash tree*.—It is more than probable, says the *Dublin Medical Press*, that the leaves of the



have become a rather scarce article, compelling manufacturers to try other vegetable substances for making paper; experiments have been set on foot with the roots of Potatoes, the wood of Willows and Beeches, the leaves of Pines, the silky hair of Poplars, Thistles, and Cotton-grasses, with Moss, Straw, Beet-roots, and Nettles; but the result was that the substances were either totally unfit for the purpose they were intended to serve, or, if applicable, they were not procurable in sufficient quantities. Jute (*Corchorus capsularis*, Linn.), which is so well adapted for ropes, and even rags in the composition of which Jute occurs, are said to be unfit for manufacturing paper. The discovery of M. Gross, who has succeeded in making paper of the wood of *Pinus Abies*, Linn., must therefore be considered important. The wood used for this purpose must not be too old, and as far as possible be free from knots; branches are rejected. The wood is reduced to a pulp, which, after a certain but very small quantity of linen has been added to it, undergoes the same process as that consisting of rags, with this exception, we are told that the sheets do not require sizing. The only difference between writing-paper made of Pine-wood, and writing paper made of rags, is that the former is not quite so white as the latter; but this defect M. Gross is in hopes of being able to remedy by bleaching. The printing-paper of Pine-wood is considered excellent, takes the ink readily, and is said to be superior to any other for printing in colours. Pasteboard made of Pine-wood is very strong, and is already much used on the continent. Another, though not quite so recent discovery is that of M. Paewewitz, near Breslau, preparing, by chemical decomposition of the leaves of *Pinus sylvestris*, Linn., a hemp-like fibre. This fibre, called in Germany "Wald-wolle," a term best rendered into English by "Pine-wool," is now extensively employed for stuffing pillows, cushions, and mattresses, or instead of wadding. Its chief advantages are, according to the published testimonials of several railway directors, and superintendents of hospitals, that it lasts very long, retains its elasticity, harbours no insects, and never becomes mouldy. It is also woven into blankets, counterpanes, and similar articles. The manufacture of Pine-wool is carried on a large scale at Humboldt's Au, about five German miles from Breslau. The liquid or decoction developed by the process, containing principally formic acid, ætheric oil, and resin, is used for medicinal baths, which are at present in high repute, and considered beneficial for cutaneous diseases, scrofula, and nervous and rheumatic complaints; it imparts elasticity and softness to the skin, especially if the strength of the liquid is increased by the addition of Pine-wool extract (*Extractum Pinus sylvestris*), and the skin be washed with Pine-wool soap (*Sapo Pinus sylvestris*). The Pine-wool oil (*Oleum Pinus sylvestris æthereum*), applied to the skin, produces similar effect to the baths, and if administered internally, it has been found to answer as a vermifuge. Specimens of the Pine-wool, and different articles manufactured of it, as well as of the extract, soap, oil, and pasteboard above mentioned, together with a series of notes on them, have lately been presented to the Museum of Economic Botany, at the Royal Gardens at Kew, by Professors Goepfert and Trevisanus; and these materials have been the chief sources of information in drawing up this brief notice of substances destined to become of considerable importance to mankind. *Seemann, in Hooker's Journal of Botany.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

As all the more delicate greenhouse plants are by this time housed, the few remaining out may be allowed a short time longer out, provided the weather continues dry; Camellias, Chinese Azaleas, and some Acacias will not be hurt for a week or two, if circumstances do not permit of their being housed immediately. Greenhouse and stove plants of an herbaceous character, after they have done blooming, should have some care, to get their roots properly ripened before they are stowed away for the winter. To effect this with Achimenes, Gesneras, Gloxinias, &c., they should be placed in a spare house or pit near the glass, and supplied with water only to keep them from flagging. This will allow the foliage to ripen gradually, and, as a matter of course, the tubers or roots. Amaryllis, and the different varieties of Japan Lilies, require the same treatment; the latter, however, being more hardy, may be ripened off at the base of a south wall or cold pit. Brugmansias, Clerodendrons, Erythrinas, Allamandas, and plants of similar habit, may be gradually induced to a state of rest in any house of medium temperature with an atmosphere drier than a common stove. Admit air day and night to all descriptions of greenhouse plants; in many species the growth is not yet perfected, and an abundance of air, dried by the heating apparatus in very damp weather, is the only means that remain to bring about that result. This may be assisted, on sunny days, by early closing for a couple of hours in the afternoon, but open the houses at six again, to get the cool night temperature.

#### FORCING DEPARTMENT.

**PINERY.**—At this season Pines are growing fast, and those intended for very early fruiting should have a drier atmosphere as the heat and length of the days decrease. The object should be to produce a cessation of growth early, to allow for sufficient time to rest before they are required to show fruit. To assist the above,

keep the plants rather dry at root, and admit air plentifully. The principal crop not expected to show before February or March, may be grown on for some time, and supplied with manure water; advantage should, however, be taken of all opportunities to give air liberally—in dull weather making fires to permit of your doing so; in proportion as the growth is vigorous must be the admission of air, and a drier atmosphere be maintained, to produce short-leaved sturdy plants, without which fine fruit need scarcely be expected. The bottom-heat should be kept steady (by whatever means it is produced), at about 90°, allowing it gradually to fall to 85° towards winter. The above directions will apply equally to successions, which should be kept growing for some time yet, but the atmospheric moisture should be gradually reduced as the days get shorter. The above will more especially be necessary when the stock is growing in pits heated only by dung linings. Pine plants will be found to bear a low temperature through the winter much better when their summer growth has become matured by exposure to a drier medium and free ventilation during the autumn months. As cold weather may now at any time set in, the linings should be kept in good working order, and materials for covering them should be at hand when wanted.

**VINERY.**—If the foliage over ripe Grapes is too thick, and helping to create damp, so as to prevent the Grapes from keeping, the spurs may be shortened back a joint or two, to admit more air to the fruit. This, however, should only be attempted where the wood is ripe, otherwise there would be danger of the remaining buds starting. **FIG HOUSE.**—Where Figs are planted out in the borders of the house, care must be taken directly the last of the crop is gathered, to get the wood well ripened, for on that (as before adverted to in reference to Vines, &c.) much of the success for next season's crop will depend. Let dead leaves, and useless and overgrown wood be removed. In the case of young plants growing in the open borders, some pains must be taken to bring their somewhat succulent habit into a fruit-bearing state. This will be more especially necessary with vigorous plants, to help which the border should be allowed, if inside, to get comparatively dry, and if outside, protected from rain as much as possible. Slight fires must be lighted on wet and dull days, attended by free ventilation, thus giving them an artificially dry atmosphere. Allow the fires to go out by night, permitting air at the same time to keep down the temperature. This treatment will do all that can be done to ensure well ripened wood. When the plants are grown in pots or tubs, the above may not be altogether required, as the plants having their roots more under the control of the cultivator are not liable to grow so strongly.

#### FLOWER GARDEN AND SHRUBBERY.

Hollyhocks and Dahlias will still require occasional looking after, to secure them against the effects of high winds, which may now be expected; unless seed is wanted, out away decayed flowers and useless shoots, for although late, every care should be taken to preserve them in beauty for as long a time as the season will permit. Herbaceous plants will likewise require the stalks of decayed flowers removed, and such as are still in bloom, carefully tied up. Asters, some Phloxes, &c., will now be making a fine show, and should have corresponding care bestowed on them; let the borders be cleaned, and neatly raked over, filling up vacant places with spare Chrysanthemums, spring struck Pansies, or spring flowering bulbs. As the season is now considerably advanced, the propagation of all the more important bedding-out plants should be brought to a close as quickly as possible; late struck cuttings are had to keep through the winter, through having an insufficient number of roots, and ill-matured wood. Let scarlet and other Geraniums struck in the open ground be taken up and potted immediately they have made roots; they will require a close frame for a week or two, when they should be placed on a dry bottom in a southern exposure, to harden them for the winter. For the same purpose Verbenas, Petunias, &c., struck in pans, and intended to be kept in them through the winter, should be placed in a similar situation; at the same time, stopping the point of the shoots. It should, in fact, be a point to keep them as hardy as possible by fully exposing them, until they are placed in their winter quarters. Mignonette for winter and spring flowering may yet be sown. Remove the stock now up to frames, or where some protection can be given from heavy rains.

#### KITCHEN GARDEN.

The cultivation of crops now in the ground will be the principal thing to attend to for some time. In addition, the drying of Onions, Shallots, and Garlic, should be finished. As the weather is unfavourable for drying the former out of doors, they will be benefited by removing them to an airy shed, where they can be turned over daily till sufficiently dry for stowing away. Potatoes, likewise, should be taken up as opportunity serves; although attacked with the disease early, and indications of an almost total failure were then apparent, we are happy to announce that, except in low and wet situations, the crop is better than we anticipated, and the quality likewise. Gherkins, Onions, Chillies, and other vegetables used for pickling, should be gathered for the purpose as they come in. Thin out useless shoots from Tomatoes, and clear away some of the leaves shading the fruit, which will require full exposure to ripen, this late season. Tie up Endive for blanching as wanted and earth up Celery when the state of the weather permits.

### STATE OF THE WEATHER NEAR LONDON

For the week ending Sept. 15, 1853, as observed at the Horticultural Garden, Chiswick.

Sept.	Moon's Age	BAROMETER.		TEMPERATURE.					Wind.
				Of the Air.			Of the Earth		
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.	
Friday..	9	29.56	29.53	65	46	55.5	56	54	S.E.
Saturday	10	29.58	29.69	67	41	54.0	58	56	S.E.
Sunday	11	29.61	29.86	73	43	60.5	57	56	S.E.
Monday	12	29.96	29.74	70	54	62.0	57	56	S.E.
Tuesday	13	30.02	29.91	63	45	54.0	58	57	N.W.
Wednes.	14	30.08	29.51	70	50	60.0	57	56	S.W.
Thursday	15	29.87	29.94	61	55	58.0	56	56	N.E.
Average ..		29.995	29.857	67.0	48.4	57.7	57.1	55.9	

Sept. 9—Foggy; rain; overcast.  
10—Cloudy; rain; low fog at night; clear above.  
11—Overcast; clear and fine; clear at night.  
12—Slightly overcast and fine; cloudy; overcast.  
13—Slight rain; fine; very clear at night.  
14—Dense fog; exceedingly fine; overcast.  
15—Foggy; cloudy; slight showers; rain at night.  
Mean temperature of the week about the average.

### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Sept. 24, 1853.

Sept.	Ave. A. Temp.	Ave. H. Temp.	Ave. L. Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.				
							N.	N.E.	E.	S.E.	S.W.
Sunday 16	66.0	45.0	55.5	55.5	13	0.84 in.	1	1	1	1	1
Mon. 17	66.7	45.0	55.5	55.5	12	0.45	1	1	1	1	1
Tues. 18	66.7	45.0	55.5	55.5	13	0.45	1	1	1	1	1
Wed. 19	66.3	45.4	55.9	55.9	13	0.50	1	1	1	1	1
Thurs. 20	67.0	46.1	56.5	56.5	12	0.40	1	1	1	1	1
Friday 21	66.0	45.4	55.2	55.2	13	0.75	1	1	1	1	1
Satur. 22	65.5	46.3	56.0	56.0	12	0.75	1	1	1	1	1

The highest temperature during the above period occurred on the 24th 1832, and 20th, 1815—therm. 81 deg.; and the lowest on the 23rd, 1814, therm. 30 deg.

### Notices to Correspondents.

**BOOKS:** *G. London's "Hortus Britannicus,"* with its supplement complete, is indispensable to a library of garden plants.  
**COLD CLAY:** *A Country Squire* will do nothing unless he drains 3 or 4 feet deep, and thoroughly. Lime may then be applied advantageously in the autumn, so that it may be broken down by frost during the winter. If circumstances allow you to apply gypsum instead of lime, use it in preference. The tree is the wild Service, *Pyrus torminalis*.  
**COTTAGES:** *M. A. B.* Certainly not.  
**EDGINGS:** *Eques.* If stone is not employed, then one of the best and most durable is that in the garden of the Horticultural Society, made by Mr. Adamson, of Turnham Green. It stands extremely well, is cheap, and if connected by an addition of Portland cement is as good as edgings made of small pieces even can be. Hogg's edging, of which an account was given some time ago (p. 87), does not stand.  
**FUNKIA:** *A. H. Ours* are in the same state. We always fancied that the mischief was done by slugs; but will enquire further.  
**INSECTS:** *E. S.* The Scotch Fir is attacked by the larvae of one of the sawflies (*Lophyrus Pini*), which are now nearly full grown. They will form pale brownish cocoons on the ground among the dead leaves and twigs, which should be collected and burnt.  
**LAURELS:** *Timothy Tug.* There is no probability of your Lau with white leaves retaining the variegation. The appearance is disease, caused no doubt by excessively wet soil and low temperature.  
**NAMES OF FRUITS:** *W. Bradley.* Your Nectarine is certainly the Elruge. You say the tree has small flowers, and we find that the fruit is a *clingtona*, a coincidence which rarely occurs. If the flowers had been large, then there would have been question as to the sort being the Roman. *—E. Hales.* Y Apple is the Summer Leadington. *—F. P.* Instead of the Washington you have obtained the Nectarine Plum.  
**NAMES OF PLANTS.** We have been so often obliged reluctantly decline naming heaps of dried or other plants, that we vent to request our correspondents to recollect that we never but or could have undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply should bear in mind that, before applying to us for assistance they should exhaust their other means of gaining information for themselves; nor would it be desirable if we could. All can do is to help them—and that most willingly. It is requested that, in future, not more than four plants may be us at one time. *—Erzeroum.* 636, *Aster alpinus*; 758, *Gala fastigiata*; 241, *Erigeron pulchellus*; 281, *Erigeron alpinus*. *Mary.* *Lycopodium complanatum* and *denticulatum* (not mo by the way) and *Veronica salicifolia*. *—Scotia.* A *Sycamo* a species of Maple or Acer; a Plane tree is a totally different plant—a *Platanus*. They are as dissimilar as a lizard and earthworm. *—E. T.* *Hypericum monogynum* and *Eucy atropurpureum*. *—F. F.* Looks like a very young specimen *Heliotropium corymbosum*. Send it again when some seed is partly ripe, but before the flowers are gone.  
**PLUMS:** *Henry Dowling.* 1, "Angelina Burdett;" fruit about size of an Orleans plum, roundish, purple, with a good bluish flesh amber-coloured, parting from the stone, rich and sub but not equal in richness to the Furze, Gage, or Reine C Violet; the stone is small, obovate. 2, "Standard England;" fruit medium-sized, obovate, purplish-red; flesh greenish-amber, partially adhering to the stone, tolerably stone small, oval. 3, "Black-gage;" fruit small, about size of the Queen Mother Plum, round, black; flesh greenish-amber, parting from the stone, of tolerably good quality; small, roundish oval. 4, "A Seedling;" cannot be recommended. It resembles an Orleans, except in quality, and in this it is inferior.  
**PREMATURE RUNNING TO FLOWER:** *P. O.* This, which is a source of disappointment in the case of early Tul, Cauliflower, and Broccoli, in a garden where other crops satisfactorily, is usually owing to the seed having been saved, or to the crop having been sown too early.  
**RADISHES:** *W. M.* The Black Spanish Radishes are all salads; or they may be eaten with salt, vinegar, and other dainties. If the weather is not severe, any slight frost will be sufficient for them.  
**SAGITTARIAS:** *A. Z.* These are all white flowered and muc in appearance. They chiefly differ horticulturally in the form of leaves, and size of flowers. The double latif we think the best.  
**SEEDS:** *D. L. B.* *Grevillea Dallachiana* and *Tecoma Latr* unknown to us; *Swainsona Greyana* and *Acacia salic* not rare; *Acacia suaveolens* and *Daviesia latifolia* are *c* *STRAWBERRIES:* *W. Nicholson.* The sorts of Strawberry mentioned in your letter have not fruited.  
**SUMMER MANURING WITH GUANO:** *P. C.* We should apply the form of a weak solution to saturate the ridges, at of 2 cwt. per acre.  
**WALLS:** *Jack.* If you will tell us what height your wall will endeavour to furnish you with the names of a few that may suit it.  
**WHIRLWINDS:** *J. B.* Your friend should study carefully Reid's "Law of Storms," and 8w of the highest value cannot attempt to explain briefly such complicated phenomena.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

## PERUVIAN GUANO, the guaranteed import of

Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.

WILLIAM INGLIS CARNE, 10, Mark Lane, London.

## SUPERPHOSPHATE OF LIME, warranted the

very best quality, with a full per centage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

PERUVIAN GUANO, guaranteed the genuine importation of Messrs. A. GIBBS & SONS. A constant supply of LIME and RAPE CAKE.

LONDON MANURE COMPANY, Bridge Street, Blackfriars.

## MANURES.—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—

Turnip Manure	...	...	per ton	£7 0 0
Superphosphate of Lime	...	...	"	7 0 0
Sulphuric Acid and Coprolites...	...	...	"	5 0 0

Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## MANURES—PERUVIAN GUANO.

WHEAT MANURE, made to meet the offer of a Prize by the Royal Agricultural Society of England, Superphosphate of Lime, Gypsum, Salt, Bone Dust, and all other Manures of known value on sale.

Also Foreign and English Linseed and Rape Cakes, Peat Moss Charcoal, &c.—Apply to MARK FOTHERGILL, 204, Upper Thames Street, London.

## PRIZE CHURN.

ANTHONY'S PATENT AMERICAN.—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BURGESS & KEY, Agricultural Implement Warehouses, 103, Newgate Street, and 62, Little Britain, London.

WINTON'S PARKES' CELEBRATED STEEL DIGGING FORKS never bend, strain, nor break, but retain their sharp points to the last, requiring no repair.

Mr. Mechi says:—"They answer admirably in breaking our heavy clays, and mixing the soil in an extraordinary manner, and facilitate labour quite 20 per cent."

BURGESS & KEY, 103, Newgate Street, and 62, Little Britain, London Agents, and also Agents to all the principal Implement Manufacturers in the Kingdom.

## SAMUELSON'S PATENT DIGGING OR

FORKING MACHINE, which obtained the SILVER MEDAL of the Royal Agricultural Society at GLOUCESTER, 1853; 5l. 5s. Prize of the YORKSHIRE SOCIETY; and 5l. Prize of the CLEVELAND SOCIETY; capable of cultivating 6 acres per day with four or six horses, may be seen at work at Banbury, and in Kent, Middlesex, Surrey, Cheshire, Yorkshire, North Wales, Berwick, Gloucestershire, Worcestershire, Leicestershire, Herts, &c.

To meet the demand of SMALLER OCCUPIERS where horse power is limited, Mr. SAMUELSON has constructed an implement equal to 3 or 3½ acres per day, with a draught of three or four horses only. Price 27l. 10s. and 24l. 10s. respectively, at Banbury.

PRIZE at Gloucester (the eighth time) to SAMUELSON'S improved GARDNER'S TURNIP CUTTERS.

Manufacturer of McCormick's Reaper (highly commended at Pusey), Anthony's Churns (3l. prize at Gloucester), Liquid Manure Pumps, Chaff Cutters, Crushing Mills, Lawn Mowers, &c.

B. SAMUELSON, Britannia Works, Banbury.

## WHEAT DIBBLING.—THE PATENT ECONO-

MIC DIBBLE, with from six to nine depositors for inserting one grain (or more if required) in each hole. Price moderate.—Mr. C. H. GABRIEL, Surrey Chambers, Arundel Street, Strand, London.

## WARNER'S PATENT FARM AND COTTAGE

PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. 2 s. d.

Patent Pump ... .. 1 15 0

Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required. They are much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CUREST, JERIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

## TANNED NETTING, for the protection of Fruit

Trees from frost, blight, and birds, and for the security of fresh sown Seeds, either in gardens or fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas, for Wall Fruit.

At EDGINGTON & CO.'S, 17, Smithfield Bars, City, and Old Kent Road, Southwark; and at Brunswick Street, near the East India Export Dock, Poplar, where may also be seen erected Emigrant Tents in great varieties, on their latest improved principles.

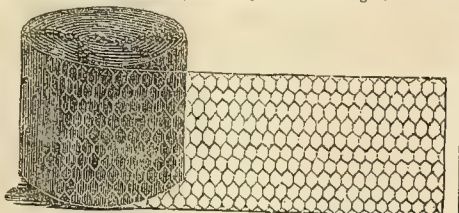
HENRY J. MORTON AND CO., PATENT GALVANISED IRON ROOFING WORKS, 9½, Albion Street, Leeds, Agents for PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES.

The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

HENRY J. MORTON AND CO., 9½, Albion Street, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING, and cannot rust or corrode, made any width and length.



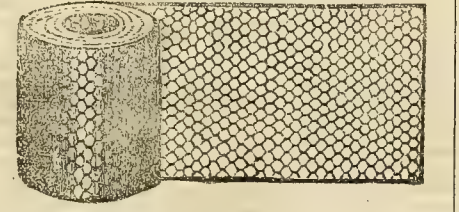
24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.

24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. 0½d. per yard. GALVANISED IRON SPOUTING, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalt Roofing Felt, &c. Apply at 9½, ALBION STREET, LEEDS.

## GALVANISED WIRE GAME NETTING.—

7d. PER YARD, 2 FEET WIDE.



2-inch mesh, light, 24 inches wide ... 7d. per yd. 5d. per yd.

2-inch " strong " ... 9 " 6½ "

2-inch " extra strong " ... 12 " 9 "

1½-inch " light " ... 8 " 6 "

1½-inch " strong " ... 10 " 8 "

1½-inch " extra strong " ... 14 " 11 "

All the above can be made any width at proportionate prices.

If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## DO YOU KEEP HORSES AND BRUISE YOUR

OATS?—If you do, read MARY WEDLAKE'S BOOK, 1s. 4d. Examine her Chaff-cutting, 1l. 10s. and 3l. 7s. 6d. Oat Bruisers, 5s. 6d. New Mangles, 50s. 6d. Ploughs, Carts, Haymakers, Weighing Machines, Flour Mills for home use, Horse Gear, or Power to move all kinds of machinery. List, 250 cuts, 1s. 4d., post free.—118, Fenchurch Street, London.

## WATERPROOF PATHS.—Those who would enjoy

their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water.

It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost.

It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

## CARSON'S ORIGINAL ANTI-CORROSION

PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for outdoor work at their country seats.

The Anti-Corrosion is particularly recommended for every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 1, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

## ROYAL AGRICULTURAL COLLEGE

CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.

PRESIDENT OF COUNCIL—Earl BATHURST.

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Students are admitted after the summer and winter vacations; also in April and October. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances.

The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelve-month—though a longer time is recommended. There is a department for general as well as for agricultural education.

Prospectuses and information can be had on application to the Principal.

The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester. Price 1s.

## COLLEGE OF AGRICULTURE AND CHEMISTRY,

AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

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The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuit of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College.

The terms and other particulars may be had on application to the Principal.

The next term will commence on the 1st of October.

## THE LANDOWNERS' DRAINAGE AND

INCLOSURE COMPANY.

INCORPORATED BY SPECIAL ACT OF PARLIAMENT.

Tenants for Life, Trustees, Mortgagees, Incumbents of Livings, &c., can have all works of Draining, Warping, Irrigating, Inclosing, and every other improvement to land, executed by the LANDOWNERS' DRAINAGE COMPANY, either by Contract or on Commission. They will provide the money by a permanent charge on the inheritance, or repayable by instalments. They are also ready to undertake the Drainage of Towns, and all works incident to such improvements. This Company having been engaged in extensive works for many years in most of the Counties of England, and having in their employ the largest Practical Staff in the United Kingdom, whose sole attention is devoted to such improvements, is the best guarantee for the success of their works.

Every information will be given at the Offices of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter.

THOMAS MAY, Secretary.

## HITCHIN AND HOME COUNTIES DOMESTIC

POULTRY ASSOCIATION.—OPEN TO ALL ENGLAND.—

The Second Annual Exhibition of this Society will be held at the Corn Exchange, Hitchin, on the 18th, 19th, and 21st of November, 1853, when Prizes amounting to upwards of 30l. will be offered for public competition.

Hitchin is a first-class station on the Great Northern Railway, 30 miles from London; at which station is a Junction with the Cambridge and Eastern Counties Railway. Regulations and Prize Lists may be had on application to the Secretary, by enclosing two postage stamps. Entries for Exhibition close on the 1st of November. Admission to the private view on Friday, November 18th, by a 5s. card (not transferable), which will be available for the three days of Exhibition. And on Saturday, the 19th, and Monday the 21st, 1s. each.

SAMUEL GOODWIN, Secretary.

The Directors of the Great Northern and Eastern Counties Railways have agreed to run Cheap Trains on the occasion, and to give free passage to all Poultry for the Exhibition (at owner's risk), and to carry back free all that is unsold.

## SMITHFIELD CLUB FAT CATTLE SHOW.—

All Entries for the Christmas Show of Fat Stock, &c., must be returned to the HONORARY SECRETARY on or before SATURDAY, the 5th of NOVEMBER, 1853.

Prize Sheets, specifying the Classes, Prizes, and Medals (which amount to nearly 800l.), and the necessary PRINTED FORMS of Certificates for Entry, to be had on application to

B. T. BRANDRETH GIBBS, Honorary Secretary,

CORNER OF HALF-MOON STREET, PICCADILLY, LONDON.

N.B.—It is particularly requested that all letters connected with the Exhibition, or on the Club's Business, may have the words "SMITHFIELD CLUB" written on the outside, in addition to the Honorary Secretary's name and address.

## The Agricultural Gazette.

SATURDAY, SEPTEMBER 17, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Sept. 22—Agricultural Imp. Society of Ireland.

THURSDAY, — 29—Agricultural Imp. Society of Ireland.

Our readers will, we are sure, share our satisfaction in the following announcement, which during the past week has been going the round of the papers:—

"MARTIN DOYLE.—Irishmen of all classes and parties will be gratified to learn that the long and valuable services of the Rev. WILLIAM HICKEY, the popular writer under the well-known name of 'MARTIN DOYLE,' have been recognised by her Majesty, who has been graciously pleased to grant him a pension of 80l. a-year out of the Literary Fund. No man in his sphere has contributed more to the advancement of the best interests of Ireland and the development of her agricultural resources.

Our correspondent 'MARTIN DOYLE' has lately favoured us with the report of a late agricultural tour through Ireland, which we shall very soon have the pleasure of publishing in these columns, and thus add one more to the many obligations to the clever pen, under which we and our readers are already laid.

AFTER all that has been said, and justly said in favour of the American reaping machines, since the Great Industrial Exhibition of 1851, it now appears



that the best machine in "the world" was quietly and successfully doing its work in one of our northern glens, which it has been doing for the last 20 years, practically unknown to all save its owner! There is doubtless sound admonition in this.

The first proposition to be gleaned from it is consolatory, namely, that we have been, unconsciously perhaps, progressing in the right direction, throwing off prejudice and putting on a willingness, as it were, to embrace progress in harvest machinery and machinery of every kind, come from what corner of the world it may.

The most important proposition relates to pounds, shillings, and pence; that is, to the influence which price has upon the introduction of a machine. For that which met the approbation of those best qualified to judge of the merits of the American reapers, was their simplicity of mechanism, and the lowness of price at which they could be constructed. They at once saw that if labour was properly abridged and subdivided in the manufacture, machines could be sold at from 10*l.* to 12*l.* each. This was the first impression upon our mind, as also upon some of our implement makers themselves, better qualified to judge. Few were altogether ignorant of BELL's reaper, while some were familiar with its working, and were consequently as able to judge of its merits then as they are now; but instead of its merits eclipsing those of the transatlantic machines, they rather enhance their value by suggesting improvements at little additional expense; for ever since 1851 the general conclusion has been current, "*That we would now have an improved and cheap machine to meet the peculiar demands of practice*"—a conclusion arrived at by the judges at Pusey, and formally enunciated in these emphatic words—

"That, by a combination of certain elements which exist in the various machines exhibited, there might be produced one surpassing anything hitherto brought before the public. Such an implement might be made to unite the advantages of simplicity in construction, greater durability, lightness of draught, and reduction of price, with the thorough capability of being more easily managed by the agricultural labourer."

Since 1851, we can hardly enumerate how many patents have been taken out for reapers, and improvements made not patented; but unfortunately almost all our efforts have been directed to the improvement of HUSSEY's reaper! (the simplest and cheapest, be it observed, of the two from America) leaving out of consideration the merits of our own old machines, although involving some very important elementary principles. Our transatlantic neighbours took us by surprise, as it were, carrying us captive in triumph before we had time to recover ourselves; and what contributed greatly to this was the fact that, between 1820 and 1840, many of our principal implement makers had "burnt their fingers," as the saying is, in the attempt to reap corn by machinery, but the above proposition of the judges will doubtless have the desired effect of turning attention to old ideas as well as new, and of ultimately procuring from the long list of machines which have existed a combination of elements of the highest merit, to meet the growing demands of the harvest field, consequent upon the emigration movement.

The success of the American reapers at home in the Union tended greatly to procure for them a favourable reception here; for had they individually been only supported by the experience of one farmer, and that one a brother of the inventor—as Mr. BELL's—it would doubtless have been otherwise with them; especially if we further suppose that some 6000 of the latter had been in operation in our own provinces at the same time. This would not have affected in one iota the mechanical merits of the respective machines, but it would have placed English farmers in a very different position to judge of them; and the facts of the case being the opposite of those supposed, the hasty conclusion in favour of the transatlantic machines is easily explained.

Experience is necessary in order to enable any one to form a correct judgment of the merits of individual reapers. The old maxim that "the farmer as an apprenticeship to serve," is applicable here. It is not enough to see two machines in operation once or twice in the hands of parties who cannot, it may be, work them successfully; for before we can determine satisfactorily their respective merits, we must be masters of working them ourselves; until this point is gained, we are more or less left to guess results, and pronounce an award.

That hasty opinions were formed of some of the elements of the American reapers in 1851, is only that was reasonable to expect, and that this circumstance will make not a few somewhat over cautious in adopting new combinations of elements is

equally plain, but this is probably the safest course for parties to steer after all; it should not, however, throw any obstacle in the way of progress, but on the contrary increase our speed in the march of improvement.

In pursuance of our promise given last week, we offer a few suggestions relative to the appropriation of a farm of 200 acres to the breeding and rearing of store pigs for sale. We of course assume that the farm consists of a soil adapted to the growth of the usual root crops; no other in fact will do. We also assume that it is under arable culture, and that a fair proportion of it should be under crops of grain or pulse. This we think indispensable. With the remainder we have to do; and our design is to show under what crops it can be most profitably put, so as to provide the greatest weight of good food for the BREEDING, REARING, AND GRAZING OF PIGS. The preparation of land for the reception of root or green crops is a very expensive process; it must be effectually done; but few of the small seeds will produce a crop unless the land is well cleaned and pulverised; and to do this properly will require a pair of horses for every 12 or 15 acres, dependent upon the tenacity of the soil, which is no trifling consideration in carrying out this project. All other appliances of labour, of culture, of manure, of cartage, will be the same in kind as in ordinary farming, but far more costly. Pigs would prove queer winter graziers in our Turnip fields; every crop must, therefore, be carted to them throughout the winter, either into properly prepared yards, or shelter grounds temporarily provided for convenience. Here they must have litter in great plenty. Yards or sties may possibly be fitted up with comfort, so as to do without litter; but we have grave doubts as to these being profitable if appropriated exclusively to store pigs, and we feel assured that breeding sows with their young progeny must have straw or otherwise littered beds. We want, then, straw for litter—we want grain to supply farinaceous food for young pigs, and we want abundance of root and herbage crops for the stores. These the farm will supply, and although we cannot see how our pig farm is to differ much in its general management from other farms, except in the substitution of pigs for cattle and sheep, we will point out what to us seems the more desirable course to follow, which in some minor matters differs from the usual routine of cropping on such farms.

In the first place we would suggest that plantations of one or two acres each be made of Chicory, Rhubarb, Jerusalem Artichoke, Rough Comfrey, and Lucerne. All these plants or crops under careful culture remain a considerable time under profitable cutting, and produce large supplies of food at that period of the year when most needed—May and the early part of June, and so continue throughout the summer—these to be cut and carried to the pigs in their yards and sties. We would next suggest that a portion of the refuse vegetation of the farm be collected and boiled, and the liquid mixed with a little meal, to be given as required in open yards or paddocks. Our next suggestion is to supply them with broad Clover, Sainfoin, or Tares—these to be grown after the corn crops, to be mown and carried to them in yards or paddocks; or the pigs might be turned on the Clovers to graze, which would aid much in promoting their healthy improvement. Our next suggestion is that a few acres of early Cabbage be planted, and a few acres of Cole-seed be sown in the month of April, so as to succeed the cuttings of Chicory, Rhubarb, &c., and make due provision for the months of June and July; these with the Clover, Tares, &c., would readily supply food enough for the herd throughout the summer and autumn, aided also by the run of the stubbles after harvest. Our next suggestion is that a field of not less than 15 acres of Mangold Wurzel should be annually provided, part of which should be Red and Yellow Globe, as being the best keepers; these to be carted into heaps, and to be for use during the months of March and April. Some of the Globe variety should be kept as long as possible for the summer's supply in case of failure in any other crop, or to be given in aid of the other early crops. Our next suggestion is to sow the remains of the fallow land with Turnips—Swedes and common Turnips—the common Turnip (in which are included every variety—our own preference is to the Red Round) for winter use generally, and the Swedes for January, February, and March. Thus the herd of swine are brought through the year on good and wholesome food; this however in some cases, and from various causes, such as too luxuriant growth, &c., may be too succulent; in such case resort must be had to the grain and pulse crops of the farm, a part of which should always be laid up in readiness. The Bean and Pea crop might in moderation be supplied in the straw, and would prove an excellent corrective for looseness or

scouring. As to the general management of the farm we offer no remarks; we presume it must be cultivated after one or other of the usual courses of husbandry, and sown with the usual crops suited to the soil. In this respect we would offer our last suggestion, that the farm should be well adapted both for the growth of Turnips and pulse crops. Such farms are not easily found. We do not at present give any opinion as to the general management of pigs, at a future day we will endeavour to give our views upon their breeding and management, as also the choice of breed, fattening, &c. C.

#### STEAM-CULTIVATION.

To the Editor of the Agricultural Gazette.

DEAR SIR,—I most willingly renounce the dignity of the 'leading section' into which you have so often done me the unsought honor to install my occasional essays on steam-cultivation—for the present purpose of re-assuring, to the utmost of my ability, two gentlemen who appear to have found matter of personal application in some observations of mine on this subject, which were certainly intended for a wider and very different purpose. There is a class of portraits which have the faculty of making each person fancy with irresistible confidence that the eyes are especially and solely directed at himself; the best way of detecting the illusion is by observing that the same impression is equally strong in two different directions. I am afraid I am in the position of one of these unconscious offenders, now looking with the frown of 'boiling indignation' upon Essex, now with a sneer 'of questionable taste' upon Oxfordshire.

Let me offer my full assurance to both these gentlemen, and any others whom it may similarly concern, of the utter absence of any such bad taste as they have thought fit to attribute to a pen which, when their own thoughts were more free from self-engagement on this once solitary topic, bespoke very different conclusions to their minds, and a somewhat different reception at their hands.

I must, with the utmost respect for them both, and for their opinions, decline once for all to commit to the perils of personal controversy the discussion of a great question, which deserves only to be treated, as I had hoped I always treated it, on the highest grounds of public utility. I quoted a phrase from Mr. Meech's letter to the *Times* as the mere symbol of an idea which, believing, as I still believe it, erroneous, I thought myself at full liberty to oppose, and, as far as I was able, to correct. But there all relation with the author of the phrase terminated. His own persevering efforts in many a hard-fought 'progress of an idea' might surely have led him, in what followed, to distinguish (as an indifferent eye would instantly do) the general argument from the particular illustration, too well to apply it to himself. For the rest, I need not tell him the man may quote Hotspur's famous indignation, without its splitting his own goose quill, unless with the merriment it ever suggests, and must have caused to that great pen that coined it. And 'Talpa' has surely some right and cause to implore men still to give THE PLOUGH (under the figure of CÆSAR) the tribute that is its due, without being charged as 'vain' and 'sensitively self-laudatory' by a mis-reader of the passage, who almost in his own next paragraph announces himself as the person to whom the idea of Mr. Samuelson's machine is to be dedicated.

The alleged priority of the idea of Mr. Romaine's steam-and-horse-power cultivator, to that of the person whose name he prints upon the title page of his pamphlet *instead of his own, and whose language he entirely uses to express himself and explain his machine*, it is not here the place to discuss; nor the loss of his own previous plans, &c., in one of the Lakes of Canada. But this I will say, that let that be all proved, and there lives not one who will give Mr. Romaine a freer and heartier welcome than the writer whose name and essays he honours with such prominent adoption.

To Mr. Samuelson's letter (excellently written, whatever my view of its opinions, or his treatment of mine), I have but a few words. First, to commit it to his further reflection that the general assertion 'that a wrong principle cannot be made a right one by a thousand patents,' is by no means a 'sneer at patentees'; and secondly and lastly, that having already had proof, with what handsome acknowledgment he can admit the practical realisation of a mechanical process of which he had before denied to me the possibility, I shall never despair of his conversion to a truth, however well he may have expressed an error. Begging your correspondents to accept my words in their best intention,

I am, dear Sir,

Yours very truly,  
C. W. H.

September 12, 1853.

#### LAND DRAINAGE.

In the report of the discussion at Graveley on the occasion of the late competition instituted by Mr. Bailey Denton, by the offer of prizes for the best made drains, we did not give in full the speeches of Mr. Hewitt Davis and Mr. Bullock Webster, the one long an advocate of deep and thorough land drainage, the other popularly known as the advocate of shallow drains, though what his real views are his own words shall inform us. For



the speeches now given we are indebted to the kindness of Mr. H. Davis:—

Mr. H. Davis replied to Mr. Denton, whose remarks are given pretty fully at page 524:—Agreeing as he fully did in most of Mr. Denton's observations, and most fully so with reference to the advantages of our deep draining of arable land, he was not prepared to say that there was no Grass land that might not be injured by going too deep—he thought it probable that some of the rich low marshes owed much of their luxuriance to the permanent presence of water at a lesser depth than 4 feet, but in this case (and it was an exceptional one), it was owing to the soil being largely constituted of sand and gravel, and therefore, with little capillary attraction to maintain moisture above the level of the water bed: he did not think this applied to clay, which held moisture more closely, and which it was desirable to render permeable as much as possible by draining. In applying these remarks to Grass land, they must bear in mind there was this important difference between it and arable land; in the one we desired to maintain as much as possible a vegetable growth all through the year, when on the other a different condition at a certain season was desirable. On arable land, corn was sown in the autumn or spring, and during its early stages it called for much moisture and frequent showers, but in summer it burst into ear, and then a different condition of the soil and atmosphere was required; its vegetation was no longer to be encouraged—it had attained its *maximum* growth, and it now called for sun and drought to fill the ear and ripen it for harvest—but this is not so with Grass; at this season of the year its vegetation was still wanting, and the presence of moisture, which was beneficial to it, would be highly injurious to corn. The drainage of land—both by means of deep cuttings, to intercept springs, and by parallel 4-foot drains—is by no means a modern invention. The Romans, 20 centuries ago, recommended 4-foot parallel drains, and also the deep cuttings; and Parliament rewarded Elkington a century ago for his system of spring sapping. With respect to the imperfection of plans of draining done by means of Government loans, it was often supposed that Government inspectors furnished the plans and superintended the works, and were answerable for their perfection; but this was not so. They were only called in to protect the heir by seeing that the work was desirable and effectual, and produced an improvement equal to the real change; and the utmost they could do, unless specially employed to make the plans, &c., was to suggest improvements in the plans submitted to them; they would not be justified in objecting to plans except on very strong grounds, for, in truth, almost every landowner had his own theories, which generally involved some departure from more experienced views; and it was often necessary to give way to them. With respect to air drains, he must confess he could not see any necessity for them, for if water freely penetrated from the surface into the drains, air must do so also—the cracks or interstices that admitted the one must also admit the other; and that air does penetrate the strongest soils at equal depths he knew from the fact that the conducting pipe from a well on his land to a pump in his house, which was buried 10 feet in the strong London clay, immediately lost the water from a small orifice being eaten into it. He could not close his remarks without expressing the pleasure he had had in inspecting works both of draining, building, and other farm improvements, effected by Mr. Denton.

Mr. Bullock Webster said—I have much satisfaction in being present at this meeting to-day; we have had the advantage of meeting on strong clay land before discussing this important subject on the carpet. I differ from Mr. Hewitt Davis and Mr. Denton that water enters from the bottom of the drains, and I contend that land requires drainage because the rain water falls through the surface of the soil; it falls below that point whence the soil can be acted upon by the sun and air, and consequently a certain portion of the soil is over saturated with moisture. The question is to what depth does water go? It has been taken for granted that it goes below 4 feet, but I will show that in other soils it does not extend beyond 2 feet 6 inches; and I will bet 10/2 that if a hole be dug between 4 feet drains 50 feet apart in a clay soil, you will find water standing at from 13 inches below the surface. In other lands you will have to dig to 3 feet before you get to the water. I am quite prepared to agree with Mr. Denton and Mr. Davis on many points upon which the gentlemen have touched, more particularly as to the necessity of arterial drainage; a matter which, I can say from experience, is far better attended to in Ireland than in this country. As regards, however, the failure of deep draining on some clay soils, I am quite prepared to show instances; but as my opponents will then urge the distance at which the drains are placed as a cause of the failure, it will be necessary for us in the first instance to come to some definite understanding on that point, otherwise our discussion will be but waste of time. You will recollect that when uniform deep draining was first insisted upon on these soils, we were told the great advantage was that the drains could be so much further apart. This is proved not to be the case. See, amongst others, Mr. Milward's article in the last number of the "Agricultural Society's Journal." Now with regard to the remarks of Mr. Denton and Mr. Hewitt Davis on the advantage of draining strong clay lands deeply, because you lower the water table, as they are pleased to term it, and pre-

vent the under water rising by capillary attraction to the injury of the crops, I totally disagree with them. I contend, on the contrary, that the strong clay subsoils of this country, in contradistinction to those so called of Ireland (which are quite of a different character), are not injured by being surcharged with under-water, but by the act of the surface water not finding its way into them.—Mr. Webster here illustrated his arguments by a diagram, making use of the book-case to represent the soil, and showing the manner in which a drop of water found its way from the surface of the earth; first, in a perpendicular, and then oblique or lateral directions, accordingly as the fissures in the clay permitted, until it reaches the drains; and he then continued: My idea is that the rain-water falling on the surface of the earth passes through that portion disturbed by the plough, thence through a portion of the subsoil which has been acted on by the sun and air, varying in different localities from various circumstances, until it meets with a mass of retentive clay of such a nature as to check its downward progress and cause the necessity for drainage; hence it arises that the depths of drains in these soils must be governed by the depth to which you can get the water to percolate, bearing in mind that if you leave a body of water below your drains you are decidedly in error. Now let me ask where is your water-table, or the body of water rising from below in the clay soil of Warwickshire, resting on a dry sandstone within 5 feet of the surface? or where is your water-table theory in this county, where the drainage of your clays is taken off by means of swallow-holes into the chalk below. Gentlemen, I hope to see the day when the gridiron system of drainage, as Mr. Denton properly calls it, shall be done away with, when the main outlets and water-courses shall be well opened, when the springs shall be cut off, the porous soils drained as deeply and as far apart as the drains will draw effectively, and each clay soil according to its requirements. (Cheers.) In short, I do hope that the invalid land suffering in various stages of dropsy may not be tapped indiscriminately with 4 feet drains and 3-inch pipes. Before I sit down you must allow me to make a remark on the subject of overdraining certain descriptions of Grass land. I congratulate the government of Ireland in having adopted arterial drainage long before us. I happened to write an article in the *Agricultural Journal* on the object of over draining Grass lands, and a writer in the *Quarterly Review* noticing it, said the ideas originated from some hermit boring for water in his garden. The fact is, however, that if you cut a long drain, it is requisite to admit air for the circulation of the water. In a drain I once had to do with, I found no current of air; but I lighted a fire at the top of the drain and soon got a current; when the fire was out the current ceased. But if air is to be freely admitted at the top of a drain, it will not have the same tendency to drain off the water all throughout; I can always find water at 30 inches, when very often I cannot find it below.—Mr. Davis explained that water found its way into the drains by rising upwards and not by descent; every drop of water that fell upon drained land descended perpendicularly, or as nearly so as the cracks in soils admitted, until it reached the level of the water which had accumulated in the soil. This level in winter would be the line from drain to drain, and if the drains were 4 feet deep, the water bed would stand 4 feet from the surface. Now, as every drop on reaching the water had raised the water bed a drop, it followed that a drop would run into the drain for every one that reached the water bed. But this drop would not be the one that reached the water bed, any more than the water which left on one side of a lake on a sudden discharge into it would be the identical drops which entered on the other. The arguments in favour of shallow draining were all based on the supposition that water went direct to the drains—as if attracted by the drains—but there was no attractive power in drains to draw water to them, and we have only to watch the course of a single drop as if it were a berry, to see the impossibility of its getting into the drain, except by perpendicular descent and swelling up the water bed. It was unfortunate for landowners that this is not more generally understood, for, from not rightly understanding the simple course of water, by far the greater part of the expense gone to in draining was money thrown away.—Mr. Bullock Webster said the question was, how deep did the water go? He contended that draining had nothing to do with the water table. Water after falling would pass off the surface of the land, and in strong retentive soils, water could not be had, unless they chanced to hit on a spring. He could show them five or six places in Dorsetshire, in the vale of Blackmoor, where they could get no water.

#### ROYAL AGRICULTURAL COLLEGE.

SESSIONAL EXAMINATION.—AGRICULTURAL CHEMISTRY.

ANSWERS BY MR. LORCH.

(2.) The rivers when going their rapid course must necessarily bring matters organic and inorganic with them, either in solution, as the former, or carried along by the current; on the mouths of rivers is deposited this sediment, and thus an alluvial soil is formed. Horner calculates the waters of the Rhine in 1000 gallons to hold in solution two-thirds of a pound of mud; this is of course deposited on the banks of the Rhine; hence the luxuriant crops of Flax which are there grown. The rivers, too, by passing through so many different strata must bring some particles of each, and thus form a fertile soil. Besides, we find rain floods, &c.,

all make their way ultimately into rivers, and, of course, bring with them vegetable, animal, and inorganic matters in abundance; this is by the river deposited along its banks and at its mouth, or when overflowing along its course. Again all excrementitious matters, as manure, and all refuse, is thrown perhaps in a branch of some river or some brook which joins a river, and this, too, is deposited, and we get for our alluvial soil every mixture; much, too, is carried along the current in large quantities. Infusorial animals, too, which can only live in their native element, which is either salt or fresh water, according to which they are organised, when the salt and fresh waters join, die in myriads; and though it takes some millions of these animalcules to make up a cubic inch, yet they contribute their share; they have an envelope of silica, which is deposited and they form a whitish slime. Rains, too, bring matter from some high lands, and deposit them in the lower countries. Floods, too, deposit much matter; and all these influences combined make up the fertile and rich soils we find at the mouth of tidal rivers, as the Thames, Humber; and large rivers, too, like the Amazon and Mississippi, deposit immense masses, which form a soil of remarkable fertility.

(3.) As to the physical characters: The capabilities of soils much depend on these, as the specific gravity, power of absorbing and retaining moisture, and of absorbing ammonia, of abstracting and retaining heat, the power of allowing moisture to percolate through it, capillary attraction, &c.; all have their influence, also the strata from which they originated, whether they be loose or friable, dry or wet, heavy or light, stony, rocky, and many influences besides. The character of a soil used to be always considered by its physical properties, but now-a-days we nearly go to the other extreme, and refer it to the chemical.

Some soils retain much ammonia; thus some soils have been analysed which were never manured, and found to contain nearly one per cent of ammonia.

(4.) Before I mention the probable functions of humus, it will be well to give a brief description of its composition, &c. Humus is decayed, not fermented, vegetable matter, &c. It constitutes most of a garden mould, and peaty soils. It chemically consists of humine and ulmine, humic, ulmic, geic, crenic, and apocrenic acids. We generally find humic acid more widely spread than ulmic, the latter being changed into the former by a higher oxidation; hence it is more generally met with, and more widely spread. Humic and ulmic acids can be separated by boiling peat in carbonate of soda, and precipitating by muriatic acid; a brown mass subsides, which is these acids. Crenic and apocrenic acids can be separated by adding ammonia and sulphate of copper to a solution containing them, when you get crenate and apocrenate of copper: they are distinguished by one being colourless in water, the other giving it a brown colour; more than 30 substances have been found by Mulder belonging to the class of humic acids.

The functions of humus.—Formerly a soil was considered the better the more humus it contained, and that plants derived all their nourishment from it; and when they did not grow, it was laid to the presence of an unknown substance prejudicial to plants; but the fact that plants can grow and flourish with scarcely any humus, upsets this theory altogether, and the incontestable views of Liebig, and the adoption of his mineral theory, which is going to the other extreme, seem to be generally prevailing. That the organic is of less value to plants than the inorganic there is no doubt. Humus, some say, supplies plants with carbonaceous food, but it is not likely plants have an apparatus elaborate enough for assimilating such food.

Humus decomposes every day, and during its decomposition carbonic acid is given off, which, trying to escape, makes its way through the soils, and increases its porosity; besides humic, geic, and ulmic acids have great affinity for ammonia, and form humate and ulmate of ammonia—a combination difficultly soluble in water; thus their power of fixing the valuable and fugitive ammonia is their good. Again, humus abstracts much moisture, and thus supplies plants with water; again, the organic and inorganic parts of humus are intimately mingled with the roots of plants, and during decay they liberate to plants their inorganic constituents; again, humus in manures acts by changing the physical nature of the soil; and this is one reason of the failure of artificial manure to supersede farm-yard manure in general.

(5.) The fact that plants will thrive with scarcely any organic food present in the soil, strengthens this theory. In Peru, Indian Corn grows where no organic matter exists in the soil; again, Liebig has proved that plants require no organic food from the soil, and the conclusive experiments of Messrs. Wiegman and Palstorf would lead one to the same conviction, for they proved that all the inorganic matters must be present, but not so the organic.

The grand source of organic food is the carbonic acid of the air, which plants take, giving its oxygen back, and retaining its carbon, which they no doubt assimilate into starch, gluten, &c.; again, if we supply plants with water charged with carbonic acid, we find they flourish and grow luxuriantly. But to say plants require no organic food whatever would be an absurdity; and Liebig has carried his views rather too far in regard to the organic food of plants, for he advises even to burn the soil and bones before using. Again, an unceasing source of hydrogen and oxygen for plants is the water, and they derive their nitrogen from the air; and



the fact of plants consisting of carbon, hydrogen, and oxygen plainly shows, when they vegetate without any organic matter, that they must derive it from somewhere, and there is no other available source but the atmosphere. These facts and many others plainly point out the carbonic acid of the air as the great source of organic nourishment for plants.

(6.) Superphosphate is prepared by dissolving boiled or raw bones, or the phosphate of lime, which is found in America, in sulphuric acid. The bones are first either put into a tub, or, if that is not at hand, a pit is made for them by clay or coal ashes; we prefer the latter. The correct quantity of bones being taken, they are put in the pit or tub, and first moistened with water: it is plain that when the sulphuric acid and water unite, considerable heat is evolved, which hastens the decomposition or dissolving of the bones. The sulphuric acid ought to be added, diluted, and it ought to be half the weight of the bones, otherwise some of the bone phosphate is not converted into soluble biphosphate of lime: the general rule is to add one-third of the weight of the bones; but then not all the phosphate of lime is converted into the soluble biphosphate. After the bones are well acted on, and converted into a pasty mass, they are removed, to make place for others which are treated in the same way; the whole being acted on, they are allowed to stand in a heap for seven or eight days. The coal-ashes are beneficially incorporated in the mass. In making superphosphate from coprolites do not inhale the gas given off, which is a pungent poisonous one, and results from the fluoride of calcium the coprolites contain.

(7.) Soot results from the burning of coal; it contains ammonia ready formed, and its value depends on the quantity which it contains. If it contain 1.864 per cent, it is very good. Soot, like shoddy and horn shavings, is estimated thus by the ammonia ready formed. It and like manures are applied when an immediate return is expected and wished for: it also contains much inorganic elements; its price ranges from 4d. to 6d. a bushel; it is subject to many adulterations.

(8.) Before applying an artificial manure we should consider four great points. 1st, the wants of the plants in regard to the elements of nutrition; 2nd, the wants of the plants in regard to the physical characters of the soil; 3rd, the composition of the soil; and, 4th, the composition of the manure; and not till all these facts have been considered, can we hope to apply our manures to the land beneficially. We must know the composition of the ashes of a plant; thus for a plant requiring much lime it would be useless to add phosphoric acid. For the cereals we must add it, or its absence will show itself by the poor thin grains of Wheat or Oats. And we must also have reference to the state of the soil, or in fact its physical and mechanical state of division: thus, if our soil were rich in lime, it would be useless to add more; besides, we must get our manure according to the time when we want it to act—thus shoddy, for instance, should be buried in spring if required in summer, &c.; or it should be buried before using three or four months. We must also look well to the composition of our manure and regulate it according to the wants of the plant we require to cultivate; thus, if we knew a plant, as Wheat, required phosphoric acid, we should add bones. If they required nitrogenised manures as well, I should mix guano and coprolites, or guano and bones together. Thus if we consider all fertilising substances, whether clay or sand, guano or farm-yard manure, under the name manure—if our soil was too loose, we might use clay, if too retentive, try sand, &c. Besides, we should for some plants add farm-yard manure, as some plants like a loose soil, where they can burrow their roots; others like a stiff soil; in fact some requiring more depth of soil than others; besides we must apply our manure according to the state of the land and the requirements of our plants.

(9.) Shoddy is a manure composed of rags; it slowly decomposes in the soil; hence it requires, before using, to be made into a compost with soda-ash and quick lime, these assisting each other in decomposing the organic matter more quickly; a useful adjunct will be the occasional moistening our heap with liquid manure, which will act as a ferment to help to decompose the mass. When we apply it to the land, we should put it near the surface, that plants may have an available source of nitrogen, as, if buried too deep, they cannot assimilate it. These nitrogenised manures, too, should be applied to the young plant, as it appears the action of ammonia on old plants is very little, sometimes not at all, and thus we shall be losing the most valuable ingredient of our manures.

(10.) Guano. If in 100 of guano, there are 16 of ammonia, in 2240 lbs., or 1 ton, there are 358 lbs.

If 358 lbs. of ammonia are worth 10*l.*, it is worth 6*d.* per lb., so that guano is worth 6*d.* per lb. for ammonia.

Then if 66 of sulphate of ammonia contain 17 of ammonia, a ton contains 576 lbs. And sulphate of ammonia costing 15*l.* is worth 6½*d.* per lb. for ammonia.

### Home Correspondence.

*Village Excursions.*—On Tuesday last the villagers of Whitfield and Falfield, Gloucestershire, accompanied by several of the neighbouring farmers, the Rev. W. Dove, of Falfield, and their families, enjoyed their annual excursion together. The point visited on this occasion was Stinchcombe Hill, one of the many pro-

jecting arms into which the high table land of the Cotswold range is here divided. The view from this hill, which is the most prominent of the many which here stretch into the vale of Gloucester, is probably the finest in the county, extending from the Malverns in the north to the Mendips in the south, and including within its western horizon the hills of South Wales, the Forest of Dean on the other side of the Severn, and the high lands of Herefordshire to the north-west. The rich vale of Gloucester below us, with the city about 14 miles to the north, and the Severn traceable from it by Newnham, Berkeley, and many smaller towns and villages along its bank, until it widens into the broad arm of the sea below Bristol, is here some six or eight miles wide, and the weather which had cleared up "for this day only," was just such, with its alternate sunshine and shade, as to bring out the beauties of the whole glorious scene in perfection. On this occasion our party was joined by contributions from Cromhall, Wickwar, Kingswood, and Nailsworth, villages lying at the distance of from 6 to 10 miles all round the place of meeting, so that we numbered several hundreds. The singing or rather psalmody classes which had been taught at all these places during the previous winter by Mr. Turner, the Earl of Ducie's schoolmaster at Cromhall, constituted in every case the nucleus of the several parties. And when the whole united on the hill side in the quiet evening air, under the direction of our leader, there was both skill sufficient and power enough for a very admirable effect. The day passed off most pleasantly, and with, I am sure, nothing but the best influence on the many who enjoyed it. I keep you informed of our experience in this way, as it always goes for something in the way of example. The subject introduced and urged by Professor Henslow some years ago used to occupy a large space in your columns than it has latterly done. *M. S. Gloucestershire.*

*Pig-breeding Farm.*—I beg to inclose a plan for a "pig-breeding farm," founded upon experience. For the method of growing early Potatoes and Mangolds, I am indebted to an article in this *Gazette* some years since, by Mr. S. Bowley, of Gloucester. I have found it to succeed exceedingly well:—

A 45-ACRE PIG-BREEDING FARM.—A light Carrot, Barley, and Pea soil.

ROTATION.		Acres. 2d Year.	
Acres.	1st Year.	Acres.	2d Year.
10	Mangolds and Early Potatoes, 1 yard apart, heavily dunged and dug.	10	7 Early Peas, and 3 Swedes. 3 Tares and Swedes.
10	7 Early Peas, Swedes after—3 Tares and Swedes. All limed and ploughed.	10	Carrots.
10	Carrots.—Dug. Soot and salt as manure.	10	Barley.
10	Barley.—Ploughed. No manure.	10	Potatoes and Mangold.
5	Grass to keep cow, and Grass and hay for horses.	5	Grass.
45		45	

PRODUCE.	
10 acres early Potatoes, taken up in July, 150 bushels	
per acre ... ..	1500 bush.
10 acres Mangolds, 25 tons per acre ... ..	250 tons.
10 acres Carrots, 20 tons per acre ... ..	200 "
10 acres Swedes, after Tares and Peas ... ..	200 "
10—7 acres early Peas, 3 acres Tares ... ..	200 bush.
10 acres Barley ... ..	400 "

DISPOSAL OF PRODUCE.	
Stock.—1 Boar and 25 Sows; average produce 8 each litter; 50 litters, 400 pigs, half to be sold at 6 months, half at 3 months old. Sows to litter end of March and end of September; pigs to be of a middling sized breed.	
KEEP.—1 Boar and 25 Sows, for 240 days, 4 tons of roots per Sow, and a few Peas, 20 bushels ... ..	104 tons.
Extra food, for April and May, Barley ... ..	200 bush.
Do. for October and November, Barley ... ..	200 "
and a few Peas ... ..	20 "
For 100 Pigs 1 month (June), Barley, with boiled small Potatoes and Carrots ... ..	100 bush.
Do. for 100 Pigs, 1 month (December) ... ..	100 "
Peas ... ..	20 "
To be sold at 3 months old.	
The same for the 3 months as for those to be sold at 6 months old, Barley 200, Peas, 20 ... ..	220 "
For 200 Pigs from 3 months old to 6 months old, 2 tons of roots per day for 100 days ... ..	200 tons.

EXPENDITURE.		£ s. d.
Debtor.—For young Pigs, 400 bush. of Barley ... ..	50	0 0
Lime, 50 hogheads, at 2 <i>s.</i> 6 <i>d.</i> ... ..	6	5 0
Manure, for Swedes ... ..	10	0 0
Do. for Carrots ... ..	10	0 0
Seeds ... ..	6	0 0
Labour, self, two men and one boy ... ..	70	0 0
Extra horse keep for two horses ... ..	10	0 0
Sundries ... ..	38	0 0
Rent and Taxes for 45 acres ... ..	100	0 0
	£300	5 0

SOLD.		£ s. d.
Creditor.—200 three-months old Pigs at 1 <i>l.</i> ... ..	200	0 0
200 six-months old do., at 2 <i>l.</i> ... ..	400	0 0
75 tons of Carrots, at 1 <i>l.</i> ... ..	75	0 0
Potatoes ... ..	75	0 0
100 bush. of Peas, at 4 <i>s.</i> 6 <i>d.</i> ... ..	22	10 0
	£772	10 0

*Edward Hulme, Putney.*

*Does Live Stock Pay?*—I am so frequently asked by enthusiastic agriculturists like "Agricola," what the profit is on live stock, that I had better at once give my opinion. All animals are necessary evils—we must have their manure to keep our fields in fertility, but we have to pay smartly for that manure—therefore, calculate on a direct loss on all you buy or grow for your live stock (including attendance, interest of money, lodging and casualties) of at least 15 to 33 per cent. Pigs lose least, because we get paid meat-price for their skins. If we give our animals a ton of hay, which would sell for 4*l.*, it would scarcely make more than 5*s.* in meat. The same

\* Should the land be very suitable for Wheat, store half the Carrots in October and immediately sow Wheat, making then 5 acres of Wheat and 5 acres of Barley.

by all other food. I yesterday asked a large and good practical farmer holding 800 acres, what he gave for his oilcake? "10*l.* a ton," said he, "I charge half to the bullocks, and the other half to the manure." So it is with Turnips; you may get 5*l.* per acre to draw off, but only 2*l.* 10*s.* to feed off. In very cold wet weather your Turnip crop may not even make 1*l.* per acre in mutton, although it costs you 5*l.* or 6*l.* Still we must have stock. A cottager will tell you "without a pig I cannot grow produce, for then I am without manure." If a cottager keeps a pig to the one-eighth of an acre, it indicates to us that our farms might be garden-like with 4 sheep or pigs to the acre the whole year. I still maintain that my balance-sheet was a profitable one. Breeding flocks are not all profit, for although the young animals bring in money, they pull the land, and I have heard it observed that the flock districts grow very little corn. Fattening stock makes fat land. *I. J. Mechi, Sept. 11.*

*Value of Stock in the United States.*—Thinking the account of the extraordinary prices of what English stock produces in the United States may be interesting to your readers, I send you the following, from the *New York Herald*, Aug. 26th, 1853:—"Extraordinary sale of cattle, &c. (From the *Cincinnati Gazette*). The Northern Kentucky Importing Association of Breeders had an auction sale of their pure-blooded short-horned stock, purchased in England in 1851, at the farm of Brutus Clay, of Bourbon County, Kentucky, on the 18th day of August, 1853. The Association is a Kentucky one, and the purchasers were put under obligations not to remove the stock from that State for one year. With this limitation the sale was well attended, and the bidding spirited. Bulls—1, Young Chilton, white, calved in May 1850, cost in England 600 dols., sold for 3005 dols.; 2, Diamond, roan, calved in June 1850, cost 630 dols., sold for 6001 dols.; 3, The Count, roan, calved in July 1851, cost 525 dols., sold for 2515 dols.; 4, Orontos, red and white, calved Sept. 1851, cost 630 dols., sold for 4525 dols.; 5, Fusilier, roan, calved Feb. 1853, cost 375 dols., sold for 4475 dols.; 6, Senator, white, calved April 1852, cost 630 dols., sold for 2000 dols.; 7, Belleville, roan, calved Jan. 1852, cost 1050 dols., sold for 1500 dols.; 8, Challenger, roan, calved Jan. 1852, cost 450 dols., sold for 4858 dols.; 9, Fortunatus, roan, calved Dec. 1852, cost 275 dols., sold for 1800 dols.; 10, Yorkshire Maynard, dark roan, calved March 1852, cost 275 dols., sold for 1000 dols. Cows and Heifers—1, Lady Stanhope, roan, calved 1847, cost 375 dols., sold for 1500 dols.; 2, Lady Fairy, red, calved in June 1848, cost 525 dols., sold for 1150 dols.; 3, Roan Duchess, roan, calved July 1850, cost 275 dols., sold for 900 dols.; 4, Goodness, red, calved September 1847, cost 525 dols., sold for 2025 dols.; 5, Gem, roan, calved April 1851, cost 775 dols., sold for 825 dols.; 6, Equity, deep red, calved March 1852, cost 400 dols., sold for 1000 dols.; 7, Necklace, roan, calved April 1852, cost 260 dols., sold for 805 dols.; 8, Bracelet, roan, twin of Necklace, cost 260 dols., sold for 750 dols.; 9, Mazurka, dark roan, calved August 1851, cost 600 dols., sold for 3050 dols.; 10, Lady Caroline, light roan, calved July 1851, cost 400 dols., sold for 1825 dols.; 11, Duchess of Sutherland, red, calved December 1850, cost 375 dols., sold for 900 dols.; 12, Maid of Melrose, roan, calved October 1851, cost 775 dols., sold for 2200 dols.; 13, Muffin, red roan, calved June 1852, cost 225 dols., sold for 535 dols.; 14, Orphan Nell, roan, calved November 1852, cost 325 dols., sold for 1000 dols.; 15, Flattery, white, calved November 1851, cost 325 dols., sold for 805 dols. Sheep, Southdown.—Three bucks sold for 755 dols., 480 dols., 340 dols.; and 3 ewes for 250 dols., 180 dols., 230 dols.; Cotswold, 2 bucks, 1010 dols., 710 dols.; and 6 ewes, 270 dols., 150 dols., 230 dols., 150 dols., 200 dols. Leicester, 1 buck and 2 ewes for 52 dols. each. Horses—Cleveland Bay Horse (Young Lord) cost 1900 dols., sold for 2800 dols." *W. B. Sheehan, Underhill House, Barnet.*

*Liquid Manuring.*—I am about to take a farm in hand, which by the rapacity of a succession of bad tenants is reduced to the last stage of inanition, and I congratulate myself on the discovery that I shall be able to do much towards the restoration of its fertility by the adoption of the Mechian system of liquid manuring, though at a very humble and respectful distance, both in means and appliances, from the practice of that spirited agriculturist. I have erected the stalls and stables in such positions that the liquid sewerage can all be brought into a tank on lower ground, which may also have the advantage of a command of flood-water. The tank is to be cylindrical, of brick in cement, and of about 12 feet diameter, and I purpose having on the lower side a discharge pipe, from which the manure may be conveyed in pipes or channels, to irrigate several acres of ground below, or may by a moveable wooden trunk be run into a water cart. But I am met by some difficulties, for such they are to me, who has never seen, nor am likely to see anything of the sort, till my own is completed. These difficulties may no doubt be easily removed, if any of your correspondents would kindly reply to my inquiries on these points.—1. What, in the absence of mechanical power, are the best means of stirring up the sediment at the bottom of the tank, so that it may flow out in a proper state of suspension? 2. How can the residuum, which in winter will amount to a considerable quantity in a short time, and be a most valuable manure, be best taken out of the tank when the latter is empty of its liquid contents? The only feasible plan which I can devise is that of an inclined plane, wide enough for a cart to be backed in, for the removal of the solid matter, but this will be attended by great additional cost, and is open to the



serious objection of exposing so large a portion of the contents of the tank to loss by evaporation. 3. What is the best form, and what the materials for the tap or discharge pipe? If of iron it will quickly be corroded, and if of other materials how is its closure to be managed? I think of having a pipe through the wall of the tank, of earthenware, in an elbow form, the mouth being horizontal, and about 2 feet from the bottom of the tank. Its cover to be a copper lid, loaded on the top, lined beneath with gutta-percha, and moving not with a hinge, but lifted between three upright copper rods, fixed in a frame or hoop round the mouth, and raised by a chain to be drawn up at the top of the tank. Any suggestions, or information in connection with the subject, will be thankfully received by me, and may be acceptable to others also, who contemplate so obvious, though so long neglected a means of improvement, as the husbanding and proper application of liquid manure. J. D. S.

### Farmers' Club.

NEWCASTLE.—The best method of improving Grass land, when it has become hide-bound.—Mr. Weeks said that he and other farmers had land which gave them much trouble. Hide-bound cattle and hide-bound land were both very unprofitable to the farmer. He had some such land, and he had it harrowed, which had benefited the land, as it had brought away a great deal of moss and undergrowth; but something more was required. He had read of a gentleman in Scotland who had such land harrowed in the summer, and who had got off a great quantity of stuff for manure, and had thus derived much benefit. He now asked the club whether he had done right, and what they would advise him and others to do with land of this kind. He had only tried his plan this year, as it was the first year of his occupying the land; and he was desirous of instruction.—Mr. Taylor said he had examined several fields, and had found that those which had been mown several years, and had been partly pastured, were not hide-bound. Some which had been close eaten he also found were not hide-bound. There were, on good ground, many patches of what was usually called sweet herbage. By frequent mowing, these tender Grasses were sometimes much hurt, while the coarser Grasses, like trees when pruned, were caused to grow more rapidly. Then sheep being put on, eat the tender Grasses, but would not take the coarser. The latter then grew long and fell, and the refuse which thus accumulated made the land what was called hide-bound. In some of the southern counties relays of cattle were kept, and lean stock were put in, which ensured the whole Grass being eaten close once a year. He thought that close eating once a year was of much importance. Some writers had recommended that hide-bound land should be pared and burnt, and seeds sown. That seemed an extreme course, and he had feared that it would in some cases destroy the land, but in some cases it had been undoubtedly beneficial. Some land belonging to a neighbour of his was pared and burnt, and left just as it was, no seeds being sown; the Grass came to the surface, and there was a better crop than had been known upon that land for years. He (Mr. T.) approved of Mr. Weeks's plan, but thought it did not go far enough. He thought it would be beneficial to use a sort of subsoil plough, one with 3 coulters, 10 ins. apart, and, if necessary, he would cross it, and apply quicklime. That would decompose the vegetable refuse which made the land hide-bound, and would promote the growth of the finer Grasses. That was seen in cases where it had been tried.—Mr. Burnett said it was generally required of a tenant that he should eat his green stuff on the premises. But they forgot the quantity of material taken away in corn, in meat, &c., all of which was lost to the land and needed to be replaced. In the towns where these things were consumed, that consumption made a nuisance. Then the authorities began to stir, boards of health were formed, a more abundant supply of water was recommended, the sewerage was improved, and all the manure was washed away and lost. He (Mr. B.) would have engines erected, and pump back all the manure of towns into the country. He was sure the farmers would be glad to have it, and would give a good price for it. On the 21st of July, he (Mr. B.) had seen a farm in Lancashire, upon which there were 8 or 10 acres of Swedish Turnips which were 25 inches high, and some of Mangold Wurzel 20 inches high. A field of Clover and Rye-grass had been cut four times this year, and they were watering it with liquid manure, and expected two or three more crops during the year; while generally only two crops were obtained. In every great town there were schools of design and lectures, yet they could not make a better curve than in the days of the Pharaohs; as to sculpture, they could only humbly imitate the works of the ancients. Yet they could not have a single piece in the United Kingdom in which the implements for agricultural purposes could be stored for the sake of comparison and improvement. It was Mr. Littledale's farm to which he had referred, and he had much pleasure in saying it was managed by a gentleman from Tyneside. There was a 3-inch main through the farm. He had no doubt that the state of Mr. Weeks's land arose from the poverty of the land. The freemen of Newcastle had 1200 acres, much of which was hide-bound land; and though they sometimes permitted 100 hides to be set apart for improvement, it was generally made worse.—Mr. Dove said he had often had his eye on the centre of the race ground. He had got permission from the Herbage Committee to drain it, putting in drains every

4 yards. He took the clay off the ridges, and limed the surface. The bents were all taken off. Last year he tried an experiment in the same way, which was successful.—Mr. Stephenson said that he thought the benefit derived from Mr. Weeks's measure would be but temporary; that the incisions made by harrowing would soon close up. Twenty years ago he entered upon the North Throckley farm. On the ridges little or nothing grew. He went down the top of a ridge with a plough and down each side. He took off the top, made compost, and laid it on. That was beneficial, but it was a work of time. It took years to get it into good order. It was now one of the best pieces he had. Westward he had some land which was greatly benefited by paring and burning, and now had an abundance of beautiful white Clover. Two years ago he tried bones on hide-bound land, and that produced the greatest benefit of all. The quantity of produce was very great.—Mr. Burnett could bear Mr. Stephenson out. Lime had but a temporary effect.—The Chairman (Mr. Ramsay) said the harrowing of such land had been recommended by some of the best writers. He did not think that the sowing of seeds in such cases was necessary; as when land was so treated, Grasses would generally spring up. The quantity of ashes got by paring and burning was no doubt beneficial. He also agreed with Mr. Burnett that poverty was the chief cause of hide-bound land. When land was made rich the moss disappeared. That might not be practicable on all lands, but much might be done. They were in this part of the country behind the south country farmers in the management of Grass. They were losing a large profit on Grass lands. They had not given them manure enough. The freemen of Newcastle would do well if they would sometimes take advice from that club. There was as fine a tract of land there, doing as little as any piece he had ever seen. As to harrowing land, they would see particular spots where the sheep eat down the Grass till some of it was actually pulled up and lay upon the surface. He believed this tearing up and bare eating was very beneficial. These short places made the most mutton. Professor Way had taken up the subject of Grasses very fully, and he (the chairman) recommended the members to read his lecture. The land at Romney Marsh was wonderful for carrying stock, and there the farmers never allowed the bents to rise. He was glad to hear Mr. Burnett mention that wonderful farm of Mr. Littledale's which he had also seen. Water meadows were very useful, though very little used here. He had seen in the south, on such meadows, the largest and earliest Grass he had ever beheld. With respect to bones, Cheshire had been made what it was by bones, though they were not so well crushed as they should be. He would have them smaller.—Mr. Burnett said, the effect would not be so durable; he would advise the use of plenty of manure, and not to rely too much upon the harrowing.—Mr. Weeks said, he burned some small fields which had been used for a fair, and much trampled in wet weather. The Town Moor was fed on every year; but he supposed not with stock enough. As to bones, he should be inclined to add something. Half-inch bones were very well for the landowner; but smaller bones, with a little nitrate of soda, were better for the tenant farmer.

### Farm Memoranda.

BURNTHUR, NEAR KINGSKITTLE, FIFE (the property of and farmed by Alex. Lawson, Esq., linen manufacturer there).—This farm consists of 136 Scotch acres; the arrangements for laying pipes to all the fields were commenced only last winter, so that there has not been time yet to ascertain the effects either on the crops or on the stock. Only one tank is in operation. It holds 50,000 gallons. But two more are to be constructed immediately, of still larger size. The tank has a float in it with a rod which rises to a conspicuous height, and which, by a graduated scale thereon, shows the depth of the liquid, and the number of gallons in the tank. The object of this float and rod attached is to show, by the sinking of it, whenever a certain number of gallons have been distributed over a measured portion of ground. Mr. Lawson allows none of the solid dung to get into the tank; it is the urine only which flows from his cattle-stalls and boxes. These stalls and boxes are constructed in a very superior style. The arrangements for ventilation are especially perfect. Water is supplied by a cock to each box and stall. Mr. Lawson has divided his farm into fields of 11 acres, each having a hydrant in the centre. To this a hose of about 175 yards in length is attached, consisting of separate pieces of hose, each 25 yards in length. The first two pieces are 2 inches in diameter, the next two 1½ inches, the last two 1¼ inches. I was conducted to a field of Italian Rye-grass, half of which was sown with nothing but Rye-grass, at the rate of 5 bushels per Scotch acre; the other half had been sown with Barley at the rate of 2 bushels, and with Rye-grass at the rate of 3 bushels. The object of the experiment was to ascertain which would yield the best return. My attention was chiefly interested with the arrangements of the buildings and machinery; any account of them, however, would be foreign to my present object—except, perhaps, to mention that it is intended to conduct the waste steam into the tank, with the view of accelerating fermentation.

### Miscellaneous.

Improvements in Preserving Milk and other Fluids. Patent dated February 25, 1853 (No. 477).—William

Symington, of 41, Gracechurch Street.—According to this invention, the milk or other fluid is placed in an open vessel, and is kept heated by a steam jacket, or otherwise. The vessel in which the milk or other fluid is to be preserved is provided with a short tube of soft metal, to which is attached by suitable coupling a long tube, which is introduced into the open vessel containing the liquid. Heat is then applied to the vessel which is to receive the fluid, by which means the air is driven from it, and ascends through the fluid; this latter then descends and fills the lower vessel as it is cooled. The short tube is then hermetically closed. Claim: The combined means described of preserving milk and other fluids. *Mechanic's Magazine*, Sept. 3, 1853.

### Calendar of Operations.

#### SEPTEMBER.

SOUTH DEVON, Sept. 7.—Although since last report it has been far from good harvest weather, yet advantage has been taken of the sunshine to take in a great portion of the corn, and by the end of the week, with the exception of some fields of late corn, the harvest may be considered well over. The prices given for cutting and binding Wheat appear to be about 6s. the acre and cider, and for mowing Barley 2s. the acre and cider. Turnips and Mangold Wurzel grow fast, the former still maintaining the promise of a fine crop. Prices of agricultural produce are well up for everything. New Wheat has already been sold at 61s. the quarter, and Barley 34s., of course prime samples.

### Notices to Correspondents.

CEMENTS: F Z has slate cisterns or troughs for milk (Cornish slate), which do not prove good; cracking and leaking. It is wished to know if there is any cement which could be used as a lining, which would become as hard as stone, and bear the cleaning by hot-water, requisite for the purpose for which these cisterns are had.

CIDER MILLS: *Blan-duris* will find information on this in the "Cyclopedia of Agriculture," published by Messrs. Blackie. Or by applying to Messrs. Ferrabee, Stroud, Gloucestershire, which is a cider county.

CLOVER DODDER: *E C Nana*. The specimen sent is the Clover Dodder, a parasite on Clover, the growth of which it destroys in the patches which it infests. These patches should be pared and burned—and the recurrence of the plague in future years may thus be hindered.

GUTTA PERCHA: *W B Hurrard*. We believe that the gutta percha tubing is being used the best for conducting liquid manure. We do not know the pump you refer to, but dare say some of our readers will be kind enough to give their experience.

### Markets.

#### COVENT GARDEN, Sept. 17.

The market is well supplied with Vegetables and Fruit, but trade is still dull. Out-door Peaches and Nectarines are plentiful, and English Grapes are abundant. Pears consist of Jargonelle, Beurré d'Amanlis, Bon Chrétien, Brown Beurré, and Bonne Louis. Importations from the Continent of Potatoes and Tomatoes are still kept up; the latter fetch from 2s. to 3s. per dozen. There are also French Apricots in the market, at from 6d. to 1s. per dozen. Cherries are over. Greengages and other Plums from the South of France fetch 4s. per basket. Carrots and Turnips fetch from 2d. to 4d. per bush. Peas are still good. Potatoes are becoming much more diseased, and prices for them are not so good. Mushrooms are more plentiful, and a little cheaper. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, Pinks, and Carnations.

#### FRUIT.

Fine-apples, per lb., 3s to 6s  
Grapes, hothouse, p. lb., 1s to 3s 6d  
Peaches, per doz., 2s to 7s  
Nectarines, per doz., 2s to 6s  
Apricots, per doz., 1s to 3s  
Plums, per punnet, 1s to 2s  
— Greengages, per punnet, 1s to 2s  
Melons, each, 1s to 3s  
Apples, per bush, 3s to 5s  
— dessert, p. lb. sieve, 2s to 4s

#### VEGETABLES.

Cabbages, per doz., 6d to 9d  
Cauliflowers, each, 1s to 2s 4d  
Greens, per doz., 2s 6d to 4s  
French Beans, p. hf. sieve, 1s 6d to 2s 6d  
Potatoes, per ton, 80s to 120s  
— per cwt., 3s to 6s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 2s to 2s 6d  
Cucumbers, each, 2d to 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 3s to 4s  
Spinach, per sieve, 1s to 2s  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

HOPS.—BOROUGH MARKET, Sept. 16.  
Messrs. Pattenden and Smith report that about 30 pockets of new Hops have arrived from Kent and Sussex, and are selling freely at from 8s. 6d. to 10l. 10s. per cwt. Yearlings are also much in request, at several shillings advance in price since last week. The month is said to be rapidly on the increase in both Mid and East Kent. Where picking has commenced, the crop is said to come very short of the estimate. The duty is from 150,000, to 155,000.

#### COAL MARKET.—FRIDAY, Sept. 16.

West Hartley, 23s.; Wallsend Riddell, 24s. 9d.; Wallsend Hutton, 26s.; Wallsend Stewarts, 26s.; Wallsend Tees, 26s.—Ships at market, 56.

#### HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 15.  
Prime Meadow Hay 90s to 105s  
Inferior do. ... 50 80  
Rowen ... 50 60  
New Hay ... 118 130

CUMBERLAND MARKET, Sept. 15.  
Prime Meadow Hay 110s to 120s  
Inferior do. ... 45 84  
New Hay ... 118 130  
Old Clover ... 118 130

WOOL.—BRADFORD, THURSDAY, Sept. 15.  
Wool is exceedingly hard to buy from the grower, and equally difficult to sell to the spinner, whose avocation is ruinously bad, and the consumption is daily diminishing. Nolls and brokes are without change.

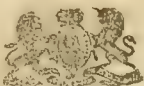
YARNS.—The business doing is steady, but the prices are ruinously low, and the cost of producing yarns is so great, both in material and labour, that the spinners are inclined to stoppage of frames where orders run out.

PAPER.—The month of September has not been active for the purchase of grey goods of plain fabric. Those so engaged are un-









### IMPROVED GRASS-CUTTING & ROLLING MACHINE.

**ALEXANDER SHANKS & SON, MACHINE MAKERS,** Arbroath, Forfarshire, respectfully solicit notice to their **IMPROVED GRASS-CUTTING AND ROLLING MACHINE** for Lawns, the complete success of which, and its acknowledged excellence and superiority over all other machines of the kind, have now been fully established.

Testimonials and further particulars will be immediately franked on application.

**SIR WILLIAM BURNETT'S DISINFECTING FLUID.**—THE BEST CONCENTRATED "CHLORIDE OF ZINC."—GREAT REDUCTION OF PRICE.—The merits of this Fluid, invented by Sir W. BURNETT, M.D., F.R.S., &c. &c., for the Disinfection of Sick Rooms, Clothing, Linen, &c.; for the Prevention of Contagion, the Preservation of Animal Matter from Putrescence, the Purification of Bilge-water, Cesspools, Drains, Water-closets, &c., are now so well known to the public as to render comment unnecessary.

Sold at the Office, 18, Cannon Street, City, London; and by Chemists, Shipping Agents, and others throughout the United Kingdom, in imperial quart bottles at 2s. 6d.; in pints at 1s. 3d.; in half-pints at 9d.; and in bulk at 6s. per gallon.

**CAUTION.—Beware of Imitations.**—The only genuine Disinfecting Fluid is sealed over the cork with the inscription, "Sir Wm. BURNETT'S Disinfecting Fluid," and accompanied with numerous testimonials of the highest order, and instructions for its use.

**DAVIES'S CANDLES,** 61d. per lb.: moulds, 7½d.; composite, 8d., 8½d., 9d., and 10d.; botanic wax, 1s.; sperm, 1s. 7d. and 1s. 8d.; Palmer's metallic, 8d.; magnams, 9d.; argand oil, 4s. 6d. per gallon, French, 4s.; solar, 3s. 9d.; sperm, 8s.; Windsor soap, 1s. 3d. per packet; brown Windsor, 1s. 8d.; rose, 2s.; almond, 2s. 6d.; yellow soap, 3s. 6d., 4s., and 4s. 8d. per 112 lbs.; mottled soap, 50s. for cash.—At M. P. DAVIES & SON'S, old-established warehouse, 63, St. Martin's Lane, Charing Cross, London.

**SHIRTS.—FORD'S EUREKA SHIRTS** are not sold by any hosiers or drapers, and can therefore be obtained only at 38, Poultry. Gentlemen in the country or abroad, ordering through their agents, are requested to observe on the interior of the collar-band the stamp—"Ford's Eureka Shirts, 38, Poultry"—without which none are genuine. They are made in two qualities, the first of which is 40s. the half-dozen, and the second quality 30s. the half-dozen. Gentlemen who are desirous of purchasing shirts in the very best manner in which they can be made are solicited to inspect these, the most unique and only perfect fitting shirts. List of prices, and instructions for measurement, post free.—**RICHARD FORD, 38, Poultry, London.**

### COUNTY OF TIPPERARY.—BARONY OF LOWER ORMOND.

**TO BE LET,** from the 29th of September, the following Lands, viz.:—

Ballylins, West Farm, containing	140 Acres, Irish.
Matthew's Farm (part of Ballylins W.)	53 do.
Castleview Farm	118 do.
Ballylins, East Farm	200 do.
Lismalin Farm	200 do.
Ballynahinch Farm	82 do.
Bullock Park, or Kilsunhamore	230 do.

These Farms are on the Estate of Lord Ashtown, and are situated about nine miles from Portlanna and Roscrea. Except the last mentioned, they are all suited for Tillage under the five course rotation; there are good Slated Houses on some of them, and any other buildings, which may be reasonably required, will be erected by the Landlord.

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**THE OIL MILLS, Weybridge, Surrey.**—**FLINTAN, HURST & Co.,** as successors to the late Messrs. W. & T. M. FLORENS, respectfully inform the customers of the late firm that they are in a position to supply them with genuine **LINSEED CAKES**, at the Mills, on the most liberal terms. Weybridge, Sept. 17.

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**COCHIN CHINA CHICKENS, from 7 to 13 weeks** old, the property of an Amateur. Pullets light buff, mostly quite clear necked; the Cockers are very light and well feathered. Bred from hens purchased of Messrs. Fletcher & Gilbert, Kensington, and Mrs. George. The Cock a splendid son of Mr. Fletcher's celebrated bird Phoenix. Price 30s., 40s., 50s., and upwards, delivered in London. Address, Mr. R. L. GOSNOLD, Betchworth, Surrey.

**COCHIN CHINA CHICKENS, from Prize Hens,** 10 months old. Mr. THOMAS GIBSON, Wine Merchant, Great Street, has for sale 50 brace-class Birds, selected from a flock of 100, of 20s., 25s., and 30s. each. Strains of Sturgeon and Pouter. Also 1 brace of 10s. per dozen, from light buff and extremely well feathered Hens, and twenty pair of England on receipt of a 10s. order. A Chukon Cuckoo and two Pouter for sale, price 30s.

### FINE SPECIMEN CAMELLIAS.

**FOR SALE, from 50 to 60 FINE SPECIMEN CAMELLIAS,** including the best kinds in cultivation, varying in size from 6 to 12 feet in height; and about 20 others of the newest kinds, averaging 4 feet in height. The whole are in the best health, and well set with Flower Buds. Most of the large specimens are in tubs. For further particulars apply to JOHN SPENCER, Buck Hill, near Calne, Wilts.

A Purchaser willing to take the lot together would be preferred. Also 6 or 8 Standard Orange Trees, about 7 feet in height.

### WESTBURY ON TRYM, NEAR BRISTOL.

**FOR SALE,** at the Trade price of the Stock, the well established **WEST OF ENGLAND NURSERY.** Mr. CURTIS is leaving the Nursery solely on account of ill health, and will dispose of the Business, &c., for the mere worth of the Stock, at a trade-price valuation. A consideration will be required for Godwin's Lease of Premises, or Transfer of Orders. The sum of 1000. only is required to be paid in cash, and in payment of the remainder of the Purchase-money approved Bills at two, four, and six months will be taken.—Further application to be made to Mr. J. G. HOBBS, Solicitor, Bank of England Chambers, Bristol.

**FOR SALE, cheap GREENHOUSES,** both span and lean-to roofs. May be seen erected on the premises of the builder, Mr. T. SMITH, Pine Cottage, New Road, Hammer-smith. Also an assortment of one, two, three, and four-light Garden Frames. N.B.—Lights glazed and painted complete at 8d. per foot; not glazed, 4½d.

**FOR SALE, a compact FREEHOLD ESTATE,** called Falconhurst, 30 miles from London, in the county of Kent, and 4 miles from the Edenbridge Station, on the South-Eastern Railway, consisting of 59 acres of Land, in a ring fence. A moderate sized House in the centre; also Barn, Stables, and all requisite Farm-buildings. About two-thirds of the Land is in Grass, the remainder in Hop and arable. The house is supplied with water from a spring.

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### TO NURSERYMEN, FLORISTS, AND OTHERS.

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**TO BE SOLD, BAXTER'S BRITISH PHENOGAMOUS BOTANY,** 6 vols.; clean, complete; half-bound in calf. A coloured copy. Price 3s. 10s. Published at 9d.

Also **THE GARDENERS' CHRONICLE** for the years 1849, 1850, 1851, and 1852; clean, complete, unbound. Price 1s. 15s. Apply to R. H., 13, Dunchurch Street, Rugby.

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### Sales by Auction.

#### NOTICE—SALE POSTPONED.

**MR. J. C. STEVENS** begs to state that the Sale of **ORCHIDS**, advertised in the last Number of the *Chronicle* for the 23d inst., is postponed till **FRIDAY, Oct. 14**, 38, King Street, Covent Garden, Sept. 17.

#### COCHIN CHINA FOWLS.

**EXTRA SALE ON TUESDAY, 27TH SEPTEMBER.**

**MR. J. C. STEVENS** will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on **TUESDAY, 27th September**, at 12 o'clock precisely, 200 **LOTS OF VERY CHOICE COCHIN CHICKENS**, chiefly Buff and Lemon colour, entirely the property of a gentleman in Kent, who has spared no expense in obtaining them of the highest quality; they were originally from some of Mr. Sturgeon's "Sam" and "Jerry" and some from Mr. Pynchard and Mrs. Herbert's strains.—May be viewed on the morning of Sale, and Catalogues forwarded on receipt of a stamped directed envelope enclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

#### SALE OF PLANTS.

**MR. CRAGG** has the honour to inform the Public that he has received instructions from W. B. Wainman, Esq., to submit by **AUCTION**, at the White Lion Inn, Kildwick, near Skipton, on **WEDNESDAY, the 21st September, 1853**, the entire **COLLECTION OF PLANTS**, all of which will be removed from Carhead for the convenience of sale, and are in the most healthy condition, consisting of Orchideae, Stove Greenhouse, Half hardy, and other plants in pots; amongst which Dendrobium, and many new and valuable varieties, particularly Dendrobium, Dendrobium, and Devoniensis, the scarce Varied furva, and the scarce Maxillaria ramosa; some excellent specimens of Stove and Greenhouse Plants, Camellias, Azaleas, Cinerarias, &c. &c. Also, some fine young plants in pots of Sikkim-Himalaya Rhododendrons; likewise several thousands four-year old Hybrid Seedling Rhododendrons (in boxes), raised from the Scarlet Nepal and Chinnamoon varieties; together with 400 pots of Tausent China and other Roses for forcing; 10 Vines in pots, from eyes, one, two, and three years old; 250 pots of Strawberries for forcing, and a fine plant of Hakea Vulcarea.

Catalogues will be ready for delivery on the 14th inst., and may be had of the Auctioneer, at his Office in Skipton, or of Mr. AUGER, the Gardener, Carhead, near Skipton, by transmitting six Postage Stamps. The whole will be on view at 10 o'clock on the morning of sale, when none but parties in possession of Catalogues will be admitted. The Sale to commence punctually at 1 o'clock in the afternoon.

Trains arrive at the Kildwick Station from Leeds and Bradford, at 10.2 a.m., 11.12 a.m., and 12 p.m.; and depart at 6.55 p.m., and 7.55 p.m. And the Last Lancashire and North Western Trains arrive at 10 a.m. and 2.13 p.m., and depart at 6.9 p.m.

### BATTERSEA.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** have received instructions from Mr. Ambrose to offer to Public Competition by Auction, without reserve, on the premises, King Street, Battersea, on **MONDAY, Oct. 10th**, at 11 o'clock, the whole of the valuable **GREENHOUSE PLANTS**, consisting of a fine collection of Indian Azaleas, amongst which are many fine specimens; Camellias, Ericas, Cytisus, Epacris, Diosma, Acacia, Daphne, choice Cinerarias, White and Purple Primula, Calceolaria, Stephanotis, Dielytra spectabilis, Rhododendrons, &c.; also about 20,000 Fancy and other Pelargoniums, which will comprise all the new and most improved kinds in cultivation; about 50 specimen plants of the newest kinds; together with 14 newly erected Greenhouses; 3 capital Boilers; about 800 feet of hot-water Pipe; several Pits; one, two, and three-light Boxes; Hand and Striking Glasses; Bricks; Wheel-burrows; Water Pots; Syringe; and sundry effects. The above Stock is particularly worthy the attention of Exhibitors enriching their collections, as well as the trade, from its excellence.—May be viewed one week prior to the sale; Catalogues (6d. each returnable to purchasers) may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

### TO LIBRARIANS, FANCY DEALERS, AND OTHERS.

A Valuable and judiciously selected Library of French and English Books by the best Authors, Engravings and Fancy Goods, Show-cases, Shop Fronts, Doors, &c.; likewise the erection of a small Greenhouse, with some Cacti and Aloes.

**MESSRS. PROTHEROE AND MORRIS** are instructed to Sell by Auction, on the Premises, by order of the Proprietor, W. DENNIS, 1, Adams' Place, opposite Arthur Street, King's Road, Chelsea, on **MONDAY, Sept. 19**, at 11 for 12 o'clock, all the carefully selected French and English Books in first-rate condition. Amongst the English will be found the works of Bulwer, Cooper, Disraeli, James, Capt. Marryat, Sir Walter Scott, Mrs. Gore, Mrs. Trollope, &c.; in the French, the works of Balzac, Alexandre Dumas, Comtesse Dash, Paul Féval, Gondricourt, Alphonse Karr, Paul de Kock, Pigault Lebrun, Soulié, Souvestre, George Sand, &c. The Fancy Goods comprise the usual assortment of goods, suitable for presents, such as Work-boxes, Fancy Baskets, with ornamental leather leaves, Scent Cushions, Boxes for Handkerchiefs, Penholders and Pen-wipers, &c. A collection of curiously cut Ornaments in card-board, &c., &c. Wire Vases for flowers, and a variety of other articles.—May be viewed three days prior to the sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

### IMPORTANT AND FINAL SALE.

NORBITON NURSERY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. Smith to submit to an unreserved Sale by Auction, on the Premises, Norbiton Nursery, Kingston, Surrey, on **THURSDAY, Sept. 22**, and following days, at 11 o'clock each day, in consequence of the lease expiring at Michaelmas, the whole of the justly celebrated hybridised **NURSERY STOCK**, consisting of White, Scarlet, and other varieties of Rhododendron arboreum; many thousand hardy Scarlet and Yellow Hybrids, including some very first rate, with the original large Yellows, beautifully furnished with bloom buds; Dr. Hooker's Sikkim varieties; also the valuable Greenhouse Plants, comprising Camellias and Azalea indica, well set with bloom buds, Lilium lancifolium, in variety; together with a capital Span-roof Greenhouse, with Cylinder Boiler and Cistern, about 200 feet of Hot-water pipe, Bricks, &c.; several one, two, and three-light Boxes, a number of Hand Lights, of sizes; Nest of Seed Doves, Desk, capital Carpenter's Bench, Garden Pots, Barrows; Hornbush, Box and other Hedges, Compost, and sundry effects.—May be viewed one week prior to the sale, and Catalogues may be had, 6d. each (returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

### MAXSTOCK CASTLE, WARWICKSHIRE.

#### IMPORTANT SALE OF SHORT-HORNED CATTLE.

**MR. STRAFFORD** has received instructions from the Executors of the late Captain Dilke, R.N., to Sell by Auction, without reserve, at Maxstock Castle, near Colshill, Warwickshire, on **TUESDAY, September 20**, the entire herd of **SHORT-HORNED CATTLE**, consisting of upwards of 60 head of Bulls, Cows, and Heifers, which have been purchased and bred from the most celebrated herds in the kingdom, such as those of the Earls of Carlisle and Spencer, Sir C. Tempest, Messrs. Bates, Bell, Booth, Lakin, Smith, Torr, Watson, Whitaker, &c. The stock are in a healthy and prolific state, and well worthy the attention of purchasers of first-class animals.—Catalogues, with the pedigrees and other particulars, may be had on application to Mr. STRAFFORD, 89, Guildford Street, Russell Square, London; and of Mr. THOMAS STARR, at the Maxstock Castle Farm, near Colshill, Warwickshire.

### ABINGTON RECTORY, NEAR NORTHAMPTON.

#### IMPORTANT SALE OF SHORT-HORNED CATTLE, ETC.

**MR. STRAFFORD** respectfully announces that he has received instructions from the Rev. F. Thursty, to Sell by Auction, without reserve, at Abington, near Northampton, on **TUESDAY, September 27**, his entire Herd of Pure-bred **SHORT-HORNED CATTLE**, consisting of between 50 and 60 head of Bulls, Cows, and Heifers, purchased and bred from the famed herds of the late Earl Spencer, Sir C. Knightley, Messrs. Bates, Booth (Killerby), Fawkes, Manning, Smith, Whitaker, &c. Also a few valuable HORSES, and some choice PIGS of the white breed, with a quantity of **DORKING FOWLS**; the whole of which are deserving the attention of breeders of superior stock.—Catalogues, with the pedigrees and other particulars, may be had on application to Mr. STRAFFORD, 89, Guildford Street, Russell Square, London; and of Mr. LICKERTON, at Abington, near Northampton.

### VALUABLE NURSERY AND GARDEN GROUND AT LOUTH, LINCOLNSHIRE.

**MR. THOMAS JACKSON** will sell by **AUCTION**, at the King's Head Hotel, in Louth, on **MONDAY**, the 19th day of September, 1853, at 7 o'clock in the evening, subject to such conditions as will be then produced, unless previously disposed of by private contract, of which due notice will be given, all that **FREEHOLD PIECE OF GROUND**, used as a Garden or Nursery, containing 5 acres, 1 rood, 7 perches, more or less, with the Cottage or Tenement, Seed House and Buildings thereon, and a Glass and Brick Pit, 23 yards long, situated near the River Trent in Louth, and fronting the Road leading to Cockerington, now in the occupation of the owner, Mr. John Fisher. The stock of Forest and Fruit Trees, Shrubs, and Agricultural produce may be taken at a valuation. The Land is in a good state of cultivation, and has been occupied as a nursery for 30 years; is well adapted both as regards situation and soil for the cultivation of Garden produce, and being the only nursery in or near Louth, is well worthy the attention of Gardeners and Florists. Immediate possession can be given.

Fair particulars may be obtained on application to Mr. FISHER, the owner, Louth; Mr. DURCAN HARRIS, Seedsmen, 109, St. Martin's Lane, London; to the Auctioneer; or to Messrs. HOLDEN & SONS, Solicitors, Hull.



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**MR. THOROLD**, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out, or re-arranging their Gardens and Pleasure-grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

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**A LARGE COLLECTION OF COPIES** from the ANTIQUE STATUES, and also of MODERN FIGURES of considerable merit by Bacon, Thorwaldsen, Hopper, and others, may now be inspected at AUSTIN & SKELEY'S Artificial Stone Works, in the New Road, near the Regent's Park, London. They are warranted to endure the frost, even of North America, as well as Portland stone, and the prices range from Two Guineas to 30l.

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**CHEAP BEER—A NEW DISCOVERY**, by which Nine Gallons of good family BEER can be made for ONE SHILLING. It is composed of the most valuable vegetable products of nature. This invigorating compound helps nature much in all her actions. It restores appetite when lost, and strengthens a weak stomach, thereby forming the basis of a healthy constitution.—Sent post free, for eight stamps, by Mr. J. HUDSON, 18, Arthur Street, Bloomsbury, London.

**ALLSOPP'S PALE ALE**, in Casks of 18 Gallons, 30s.; and in full-sized Bottles, Imperial Measure only, by which the Public gain one-third—

Quarts ... .. 8s. per dozen.

Pints ... .. 5s.

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Supplied, in the highest state of perfection, by HARRINGTON PARKER, Beer Merchant, 54, Pall Mall, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitehall, in the City of London, and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—SATURDAY, SEPTEMBER 17, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 39.—1853.]

SATURDAY, SEPTEMBER 24.

[PRICE 6d.

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ERRATUM.—In Mr. BUNNEY's List, advertised Sept. 17th, under the head Orchideous Plants, *Miltonia Moreleana* should be 42s. instead of 21s.

**THE GREAT FLORAL EXHIBITION**, under the immediate patronage of his Highness, the Duke of NASSAU, will take place in the Winter Gardens at Fiebrich-on-the-Rhine, from the 1st to the 15th of April, 1854.—Programmes and Lists to be obtained gratis, at the Office of this Paper.

THELEMAN, Director.

**SCOTTISH GARDENERS AND LAND STEWARDS' ASSOCIATION.**—ELECTION OF PENSIONERS.—Notice is hereby given, that applications from parties intending to become candidates for the next Election of Pensioners, must be lodged with the Secretary on or before the 15th October ensuing.

By order of the Board.

6, York Place, Edinburgh, Sept. 24.

**HIGHBURY BARN TAVERN.**—The beautiful Gardens attached to the above Tavern are open daily, and can be ENGAGED for FETES, GALAS, HORTICULTURAL and POULTRY EXHIBITIONS, &c. — rooms are admirably adapted for first-class Concerts and Balls. Wedding Breakfasts and Private Dinners executed with elegance and despatch. Wines of the first class only.

A. HINTON, Proprietor.

**NEW SEEDS FOR THE COMING SEASON.**

**WILLIAM E. RENDLE AND CO., SEED MERCHANTS**, Plymouth, are now harvesting and receiving from the Growers a choice assortment of all kinds of Garden and Agricultural Seeds. Their New Seed Catalogue will be ready early in December.

## LOBELIA ST. CLARE.

**JAMES LAKE, NURSERYMAN, &c., Bridgewater**, begs to inform the Public that his Stock (about 700) of the above beautiful plant is now in bloom, a spike of which will be sent to any one on application, by their paying the carriage thereof. Strong old plants, 3s. 6d. each; smaller plants, 18s. per dozen. Orders taken for next spring at 12s. per dozen. The usual allowance to the Trade.—Sept. 24.

## DAHLIAS AND PHLOX.

**JOHN SALTER** begs to announce that his extensive Collections of DAHLIAS and PHLOX are now in bloom, and admirers of these favourite flowers are respectfully invited to view them.

Versailles Nursery, William Street, Hammersmith Turnpike.

## CARNATIONS, PICOTEEES, PINKS, PANSIES, ETC.

**JOHN SCHOFIELD AND SON** have now ready their Autumn Catalogue of the above Florist Flowers, strong plants, in lots of not less than 12 pairs Carnations and Picotees, 12s. to 20s.; Pinks, 3s. 6d. to 12s.; Pansies, per dozen plants, 6s. to 15s. Pansy Seed, selected with the greatest care, 2s. 6d. per packet. The Catalogue sent free.—Knowlthorpe, near Leeds, Yorkshire.

## NEW CATALOGUE.

**JOHN and CHARLES LEE'S CATALOGUE** of STOVE and GREENHOUSE PLANTS for this autumn is just published, and may be had POST FREE on application.—Nursery, Hammersmith.

## ROSE CATALOGUE.

**WOODLAND NURSERY, MARSHFIELD, NEAR UCKFIELD, SUSSEX.**  
**WILLIAM WOOD AND SON** beg to announce that the New Edition of their Rose Catalogue, for 1853-54, is now ready for distribution, and will be sent gratis on receipt of Two Penny Postage Stamps.  
Their Catalogue of General Nursery Stock may also be had on the same terms.

## NEW PLANT CATALOGUE.

**WILLIAM RUMLEY AND SONS** beg to announce that their New Descriptive Autumn Catalogue of New and Choice Fuchsias, Verbenas, Geraniums, Cinerarias, Hollyhocks, Chrysanthemums, &c., at very reduced prices, is now ready, and may be had on application. For choice selections of the above, see their Advertisement in this Paper of Sept. 17.

Gilling, Richmond, Yorkshire.

**STANDISH AND NOBLE'S CATALOGUE** for the present season is now ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 19th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Sept. 24.

## TO ADVERTISERS.

### THE ADVERTISEMENT DUTY being now REPEALED, the PROPRIETORS of the GARDENERS' CHRONICLE

beg to announce that there will henceforward be a reduction from the customary charge for each Advertisement of 1s. 6d., the full amount of duty taken off by the Government.  
Advertisements of Gardeners out of Place, of not more than four lines in length, 1s. 6d. each.

## CHOICE FLOWER SEEDS.

**FINE IMPREGNATED CALCEOLARIA SEED**, saved from the best collection in England, 2s. 6d. per packet; fine selected **HOLLYHOCK SEED**, warranted from Chater's sorts, 1s. 6d. per packet; **CINERARIA SEED**, from fine named varieties of 1852, 1s. 6d. per packet; **ANTIRRHINUM SEED**, saved from the best kinds, per packet, 1s. 6d.; **AQUILEGIA** or **COLUMBINE**, from a collection of the best sorts, 6d. per packet.  
**HENRY MAY**, the Hope Nurseries, Bedale, Yorkshire.

## CHOICE FLOWER SEEDS,

FOR AUTUMN AND PRESENT SOWING.

**PANSY**, saved from 100 of the best vars., by name, 2s. 6d. per pkt.  
**POLYANTHUS**, do. 50 do. do. 2s. 6d. "  
**VERBENA**, do. 50 do. do. 2s. 6d. "  
**HOLLYHOCK**, do. 60 of the most superb kinds, by name do. do. 2s. 6d. "  
**CALCEOLARIA**, do. 24 do., spotted, by name 2s. 6d. "  
**DAISY**, do. 50 of the new Belgian do. do. 1s. 6d. "  
**ANTIRRHINUM**, do. 20 best named varieties, 1s. 6d. "  
**ANEMONE**, from the most showy and brilliant kinds, 1s. 6d. "  
**PASTOLFF RASPBERRY SEED**, for exportation, per ounce, 3s. 6d.

The above, per post, free.—Postage Stamps received in payment.

YOUELL & Co., Royal Nursery, Great Yarmouth.

## CUTHILL'S PRINCE OF WALES AND BLACK

**PRINCE STRAWBERRIES**.—Very fine strong plants of Prince of Wales at 15s. per 100, or 10s. for 50; Black Prince at 5s. per 100. See former Advertisements. Also, **CUTHILL'S Pamphlet** on the Potato, &c., price 2s., or, by post, 2s. 4d.; also, his Market Gardening Round London, 1s. 6d., or, by post, 1s. 8d. Post Office Orders to be made payable at Camberwell Green.

JAMES CUTHILL, Camberwell, London.

## HYACINTHS, DUTCH BULBS, ETC.

**HENRY GROOM, Clapham Rise, near London**, by Appointment Florist to HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that he has received his usual supply of **HYACINTHS** and **DUTCH BULBS**, in very fine condition. His Catalogue of Bulbs, &c., will be forwarded on application.

## DUTCH BULBS OF SUPERIOR QUALITY AT

**LOW PRICES.**  
Hyacinths, Dutch Mixed, all colours, ... 21s. per 100.  
named, separate colours ... 6s. per doz.  
Polyanthus Narcissi, various ... 3s.  
Tulips, Dutch, mixed, early sorts ... 6s. per 100.  
Crocus, Dutch, mixed, all colours ... 10s. per 1000.  
Iris, mixed, all colours ... 5s. per 100.  
The above, with every other kind of Flower-roots, equally moderate in price, may be had of **WILLIAM DENYER**, Seedsman and Florist, 82, Gracechurch Street, London.  
Descriptive and priced Catalogues forwarded on application.

## DUTCH ROOTS.

**RENDLE'S DESCRIPTIVE CATALOGUE** for the present Autumn is now ready, and can be had in exchange for one stamp.

It contains descriptions of all the best Hyacinths, Tulips, Polyanthus, Narcissus, Jonquils, Iris, Crocus, Crown Imperials, Lilliums, Ranunculus, Anemones, Gladiolus, Ixias, Sparaxis, and various miscellaneous Bulbs.

The following Collection can be obtained for 3l. :—

40 Superior named Hyacinths, in 40 sorts	24 English and Spanish Iris, fine mixed
24 Tulips, single and double, in 6 sorts, fine	12 Ixias and Sparaxis, finest named
12 Narcissus, in 6 named varieties	12 Superior named Gladiolus, in 6 fine varieties
12 Jonquils, fine	2 Lillium lancifolium album, fine
200 Crocus, in 6 fine varieties	100 Double Snowdrops
50 Finest mixed Anemones	12 Dog's Tooth Violets, mixed
100 Turban and other Ranunculus, mixed	24 Mixed Hyacinths, for borders

The following Collection for 2l. :—

80 Hyacinths, very choice, 30 sorts	50 Ranunculus, fine mixed
18 Tulips, 3 of each sort	18 English and Spanish Iris
9 Fine Narcissus, named	6 Ixias and Sparaxis, by name
6 Double Jonquils	50 Double Snowdrops
200 Crocus, in 4 fine varieties	6 Mixed Dog's Tooth Violets
25 Finest mixed Anemones	18 Mixed Hyacinths, for borders

The following Collection for a Small Garden for 1l. :—  
24 Finest Hyacinths, in named sorts  
12 Tulips, in 4 named varieties  
6 Choice Narcissus

If there should be any sorts in the above Collections not required, increased quantities of those most desired could be sent, or purchaser's selection from the General Catalogue to any amount will be strictly attended to.

These Collections have always given the greatest satisfaction to all who have obtained them.

\* \* \* All Orders above £2 CARRIAGE FREE to all the Railway Stations between Plymouth and Puddington, and Birmingham, also to Cork, Dublin, and Belfast.

For Catalogues and further particulars apply to **WILLIAM E. RENDLE & Co., Nurserymen and Seed Merchants, Plymouth.**

ESTABLISHED 1783.

## TO THE SEED TRADE.

### "LEPTOSIPHON LUTEUM" (FOR AUTUMN SOWING.)

**MESSRS. VEITCH AND SON** beg to announce that they are now prepared to supply excellent Seed of the above beautiful new Annual, which was sent them direct from California by Mr. Lobb, and is at present solely in their possession. It has been exhibited at Chiswick and Regent's Park during the past season, and at both places Prizes were awarded it. It was proved to be quite as hardy as the other Leptosiphons, and produces a very striking effect. It is also well adapted for growing in pots and boxes for ornamenting the Conservatory. Prices forwarded on application.

N.B. The quantity being limited, Messrs. V. & S. can only guarantee to supply the first orders.—Exeter, Sept. 24.

## PELAGONISMS AND CINERARIAS.

**JOHN SUTTON AND SONS, Reading Nurseries**, Reading, Berks, having propagated extensively of some of the best Geraniums in cultivation, can supply them at 18s. per dozen, good plants, either fancy or show flowers. The sorts are all first-rate, and some quite new. Purchasers are requested to send a list of the sorts they already possess, that duplicates may not be supplied.

Also the leading kinds of Cinerarias, 10s. 6d. per doz.

## ROSE NURSERIES, HERTFORD.

ON AND AFTER SEPTEMBER 28TH,

**E. P. FRANCIS'S NEW CATALOGUE OF ROSES**, containing all the new varieties, will be ready for delivery, and will be forwarded gratis on application.

## A. VAN COERT, NURSERYMAN, Ghent, Belgium,

begs to inform Amateurs and Nurserymen that his General CATALOGUE OF PLANTS is just published, which may be had on application to his Agent, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London.

## DUTCH HYACINTHS, for Forcing, single and

double, at 4s. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculus, priced Catalogues of which will be forwarded by post, from ARTHUR COBBETT'S Italian and Foreign Warehouse, 18, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

## ROSES AND HOLLYHOCKS.—The extensive

Collections growing at the Cheshunt Nurseries are still finely in bloom, where admirers of these Fl. are respectfully invited to view them. Trains of the Eastern Counties Railway almost hourly to Cheshunt or Waltham.

Priced descriptive Catalogues are now ready, and will be forwarded free by post for two postage stamps.

A. PAUL & Son, Nurseries, Cheshunt, Herts.

## SIKKIM RHODODENDRONS.

**WILLIAM MASTERS, Exotic Nursery, Canterbury**, begs to offer 12 plants of **SIKKIM HIMALAYA RHODODENDRONS** of 12 sorts for 3l., including Edgworthii, the sweetest, and Fulgens and Thompsoni the most brilliant of the species introduced by Dr. Hooker.  
Orders are respectfully solicited, and carriage will be paid to London.

## CHRYSANthemums.

**J. AND J. FRASER** have to offer very fine Plants of the above, amongst which are the best varieties in cultivation. The plants are from 2 to 3 feet high, very bushy, and full of flower-buds. Large-flowering varieties, 9s. per dozen; Pompones, or Liliputian, 12s. per dozen.—A Catalogue of the sorts may be had, on application.—Lea Bridge Road, Leyton, Essex.

## EARLY CABBAGE, superior sorts.—Bedded

Plants of CATTELL'S Barnes and Reliance, 5s. per 1000, package included; packages of 5000 and upwards delivered, free of carriage, to London and to the Enderbidge station of the South-Eastern Railway.—Address, JOHN CATTELL, Nurseryman Western-Ham, Kent.

## TO GRAPE AND PINE GROWERS.

**WANTED TO PURCHASE.**  
A quantity of GOOD PINES, from 2 lbs. to 3 lbs. each, MUSCAT and HAMBURG GRAPES, and other CHOICE FRUITS during the Season.—Apply to GEORGE TAYLOR, Jun., Fruit Salesman, St. John's Market, Liverpool.

## BEGONIA ZANTHINA.

**YELLOW FLOWERED BEGONIA, or ELEPHANT'S EAR.**

**ARTHUR HENDERSON AND Co.** now offer, at One Guinea per plant, the above very beautiful BEGONIA, the entire stock of which is now in their possession. It is remarkable for the large, full, almost golden yellow flowers, tinged with red at the back, which contrast well with the ample foliage, of a deep glossy green above, and with the fine red at the underside of the leaf.

N.B.—Introduced by Mr. Booth, from Bouton, and flowered by Mr. Nuttall, Rainhill, Preston, Lancashire. Figured in the *Botanical Magazine*, No. 4685, November, 1852.

Fine Apple Tree, Edgware Road, London.

## DUTCH BULBS.

### T. APPLEYBY AND SON, NURSERYMEN AND SEEDS-

MEN, Uxbridge, beg leave to inform their Friends and the Public in general, that they have just received their annual importation of Dutch Bulbous Flower Roots, selected with great care from the best stock in Holland. They have arrived in excellent condition, and the Bulbs are very sound and firm. Catalogues are ready, and will be sent on prepaid application.

T. A. & son beg to observe also that their stock of Trained FRUIT TREES have made fine growth this last summer, and as they have at least 600 yards of walls on their premises, the trees are all well trained, consequently the wood is well ripened and much better than when trained with sticks in the open quarters of the Nursery. Orders are respectfully solicited. Carriage of all goods paid to London.

Victoria and Hillingdon Nurseries, Uxbridge, Middlesex.



## AZALEA INDICA—"BEAUTE DE L'EUROPE."

HUGH LOW AND CO. have to offer plants of the new AZALEA named above, raised by M. Demarcq, of Ghent, and exhibited at Paris in March, and at the National Floricultural Society of London in May of the current year. At the former it obtained a prize, and at the latter a Certificate of Merit of the first class was awarded it. The plant is of vigorous habit, flowering when very small, and will be well adapted for exhibition purposes. A coloured plate may be seen at the nursery. Price 10s. 6d. per plant.

The usual discount to the Trade.

Clapton Nursery, London.

**EDWARD GEORGE HENDERSON AND SON,** Wellington Road, St. John's Wood, London, will commence sending out in October, the following superior FLOWERS of CINERARIAS and FANCY GERANIUMS, which have been flowered two years in succession in their nursery, and consequently can recommend them with confidence as flowers of great merit.

**FANCY GERANIUMS.**—Constance, 21s.; Empress of France, 10s. 6d.; Illuminator, 10s. 6d.; Lady Hume Campbell, 15s.; Mary Howitt, 15s.; The Ocean Queen, 10s. 6d.

**FIRST CLASS CINERARIAS.**—Empress Eugénie, 10s. 6d.; Novelty, 10s. 6d.; Picturata, 10s. 6d.; Lord Stamford, 10s. 6d.

If a set is taken, one of the following varieties will be presented gratis.

**SECOND CLASS CINERARIAS.**—Advancer, 7s. 6d.; Estelle, 7s. 6d.; Etoile de Vaise, 7s. 6d.; Lahache, 7s. 6d. Or 21s. the set.

## NEW ROSES FOR 1853-54.

**A. PAUL AND SON** beg to offer the following New Roses, the entire Stock of which is at present in their possession.

**PRINCESS ALICE, Moss (Paul's).** Flowers bluish pink, centres large and full, produced in great abundance; buds well mossed. This variety introduces a new style among Moss Roses, having the deep centre and pale edges of the Celestial Rose; the growth is very vigorous, and it quickly forms an unbranched bush, the branches well clothed with handsome foliage. It has received Certificates from the National Floricultural Society, and the North Wilts Horticultural Society, the only places where exhibited for a Prize, and is figured in the "Florist" for September. Strong Plants in November. 10s. 6d. each.

**VIVID, (Hybrid Bourbon (Paul's)).** Flowers vivid crimson, petals of good substance, containing a great body of colour, which imparts to the flower a rich velvety appearance. The flowers are of medium size, not large enough for an Exhibition Rose; but being an abundant bloomer, of vigorous growth and handsome foliage, this is highly recommended as a brilliant dark pillar or climbing Rose; and whether grown as such or as a standard, it produces a rich effect in the Flower Garden. Certificate from the National Floricultural Society. Plants in November. 7s. 6d. each. See also Rose Catalogue, just published.

Nurseries, Cheshunt, Herts, September 24.

## NEW SHANGHAI PEACH.

**GEORGE DAVIS** begs to inform his friends and the public that he can supply Maiden Peach, in November next, of the above extraordinary PEACH, at 21s. each; Buds, 10s. 6d. each. The Stock being very limited, early orders alone will secure Plants. The above splendid Peach was introduced from China, in 1851, by the late Henry Winch, Esq., of Liverpool; and it is stated by those who have visited Shanghai that it attains an enormous size, each fruit weighing at least 1 lb.

**GLOXINIA WILSONI,** 10s. 6d. each. This splendid Gloxinia is figured in the July number of Harrison's "Floricultural Cabinet"; the Editor of which justly observes, "All the Gloxinias are handsome, but the variety now figured stands pre-eminently majestic above all others which we have seen."

**AZALEA STANLEYANA,** 15s. each. This Azalea is a bright deep rose colour, with brown spots on the upper petals, and for form, size, and substance is superior to anything before the public.

G. D. deems it sufficient to say, with respect to its merits, that no one has accepted his proposals for competition at Regent Street, as stated in the *Gardeners' Chronicle* of August 13, 1853. Stanley and Green Lane Nurseries, Old Swan, Liverpool—Sept. 24.

## NEW AND CHOICE PELARGONIUMS.

**THOMAS DAVIES & CO.,** having a large stock of all the new and leading varieties, beg to offer them, in strong plants, at the under-named prices:—

Varities sent out in the Autumn of 1852.—Amazon, 3s. 6d.; Astrea, 3s. 6d.; Annie Laurie, 3s. 6d.; Butterfly, 3s. 6d.; Basilisk, 5s.; Cordelia, 5s.; Commander, 5s.; Galatea, 3s. 6d.; Heroine, 3s. 6d.; Jupiter, 5s.; Kulla, 3s. 6d.; Leonora, 3s. 6d.; Lady Dacre, 5s.; Legoma, 2s. 6d.; National, 5s.; Nonpareil, 7s. 6d.; Novelty, 3s. 6d.; Optimum, 7s. 6d.; Portia, 3s. 6d.; Queen of May, 5s.; Rachel, 5s.; Selina, 7s. 6d.; Spot, 5s.; Vulcan, 7s. 6d.; Virginium, 5s.; Zaria, 3s. 6d.

Varities sent out in the Autumn of 1851.—Ambassador, 2s.; Afghani, 2s. 6d.; Archduke, 2s. 6d.; Adelaide, 2s. 6d.; Attraction, 1s. 6d.; Bride of Abydos, 2s. 6d.; Christine, 2s.; Capella, 1s. 6d.; Commissioner, 2s.; Celis, 1s. 6d.; Enchantress, 1s. 6d.; Exhibitor, 2s. 6d.; Elise, 1s. 6d.; Electra, 2s.; Ganymede, 1s.; Goliah, 2s.; Herald, 2s. 6d.; Incomparable, 1s. 6d.; Lavinia, 1s. 6d.; Lablache, 2s.; Magnet, 2s. 6d.; Mochauna, 2s.; Painter improved, 2s.; Pulchra, 1s. 6d.; Purple Standard, 1s. 6d.; Sheet Anchor, 2s. 6d.; Willmore's Surprise, 2s. 6d.

Older varieties, such as Ajax, Major Domo, Beauty of Montpellier, Grace Darling, Ninon l'Enclos, Prince Arthur, Rosa, Magnificent, &c. &c., 12s. to 18s. per dozen.

A liberal allowance will be made from the above prices when a dozen or more varieties are taken.

Wavertree Nursery, Sept. 24.

**N. GAINES, FLORIST,** Surrey Lane, Battersea, will commence sending out in October, the following superior GERANIUMS, which have flowered two years, and proved to be first-rate show flowers, and gained certificates and medals at the Metropolitan Exhibitions.

**SHOW GERANIUMS, or PELARGONIUMS.**—Conqueror, brilliant scarlet, with dark crimson, shot in the upper petals; this is the brightest scarlet ever offered to the public, the petals are very smooth and round, 42s.—Iago, rosy lilac claret, upper petals with a maroon, well defined, margin of rose, 31s.—Success, top petals maroon, with well defined belt of rose, lower petals rosy lilac, pure white centre, 31s.—Madonna, under petals white, upper petals crimson, with white margin, 31s.—Nil Desperandum, large and fine shaped flower, upper petals black, with scarlet margin, lower petals shaded crimson, 42s.—Salmon: this flower is a beautiful salmon colour, with dark crimson spots, shaded with orange, 21s.

**FANCY GERANIUMS.**—Hermes, upper petals crimson purple, under petals white with deep rose blotch, 10s. 6d.—Eclipse, upper petals purple maroon, edged with white, under petals white with rosy purple blotch, 21s.—Calypso, upper petals rosy purple upon a white ground, lower petals white, clouded with rosy purple. This flower surpasses all of its class, 21s.—Lucy, upper petals velvety crimson, distinctly marked with clear white, lower petals white, with a crimson spot in each, 10s. 6d.—Vandyke, upper petals rich plum, with a clear defined margin of pure white, lower petals crimson, with pure white centre, 15s.—Chamouni, upper petals bright mulberry edged with pure white, lower petals pure white, with a marking of crimson purple in each petal, 15s.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections; together with a Treatise on their successful management.

The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

**LORD KEYNONS FAVOURITE** is the best and most productive CUCUMBER for winter cultivation, price 2s. 6d. per packet, or 30 penny postage stamps.

EDWARD TILLEY,

Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

**GEORGE SMITH** begs to offer the following NEW PELARGONIUMS of 1852. In Strong Plants, at 36s. per dozen, viz.:

FOSTER'S—Optimum, National, Eleanor, Rachael.

HOYLE'S—Astrea, Oscar, Leonora, Zaria, Lagona, Portia, Basilisk, Amazon, Butterfly, Medora, Albura, Kulla, Novelty, Ringleader.

ESSEX'S—Spot, Vulcan, Gertrude, Harriet, Pasha. With all the leading varieties previously offered, at 18s. Both Show and Fancy Kinds.

New FUCHSIAS—Glory, Banks's; Lady Franklin, Smith's; Duchess of Lancaster, Henderson's; and England's Glory, Harrison's, at 2s. 6d. each, in strong Plants; with all the new varieties of the last Spring, at 18s. per dozen.

New VERBENAS, 12s. per dozen. Fine strong Plants of the beautiful Ageratum variegatum, at 1s. 6d. each.

Tollington Nursery, Horsey Road, Islington, London.

## FLOWER ROOTS DIRECT FROM HOLLAND.

**H. MAY** begs to offer the under-mentioned DUTCH BULBS, imported direct from Haarlem, which are received in fine condition. Per dozen

Hyacinths, fine named sorts, double red, white, blue, and yellow 6s. Do. do. single do. do. 6s.

Narcissus, Grand Monarque and Primo Citronier ... 4s. Do. Soliel Dor and double Roman ... 3s.

Tulips, single and double Duc Van Thol ... 1s. Best mixed Ranunculuses, 10s. per 100; best Scarlet Anemones, per 100 ... 12s.

Jonquils, Crocus, Gladiolus, Cyclamens, and Lilies equally low.

Address, HENRY MAY, The Hope Nurseries, Bedale, York.

## DUTCH BULBS AND FLOWER ROOTS.

**THOMAS JACKSON AND SON** respectfully inform their patrons and the public that they have received, in the finest condition, their annual consignment of BULBS and ROOTS, and that they are of the largest size and very finest quality.

Good Double Hyacinths, per dozen ... 4s. 6d.

Mixed Polyanthus Narcissus, per dozen ... 3 0

Their Priced List of Bulbs and Roots, and also their Priced Catalogue of Stove, Orchidaceous, and Greenhouse Plants, Shrubs, Trees, and Herbaceous Plants, may be obtained on application.

Nurseries, Kingston, Surrey, Sept. 24.

## PINKS.

**C. TURNER'S** stock of the above is in the finest health this season. Fine plants are now ready for sending out. In addition to all the established varieties, C. T. begs to offer the following new kinds:—

Per Pair—s. d.

ANNO LYSE (Looker), purple ... 3 6

CRITCHTON (Turner), rose ... 3 6

FANNY (Hardstone), red ... 5 0

GLORY (Turner), rosy purple ... 3 6

KING OF HANOVER (Turner), rose ... 3 6

PERFECTION (Turner), purple ... 5 0

RICHARD SMITH (Looker), purple ... 3 6

Pinks, per dozen pairs, selection left to C. TURNER, 6s., 9s., and 12s.—Royal Nursery, Slough.

## NOTICE TO NURSERYMEN.

**TRANSPLANTED FRUIT STOCKS.**—We, the undersigned Cultivators of Fruit Stocks, beg to inform the Trade that the following prices will be charged during the ensuing season:—

Muscle Plum ... per 1000 30s. Cherries ... per 1000 30s. to 35s. Common do. ... 40s. Pears ... 40s. to 50s.

Brussels do. ... 35s. Crabs ... 30s.

Brompton or Mignonne, ... 40s. Paradise ... 50s.

White Pear Plum ... 40s. Quince ... per 100 8s.

WATERER & GODFREY, Knap Hill, Woking, Surrey.

DONALD & SON, Goldworthy Nursery, Woking, Surrey.

GEORGE JACKMAN, Woking Nursery, Woking, Surrey.

## TO LOVERS OF CONIFERS.

**JOHN SCOTT**, of the Merriott Nurseries, Crewkerne, Somerset, having had the pleasure of raising a NEW CUPRESSUS (EXORSLA, Scott), from seed imported from hills in America 8000 feet above the level of the sea, begs to offer it to the attention of the public. It is more beautiful, and far more valuable, than the far-famed C. funebris, growing, as it does, to the height of from 80 to 100 feet, and perfectly upright, with a trunk from 4 to 5 yards in circumference. The colour is a beautiful light glaucous, or sea-green, and the habit is elegant, pendent, and graceful. Indeed it is one of the loveliest of Conifers. It grows as fast as a Larch, and the wood is said to be of the finest quality and almost indestructible. The church at Teopan, in Guatemala, was built about the year 1524, and roofed with this wood, which is now as fresh as when first put up.

J. S. thinks, at no distant date, this tree will become as plentiful as the Larch, and add, by its grace and beautiful evergreen character, a new charm to our already charming landscapes.

Largest size Plants, 42s. each; second size, 31s. 6d. each.

## STRAWBERRIES.

## FOUR NEW AND DISTINCT VARIETIES.

**NICHOLSON'S AJAX.**—Very large and handsome, most exquisite flavour, unequalled as a dessert fruit, and forces well.

**NICHOLSON'S RUBY.**—Medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; also a good forcer.

**NICHOLSON'S CAPTAIN COOK.**—A first-rate market fruit; colour scarlet, very large size, great bearer, and bears carriage well; plants remarkably strong and hardy.

**NICHOLSON'S FILL-BASKET.**—Nothing can surpass this fine sort as a market fruit; in colour it is of a very bright scarlet; general shape round, gets very large, but never out of shape; excellent for preserving; a tremendous bearer, and will bear carriage a great distance. Plants very robust and healthy.

These splendid Strawberries have been admired by all who have seen them; the two first for their surpassing excellence as a dessert fruit; the two latter for their size, colour, abundance, and other good qualities as market fruit.

Gentlemen, Amateurs, and Market Gardeners wishing to possess these valuable Strawberries, can now be supplied with well rooted Plants, by WILLIAM NICHOLSON, at 11, per 100; or 25 plants of any two sorts for 12s., box included. Post Office orders made payable at Yarm, Yorkshire.

Egglecliffe near Yarm, Sept. 24.

## READ'S GARDEN ENGINES, SYRINGES, ETC.

**WHEN** an article of real utility attracts public attention, imitators start into the field to snatch from the inventor the just reward of his labours. It has now become a daily practice to exhibit in the windows of ironmongers and others, Syringes of the VERY COMMONEST DESCRIPTION, with the words "READ'S PATENT," as an inducement to purchasers. This, as an eminent writer on Horticulture has recently remarked on the subject, is indeed "living upon another man's fame."

READ'S Instruments have the ROYAL ARMS, with the Address—

35, Regent Circus, London.

Descriptions sent post free.

## PERMANENT EDGINGS FOR GARDEN WALKS.

**HOGG'S EDGING TILES** are now ready for delivery, and as all orders will be executed during the autumn and winter in the same rotation as received, they should be forwarded without delay.

These Tiles are more ornamental, more durable, and considerably cheaper than Box or any other edging. They resist the action of the atmosphere, are impervious to frost, do not harbour slugs, and most effectually relieve the walks of water. They are easily laid down, and are so peculiarly fixed that the borders may be cultivated without disturbing them. Each Tile is 1 foot long, and the price is 13s. per 100.

A prospectus may be had by enclosing a postage stamp to Mr. ROBERT HOGG, 13, Giltston Road, Brompton, London, to whom all orders are to be addressed.

A remittance will be required from unknown correspondents before orders are executed.

**FRIGI DOMO**, patronised by the Horticultural Society and the Zoological Society, a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 4d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

## ESTABLISHED ABOVE SIXTY YEARS.

**ROBERT METTARN, BRITISH AND FOREIGN WHOLESALE WINDOW GLASS WAREHOUSE**, 30, Princes-street, Leicester-square.

16 oz. Sheet Glass in Boxes of 100 feet. Sheet Glass cut to size, not exceeding 40 inches.

Under 6 ins. by 4 ... 11d. p. foot. 16 oz. ... 3d. to 3 1/2 p. foot.

6 by 4, under 8 by 6, 2d. 21 oz. ... 3 1/2 to 5d. "

8 by 6 " 12 by 10, 2 1/2 d. " 26 oz. ... 5d. to 7d. "

Foreign Sheet Glass, packed in boxes of 200 feet each, large sizes—4ths, 2 1/2 d.; 3rds, 2 1/2 d. per foot net.

Thursly's Patent Rough Plate Glass, Glass Tiles and Slates, and every description of Glass now manufactured. Estimates and Price Lists forwarded post free.

## ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON, Importer and Dealer in GLASS FOR CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.**

WAREHOUSE, 87, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, 100 feet each. Squares in boxes, 100 feet each.

not above 40 inches long. Under 6 by 4 ... 12s.

6 by 4, 6 by 4 1/2 ... 13s.

16 ounces ... 3d. per foot. 7 by 5, 7 1/2 by 5 1/2 ... under 9 by 7 15s.

21 ounces ... 4d. " 8 by 6, 8 1/2 by 6 1/2 ... 16s.

26 ounces ... 4 1/2 d. " 9 by 7, 8 by 8, 12 by 9, 12 by 10 ... 20s.

32 ounces ... 7d. " 13 by 10, 14 by 10, 15 by 10 ... 20s.

Large Sheet of No. 16 very superior, packed in cases of 100, 200, and 300 feet, at 2 1/2 d. to 2d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments, Fern Shades and Dishes.

## GLASS FOR CONSERVATORIES, ETC.

**HETLEY AND CO.** supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES AND SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

## JAMES PHILLIPS &amp; Co., 116, BISHOPSGATE STREET WITHOUT.

**HARTLEY'S PATENT ROUGH PLATE GLASS**, for CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTORIES, SKYLIGHTS, &c.

Packed in Crates, for Cutting-up of the sizes manufactured.

30 inches wide and from 40 to 50 long } 0 5 1/2 0 7 0 9

Or 20 " " 50 " 70 " 0 6 0 7 1/2 0 9 1/2

In Squares cut to the sizes ordered.

Under 8 by 6 ... 0 4 0 5 0 6

8 by 6 and under 10 by 8 ... 0 4 1/2 0 6 0 7

10 by 8 " 14 by 10 ... 0 5 0 6 1/2 0 8

14 by 10 " 1 1/2 ft. sup, if the length does not exceed 20 inches ... 0 5 1/2 0 7 0 8 1/2

1 1/2 ft. sup. " 8 ft. sup, or if above 20 and not above 30 inches long ... 0 6 0 7 1/2 0 9

3 " " 4 " 20 " 30 ... 0 6 1/2 0 8 0 9 1/2

4 " " 5 " 30 " 35 ... 0 7 0 8 1/2 0 10

5 " " 6 " 35 " 40 ... 0 7 1/2 0 9 0 10 1/2

6 " " 8 " 40 " 45 ... 0 8 0 9 1/2 0 10 1/2

8 " " 10 " 45 " 55 ... 0 8 1/2 0 9 1/2 0 10 1/2

10 " " 12 " 55 " 65 ... 0 8 1/2 0 10 0 11

12 " " 1 " 65 " 75 ... 0 9 0 10 0 11 1/2

15 " " 20 " 75 " 90 ... 0 10 0 11 0 1

20 " " 25 " 90 " 100 ... 1 0 1 1 1/2

25 " " 30 " 100 " 120 ... 1 1 1 1 3/4

Quarries ... 0 6 ... 1 1 3/4

JAMES PHILLIPS & Co., Horticultural Glass Merchants, 116, Bishopsgate Street Without, London.

"There can be no question now that Rough Plate Glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of cheap or transparent glass, and it has many advantages peculiar to itself, without a single disadvantage as a set-off."—*Gardeners' Chronicle*.



## FINE NEW FRUIT.

## THE NIMROD STRAWBERRY.

LUCOMBE, PINCE, AND CO. respectfully inform the public that they possess the entire stock of this much admired **NEW STRAWBERRY**, and purpose sending out strong healthy plants of it in the first week of October next, at 87. per 100.

The great superiority of the Nimrod Strawberry has been acknowledged by many competent judges. Doctor Lindley pronounces it to be "superior to the British Queen—sweeter and richer." See *Gardeners' Chronicle*, of this year, July 23d, page 472. —Mr. Spencer, of Bowood, a first-rate authority in all that appertains to Horticulture, also speaks very highly of it in the same publication, July 30, page 435.

The following description will convey some idea of its quality. Colour bright scarlet; size considerably above the average; flesh juicy, melting, richly flavoured; shape oblong, or rather conical; skin firm, dry, highly varnished, owing to which properties it packs and carries well; thoroughly hardy, having stood uninjured last winter, where the British Queen was destroyed; very prolific, and forces exceedingly well.

N.B. For the accommodation of those who may wish to force it, or to have extra strong plants capable of producing a good crop early next season, some of the first layers have been put into 48-sized pots, in which they will be very strong and well established in October, at 67. per 100.

The stock is very limited, and though, in order to get a large supply, L., P., & Co. ought to have kept it over another season, they have been solicited by so many persons to let it out this season, that they are unwilling to disappoint their friends.

The Exeter Nursery, Exeter, Sept. 24.

## NEW HOLLYHOCKS.

**A. PAUL & SON, NURSERYMEN, Cheshunt, Herts.**, beg to offer the following New Hollyhocks, which have obtained First Prizes wherever exhibited:—

**AGRICOLA (PAUL'S)**, salmon pink, lively, distinct, and beautiful, producing a fine effect on the spike; begins flowering at 18 inches from the ground. 7s. 6d.

**ANIBAL (PAUL'S)**, claret, lavender blush edges, very large; a bold and distinct flower; a little rough, but the best of its colour. 5s.

**BEAUTY OF CHESHUNT (PAUL'S)**, light rose red, large and very smooth; perfect shape and fine spike. The best Hollyhock known. First Class Certificate from National Floricultural Society. 10s. 6d.

**FLAMBEAU (PAUL'S)**, rich luminous red, of a distinct shade, large and very fine. 10s. 6d.

**GLORY OF CHESHUNT (PAUL'S)**, clear golden yellow; the finest of its colour. 10s. 6d.

**LIZZY (PAUL'S)**, clear peach, very large, smooth, and finely formed; a magnificent flower. First Class Certificate from National Floricultural Society. 10s. 6d.

**PROFESSOR DICK (PAUL'S)**, bronzy salmon, very close; perfect shape. Certificate from National Floricultural Society. 10s. 6d.

**PINK MODEL (PAUL'S)**, clear pink, fine large flower. 5s.

**WHITE GLOBE (PAUL'S)**, white; exquisite shape; very large and close, producing a spike like "WALDEN GEM." First Class Certificate from National Floricultural Society; ditto from Royal South London Floricultural Society. 10s. 6d.

**ZENOBIA (PAUL'S)**, fawn, claret base; rather pockety, but clear, showy, and distinct; very desirable till a better of the colour be obtained. 7s. 6d.

N.B.—The set of ten, if ordered together, will be charged 4l.

A fine Stock of Healthy Plants of all the best varieties grown nearly ready. A priced Descriptive Catalogue forwarded free by post for one postage stamp.

Recently published, price 1s., "AN HOUR WITH THE HOLLYHOCK," by WILLIAM PAUL.

## KNAP HILL NURSERY, WOKING, SURREY.

**WATERER AND GODFREY, Nephews and Successors to the late HOBSE WATERER**, respectfully invite the attention of parties engaged in planting to the following list:—  
Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6, and 8 feet.  
Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7, and 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.

"Goveniana, 2 to 3 and 4 feet.

"Funchria, 2 and 3 feet.

"thyroides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.

"Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.

"repandus, 3, 4, 5, and 8 feet.

"Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.

"Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, 6, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.

"Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one size, so adding much to their appearance and value.

"Gold Striped, 1, 2, and 3 feet.

"do, worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

"elegantissima (new striped), standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.

"Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5, and 7 feet; a few magnificent plants, 10 to 12 feet high.

"insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.

"cembra, 3, 4, to 6 feet.

"Canadensis (Hemlock Spruce), 3, 4, and 6 feet.

"monda, 3, 4, and 6 feet.

"Menzieli, 3, 4, 5, and 8 feet.

"cephalonic, 3, 4, to 4 feet.

"Pin apex, large and handsome, 3 and 4 feet.

"Nordmanniana, from seed, 14 feet; a few larger, 2 feet.

"nobilis, stout plants, with perfect heads, about 14 feet; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor vite, American, 3 to 6 feet. We recommend this plant for hedges.

"Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.

"aurca. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 14, 2, and 3 feet. This is a very distinct and beautiful plant of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, including Ornamental Trees, and of large quantities. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

## ROSE CATALOGUE, ETC.

**MESSRS. LANE AND SON, NURSERIES, Great** Berkhamstead, Herts, beg to inform their patrons that the undermentioned descriptive CATALOGUES may now be had. General Rose Catalogue for two postage stamps; Tree and Shrub and Fruit Catalogue for two ditto; Azalea Indica, Camellias, Hollyhocks, &c., for one ditto.

The Hardy Rhododendrons are fine; the Araucaria Imbricata, Cedrus Deodara, the Pinus, with all other Evergreen and Deciduous Plants, are remarkably healthy, forming fine specimens, giving immediate effect, and well worthy the attention of Planters. Fruit Trees established in pots are well set with bloom buds, many of the trees having had a good crop of fruit this season.

FINE SELECTED STANDARD ROSES Per Doz. 18s. to 24s.

Ditto DWARF and DWARF STANDARDS " 10s. to 16s.

Ditto DWARF ROSES, two of each sort " 6s.

MIXED DWARFS, without names " Per 100 30s.

## TO THE TRADE.

**WILLIAM MASTERS, EXOTIC NURSERY, Canter-** bury, is wishing to reduce his stock of the following plants, and will send prices upon application.

## AMERICAN PLANTS.

Azalea pontica, 1 to 2 feet  
" Ghent varieties, 1 to 2 ft  
" American ditto, 1 to 2 ft  
Heaths, 24 hardy kinds  
Rhododendron, 1 to 2 feet and  
3 feet, of many kinds  
Rhododendron, dwarf species  
Rhododendron, several new  
kinds from the Sikkim Him-  
malaya

## EVERGREENS.

Alaternus of sorts, 2 feet  
Aucuba, 1 to 2 feet  
Arbut-Vite, 1, 2, 3 feet  
Junipers, 1, 2, 3 feet  
Gorse, Double, 1 foot  
Savin, 6 inches, 1 to 2 feet  
Yew, 1, 2, 3, 4 feet  
Box, green tipped and varie-  
gated, 1, 2, 3 feet  
Laurels, 9 inches, 1, 2 feet  
Privet, 1 to 2 feet  
Berberis aquifolium, 6 inches,  
1 to 2 feet  
Bays, 1 to 2 feet  
Laurastine, 1 to 2 feet  
" shining, 1 to 2 feet  
" upright, 1 to 2 feet  
Oak, Evergreen, 2 feet

## FRUIT TREES, ETC.

Gooseberry and Currant, by name  
Raspberries  
Figs of 10 kinds  
Mulberry, 2 to 3 feet  
" fine Standards  
Walnuts, 2 feet  
" large Standards  
Filberts and Nuts

## FOREST TREES.

Ash, 3, 4, 5 feet  
Spanish Chestnuts, 1, 2, 3, 4 feet  
Larch, 2 to 3 feet  
Lime, 3 to 4 feet  
" Standards, 6 to 9 feet  
Birch Standards  
Elm ditto  
Oak, Turkey Oak  
Sycamore and Norway Maple

## SEEDLINGS.

Daphne Laureola, 2 to 4 inches  
Broom, white and yellow  
Cytisus Laburnum  
" nigricans and capitatus  
Sycamore  
Oak, 1 and 2 years  
Berberis aquifolium, 2 years  
Junipers, 3 years  
Ash, 1 year  
Evergreen Oak, 1 and 2 years

**GERANIUMS** offered by **WILLIAM E. RENDLE** AND CO., Plymouth.—12 fine Show Flowers for 1l, or 20 for 12. 10s., to include any of the following:—

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Purchaser's selection from the following list, 12 for 15s., or 20 for 14. 10s.

Victory Superb, Miss Sheppard, Albion, Creole, Magnifica, Fairy Queen, Lady Rivers, Flexuosa, Jehu, Lady Plymouth, Jehu Improved, Jenny Lind, Stasiaki, Unique, Queen Victoria, Bonquet tout fait, Gaiety, Pilot, Mornus, Excellent (Latter's).

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LOGUE is now complete. Copies supplied free for three penny stamps each. It contains a large number of the New Plants at reduced prices, comprising Geraniums and Cinerarias, of the best new varieties of October last, with finest of the older varieties; Azalea Indica, 50 varieties of the choicest; the best new Fuchsias, Verbenas, and Petunias; new and select Stove and Greenhouse Plants; Plants selected for Winter and Early Flowering; Roses, in select collection, of about 300 best; new and select Hardy Shrubs and Climbers, Conifers; new and other best Chrysanthemums, Hollyhocks, Hardy Herbaceous and Rock Plants, collection of new Dwarf Rock Cistus, Choice Fruits, &c.

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BASS AND BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

## The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 24, 1853.

COUNTRY SHOW FOR THE PRESENT MONTH.—26th: Slough Dahlia.

We fear that we have unwelcome news for our friends whose interests are concerned in woodland property. The low price of British timber, excepting Oak, has long been a serious misfortune to them, enhanced by the declining price of BARK, even when cured upon a more rational plan than that employed by some of the gentlemen managing the Royal forests. But now it would appear as if bark itself was likely not to be worth the stripping.

It was stated in the "Mechanics' Magazine," of Sept. 18th, 1852, that a Mr. PRELLER had taken out a patent for preparing skins with materials of which bark formed no part. He used, on the one hand, vegetable substances consisting largely of starch, and containing little gluten, such as Barley flour, Rice flour, or even starch itself; on the other, butter, milk, grease, and other fatty animal matters; to which he added salt or saltpetre in certain proportions. With this mixture, skins prepared in the usual manner are smeared, after which they are agitated in a revolving cylinder for a certain length of time, when they quickly become ready for the currier.

In a late number of the same publication it is stated that "this method of treatment is so remarkable for its originality, and attended with such excellent advantages in the course of manufacture, and in the character of the produced article with reference to the requirements of practice, as to promise nothing short of a complete revolution in the arts of the tanner, and the establishment, to a certain extent, of new criteria by which the qualities and value of leather for practical purposes are henceforth to be estimated. A large factory in Lant Street, Southwark, has been fitted up by Mr. PRELLER, and he is there carrying on his manufacture to a very considerable extent, and with a degree of success which could hardly have been supposed would attend his efforts in the comparatively short time which has elapsed since he began. His leathers have already acquired a high reputation in the market, and are rapidly getting into favour for a variety of manufacturing purposes, especially for driving-bands, for which their superior strength, flexibility, uniformity of texture, and durability, render them eminently serviceable."

The difference in quality of the skins thus treated and such as have been tanned with Oak bark, Catechu, or similar substances, is represented to be strikingly in favour of the patent process.

The peculiar merits of PRELLER's method are said to be these. It reduces the weight of leather, and at the same time increases its strength; and this takes place to such a degree that "it has been found that Oak-tanned leather of 3-8ths of an inch in thickness is incapable of resisting a strain which PRELLER's leather 1-4th of an inch in thickness will resist in constant working. A strip of it a yard long, about half an inch in width, and 1-8th thick, gave way with a breaking weight of 6 cwt. 20 lbs.; while ox-hide, well tanned on the Oak-bark system, and of the same dimensions, could only resist a strain of 5 cwt. As another illustration of the superior



strength of Mr. PRELLER's leather for driving-bands, we may mention a circumstance which was told us at the factory, that on one occasion, to lengthen a driving-band made of his own leather, he added to it a piece of Oak-tanned, and that the latter gave way in the performance of its work. Sheep-skins, kid-skins, and some other species of leather, which in general may be torn asunder in the hands with the exercise of only a small degree of force, acquire in this process a strength which is quite surprising, of which we had experience ourselves when a piece of split sheep-skin, of large size, was put into our hands, and we were requested to try to break it."

Another great advantage in PRELLER's process is represented by the same authority to consist in saving time in the process of preparing. "The thickest ox-hide requires only two days and a half to be fully converted by the application of this process, of which Mr. PRELLER showed us an example in the hide of a large prize ox exhibited at the late cattle show. Under the most favourable circumstances, it now requires four or five weeks' subjection to the tanning liquor. Under the old process of tanning, in which the hides were placed in the pit, with layers of tan to separate them, and afterwards filled with water, a very considerable period has been known to elapse during the process; sometimes amounting to four years. This old-fashioned method has not been yet completely abandoned for more scientific ones, and contrasted with it the great change which this invention has effected is the more remarkable. The walrus skin exhibited in the Great Exhibition took no less than four years to tan; but Mr. PRELLER estimated that by his mode of treatment the conversion would be perfect in 60 hours, allowing six periods of agitation in the drum, each of 10 hours' duration. The economy of time in the conversion of the hide is a circumstance strongly favourable to the practical working of the system, and is calculated to give to this branch of industry a degree of activity not hitherto experienced."

It is further stated that leather prepared thus, without tan, possesses greatly increased capacity for resisting the passage of water, combined with remarkable suppleness; so that for boots and shoes it is far preferable to tanned leather. "When ordinary leather," says our well-informed contemporary, from whom we borrow these particulars, "is boiled in water, it gradually hardens and becomes rigid; and if the operation be continued for half an hour, it will be found to have assumed a kind of woody texture, and to have become brittle. Some descriptions of leather, on the other hand, become converted into a mass somewhat resembling glue. When PRELLER's leather is tried in the same way, it gradually approaches to the condition of horn, but it requires several hours' before that state is attained. In its ordinary condition, as before observed, it is remarkably supple, and that quality admirably fits it for being used in the soles of shoes; for the West and East Indies, in particular, this quality is highly advantageous, and for the supply of troops would probably be found to be attended with economy, and productive of comfort."

We can hardly over-estimate the importance of these facts to country gentlemen; for, if further experience shows them to be fairly stated, of which we have no reason to doubt, then it is clear that the timber on an estate will become seriously depreciated, and all valuations will have to be made upon an entirely new basis.

It is scarcely possible to attribute too much importance to the experiments which M. TRÉCUL is carrying on with such unwearied zeal, with a view to settle the much disputed question of the real origin of WOODY FIBRE. Two memoirs of a later date than those which we recently noticed are now before us, the former extending the interesting observations which he had made respecting the produce of new wood from decorticated surfaces, the other showing the possibility of its production from bark. Not only does it appear that the medullary rays are capable of giving rise to new tissue, which is gradually transformed into fresh bark and wood, replacing perfectly that which was removed, but the author has shown that the woody fibre is equally capable of throwing off lateral cells, which, while in immediate connection with the old fibre, exhibit more or less imperfectly the character and form of the tissue from which they rise, while the free ends are mere parenchymatous cells. A glance at the figures with which the text is accompanied is quite sufficient to convince any unprejudiced mind of the heavy blow which the memoir inflicts on the theory of roots descending from the buds. The other memoir is if possible more conclusive, and, like the former, is but a repetition of DUHAMEL's experiments, with superior opportunities of forming a correct judgment as to the necessary inferences. The bark

of a *Paulownia imperialis*, about  $4\frac{1}{2}$  inches in diameter, was stripped downwards in seven divisions, from a circular incision to the length of nearly 12 inches, so as to leave the place of attachment below uninjured. A ring of wood was then removed at the base nearly 6 inches long and a quarter of an inch deep, and the strips of bark replaced, the whole being made fast with tacks and cement. To prevent any possible objection respecting the descent of fibres from the buds, an annular ring of bark was removed some 15 inches higher, and the denuded surface carefully scraped and exposed to the atmosphere. Union did not take place between the opposed surfaces of the bark and wood; but the bark which derived its nourishment entirely from the uninjured part beneath increased greatly in thickness, though almost every leaf on the tree withered, and ultimately produced a layer of wood as deep as that which had been removed, the thickness of the layer decreasing upwards. The woody fibre was continued directly from the utricles of the bark, which appears to be entirely wanting in the usual bast-fibres, while certain of the new ligneous fibres were transformed into punctuated ducts, and the medullary rays preserved the same horizontal line throughout. The contrary experiment of stripping the bark upwards was not successful.

The young elements of the wood therefore are susceptible of transformation into ordinary cellular tissue, which gives rise to bark and new wood on decorticated surfaces, and the cellular tissue of the bark is capable of regenerating the wood when it has been detached from the trunk, so as to retain its connection with it at one extremity only. *M. J. B.*

#### HISTORY OF THE BLENHEIM ORANGE APPLE.

THE last remnant of the stem of the original tree which first produced this celebrated Apple is no more—the sapless and mouldering relic exists no longer; that which the wood-louse and the worm were gradually consuming, the war of the elements and the hand of man have hastened to a swifter decay.

The rains and wind of the autumn of 1852 levelled the rotten and hollow shell, and the broken fragments have been gathered up and committed to the fire. "Thrown down and cast into the oven," this time-honoured relic has fulfilled the stern decree of Nature against all vegetable life. The only sound piece of wood remaining was preserved by an horticultural enthusiast to make a snuff-box, to serve as a memorial of the past, and to recall visions of him "who first planted the tree."

In the autumn of 1851 we wrote as follows:—"In a somewhat dilapidated corner of Old Woodstock stands all that remains of the original stump of the Blenheim Orange; it is entirely dead, and rapidly falling to decay, and time will soon claim the hollow, rotten remnant." We told how the white-haired gardener Kempster first raised from seed this beautiful, and justly celebrated Apple—that he lived in his little cottage garden in Old Woodstock, a plain, practical, labouring man; and we mused on the mutability of all sublunary substances—on Kempster and his child.

Kempster is long since gathered to his fathers, and the favourite tree to which he gave his name has followed him, and is now no more to be seen—the place which once knew it now knoweth it no more;—nothing remains to mark the almost consecrated spot where once it grew and bore its ruddy ripening orange burden, except a young tree derived immediately from the patriarchal trunk itself.

Though the parent stem has for ever vanished, a numerous and flourishing offspring thrive in the neighbouring crofts and orchards, and from thence are now generally dispersed throughout the length and breadth of this island, and have reached even to our American and Australian colonies.

The merits of this Apple are undoubtedly very great, both for culinary purposes and as a handsome ornament either for the show room or the dessert table. It is not a first-rate keeper, losing its flavour early, and is much better before Christmas than after it.

In some parts of England it is a shy bearer; but a calcareous soil is best suited to it, and it is observable that where the Apricot flourishes, there the Blenheim Orange is in perfection.

A young tree seldom produces much fruit, but in its more matured state it will generally yield an abundant and regular crop.

If the celebrating the memory of heroes be an object worthy of the muse of history, and the preservation of the records of remote antiquity be not beneath the pen of the archaeologist, surely it will not be thought vain or useless for Pomona to place on record the end and history of her most cherished children. The loves of monarchs, the birth of princes, the reward of heroes, and the skill of the artificer are amongst Woodstock's glories, known and manifest to the world because Chaucer, Scott, and Alison have written, and Industry will herself declare her own glory and her power; but that Kempster dwelt near the same "bower" in which the "fair" but frail one erred, is "a history but little known" to those who might be desirous of being informed on the subject.

Some have thought this Apple was raised in Blenheim

Park by the Duke of Marlborough's gardener. It was named only in honour and compliment to the noble owner of the adjoining palace; and the gardens of Blenheim, noble though they be, and unsurpassed both in their produce and extent, have no claim to the further distinction of having been the nursing mother of our fruit. *Micklewell, jun., Sept. 13.*

#### BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(MEETING AT HULL, SEPT. 1853.)

SECTION B: CHEMICAL SCIENCE.—On the Employment of the higher Sulphides of Calcium as a Means of preventing and destroying the Oidium Tuckeri, or Grape Disease; by Dr. ASTLEY P. PRICE.—Of the many substances which have been employed to arrest the devastating effects of this disease, none appear to have been so pre-eminently successful as sulphur, whether employed in the state of powder or flowers of sulphur, or by sublimation in houses so affected. Notwithstanding the several methods described for its application to the Vines, I am not aware that any had been offered in 1851, when these experiments were instituted, by which sulphur might be uniformly distributed over the branches, and be there deposited in such a manner as to be to some extent firmly attached to the Vine. Three houses at Margate, in the vicinity of the one in which the disease first made its appearance in England, having been for the space of five years infected with the disease, and notwithstanding the employment of sulphur as powdered and flowers of sulphur, no abatement in its ravages could be discovered—I was induced to employ a solution of pentasulphide of calcium, a solution of which having been found to act in no way injuriously to the young and delicate shoots of several plants, was applied to the juices in a dilute condition; the object in view being that the compound should be decomposed by carbonic acid, and that the excess of sulphur should be deposited with the carbonate of lime in a uniform and durable covering on the stems and branches of the Vines. This was adopted, and although but few applications were made, the stems became coated with a deposit of sulphur, and the disease gradually but effectually diminished, inasmuch that the houses are now entirely free from any trace of disease or symptoms of infection. The young shoots are in no way injured by its application, and the older wood covered with this deposit of sulphur continues exceedingly healthy. This was, we believe, the first employment of the higher sulphides of calcium as a vehicle for the application of sulphur to the stems and foliage of diseased Vines. Specimens were exhibited from Vines which in 1851 were covered with disease, and which have since the autumn of that year received no further treatment. The Vines in the immediate neighbourhood, and adjoining one of the houses, are covered with the disease; but, notwithstanding their close proximity, no indication of the disease has at present been detected in either of the three houses.

On the Effect of Sulphate of Lime upon Vegetable Substances; by Chevalier CLAUSSEN.—About six weeks since I was engaged in making various experiments on the effect of sulphate of lime upon vegetable substances. A portion of the substances then used by me was thrown carelessly aside, and upon returning to my experiments about a fortnight afterwards, I was surprised to find that decomposition had not taken place in those portions of the vegetables which had been subjected to the action of the sulphate, while those which had not been so treated were completely decayed. Among the articles experimented upon were a number of Potatoes, each of which was affected by the prevalent disease; some of these remain sound to the present day, the others have some time since completely rotted away. Subsequently, I procured some more Potatoes, and also some Beet-roots, the former being, as far as I could judge, all diseased. I divided the Potatoes into three portions. One lot I placed in a vessel with a weak solution of sulphuric acid, and from thence I placed them in a solution of weak lime-water. In the second lot the process was reversed, that is to say the Potatoes were first placed in the lime-water, and then in the acid. The third lot was left untouched. Ten days afterwards I examined the Potatoes, and found, as I expected, that the Potatoes which had not been treated with the sulphate were rapidly decaying—those which had been first placed in the solution of lime and then in the acid were more nearly decomposed—while those which had been treated in the mode first described remained as sound as when first taken in hand. Upon being cut open the diseased part of the Potatoes was not found to have spread internally, and the flavour of the root was in no degree affected by the application of the process, nor do I think that its germinating power was injured by the effect of the sulphate. The effect upon the Beet-roots was similar to that produced upon the Potatoes, and which would seem to be somewhat analogous to that of galvanising metals, viz., protecting the substances from the effect of atmospheric agencies. I may add, that muriatic and other acids have been employed by me on other occasions with equal success, the only agents required appearing to be those which will most readily produce a sulphate in contact with the substances required to be preserved. As at present it does not appear that any means can be successfully adopted to prevent the Potato from becoming diseased while in the ground and arriving at maturity, it would certainly be of immense advantage if anything could be discovered by the use of which the



roots when taken up could be prevented from that absolute decay and irreparable loss to which Potatoes affected by the disease are liable. The results which I have described seem to me to point to the possibility of arresting this loss. How far the plan suggested may be practicable or applicable upon a large scale, my present very pressing and numerous engagements have hitherto prevented me from ascertaining. I do not think that any insuperable difficulty exists with respect to the application of the process. The acid employed by me was very weak, about 1 part to 200 of water; the lime-water was about the consistency of milk. The materials are not, therefore, expensive; and when the value of the crop to be saved is taken into consideration, it would be a matter well worthy of being tested by some of those extensive growers of Potatoes in the county in which the British Association is now holding its sittings. For my own part, I should be most happy if by any suggestion of mine I had merely been the instrument of directing the attention of scientific men to the subject of the possibility of preserving from total destruction a vegetable so valuable and so indispensable as the Potato.

(To be continued.)

#### BEEES AND CHLOROFORM.

In the south of Britain, this year has been unfavourable for bees, and unless a little care is bestowed upon them now, many will die during the autumn and winter; indeed, some of this year's swarms are at the point of starvation already. Can anything be done to save them from death, and thereby secure a sufficient stock for next year? I answer, yes. Now is the time to unite the weak ones with the stronger ones, which should be fed forthwith. The combs in the weak hives should not be taken out or disturbed, but carefully preserved, as there is no honey to be had from them, and as they would be of great benefit to the swarms of next year. When a swarm is put into a hive containing combs they are soon filled with honey or eggs, the latter of which the queen lays in abundance at swarming time. When a swarm is put into an empty hive, the bees must first make combs ere honey or eggs can be deposited. A few clean nice combs in a hive are of great value indeed at swarming time. Up to September all the brood is not hatched, and hence it is not proper to remove the bees from the combs sooner. Were the bees removed before the hatching is completed, the brood would rot in the cells, and thereby make the combs worse than useless. No swarm would prosper amongst them.

As it is considered by some people a very difficult matter to get bees out of a hive alive at this season, I tested the use of chloroform for this purpose, on Saturday last. One of the surgeons of the place supplied me with a quarter of an ounce of it for sixpence. I lifted a weak hive, and then placed on the board a small flower-pot saucer, into which the chloroform was put. The hive was speedily let down and its door closed, and before one had time to speak there was heard a great noise and hubbub inside, which did not last more than half a minute. The hive was again lifted off its board, on which almost all the bees had fallen; some of them were tumbling about, some scarcely able to move a limb or a wing, and some were apparently quite dead. The queen seemed to be as much overcome as any of them. As this was tried at noon, an improper time to unite swarms, and as I was anxious to see how long they would remain affected by the chloroform, I merely put an empty hive over them, to which plenty of air was admitted. In about 20 minutes many of the bees were able to fly, but it was nearly an hour before the whole of them recovered. About 2 dozen, which fell into the liquid in the saucer, did not recover; had I covered it with a perforated card the life of every bee might have been preserved. In the evening the little swarm of chloroformed bees was found beautifully clustered on one of the sides of the empty hive, from whence I shook it into the hive standing next to it, and then gave them a nuptial feast, by pouring over them a little mixed sugar and water.

The uninitiated, and those who are afraid of bees, may safely and successfully employ chloroform in uniting swarms and in artificial swarming. Those accustomed to bees do not require the use of it. By blowing a little smoke from a bit of ignited fustian or corduroy cloth into a hive, they are able to turn it up and do many things with the bees. In summer bees can be drummed out of a hive, but in autumn and winter drumming does not answer—the bees will not run. To meet this difficulty we pour a little sugar and water over the combs, whence the bees are to be taken. In two or three minutes they will be found sitting loosely on the combs, sipping at the sugar, from which they may be shaken by one sudden jerk, like snow from a man's foot, or china from a tea tray when it strikes the door-post. In cold weather it is a good way to unite swarms by candle light in a barn or empty house. First sprinkle the combs with sugar and water, then let the edges of the hive (in its right position) rest on your two hands placed at opposite sides, now lift it erect off the floor 2 feet, and give it a sudden shake downwards. You will thus cause all the bees to fall on the floor, when the hive that is to receive them should be placed over them. If a little sugar is sprinkled over the combs of the receiving hive all the better, though swarms never quarrel or fight when united at night. They coalesce and become one as readily as water does with water. The operation, so difficult to explain in few words, may be performed in less than five minutes, and by using chloroform the

bees may be got out of one hive and put into another within the space of two minutes. There need be no concern about two queens going together, for one will be kept—the other killed. One thing more should be mentioned—the hives against another ought to be united. Were two swarms between which others are standing united, the bees would naturally go back to their old stool.

For feeding bees nothing can surpass loaf sugar and water mixed at the rate of a pound of the one to a pint of the other, slightly boiled. As to the mode of giving it nothing need be said—it is like poking the fire; everybody thinks his own way the best. A. Pettigrew, Woodside Gardens, Whetstone.

#### Home Correspondence.

*How to convert Coppice into Orchard Ground.* (see p. 597).—First, let the ground be trenched sufficiently deep to remove all roots; then let drains be made down the slope 24 feet apart, and 15 inches deeper than the ground is trenched; let the bottom of the drains be filled up with broken stones, sifted clean from dirt, 12 inches deep, and covered with any material that will keep out the soil until it has become consolidated. 2d. The roots dug up should be burnt with as much clay as possible, to be spread over and dug into the soil. 3d. Let the trees, either dwarfs or standards, or one alternately, be planted in rows in the middle of the space between the drains, at 12 feet apart in the row; they should be planted on the surface, and the roots covered to the same depth as they were previously with light good soil, so that when finished a small mound will be formed around each tree. To prevent too rapid evaporation before the trees are established, these mounds should be mulched over with litter during the spring and summer after planting. The trees may be purchased at any respectable nursery where they can be had true to name, no grafting will then be required. The training of the Apple tree is as much a matter of taste as utility; the main point is to have the branches far enough apart to have all the leaves fully exposed to light, in order that good fruit may be produced throughout the tree. The pruning required for one variety may not be suitable for another; attention to their mode of growth, and the way in which the flower-buds are produced, will be the best guide. 4th. There are so many good sorts of eating Apples now in existence, that it is not easy to judge for every taste; but were I planting for myself I would select, with other sorts, the Kerry Pippin, Margel, Ribstone Pippin, Downton Pippin, Non-such Pippin, Court of Wick, Ferns Pippin; and I would consult Mr. Thompson, of the gardens at Chiswick, who is an excellent authority in such matters. It would be well, however, to select those varieties that grow in a healthy state and produce good fruit on the same soil in the neighbourhood. 5th. Cultivate the ground between the rows, and grow on it any vegetable you may require. No injury will arise to the trees; on the contrary, if proper attention is paid, they will rather be benefited by it than otherwise. Ye Ken Wha.

*Anacharis alsinistrum.*—Your correspondent Mr. Marshall has evidently not read the account in the *Worcestershire Chronicle*, referred to in my communication the week before last (see p. 581). In it I had made several extracts from his interesting letters, in fact, nearly the same that he quotes in your last Number, viz., that the plant "is only now descending the rivers is evident," and that it might be expected to come into the Severn through the Avon. It has already been found in the Avon in this county, but the "pool" in question is about 20 miles above the confluence of the Avon and Severn, and therefore the weed was not at all likely to get there in that way. My friend Mr. Edwin Lees has told me that since the account in our local papers was published, he has been informed that the *Anacharis* has been found in the Severn near Shrewsbury. It is therefore very probable that it will be found in other places between Shrewsbury and Worcester. I do not think there is the slightest probability that the "pool" has been "inoculated" by any local botanist. T. Baxter, 1, Castle Place, Worcester.

*Pear-pecking Birds.*—Will any one kindly inform me what bird it is that pecks holes in Pears. I do not wish to make an indiscriminate slaughter of birds, so I should like to know who my enemy is. As they seldom eat much of the fruit, the mischief seems gratuitous, though I have heard the supposition that the object of the bird was to get at the seed. So desirous, however, are they of pecking the fruit that, although I net my trees, yet unfortunately a small hole being left in one of the nets, they got in, and destroyed a whole crop of beautiful Marie Louise, chiefly in a single night. J. M. B. [Do not the birds resort to the Pears for the maggots that are in them?]

*Yellow Cucumber.*—One of my neighbours has in his garden, among others, two Cucumber plants which have produced throughout the season fruit of a lemon colour, but in other respects similar to the ordinary produce. I shall feel obliged by your informing me whether it is anything very uncommon. The seed from which the plants were raised was produced from Cucumbers which grew close to a Squash bed. H. E. S., Chichester. [We presume there can be no doubt about the seed producing the yellow Cucumbers having been sown by the Squash.]

*The Stanwick Nectarine.*—I wrote last autumn a few particulars respecting the above Nectarine; that it had not ripened its fruit in an orchard house, without fire-heat, and that its fruit had cracked and dropped off towards the end of October, without becoming in the

least soft or approaching to ripeness. I now feel much pleasure in telling you that I have succeeded this season in ripening its fruit in great perfection with very little trouble. About the 1st of this month my Elruge and Violette Hative Nectarines in pots were ripening very nicely, but some very fine fruit on a tree of the Stanwick, also in a pot, standing alongside of them, were green and hard. I therefore removed the tree to a house in which a gentle heat is kept up, with abundance of air night and day; I much feared the fruit would drop off, but to my great satisfaction I have to-day gathered some large fruit perfectly ripe and of the most delicious flavour. I think I may add that its flavour is peculiar and unique, a sugary sweetness with a slight agreeable astringency, not at all partaking of the usual Peach-leaf taste, but piquant and refreshing; in shape it is nearly oval, very large, and its stone remarkably large. The tree is a most abundant bearer in pots, and it will be seen by the above that its culture is very simple, for when the fruit is full grown towards the end of August, the trees may be removed to a house with fire-heat and the fruit ripened well, in a Peach house. When the trees are trained on trellises in the usual way and forced it will be superb; and on flued walls I should think it will succeed admirably, but on common brick walls, unless in very hot summers, I apprehend it will not ripen. Thomas Rivers, Sawbridge-worth, Sept. 21.

*Lime v. Potato Disease.*—At the beginning of August last, I had a bed of ripe walnut-leaved Potatoes dug, the produce of which amounted to 3 bushels. Conceiving the disinfecting properties of lime might be advantageously employed in checking the progress of the disease, then slightly manifesting itself, I resolved on sprinkling a handful on every alternate layer of Potatoes in the bushel, extending the experiment to 2 bushels only, and storing the remaining one in a dry state without any application. On examining them a week ago, I was gratified at the discovery that five Potatoes only were bad among the 2 bushels to which the lime was applied, while 2 gallons of the other bushel were infected. To prevent the effect being attributed to any other agency than the lime, it may be stated that the whole of the ground was planted with tubers of the same sample, and had previously received similar treatment. I do not find that the lime has, in any degree, affected the quality of the Potato. W. Sprent, Overton, Sept. 12.

*The Ochro.*—In a volume published by G. Putnam, New York, 1853, entitled "Rural Essays," by the late A. J. Downing, I find, in a chapter entitled "A Chat in the Kitchen Garden," that mention is made of a vegetable called Okra. It is said to be very little known yet to the (American) country generally. Yet it is "a truly delicious vegetable," cultivated all over the southern States, and held there in the highest esteem; that it will thrive very well, and mature an abundance of its pods with no trouble but that of planting it in a rich warm soil, if it be cultivated even in the northern States, "except to the north of Albany." Its pods are said to be almost as delicate and delicious as an East India bird's nest. And besides being so excellent it is the most wholesome of all vegetables in summer. If you can give your readers any information regarding this vegetable, and whether it has been cultivated at all in England, you will greatly oblige at least one of them, who is D. S. H. [The Ochro is the Hibiscus esculentus, cultivated wherever the summers are long enough and warm enough to produce its mucilaginous pods. The dried powder may be bought in the great shops of London; it is used in the garrison of Gibraltar to thicken soup. With us it is a tender stove plant, very apt to be attacked by red spider, and not cultivable at any expense proportioned to its value.]

*Akebia quinata.*—We have this in fruit. Has it ever fruited before in this country? J. Weeks & Co., King's Road, Chelsea. [Not that we know of.]

#### Foreign Correspondence.

MELBOURNE, ITS BOTANIC GARDENS, AND A BOTANICAL TOUR TO THE DANDYNOY RANGES: May 6th, 1853.—The botanic gardens here are rather more than a mile from the town, and are situated on the banks of the Yarra Yarra, on which Melbourne also stands. The road to the gardens leads along Prince's Bridge, and turns to the left by the river side, leaving on the right a series of wooden houses recently erected for the accommodation of new comers, the influx of which is immense. There is, however, plenty of room for all, as the province of Victoria alone contains about 60 million acres of land, and probably not more than one million of acres has been purchased by the people, and only a small portion of that is under cultivation. The entire population is about a quarter of a million, whilst Melbourne and its vicinity contains about 60,000 inhabitants.

But to proceed: the road has a kind of circular bend, by the side of which are swamps or lagoons filled with frogs, which make a dreadful croaking at night; there are several plants in these lagoons, the names of which I have not yet learned; one in particular, a *Mimulus* with dwarf habit and purple flowers, is not, as far as I know, yet described. A little further on and we pass two old limestone quarries, the strata of which lie at an angle of about 45°; still advancing, we arrive at the gate of the botanic gardens, close by the side of the Yarra, the ground on the right being almost perpendicular; a little way up is a small neat brick cottage, by way of porter's lodge; inside the gate the road



branches into two—that to the left passing along the side of the Yarra, the other by the side of a large lagoon; along the sides of this walk, for a considerable distance, is growing in great luxuriance what is here called the Wattle, *Acacia dealbata*, and which I at first mistook for *A. affinis*; passing some nursery beds filled with miscellaneous plants, we arrive at a rustic bridge, at a point where the lagoon forms itself into a kind of neck, formed by the washing away of the soil during heavy rains, which, accumulating on the rising ground, wash down here with great violence; at this part of the lagoon, which is pretty clear of weeds or rushes, a few swans may be seen cruising about on the water, several of which are the black swans indigenous to the country; the others, which are white, have been lately imported from England. A little distance further on and we arrive at the kept ground, or that which is planted with trees and shrubs, all the rest being in its natural state, covered with Wattles and Gum trees. The trees and shrubs are planted promiscuously, native and exotic, heedless of class or order, and interspersed with a good sprinkling of herbaceous plants, and florists' flowers for show. The gardens contain a good collection of what in England are termed New Holland plants, such as the different species of the Gums, *Acacias*, several of which have not yet been introduced into Europe, having been recently found in the interior of the country, *Polycalas*, *Correae*, *Cassias*, *Billardieras*, *Callistachys*, *Eurybias*, *Araucarias*, &c., and some very large plants of *Agave Americana*; two *Grevilleae* of great beauty, recently found in the bush, are in flower here just now, viz., *Grevillea Latrobi* and *G. Dallachiana*, the former named after Mr. Latrobe, the present governor of the colony, the latter after M. Dallachy, curator of the gardens, by whom many such plants are annually discovered, during his botanical rambles into the interior, principally for the purpose of collecting seeds; this autumn he and two others, along with the government botanist, Dr. Muller (a German, and recently appointed to this office with a salary of 400*l.* a year), were away for about two months, and discovered some really good things, well adapted for pot culture at home; among these were a *Grevillea* with large scarlet flowers, several *Acacias*, &c. *Scarlet Geraniums* attain a large size here, growing like *Portugal Laurels*; these, together with all other greenhouse plants, stand out all the year in the open border. There is not much glass here, only a small span-roof propagating house, a few frames, and pits for seedling plants. The garden enclosure embraces an area of upwards of 30 acres; the situation is well chosen. Nature has done her part and Art must now step in and complete what it has already begun, so as to render the gardens an honour to the Victorians. During the autumn which is just finished not more than six men were employed, but now that the winter is setting in, and a good deal of new work is in contemplation, that number has already been doubled. Demand for all kinds of labour is on the increase, and provisions rising. Wages in the garden are 10*s.* per day—indeed this is the lowest wage in the colony. Gardeners who engage by the year receive from 60*l.* to 80*l.* per annum, and rations, that is board and lodgings, or so much flour, beef, tea, sugar, &c.; but there are no situations to be had of any note, they are all single-handed. House-rents around here are enormous, the rental for a small cottage with two rooms is from 1*l.* to 1*l.* 10*s.* per week. Land is also very dear within a few miles of Melbourne, five acres lately advertised for sale about five miles from the town, fetched 600*l.* Many gardeners who came out lately thought that, owing to the high price of vegetables, market gardening would be a good speculation; but owing to the high price of land within a marketable distance of town, they have been forced to abandon the idea, and sell or give away such seeds as they brought with them. No doubt parties who held gardens prior to the gold era, or who have since commenced market gardening, are doing well, for Cabbages are selling at from 12*s.* to 16*s.* per dozen; during the past week the price of vegetable productions was as follows:—Cabbages and Cauliflowers 12*s.* to 16*s.* per dozen, Lettuces 6*s.* per doz., Peas 8*d.* per quart, French Beans 1*s.* per lb., Onions 5*d.* per lb. Fruit: Grapes, 2*s.* per lb., Peaches 6*s.* per doz., Apples from 1*s.* to 2*s.* per lb. Potatoes 25*s.* per cwt.; bread, 4 lb. loaf, 1*s.* 6*d.*

Permit me now to give a sketch of a journey of some 20 miles in the bush, along with the Government botanist:—About 8 o'clock in the morning of the 10th January last, after dressing in the bush fashion, and starting briskly off for the Dandynoy range, we soon found ourselves a few miles from the gardens, in the middle of a thick scrub, and anxiously looking for something new and rare; this scrub consisted chiefly of several species of *Epacris*, none of which were in flower, *Hibbertia prostrata* in bloom, and a pretty growing plant with purple flowers—the *Comesperma lineari-folia*; several *Goodenias*, and *Oxalis microphylla*; two beautiful blue *Lobelia gibbosa* and *simplicicaulis*, and many other things of less importance, at least, as regards beauty; here we made a beginning by picking up a few things only, as we did not intend returning by the same route. By this time the sky had assumed a blackened appearance, and thickening clouds prognosticated rain, which shortly after began to fall, and before 12 o'clock it had unmistakably set in for a rainy day; we however put on our waterproofs and bade it defiance. Our road now lay through the Gum-tree forest; it merely consisted of the tracks made by the bullock drays employed in bringing down timber, and was cer-

tainly of a most serpentine character. The rain still continued to pour down, and there were no signs of a human dwelling. We increased our speed, and thought we must be near a station we expected to find; but on and on we went, through dub and mire, and there were no signs of a living soul; by this time it was within an hour of getting dark. We passed two or three old bark huts, and in one we determined to spend the night. Next morning foreboded rain, which soon began to fall, and made us resolve to shelter here for another night, where we could have the addition of a good fire to warm us; here we were employed in drying our clothes, specimens, &c.; and at night we laid ourselves down to sleep on a sheet of bark, in front of a good fire, and spent a more comfortable night than the preceding; after partaking of some tea, we again bundled up our traps and started on our journey, hoping to be more successful than formerly; after travelling some six miles we met with two boys who put us on the right way, and in about half an hour afterwards we came in sight of the long-looked-for station, and certainly a most forlorn-looking place it was. There was a small stone building for the master, and a diminutive bark-hut for the men; as this was a cattle station, great numbers were to be seen standing about. Here we had a hearty breakfast, consisting of the usual fare of the colony, bread, beef, and tea; this constitutes the daily food, vegetables being so high priced are not come-at-able.

We now proceeded with a view to ascend the mountain, the base of which was about six miles distant, principally through a thick scrub, consisting of *Hakeas*, *Epacris*—*E. pulchella* alone being in flower—a few Gum trees and *Acacias*; *Daviesia latifolia* was in great abundance and in seed, several of which we gathered. We also picked up a pretty purple Orchid, but the day being fine we hastened onwards. Just at the bottom of the hill, growing by the sides of two creeks or rivulets, was presented to our view a sight I shall never forget, viz., the stately forms of the Tree Ferns, *Dicksonia antarctica*, and *Alsophila australis*, whose acrogenous stems, composed of the annual footstalks of the withered leaves, attain a height varying from 4 to 40 feet; and on the stems of trees in more shady places we found, in great luxuriance, some of the more humble members of the Cryptogamic alliance, such as *Polypodium Billardieri*, *Asplenium* species, *Hymenophyllum nitens*, or flabellatum, *Grammitis australis*, and *Trichomanes*, &c.; in the vicinity of trees were growing, in great luxuriance, *Prostanthera lasiantha*, *Bedfordia*, and *Musk Aster*, *Aster argophyllus*, *Australian Mulberry* (*Pseudo-Morus australasica*); several climbers with their graceful forms embraced the naked stems and branches of some of the trees, such as *Clematis blanda*, and *Tecoma Latrobi*; by the side of the creek were a few old deserted bark huts, of which we chose the best, in which to spend the night. Here we left our provisions, and then attempted the ascent, but we soon found that to be impossible, but not without making many bold efforts, and frequently "measuring our length" on the ground. Several trees were lying here and there, varying in length from 50 to upwards of 150 feet; the Brake Fern was as high as our heads, but our most formidable enemy was a species of Grass (*Ehrharta australis*) of ramose habit, climbing up the stems of the underwood to a height of some 12 to 15 feet; we again descended, but found this much worse than the ascent; we, however, managed to tumble down somehow. We then entered our hut, lighted the fire, made some tea, and spent the afternoon in exploring the creeks. In the evening we got a good supply of wood, being close to an old sawpit. After providing a few large sheets of bark on which to sleep, we soon retired to rest; but being in such a lonely spot, sleep, at least for a time, had deserted our eyelids. While dreaming with open eyes, and a good fire glowing on the hearth, I heard a sharp sound, similar to the smart crack of a whip, and anon, another crack; surely, I thought, there must be some bush-rangers passing this way; but on making my fears known to the doctor, he told me it was the sound of a bird, very appropriately called the coach-whip; although we heard the noise of this bird the following day we could not obtain a glimpse of it. There were plenty of parrots of beautiful plumage in this neighbourhood. Early next morning we were on the alert, in order to attempt an ascent from another point: the morning was very fine. Our road to-day was in many respects different from that of yesterday, as there was little or no underwood, with the exception of a few clumps of Ferns here and there; fortunately, we got on to a road leading to the very top of the mountain, and along which timber had been brought down. The finest trees were growing at the very summit, these consisted of the kind of Gum trees known by the name of Stringy Bark, of which there are several varieties. These Gum trees, or *Eucalypti*, constitute the principal timber trees of Australia. This genus is about being described by Swainson, the author of several volumes of natural history, in "Lardner's Cabinet Cyclopaedia," and who, though a native of England, has been residing in New Zealand during the last 12 years. The sum of 800*l.* has been set apart by Government, to cover the expenses of this undertaking. During the last three months he has been residing at the Dandynoy, in which place alone he has discovered some hundreds of species. But to our own journey: On reaching the summit, as I have stated, we beheld some of the finest timber trees which it is possible to have any idea of; three-fourths of them had, however, a charred appearance, and were comparatively leafless, being thus destroyed by the extensive bush fire, which about two

years ago swept over nearly the whole country. Many stations were burned to the ground; the stems of some of the trees were about 150 feet in height, clear of branches, and as clean as a walking-stick. One in particular which we observed must have been nearly 200 feet in height. All the bark was hanging loosely from the tree (which was lifeless), in strips like ropes from the top of some huge tree of liberty. Seeing such long strips dangling about by the wind, I thought if I could pull one off and measure it, it would give me a good idea of the height of the tree. So we waded through the Ferns, and took hold of one of the strings, gave it a desperate pull, and swung with all our weight to it, but all attempts to separate it were useless. I might as well have thought off walking off with the tree as of pulling down a strip of this tenacious bark. Seeing little of any botanical interest in this part of the range, we again descended to the place of our former rendezvous, and after binding our wallets on our backs, we bade the fairy retreat good-bye, casting many a lingering look behind. The Tree Ferns being quite new to us, and conveying an idea of something like part of a tropical landscape, we spent the night at the station at the bottom of the ranges. After breakfast next day we started off home. The only bit of farming we saw was at the station, and that consisted of a few Oats and a small piece of Potatoes. We reached home safe, after spending a week in the bush. During the last few days there has been a number of gardeners this way in want of employment—new arrivals, of course. Although gardening is different here from what it is at home, and one has to rough it, as they call it, yet there is this consolation—that the wages are good. A young man who has just been a week in the gardens here is leaving for a situation where he is to receive 2*l.* 5*s.* per week, with cottage, wood, and water. It will be thought that water can be of little consideration, but it costs money here, unless you are in the neighbourhood of the Yarra, there being no spring about Melbourne; the water is driven in barrels, and sold at so much per load, the value of which may be guessed at when I state that a man with a horse and cart can realise from 2*l.* to 3*l.* per day just now, labour of all kinds being enormously high priced; but of course horse-keep is also very dear, being about 15*s.* per day. *John Walters, Botanic Gardens, Melbourne.* [We learn from Mr. Lumsden, of Bloxholm Gardens, Sleaford, Lincoln, to whom we are indebted for the above, that Mr. Walters was formerly gardener to Charles Chaplin, Esq., of Blankney, in that county, and that he left for Australia about 12 months ago.]

## Societies.

CALEDONIAN HORTICULTURAL, Sept. 10.—Prizes were awarded on this occasion as follows:—Peaches: 1st, Mr. Crocket, Raith, with Royal George and Bellegarde; 2d, Mr. Pender, Moredun, with Noblesse and Royal George. Nectarines: 1st, Mr. Campbell, Alva, with Elruge; 2d, Mr. Thom, Kelso, with Newington. Muscat Grapes: 1st, Mr. Lees, Tynningham; 2d, Mr. Reid, Ballindean. Black Hamburg: 1st, Mr. Crocket, Raith; 2d, Mr. Allan, Rosehills. Frontignan: 1st, Mr. Crocket, with Grizzly; 2d, Mr. Thomson, Balchristie, with the same variety. Highest flavoured Grapes: 1st, Mr. Crocket, with Chasselas Musqué. Silver Medal to Mr. Dickson, Paisley, for a Queen Pine Apple. Apricots: 1st, Mr. Addison, Gosford, for Moorpark; 2d, Mr. Crocket, for Royal; 3d, Mr. Reid, Edmonstone, for Moorpark. Greengage Plums: 1st, Mr. Fowler, Smeaton; 2d, Mr. Addison; 3d, Mr. Anderson, Oxenford; 4th, Mr. Crocket. Plums (three sorts): 1st, Mr. Crocket, with Magnum Bonum, Purple Gage, and Washington; 2d, Mr. Anderson, with Washington, Victoria, and Magnum Bonum. Highest flavoured Melon: 1st, Mr. Lees, with Broomham Hall; 2d, Mr. Reid, Milbank, with the same variety; 3d, Mr. Mossman, with Thurston Green-fleshed. Hollyhocks: Messrs. Downie and Laird's prize—1st, Mr. Cossar, Peebles, with General Bem, Watford Surprise, Lady Clark, Lord Ronald, Walden Gem, Sir David Wedderburn, Susannah, Comet, Shylock, Mountain of Light, Constellation, Richard Cobden, Illuminator, Queen, Lady Elitank, Pillar of Beauty, Charles Turner, and Sir David Dundas; 2d, W. Blackwood, Esq., with Walden Gem, Susannah, Pourpre de Tyre, Triumphant, Sir David Wedderburn, Lady Dairymple, Sir Joseph Paxton, General Bem, Magnum Bonum, William, Lord Melville, Cream of the Valley, Charles Turner, Richard Cobden, Illuminator, Spectabilis, Countess of Home, and Captain Hutchison. Dahlias: Silver Cup (value 5*l.*) to Messrs. J. Dickson & Sons, for Beeswing, Mr. Seldon, Duke of Wellington, Queen of Whites, Sir R. Whittington, Crocus, Bob, Barmad, King, Morning Star, George Gleny, George Villiers, Annie Salter, Plantagenet, E. Foster, Sir F. Thesiger, Lilac King, Sir F. Bathurst, Scarlet King, Malvina, Richard Cobden, and Sir J. Franklin; 2d premium to Mr. Handasyde, for Beeswing, Princess Radziville, Duke of Wellington, Miss Caroline, Plantagenet, Earl Clarendon, Amazon, Frederick Jerome, Malvina, Alice, Queen of Whites, Bob, King of Dahlias, Marchioness Cornwallis, Sir C. Napier, Seraph, Sir R. Whittington, George Gleny, Sir John Franklin, George Villiers, Yellow Standard, Brilliant, White Standard, and Goliath. Fancies: 1st, Messrs. Dicksons & Co., with Rainbow, Elizabeth, Miss Campton, Keepsake, Miss Jane, Kossuth, Miss Ward, Forget-me-not, Unknown, Miss Blackmore, Laura Lavington, and Cricket; 2d, Mr.



Handasyde, with Princess Charlotte, Mrs. Hansard, Kossuth, Wonderful, Mrs. Murray, Reine des Belges, Unanimity, Empereur de Maroc, Flora M'Ivor, Belle de Nugent, Reine Pomare, and Gloire de Vienne. Practical Gardeners and Amateurs: Silver Cup (value 5*l.*), to Mr. Young, Archerfield, for Plantagenet, Duke of Wellington, Princess Radizville, Sir R. Whittington, Marchioness Cornwallis, G. Villiers, Sir Charles Napier, Mrs. Ferguson, Miss Speirs, Triumphant, Seraph, and Bob; 2*d* premium to Mr. Begg, Paisley, for Queen of Lilacs, Annie Salter, Mr. Seldon, Crocus, Morning Star, Plantagenet, Duke of Wellington, Miss Caroline, Edmond, Triumphant, Malvina, and Miss Speirs. Fancies: 1*st*, Mr. Stenhouse, Pitfirrane, with Spectabilis, Kossuth, Mrs. Hansard, Flora M'Ivor, Laura Lavington, and Mr. Chouveau; 2*d*, Mr. McDonald, Drummond Castle, with Forget-me-not, Hermina, Le Paon, Jeannette, Gasparini, Furstur, and Madame Wacky. Six Dahlias: 1*st*, J. Mood, Esq., with Duke of Wellington, George Glenn, Sir F. Bathurst, Queen of Dahlias, Sir R. Whittington, and Barnaid; 2*d*, Mr. Stewart, with Beeswing, Crocus, Magnificent, Mr. Seldon, Shylcock, and Queen of Versailles. Hollyhocks: Silver Cup (value 5*l.*) to Messrs. Downie and Laird, for Marquis of Tweeddale, Pourpre de Tyre, Emperor, Watford Surprise, General Bem, Mrs. Ferguson, Walden Gem, Magnum Bonum, Sir David Dundas, Susannah, Comet, Meteor, and Napoleon; 2*d*, to Messrs. Ballantyne, Dalkeith, for Sir William Wallace, General Bem, Rosea grandiflora, Raphael, Sulphur Queen, Alice Maude, Scarlet King, Napoleon, and four seedlings. Practical Gardeners: Silver Cup (value 5*l.*) to Mr. Lang, Dysart, for Pourpre de Tyre, Joan of Arc, Cream of the Valley, Lady Elizabeth, Shaded Model, Spectabilis, King of Roses, National, Queen of Denmark, Charles Lidgard, Illuminator, and Penelope; 2*d*, to Mr. Pow, for Gem of the North, Watford Surprise, Walden Gem, Kossuth, Susannah, Magnum Bonum, Queen, Sulphur Queen, Prince Albert, Rosa grandiflora, Napoleon, and Pourpre de Tyre. Of the prizes offered by Messrs. Turner and Keynes for the best 6 new Dahlias sent out by either of them in 1853, the Silver Cup (value 5 guineas) given by Mr. Keynes, was gained by Mr. Mitchell, Ravelston, with Wonderful, Grand Duke, Bob, Lilac King, Plantagenet, and Miss Caroline; 2*d*, 2 guineas, given by Mr. Turner, was awarded to Mr. Begg, Greenlaw, for Plantagenet, Miss Caroline, Bob, Lilac King, Sir John Franklin, and Amazon. The third prize, one guinea, also given by Mr. Turner, was assigned to Mr. Reid, Broomfield, for Lilac King, Plantagenet, Miss Caroline, Queen Victoria, Bob, and Sir J. Franklin. Messrs. Paul & Son, Cheshunt, exhibited 13 spikes of seedling Hollyhocks, for some of which certificates were voted, viz., Lizzy (pink), White Globe, Glory of Cheshunt (pale yellow), and Ariccola, an improvement upon Spectabilis. From Mr. Young, Archerfield, a seedling Dahlia, a fine yellow of large size, named Mrs. H. N. Ferguson, to which a Certificate of Merit was awarded.

At a previous meeting, the secretary read a report by a committee appointed to examine certain plans of gardens, &c., sent in competition for prizes offered to journeymen and apprentice gardeners; and, in terms of the committee's recommendations, prizes were awarded as follows:—1. For the most approved original plan for laying out a flower garden and shrubbery (together not to exceed one acre in extent), with a list of the plants best suited to the design, and a brief account of the mode of management most calculated to produce ornamental effect throughout the year; the Silver Medal was awarded to Mr. George Scott, Leuchie House, North Berwick. 2. For the best arrangement of a kitchen garden (not to exceed one acre in extent), with a list of the trees and small fruit bushes most suited to the various exposures, describing briefly the mode of management, and also the course to be pursued in cropping the ground, with a view to a continuous supply of vegetables throughout the season; the Silver Medal was awarded, as first prize, to Mr. Scott, Leuchie House. A second prize was voted to Mr. James Anderson, Riccarton. 3. The prize (Silver Medal) offered through the Society by C. K. Sivegrist, Esq., for the best plan (the ground not to exceed one acre in extent) combining the requirements of Prizes Nos. 1 and 2, as above, was awarded to Mr. William Collie, Experimental Garden.

## Reviews.

Moore's *Handbook of British Ferns* (Groombridge and Pamplin, small 12mo), has, we are happy to see, arrived at a second edition, a result which its sterling merit was certain to produce. This is a great improvement upon the original in matter, as well as in typographical appearance, being beautifully as well as skilfully printed; and we heartily recommend it to every body who wishes to become acquainted with our interesting wild Ferns. The little woodcuts with which the pages abound, are neatly and correctly executed. We shall have occasion to refer to this work again upon an early occasion.

Since our last notice of Black's charming Library Edition of the *Wanderer's Noctua* "Quentin Durward" and "St. Ronan's Well" have appeared, with all the merits of their predecessors.

Messrs. Maw and Co., of Bentham, near Broseley, in Shropshire, have issued a "*Pattern Book*" of their *Encaustic Tiles*, in the form of a thin 16o pamphlet. It is published by Mr. Bridgen, of Darlington Street, Wolverhampton, and should be consulted by all who are using

such materials. The designs for some of the enriched black and red patterns strike us as being peculiarly graceful. They are stated to have been drawn by Mr. H. B. Garling.

## New Plants.

### 7. SCHOMBURGKIA LYONSII.

*S. sepalis petalisque ovatis obtusissimis crispis, labello indiviso conformi unguiculato concavo margine erosulo: costis 5 subaequalibus acutis, anthera bicornuta.*

PERHAPS this is the prettiest of the Schomburgkias. When out of flower there is nothing in it to attract notice; but the flowers are quite different from those of any previously known species. They are pure white, with rich purple spots and speckles. The lip is of nearly the same form as the other parts, but more taper pointed, dull violet with a yellowish edge and rich crimson ribs. The anther is very remarkable for bearing in front a pair of yellow horns curved like those of an ox.

We received flowers of it on the 27th of August, from J. C. Lyons, Esq., of Ladiston, near Mullingar, whose collection of Orchids is by far the richest in Ireland. He believes it was given him by the late Mr. Clowes, and if so it may be expected to exist also at Kew. The undivided lip, beautiful marking, and horned anther are obvious marks by which it may be recognised. Its native country is at present unknown.

### 8. PSAMMISIA SCLEROPHYLLA. Planchon and Linden, in *Flore des Serres*, t. 825.

A very fine greenhouse shrub, which the public is once more indebted to Mr. Linden. It was found by his collectors, Funck and Schlim, in the wooded parts of the province of Merida, in the state of Venezuela, at an elevation of from 7000 to 8500 feet above the sea. It is now two years since Mr. Linden flowered it. The appearance of the plant is that of a broad-leaved Tibaudia, to which genus it is nearly allied. The flowers are nodding, in terminal naked many-flowered racemes, rather more than an inch long, almost egg-shaped, with a deep crimson tube, and a yellow 5-toothed border. It looks as if it would be a fine exhibition plant. Mr. Van Houtte prescribes for it equal parts of leaf-mould and peat; a well ventilated greenhouse in winter, and the open ground with a western exposure during summer. We do not find this in Mr. Linden's catalogue; but he offers for sale three other species, namely, *Psammisia Coralito*, *crassifolia*, and *penduliflora*.

## Garden Memoranda.

MR. GROOM'S NURSERY, CLAPHAM.—The show-house here has been exceedingly gay for some weeks past with the different varieties of Japan Lilies, but their beauty is now nearly over. They are still, however, sufficiently in flower to show how fine they have been. Mr. Groom has not only paid great attention to the cultivation of these Lilies, than which we have nothing half so handsome at this season of the year, but he has also done much in the way of grossing them one with another, until at last he has obtained a race with flowers very much improved in shape, deeper coloured, and even more richly spotted than *Speciosum* itself. In the open ground are large beds of these seedlings, and also of the named varieties, and though now past their best, they have even still a very striking effect, their stiff, waxy, deep crimson spotted flowers remaining long in perfection. All the varieties are quite hardy; some of the beds have been planted several years without taking the bulbs out of the ground in winter, and they have never been the least injured by the weather, but have come up well, and bloomed regularly every year. It is to be observed, however, that Mr. Groom's soil is light, and not retentive of water, which, if allowed to stagnate about them, is well known to be injurious to all bulbs. In gentlemen's establishments the best place for these Lilies, when they are intended for out-door decoration, would be in the American beds, the peaty soil of which would exactly suit them, and as such beds are generally well drained, they would winter safely in them, and flower beautifully every autumn. The deep coloured varieties are the earliest; then comes *punctatum*, and last of all the white sorts, which are not even yet in bloom at Clapham. They are, however, later this year than usual. Although these Lilies succeed well out of doors, however, it is under glass that their beauties are seen to most advantage. The conservatory bed is perhaps as good a place as any for them; but we need not say that with proper management magnificent specimens of them may also be produced in pots. *Tritonia aurea* has been plentifully in flower here under glass, where its large panicles of orange blossoms have a charming effect. Mr. Groom has planted it out of doors; but it did not succeed well. He intends, however, to give it a further trial. In the show house several plants of *Valloia purpurea* are at present very gay, many of the flower spikes having four, five, and even six large scarlet blossoms on them, and some of the bulbs send up two flowering spikes. Considering the little care which this showy plant requires, it is surprising that it is not more extensively grown than it is. In another house, surrounded by a large and fine collection of *Amaryllids*, were two specimens of the noble Fern *Alophila australis*, the handsome fronds of the larger one measuring nearly 6 feet in length. This is truly a valuable species. We also find that he is fortunate enough to possess some store of the rare and fragrant *Lilium Thompsonianum* from the Himalayas.

## FLORICULTURE.

CULTURE OF THE PELARGONIUM.—I strike my cuttings, which are obtained as soon as the wood is thoroughly ripe, under hand-glasses in the open ground, watering them very slightly for a week or two, but exposing them to dews at night. When they are well rooted, they are lifted and potted in turfy loam, two-year-old cow-dung, some peat and silver sand, all well mixed together, and placed on an efficient drainage. The plants are then set in a cold frame, and kept close in the day-time, till they have become established; but they are left open at night. Ultimately the lights are off during both day and night, and, as soon as they will bear it, they are placed on boards, exposed to all weathers, until the long, cold, late autumn nights cause them to be placed in-doors. The main point in their out-door treatment is, never to allow them to get water-logged or stunted in their growth. They receive a shift in November, using the compost mentioned above without the peat. They are again shifted in February, and each shoot stopped at the fourth joint. Lateral shoots are then produced, and these are tied out horizontally, so as to form the basis of the future specimen. The lateral shoots are also stopped, and by these means plenty of wood is obtained for large plants in the following season. But I have another mode of proceeding, which is, to take strong plants in April or May, pot them in 11-inch pots, place them out of doors and pick the flowers off them throughout the season. Next year they are fit for exhibition. The plants that are to blossom in May are never stopped after they are cut down in July. The June plants are stopped early in January, and those for July in February. To grow Pelargoniums successfully, I find that much depends on their winter treatment. They should not receive too much water or fire-heat, and the wood should be well ripened before they are allowed to flower, if a fine head of bloom is wanted. My general time for cutting down is between the first week of July and the middle of August, according to the ripeness of the wood. When the plants have fairly broken, the old soil is shaken clean from their roots; the latter are trimmed in a little, and the plants are repotted and placed in a frame till they have become established, when they are placed out of doors till they are removed to their winter quarters. To come in for exhibition in May and June, they are repotted in November, and for July in February. When they begin to show flower-buds, liquid manure is occasionally given them. The latter is made by putting into a large tub of soft water half a barrow-load each of cow, sheep, and horse-dung, and a peck of lime, mixing well and using the clear liquid, after two-thirds of clean water has been added to it. During the blooming season plenty of water (not liquid manure, that is only given five or six times just before they come into flower) is required, otherwise the foliage becomes discoloured, and the blossoms come small and deformed. P.

WHITE IVY-LEAVED PELARGONIUM.—When allowed to scramble freely over the surface of the soil, with an invisible peg here and there, this is one of the prettiest bedding plants we have. Its short petioles contrast admirably with the long flower stems, giving the blossoms a charming effect. It is of good habit, and produces abundance of flowers, the latter being so well set off by the stout, glossy, horse-shoe foliage, that I think it cannot possibly fail to please those who may be induced to grow it. W. Browne, Merevale.

NATIONAL FLORICULTURAL SOCIETY, Sept. 22.—A First Class Certificate was awarded on this occasion to Dahlia Col. Baker (Dodds), a medium sized canary-coloured flower, of good form and substance, eye prominent; Certificate of Merit to John Keynes (Dodds), a full-sized, dull, salmon-coloured flower, of good form and tolerable substance; ditto to Ariel (Alexander), a shaded peach-blossom coloured flower, of general good qualities; ditto to Magnet (Kimberly), a large ruby-crimson useful looking flower, with a good outline, eye rather sunk; ditto to Golden Eagle (Holmes), a medium-sized flower, with good depth of petals and good substance, form middling; Label of Commendation to Admiration (Green), a good fancy flower, with a white ground bordered with crimson; ditto to Lady Emma (Hunt), a medium-sized shaded maroon flower, tipped with white, form rather flat, outline irregular; Certificate of Merit to Hollyhock Lilac Perfection (Chater), a distinct looking flower, possessing general good properties. Label of Commendation to Hollyhock Emperor (Roake), a soft rosy-coloured kind; First Class Certificate to Verbena Caliban (Smith), a violet and rosy shaded flower of general good properties; Label of Commendation to Verbena Attraction (Banks), a pale lilac kind with a bold primrose eye; ditto to Fetunia Novelty (Kimberly), a dwarf-growing sort with blotched lilac flowers; a Hollyhock from Mr. Roake, and a collection of Verbenas from Mr. Edmonds, of Great Ormsby, were very promising, but no particular notice could be taken of them, on account of the bad condition in which they were shown. Dahlia Indispensable, from Mr. Barnes, is a good flower, which will doubtless be shown again.

EUCHASIA: J. A. One of the singular, but not uncommon monstrosities to which the cultivated varieties are subject. The plants which produce such things are over-fed.

PELARGONIUM SEED: R. N. T. It should have been sown last July. We would be inclined, however, rather to try it now than wait till that time next year. Sow in pans in a little heat, and endeavour to get the plants up and somewhat established before winter.

PINKS: Anicis. To the sorts you already have you may add Harry, Optima, Criterion, Lola Montes, Phoenix, and Esther.

### SEEDLING FLOWERS.

ANTHRIMMUM: J. Of little value. The dark sort is the best; but there are far better than either now in cultivation.

DAHLIA: T. C. A good deal in the way of Golden Eagle, mentioned above, but not so well formed. - C. Dulwich. A fine bloom, good in colour, but deficient in the centre.

DIANTHUS: R. M. Very pretty, and being dwarf in habit it will doubtless make a good bedding plant.

PELARGONIUM: C. J. Your scarlet seedling had dropped to pieces before it reached us.

VIOLAS: J. A. C. All handsome, but too like kinds possessing the same colours already in cultivation.



## Miscellaneous.

**Mulberry Disease.**—At a meeting of the Accademia dei Georgofili (of Florence), held on June the 5th, one of the members exhibited branches of the Mulberry-tree, the leaves of which were completely spoiled by the effect of what is here called fersa, secume, or marino. This disease is well known; it formed the subject of long discussions in the scientific meetings held annually in Italy before the events of 1848; it is considered by some as caused by the presence of a parasitical fungus, first described about ten years ago by Dr. Sandri. The damage is usually limited to a small portion of the leaf, the rest of which remains untouched, and can therefore be given for food to the silkworms; but this year the whole surface of the leaf has been attacked, and to such an extent that breeders of silkworms have been obliged to throw away a considerable quantity of the caterpillars because either they had no food at all to give them, or the little that was left had risen to an enormous price. It is to be remarked that the Mulberry-tree of the Philippines has resisted the disease much better than the common one, in the same way that the American kinds of Vine have done compared to the European species. The Mulberry disease has also made its appearance in the southern parts of France; according to Montagne, the fungus accompanying it in that country is the *Fusisporium cingulatum*, Mont. *Hooker's Journal of Botany*.

## Calendar of Operations.

(For the ensuing week.)

## PLANT DEPARTMENT.

The conservatory will still be kept gay by fresh introductions of plants in bloom, and the removal of such as begin to decay. It will, however, not be desirable to overcrowd the house at this season of the year, as the permanent inmates will require to have all the light and air possible, to effect the ripening of their wood. The climbing plants in this and other houses should likewise have a weekly regulation, shortening back the shoots going out of bloom, and training the remainder in a suitable manner, to effect a free natural habit. Climbing plants in pots, as *Kennedya*, *Hardenbergias*, &c., should likewise be neatly tied to their trellises, and exposed to a good share of light. The borders in the conservatory will require less water, and this should be still further reduced as the days shorten, making a difference, however, with strong rooting plants, which will require larger quantities than others. The buds of *Camellias*, where too thick, should be thinned out according to the strength of the plant; water such as have not been recently potted with clear soft-water, which will help them to perfect good-sized flowers. A batch of *Roses* having had a short rest may now be placed in a light pit, for after removal to the plant-houses or drawing-rooms, they will be useful when the out-door ones are over. For a number which is useful we recommend the following as blooming very late: *Devoniensis*, *Elise Sauvage*, *Goubault*, and *Smith's Yellow*, and *Scarlet Odorata*, among the "Teas." Most of the *Perpetuals* and *Bourbons* should likewise be grown—*Géant des Batailles* particularly so, and the dwarf miniature *Roses* are pretty objects for the drawing-room, when grown in pots. A portion of the stock of *Chrysanthemums* should be placed under glass, to forward them; thin out the bloom buds, and water with liquid manure. In arranging *Pelargoniums* for the winter, allow them the lightest and warmest end of the house, unless there is a separate house for them, when the *Fancies* should have the best end; keep them close to the glass, and do not allow them to touch each other; those cut back late may yet be shaken from their old soil and repotted, placing them, however, in a slight bottom heat afterwards, to facilitate their quick rooting; cuttings struck should be potted at once, if not done previously. Let the greatest cleanliness be carried out in every house. The pots should be frequently washed on the outside, and moss prevented from growing on the surface soil. Make it a rule to clean out each house after the morning's watering, that it may get dry early in the forenoon. Specimen plants should be frequently turned round, to prevent their becoming one-sided. Keep only moderate fires to stove plants at this season.

## FORCING DEPARTMENT.

As the present time is a season of rest in this department, advantage should be taken of dry weather to procure the requisite supply of loam for growing *Pines*, *Melons*, &c., as well as for making new, and renovating old fruit tree borders. To the inexperienced planter we may observe that a soft sandy loam, full of fibrous roots, and cut not more than 3 or 4 inches thick, should be selected, if procurable, for making borders for growing *Vines*; it will be preferable if taken from an old pasture or sheep-walk, and the more elevated the ground from which it is taken the more free will the turf be found from the oxides of iron, &c., which in their raw state are unfavourable to vegetation. A good guide, however, is the character of the vegetation—and no harm can follow using a soil carrying naturally a close sward of the finer Grasses; the presence of the common Fern, too, generally indicates a suitable soil, if not of too poor a quality. Loam of a somewhat heavier texture should be selected for *Pears*, *Plums*, and *Apples*. In making the borders, let them bear some proportion in regard to depth to the nature of the soil used. Of whatever kind the loam, it should be stacked up with the natural herbage attached, in narrow

tiers, laid somewhat hollow, to admit the air through them, with an occasional turning during the winter, without breaking the turves very much, when it will be ready for use the ensuing spring. At leisure times, the various heaps of manure and compost should likewise be turned over, to prepare them for mixing with the above when the borders are made.

## FLOWER GARDEN AND SHRUBBERY.

The removal and transplanting of evergreens may be undertaken from the present time to November with more chances of success than at any other period of the year, and for large specimens no other season should if possible be selected. The natural warmth of the soil placed about the roots, and the close damp weather generally prevailing in the autumn months, are the principal causes operating to ensure success. Add to this, a principle (well known to those who have planted largely at all seasons) in plants to form roots more readily after the season of active growth, and during the ripening of the wood, than at any other. Whether planting is done in masses or singly, the ground should be well trenched and drained before attempting to put a plant in; for single plants, if they are meant to thrive, a mere round hole, just sufficient to hold the roots, is not sufficient; but the ground for some space round should be well worked up, to facilitate the progress of the future roots, as well as the escape of water. As each tree or shrub is planted, secure it from the action of high winds. Mulch the surface, to prevent evaporation from the soil; and besides occasional watering at the roots, when the earth becomes dry (and then only), sprinkle the tops well each evening, wetting the bark and foliage completely. This will be a much safer plan to promote their growth than pouring water on the roots of a plant, when the soil around them is already in the shape of mud. Cuttings of *Laurels*, *Privets*, *Yews*, and various other evergreens, may now be in, and the layering of others, which do not strike readily from cuttings, proceeded with.

## FLORISTS' FLOWERS.

*Carnation* and *Picotee* layers which are sufficiently rooted may be taken off and potted. It is not advisable to use soil of too rich a nature to winter them in, and a couple of layers in a pint pot will be sufficient. When the layers are removed from the parent plant, if any disease or canker be apparent at the section, it must be cut carefully away; this is a point of great importance. Look over the calyxes, giving them a slight pinch, by which means it will be ascertained whether there is any seed; if at all plump, cut them off with a small portion of stalk, and hang them up in an airy, dry place, taking care, however, that they are enveloped in a very thin paper bag. Plant offset *Tulips*, and given them a good situation and good soil; these are the "corps de reserve" of the main bed, and should have every attention bestowed on them. Give the bed intended for the blooming roots a turning, add also fresh compost, sweet and rich. Many florists use the soil in which they have grown their *Carnations* with good effect. Mark seedling *Dahlias*, the weakest are often the best; should any present a novel character, though otherwise not quite up to the mark this first season, give them another trial.

## KITCHEN GARDEN.

The weather having become more favourable, *Potatoes* should be taken up at all opportunities, as the chances of their keeping without rotting in the pits are much increased by their being put together in a dry state. As adverted to last week, the crops in low damp soils are scarcely worth taking up, four-fifths being more or less diseased; we should not again notice this, did we not see, year after year, *Potatoes* planted on soils which, under the present condition of the crop, cannot be expected to be remunerative. Very dry soils, early planting, and open exposures are the best auxiliaries for realising a sound crop of *Potato* tubers. Continue to earth up *Celery*, and the crop of late *Cauliflowers* and *Walcheren Broccoli* should have a few of the outside leaves tied over the heads as soon as the latter are visible—this will be necessary now to protect them from sudden frosts, but should be practised as well through the summer, to preserve them fresh and white, which exposure to the sun destroys. A warm sheltered piece of ground should be selected for the crop of hand-glass *Cauliflowers*. Fork in some fresh loam and well rotten dung, and arrange the glasses 3 or 4 feet apart, forming a shallow basin under each, in which, when the plants are strong enough, three or five plants should be planted, according to the size of the glasses. At the same time, and in a similar situation, a batch of the genuine *Bath Cos* and brown Dutch *Cabbage Lettuces*, may be planted under glasses for winter and early spring supply. Pay attention to the seedling crops of *Lettuce*, *Cauliflower*, and *Onions*, to get them forward for the above uses.

## STATE OF THE WEATHER NEAR LONDON,

For the week ending Sept. 22, 1853, as observed at the Horticultural Gardens, Chiswick.

Sept.	Moon's Age.	BAROMETER.		TEMPERATURE.					Wind.	Rain.
		Max.	Min.	Of the Air.			Of the Earth.			
				Max.	Min.	Mean.	1 foot 2 feet deep.			
Friday 16	13	29.953	29.916	54	51	55.5	57.5	56	N.	.04
Saturday 17	14	30.063	30.008	69	45	56.0	57.5	56.5	N.E.	.00
Sunday 18	15	30.188	30.100	70	42	56.0	57.5	56	N.W.	.00
Monday 19	16	30.244	30.110	70	49	59.5	57	56.5	S.W.	.00
Tuesday 20	17	30.057	29.924	62	41	51.5	57	56	S.W.	.00
Wednesday 21	18	29.937	29.834	65	44	54.5	56.5	55.5	W.	.00
Thursday 22	19	29.839	29.734	67	54	60.5	56	56	S.W.	.08
Average		30.041	29.950	67.9	46.7	56.8	57.0	56.1		0.12

Sept. 16—Uniform haze; shower; hazy at night.  
17—Fine; very fine; clear at night.  
18—Slight fog, with heavy dew; very fine; clear and cold.  
19—Fine; clear and exceedingly fine; clear at night.  
20—Uniformly overcast; very fine; clear and cold.  
21—Foggy; very fine; rather hazy at night.  
22—Fine; clear and fine; overcast; rain at night.  
Mean temperature of the week 56 deg. above the average.

## STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Oct. 1, 1853.

Sept. and Oct.	Average Temp.	Average Amount of Rain.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
					N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 25	65.9	45.5	53.9	12	0.30 in.	1	4	2	2	4	9	1
Mon. 26	65.4	46.1	55.3	15	0.72	1	4	5	1	4	6	3
Tues. 27	64.8	45.3	55.0	16	0.63	1	4	4	1	4	6	3
Wed. 28	64.4	43.2	54.3	13	0.50	1	4	1	1	6	4	2
Thurs. 29	64.1	45.2	54.7	16	0.53	1	2	3	2	5	7	1
Friday 30	63.7	41.3	54.0	14	0.38	2	3	2	1	6	7	3
Satur. 1	63.2	46.1	54.6	14	0.53	2	3	2	2	6	7	3

The highest temperature during the above period on the 25th 1852—therm. 82 deg.; and the lowest on the 27th, 1852—therm. 24 deg.

## Notices to Correspondents.

**APPLES:** *Constant Reader*. If your cellar is dry, you may keep some of the better keeping sorts of Apples for a few months, packed in kiln-dried mould or sand, in a corner of it. First put a good thick layer of dry material, then a layer of Apples, and so proceed till they are all stored. In gathering them take care not to bruise them, for that would predispose them to rot.

**BOOKS:** *Halbert*. The first additional supplement to Loudon's "Hortus Britannicus," has no date. A second was published up to March, 1839. We have seen no others. We presume that the fullest actual list of garden plants is Don's edition of "Don's Hortus Cantabrigiensis," but it by no means supercedes Loudon's "Hortus Britannicus."—*D. B. J.* Such a subject as the poor law cannot be treated both well and concisely. The best work on the subject is the last edition of "Archbold's Poor Law," published not long ago.—*Jobbing Gardener*. Loudon's "Hortus Britannicus."—*B. E.* Mills on the Melon and Cucumber will possibly suit you.

**HAWS FOR AUSTRALIA:** *J. M.* When the Haws are quite ripe put them in a heap to rot. Then rub out the stones, and send the latter packed in sand.

**HEATING:** *J. O. W.* We certainly advise you to employ a brick flue for your pit. The work it has to do does not demand so expensive an apparatus as hot water must have; and the others proposed to you will not answer your purpose so well as a fine, well built.

**HOLLIES:** *H.* The best time for pruning and cutting *Laurels* or *Hollies*, to make them shoot where nakedness occurs, is the month of April.

**INSECTS:** *A. H.* Your leaves have all the appearance of having been gnawed by some caterpillar, but as the edges of the incisions are dried and brown, it is evident that they have been made some time, probably when the leaf was small and young, the size of the incisions increasing with the growth of the leaf.

**MENANTHES RENIFORMIS:** *A. H.* This plant is figured and described in the "Botanical Magazine," t. 1029, under the name of *M. exaltata*. It is not unlike a *Parnassia*, but has a branched inflorescence and yellow flowers. It is wild in Van Diemen's Land and Southern Australasia, where it inhabits swampy places.

**NAMES OF FRUITS:** *Z. L.* Your Grape appears to be the *Chasselas Musqué*; but although the specimens received were well ripened, very sugary and rich, yet the Muscat flavour was not so strong as it usually is in the *Chasselas Musqué*, which may be owing to circumstances. However, as it is a disputed point, and in order to make perfectly sure, perhaps you will take the trouble to send a medium-sized leaf by post.—*Edinburgh Sub.* 1, White Astrachan; 4, Lamb Abbey Pearmain; 5, Old Nonpareil; 6, Borsdorffer; 12, Purses-mountain Codlin; 13, Osline; 16, Northern Greening; 19, London Pippin; 20, Pomme d'Api. The others cannot be ascertained in their present green state. Although you have lost the respective names, perhaps you have the general list; if you have, please to forward a copy of it.

**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, no more than four plants may be sent us at one time.—*Erzerum*. 674, *Inula montana*; 911, *Inula hybrida*; 1014, *Parnassia biseriata*; 169, *Achillea setacea*.—*C. F.* 1, *Salsola Kali*; 2, *Arenaria peploides*.—*A Regular Sub.* *Lycopodium complanatum*. The meetings, &c., in Regent Street, in the ensuing season, will be on the days which correspond with those of last year: Peas on the third Tuesday in October.—*Mary M. C.* 1, *Begonia dipetala*; 2, *Dregei*.—*H. E.* One is *Beta maritima*; the other seems to be a starved specimen of the thick-ribbed or Chard Beet.—*W. X. Y. Z.* *Arundo Phragmites*.—*C. L. P.* Your plant is probably the *Sarcopodium affine* of the "Folia Orchidaceae" (No. 13), a species we never saw alive; but it differs in some particulars, especially in colour, and may be new, a point which cannot be determined without seeing the plant itself, and hearing more of its history. The moveable joint of the lip occurs in all *Sarcopodia*.—*A. D.* *Coleogyne fuliginosa*.—*Amigo*. We suppose the *Phystostegia* to be truncated; we find no *Linaria*, but a *Coleopogon* plant in its place; the *Epilobium* we do not recognise. But all these arrived in such a shrivelled state as to be in reality indeterminate. If you will send us better specimens, preserved flat between paper (the post-office pressure will not hurt such things), we will endeavour to give you a better reply.—(?) *Name lost*. 1, *Catantopus tridentatus*, the monstrous form called *Monachanthus viridis*; 2, *Catantopus Naso*; 3, *Brassia cinnamomea*; 4, some *Acropera* not determinable.

**ORCHIDS:** *J. S. L.* The following may possibly answer your purpose, viz., *Dendrobium nobile*, *Pierardi*, *densiflorum*, *moniliforme*, and *formosum*; *Epidendrum crassifolium*; *Aerides odoratum*, *Phalenopsis amabilis*; *Cattleya Mossie*, *Skinneri*, and *violacea*; *Cypripedium barbatum*, *Saccolabium guttatum*, *Vanda suavis*; *Oncidium ampliatum majus*, *Lanceanum*, and *divaricatum*; *Trichopilia tortilis*, *Brassia maculata*, *Zygopetalum rostratum*, *Stanhopea tigrina* and *oculata*, *Miltonia spectabilis*, and *Phaius grandifolius* and *albus*. On the rafters you may have *Stephanotis floribunda*, *Cymbidium purpureum*, *Passiflora Kermesina*, *Allamanda cathartica*, and *Dipladenia splendens*.

**PROTECTION:** *A Constant Reader*. A substance called *Frigi Domo*, frequently advertised in our columns, is better than Russian mats. It costs more at first, but it is much more economical in the long run. The seed of the *Scarlet-runner*, when ripe, constitutes one of the kinds of *Hariot*, largely employed on the Continent as winter food. The skins should be removed, which is easily done when the beans have been cooked.

**SCARLET RUNNERS:** *W. N. Your* "Seedling Scarlet Runner" pods were 8 inches in length, and tender. We cannot, however, say whether it is essentially different from the *Scarlet Runner* in general cultivation until both are seen grown under similar circumstances.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

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AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

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**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full per centage of soluble Phosphate, Ammonia, &c., &c., delivered to any Railway Station in London, at 6l. per ton; also CORN MANURE for top-dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

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**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites... .. " 5 0 0  
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## MANURES—PERUVIAN GUANO.

**WHEAT MANURE**, made to meet the offer of a Prize by the Royal Agricultural Society of England, Superphosphate of Lime, Gypsum, Salt, Bone Dust, and all other Manures of known value on sale.

Also Foreign and English Linseed and Rape Cakes, Peat Moss Charcoal, &c.—Apply to MARK FOTHERGILL, 204, Upper Thames Street, London.

**SEWAGE CHARCOAL MANURE.**—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt. for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

## DRAINAGE AND IRRIGATION.

**HENRY WEBBER** begs to inform Landowners and the Public that, having had considerable practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by contract or on commission. Reference given.—Address, Halberton Court, near Tiverton, Devon.

## LAND DRAINAGE.

**MR. JOHNSON** (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five shillings per acre; or if under 30 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

## PRIZE CHURN.

**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BROOKS & KEY, Agricultural Implement Warehouses, 103, Newgate Street, and 62, Little Britain, London.

**WINTON'S PARKES' CELEBRATED STEEL DIGGING FORKS** never bend, strain, nor break, but retain their sharp points to the last, requiring no repair.

Mr. Mechi says:—"They answer admirably in breaking our heavy clays, and mixing the soil in an extraordinary manner, and facilitate labour quite 20 per cent."

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OATS?—If you do, read MARY WEDLAKE'S BOOK, 1s. 4d. Examine her Chaff-cutter, 1l. 10s. and 3l. 7s. 6d. Oat Bruisers, 5s. 6d. New Mangles, 6s. 6d. Ploughs, Carts, Haymakers, Weighing Machines, Flour Mills for home use, Horse Gear, or Power to move all kinds of machinery. List, 250 cuts, 1s. 4d., post free.—118, Fenchurch Street, London.



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**ALEXANDER SHANKS & SON**, MACHINE MAKERS, Arbroath, Forfarshire, respectfully solicit notice to their IMPROVED GRASS-CUTTING and ROLLING MACHINE for Lawns, the complete success of which, and its acknowledged excellence and superiority over all other machines of the kind, have now been fully established.

Testimonials and further particulars will be immediately franked on application.

**THE OIL MILLS**, Weybridge, Surrey.—**FLINTAN, HURST, & Co.**, as successors to the late Messrs. W. & T. M. FLOCKTON, respectfully inform the customers of the late firm that they are in a position to supply them with genuine LINSEED CAKES, at the Mills, on the most liberal terms. Weybridge, Sept. 24.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.



## WEIR'S DRAINING LEVEL.

PRICE 30s. These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

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Patent Pump ... .. 1 15 0

Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required.

They are much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

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Every description of Machinery for Raising Water; Fire Engines, &c.

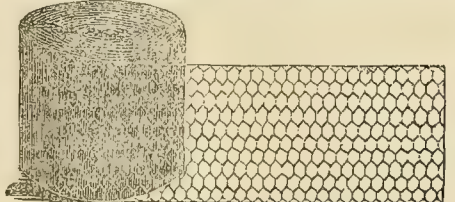
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The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



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24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.

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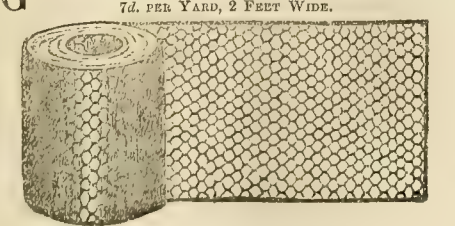
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Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron, Asphalt Roofing Felt, &c.

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2-inch mesh, light, 24 inches wide ... 7d. per yd. 5d. per yd.

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All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

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Students are admitted after the summer and winter vacations; also in April and October. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth, though a longer time is recommended. There is a department for general as well as for agricultural education.

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Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuit of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College.

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The next term will commence on the 1st of October.

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The course of instruction comprises all the requisites of a sound and liberal education, and the terms are moderate and inclusive. Vacancies for two private pupils. Soils, Minerals, and Manures carefully analysed.

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**PHOTOGRAPHY.**—The attention of the public is respectfully invited to the PHOTOGRAPHIC PORTRAITS of this Department, which, from the vast resources and elaborate apparatus of this Institution, exhibit a degree of excellence not hitherto approached elsewhere. A select stock of Ross's superior Portrait and Landscape Lenses, pure chemicals, &c.

**CHEMISTRY.**—Mr. HOLMES commenced a Class of PRACTICAL CHEMISTRY, in the Laboratory, on September 1, for medical students, gentlemen amateurs, or gentlemen wishing to investigate any particular branch of Chemical Science. A Select Class for Ladies, and a Juvenile Class in the morning. Also, on the same day, Mr. Holmes commenced his Course of AGRICULTURAL CHEMISTRY, embracing simple practical methods of analysing soils, manures, &c., and instruction in the application of Chemical Science to the general routine of farming operations. The privilege of free admission to the Institution is granted to all pupils on the evenings of their lectures.

For terms and further particulars apply to the Secretary; if by post, enclose two postage stamps.

**AN EXHIBITION of POULTRY and PIGEONS** will be held at the Corn Exchange, Bedford, on the 30th November and 1st and 2d December. Entrance to non-subscribers on the first day 2s. 6d., on the other days 1s. Subscribers of 10s. and upwards are entitled to admission throughout the exhibition. Prize lists and forms of entry can be obtained of Mr. H. J. Jones, Bedford; and Mr. Charles Howard, Biddenham, near Bedford. Entries to close on the 22d October, 1853.

## SMITHFIELD CLUB FAT CATTLE SHOW.

All Entries for the Christmas Show of Fat Cattle, &c., must be returned to the HONORARY SECRETARY on or before SATURDAY, the 5th of NOVEMBER, 1853.

Prize Sheets, specifying the Classes, Prizes, and Medals (which amount to nearly 800l.), and the necessary PRINTED FORMS of Certificates for Entry, to be had on application to

B. T. BALDREY, General Honorary Secretary,

Corner of HALF-MOON STREET, Piccadilly, London.

N.B.—It is particularly requested that all letters connected with the Exhibition, or on the Club's Business, may have the words "SMITHFIELD CLUB" written on the outside, in addition to the Honorary Secretary's name and address.

## The Agricultural Gazette.

SATURDAY, SEPTEMBER 24, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Sept. 29—Agricultural Imp. Society of Ireland.

THURSDAY, Oct. 6—Agricultural Imp. Society of Ireland.

## THE FABLE OF 'THE HARE WITH MANY FRIENDS' WAS

long a favourite simile for Agriculture; but Esop could have supplied something still more apposite. The substantial advantages that were let drop in vainly grasping at the shadow of political preference, are beginning to suggest a reflection to men's minds, which every year now makes more striking and distinct, not to the farmer only and the landowner, but to the community at large. And, after all, that capacious Noun-of-multitude is your only true Improver! it is only by the point of his ponderous forefinger—vast enough to fill another 'Castle of Otranto'—it is only by a sensation (the least imaginable) of his august avoidpoids—that improvement is ever set in motion. There is some innate deficiency of action and perception, some constitutional inertia within, that, in every art or calling by which money is made or 'establishments' set up, leads poor shivering Necessity and her bright-eyed child Invention to turn a wistful eye for help rather to that same 'Community-at-large' than to any smaller body-corporate, however respectable in its way, wherever intelligence or breadth of view are needed as the adjuncts or preliminaries of movement.

For it is really come to this. It is not a question of Speed: it is movement, mere exertion, actual and



perceivable, that is required, under the condition in which agriculture finds itself, on awaking from two generations of false aim and false position,—during which it has pursued the phantom 'Price,' instead of crushing the vampire 'Cost,'—and looking back upon the oversights and loss it has incurred, from mere lapse of time spent in the cradle of legislative patronage instead of the workshop of active energy and self reliance.

As it is, we stand with one foot in the last century. While the science of Statistics has been shedding the most surprising light, and furnishing the most unlooked-for charts to steer the helm of Certainty through the shoals of Risk, on some of the wildest and most hopeless shores of human navigation, Agriculture is *without Statistics!* While 'Transfer' and 'Conveyance' in other articles, including our precious selves, have passed through phases rapid and varied as those of the kaleidoscope—from the Packhorse to the Wagon, from the wagon to the Canal, the canal to the Railroad; the transfer of an acre of land is in *worse* condition than in the reigns of the PLANTAGENETS. While the Books of the Bank of England have achieved a sort of power-loom speed and comprehensiveness in the designation and disposal of Trust-funds and Personal estates, and the 'simplicity of the 3 percents,' become a proverb, the Uses and Trusts of 'real' property, are still spun by hand at a thousand times the cost, from the same inexplicable cobwebs that owe their date to 'hump-backed RICHARD' and 'bluff King HARRY,' and have been straining at gnats and swallowing—*clients*, from that time to the present. While feudalism has become a romance, a 'tale that is told,' and the Salic law which dishonours the weaker and defenceless sex, a thing that even the uncivilised parts of Europe are grown ashamed of,—they are still a living fact, a startling reality in the British land-agent's and lawyer's office, and hang like a chilling night-damp over the farmer's acres.

Well may the plough refuse to go by STEAM! Well may the Suffolk-punch with its timber-laden step be still sagely pronounced "the best animal, upon the whole, for agricultural purposes." "Upon the whole!" These are pregnant words. It must have been a waggish pen that in the accredited Journal of Agriculture-Royal, poised upon the pivot of that phrase a conclusion only too conclusive, a settlement so prudent, of the problem how far it was really possible to 'speed the plough!'

It seems probable enough that this ancestral topic of research has reached its anti-climax, and must, like all earthly things, give way to something else. Nor has the Plough much to complain of, either as to the duration of its dynasty or the suddenness of its deposition. Few instruments of human use have been handed down with a more prescriptive honor and unquestioned title, and few potentates have survived so long, and so unconsciously, the birth and growth of the Successor who was destined to dethrone them. For, from the moment that the Steam-engine was perfected, not a new element only, as some would merely suppose, but an emphatically new mechanical capability had arisen, silent as the dawn, bearing within itself an intrinsic relation to the complicate act of Culture, to be afterwards developed at that moment when 'mechanical substitute' was at its utmost need.

Whoever will be at the pains to enter on a close analysis of the act called 'Cultivation' will come to recognise in it a bifid process. Whether attempted by the Spade or the Plough, the first thing we aim at is *inversion*. To the neat accomplishment of this primary and *essential* requisite, a dexterous turn of the elbow and wrist, that almost the steam-engine might sigh or whistle for in vain, is supplied by the spadesman; for this, mathematical science may be truly said to have lavished itself upon the spiral angle of the polished mould-board of the plough. Nor unwisely: for even the 'cleanest'-looking field teems with summer life, animal, vegetable, indescribable, that must all (in Indian phrase) 'go under'—be given to darkness, pressure, decay, and death—in the beautiful round of nature, before new life can properly begin. We read in classical writ of the 'putrid' soil—the term is admirable. Like everything else that holds, or engenders 'life,' the soil, before it be tasked for reproduction, must die and be buried. 'Inversion' is its proper and peculiar burial; perhaps one of the most simple and suggestive forms that exist of that mortal change that everything (even up to Human Love!) must see, and suffer: without it the seeds of weeds, the larvæ of grubs and insects, and a latent host of nameless organisation, resume their life and growth almost without a check; without it every atmospheric element, and precipitant,—rain, frost, thaw, dew, and drought, fall like a stale dose that has lost its former freshness and virtue: inversion is to the soil what the sleep and oblivion of night are to man, 'the

death of each day's life, tired nature's second nurse.'

There are of course instances (as after Turnips on a well forked fallow, fed-off, or an early-removed and clean spring crop of opposite botanical family, and perhaps a few, a very few, other cases), where it may with propriety be omitted; but in these cases the principle is confirmed, not contradicted. He who neglects 'inversion,' knows little of cultivation, still less of the force of that analogy which runs like a decree, written in cypher, throughout the laws of nature.

But inversion is only the death and burial of last year's surface; a fresh and mellow surface has succeeded to it, vigorous from its recent sleep, and the chemical effects of darkness (for darkness has its appointed agency as well as light, and their succession is *special*, not casual or accidental), and the next process is the division and disintegration, the exposure of the utmost possible *internal superficies* of the soil, closed and 'run together' as it has lain by recent pressure (a condition that also has its use chemical as well as mechanical). The task is now to awaken to the atmosphere every lazy particle, and bid it gape into life and energy for the work it has to do. With this, if this be well performed, comes *aëration*; not external merely, but intrinsic; that sinks through as well as passes over, and comes down fresh and fresh with every shower that falls, opening with its rain-drops the countless passages for the *showers of air* that follow, as the thread follows the needle. Is the work of cultivation now accomplished? We can follow it no further:—

—*Si quid novisti rectius istis,  
Candidus imperti; si non, his utere mecum.*

And now for the means by which it *is* accomplished, and by which it *may be*. It is plain that the plough, with honest simplicity at least, however cruelly both to what it presses down, and what it squeezes up, confines itself to the first act—that of inversion. Imperfectly as it does even this, as we have heretofore long ago explained, still there is a rude honesty in the *single aim*, which will commend itself to all lovers of candour and humility. By the nature of its constitution, and of its motion, it can do no more: it leaves the rest to be done by a fresh application of the same direct and horizontal traction, whether harnessed to the Scuffler that runs *through*, the Harrow that dances *upon*, or the Roller or crusher that roll *over*, the newly exposed surface. All these, in their turn, are natural and primary applications of horse-power: for no one, after a moment's reflection, will confound the simple traction of a roller or a wheel by its *axis*, with the generating of a *secondary* 'revolution,' through multiplying media, actuated by the bite of the wheel's periphery against the ground. We have beforetime (under an arbitrary use of the words 'rolling' and 'revolving') endeavoured to point attention carefully to this distinction. We must now go more closely into it, with the desire to show what is and what is not a true and economical application of horse-power.

When you pull a wheel round by the *ends of its spokes* you make it a lever; when you draw it along by its *axis* you use it as a roller. With the first you may generate secondary revolution with economy, as in all mill-work, because you have the lever on your side: but in attempting it by the latter, the loss of power is irremediable, and, if tasked upon animal muscle, is shown by a *peculiar kind of distress* to which we will advert hereafter. When four horses are going round, at work at a threshing-machine, they are able to generate a secondary and multiplied revolution in the drum of the machine with perfect economy, because their power (limited to horizontal draught) is here concentrated upon a pivot from the *ends of the long powerful levers* to which they are attached. The same with a man turning a winch—where his power, greatest in the vertical act of lifting, is concentrated through a lever (the crank of the winch) upon a central pivot, and 'distributed' over the rest of the circle by the aid of a fly-wheel. But it does not, therefore, by any means follow that the pull of horses can be properly applied to generate revolution by pulling at the *axis* of a rolling machine, as the point of traction. In the case of the hay tedding-machine we have nevertheless an instance of the attempt; and to a mindful eye (and we might add a mindful *experience*), this fragile though elegant multiplier tells at a glance the tale that the pen portrays so slowly, of the immense loss of power and surprising animal distress attendant upon this mode of accomplishing even the lightest task that agriculture in the hey-day of its most smiling season offers to the hand of—woman.

And with this fair word we will adjourn to another day the explanation why, and how, that which horses cannot duly accomplish, except by successive *single* operations, the steam-engine and the steam-engine alone [saving always the hand, and guiding mind, of man] can successfully perform in one. C. W. H.

## STEAM CULTIVATION AND ROTARY FORKING.

I AM far from wishing to prolong an argument with "C. W. H.," which he declines in terms so flattering to myself. Ignorant as I am of there being any other forking machines than mine in general use at the present time, I gladly receive his assurance that he did *not* allude to mine when he spoke of the work of such machines *shaming the very name of cultivation*.

I accept no less willingly his assurance that I misinterpreted the context of his article in supposing it to convey a sneer at patentees; and I do this the more readily, as I observe by the *London Gazette* that he has himself become one of the fraternity. I regret, on the other hand, that I cannot receive the compliment which he pays to my candour, at the expense (no doubt unintentionally), of my judgment. To advance (in the instance referred to by "C. W. H.") "objections to his cultivator being propelled by the power which cultivates in the hope that he may be able to remove them," may signify a *doubt*, but cannot be construed into a *denial* of its possibility; and "C. W. H." now that he is a patentee, will find how expensive it is not to doubt a little in an art which includes so many gradations between failure and success.

I beg to thank "C. W. H." for his courtesy, and yourself for the readiness with which you have placed your valuable space at my disposal. B. Samuelson.

## ON RECENT IMPROVEMENTS IN MACHINES FOR TILLING THE SOIL.

A Paper read before the Mechanical Section of the British Association for the Advancement of Science, at Hull, on the 12th September, 1853, by MR. W. SAMUELSON, of Banbury.

THE mechanical disintegration of the particles of the soil, for the purpose of increasing its productiveness, has been practised more or less skilfully from time immemorial; until within the last hundred years or so, however, rather as a matter of routine, than in consequence of any apprehension of the causes of its efficacy. It is true that the tendency of a plant to increase above ground, in proportion to the extension of its roots below the surface, may have been admitted, and the necessity of loosening the soil consequently enforced, still no serious attempt was made before the time of Jethro Tull to ascertain the functions of the root in the vegetable economy.

Omitting any reference in detail to the experiments of that pioneer of modern cultivation, it may be stated of him with truth, that his discoveries hold the same relation to those of the great organic chemists of our day, in which the solar systems of his predecessors stand to that of Copernicus, *i.e.*, they afford a sufficient formula for the elucidation of some of the leading phenomena of the nourishment of plants, yet stop short of the laws which govern them. From the moment, however, when it was demonstrated that the inorganic constituents of vegetables are furnished by the decomposition of the soil itself, and of the earthy matters contained in the manures which are supplied to it, its mechanical subdivision ceased to be an empirical practice, for it became evident at once that by presenting the greatest possible number of points to the action of air and water, the agriculturist facilitates such decomposition in the same manner as the chemist assists his reactions, by reducing to powder the substance on which he operates.

Hence increased importance has of late been attached to the drainage of the subsoil, and the pulverisation and deepening of the seed bed, and it is to some of the more recent mechanical contrivances for effecting the latter objects that I wish to draw your attention.

The plough, which has so long been the principal, and will probably remain for a long time to come a most valuable implement of husbandry, has, amongst others, this inconvenience, that, while it loosens and reverses the top soil, it compresses the bottom of the furrow in its progress. A partial remedy was applied to the soil at considerable expense by the use of the subsoil plough, which bursts the ground immediately below the furrow. Meanwhile it has been sought to avoid the use of the plough entirely in those cases where the complete inversion is not needed, and hence the introduction of various pulverisers, grubbers, &c., which have of late been used, no longer as auxiliaries, but as principals in cultivation. For the same reason digging with the spade or fork, hitherto confined to the operations of the gardener, has been practised recently with great success by many farmers, amongst whom I need hardly mention Mr. Mechi in the larger, and the Rev. S. Smith, of Lois-Weedon, in a more experimental scale. Horse and hand hoeing is becoming more regular every year, not merely for the purpose of destroying weeds, but also of exposing fresh particles of soil to decomposition, thus constantly increasing and renewing the supply of food at the disposal of the growing crop. Not content with these amplifications of the use of the accustomed farming tools, other more expeditious and more complete machines of cultivation have been sought after and invented. Omitting the various clod-crushers and harrows, these may be conveniently divided into—1st, ploughing machines drawn by stationary steam-engines; 2d, locomotive steam ploughs; and, 3d, machines, chiefly rotary, for pulverising by means of forks, spades, or claws.

Amongst the first class, the most remarkable are the ploughing frames of Lord Willoughby d'Eresby, and of the Marquis of Tweeddale, differing in their details, yet both attended more or less with some of the inconveniences of the horse plough, but successful, inasmuch as they substitute a more expeditious and powerful



agent for animal traction. The Marquis of Tweeddale's ploughing machine consists of a frame containing two double ploughs, resembling the common turn-wrist plough, one-half of each being in the air while the other half is in the ground. The frame is drawn across the fields by wire ropes attached to two steam-engines, stationed at opposite headlands, both ploughs being reversed at each end, so that the slices are always laid on the same direction. The work of each plough is 15 inches deep and 13 inches wide, equal to 26 inches in the frame, and the execution is faultless. By means of a beam about 18 feet long projecting from each engine, at right angles to the ploughing frame, and a simple apparatus attached to it, the ploughs are lifted at each turn and deposited two furrows, or 26 inches, in advance of their previous position. Thus the frequent removal of the engines is avoided; they are, however, locomotive, and run upon wooden trains laid for the purpose. The machine ploughs 3 acres per day, and requires four men to work it, besides a man and horse to bring water. The depth ploughed, 15 inches, is, I believe, unprecedented, except by the horse ploughing of the Marquis himself, who, I am informed, by the aid of the latter, so improved the fertility of two entire farms as to have raised their annual value in five years from 7s. 6d. to 3l. per acre.

A more decided advance in steam ploughing has been made by Mr. Usher, of Edinburgh, who boldly abandoned the old mode of traction altogether, and causing his steam-engine to cross the land on a broad roller, attaching to it a cylindrical framework of plough points and mould-boards, which, whilst being lowered into the ground to the required depth, is made to rotate, disintegrating the soil more completely than the ordinary plough, without compressing the bottom of the furrow, the thrust of the mould-boards at the same time aiding the forward motion of the engine, and enabling it to mount inclinations which it could not cope with by the mere adhesion of the roller. As at present constructed the power is about 10 horses, and when worked to a depth of 7 or 8 inches it will plough about 6 acres per day. Its great weight, about 6 tons, is a serious drawback, but I am inclined to think that it may be considerably reduced, and I know of no other rotary machine that so successfully inverts the soil, though it still is excelled in that respect by the ordinary traction ploughs. Usher's steam plough has been repeatedly worked in the Lothians, and I am not aware that its use was attended with any difficulties beyond those which must be expected in all new inventions.

With reference to machines for digging by means of spades, I am not aware of any that have been put into actual operation. The machine exhibited by Thompson in the agricultural department of the Crystal Palace of 1851 must have been noticed by many of my auditors. It consisted of two series of spades at right angles to each other, the second series covering the spaces left by the first, and both being forced into the ground by a cranked shaft borne in a rectangular frame.

The last, and apparently the most promising division, is that of the rotary forking or clawing implements. A light machine of this kind was constructed so long as 30 years back by Morton, of Leith, but it comes rather under the class of revolving harrows than of cultivators, properly so called. Foremost amongst the latter in point of date, is that of Lady Vavasour, exhibited at the Show of the Royal Agricultural Society at Bristol, which, though unsuccessful, may be regarded as the precursor of the more practical rotary forking and subsoiling machines that have since been constructed. Lady Vavasour's implement consisted of a cylinder studded with prongs, set spirally around it, which penetrated the ground by the weight of the cylinder and framing, and broke or tore it up as the latter was drawn forward. It was succeeded, after an interval of some years, by the cultivators of the Hon. Mr. Clive, and of Josiah Parks. One of the latter has been used in subsoiling the estate of Mr. Marshall, at Patrington, near this town. Here the cylinder of Lady Vavasour, which had the inconvenience of forming, as it were, a taking-up roller, round which the earth wound itself until it formed a solid mass in which the prongs entirely disappeared, is replaced by a number of discs revolving independently of each other, the prongs also being made so long that the earth cannot easily reach their roots. Another step was the addition of clearing or doffing-bars for stripping the soil from the prongs. Of these, Roberts' machine affords an example. Its chief peculiarity, however, consists in the prongs being made to feather somewhat like the floats of Morgan's paddle-wheel, the motion communicated to them resembling that of the fork in the hands of a man.

I must not omit to mention the labours of Hoskyns, the talented author of the "Chronicles of a Clay Farm," which, with their humorous illustrations by Cruikshank, have contributed so greatly to popularise the subject of tillage. Though it will be evident at once to the mechanic that the writer is anything but familiar with the practical difficulties which would attend the use of steam-engines on such surfaces as those with which the agriculturist has to deal—difficulties, by the way, to which the rotary plough of Usher is subject in a far less degree—and though he assumes for his steam cultivator a power of inverting the soil which the means he employs would fail to insure, his description of the thing to be accomplished is so vivid, and his sketch of the engine, which, according to his view is to effect it, is so near a specimen of mechanical drawing by words alone, that I must claim indulgence for quoting them here.

"I say the plough has sentence of death written upon

it, because it is essentially imperfect; what it does is little towards the work of cultivation, but that little is limited by a radical imperfection, damage to the subsoil, which is pressed and hardened by the share in an exact ratio with the weight of the soil lifted, plus that of the force required to effect the clearance, and the weight of the instrument itself; were there no other reason for saying it than this, this alone would entitle the philosophic mechanist to say and see that the plough was never meant to be immortal.

"Why then should we struggle for its survival under the new dynasty of steam? The true object is not to perpetuate, but as soon as possible to get rid of it. Why poke an instrument 7 or 8 inches under the clod to bear it up in the mass by main force, for other instruments to act upon, toiling and treading it down again, in ponderous attempts at cultivation wholesale, when by simple abrasion of the surface by a revolving-toothed instrument, with a space as broad as the hay tedding machine, or Crosskill's clod-crusher, you can perfect the complete work of comminution in the most light, expeditious, and perfect detail.

"Imagine such an instrument (not rolling on the ground, but) performing independent revolutions behind its locomotive, cutting its way down by surface abrasion into a semicircular trench about a foot and a half wide, throwing back the pulverised soil (as it flies back from the feet of a dog scratching at a rabbit hole), then imagine the locomotive moving forward on the hard ground with a slow and equable mechanical motion; the revolver behind, with its cutting points (case-hardened) playing upon the edge or land side of the trench, as it advances, and capable of any adjustment to coarse or fine cutting, moving always forward, and leaving behind, granulated and inverted by its revolving action, a seed-bed 7 or 8 inches deep, never to be gone over again by any implement except the drill, which had much better follow at once, attached behind with a light bush-harrow, to cover the seed."

(To be continued in our next.)

### Home Correspondence.

*Early Sowing.*—Messrs. Hardy & Son state in your last paper the three requisites for a good crop of Wheat are, early sowing, thin, and singly; with regard to the first, I sowed my Wheat on October 3rd, 1851, that is a month earlier than my neighbours, November 10th being usually allowed to be a seasonable time, not too soon, nor too late. My crop at harvest, 1852, was what is called gouty, or club-footed; the main stalk seemed to have died away, and several shoots to have sprung up round the crown. Many farmers saw it, and attributed it to early sowing, so that I am afraid to follow the same plan, though my ground is dunged and ploughed, and the seed ready. Am I to set my opinion against that of Messrs. Hardy and Son? On a former occasion from early sowing, my field looked so gay all the winter, what is called winter proud, and Farmer Giles often said "I wish my Wheat looked so fine as yours;" but the consequence at harvest was, mine was exhausted by early growth, and his sorrowful-looking plant outshone mine in that material part of a farmer's occupation, the measure and weight. What say you Messrs. Hardy & Son? I am writing now on a chalky farm in *South Hants.*

*Royal Irish Academy and the "Immortal Johnston."*—I beg to acknowledge the favour done by your correspondent "J. C.," in the *Agricultural Gazette* of the 3d inst. The writer in question has been made to say, in speaking "of Frederick Darley, Esq., the great Irish architect, the only living pupil of the immortal Johnston," that the latter was the founder of the Royal Irish Academy, &c. He was, however, the founder of the Royal *Hibernian* Academy, an institution not less—indeed, by some considered more—valuable than its "antiquarian" precursor. The Royal *Irish* Academy was founded in the year 1785 by Charlemont and other eminent philanthropists of that day, and incorporated by Act of Parliament in 1786, for promoting the study of science, polite literature, and antiquities. The Royal *Hibernian* Academy, founded by the "immortal Johnston," was incorporated in 1823, or nearly 40 years after, for the encouragement and promotion of painting, sculpture, and architecture. To go into anything like a lengthened detail of the great merits of these institutions, however interesting such might be to your readers, would exceed my abilities. Sufficient to say, that such of your readers as may hereafter visit our Irish Exhibition will find food for contemplation, and the means of being vastly improved in many things by a close inspection of the different articles sent there from each of these institutions. As I am much obliged to "J. C." for his correction of the press in my case in my absence, I hope he will now pardon my doing a similar act for him, whether he be present in or absent from Dublin. *Edward Carroll, Sept. 12.*—P.S. I regret being obliged now to admit what you will be inclined publicly to do, that the Irish Potatoes are rotting fast. *E. C.*

*The present Wheat Crop* will undoubtedly be the shortest for many years; there was an unusually short breadth sown, which was very thin in the ground, and now that it is got together does not occupy more than half the room it usually does; added to this, the yield turns out even worse than was anticipated—some that was estimated just before cutting at 20 or 22 bushels per acre turns out on being threshed to be only 15 bushels, and I hear this is very much the case in other parts of Hampshire. I have heard of one farmer, living on good land not far from Southampton, offering his whole crop at 16 bushels per acre; another, who

lives in a good Wheat-growing district, not far from Alton, told me he did not think their whole district would grow over 16 bushels per acre, enough having been threshed to ascertain this. I think I may say with safety that our own parish, of 8000 or 9000 acres, will not grow half the Wheat it usually does. Peas and winter Beans are nearly a failure here; summer Beans promise better. So you see the crop turns out much worse than was thought; but when we look to the cause it is not so astonishing—the drenching rains of last winter must have washed out of the soil all the soluble matter on which plants live and grow; added to this, the almost entire absence of sunshine for nearly the whole period during which the Wheat was blooming. The cold and winter-like summer will, I fear, be the cause of the present crop of Wheat being the shortest within the memory of the present generation. It will take years of good tillage and manuring to restore the land to its previous condition. *James Eames.*

*Potatoes.*—In my report of the crops I stated that the disease was appearing in the Potatoes; I have now to observe that this has latterly made serious progress. In taking up I find some sorts damaged to near one-half, and others one-third of the number. It is to be apprehended that the yield of this esculent will be very deficient. *T. Horsfall, Burley Hall, near Otley, Yorkshire.*

*The Potato Crop managed after Mr. Cuthill's Instructions.*—The following letter has been received by Mr. Cuthill from one of the purchasers of his pamphlet. "I have now finished raising, and have sold as below the produce of 10 acres of Potatoes.

Tons.	Cwt.	£	s.	d.
56	2	253	3	0
5	4 seeds	15	10	0
£298 13 0				

And as they were managed as nearly as possible according to the instructions given in your valuable little book on the subject of Potato growing, I think it quite right to let you know the result, more particularly as there was certainly not a sack of diseased Potatoes in the lot. It may be said that this instance is a chance one that may not occur again, but I beg to say that the result was the same last year and the year before; when my crop was most abundant and sound, all the crops both in the gardens and fields were much diseased, and even those planted in my own garden, with purchased seed, were entirely lost, although they grew within 20 yards of the field, which convinces me that there is much truth in what you say about the management of the seed during the winter. I know there is much difficulty in persuading the public to adopt any new plan, but yours is so simple, and really no extra expense, that there can be no reasonable objection to making a trial, and I then feel sure that many would say, as an old labourer of mine did the other day, 'none of the old way of planting 'tates for me again.' I have as many good ones off the same ground this year as I have had the last three years put together. *Yours Obligated.*

*The Agricultural Labourer.*—How are we to make the life of the labourer or mechanic more agreeable to himself, and his labour more profitable to his employer? By teaching him how to enjoy himself. The mind of man requires relaxation, amusement must be had, and of all enjoyment for the labourer that of reading is the best; but all men are not constituted alike, and to endeavour to bring them all to the same model is to violate the laws of nature. In education variety should be studied, every school should be provided with its library of useful and entertaining books, they must not only be good books, but such as the people will read; it should also have a small collection of objects in natural history generally, as well as a local museum. There is nothing children so much delight in as such things; boys may be taught how to split, rub down, and polish stones, how to discriminate minerals and to prepare specimens of timber; girls may collect, dry, and tastefully arrange the plants of the neighbourhood. A small workshop might also be added, in which models of machines could be made by those who possessed mechanical skill, and thus a number of men fit to manage the various machines in use, and destined to be used by the former, might be prepared, while all should be encouraged to read. And thus all would meet with something to suit their peculiar tastes which would keep them from the low and debasing pursuits our labouring population too often follow in their leisure hours. They would become more refined, the pot-house would be forsaken, and they would learn to look to nature's God, the meanness of whose works would afford them pleasure. This alone would well repay those who encouraged them, but in addition an immense number of facts in natural history, valuable to the farmer and gardener, would be observed. *J. Stollard.*

*The Guano Question.*—Without attaching any great importance to the offer of 1000l. and of the gold medal made by the Royal Agricultural Society, for the "Discovery of a manure equal in fertilising properties to the Peruvian guano, and of which an unlimited supply can be furnished to the English farmer at a rate not exceeding 5l. per ton," we certainly perceive that a spirit of active research has been roused, and therefore cordially acquiesce in the opinion of the council, "that the attention which this prize will call to the whole economy of manuring, and to the agricultural as well as sanitary question of the manurial resources of the kingdom, will lead to new and important results." In proof of the correctness of this opinion, I beg to state, that very shortly after the promulgation of the Society's offer, I addressed a paper to the Council on the points which must be rigorously attended to before any arti-



ficial manure could be produced, that might represent or in any way compete with the genuine guano of Peru. Having been for a long period engaged in the analysis of many samples of guano, I suggested as an indispensable condition that fish ought to be made a constituent of a compost which should pretend to meet the views of the Society. In fact, it must be apparent to any one who has made himself practically acquainted with the elements—solid and liquid—of real manures, that the former consist chiefly of a bone phosphate in a state of minute division, so fine as to be almost inimitable by art, and also of much insoluble urate of ammonia, both being products of fish, elaborated by sea-birds in their digestive and urinary systems. It will now be unnecessary to allude to the soluble phosphates, sulphates, &c., which abound in guano; but we must persist in claiming as an indispensable condition, that fish, combined with the *excreta* of poultry, shall form the basis of any manure that can be advantageously employed on the farm. Having thus premised, and also taken the earliest opportunity to place, not only before the council of the Royal Agricultural Society but before the public, through other channels, those leading facts which I thus re-urge, it was with no little satisfaction that I have observed the notice of a new guano to be prepared at home from fish or offal, by a Mr. Pettit. If the preparation announced bear with it a promise of a good and ample supply; if it combine with the elements of fish those of the *excreta* of birds; if it can sustain every proof that the most rigid analysis and practical experiments can apply as tests of its efficiency—then will the inventor and the agricultural body have cause to congratulate each other on a discovery of great and vital importance. *J. T., Croydon, Sept. 13.*

*Contents of Cesspools.*—"Thos. Comr. R. N., King's Lynn," in replying to "K. C. L.'s" enquiry on this subject, has not done so in a way to render his reply useful to your readers in general. Will you permit me therefore to ask whether the "manures contained in the boxes" he sent to you, are such as may be procured in the ordinary way of commerce, or are some compositions of his own, of which he is the vendor? If the latter, then his name and address, and the prices of his commodities, would be acceptable. I should like to render the contents of a cesspool of equal or similar value to guano. *J. G.* [Unfortunately we have not got our correspondent's address; but we imagine his object in sending us the specimen was to prove the power of charcoal as a fixer of volatile ingredients in manure: and thus give force to his recommendation to "K. C. L." to use it in utilising the contents of his cesspools.]

*A Splendid Make of Cheese.*—At Gift Hall farm, Winmarley, near Garstang, Lancashire, belonging to J. W. Patten, Esq., M. P. for North Lancashire, a first-rate Cheshire dairymaid was engaged, at the commencement of 1852, for the purpose of fairly testing whether cheese of first-rate quality could be made, on the Cheshire system, at this farm. Although it is asserted in Vol. VI., page 103, of the Journal of the Royal Agricultural Society of England to have been a failure, and the reason assigned for it was the land, Mr. Patten has fairly proved that the "failure" has not been owing to the land, but to the dairymaid; and I had an opportunity on Monday, Sept. 12, of conversing with the above-mentioned dairymaid on the subject. In the principal cheese-room there were placed 224 cheeses, weighing about 56 lbs. each, upon dried Grass on the floor. The room is over one of the cow-houses, and it is well lighted and ventilated by a large sliding-sash window at the north end—the upper part, being that which slides, is occasionally put down. I pointed out to the dairymaid that it was asserted in the above-named journal (p. 105) that light and air are invariably excluded from cheese-rooms, either by a curtain or shutters, to prevent the mischievous effects of the fly. But she appeared not in the least afraid of the flies attacking the cheese in that room, as she never brought the cheese into it moist, but perfectly dry, flies having nothing to do with cheese when clean and dry; and by the upper part of the window sliding down, any evaporation from the cheese escaped, so that the air of the room was as pure as that of the field adjoining. The weight of the cheeses about to be sent off was 5 tons; they were purchased by a London factor at 80s. per ton; he had them the previous year, which is a proof that they are excellent. This price is something like 20s. a ton more than what the local factors are giving for that made on the Lancashire system, in the neighbourhood of Garstang. At Gift Hall they milk 54 cows, from which they make two cheeses per day, which amounts to 7 cwt. per week; and this is done by a male and three female natives of Cheshire. This experiment will well repay Mr. Patten, and be the means of benefiting others. *M. Saul, Garstang, Sept. 16.*

## Societies.

**HERTS AGRICULTURAL SOCIETY.**—At the meeting of this Society on Tuesday, the following remarks were made by Mr. Mechi, on the application of steam-power in Agriculture:—

He measured the agricultural progression of a district by the quantity of steam it possessed. He said this quite seriously. If they went into Lincolnshire or Norfolk they would find men with one, two, or three engines upon a farm, and when he saw the position which those men occupied in society, and the means they possessed, he was quite sure that they did it not as a matter of fancy, but of sound calculation and profit. If they could thresh out their corn for 1s. a quarter by steam, they would not be such fools as to pay 2s. 6d. or 3s., especially when they could employ their labourers profitably in another way. He said this in the kindest

spirit, because he had no doubt that they were going ahead now, and that they began to see, however much they were wedded to old customs, that they would be obliged to give them up. With regard to cultivation, he begged to inform them that he was having constructed in his own village, upon public grounds, a steam-engine which would cultivate the soil and do certain other things. It was the invention of a Canadian gentleman of great talent, who had come over here and had not hitherto met with much encouragement. He (Mr. Mechi) had, however, asked the gentleman to construct one for him, which he was doing, at a cost of 200l. When it was finished it should be tried upon his farm, either to succeed or to fail, and he should take care, by special advertisements, that all agriculturists who liked should be present to witness its failure or its success. He had no doubt most of them were aware that Mr. Usher the brewer, of Edinburgh, had also invented a steam-plough, which had been at work in Scotland, which ploughed the land without horses, and for which the patentee was about forming a company. He (Mr. Mechi) had written to that gentleman stating that he thought it would only be fair to his countrymen in the south if he would bring his plough down, to be tried on his farm at the same time as the Canadian steam-plough, and he had offered to pay 5l. towards the expense of bringing it here. He said that this was a great and important question. There was no branch of manufactures or mode of travelling which had escaped the force of steam. They went down from London, perhaps, to that meeting with the power of 150 horses contained in a piece of machinery not longer than an ordinary table; and if they could concentrate such a mighty power in so small a space and so small a weight, surely that was something which might be applied to the benefit of agriculture. They knew that if they wanted to plough to a depth of 12 inches instead of 5 inches, they must put on five or six horses, and that the great weight and pressure of those horses counteracted the effects of the cultivation, while the expense was ruinous to the farmer. If they could reduce that expense by means of steam to 10s. an acre, he believed that agriculture would be benefited to the extent of something like 10,000,000l. sterling, while they would greatly increase their production. There was nothing magical in a depth of 5 inches of soil, but they ploughed that small depth simply because a plough could not go deeper with a pair of horses. If they could succeed, then, as he believed they could, in concentrating the power of 10 or 15 horses in the small weight of a ton and three-quarters, they might depend upon it that cultivation would be conducted by steam power. They, no doubt, all remembered the reports of Mr. Caird, the Times Commissioner, which he had never found any man to question, although they were far from complimentary to the progress of British agriculture, as compared with that of commerce and manufactures. If the manufacturers had stuck to old customs as long as the agriculturists had to old waggons, instead of enveloping the whole world in calico, half the population would be in want of breeches. ("Hear, hear," and a laugh.)

## Farmers' Club.

**SPARKENHOE, SEPT. 11.**—On the Cultivation of Wheat.

—Mr. Baker, of Writtle, said, although there had been as many as thirty varieties cultivated in England, only three were so to any extent, viz., the red, white, and bearded. The Talavera Wheat is one of the earliest and most valuable varieties of white Wheat; but it is extremely delicate, and sprouts in wet seasons more quickly than other varieties. The Taunton Dean is another valuable variety; and the velvet chaff, or, as it is termed "rough chaff," is extensively grown in the heavy clay districts of Essex, Kent and Suffolk. The latter in dry seasons, on suitable soils, yields abundantly, but is liable to mildew. In one instance that came under his observation, 104 acres yielded 685 quarters. That description of Wheat having its grains long and taper was most sought by mealmen, of which the three above described are types. That having round-shaped grains similar to the Chittam, Harcastle, Golden drop, Thick-set, &c., was, on the contrary, less esteemed. The former contains the largest proportion of gluten, the latter less gluten and a larger proportion of starch. A large number of new varieties have, during the present century, been introduced, which, after a time, have been superseded by other and better varieties; and he had no hesitation in asserting, that most of the new varieties were far more productive than the old. He cautioned them how they purchased advertised Wheats, as nothing was more liable to mislead persons, when the seed was taken to another part of the country, as they found it degenerated. The Whittington Wheat, which took a prize at Liverpool, was very liable to this. It had been grown in his own neighbourhood until it was discarded by the millers. It was far preferable to cultivate Wheat grown in their own neighbourhood. He had found Wheat to thrive best on strong alluvial soils. If it was a sandy loam, some strong clay might be added—or common clay with chalk or lime. Lime was very useful when too much was not put on at once, or too often; and he could mention cases where tenants used lime until it did mischief, beginning to act injuriously. The proper use of lime was to decompose portions of manure, and fit them for food for plants, so that they might readily take it up. The solidity of the seed-bed in light lands was essentially necessary, and when the seed was put in, the land should be consolidated as much as possible. In Sussex, a heavy presser, formed by the action of a wheel of cast-iron, was used. Heavy rolling was essential wherever it could be effected properly; shallow ploughing was also practised for the Wheat crop, especially upon the chalk clay soils, most of the land not being ploughed to a greater depth than 3 inches; and, as it produced excellent crops in this way, the principle might be considered correct. It is also considered a good plan to plough the land some time previously to putting in the seed, as the small weeds would have in most seasons vegetated before the harrowing-in of the seed took place, and thus be destroyed. On the strong clays of Essex, a species of *agrostis*, known as black grass, came up in profusion upon the well-tilled lands, and injured the crop to a considerable extent; but as it is found impossible to eradicate it, perhaps the better mode would be to scarify or plough the land and drill it over again, and, whenever the weather would allow, he would recommend it as the cheapest and best mode. The land intended for Wheat ought not to be too highly manured, but be in a condi-

tion well known to them of being in good heart, and which could only be obtained by several years' previous good farming. Whenever manure was requisite, it ought to be applied upon the Clover either in the preceding autumn or immediately after being mown, and in either case to the preceding crop, especially those of Beans and Peas, the former of which, like Clover, was considered one of the best preparations for the Wheat crop, the deposits from the leaves and roots being highly beneficial to the Wheat plants. It was a maxim with some people to say, "apply the means and you will obtain the end;" but he contended that high manuring for Wheat caused it to be subject to mildew, and to be lodged before it was ripe, besides forcing the straw, and making the grain deficient in weight. The average produce per acre was set down at from 32 to 40 bushels per acre, but he believed the ordinary produce was more likely to be from 20 to 30. He would not for a moment attempt to throw any impediments in the way of improvements, yet he could not forget that Nature had set a limit to her laws. As to the mode of depositing the seed, which should not be done too thickly, he preferred dibbling, if the labour could be had, and the season favourable. Dibbling took from two to four pecks per acre, drilling from six to eight, and broadcast from eight to twelve. The drill was more economical, and could be put in use at almost any time, and at any depth; care should always be taken not to plant the seed too deep, as it would prove injurious to the crop. The broadcast system was now almost superseded by the drill, as it was found much less seed was necessary than formerly. Garret and Smyth's drills, at the rate of six pecks per acre, deposit one grain to each inch, lengthwise, at six inches apart from row to row. If one half of this remained, it would be sufficient for the production of a good crop, as it was essential that each plant should have sufficient room to tiller, or branch out. The first effort of the plant was to strike its roots downwards deeply into the soil during the severity of winter. In February it formed a knot of shoots just above the ground, called tillers, which might be separated, and each tiller would form a plant or bear an ear. After the tillers had struck root was the best time to give Wheat a top-dressing. In applying guano or other stimulants, it was better to give them at different periods, say the first in February and again in June, using not more than 1½ cwt. per acre in February. He had not made these experiments on top dressing himself, but he knew some successful applications had been made with those quantities. Much depended on proper rotation crops to insure a productive return from Wheat. It would be madness to sow Wheat after Barley or Rye-grass, as both would exhaust the food necessary for the Wheat. Clover was, perhaps, the best crop that could precede Wheat, as it left so many roots in the ground. There was much food for the Wheat plant left by Beans and Mangold; he had tried Wheat after the latter, with a top-dressing, with success. Mangold Wurzel and Wheat were good rotation crops. Wheat should not be sown when the soil was very dry, and too fine tilth was also objectionable, whilst Rye could not be put in too dry a state. Tusser wrote an excellent couplet on this in 1557. Mr. Baker then gave some statistics as to liming, marling, and chalking in Essex, Suffolk, and Norfolk, and clay over the peat in Lincolnshire, showing that in some light lands the addition of 16 to 20 tons per acre was the means of insuring good crops, and the marling lasted 20 to 25 years, so that manuring in some cases immediately after was of little use. Wheat might be manured by spreading on the Clover, when the laud was intended for Wheat, which made it less liable to mildew. In harvesting Wheat there was a great division of opinion, as well as to when was the proper time and mode of cutting. It was considered a proper time to cut Wheat when it had passed from a "milky state" to a "doughy state." Experiments had been made under three heads, first, when it was green; second, when the straw was changing colour; third, when fully ripe. The results were, in the first case 19½ bushels per acre, valued at 61s. per acre; in the second, 23½, at 63s.; in the third, 22½, at 61s. There was a similar result in the straw. The total value per acre was found to be—on that cut green on 8th August, 12l. 17s. per acre; second, cut when yellow below the ear one week afterwards, 13l. 7s.; third, cut when fully ripe, one week later, 11l. 12s. This difference arose from that cut first and second producing more fine flour and less bran than that cut last, which proves that the gluten is converted into starch if the Wheat stand until fully ripe, the proper time being undoubtedly as soon as either end of the straw has changed to a yellow colour, the sap having then ceased to flow; but on other hands it is better to cut early, as no portion is lost by shedding during the process of cutting, or by the effect of high winds; it is also less liable to sprout in the sheaf, and early harvests are also generally best; besides, a few days gained in the commencement of harvest is of immeasurable advantage, and enables the farmer to take opportunities for effecting other work, which otherwise he could not do. In the three modes of cutting—reaping, mowing, and fagging—he preferred the mowing as being the cheapest and liable to the least waste; and he would advise cutting a little earlier rather than too late, as the straw would be much better for fodder. The weight would be greater, and if they could do so, he recommended them to take the medium course, but never to let the harvest be driven off too late. It was a practice in Norfolk of folding on Wheat, but he never recommended it being done after February, and thought it ill-adapted for their cold clay lands. After they had harvested, they should take the best



care of it they could, and as he had said he preferred mowing, he did so because the sheaves were left more open, which was very essential to let in the sun and air. To prevent vermin eating the produce, he recommended the stacks being placed on stands. As regarded Oats and Barley in which Clover was abundant, the value of the feeding property when threshed day by day with the flail is equivalent to the whole cost of the thrashing altogether. But the position of the farm, the contiguity of markets, and the cost of labour, must always govern, and the judgment of the cultivator would guide him to the selection of the best method. He then proceeded to treat of the diseases to which Wheat is subject, and entered at considerable length into their nature. He stated that all plants were more or less liable to become attacked with parasitic fungi, which consisted of a particular fungus growing upon the plant, or of entering the sap vessels during its growth, and protruding from the interior to the external vessels. Of the first was the rust, or *Uredo rubigo*. This usually attacked the blades of Wheat when in a highly vigorous state, and frequently proceeded from high manuring, especially with guano or other powerful top-dressings. Sometimes it produced little injury; at other times it was exceedingly injurious, the blade of the Wheat changing to a deep rusty red colour, and splitting into shreds. But the most injurious of any was that known as mildew, or *Puccinia graminis*, which bursts through the epidermis of the stem, and breaks up the active cellular tissue of the plant, which becomes rugged and changes to a black colour. Upon examination with a powerful microscope it is found to consist of myriads of club-shaped spores or fungi, which exhaust the sap, and render the grain in many cases valueless. Sudden and rapid changes of temperature are supposed to produce it; and in some seasons it destroys the crops of whole districts. The years 1804 and 1852, in the present century, were remarkable for its prevalence; and it must be remarked that the immediate cause of its appearance is unknown; still it must be observed that it is rather an effect than a cause of disease, for it is generally found that all parasites attack diseased plants in preference to those that are healthy. The Pea is especially liable to mildew; as well as the Swede Turnip, Cabbage, and, indeed, every description of plant and vegetable. It not only destroys the leaves, but the bulb of the Turnip itself. The Grape Vine has also of late become exceedingly liable; and the disease is now ravaging the continent, and destroying the produce of most of the vineyards. With Vines under cover, and even in exposure, flour of sulphur is a certain remedy. It must be dusted upon the leaves and fruit until the mildew disappears, which it does in a short time. There is another description of fungi which attacks the grains of Wheat, converting the ovary of the grain into a black, foetid substance (*Uredo caries*), which, on being broken, attaches to the sound grains, and seriously injures the sample. This is prevented becoming injurious by immersing the grain in steep of sufficient strength to prevent the vegetation of the smut-ball, and not sufficiently strong to injure the vegetative power of the Wheat. Blue vitriol and arsenic, as well as strong ley from wood ashes, effects the object, the application of which does not need description. The Wheat midge is a small insect of a yellow-ochre colour, about the size, and similar in appearance to a small gnat, that, by means of its tail-like ovipositor, inserts its eggs between the glumes of the chaff of the Wheat, which soon become small yellow maggots, and feed upon the pollen; and by gluing the chaff together, it prevents the anthers escaping, and the grain fructifying. It usually makes its attack upon that side of the ear which first emerges from the sheath; and hence the injury is mostly found on one side of the ear only. Sometimes it injures the crop to the extent of upwards of 20 per cent.; and may be seen best about four o'clock in an evening, when the weather is warm and the air still, from five to ten of them being visible at one time upon a single ear. The destructive effects of the larvæ of the *Elatér lineatus*, or "lined click beetle," known as the wireworm, are sometimes exceedingly destructive, especially upon newly-raised pasture or grass land. It protracts its existence in its larva state for several years together, and destroys the young plants it meets with, by eating through them beneath the surface. A preventive is stated to have been found by drilling in guano or rape-cake with the seed, but probably with uncertain success. The best preventive was thorough good farming, never suffering Grass to accumulate, especially the stems of Ryegrass; for it is in decomposing vegetable matter that the beetle deposits its eggs, which become the future larvæ, so destructive in its effects.

### Miscellaneous.

\* *Mr. Romaine's Steam Cultivator*.—The publication of particulars relating to this machine is delayed until the inventor has been fully protected, by patent.

*Sale of Short-Horned Cattle at Maxstoke Castle, Warwickshire*.—The herd of short-horn cattle, the property of the late Captain Dilke, R.N., of Maxstoke Castle, was offered for sale by Mr. Trafford, on Tuesday last, and attracted a large company. The stock included 49 cows and heifers, which produced 19974 12s. 6d.; and 15 bulls and calves, of various ages, which realised 4731 11s.; making a total of 24711 3s. 6d. The principal purchasers were the Duke of Newcastle, the Earl of Aylesford, Earl Howe, Sir R. Peel, Bart., M.P.; Colonel Pountney, C. R. Colville,

Esq., M.P.; W. S. Dugdale, Esq.; Mr. Willoughby Wood, Mr. Woodward, Bredon's Norton; Mr. Tanqueray, Mr. Robinson, Burton-on-Trent; Mr. B. H. Allen and Mr. Rotch, from the United States; and Messrs. Carr, Crawley, Drake, Fryer, Henning, Popham, Timm, Williams, and J. G. Wood, from Ireland. We have been favoured with a marked catalogue, from which we perceive that "Lady Barrington," calved in November, 1846, sold for 210l.; "Darling," calved July, 1850, 147l.; "Lady Blanche," calved September, 1850, 97l. 13s.; "Edith," calved June, 1848, 63l.; "Nell," calved July, 1850, 64l.; and others varied from 50l. to 70l. Of the bulls, the highest sum obtained was 115l. 10s. for "Neptune," calved November, 1850.

*The Cycloidal Digging Machine*.—Another revolving grubber has lately been added to the list; and Mr. Wilson, who brought it into use some years ago in Australia, had an opportunity of trying it last Tuesday on Kennington Common. It is described as 3 feet in breadth, with five cylinders, and 20 picks or forks in each, and drawn by five horses. It had left the ground before we could arrive there, but the land was evidently altogether unfitted for its use—very hard and dry—and very little had been done by the machine to loosen it, and still less to invert it. Even where it had been drawn over the surface of the earth that had been carted over the land, although the surface was disturbed to some depth, it was not overturned either as digging would have done it, or even in the degree in which that is accomplished by the Banbury machine.

*Improvements in Machinery for Breaking and Dressing Flax and other Fibrous Materials*. By Edward Maitland Stapley, of Lawrence Lane, London. Patent dated March 9, 1853. (No. 602).—This invention consists of a machine of peculiar construction for breaking and dressing Flax and such like fibres preparatory to scutching. The Flax, &c., is fed on to an endless apron, and received between fluted feed-rollers, from which it passes to a box or chamber by a narrow aperture, which can be adjusted at pleasure. Inside this box is a cylindrical beater, through which is formed a long narrow slit, into which the Flax enters, and in which it is held while the beater receives a vibratory motion, the effect of which is to shake the fibre, and beat it against the rests or entrance into the box. The detached matters are carried away by a blast of air produced by any blower, and directed into the box. From this beater the Flax passes between two rollers, and is received on an endless apron, from which it is taken and subjected to a scutching-machine, which may be combined with that above described. *Mechanics' Magazine*.

### Calendar of Operations.

#### SEPTEMBER.

*FARM NEAR CHELMSFORD, ESSEX, Sept. 20*.—We have, since our last, concluded harvest; but a considerable quantity of Barley and bearded Revett Wheat remains still to be carried. The former has lately become much sprouted and stained, and will make indifferent malt. Since harvest was finished on this farm, viz., on the 31st ult., we have been busily employed ploughing up eddishes for future crops of Mangold Wurzel, Swede Turnips, and Rye; and during the present week shall sow the latter, as well as some winter Oats and Tares for early feed. We have also threshed about 20 quarters of Wheat by machine, the yield of which is full 8 bushels per acre below our anticipation; indeed, this is the general complaint. The deficiency was contemplated to be considerable, but not to the extent it is now on all hands admitted to be by several bushels per acre; and so far as information has reached us, the average will not be more than 16 to 24 bushels per acre on the best pieces, whilst the greater portion will fall below even that quantity. Barley will also be deficient, and an opinion now begins to be prevalent that not more than half the number of bushels grown last year will be grown in the present one in this county, but we are inclined to think the deficiency in Barley will not be found so great, the average of which may reach 4 quarters per acre. The Swede Turnips and early white common Turnips are growing rapidly, but the latter pieces will be rather indifferent; this is also general throughout Essex and Suffolk. The Mangold Wurzel is progressing well, and we have been closely pulling out all weeds. It will be a good crop on this farm, but it is generally otherwise. We attribute a portion of our success to the use of about 3 cwt. of fishery salt in addition to 2 cwt. of guano, and 10 loads of farm-yard manure per acre. The Clover and Wheat stubble that we mentioned in our last with the intention of mowing for stover is now mown, but not carried; we hope to be able to do so in a day or two. The whole of our plants of stubble Turnips have disappeared; the common slug exists in such numbers that both them and the Rape are entirely swept away; and estimating the average crop that we get, the system is not worth pursuing. The young Clover and Grasses are most abundant, and feed is more plentiful than we ever before recollect having experienced, and for the first time we are enabled to say we have enough. There is, however, considerable deficiency of plant in red Clover; this we shall make good by dibbling with Tares or Trifolium, the men using a pair of dibbles, and walking backwards, two boys following each man, and one more to punch the holes full with the back of a hoe; this mode succeeds better than that of drilling, as no harrowing is requisite. The weather is now fine and warmer than it has been for several weeks past, and if it continues will afford opportunity of carting on manure for the Wheat crop, of which we have above 800 loads to apply, and which will cover about 80 acres. We prefer, however, applying it immediately after the Clover is mown, but this season no opportunity offered, and we hope in a few days to be more able to effect it. The pressure of work on all hands will not allow an hour of idleness to men or horses, and the utmost exertion will be required to fetch up lost time.

*RUINS OF GALLOWAY*.—Since our last report harvest operations have made considerable advance, and on some early farms the crop is safe in the stackyard. The weather at the beginning of harvest was rather unfavourable, but since we have had a fortnight of excellent weather, both for maturing the later crops and cutting down and gathering in those more forward. Various reports are abroad as to the state of the crops, many saying that they have a very great deficiency in bulk, while on other farms the bulk seems as large as usual, while it is generally admitted that the grain, especially the Oats, is heavier than for some years. A little threshing-out has taken place as yet, but it would be premature to venture a definite opinion as to the yield; but we are satisfied that the grain in the stack handles well, not a bad omen as to the profitable yield. Within the last few days we have had a great change in the weather; it has got very unsettled, and between a fall of rain, but it in well we have had cold dry

winds occasionally, which will save the grain in the stack, and help to prepare it sooner for the barn-yard. The weather has been favourable for the Turnip crop, and they have made rapid advances of late, and may yet be a good crop. There are some complaints of finger-and-toe—on some farms, I believe, very bad. Potatoes have given very fast during the last fortnight; in some cases they will be almost an entire loss. Pastures have been freshened by the occasional showers we have had. Large importations of sheep have been received per steamers from the Highlands, for Turnip feeding and stock ewes, and large lots of lambs; prices of all kinds have been very high; cattle markets still rule high.

### Notices to Correspondents.

*CLOVER DODDER, &c.*: S. W. S. The only hope of destroying it consists in paring and burning the patches in which it occurs. As to stock management, Hillyard's "Practical Farmer and Grazier" is a good book; or the tract on Small Farms, by Mr. Blacker.

*COWS ON PASTURE*: W. F. Water twice a day for cows on pasture is sufficient. W. C. S.

*DOSE FOR WORMS: Leisurely*. It should be given in somewhat lesser quantities under the circumstances named. W. C. S. *HEDGEROW TIMBER: B. E.* We should be against planting any hedgerow timber in the tract of newly enclosed land to which you allude. If shelter is wanted, plant belts and plantations to windward; but a corn field should be one thing, as we once heard a farmer put it, and a forest another. If, notwithstanding, you resolve to plant, put in Elm, not Ash.

*ITALIAN RYE-GRASS: J. W.* Will any one give us a full detail of his experience in its successful cultivation on clay land?

*MANURE: One who has subscribed from 1847*. We quote our reply to your question from Mr. Haxton's article on manure in Blackie's "Cyclopedia of Agriculture." In stall feeding (according to numbers resulting from certain quoted experiments), the amount of manure will stand thus:—

	tons	cwt.	qrs.	lbs.
Solid dung for 210 days, 53 lbs. daily	5	3	0	24
for 155 days, 41½ lbs. daily	2	17	1	20
Litter for 365 days, 14 lbs. daily	2	5	2	14
Urine absorbed by litter, 22½ lbs. daily	3	13	1	8½
Total solid dung	13	19	2	10½
Urine which flows into tank	7	18	0	6½

21 17 2 16

The above is from "full-sized and highly fed cows." The account given of a bullock fed after the rate of 100 lbs. of Turnips and 5 lbs. of oilcake daily, with 10 lbs. of straw, is about 84 lbs. of dung, of which the urine would be about one-half. We have no information on the quantity of manure voided by the sheep. Bousingault quotes it at 1800 lbs. annually of solid and 1200 lbs. annually of liquid excrements.

*RABBITS: A. H.* wants to ascertain the best mode and time of destroying them. We imagine that, as they breed all through the year, the time is a matter of small importance; and that they will ultimately yield to the gun and ferret and netting.

### Markets.

#### COVENT GARDEN, Sept. 24.

The market continues to be well supplied with Vegetables and Fruit, but trade is very dull. Peaches and Nectarines are plentiful, and English Grapes abundant. Pears consist of Beurré d'Amanlis, Bon Chrétien, Brown Beurré, Bonne Louis, Gansel's Bergamot, and Marie Louise. Importations from the Continent of Potatoes (sound) and Tomatoes are still kept up; the latter fetch from 2s. to 3s. per dozen. There are also French Apricots in the market. Plums from the South of France fetch 4s. per basket. Caulots and Turnips fetch from 2d. to 4d. per bunch. Peas are still good. Potatoes are becoming much more diseased, and prices for them are not so good. Mushrooms are rather more plentiful, and a little cheaper. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and Carnations.

#### FRUIT

Pine-apples, per lb., 3s to 6s  
Grapes, hothouse, p. lb., 1s to 3s 6d  
— Portugal, per lb., 6d to 1s  
Peaches, per doz., 1s 6d to 1s  
Nectarines, per doz., 1s to 4s  
Apricots, per doz., 1s to 3s  
Plums, per punnet, 1s to 2s  
Melons, each, 1s to 3s  
Apples, per bush, 3s to 4s  
— dessert, p. hf sieve, 2s to 4s  
Pears, per doz., 1s to 3s

Figs, per doz., 1s to 2s  
Lemons, per doz., 1s to 2s  
Oranges, per doz., 2s to 3s  
— Seville, p. 100, 14s  
Almonds, per peck, 5s  
— sweet, per lb., 2s to 3s  
Filberts, p. 100 lbs., 50s to 60s  
Walnuts, per 100, 1s to 1s 6d  
Nuts, Barcelona, per bush, 40s  
— Cobs, p. 100 lbs., 45s to 50s

#### VEGETABLES.

Cabbages, per doz., 6d to 9d  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 2s 6d to 4s  
French Beans, p. hf. sieve, 1s 6d to 2s 6d  
Potatoes, per ton, 30s to 120s  
— per cwt., 3s to 5s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 2s to 2s 6d  
Cucumbers, each, 2d to 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 3s to 4s  
Spinach, per sieve, 1s to 2s  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

Garlic, per lb., 6d to 8d  
Lettuce, Cab., p. doz., 6d to 8d  
— Cos, per score, 9d to 1s  
Radishes, per doz., 1s to 2s  
Small Salads, p. pun., 2d to 3d  
Horse Radish, p. bundle, 2s to 4s  
Mushrooms, p. pott., 1s to 2s 6d  
Sorrel, per hf. sieve, 6d to 1s  
Artichokes, per doz., 3s to 6s  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. doz. bunches, 2s to 4s  
Mint, green, per bunch, 2d to 4d  
Basil, do., per bunch, 6d  
Marjoram, do., do., 6d  
Watercresses, p. 12 bun., 3d to 4d

#### HOPS.—BOROUGH MARKET, Sept. 23.

Messrs. Pattenden and Smith report that the letters from the Hop plantations report that the crop comes very short of expectation. Market very brisk. Duty 150,000l.

#### COAL MARKET.—FRIDAY, Sept. 23.

Hollywell, 23s 6d; Howard's West Hartley, 20s.; Wallsend Riddell, 23s.; Wallsend Hetton, 24s.; Wallsend Stewarts, 24s.; Wallsend Tees, 24s.—Ships at market, 181.

#### HAY.—Per Load of 36 Trusses.

*SMITHFIELD, Sept. 22.*  
Prime Meadow Hay 90s to 100s  
Inferior do. ... 50 80  
Rowen ... 40 55  
New Hay ... 40 55  
Clover ... 80s to 120s  
Second cut ... 75 110  
Straw ... 82 96  
E. J. Davis.

*CUMBERLAND MARKET, Sept. 22.*  
Prime Meadow Hay 112s to 120s  
Inferior do. ... 95 105  
New do. ... 60 110  
Now Hay ... 40 85  
Old Clover ... 132 140  
JOSHUA BAKER.

*WHITCHAPEL, Sept. 22.*  
Fine old Hay ... 100s to 105s  
Inferior do. ... 88 95  
New Hay ... 80 84  
Inferior do. ... 36 60  
Old Clover ... 120s to 126  
Inferior do. ... 110 115  
Fine new do. ... 90 98  
Inferior do. ... 70 80

#### WOOL.—BRADFORD, THURSDAY, Sept. 22.

Wool.—The inquiries for wool continue very limited, with but few sales making, and the difficulty to buy from the growers is not in any way altered to enable it to come to this market. Nails and broken command full prices.

*YARNS*.—There is nothing new in this department. The accounts from the East Indies induce the shippers to pause. For home consumption the demand is steady.

*FINES*.—The dull weather a few weeks past had a somewhat flattening tendency, and the market has not since resumed its usual activity.



SMITHFIELD, MONDAY, SEPT. 19.

The supply of Beasts is again very large. Trade is exceedingly dull. The hot weather makes buyers very cautious. Prices are lower, and there is a larger number unsold than for some time past. The number of Sheep is rather smaller than last week, but the demand has also decreased, and we cannot quote higher, although in a few instances prices have advanced a little. Calves are not selling quite so well. There is more demand for Lambs. From Germany and Holland there are 2902 Beasts, 9090 Sheep, 218 Calves, and 60 Pigs; from Scotland, 100 Beasts; and 2400 from the northern and midland counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 4 2 to 4 4	Best Long-wools... 4 6 to 4 8
Best Short-horns 4 0 4 2	Do. Shorn ... 0 0 0 0
2d quality Beasts 2 4 3 4	Ewes & 2d quality 3 6 4 2
Best Down and Half-breds ... 5 0 5 2	Do. Shorn ... 0 0 0 0
Do. Shorn ... 0 0 0 0	Lambs ... 4 6 5 4
Beasts, 6224; Sheep and Lambs, 27,410; Calves, 275; Pigs, 440.	Calves ... 3 4 4 6

FRIDAY, SEPT. 23.

The number of Beasts fresh up this day is small; however, fully adequate to the demand, which is very limited, owing to a dull trade at the dead markets. Prices for the best descriptions remain about the same as on Monday, but it is difficult to dispose of inferior qualities. Trade is by no means brisk for Sheep, although the shortness of the supply enables us to retain Monday's quotations. Calves are on the average lower, but they are all disposed of. From Germany and Holland there are 339 Beasts, 3230 Sheep, 349 Calves, and 26 Pigs. The number of Milch Cows is 75.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 4 2 to 4 4	Best Long-wools... 4 6 to 4 8
Best Short-horns 4 0 4 2	Do. Shorn ... 0 0 0 0
2d quality Beasts 2 4 3 4	Ewes & 2d quality 3 6 4 2
Best Down and Half-breds ... 5 0 5 2	Do. Shorn ... 0 0 0 0
Do. Shorn ... 0 0 0 0	Lambs ... 4 6 5 4
Beasts, 902; Sheep and Lambs, 6500; Calves, 534; Pigs, 320.	Calves ... 3 4 4 6

MARK LANE.

MONDAY, SEPT. 19.—There was a fair supply of Wheat from Essex and Kent at this morning's market, a small portion of which only consisted of the new crop. The Essex remained unsold towards the close of the market, but the new Kent advanced 4s. per qr. upon the prices of this day's night. The demand for foreign was inactive, and a small business only transacted; the sales effected were from 3s. to 5s. per qr. above last Monday's quotations. A few parcels of superior malting Barley brought an advance of 1s. to 2s. per qr.; grinding sells at an improvement of 1s. per qr. Beans are scarce, and 1s. to 2s. per qr. dearer. White Peas are much wanted, and command our highest quotations; grey bring fully last week's prices. Oats sell at an advance of 1s. per qr. The top price of town-made Flour is raised to 65s. per sack, and barrels are 1s. to 2s. dearer.

FAR IMPERIAL QUARTER.

Wheat, Essex, Kent & Suffolk	White	56-65	Red	55-60
— fine selected runs	ditto	63-68	Red	53-64
— Talavera				
— Norfolk			Red	
— Foreign		52-72		
Barley, grind. & distil. 32s to 36s.	Chev.	40-43	Malting	36-40
— Foreign, grinding and distilling		25-35	Malting	
Oats, Essex and Suffolk		17-21		
— Scotch and Lincolnshire	Potato	22-24	Feed	17-21
— Irish		21-23	Feed	19-20
— Foreign	Poland and Brew	17-25	Feed	16-23
Rye		29-32	Foreign	
Rye-meal, foreign				
Beans, Mazagan	30s to 38s	35-40	Harrow	35-40
— Pigeon	40s to 42s	Wind.		
— Foreign		32-42	Egyptian	32-35
Peas, white, Essex and Kent	Boilers	52-56	Suffolk	
— Maple	38s to 42s	Grey	40-48	Foreign
Maize		35-40	Yellow	
Flour, best marks delivered	per sack	58-65		
— 2d ditto		45-58	Country	45-58
— Foreign	per barrel	31-34	Per sack	49-55

FRIDAY, SEPT. 23.—The arrivals of English grain this week have been moderate, but good of foreign, including about 15,000 barrels of Flour. To-day's market was well attended, particularly by country buyers, and a good business done in foreign at an advance of 1s. to 2s. per qr. upon Monday's rates. English realised the extreme prices of that day. In floating cargoes from the South sales to a fair extent have been effected, at 2s. to 3s. per qr. improvement. Grinding Barley and Oats bring an advance of 6d. per qr. Barrel Flour is 6d. to 1s. dearer. Other articles remain as on Monday.

ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 1310	Qrs. 120	Qrs. 370	1850 sacks
Irish ...			770	
Foreign ...	15520	6250	9780	14970 brls

IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
Aug. 13	53 3	29 10	22 3	34 9	41 5	36 9
— 20	51 1	29 7	22 0	34 10	40 11	34 9
— 27	48 6	29 6	21 6	33 8	41 1	36 6
Sept. 3	50 4	30 4	21 10	32 3	41 1	37 2
— 10	54 9	31 3	21 11	33 6	41 3	37 8
— 17	56 7	34 9	20 6	35 7	41 9	39 8
Aggr. Aver.	52 5	30 11	21 8	34 1	41 3	37 1

FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Aug. 13.	Aug. 20.	Aug. 27.	Sept. 3.	Sept. 10.	Sept. 17.
56s 7d	...	...	...	...	...	...
54 9	...	...	...	...	...	...
53 3	...	...	...	...	...	...
51 1	...	...	...	...	...	...
50 4	...	...	...	...	...	...
48 6	...	...	...	...	...	...

LIVERPOOL, TUESDAY, SEPT. 20.—The arrivals from Ireland and coastwise during the past week have been small. At our Corn Exchange this morning there was a large attendance of the town and country trade, and a very good consumptive demand was experienced for both Wheat and Flour, at an advance of 4d. to 6d. per 70 lbs., and 2s. per sack and barrel. Oats improved 1d. to 2d. per 45 lbs., and Oatmeal 1s. 6d. to 2s. per load, with a fair sale. Barley brought 2d. per 60 lbs., and Beans and Peas 1s. to 1s. 6d. per qr. more money. Indian Corn met with a brisk inquiry, and floating cargoes and parcels on the spot were fully 2s. per qr. dearer. FRIDAY, SEPT. 23.—At this morning's market there was a large attendance of the town and country trade and of buyers from a distance, and an extensive business was done in Wheat, both for consumption and on speculation, at an advance of 2d. per 70 lbs. on fine Wheat, and 2d. to 3d. on inferior descriptions. Barrel Flour was in active request, at 1s. to 1s. 6d. per barrel advance on Tuesday's rates. Oats were in fair request, and 1d. per 45 lbs. dearer; and Oatmeal sold freely, at 1s. per load advance. Barley brought 1d. to 2d. per 60 lbs., and Beans and Peas 1s. per qr. more money, with a good retail demand. Indian Corn met with a good inquiry, and may be quoted 6d. to 1s. per qr. dearer.

OUT OF THE FRYING-PAN INTO THE FIRE."

WEARING AIR-TIGHT GARMENTS TO EXCLUDE RAIN.

## BERDOE'S VENTILATING WATERPROOF

OVER-COATS resist any amount of rain, without confining perspiration, the fatal objection to all other waterproofs, and being free from vulgar singularity, are adapted not merely for rainy weather, but for general use at all times; price 45s. One of the largest stocks in London, of superior OVER-COATS of every kind, CAPES, SHOOTING JACKETS, LADIES' CLOAKS, MANTLES, HABITS, &c., all thoroughly waterproof.—W. BERDOE, 96, New Bond Street, and 69, Cornhill (only).

## METCALFE AND CO'S NEW PATTERNS TOOTH

BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-improving office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like prepared hair. Improved Clothes Brush, that cleans harmlessly in one-third the usual time. The new Velvet Brush; and immense stock of genuine unbleached Smyrna Sponges, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street. Caution.—Beware of the word "Metcalfe's," adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2s. per box.

## YOURSELF! WHAT YOU ARE, AND WHAT YOU WANT.

ELLEN GRAHAM continues to give her novel and interesting delineations of character from an examination of the Hand-writing, in a style of description peculiarly her own, filling the four pages of a sheet of paper. Persons desirous of knowing their true character, or that of any friend, must send a specimen of the writing, stating sex and age, or supposed age (including 13 penny postage stamps) to Miss Graham, 14, Hand Court, Holborn, London, and they will receive in a few days a minute detail of the gifts, defects, talents, tastes, affections, &c., of the writer, with many other things hitherto unsuspected. Seventh Edition, "A Few Words before Matrimony," sent post free on receipt of six postage stamps.

THE SUCCESSFUL RESULTS OF THE LAST HALF CENTURY HAVE PROVED BEYOND QUESTION THAT

## ROWLANDS' MACASSAR OIL

possesses singularly nourishing powers in the growth, restoration, and improvement of the Human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the Hair. It prevents it from falling off or turning grey, strengthens weak hair, produces a thick and luxuriant growth, cleanses it from Scurf and Dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of WHISKERS, EYEBROWS, and MUSTACHIOS, it is unfailing in its stimulative operation. For children it is especially recommended, as forming the basis of a beautiful head of hair, and rendering the use of the fine-comb unnecessary. In dressing the hair nothing can equal its effect, rendering the hair so admirably soft that it will lie in any direction, and imparting a transcendent lustre. Price 3s. 6d. and 7s.; Family Bottles (equal to four small), 10s. 6d.; and double that size, 21s. CAUTION.—On the wrapper of each bottle are the words, "ROWLANDS' MACASSAR OIL," in two lines. The same are engraved on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLAND & SON, 20, Hatton Garden, London; and by Chemists and Perfumers.

## HOLLOWAY'S OINTMENT AND PILLS, THE

MOST EXCELLENT REMEDIES FOR THE CURE OF SORES, WOUNDS, AND ERUPTIONS.—William Patterson, of Little Ormsby, had a child who, for the period of eight years, suffered with sore arms, which ultimately flew to and settled in the legs, and the child became one mass of sores from the knees to the ankles. She had the best medical advice that the neighbourhood afforded, but did not obtain the slightest relief. The father was finally induced to try Holloway's Ointment and Pills, which in a few weeks completely cured her, and she has enjoyed the most excellent and unimpaired health ever since. Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

## WORMS IN CHILDREN AND GROWN PER-

SONS.—Thousands are suffering the privation of health, and brought to premature death by worms in the human body.—Dr. THOMAS'S RUSSIAN REMEDY, by which he will guarantee the greatest sufferer is cured in two days, without offending the stomach of an infant or most delicate person. The common symptoms of worms are a disagreeable odour of the breath, bluish appearance about the eyes, paleness of the lips, itching of the nose, flatulence, nausea, headache, sickness, irregular appetite, acid eructations, furred tongue, oppressed breathings, quickened pulse, faintings, hiccup, dizziness, vertigo, tenesmus, deranged bowels, pale and emaciated countenance, griping pains, a dry cough, thirst, vomiting, startings during sleep, and grinding of the teeth. This medicine has stood the test of nearly every hospital in England and America, where the Doctor introduced it with perfect success in every case, and has had 15 years' experience of the efficacy of this remedy, having during that period applied it in some hundreds of invertebrate cases weekly, both in private practice and in various hospitals on the Continent, and in America, and can positively assert it has never failed in a single case; therefore he with confidence offers it to the public, and will send it (post free) on any part of the kingdom upon receipt of Post Office order for 5s., payable to Dr. THOMAS, M.R.C.S.L., 15 years resident M.D. of Dover.

"My child voided thread-worms by hundreds the next morning. JANE GREENING."—"Dear Sir, A worm nearly 3 yards long has been expelled from my child, 5 years old, by one dose of your medicine." From Mrs BROUGHTON, Colchester.

Hundreds of cases could be cited, but space prevents. DAVID THOMAS, M.R.C.S.L., 14, Strand Street, Dover.

## A VOICE FROM VAN DIEMEN'S LAND.

"We consider we are performing an act of humanity to the community of Van Diemen's Land in acknowledging that statements have been made to us by several persons who have taken PARE'S LIFE PILLS, with the most beneficial effect to them. Accounts of their efficacy have been furnished to us by various individuals who have taken them, since the supply furnished by the patentees in England to Mr. Dowling; but they have generally savoured so much of the marvellous that we have hesitated to make the statements public. However, we are now satisfied, from further accounts given to us, that to hesitate longer would be perpetrating an act of criminal omission to our fellow-creatures; and having taken the Pills ourselves with the most satisfactory result, we perform only an act of duty in most strongly recommending the use of them to the public at large. This we feel the more confidence in doing, knowing that, under any circumstances, they cannot do harm; and our conscientious belief is, that they cannot be taken by any person without doing him good."—Cornwall (Van Diemen's Land) Gazette.

N.B.—"PARE'S Life Pills" are so highly and universally esteemed in Australia and New South Wales, that many of the recent consignments have been sold at a profit of 50 per cent. Merchants and Emigrants are respectfully informed that a liberal discount is allowed for exportation.—Sole Proprietors and Preparers, T. ROBERTS & Co., Crane Court, Fleet Street, London. Ask for "PARE'S Life Pills," to be had through all Chemists, in boxes, price 1s. 1/2, 2s. 3d., and in family packets, 11s. each. Directions with each box.

GLAZED LIGHTS for Sale, sixteen 6 feet by 4 feet, with Rafter and Uprights, if required, to be sold a bargain, all nearly new; also 80 dozen Plants: must be sold this week. Apply to C. TRAVELLER, Hope Cottage, Barrow Bridge Lane, Acton, Middlesex, near the Red Lion.

## SIR WILLIAM BURNETT'S DISINFECTING

FLUID.—THE BEST CONCENTRATED "CHLORIDE OF ZINC"—GREAT REDUCTION OF PRICE.—The merits of this Fluid, invented by Sir W. BURNETT, M.D., F.R.S., &c., &c., for the Disinfection of Sick Rooms, Clothing, Linen, &c.; the Prevention of Contagion, the Preservation of Animal Matter from Putrescence, the Purification of Bilge-water, Cesspools, Drains, Water-closets, &c., are now so well known to the public as to render comment unnecessary.

Sold at the Office, 18, Cannon Street, City, London; and by Chemists, Shipping Agents, and others throughout the United Kingdom, in imperial quart bottles at 2s. 6d.; in pints at 1s. 3d.; in half-pints at 9d.; and in bulk at 6s. per gallon.

CAUTION.—Beware of Imitations.—The only genuine Disinfecting Fluid is sealed over the cork with the inscription, "Sir Wm. BURNETT'S Disinfecting Fluid," and accompanied with numerous testimonials of the highest order, and instructions for its use.

## THE COMFORT OF A FIXED WATER-CLOSET

FOR £1.—Places in gardens converted into comfortable Water-closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1/6. Hermetically Sealed Inodoriferous Chamber Commodes, for the sick room, 11. 4s., 2l. 6s., and 3l.; also Improved Portable Water-closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FRYE & Co.'s, 25, Tavistock Street, Covent Garden, London.

## DAVIES'S CANDLES, 7d. per lb.: moulds, 8d.;

composite, 8d., 9d., 9 1/2d., and 10d.; botanic wax, 1s.; sperm, 1s. 7d. and 1s. 8d.; Palmer's metallic, 8d.; magnus, 9d.; argand oil, 4s. 6d. per gallon, French, 4s.; solar, 3s. 9d.; sperm, 8s.; Windsor soap, 1s. 2d. per packet; brown Windsor, 1s. 8d.; rose, 2s.; almond, 2s. 6d.; yellow soap, 3s. 6d., 4s., 4s. 6d., and 5s. per 112 lbs.; mottled soap, 5s. for cash.—At M. P. DAVIES & SON'S, old-established warehouse, 63, St. Martin's Lane, Charing Cross, London.

## FENDERS, STOVES, AND FIRE-IRONS.

Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ormolu ornaments and two sets of bars, 5l. 10s. to 12l. 12s.; Bronzed Fenders complete, with standards, from 7s. to 3l.; Steel Fenders from 2l. 15s. to 6l.; ditto, with rich ormolu ornaments, from 2l. 15s. to 7l. 7s.; Fire-irons from 1s. 9d. the set to 4l. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges.

1st.—From the frequency and extent of his purchases; and, 2dly.—From those purchases being made exclusively for cash.

## DISH COVERS AND HOT-WATER DISHES

in every material, in great variety, and of the newest and most recherche patterns. Tin Dish Covers, 6s. the set of six; Block Tin, 11s. 6d. to 25s. the set of six; elegant modern patterns, 20s. to 55s. the set; Britannia Metal, with or without silver-plated handles, 6s. to 102s. the set; Sheffield Plated, 10l. to 16l. 10s. the set; Block Tin Hot-water Dishes, with wells for gravy, 11s. to 25s.; Britannia Metal, 20s. to 72s.; Sheffield plated, full size, 9l. 10s.

## GAS CHANDELIERS AND BRACKETS.—The

increased and increasing use of gas in private houses has induced WILLIAM S. BURTON to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are mark-d in plain figures, at prices proportionate with those which have tended to make his Ironmongery Establishment the largest and most remarkable in the kingdom, viz., from 12s. 6d. (two lights) to 16l. 6s.

## LAMPS OF ALL SORTS AND PATTERNS.—

The largest, as well as the choicest, assortment in existence of PALMER'S MAGNUM and other LAMPS, CAMPHINE, ARGAND, SOLAR, and MODERATEUR LAMPS, with all the latest improvements, and of the newest and most recherche patterns, in ormolu, Bohemian, and plain glass, or papier-mâché, is at WILLIAM S. BURTON'S, and they are arranged in one large room, so that the patterns, sizes, and sorts can be instantly selected.

PALMER'S CANDLES, 8d. per lb.—Palmer's Patent Candles, all marked "Palmer."

Single or double wicks	...	...	...	8d. per lb.
Mid. size, 3 wicks	...	...	...	8 1/2d.
Magnus, 3 or 4 wicks	...	...	...	9d.
English Patent Camphine, in sealed cans	5s. 9d. per gallon.			
Best Colza Oil	...	...	...	3s. 9d.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

## VALUABLE REMEDIES FOR THE AFFLICTED.

## DR. ROBERTS'S CELEBRATED OINTMENT,

called the POOR MAN'S FRIEND, is confidently recommended to the Public as an unfailing remedy for Wounds of every description, a certain cure for Ulcerated Sore Legs, if of 20 years' standing; Cuts, Burns, Scalds, Bruises, Chilblains, Scorbatic Eruptions and Pimples on the Face, Sore and Inflamed Eyes, Sore Heads, Sore Breasts, Piles, Fistula, and Cancerous Humours, and is a specific for those afflicting Eruptions that sometimes follow vaccination. Sold in pots at 1s. 1/4d. and 2s. 9d. each.

Also his PILULÆ ANTISCROPHULÆ, confirmed by more than 40 years' experience to be, without exception, one of the best alternative medicines ever compounded for purifying the Blood, and assisting nature in all her operations. Hence they are used in Scrofula, Scorbatic Complaints, Glandular Swellings, particularly those of the Neck, &c. They form a mild and superior Family Aperient, that may be taken at all times without confinement or change of diet. Sold in Boxes, at 1s. 1/4d., 2s. 9d., 4s. 6d., 11s., and 22s.

Sold Wholesale by the Proprietors, BEACH and BARNICOTT, at their Dispensary, Bridport; by the London houses. Retail by all respectable Medicine Vendors in the United Kingdom.

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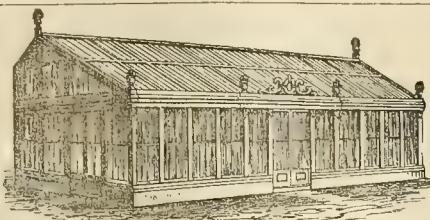
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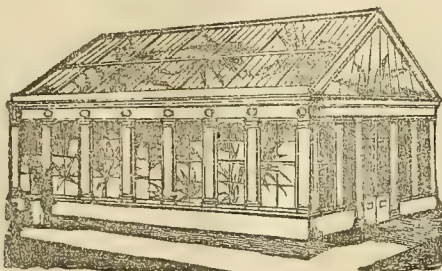
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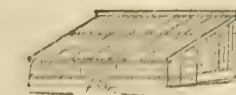
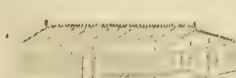
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**FOR SALE,** with immediate possession, an ESTATE of 1162 ACRES, 1000 of which are covered with a valuable deposit of peat, which being the fuel in universal use in Holland, from the high price of coals, always commands a ready market. The Estate is intersected by canals for the conveyance of the peat, and these communicate with one of the chief canals in a northern province of Holland, and by these means there is direct and cheap water communication with the towns and cities in which the fuel is consumed; 150 acres are cleared and already in excellent cultivation, exposing a fertile soil, and 12 acres are in wood. On the estate is a comfortable Dwelling House, two Farmhouses, 14 Cottages, a Large Barn, and Cattle Sheds. There are also for sale all the implements required in digging the peat and cultivating the land, together with eight Horses, 20 head of Cattle, &c., also a Thrashing Machine, &c.—For further information, apply, by letter, to J. C. M., at the Office of this Paper.

## LANDED INVESTMENT.

**FOR SALE,** 100 acres of fine LAND, with an excellent House and Agricultural Buildings, in a good situation; to pay a clear 5 per cent.—Apply to Mr. HENRY NEWSON, Land Agent, Bury St. Edmund's.

## FANCY FOWLS.

**FOR SALE,** a few healthy CHICKENS of the following breeds:—Silver Polish, Brown and Buff Cochins China, Bearded Minorca (imported), and other Fancy Fowls.—Apply to Mrs. THOMAS WILLIAMS, Thornage, Brimingham, Norfolk.

**JOHN T. WILLMER, JUN., Auctioneer.** Sunbury, Middlesex, begs to inform Nurserymen and Florists having stock to dispose of by Auction, that he undertakes the same at the lowest charges.

## Sales by Auction.

## BRAHMA POOTRA FOWLS.

**MR. W. B. SHEEHAN, Underhill House, Barnet,** begs to state that he has not any more of these beautiful Fowls or Chickens for sale by private contract. When his imported Brahmans arrive, they will be offered for sale (together with some Chickens of Mr. S.'s breeding), by Public Auction. This will give Poultry Amateurs the opportunity of seeing many of these birds. Mr. S. must for a little time respectfully decline to show his Brahmans and Cochins Fowls.—American Daguerreotype Portrait Gallery, 385, Oxford Street, London.

## COCHIN CHINA FOWLS.

EXTRA SALE ON TUESDAY, 27th SEPTEMBER.

**MR. J. C. STEVENS** will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 27th September, at 12 o'clock, precisely, 200 LOTS OF VERY CHOICE COCHIN CHICKENS, chiefly Buff and Lemon colour, entirely the property of a gentleman in Kent, who has spared no expense in obtaining birds of the highest quality; they are principally from Sons of Mr. Sturgeon's "Sam" and "Jerry," and some from Mr. Pinchard and Mrs. Herbert's strains.—May be viewed on the morning of Sale, and Catalogues forwarded on receipt of a stamped directed envelope enclosed to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

## BATTERSEA.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** have received instructions from Mr. Ambrose to offer to Public Competition by Auction, without reserve, on the premises, King Street, Battersea, on MONDAY, Oct. 10th, at 11 o'clock, the whole of the valuable GREENHOUSE PLANTS, consisting of a fine collection of Indian Azaleas, amongst which are many fine specimens; Camellias, Ericas, Cytisus, Epacris, Diosma, Acaecia, Daphne, choice Cinerarias, White and Purple Primula, Calceolarias, Stephanotis, Dellytra spectabilis, Rhododendrons, &c.; also about 20,000 Fancy and other Pelargoniums, which will comprise all the new and most improved kinds in cultivation; about 50 specimen plants of the newest kinds; together with 14 newly erected Greenhouses; 3 capital Boilers; about 800 feet of hot-water Pipe; several Pits; one, two, and three-light Boxes; Hand and Striking Glasses; Bricks; Wheelbarrows; Water Pots; Syringes; and sundry effects. The above Stock is particularly worthy the attention of Exhibitors enriching their collections, as well as the trade, from its excellence.—May be viewed one week prior to the sale; Catalogues (6d. each returnable to purchasers) may be had on the premises; or of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## IMPORTANT SALE OF FIRST-CLASS SHORT-HORNED CATTLE.

**MR. STRAFFORD** is favoured with Instructions from Robert Holmes, Esq., to sell by Auction, without any reserve, at Moycashell Farm, near Kibbegan, Ireland, on THURSDAY, the 29th of September next, his entire Herd of pure-bred SHORT-HORNED CATTLE, consisting of Forty Head of Bulls, Cows, Heifers, and Calves. This Herd is directly descended (with one exception) from two Cows, bought at the great Chilton Sale of Mr. Mason's stock in 1829, viz., "Victoria," by own sister to Monarch (2324), and "Princess Britannia," by Monarch, from Mason's No. 8, and Mr. J. Collings' "Ruth," by Layton (2192), since which Mr. Holmes has used the very best Bulls that could be obtained, such as Napoleon (2348), own brother to Monarch (2324), Argus (759), Augustus (1662), Captain Parry (328), and Volunteer (1553) from Messrs. J. and R. Booth; Belzoni (783), and latterly 2d Comet (5101), Sir John Sinclair (5165), Lord John (1731), Hamlet (8126) a son of Bracelet, Royal Buck (10750), and Baron Warley (7813). The Cows and Heifers are principally in-calf to Mr. R. Booth's Hopewell (10332), own brother to his far-famed prize cow "Charity."—Catalogues, with the pedigrees and other particulars, may be had on application to Mr. Holmes, Waterstown, Glasstown, Athlone; or of Mr. STRAFFORD, 89, Guildford Street, Russell Square, London.

## TO NURSERYMEN, INN-KEEPERS &amp; OTHERS.

By order of the Assignees of Joshua Bowker, a bankrupt, at the Grapes Inn, Hyde, in the county of Chester, on the 5th day of October next, at 3 o'clock in the afternoon, subject to such conditions as will then and there be produced:

**THE Extensive and Valuable STOCK OF TREES, SHRUBS, AND PLANTS,** in the Nursery Grounds adjoining and near to the Grapes Inn aforesaid, comprising altogether upwards of 200,000, which have been selected with great care and are in fine growing condition. And also a quantity of Garden and other Seeds; together with the unexpired Term in the Lease of the Nursery Grounds, containing about 5 acres. And also the unexpired Term in the Lease of the Grapes Inn aforesaid, and the Stock in Trade and Furniture therein, and the Outbuildings, Greenhouse, Gardens, Pleasure Seats, and Premises belonging thereto. The Gardens belong to the House and, independent of the Nursery Ground, are very spacious, and contain a large building of wood lately put up, capable of containing 500 persons; and also a suitable provision for a band and numerous pleasure seats. The whole of the premises are subject to the low rent of 40l. for the remainder of the term of seven years in the lease thereof, commencing on the 19th day of April, 1850, and will be disposed of altogether, or the interest in the public-house, stock, and furniture, and the gardens and premises belonging thereto in one lot, and the stock in the nursery grounds, and the interest in the lease thereof separately, as may suit the convenience of purchasers. In case the property is not sold in one or two lots, the sale of the plants and shrubs, iron hurdles, and other effects, will be proceeded with in lots, on the 6th and following days of October, until the whole are disposed of, and the stock, furniture, and good-will in the public-house will be sold separately.—The stock can be viewed on application on the premises, and detailed particulars and further information had on application to Mr. LAVERY, wine and spirit merchants, Clarence Street; or Mr. LOMAS, Dog and Partridge, Oldham Road, Manchester; the assignees; or Mr. COBBETT, Solicitor, Cooper Street; or Mr. ANDREW, solicitor, Princess Street, Manchester.

Printed by WILLIAM BRADBURY, of No. 13, Upper Voburn Place, in the Parish of St. Pancras, and FRANCIS MULLIST EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitechapel, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to the EDITOR.—SATURDAY, SEPTEMBER 24, 1883.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 40.—1853.]

SATURDAY, OCTOBER 1.

[PRICE 6d.]

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## CHOICE ROSES.

**LUCOMBE, PINCE, & CO.** have now a very healthy stock of strong plants of all the

### NEWEST AND BEST ROSES,

on their own roots, and also budded on clean healthy stocks, which they can offer very cheap.

Lists of the sorts and their prices can be obtained on application to them.—Exeter Nursery, Exeter.

## CHOICE ANTIRRHINUMS.

**R. LAING** has now ready to send out Antirrhinum Seed, saved from a fine Collection of Seedlings. An extra prize was awarded for 18 of the varieties exhibited at the Isleworth Horticultural Show in June last. Packets, 2s. 6d. each. The Nursery, Twickenham, Middlesex.

## SUPERB DOUBLE HOLLYHOCKS.

**WILLIAM CHATER** has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp. Saffron Walden Nursery, October 1.

## PELARGONIUMS AND CINERARIAS.

**JOHN SUTTON AND SONS**, Reading Nurseries, Reading, Berks, having propagated extensively of some of the best Geraniums in cultivation, can supply them at 18s. per dozen, good plants, either furnished or show flowers. The sorts are all first-rate, and some quite new. Purchasers are requested to send a list of the sorts they already possess, that duplicates may not be supplied.

Also the leading kinds of Cinerarias, 10s. 6d. per doz.

## HYACINTHS, DUTCH BULBS, ETC.

**HENRY GROOM**, Clapham Rise, near London, by Appointment Florist to HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that he has received his usual supply of HYACINTHS and DUTCH BULBS, in very fine condition. His Catalogue of Bulbs, &c., will be forwarded on application.

## FLORISTS' FLOWERS, AND THE LANCASHIRE SHOW COOSBERRY TREES, ETC.

**JOHN HOLLAND**, Bradshaw Gardens, Middleton, near Manchester, respectfully informs his Floricultural Friends and the Public that his priced and descriptive Catalogues are now ready, and will be forwarded on application, enclosing a postage stamp.

THE GOOSEBERRY GROWER'S REGISTER for 1853, stitched, 1s. 3d.; in boards, 1s. 6d.

**GEORGE JACKMAN**, NURSERYMAN, Woking, Surrey, 14 mile from Woking Station, South-Western Railway, begs to announce that he has just published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard Dwarf Roses, Fruit and Forest Trees, &c. &c., and may be had on application by enclosing two postage stamps.

**CUTHILL'S PRINCE OF WALES AND BLACK PRINCE STRAWBERRIES**.—Very fine strong plants of Prince of Wales at 15s. per 100, or 10s. for 50; Black Prince at 5s. per 100. See former Advertisements. Also, CUTHILL'S Pamphlet on the Potato, &c., price 2s., or by post, 2s. 4d.; also, his Market Gardening Round London, 1s. 6d., or by post, 1s. 8d. Post Office Orders to be made payable at Camberwell Green. JAMES CUTHILL, Camberwell, London.

**NEW STRAWBERRY**.—Ingram's PRINCE OF WALES, proved at the Royal Gardens to be the best for early forcing and fruiting in the autumn (from forced plants), producing beautiful fruit through the months of September, October, and November. It has now a fine crop of fruit in perfection at the Royal Gardens, Frogmore. Fine plants may be had of J. and E. SMALL, Nurserymen, Colnbrook, Bucks; and of Messrs. Nutting, Seedsmen, 46, Cheapside, London, at the following prices: 3s. per 100; 11. 15s. for 50; 11. for 25. The usual allowance to the trade when 300 are taken.

**JOHN SCOTT**, Florist, Watford, near Bath, can supply good plants of the following new GERANIUMS, named and priced at 42s. per dozen: Optimum, National, Ellen or Richard, Astrea, Leonora, Cordelia, Lagotis, Portia, Butterfly, Kolla, Extravaganza.

The following at 21s. per dozen: Ambrosia, Aridne, Enchantress, Elise, Magnet, Moehanna, Magellan, Lord Mayor, Lulache, Flying Dutchman, Purple Standard, Ganymede, Pulchra, Christina—the 24 for 92s.

**FUCHSIAS**. Banks' Glory, Lady Franklin, Duchess of Lancaster, and Mrs. Patterson, 2s. each.—Post Office Orders, payable at Bath, requested from unknown correspondents.

## TO ADVERTISERS.

THE ADVERTISEMENT DUTY being now REPEALED, THE PROPRIETORS of the GARDENERS' CHRONICLE

beg to announce that there will henceforward be a reduction from the customary charge for each Advertisement of 1s. 6d., the full amount of duty taken off by the Government. Advertisements of Gardeners out of Place, of not more than four lines in length, 1s. 6d. each.

## NEW CATALOGUE.

**JOHN and CHARLES LEE'S CATALOGUE** of STOVE and GREENHOUSE PLANTS for this autumn is just published, and may be had POST FREE on application.—Nursery, Hammersmith.

## ROSE CATALOGUE.

**WOODLANDS NURSERY**, MAREFIELD, NEAR UCKFIELD, SUSSEX. **WILLIAM WOOD and SON** beg to announce that the New Edition of their Rose Catalogue, for 1853-54, is now ready for distribution, and will be sent gratis on receipt of Two Penny Postage Stamps. Their Catalogue of General Nursery Stock may also be had on the same terms.

## ROSE CATALOGUE, ETC.

**MESSRS. LANE and SON**, NURSERIES, Great Berkhamstead, Herts, beg to inform their patrons that the undermentioned descriptive CATALOGUES may now be had. General Rose Catalogue for two postage stamps; Tree and Shrub and Fruit Catalogue for two ditto; Azalea Indica, Camellias, Hollyhocks, &c., for one ditto. The Hardy Rhododendrons are fine; the Arancaria imbricata, Cedrus Decidua, the Pinus, with all other Evergreen and Deciduous Plants, are remarkably healthy, forming fine specimens, giving immediate effect, and well worthy the attention of Planters. Fruit Trees established in pots are well set with bloom buds, many of the trees having had a good crop of fruit this season. FINE SELECTED STANDARD ROSES. Per Doz. 18s. to 24s. Ditto DWARF and DWARF STANDARDS " 10s. to 16s. Ditto DWARF ROSES, two of each sort " 6s. MIXED DWARFS, without names " Per 100 30s.

## NEW SEEDS FOR THE COMING SEASON.

**WILLIAM E. RENDLE and CO.**, SEED MERCHANTS, Plymouth, are now harvesting and receiving from the Growers a choice assortment of all kinds of Garden and Agricultural Seeds. Their New Seed Catalogue will be ready early in December.

## CARNATIONS, PICOTEEES, PINKS, PANSIES, ETC.

**JOHN SCHOFIELD and SON** have now ready their Autumn Catalogue of the above Florist Flowers, strong plants, in lots of not less than 12 pairs Carnations and Picotees, 12s. to 20s.; Pinks, 3s. 6d. to 12s.; Pansies, per dozen plants, 6s. to 15s. Pansy Seed, selected with the greatest care, 2s. 6d. per packet. The Catalogue sent free.—Knowsthorpe, near Leeds, Yorkshire.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment. The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

## NEW & CHOICE SHOW PELARGONIUMS.

**HENRY WALTON**, Florist, &c., Edge End, Marsden, near Burnley, Lancashire, having a very large stock of all the leading new PELARGONIUMS sent out last autumn, is prepared to send out strong plants, in 4-inch pots, at 36s. and 40s. per dozen.

**PANSIES**, a very large collection of all the new Scotch and other varieties, 18s. per doz.; older varieties, 6s., 9s., 12s. per doz. **CINERARIAS**, choice varieties, 6s., 9s., 12s. to 18s. per doz. **FUCHSIAS** all the newest varieties out, 18s. and 21s. per doz. **DAISIES** (Salter's New Improved), very fine, 9s. per doz. Descriptive Lists of the above are now ready, and may be had for one stamp.

Older varieties of Pelargoniums, and all the Florist Flowers, &c., at very reduced prices. Camellias, well set with buds, and other Greenhouse and Stove Plants equally cheap.

## SUPERB PEA.—The "NOVEMBER PROLIFIC"

supercedes all other varieties, yields a crop of extraordinary abundance, and stands the severe weather better than any other. It is of the richest flavour, and may be sown from November to July without missing a crop, price 1s. 6d. per quart; to be had from WILLIAM HAMILTON (bro of Chesapeake), Seedman and Florist, 11, Margaret Street, Cavendish Square (first door from Regent Street).

N.B. A large assortment of Hyanthids, Tulips, Crocus, Narcissus, and other flowering roots, a priced Catalogue of which may be had free by post for two stamps. The Catalogue also contains a descriptive and very excellent list of Roses, together with the best Carnations, Picotees, Fruit trees, &c.

## EARLY CABBAGE, SUPERIOR SORTS.—Bedded

Plants of CATHILL'S BURNES and Reliance, also Imperial, Nonpareil, Deftford, East Ham, and Paragon, 5s. per 1000, packages included; packages of 5000 and upwards delivered, free of carriage, to London and to the Edenbridge station of the South-Eastern Railway. A gratuity to accompany all orders from unknown correspondents. Address, JOHN CATHILL, Nurseryman, Westerham, Kent.

## TO THE SEED TRADE.

"LEPTOSIPHON LUTEUM" (FOR AUTUMN SOWING.)

**MESSRS. VEITCH and SON** beg to announce that they are now prepared to supply excellent Seed of the above beautiful new Annual, which was sent them direct from California by Mr. Lobb, and is at present solely in their possession. It has been exhibited at Chiswick and Regent's Park during the past season, and at both places Prizes were awarded it. It was proved to be quite as hardy as the other Leptosiphons, and produces a very striking effect. It is also well adapted for growing in pots and boxes for ornamenting the Conservatory. Prices forwarded on application.

N.B. The quantity being limited, Messrs. V. & S. can only guarantee to supply the first orders.—Exeter, Oct. 1.

## DUTCH HYACINTHS, for Forcing, single and

double, at 4s. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR COBBETT'S Italian and Foreign Warehouse, 18, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

## ROSES and HOLLYHOCKS.—The extensive

Collections growing at the Cheshunt Nurseries are still finely in bloom, where admirers of these Flowers are respectfully invited to view them. Trains of the Eastern Counties Railway almost hourly to Cheshunt or Welham.

Priced descriptive Catalogues are now ready, and will be forwarded free by post for two postage stamps.

A. PAUL & SON, Nurseries, Cheshunt, Herts.

## STANDISH and NOBLE'S CATALOGUE for the

present season is now ready, and may be had on application. A selection from it appeared as a detailed advertisement in the Gardeners' Chronicle, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Oct. 1.

## ROSES.

**T. RIVERS** has just completed his descriptive Catalogue of Roses for the present season, which will be sent free per post on application, to all known correspondents; strangers inclosing two postage stamps will be supplied with a copy post free. In this Catalogue, only the most select Roses are inserted, and it will be found an efficient guide to the amateur. A descriptive Catalogue of Fruits will shortly be ready.

Shortly will be published, the Fifth Edition of the ROSE AMATEUR'S GUIDE, by THOMAS RIVERS, with information about new Roses, &c., brought down to the present time.

Nurseries, Sawbridgeworth, Herts, October 1.

## LORD KEYNON'S FAVOURITE is the best and

most productive CUCUMBER for winter cultivation, price 2s. 6d. per packet, or 30 penny postage stamps.

EDWARD TILEY,

Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath.

## CINERARIAS.

**THOMAS RADDENBERRY** begs to offer the following best varieties, 12 for 15s., 6 for 9s., or 2s. each, viz.,

Kate Kearney, Loveliness, Major Dome, Charlotte, Prince Arthur, Marguerite d'Anjou, Conspicua, Rosalind, Charles Dickens, Duke of Wellington, Mr. Sidney Herbert, Mrs. Sidney Herbert, Mrs. Charles Kean, Queen of England, Queen of Beauties.

Echites Harrisii, 21s.; Eschynanthus splendens, 3s. 6d.; Hexacentris myrsoceras, 1s. 6d. each. About 50 specimen and half specimen Ericas, good varieties, in excellent health and condition.—Clifton Down Nursery, Bristol.

## NEW CINERARIAS.—Strong Plants of the follow-

ing are now ready for delivery:—

**LADY CAMOYS**, 7s. 6d.; Certificate at the National and South London Floricultural Societies. A fine pure white, with deep blue edge and disc, fine form and habit; a fine show flower. Mrs. BEECHER STOWE, 5s.; a fine white, with rich purple edge, purple disc, fine form and habit; good for show or decorative purposes.

**SCOTTISH CHIEFTAIN**, 7s. 6d.; Certificate at the National Floricultural Society. A fine white, with a rich violet edge, violet disc, fine form and habit; a first-class show flower.

**POLYANTHÉLORA**, 3s. 6d.; crimson purple, with ring of white round the disc, fine substance.

Also all the leading varieties in cultivation. A Priced List may be had on application.

CHARLES TURNER, Royal Nursery, Slough.

## DUTCH ROOTS, GERANIUMS, ETC.

**RENDLE'S DESCRIPTIVE CATALOGUE** for the present Autumn is now ready, and can be had in exchange for one penny stamp. It contains descriptions of all the best Hyacinths, Tulips, Gladioli, and all kinds of Bulbs, as well as Geraniums and other Plants.

**COLLECTIONS OF BULBOUS ROOTS**, made up to suit various sized gardens, at 20s., 40s., and 60s. each. For varieties and quantities see front page of this Paper for SATURDAY, Sept. 24.

**GERANIUMS** 12 fine show flowers for 20s., or 20 for 11s. 12s. second class varieties for 12s., or 20 for 18s.

Purchaser's own selection (see List at p. 611, Sept. 24).

**FANCY GERANIUMS**—12 first class varieties for 20s., or 20 for 30s.

12 second class varieties for 15s., or 20 for 21s.

**SCARLET GERANIUMS**—12 varieties for 12s., or 20 for 18s.

Purchaser's own selection (see List at p. 611, Sept. 24).

Troloper's Queen Victoria Strawberries ... 7s. 6d. per 100.

Kitley's Goliah do. ... 4s. do. do.

Cuthill's Black Prince do. ... 4s. do. do.

For descriptions of the above Strawberries, and for list of other choice varieties, see Advertisement, p. 611, Sept. 24.

Orders above £2 will be delivered Carriage Free to any Railway Station between Plymouth, Paddington, and Birmingham, and to Cork, Dublin, and Belfast.

Apply to WILLIAM E. RENDLE & CO., Nurserymen and Seed Merchants, Plymouth.

ESTABLISHED NEARLY 70 YEARS.







## DUTCH BULBS AND FLOWER ROOTS.

THOMAS JACKSON AND SON respectfully inform their patrons and the public that they have received, in the finest condition, their annual consignment of BULBS and ROOTS, and that they are of the largest size and very finest quality.

Good Double Hyacinths, per dozen ... 4s. 6d.  
Mixed Polyanthus Narcissus, per dozen ... 3 0

Their Priced List of Bulbs and Roots, and also their Priced Catalogue of Stove, Orchidaceous, and Greenhouse Plants, Shrubs, Trees, and Herbaceous Plants, may be obtained on application.

Nurseries, Kingston, Surrey, Oct. 1.

## NEW AND CHOICE

## GERANIUMS, FUCHSIAS, AND CINERARIAS.

SAMUEL FINNEY AND CO. have a large Stock of all the new and leading varieties, which they offer, in strong plants, at the undernamed prices:—

GERANIUMS, varieties of 1852.—Astrea, 3s.; Commander, 3s. 6d.; Gertrude, 3s. 6d.; Harriet, 3s. 6d.; Jupiter, 3s. 6d.; Kulla, 3s.; Leonora, 3s. 6d.; Lagoma, 3s.; Optimum, 5s.; Pasha, 3s. 6d.; Queen of May, 3s. 6d.; Rachael, 3s.; Spot, 3s. 6d.; Vulcan, 5s.; Zaria, 3s. 6d.

Varities of 1851.—Ambassador, 1s.; Arethusa, 2s.; Ariadne, 2s.; Beatrice, 1s. 6d.; Capella, 1s.; Chloe, 1s. 6d.; Chieftain, 2s.; Colonel of the Buffs, 1s. 6d.; Christine, 1s. 6d.; Commissioner, 1s. 6d.; Cynthia, 1s. 6d.; Euphrasia, 1s.; Exhibitor, 2s.; Elise, 1s. 6d.; Gaymede, 1s.; Gem, 1s. 6d.; Generalissimo, 1s.; Herald, 2s.; Incomparable, 1s. 6d.; Lavinia, 1s. 6d.; Lablache, 1s. 6d.; Little Nell, 1s.; Magnet, 2s.; Major Domo, 1s.; Mochanna, 1s. 6d.; Monteith, 1s. 6d.; Painter Improved, 1s. 6d.; Purple Standard, 1s. 6d.; Purpurea, 1s. 6d.; Rubens, 1s. 6d.; Silk Mercer, 1s.; Shyluck, 1s. 6d.; Tryan Queen, 1s.

FUCHSIAS, varieties of 1853.—Dr. Lindley, 2s.; Duchess of Lancaster, 2s. 6d.; Glory (Banks), 2s.; Incomparable, 2s.; England's Glory, 2s. 6d.; King Charming, 2s. 6d.; Lady Franklin, 2s.; Model, 2s.; Mrs. Patterson, 2s. 6d.; Perfection, 1s. 6d.; Purple Perfection (Banks), 2s. 6d.; Premier, 2s.; older varieties, 6s. to 9s. per dozen.

CINERARIAS, varieties of 1852.—Charles Dickens, 1s.; Conspicua, 1s.; Harriott, 1s.; Kate Kearney, 1s.; Loveliness, 1s.; Marguerite d'Anjou, 1s.; Prince Arthur, 1s. 6d.; Rosalind, 1s.; older varieties 6s. to 9s. per dozen.

A choice collection of Hollyhocks, Pansies, and hardy Phloxes, at moderate prices.

S. F. & Co. have received a large importation of Dutch Flower Roots, which are in fine condition. Hyacinths, with names, from 6s. per dozen; ditto in mixture, colours separate, 4s. per dozen. A Catalogue of the above may be had on application. Remittances expected from unknown correspondents.

Gateshead Nursery, near Newcastle-upon-Tyne.

## FANCY PELARGONIUMS.

CHARLES TURNER begs to offer the following new varieties, raised by Mr. Ambrose, of Battersea, who is retiring from business. Mr. Ambrose's name is a sufficient guarantee of their quality. Strong plants ready for delivery the first week in October.

DANDY, 21s.—A flower of fine form, good habit, and profuse bloomer; upper petals of a rich crimson maroon, suffused with carmine and broad white margin; under petals pure white, with a semicircle of rose crimson, the belting broad and regular.

MADAME ROSY, 21s.—A flower of fine form and substance, good habit, and free bloomer; upper petals of a rich crimson purple, with light margin; under petals pencilled with lilac, the throat pure white; a fine show flower.

EMINENT, 15s.—A plant of good habit, flowers of good substance, upper petals a rich purple-plum colour, lower petals light, with markings of the same colour.

BARBETTE, 10s. 6d.—This plant is of good robust habit, and free; upper petals white, with deep rose spots; lower petals spotted with bright cherry.

FIGARO, 10s. 6d.—Good robust grower, of close habit; a most profuse bloomer; upper petals very crimson; lower petals spotted with the same colour; a fine show flower.

DUCHESS OF SUTHERLAND, 10s. 6d.—A very great improvement on "Delicatum," being a more vigorous grower; upper petals a beautiful flesh colour, bloomed with deep cherry; under petals pure flesh colour; indispensable as a show plant.

Also the following, raised by Mr. Miller:—  
LADY HUME, 6s. 6d.—Upper petals crimson-white, edged with white; lower petals white, and rose-white centre; good form, free bloomer, fine habit.

LADY ALICE PEEL, 15s.—Upper petals rich mulberry, margined with lilac bottom petals, mottled with rich purple; pure white throat.

A Descriptive Priced Catalogue of all the established varieties may be had on application.—Royal Nursery, Slough.

THE PERPETUAL TREE VIOLET, or DOUBLE VIOLA ARBOREA.—The original grower of this, the true variety of the above beautiful Violet, now offers it to the public, and which has surpassed all others, and now stands without an equal for its size of flowers, fragrance, and perpetual blooming; and as a plant for the conservatory or greenhouse, nothing can equal it. Large plants, 6s. per dozen; smaller ditto, 3s.

DOUBLE WHITE TREE VIOLET.—This is also a fine variety, and resembles the other in many respects, with the exception of its colour. The stock of this is small, in consequence of the great demand for it last season; parties requiring plants should not delay their orders. 6s. per dozen.

THE RUSSIAN SUPERB VIOLET.—One of the finest of single Violets, large blooms, with long stems, and most delightful fragrance; will bloom well through the season if sheltered from the heavy rains and severe frosts during the dead of winter. Plants 3s. per dozen.

A METHOD of, on the best and most effectual mode of cultivating the VIOLET, post free for 12 stamps, or sent gratis with all orders above 5s.

DOUBLE GLOVE CARNATION.—A limited stock of fine plants of the above beautiful dark Glove-colour and fragrance unequalled. 2s. 6d. per pair.

PURE WHITE GLOVE CARNATION.—This is also a beautiful variety. 1s. 6d. per pair.

NEW GLOVE PRINCE OF WALES.—A very striking variety, unequalled in colour, being a bright vermilion. 2s. 6d. per pair.

GIANT SCARLET BROMPTON STOCK.—Plants can now be had; they have always given the greatest satisfaction; will bloom next spring. 6d. per dozen, or 4s. per 100.

SWEET WILLIAMS.—Also a fine stock, consisting of dozens of 50 distinct and splendid varieties. 6d. per dozen, or 4s. per 100.

SHEDDING ANTHRIMUS.—Saved from all the choicest, raised and spotted flowers. 1s. per dozen, or 7s. per 100.

One dozen of each of the Violets, one pair of each of the Glove Carnations, and one dozen of each of the Brompton Stocks and Sweet Williams, with the Treatise on the Violet, will be sent, postage and postage free, for 14.

STRAWBERRY PLANTS, of the following varieties, can still be obtained: Ajax, 2s. per 100. Rival, 2s.; Victoria, 5s.; Prince, 3s.; Eleanor, 3s.; British Queen, 3s.; Alice Maud, 3s.; Ruby, 3s.; Greenback Perpetual, 3s. hamper and package free.

These and any part of the above will be sent on receipt of Post Office order or penny postage stamps, which must accompany every order, when the Violets and Carnations will be sent by parcel and postage free, the other plants hamper and package free.

## EDWARD TILLY.

Nurseryman and Seedman, 11, Ashley Churchyard, Bath, Somerset.

## AZALEA INDICA—"BEAUTÉ DE L'EUROPE."

MESSRS. E. G. HENDERSON AND SON have to offer plants of the new Azalea named above, raised by Mons. Demarec, of Ghent, introduced by M. Mieliez, of Lisle, and by him forwarded to them for Exhibition at the National Floricultural Society of London in May of the current year, by which Society it was awarded a first class Certificate. A correct drawing taken at that time can be seen at the Nursery, the coloured plate received from the Continent being, in their opinion, exaggerated.—Different sized Plants at 10s. 6d., 15s., and 21s., with the usual discount to the trade.

E. G. H. & Son will also send out the following new Geraniums and Cinerarias:—  
FANCY GERANIUMS.—Constance, 21s.; Empress of France, 10s. 6d.; Illuminator, 10s. 6d.; Lady Hume Campbell, 15s.; Mary Howitt, 15s.; The Ocean Queen, 10s. 6d.

FIRST CLASS CINERARIAS.—Empress Eugénie, 10s. 6d.; Novelty, 10s. 6d.; Picturata, 10s. 6d.; Lord Stamford, 10s. 6d.

SECOND CLASS CINERARIAS.—Advance, 7s. 6d.; Estelle, 7s. 6d.; Etiole de Vaise, 7s. 6d.; Lablache, 7s. 6d.

## OR

The usual discount to the trade, and other advantages, if a set of the above Catalogues, containing many novelties in Gladioli and Ornamental Plants for Garden, are now ready, and will be forwarded post free on application.

Wellington Nursery, St. John's Wood, London.

## NOBLE SPECIMENS

## OF

## CONIFERÆ.

LUCOMBE, PINCE, AND CO. beg to call attention to their unrivalled Stock of the above, prices and sizes of which can be had on application to them.

Exeter Nursery, Exeter.

## BASS AND BROWN'S NEW AUTUMN CATALOGUE

is now complete. Copies supplied free for three penny stamps each. It contains a large number of the New Plants at reduced prices, comprising Geraniums and Cinerarias, of the best new varieties of October last, with almost all of the older varieties; Azalea Indica, 50 varieties of the choicest; the best new Fuchsias, Verbenas, and Petunias; new and select Stove and Greenhouse Plants; Plants selected for Winter and Early Flowering; Roses, in select collection, of about 300 best; new and select Hardy Shrubs and Climbers, Conifers; new and other best Chrysanthemums, Hollyhocks, Hardy Herbaceous and Rock Plants, collection of new Dwarf Rock Cistus, Choice Fruits, &c.

THE BULB and ROOT STOCK consists of Gladioli in upwards of 100 superb varieties, choice Ranunculuses, Anemones, superb collections of English, German, and other Iris, fine imported Dutch Hyacinths, Narcissus; Early, Double, and Late Tulips; Crocus, Lilies, Ixias, with a large collection of other roots.

The Catalogue also contains a list of a few SEEDS FOR AUTUMN SOWING, comprising Geranium, Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Hollyhock, &c., which have been carefully saved from our own superb collections, and can be highly recommended.

## CHRYSANTHEMUMS.

A large stock of strong bushy plants for flowering this autumn. 12 best new large flowering varieties of last season ... 12s. 6d.  
12 best new Lilliputian varieties of do. ... 12s. 6d.  
60 splendid varieties, including the above ... 40s. 6d.  
40 splendid varieties, 30s.; 25 do. ... 17s. 6d.

Our importation of Dutch Roots comprises collections of the best and most favourite sorts, and are very fine.

Goods (not under 20s.) Free to all the Stations in London; and with orders of 40s. and upwards, Plants and Roots gratis to compensate for long carriage.

BASS AND BROWN,

Seed and Horticultural Establishment, Sudbury, Suffolk.

## KNAP HILL NURSERY, WOKING, SURREY.

## WATERER AND GODFREY, Nephews and Successors to the late HOSIA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6, and 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.

Governiana, 2, 3 and 4 feet.

Funebris, 2 and 3 feet.

thyoides variegata, 2, 3, and 4 feet.

Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.

Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.

repandus, 3, 4, 5, to 8 feet.

Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.

Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.

Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.

Gold Striped, 1, 2, and 3 feet.

do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

elephantissima (new striped), standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.

Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5, and 7 feet; a few magnificent plants, 10 to 12 feet high.

insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.

canadensis (Hemlock Spruce), 3, 4, and 6 feet.

morinda, 3, 4, and 6 feet.

Menziesii, 3, 4, 6, and 8 feet.

cephalica, 3 to 4 feet.

Pinsapo, large and handsome, 3 and 4 feet.

Normaniann, from seed, 14 feet; a few larger, 2 feet.

nobilis, stout plants, with perfect heads, about 14 feet; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor vite, American, 3 to 6 feet. We recommend this plant for hedges.

Weymouthii, 3 to 6 feet, one of the few really hardy and most useful evergreens.

aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 14, 2, and 3 feet. This is a very distinct and beautiful plant of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large sizes. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

## BECK'S NEW PELARGONIUMS.

JOHN DOBSON begs to announce that he is now sending out, in 4-inch pots, strong and well-established Plants of the new and beautiful SEEDLING PELARGONIUMS raised at Worton Cottage. The success of Mr. Beck as a raiser of Seedlings, and the awards which the flowers have received, will be a sufficient guarantee that they are first-rate in every respect; they are quite distinct from anything out. A Catalogue, with full descriptions, may be had in exchange for one stamp.

Empress, vermilion, the finest variety ever offered, 42s.; Leah, 31s. 6d.; Neatness, 31s. 6d.; Picta, 15s.; Rebecca, 31s. 6d.; Marguata, 21s.; Eliza, 21s. The new varieties of last season may be had at greatly reduced prices.

J. D., having a very large and healthy stock of the following, in 3 and 4-inch pots, begs to offer them at the following low price; the plants require an immediate shift. Any 12 of the following (purchaser's own selection) for 42s.; hamper, package, and carriage to London included in this price:—Arethusa, Ariadne, Ambassador, Optimum, Basilisk, Exhibitor, Magnet, Enchantress, Eleanor, Spot, Zaria, Commander, Gertrude, Glowworm (new), Helen (new), Rosa, Astrea, Rubens, Lagoma, Leonora, Prince Arthur, Rachel, Leader, Shyluck, Painter Improved, and Virgin Queen. All Plants carefully packed, as noticed in the "National Almanac" for this year.—Woodlands Nursery, Isleworth.

## GEORGE SMITH begs to offer the following NEW PELARGONIUMS of 1852.

In Strong Plants, at 36s. per dozen, viz.:

FOSTER'S.—Optimum, National, Eleanor, Rachael.

HOYLE'S.—Astrea, Oscar, Leonora, Zaria, Lagoma, Portia, Basilisk, Amazon, Butterfly, Medora, Albira, Kulla, Novelty, Ringleader.

BECK'S.—Spot, Vulcan, Gertrude, Harriet, Pasha.

With all the leading varieties previously offered, at 18s. Both Show and Fancy Kinds.

NEW FUCHSIAS.—Glory, Banks's; Lady Franklin, Smith's; Duchess of Lancaster, Henderson's; and England's Glory, Harrison's, at 2s. 6d. each, in strong Plants; with all the new varieties of the last Spring, at 18s. per dozen.

NEW VERBENAS, 12s. per dozen. Fine strong Plants of the beautiful Ageratum variegatum, at 1s. 6d. each.

Tollington Nursery, Hornsey Road, Islington, London.

## FUCHSIA "DUKE OF WELLINGTON."

Flowers of this splendid Fuchsia may still be had on application, enclosing 9 postage stamps. It has already been seen and ordered by several of the most eminent Florists, and is admitted to be (in form) unrivalled.—J. MOORE & SON, Perry Barr Nursery, near Birmingham, Oct. 1.

## JUST IMPORTED, an Extensive Collection of

HYACINTHS, IRISES, ANEMONES, TULIPS, CROCUSES, JONQUILS, NARCISSI, GLADIOLI, &c., direct from Messrs. BEVOET, DE BOON, and other celebrated Florists in Haarlem, consisting of the most showy kinds in cultivation, and all at very moderate prices.

For particulars, apply to Messrs. SUTTON & SONS, Seed-growers, Reading, Berks.

## The Gardeners' Chronicle.

SATURDAY, OCTOBER 1, 1853.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, Oct. 6.—National Horticultural, 3 P.M.

In a previous Number (Sept. 10) we gave some statements calculated to direct attention to the powerful effects of SOLAR RADIATION, considered more especially in a dynamical point of view. We now return to the subject, convinced that it deserves further consideration, with reference to vegetation, than it has hitherto received. That solar radiation is of vast importance to the perfect ripening of crops, all will readily admit, but at the same time, every one must regret the want of precise data respecting its specific action on various kinds of plants, as well as the scarcity of statistics relative to the value of its effects, according to its degrees of intensity on the same kind of plant. We know that from having a large amount of solar radiation, all other circumstances being favourable, a rich and abundant harvest results. On the other hand, although the ground may be in good condition, with moisture sufficient, and even a fair average temperature, yet the crops prove unsubstantial if solar radiation has been intercepted. Grain and fruit crops may be bulky, but the quality attains, exceeds, or is below an average according to the greater or less amount of solar radiation which the plants receive during certain periods of their growth. As the intrinsic value of produce depends so much on the agency in question, the latter is certainly a fit subject for investigation. It is one on which the Comte DE GASPARIN has been making various experiments since 1840; and a very interesting communication upon it is given by him in the *Comptes Rendus* for June 1853.

The effects, he observes, of solar radiation on vegetation are so apparent and so well known, that no one doubts their importance. When one plants a Vine, he does not require scientific information to direct him in choosing a southern aspect; nor to plant fruit trees against a wall which receives and reverberates the rays of the sun; nor to place exotic plants under glass, which readily admits direct rays of heat and light, but through which obscure heat, or that derived from a heating apparatus in a hot-house, passes slowly, and thus an accumulation of heat takes place; practical men do all these things as a matter of course.

But there are many other effects resulting from the same cause, which do not come so directly under our senses.

The Olive is unproductive at Agen, with a mean temperature of 57° F., and fertile in Dalmatia,



with  $55\frac{1}{2}^{\circ}$ ; the limit of the Vine is arrested by  $54^{\circ}$  mean temperature on the banks of the Loire, but Grapes ripen where the mean temperature is only  $50^{\circ}$  on the Rhine; the harvest near London is matured with a mean summer temperature of  $62^{\circ}$ , and in the same time at Upsal with  $59^{\circ}$ . When we take these phenomena into consideration, we must conclude that they depend upon the presence or absence of that important element of heat, solar radiation, by which the temperature of opaque bodies is raised above that which they could receive from the diffused heat of the atmosphere.

When we also know that the absorption and assimilation of carbon, the substance of which about half the mass of plants is composed, does not take place except under the influence of light, and is proportionate to its intensity, we feel assured that the determination of its effects must prove interesting to cultivators.

Under this impression, the Comte de GASPARIUS has made various experiments. In 1840 he communicated some observations on three Mulberry trees, of the same variety. One of these was fully exposed to the rays of the sun; the second only till noon; and the third was wholly in the shade. The solid matter of the leaves of the first was 45 per cent. of their weight; that of the second, 36 per cent.; whilst that of the third was only 27 per cent.

In 1852 he cultivated some Broad-Beans on a plot of ground divided into two equal parts by a partition which shaded one-half the ground from the rays of the sun. After being dried, the plants grown on the south side weighed 21 ounces; but those grown on the north side, although much taller, weighed only 12 ounces. The difference in their fructification was, however, still more remarkable. The plants on the south side had 131 pods; those on the north only 47.

It is impossible to attribute these results to the simple augmentation of heat. The plants in the above experiment had a mean atmospheric temperature of  $59\frac{1}{2}^{\circ}$  F.A.H. for 84 days, and  $5\frac{1}{2}^{\circ}$  was the average daily amount of solar radiation. Certainly an additional  $5\frac{1}{2}^{\circ}$  of obscure heat would not produce such results.

As regards horticulture and agriculture, it would be desirable to know, not only the quantity of solar heat which strikes upon opaque bodies, but also the quantity accumulated in them; in short, the variable temperature of these bodies exposed to the sun during different days of the year, and in different hours of the day. But when we see the difference of effects produced by solar radiation on opaque bodies submitted to its action according to their nature, volume, form, and colour, we can scarcely hope to find means of generally indicating that which takes place in the various parts of the vegetable kingdom. Thus the ears of Wheat, exposed to the rays of the sun, acquire a different temperature from that of the berries of the Grape, or from that of a Melon; leaves acquire a different temperature from that of stems; dry and lifeless parts are heated quite differently from living bodies, the surfaces of which are constantly transpiring, so that their heat, in consequence, very little exceeds that of the surrounding air. Such being the case, it becomes necessary to choose a body of a certain size, form, and colour, and to observe the effects produced upon it by solar radiation. Horticulturists and agriculturists would then have a standard with which they could compare the development of different plants; and thus solar radiation, with regard to its peculiar action, might be distinctly introduced in the study of vegetable phenomena.

We are aware that thermometers placed in the sun's rays do not uniformly indicate the force of solar radiation. Any number of thermometers may agree very well as regards their indications in the shade; but place them in the sun and they generally all differ, according to their composition and the size of their bulbs. The surface of the ground is also objectionable, for the sun's rays, striking obliquely, acts according to the sine of the angle of incidence. After trying various instruments for receiving and measuring the intensity of the sun's rays, the following has been adopted by the Count de GASPARIUS:—A sphere of thin copper, 10 centimètres (3.937 inches) in diameter, and weighing about  $3\frac{1}{2}$  ounces, with an opening at top in which a thermometer is introduced, and secured so that its bulb may be in the centre of the sphere. The opening is then luted with gum-lac or wax. This sphere, supported so as not to be upset by the wind, placed away from the radiation of surrounding bodies, and, if possible, on an isolated post, is painted with two coats of lampblack applied with a drying oil. R. T.

In another column will be found a communication from our old and valued correspondent, Mr. FORTUNE. It was despatched from the Temple of Tein-tung,

near Ningpo, on the 20th of June. He was at that time quite well, and in the midst of the important duties entrusted to him by the East India Company. He had seen nothing of the Chinese insurrection.

When Mr. FORTUNE returned to India he took with him, at the suggestion of Dr. ROYLE, some plants of Cinchona Calisaya, the most valuable of all the species for medical use. These were obtained from the Horticultural Society and the Royal Botanic Garden at Kew, in which establishments the plants had been raised from seeds brought from Peru by Dr. WEDDELL. The more interest attached to this experiment in consequence of India being incapable of furnishing any good equivalent for Jesuits' Bark and Quinine, medicines indispensable in tropical countries. We therefore announce with very great satisfaction that the plants reached Calcutta in perfect order, and are now growing vigorously in the celebrated Botanic Garden there. So that, in a few years, our eastern empire will be independent of foreign countries for the most precious drug yielded by Spanish America.

#### CULTIVATION OF LETTUCES AT PARIS.

As the French excel in producing fine Lettuces, more especially in winter, the following details of their mode of culture, by M. Courtois-Gérard, may at this time prove useful.

**SPRING LETTUCES.**—The varieties of these cultivated in the market gardens of Paris are the Crêpe or Petite Noire, La Gotte, and La George.

**Laitue Petite Noire** (small, very white, hearting quickly, seeds black).—The first sowing of this is made in the beginning of September. After having dug a piece of ground it is harrowed and raked, then a layer of vegetable mould is spread over it to the depth of about an inch, and it is trodden lightly. The bed having been prepared in this manner, the place to be occupied by each bell-glass (cloche) is marked out by pressing one slightly into the ground, so as to leave an impression. The Lettuces are sown where the bell-glasses are to be placed; and after sowing, the seeds are covered with some sifted vegetable mould; the bell-glasses are next put on, taking care at the same time that their edges penetrate some distance into the soil in order to prevent evaporation. When there is sun, we shade with long litter, but no air is given. When the plant is fit for pricking out, that is when the cotyledons are well developed, and the first leaves begin to make their appearance, a sloping bed or ridge is formed; it is covered with about an inch of vegetable mould, and three rows of glasses are placed along it. The first row is placed with a line, the two others in quincunx; then the plants are carefully lifted in such a way as not to break the roots, and 30 Lettuces are planted under each bell-glass. In planting, the finger is used instead of a dibber. Immediately after this operation is performed the bell-glasses are put on, and the Lettuces are raised without ever giving them any air.

In the beginning or middle of October a fresh sloping border is prepared on which three rows of bell-glasses are placed; the plant is lifted with a ball, and four Lettuces are planted under each glass, care being taken that they are at a sufficient distance from the glass that their leaves may not be scorched by the sun or rotted by the moisture. If frost come on in the nights the bell-glasses are covered with straw mats; and we take away everything that is likely to produce damp. These Lettuces are fit for use at the end of November or in the beginning of December. Besides planting under bell-glasses we may do so in frames. At the period first mentioned, we place frames in a good aspect, and fill them up so that the Lettuces may be as near the glass as possible. After this we plant seven rows in each frame, and 25 plants in a row. If frosts come on at right the frames are covered with straw mats, and, as before said, everything likely to produce moisture is removed. In the first fortnight in October a succession is sown under bell-glasses on a sloping border. In the second fortnight of the same month a fresh sloping border is prepared, and in the beginning of November—in fact, when the plants are sufficiently strong—they are pricked out the same way as previously detailed. When frosts come on a lining of dung is made behind the sloping bed; the bell-glasses are surrounded with very dry dung, the quantity of which is increased according to the intensity of the cold, and the whole is covered over with straw mats. We uncover when there is sun, but must first assure ourselves that the plants have not suffered from the frost; for, if that be the case, instead of uncovering, we must increase the protection, and let the plants thaw gradually. This planting, if properly attended to, will serve for all successions from the end of November till February. In the second fortnight in November a hot-bed, 16 inches in thickness, is prepared, the heat of which should be from  $54^{\circ}$  to  $59^{\circ}$ ; it is covered with vegetable-mould very evenly spread, and seven rows of Lettuces, 25 in the row, are planted in each frame. After planting, the Lettuces are frequently looked over and all leaves injured by moisture are removed; it is a very common custom to take off two or three of the lowest leaves when the plant begins to heart, an operation that is never performed except on Lettuces, planted at this time of the year. In frosty weather the sashes are covered with straw mats at night; and if the frost becomes severe the frames are surrounded with a lining of dung; the trenches are

filled as high as the sashes with dry dung, and double mats are put on, but these are taken off whenever the temperature will allow of doing so. These Lettuces are fit for use in the course of the month of January.

In January or February, according as the weather will permit, we make the last planting. Beds 13 inches thick and 4 feet 4 inches in breadth are prepared. They are covered 4 inches thick with vegetable mould, and four rows of bell-glasses are placed, then four of these Cabbage Lettuces, and one Cos Lettuce in the centre, are planted under each bell-glass. The glasses are covered at night with straw mats, and the Cabbage Lettuces are fit for use in February or March.

**Laitue gotte** (larger than the *Petite noire*, and of a darker green).—Two varieties of this are cultivated, the one having white seeds the other black. It is sown in the second fortnight in October, under bell-glasses, on a sloping border. It is pricked out in the first fortnight in November, and when the young plant begins to vegetate, a little air is given by lifting up the glasses about an inch from the ground on the side sheltered from the wind. At the end of a few days this distance is increased, weather permitting. In order to render the plants hardy, the glasses must not be put down except when there is four or five degrees of frost. When the cold increases, a lining of dung is raised behind the bed, the glasses are surrounded with very dry dung, the quantity of which is increased according to the intensity of the cold, and the whole is covered up with straw mats. Lastly, all that we have said respecting the *Laitue petite noire* is observed in this case also.

About the end of January, or the beginning of February, the Lettuces are planted under glasses or in frames.

1. Under Bell-glasses.—Hot-beds, 13 inches thick and 4 feet 4 inches broad, are prepared. The beds are covered with vegetable mould to the depth of 4 inches. Three rows of bell glasses are placed, and three Lettuces planted under each glass. At night the glasses are covered up with straw mats, and air is given whenever the temperature will permit.

2. Under Frames.—The *Laitue gotte* is planted after the *Laitue petite noire* is cut. It is not necessary to renew the beds, the mould only is turned, then six rows, of 15 in a row, and planted in the same way as those under bell-glasses. The sashes are covered up with straw mats at night, and we give air whenever we can do so with safety. These Lettuces, planted about the end of January, are fit for cutting in the end of March. Those planted in February are ready at the beginning of April.

**Laitue George.**—(A sub-variety of the preceding, but larger; seeds white.) This is sown in the first fortnight in November under bell-glasses, on a sloping border. It is then treated exactly as the *Laitue gotte*. The first succession is planted in February, under bell-glasses on hot-beds, after the season of the *Laitue petite noire* is over; they are treated in the same way as the *Laitue gotte* with respect to frost, and air is given whenever the temperature will permit. These Lettuces are usually ready for use about the end of March.

This Lettuce may also be planted in March, in the open ground, with a good aspect. Some time before planting out plenty of air is given when the weather will permit, in order to render the plants hardy; then in the course of March they are planted out in a border with a good aspect, and are fit for use some time in May.

**SUMMER LETTUCES.**—The Lettuces cultivated at this season in the market gardens of Paris are the *Palatine* or *rouge*, and the *Grosse Brune Faresseuse*, known to the market gardeners under the name of *Grise*.

**Laitue Palatine or Rouge.**—Leaves smooth, reddish coloured; heart middle sized; seeds black. This Lettuce is sown in the second fortnight of October under bell-glasses on a sloping border or side of a ridge, and treated in nearly every respect like the *Laitue gotte*. As much air is given as possible, and when the weather is favourable the bell-glasses are lifted off during the day, in order to render the plants as hardy as possible. In the course of March the first crop is planted on a border having a good aspect, and about the end of March, or beginning of April, we plant in the open ground. After having forked and harrowed the ground, a good layer of vegetable mould is spread, and 10 or 11 rows are marked out in each bed; the Lettuces are then planted at the distance of about 14 inches in the row. As soon as the planting is completed we water the young plants, if the weather is mild, and this we continue to do whenever it is necessary. These Lettuces are ready about the end of May.

**Laitue Grise.**—Leaves greyish, spotted with pale brown; heart very large; reddish at the top, very slow in forming; seeds black. About the end of February or beginning of March a first crop is sown in hot-beds, and when the plants are sufficiently strong they are planted out in the open ground at once. Before planting, a good mulching of littery dung is spread over the ground; then nine or ten rows are marked out in each bed; after this the plants are pricked out at the distance of about 16 inches in the row. During the hot weather they are frequently watered, in order that we may always have tender Lettuces at the above period. Successions may be sown until July, but these sowings must be made in some shaded place.

**Laitue à couper.**—We may have this Lettuce nearly all the year round. It is sown promiscuously among Cabbages, Radishes, Carrots, or Onions, from March till November, and is a kind of small salad.

**Cos LETTUCES.**—Of these, three varieties are cultivated viz., the *verte hâtive*, *blonde*, and *grise maraichère*.



*Romaine verte hâtive*.—Heart largish and full; leaves yellowish green, pointed at the extremities; seeds white. It is sown in the first fortnight in October in the open ground, or under bell-glasses on a sloping border. The plants are pricked out under bell-glasses; it is usual to plant 24 or 30 under each glass, and they get air whenever the weather will allow. As it frequently happens that the plants run up too much, notwithstanding the care that is taken to give them plenty of air, they are in this case taken up in November, and immediately replaced. A new sloping border is prepared, and then only 18 or 20 are planted under each bell-glass; from this time they are treated in the same way as Cabbage-Lettuces sown at that time. About the end of December or beginning of January we begin to plant in frames or under bell-glasses. In frames, eight rows of 25 in a row are planted, every other plant being a Cabbage Lettuce. Under bell-glasses one Cos and four Cabbage Lettuces are planted.

The Cos Lettuces thus treated are fit to cut in the beginning of February. After these are removed a second planting is made on the same bed, and about the end of February, or beginning of March, when there is no danger of severe frosts, a Cos Lettuce is planted between each bell-glass. As soon as all the Lettuces under the glasses are cut, the latter are put over the second planting, and in this way it may be fit for use about three weeks afterwards. At the same period the borders are planted with Cos Lettuces; 10 or 12 rows are marked out according to the breadth of the border, and the distance between each plant in the row is about 14 inches. Immediately after planting some Radishes, Leeks or Carrots are sown among the Lettuces. When the weather is mild we give water when it is requisite. These Lettuces are usually fit for use about the end of April or beginning of May.

*Romaine blonde*.—Leaves yellowish green, somewhat incurved at the top; heart large and full; seeds white. *Romaine grise* resembles the preceding, but it is of a darker green; seeds white.

These two varieties are sown in the second fortnight in October; the young plants are treated as in the case of the *Laitue gotte*. In the first two weeks in May these sorts of Lettuces are planted among Cauliflowers, or in beds sown with Sorrel, Parsley, Radishes, &c.; they are watered when necessary; and, when the weather is favourable, they may be fit for use about the end of May. At a later period they are treated in precisely the same way as the *Laitue grise*. Although, strictly speaking, the *Romaines maraichères* do not require tying up, still it is customary to do so, in order that they may heart better, and blanch more readily. This operation should only be performed in dry weather, and from that time the plants should be watered in the morning or evening, for if they get water when the sun is out the leaves are apt to rot.

#### BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Continued from page 613.)

On the Origin and Composition of a Mineral called Rotten-stone; by Prof. JOHNSTON.—After having stated the district—the Great Fin, Derbyshire—in which the mineral was found, the Professor went on to describe its chemical character and affinity. He observed that its component parts were not of a constant character, as had been asserted in some mineralogical works. Its origin was stated by Phillips to be from the decomposition of the slate rocks of Derbyshire. When examined under the microscope it did not exhibit any organisms, but there were particles or bundles of some substance resembling the bituminous substances found near Castleford. Rotten-stone was found in lumps of all shapes and sizes, at depths varying from 2 to 6 feet below the surface of the earth. It was his (the Professor's) opinion that the rotten-stone was not the result of the decomposition of the shale of Derbyshire, but of the veins of black marble of the country, which had undergone a great change. In proof of this assertion, he produced specimens which he found to be black marble, with the merest coating of rotten-stone on them, whilst others were half rotten-stone and half black marble. The decomposition had been effected by dissolving the lime out of the rock, and not the rotting of the strata. This substance can be produced by dissolving the lime out of the limestone, by bringing weak acids to bear upon it. This proved that there must necessarily exist in the soil some acid which dissolves the lime with which it comes in contact. Farmers would, therefore, see the necessity of adding lime to their land from time to time, because the lime kept continually washing away by the waters of heaven falling on it and extracting from the rotten roots of the earth an acid, which had a powerful effect, not only on lime but on other mineralogical structures as well. Prof. Johnston then, at considerable length, entered upon a disquisition of the subject of the recent discovery of the greenstone rocks and the phosphoric acid which abounded in some districts.—Dr. Daubeny thought the Professor's opinion as to the origin of rotten-stone and the cause of the decomposition of the limestone, was highly correct. He thought the phosphoric acid was owing to the action of carbonic acid gas, generated in the earth, upon the lime of animal substances.—Mr. C. Varley was of opinion that the various animals feeding in the districts in which the phosphoric acid was found, took it into their bodies in their food, and as they could not exist without phosphorus, they retained a certain portion and evacuated the rest. Mr. H. S. Blundell said, attempts without

end had been made to obtain rotten-stone equal to the natural production, but they had proved entirely abortive. He always understood rotten-stone to be an aluminous substance, and not one of the nature of black marble, but he thought rotten-stone had now been proved to be owing to the decomposition of the limestone.—Prof. Johnston said, thousands of gallons of muriatic acid rolled yearly down the Tyne, and no doubt it could be turned to good account in manufacturing rotten-stone from marble, which might be procured from Derbyshire.—Mr. Blundell said, that in the event of such an establishment he would support it heartily.

SECTION D.—ZOOLOGY AND BOTANY, INCLUDING PHYSIOLOGY.—Notice of the Reproduction of the Lower Extremities in a Warm-blooded Animal, by Mr. ALLIS.—The case was that of a common song thrush. In November, 1851, it moulted, and had every appearance of dying; was reduced to a skeleton and unable to walk; it lay on its back for six weeks, being fed by hand with raw beef, and occasionally with beef-tea and biscuit. Early in 1852 an unusual protuberance appeared at the bottom and in front of the tibia above the ankle joint; from these protuberances perfect tarsi and toes were developed, which came to maturity in about three weeks; this annoyed the bird greatly, and he destroyed the newly-formed members with his beak and by friction on the perch. He moulted again in September, 1852, and in November he lost his original tarsi, and new ones were produced; in January last fresh tarsi were again produced; these displaced those formed in November from articulation with the tibia, and the displaced tarsi are now visibly located on the upper edge of those produced in January last, which latter differed greatly from the normal form, being larger and flatter, and bearing a resemblance to the tarsi of aquatic birds; they have feeble though perfectly developed toes, which are sufficient for the purpose of locomotion, and to enable the bird to perch. The living bird, showing the one pair of tarsi overlying those subsequently produced, was exhibited to the section by Mr. R. Cook, of York, its owner.—Mr. A. Strickland referred to an instance of additional feet growing from the fetlocks of a mare.—Professor Allman referred to the well-known fact of persons with supernumerary fingers as analogous to this case.—Dr. Redfern regarded the production not as an extra limb, but as a substitute for one that was lost.—Dr. Lankester pointed out the fact of its occurring after a diseased condition as placing the feet in quite a different relation to the cases related—which were congenital, and not a new or acquired organic action.

(To be continued.)

#### MANAGEMENT OF CIDER APPLE TREES.

(Continued from page 596.)

Rearing the Plants in the Nursery.—After having been planted in the nursery two or three years, the young trees should be about the thickness of one's finger. If it is intended to graft them low, it is now time to clear the stems to the height of from 8 inches to a foot above the ground, in order to prepare a place for the graft. If, on the contrary, we wish to graft them standard high, we should, in the second year after planting, encourage the upward growth of those plants that are inclined to grow straight, by pinching the young shoots on the sides of the tree, in order to drive the sap into the terminal shoot. With regard to those plants the stems of which have taken an improper direction, and which cannot be remedied by means of a rod or guide, they must be cut down, in order to obtain a straight vigorous shoot.

Before the plants acquire sufficient thickness for cutting down, that of the finger for example, they will probably have to stand two or three years in the nursery. The cut should be made nearly close to the ground with a slope facing the north. This cutting down should take place after the frosts are over and before the recommencement of vegetation; that is to say, in February or March. The plants thus cut down produce several shoots in the spring. From these we must select the straightest and strongest one to form the stem. The others should be cut off if the stock is strong; but they should be merely pinched if it is necessary to render it more vigorous. If the shoot retained to form the stem is very vigorous it will push out laterals; these must be pinched when they attain the length of from 8 to 12 inches.

The training of the stem is the same whether the plants have been grafted low or otherwise; we should endeavour to keep the stem straight and to increase its thickness. A young stem may cease to grow upright because its young terminal shoot may have been cut by a kind of coleopterous insect; or canker having been formed we may have been obliged to cut down to a lateral bud. In this case the leading shoot being the product of an eye or bud situated on the side of the stem, generally grows obliquely upwards, which would form a crooked stem if preventive means were not employed. The leading shoot is therefore straightened by means of a rod or guide, or more expeditiously by twisting round its base another shoot growing in an opposite direction. The shoots which grow on the young stem should be preserved until it has attained a sufficient size to be grafted; but these shoots must not be allowed to grow too large; they are therefore shortened to 8 inches or a foot by pinching in May or in the beginning of June, or a little later, by twisting, or by breaking them off at the end of the following winter if they have grown too large, not having been checked by pinching or twisting at the proper time. The breaking is performed at 6 or

7 inches from the stem; this is closer than the other operations above mentioned, in order not to obstruct the passage between the rows. It should take place both on the shoots that have been pinched the preceding spring to 10 or 12 inches in length, and also on those shoots which were twisted.

These shortened shoots and branches cause an increase in the thickness of the stem by supplying it with the descending sap elaborated in their leaves; therefore their presence is of great importance, at least until the stem is sufficiently strong to be grafted at standard height, or to have its head formed if it has been grafted low.

But the removal of these stubs, which should take place at the end of winter, should not be effected at one time, as by so doing there would be too many wounds to heal over in one year.

For this reason only partial removals must be annually made for the first two or three years. During that time only the strongest shoots, the largest stubs, and those which are too near each other should be cut off. At a later period the base of the tree, and successively the whole of the stem, is cleared. The manner of taking off the stubs, or shortened shoots, is not a matter of indifference. It is bad to cut them off even with the stem, because that makes a larger wound than is necessary, and also one that heals slowly and with difficulty, thus injuring the vigour of the tree, and causing a greater absorption of sap. These productions, like all shoot and branches which are to be removed, ought to be cut from below upwards, immediately above the swelling or circular wrinkles or rings of the bark at the base of the shoots intended to be cut off. This causes a slight projection of about a tenth of an inch beyond the surface of the stem; but by this proceeding a smaller wound is made, and the wrinkle preserved around it greatly contributes to the speedy healing of the wound, as there is more cambium there than in the smooth parts of the bark.

Culture of the Soil of the Nursery.—After planting, the ground should be dug or forked as soon as the state of the weather and of the ground will permit, in order to render it more permeable to the air and heat, and also to renew the surface and destroy weeds. This is the only deep stirring that can be given without danger to the roots, which, even in this operation, must not be disturbed. Deep digging or stirring is more especially beneficial in clayey or compact soils.

During the summer of this, and of every following year, the ground should get one or two shallow diggings, and a deeper one at the beginning of winter, so that the frost may mellow the ground. It should also be hoed several times to destroy weeds and to keep its surface loose. This is all the culture necessary for Apple trees. But in localities where old thatch or straw, leaves of trees, Fern, Colza husks, or similar substances, are easily procured, it is very advantageous to cover the soil of the nursery with them to the depth of 3 or 4 inches.

This mulching saves labour by preventing the growth of weeds. It also keeps the ground cool, prevents its surface from hardening and cracking, and improves it by converting it into a mould which encourages the formation of roots. In light and stony soils, and in those exposed to a strong sun, mulching is more especially advantageous. In clayey land, with a compact subsoil, it proves injurious by keeping the ground too moist. There is, however, a drawback attending the use of mulching, especially in Apple nurseries, which we must point out; at the same time we will show how it may be completely remedied.

As a thick, close covering prevents the ground about the foot of the trees from freezing, it frequently happens in long and severe winters that field-mice, not finding any other means of subsistence, take advantage of that circumstance to gnaw the part of the bark that is beneath the mulching. To prevent this, it is sufficient to lay bare the earth at the bottom of the trees, collecting the covering in a narrow ridge in the midst of the space between the rows. This operation performed when the hard frosts come on exposes the eggs and larvæ of insects, which the cold partly destroys. After the winter is past, the mulching is again spread over the whole surface of the ground.

Forming the Head of Young Trees.—The stems of Apple trees grafted near the ground are stopped at the height of from 6½ to 7½ feet, in order to develop the principal branches of the head. Trees which have been grafted high should also be stopped at the same height.

Four or five shoots are enough to commence the head. They are so chosen as to be at equal distances all round the stem. A greater number of shoots or branches would be too many; excess would eventually occasion injurious amputations to be made. We may also form the head of a standard from only two or three shoots, taking care to shorten them at the end of the following winter, on two lateral buds, each of which will produce a young shoot. In this way from four to six young shoots will be regularly placed at from 12 to 16 inches from the stem, and the head of the tree will in this way be properly commenced.

The following year the growth of the leading shoots is promoted by pinching the laterals at 4 or 5 inches from their base, the young lateral shoots thus shortened become spurs, and in a few years produce fruit. We do not allow further ramifications of the leading branches until a later period, when it is necessary to furnish completely the head of the tree.

(To be continued.)



## Home Correspondence.

**Red Hamburgh Grapes.**—I have charge of a good Grape house, in which there are six Hamburgh Vines that were planted for the black sort. But I find that those which were black last year are red or ill-coloured this season, and that those which were red or badly coloured last year are black this. In both seasons, however, the badly coloured Grapes have been highly extolled for their richness of flavour, and said to be far superior to the black well coloured ones; and even the produce of another house in the same range, where the bunches all colour to a jet black, is said not to be so rich or high in flavour as the red or badly coloured Grapes, which consist of very large fine berries, measuring 4 inches in circumference, and the crop is very heavy. Every rafter has two Vines on it; one with the roots outside, and the other with them inside, which I find makes no difference either as to their bearing or colouring. Now, what I wish to know is, whether or not it is a common thing for Black Grapes to become discoloured every second year as mine have done. There are in the same house Muscat of Alexandria, white, black, and Grizzly Frontignans, Black Palestine and Black Prince, all of which bear amazing crops. J. J. T.

**Swallow Pear.**—In the West of England there is sold in the markets a berry, on a long stalk, of the size and shape of the Service Berry, but brown, and which is eaten when rotten, like the Medlar. It is there called the Swallow Pear. Can you inform me on what tree it grows, and where I could procure some of them? E. W. C.

**Potato Disease and its Prevention.**—On the 19th of last month (August), observing symptoms of disease, I tried the following experiment in my garden, with four consecutive rows of second early Potatoes. The first row was left untouched; the second had all the tops cut off close to the ground; the third had the tops cut off in the same manner as the second row, but was earthed over with 3 or 4 inches of nice mellow soil; the fourth had the tops cut off in the same manner as the second and third rows, but was covered with a thin sprinkling of quicklime in a pulverised state. On taking up the crop on the 17th inst., the experiment having been tried for a month and a day, the result was as follows: The first row with the tops uncut produced (I give you the exact numbers) 131 Potatoes, 31 of which were diseased; the second, with the tops cut off, 147 Potatoes, 12 of which were diseased; the third, with the covering of earth, 130 Potatoes, of which number 8 were diseased; and the fourth, which was covered with lime, 118 fine Potatoes, only 1 of which was diseased, and this might have been affected before the experiment was tried. It may perhaps be worthy of remark, that the best sample of Potatoes was from the row covered with lime, and the worst from the row with the tops cut and not covered with anything, the former being of good average size, the latter very small. I only regret that the experiment was tried on so small a scale. As to the efficacy of the lime, however, in counteracting the effects of the disease, proceed it from whatever cause it may, I have not the slightest doubt, and it would be well for gardeners and farmers to make a trial of it. About 3 bushels would suffice for a statute acre. A Turnip drill, in the absence of a more convenient husbandry implement, would apply the lime, and should the effect not be so satisfactory as I anticipate, when tried on a larger scale, the succeeding crop, at all events, would be no worse for the experiment. Robert Pickshall, Mint House, Kendal, Sept. 19.

**Variegated Plants.**—In your paper of the 17th ult., p. 597, I find an instance of marginal variegation (sporting), to which I beg to add the following. In the case of a large plant of Geranium Commander-in-Chief, and one of Flower of the Day, growing in the same clump, a branch of the former became variegated; the foliage being exactly similar to that of the latter. While the latter, which is a variegated-leaved Geranium, also has a branch of the former. I have rooted the cuttings, and they still retain their character. Last year I had a plant of Flower of the Day, which sent out a shoot, the foliage of which resembled in every respect Conway's Royalist Geranium. I cannot agree with your French correspondent that marginal variegations are permanent. My employer purchased, about a year ago, a plant of Coronilla coronata, about 6 feet high; at that time it was variegated from top to bottom; but this summer, one-half only is variegated, while the other half is covered with foliage entirely green. R. Miles, Kingsdown, Bristol.

**Cure for Vine Mildew.**—I have been informed that the following solution is an effectual remedy for Vine mildew; I therefore trust that some of your correspondents will try it and publish the result. It is reported to be more efficacious than sulphur, easier applied, and does not leave any stain on the fruit. It consists of 1 oz. sulphate of potash, 1 oz. nitre, dissolved in 4 gallons of water, and applied with the syringe. W. Foster, Stroud.—The leaves on a cane of a Red Hamburgh assuming the appearance of the Potato disease, I removed every one of them, and for about a fortnight every suspected leaf was detached: the blight was checked, but the fruit was not large, as the atmosphere was kept dry—this occurred in the spring of 1852; this year, in April, the same Vine, under the same side of the rafter, but a new cane, became again diseased. Alarmed at the repetition, and ignorant of the cause, I sent specimens to the *Gardeners' Chronicle*, and was informed that it was the fatal mildew; my

treatment having been successful last year I pursued the same this season, and with equal success. Anne.

**Late-growing Douglas Fir.**—Will some one of your readers kindly inform me whether there is any and what remedy for an Abies Douglasi, which has quite lately made fresh shoots of 3 inches long at its leader, after having made a growth of more than 30 inches during the summer. It stands on a high point of land looking west, slightly sheltered by small Scotch Fir, quite 900 feet above the sea, in a cold district. The plant is now about 6 feet high. L. L. L.

**The Holly Tree.**—You doubtless have read the pleasing lines of poetry by the late laureate, Southey, on the Holly tree. In those lines there is a peculiarity in the tree pointed out, and dwelt upon as one of the provisions of an all-wise Providence, which we have so frequently occasion to admire in the vegetable, as well as animal kingdom; the truth of which, however, in this case I have always doubted. A friend, in the course of this summer, having called my attention to this peculiarity in the tree, I expressed to him my doubts as to its truth; but not being able quite to convince him, I am desirous of hearing the opinion of your readers on the point. The lines, no doubt well-known to many, commence as follows:—

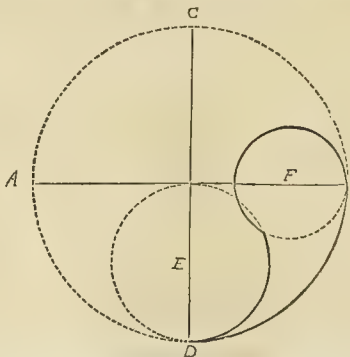
"O reader, hast thou ever stood to see  
The Holly tree?  
He that contemplates it perceives  
Its glossy leaves,  
Order'd by an Intelligence so wise,  
As might confound the Atheist's sophistries.  
Below a circling fence, its leaves are seen,  
Wrinkled and keen;  
No grazing cattle through their prickly round  
Can reach to wound;  
But as they grow, where nothing is to fear,  
Smooth and unarm'd the pointless leaves appear.  
I love to view these things with curious eye,  
And moralise;  
And in this wisdom of the Holly tree  
Can emblems see,  
Wherewith perhaps to make a pleasing rhyme;  
One which may profit in the after time."

Now in my observations on the Holly, I have always been led to consider the tendency in the leaves to grow smooth, as merely the result of advanced age (in the tree); and accordingly my opinion is that the real peculiarity is expressed in the following very pleasing stanza, which occurs afterwards in the piece of Southey's poetry from which I have already quoted:—

"And though my youth, as youth is apt, I know,  
Some harshness show,  
All these asperities I day by day  
Would wear away,  
Till the smooth temper of my age should be  
Like the high (ag'd) leaves upon the Holly tree."

## A Country Clergyman.

**How to Draw a Geometrical Pear.**—Having seen, at p. 534, instructions for drawing an ellipse, I now send a plan for drawing a geometrical Pear-shaped figure, which is as follows:—First, describe a circle as in the accompanying sketch, then draw the two diameters,



$AB$  and  $CD$ ; next describe the circle whose centre is  $E$ , on the line  $CD$ ; then draw the other circle the centre of which is  $F$ , on the line  $AB$ . The radius of the circle  $E$  must be one-fourth of the line  $CD$ , and the radius of the circle  $F$  one-sixth of the line  $AB$ , which will give the geometrical figure required. W. Moore, Carhead Gardens, Yorkshire.

**Bats in Churches.**—The parish clerk of our church—a very large and ancient one—who has had charge of it more than 40 years, and is well acquainted with the nuisances which bats occasion, says, that the church was never more free from them than at the present time; and this freedom he attributes to the presence of that useful creature the barn owl, the feathers of which he frequently finds in the church, and which doubtless makes the bats its prey. Cartmel.

**Oak Disease.**—A disease of which I send specimens has attacked a great many of the Oaks in this neighbourhood. The first symptoms of it are shown by the leaves turning brown, and in a few days the shoot drying up, the least gust of wind separating it from the main branch; and to so great an extent has this disease prevailed in some trees, that one-fourth of the shoots are dying. I should feel obliged if any of your correspondents can furnish me with information as to the cause of the evil, or whether or not it is general. C. Booth, Belmont, Barnet.

**Edgings for Garden Walks.**—My attention has been directed to the *Chronicle* of Sept. 17, where in answer to a correspondent, it is stated that "Hogg's edging tiles do not stand," and where a comparison is drawn between them and what are called "Adamson's edgings,"

the superiority being accorded to the latter. As the statement there made evidently conveys the impression, that the material of which my edgings are composed does not withstand the action of the atmosphere, I beg most distinctly and unreservedly to say that the opinion therein expressed is incorrect, and calculated to mislead the public. The material of which they are made does "stand;" but the construction of the original pattern was such that some of the tiles cracked in drying, and in winter the frost rent those which were cracked, and those only. That pattern has ever since last spring been abandoned, and those which are now being made are according to a newly registered design, wherein all such casualties will be obviated. Robert Hogg. [Of what does Mr. Hogg complain? Of the truth? The tiles he supplied to the Horticultural Society were much injured by the frost of last winter; and he admits that it was so elsewhere. Does he imagine that we suppress facts to suit the private interests of projectors? We have struck out of his letter a very gratuitous attack upon a third party. We do not choose to allow a modest and deserving young man to be injured by statements wholly uncalled for by anything that has appeared in these columns.]

**Rafters.**—Perhaps some of your correspondents will say what is the comparative merit, as to durability, of Larch poles and Pine balk from America, as rafters; the former fallen in season and deprived of its bark for use. \*\*\* [We suppose there can be no question about the superiority of Larch.]

**Striking Cuttings.**—A friend of mine has struck all his bedding plants, such as Geraniums, Cupheas, Salvias, Petunias, and many others in pots placed on ashes in a cold frame entirely exposed to the sun, neither shaded or covered with glass. I have, on the contrary, placed mine in a cold frame, carefully shaded (when necessary) and kept close till I thought roots were formed. My cuttings look wretched, whilst his look vigorous. How is this? I thought that in striking cuttings necessary shading and closeness were indispensable during the rooting process. If we cover with hand-glasses I presume it is to keep out the air and prevent evaporation of the juices of the cuttings; then, I ask, if this is really the system, why do not the said cuttings evaporate when we strike in the open border—entirely exposed? C. S., Fitzroy Place, Kentish Town. [Where has the sun favoured a gardener with his presence this summer? A glance now and then is all we have been fortunate enough to see.]

**Pear-Pecking Birds** (see p. 613).—In Cheshire the birds that peck holes in the stalk end of Pears are the blue tomits principally, but the robins either do the same or come to the feast after the hole is made. In a garden at Conway, near the Castle, every Citron des Carmes was pecked as it ripened this year, and Fondante d'Automne, or any sweet Pear is liable to the attacks of these little depredators, who, however, are not guilty of gratuitous mischief as "J. M. B." supposes, but extremely enjoy a good Pear, as he will find if the Pears with small holes are left hanging; the small holes soon become large ones. M. F.

## Foreign Correspondence.

LEAVES FROM MY CHINESE NOTE BOOK.—No. I.

UNDER this title I propose to send you, from time to time, descriptions of Chinese gardens, plants, and other objects of natural history which I consider of sufficient interest to occupy a place in your columns. These descriptions will form a kind of sequel to my former "Notes of a Traveller;" and as many of your readers have, no doubt, heard of "Howqua's Mixture," I shall begin by attempting to describe Howqua's GARDEN.

This garden is situated near the well-known Fa-tée nurseries, a few miles above the city of Canton, and is a place of favourite resort both for Chinese and foreigners who reside in the neighbourhood, or who visit this part of the Celestial Empire. Having occasion to be in Canton a few weeks ago, I determined on paying a visit in company with Mr. McDonald, who is well-known in this part of the world as an excellent Chinese scholar, and to whom I am indebted for some translations of Chinese notices, which appeared very amusing to us at the time, and which, I dare say, will amuse your readers.

Having reached the door of the garden we presented the card with which we were provided, and were immediately admitted. The view from the entrance is rather pleasing, and particularly striking to a stranger who sees it for the first time. Looking "right ahead" as sailors say, there is a long and narrow paved walk lined on each side with plants in pots. This view is broken, and apparently lengthened by means of an octagon arch which is thrown across, and beyond that a kind of alcove covers the pathway. Running parallel with the walk, and on each side behind the plants, are low walls of ornamental brickwork, latticed so that the ponds or small lakes, which are on each side, can be seen. Altogether, the octagon arch, the alcove, the pretty ornamental flower pots, and the water on each side, has a striking effect, and is thoroughly Chinese.

The plants consist of good specimens of southern Chinese things, all well known in England, such for example as Cymbidium sinense, Olea fragrans, Oranges, Roses, Camellias, Magnolias, &c., and of course a multitude of dwarf trees, without which no Chinese garden would be considered complete. In the alcove alluded to there are some nice stone seats, which look cool in a climate like that of southern China. The floor of this building is raised a few feet above the ground-level, so



that the visitor gets a good view of the water and other objects of interest in the garden. That this is a favourite lounge and smoking place with the Chinese the following Chinese notice, which we found on one of the pillars, will testify to:—"A careful and earnest notice: This garden earnestly requests that visitors will spit Betle\* outside the railing, and knock the ashes of pipes also outside." Several fine fruit trees and others are growing near the walks, and afford shade from the rays of the sun. On one of these we read the following:—"Ramblers here will be excused plucking the fruit on this tree."

Near the centre of the garden stands a substantial summer house, or hall, named "the Hall of Fragrant Plants." The same notice to smokers and chewers of Betle-nut is also put up here; and there is another and a longer one which I must not forget to quote. It is this:—"In this garden the plants are intended to delight the eyes of all visitors; a great deal has been expended in planting and in keeping in order, and the garden is now beginning to yield some return. Those who come here to saunter about are earnestly prayed not to pluck the fruit or flowers, in order that the beauty of the place may be preserved." And then follows a piece of true Chinese politeness—"We beg persons who understand this notice to excuse it!" Passing through the Hall of Fragrant Plants we approached, between two rows of *Olea fragrans*, a fine ornamental suite of rooms tastefully furnished and decorated, in which visitors are received and entertained. An inscription informs us that this is called "the Fragrant Hall of the Woo-che tree." Leaving this place by a narrow door we observed the following notice—"Saunterers here will be excused entering." This apparently leads to the private apartments of the family. In this side of the garden there is some fine artificial rockwork, which the Chinese know well how to construct, and various summer-houses tastefully decorated, one of which is called the "library of verdant purity." Between this part of the garden and the straight walk already noticed there is a small pond or lake for fish and Water Lilies. This is crossed by a zigzag wooden bridge of many arches, which looked rather dilapidated. A very necessary notice was put up here informing "saunterers to stop their steps in case of accident."

On the outskirts of the garden we observed the potting sheds, a nursery for rearing young plants and seeds, and the kitchen garden. Here a natural curiosity was pointed out by one of the Chinese, which, at first sight, appeared singularly curious. Three trees were growing in a row, and at about 20 or 30 feet from the ground the two outer ones had sent out shoots, and fairly united themselves with the centre one. When I mention that the outer trees are the Chinese Banyan (*Ficus nitida*), it will readily be seen how the appearance they presented was produced. The long roots sent down by this species had lovingly embraced the centre tree, and appeared at first sight to have really grafted themselves upon it.

I am afraid I have given a very imperfect description of this curious garden. Those who know what a Chinese garden is will understand me well enough, but it is really difficult to give a stranger an idea of the Chinese style which I have been endeavouring to describe. In order to understand the Chinese style of gardening it is necessary to dispel from the mind all ideas of fine lawns, broad walks, and extensive views; and to picture in their stead everything on a small scale—that is, narrow paved walks, dwarf walls in all directions, with lattice-work or ornamental openings in them, in order to give views of the scenery beyond, halls, summer-houses, and alcoves, ponds or small lakes with zig-zag walks over them—in short, an endeavour to make small things appear large, and large things small, and everything Chinese. There are some of these ornaments, however, which I think might be imitated with advantage in our own gardens. Some of the doorways and openings in walls seemed extremely pretty. In particular I may notice a wall about 10 feet high, having a number of open compartments filled with porcelain rods made to imitate the stems of the Bamboo. I shall now close this notice with the modest lines of the Chinese poet, which we found written in the "Library of Verdant Purity," and which seemed to be an effort to describe the nature of the garden:—

"Some few stems of Bamboo plants  
A cottage growing round;  
A few flowers here—some old trees there,  
And a mound of garden ground."

R. F.

## Societies.

**ROYAL HORTICULTURAL OF CORNWALL.**—At this the last meeting of the season, the following prizes were awarded:—Best Pine-apple (Antigua), Mr. Williams; 2d best (Black Jamaica), Mr. J. Vivian; 3d best, (Montserrat), Mrs. Fox. Best dish of Grapes (Syrian Muscat of Alexandria, Red Frontignan, Black Hamburgh, Victoria Hamburgh, Sir Abraham Picher's white Grape), Mrs. Fox; 2d best (Cannon Hall Muscat, Muscat of Lunel, Muscat of Alexandria, Black Hamburgh, Black Prince, Sweetwater, White, Grizzly Frontignan), Rev. T. Phillpotts. Best bunch of Grapes (Black Hamburgh), Mr. W. P. Williams; 2d best (Muscat of Alexandria), Rev. T. Phillpotts. Best Melon (King's Own

\* The natives in the south of China, like the Malays, are very fond of chewing the fruit of the *Araca*, commonly called Betle-nut.

Green-flesh), Mr. J. Vivian; 2d best (Beechwood), Mr. A. Fox. Best 6 Peaches (Mignonne), Mr. W. M. Tweedy; 2d best (Bellegarde), Rev. Canon Rogers. Best 6 Pears (Bon Chrétien), Mr. A. Fox; 2d best (Gray Caroline), Mrs. Fox. Best 6 Nectarines (Elruge), Rev. T. Phillpotts; 2d best (Violette Hative), Mr. W. M. Tweedy. Best 12 Apples (Lucombe Pine), Mr. R. W. Fox; 2d best (Hubbard), Mr. A. Fox; 3d best (Lucombe Seedling), Rev. T. Phillpotts. Best 6 Figs (Lee's Perpetual), Rev. T. Phillpotts. Best dish of Cherries (Morello), Mr. W. M. Tweedy. Best dish of Plums (Green-gage), Mrs. Fox; 2d best (White Magnum Bonum), Rev. Canon Rogers. Currants (White Dutch), Rev. Canon Rogers; (New Dutch), Mr. W. P. Williams. Ornamental Plant, in flower, not previously exhibited (Begonia Prestoniensis), Bronze Medal, Mr. G. Williams. Best Stove and Greenhouse Plants (Rondeletia speciosa major, *Cyrtoceras reflexum*, *Clerodendron squamatum*, *Ixora coccinea*, *Allamanda cathartica*, *Schubertia graveolens*, *Hoya campanulata*, and some Orchids), Mrs. Fox. Best 6 varieties (Rondeletia speciosa major, *Veronica Andersoni*, *Æschynanthus Lobbi*, *Leschenaultia formosa*, *Gesnera picta*, &c.), Mr. G. Williams. Best specimen (Rondeletia speciosa major), Mrs. Fox. Best specimen Greenhouse Plant (*Ipomoea carulea rubra*), Mrs. Fox. Best specimen Orchid (*Stanhopea insignis*), Mrs. Fox. Best 6 Fuchsias (Vultigeur, Prince Arthur, Princeps, Clapton Hero, Gem of the West, Splendida), Mrs. Fox. Best specimen of ditto (Vultigeur), Mrs. Fox. Best 12 Dahlias (Fearless, Sir Richard Whittington, General Faucher, Magnificent, Duke of Wellington, Mr. Seldon, Miss Sarah, Edward's Magnificent, Violet perfecta, Grenadier, Princess Radzville, Sir Edmund Antrobus), Silver Medal, Mrs. Fox; 2d best (Grand Duke, Richard Cobden, Magnificent, Gem, Jeanne de Paris, Mr. Seldon, Queen Victoria, Plantagenet, Morning Star, Gem of the Grove, George Villiers, Sir J. Franklin), Mr. G. Williams. Best 6 Dahlias (Fearless, General Faucher, Magnificent, Sir Edmund Antrobus, Miss Sarah, Edward's Magnificent), Mrs. Fox; 2d best (Captain Warner, Princess Louisa, Grenadier, Bathonia, Cleopatra, Duke of Wellington), Rev. Canon Rogers. Cut Roses, (Queen Victoria, Géant des Batailles, Madame Angeline, Louis Napoleon, Mogadore, Mrs. Elliot, Bourbon Queen, Charles Duval, Dr. Marx, Joan of Arc, Comte de Paris, Riversi, Souvenir de la Malmaison, Souvenir d'un Amie, Duchess of Sutherland, Ophire), Mr. M. Williams. Best Bulbous Plants (*Lilium lancifolium speciosum*, *punctatum*, *roseum*, *album*; *Vallota purpurea*), Mrs. Fox.

## New Plants.

9. *EUCHARIS CANDIDA*. *Planchon and Linden*, in *Flore des Serres*, t. 783.

A BULBOUS plant found in New Grenada by M. Schlim, and introduced by Mr. Linden, in whose nursery at Brussels it flowered in the winter of 1851. It is a very handsome plant with the foliage of a Griffinia and the flowers of Eurycles, only they are much larger and finer, ivory white with a projecting coronet of brilliant yellow antheriferous scales, resembling those of *Pancratium maritimum*. Mr. Van Houtte directs it to be treated like a tender stove plant while growing; but to be removed to the greenhouse and placed on a dry shelf next the glass when at rest. It should be grown in a thoroughly drained pot, in earth rich in leaf-mould. The flower stem is 2 feet high; the flowers themselves are full 3 inches long, in an umbel of 9 or 10. M. Planchon regards it as a new genus allied to *Coburgia* and *Leperiza*, and happily compares its appearance to that of a white Funkia. We understand, from the Belgian advertisements, that the entire stock of the species is in the hands of Mr. Van Houtte, of Ghent.

## Garden Memoranda.

**HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN.**—Since our last visit the alteration of the Rhododendron clump in the arboretum has progressed considerably. More than half of the old formal belt has already been removed and disposed in beds, and various changes in the level of the ground are about to be effected.

In a little frame in front of the Orchid-house, *Oxalis Bowei* is beautifully in flower. It blossoms here every year about this time with the greatest regularity, and certainly nothing can be handsomer or more enlivening than are its numerous round rosy flowers. *Brunsvigia Josephine* planted among dwarf Cacti is also in bloom in the same frame, whose only warmth is derived from what heat may escape through the front wall of the Orchid-house, and a mat thrown over the glass at night in severe weather in winter.

In one of the stoves we remarked some nice specimens of *Aphelandra cristata* very finely in flower, a result which the superintendent attributes to resting and hardening the plants by keeping them out of doors in summer, and tolerably dry. *Clerodendron splendens* in the same house was also equally gay. This, too, was reported to have been well rested and ripened out of doors in the same way. The white-flowered *Funkia grandiflora*, a sweet-scented species from Japan, was in bloom in one of the greenhouses. The blossoms are sufficiently large and numerous to make it very effective; and although quite hardy, we believe, it certainly well deserves a place under glass. In a pit was a number of fine plants of *Selago distans*, struck last spring, and

coming forward for the conservatory, in which they are so ornamental all the winter.

Among novelties was a flowering plant of *Weigela amabilis*. In general appearance it resembles *W. rosea*, but the flowers are of a deeper rose, a colour which they possess when they first open, whereas the newly-expanded blossoms of *rosea* are very pale, the rosy hue becoming deeper as they advance in age.

In the American garden hardy Heaths are now very gay. The most conspicuous are *vagans* and its white variety. The white and purple *Menziesias* are also charming hardy plants at this season, and on rockwork the red-berried *Cotoneaster microphylla* is very striking, its bright waxy fruit remaining on it all through the winter. *Escallonia macrantha*, which has stood frost well, is also in flower; but the gayest plant of all here is the hybrid *Anemone*, raised between the white *A. vitifolia* and *A. japonica*. This is even a greater favourite with some than the Japanese parent itself. The fine specimen of *Pampas Grass* at the entrance of this garden is again throwing up numerous flower spikes.

On the Peach-wall the fruit is nearly all gathered, except a few of the Barrington, Chancellor, Late Admirable, and Gregory's Late. The latter is a very good clingstone Peach, a great deal like the Late Admirable; but is ripe now, while the fruit on the last named variety is still quite hard. We likewise remarked some handsome fruit of the Imperatrice Nectarine. We may also mention here, that the Peaches on the tree in Ewing's glass walls have ripened satisfactorily.

In the fruit-room were examples of King Edward's Pear, a sort which has sometimes been mistaken for the Vicar of Winkfield; but which grows very much larger than that sort—in fact, almost as large as a Uvedale's St. Germain. It is usually fit for use in September and October; but this season being late, it will not be ripe quite so soon. *Beau Présent d'Artois* is a new Pear, like a large *Passe Colmar*; it is a good looking fruit, but we cannot yet say what its quality may be. *Beadnell's* Seedling, also a new kind, is ripe now; it is a medium sized variety, melting and excellent. *Beurré Beaumont*, a good melting Pear, is likewise in season now, as is also *Fondante d'Automne*, which is one of the best autumn Pears we possess. The Elton too is eatable now; it is easily known from its having no core. *Doyenné Boussock* is a handsome new Belgian variety, which does well on a standard; it is obovate, truncated at the stalk, with an open eye set in a regularly formed shallow basin. Among Apples we remarked *Reinette de Laak*, a dessert variety of Dutch origin; *Baleborodova*, a Russian kind, with the colour of a Manks Codlin; *Kerry Pippin*, a kind too well known to require comment; *Oslin*, remarkable for its peculiarly rich aroma; *Summer Thorie*, a handsome sort of good quality and an abundant bearer; the *Summer Golden Pippin*, one of the best of all the summer dessert Apples; and the *Gravenstein*, a crisp juicy sort, which, in a warm season, has an agreeable and peculiar aroma. These are a few of the more remarkable of the fruits that have as yet been harvested; there are, however, other kinds yet to house, some account of which will be given next month. It is, however, feared that they will all prove of very inferior quality, owing to the ungenial season in which they have been produced.

## FLORICULTURE.

**DOUBLE CHINESE PRIMROSE.**—There are few small growing plants which better repay the cultivator for his care than this; and, therefore, a few words on its cultivation may not be uninteresting. Early in March place the plants which have bloomed into a warm house, a Vinery or stove will do; in April, when they begin to grow, let them get rather dry, and cut them down; divide the top into separate crowns, and insert the latter firmly in sand, singly in small pots, or several in a pan or large pot; plunge them in bottom heat and cover with a hand-glass. Give them air, and wipe the glass every morning, watching carefully for damp, all appearance of which must be removed. When they have struck root, pot them in 3-inch pots, and keep them close till they have become established; they should then be removed to a warm, sheltered part of the greenhouse, keeping them shaded from the sun, but as near the glass as possible. When the pots are well filled with roots, shift into 5-inch pots. I have observed with reference to these plants, that they make no progress at the top, till the pots are full of roots, they had therefore better not be shifted directly the roots reach the sides, which would be advisable in the case of gross feeding plants. As they advance in growth, they must be shifted into still larger pots; move them on as they require it; for some will probably make more progress than others, and if all are shifted when only half need it, the smallest plants will probably diminish instead of increase, unless they are watered very carefully indeed. The flower-stems must be cut away as soon as they appear, so long as you want them to grow. When you have given them the final shift, permit the largest plants to come into bloom, and let the others come in in succession, you may thus have a constant supply of flowers from November to March, or longer; but as blossoms are scarce during winter, I endeavour to grow plants to flower at that time. If the old plants do not furnish sufficient stock at one batch, by keeping them warm and rather dry for a time, to prevent bleeding, they will yield some later cuttings, which should be treated as I have already directed. I have tried a great variety of soils



for these plants, but I find none to suit them better than good fibry peat, with a small quantity of loam and dry cow-dung, and a liberal addition of silver sand. If cut flowers only are required, the plants may be grown in a stove all through the season; they will make larger plants but will not bear to be taken to a conservatory or cooler place so well as those grown in a greenhouse. It may be well to remark that they do not like either hot sun, cold draughts of air, or excessive moisture. *J. B., Clifton.*

**WINTER PELARGONIUMS.**—Permit me to mention that I have found Bennett's Fanny to be an excellent variety for winter flowering. During three seasons I have had it in full blossom in a cool house shortly after Christmas. In habit it is very dwarf, the truss is large, and carried well up above the foliage. The upper petals are very dark, the lower ones pink, with a large clear white centre, and edged all round with a white belt; it is very showy and attractive, and a profuse bloomer, flowering freely even in very small pots. Those who make bouquets during winter should not be without it, for a sprig of Pelargonium at that time is often thought more of than a large specimen covered with blossom in summer. *P., Worcester.*

**TAKING UP AND STORING DAHLIAS: G. T.** In a treatise on this flower, recently published, by Groombridge, the cutting down is recommended "not to be performed until the first frosts have completely checked vegetation. For choice, good varieties, it is an excellent plan," says the same authority, "to place a small hillock of dry ashes round the stem of each plant. This protects the embryo buds both from any sudden severe frosts, and also carries off to a distance the heavy autumnal rains. In wet ground especially, this is a good and useful application, though in high dry land it may not be absolutely necessary. Choose some dry morning, when there is a probability of a dry following day, and cut down the plants to within 1 foot of the ground. The day following take up all the roots so cut down, and turn them upwards to allow the watery sap to drain from the stems. Bring them in under cover, and see that the numbers or names are all securely tied to the stems with copper wire. Mat or twine is not good for this purpose, because it will soon rot, and the name may easily be displaced or lost—a matter of consequence to such as wish to keep their plants true to name. The roots should all be taken up on the same or the following day, in order to become all dry together, so that they may be put away for the winter at once. Let all the soil be carefully picked out from among the tubers without wounding them. As soon as they are quite dry, and before they begin to shrivel, fix upon a place to store them away. A dry cellar is best, because there is, in such a place, just sufficient moisture to keep the tubers fresh without shrivelling, and the buds alive. Pack them with their stems downwards, and cover them up with dry clean straw, several inches thick, a layer of roots, and a layer of straw between and under each layer of roots. In these winter quarters they may remain till the season for starting them into growth returns. They should be looked over about once a month, and all decaying roots and rotting stems removed, and fresh dry straw laid upon them to absorb any moisture; this is the best method of keeping Dahlia ground-roots. Pot-roots should have their tops cut off, and the pots laid on their side in a place where the frost cannot have access to them. If the amateur has a greenhouse, these pot-roots can be conveniently stored away under the stages, laid on one side: no water that may run through the stage from the plants will injure them. Pot-roots keep better than ground-roots, and therefore it is desirable to have a few of each variety struck later for this purpose. If the amateur has no cellar for his ground-roots, nor a greenhouse for his pot-roots, he may store the former away in boxes, in a dry chamber, or in any out-building, provided the frost can be kept from them by some kind of covering, such as old carpets or garden mats. In such places they will require more frequently looking over, to remove all decaying roots and stems."

#### SEEDLING FLOWERS.

**DAHLIAS: C. J.** Your seedling is well formed, deep, and symmetrical in the petals, which are of good substance, but the colour is rather dull. It will, however, make a show flower.—*S. E.* In bad condition, but apparently of little merit.

**HOLLYHOCKS: S. E.** The pink one is the best; but the bloom sent is small. The others appear to be of no value.

#### Miscellaneous.

**Means of fastening Leather upon Metal.**—The metal is washed with a hot solution of gelatine, and the leather previously steeped in a hot infusion of gall-nuts pressed upon the surface and allowed to cool. It then adheres so firmly that it cannot be separated without tearing. *Allgemeine Polytech. Zeitung, March 1852. Pharmaceutical Journal.*

#### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

Any plants yet standing out should be placed under some kind of shelter, as the present weather is unfavourable for their remaining longer out; at the same time Orange trees and similar plants should be taken in. As the houses in which the greater part of greenhouse plants are wintered, in all likelihoods, are now partly filled with Fuchsias and other summer blooming plants, the latter should be looked over, retaining only those likely to keep in bloom for some time longer, and either removing the others to spare Vineries for ripening off, or throwing them away. As in most places there is generally a spare forcing house at this season empty, such plants as cannot conveniently be placed at once in their proper winter quarters may be arranged in it for a short time, to allow for retaining some of the gayest summer flowering plants a week or two longer. Wherever plants are placed, it will be necessary to supply them liberally with air, and where mildew is making its appearance, a little fire may be made on damp days to dry the house, but allow extra ventilation; at the same time apply sulphur to the infested plants. Before plants are finally staged well wash the outside of the pots, and see the drainage is not choked up; and the plants will look more tidy if the surface soil is slightly loosened, and a little fresh added to give a neat appearance. Chrysan-

themums now require attention; to keep them in a vigorous state liquid manure must be given liberally, and careful training will be equally necessary to ensure nice bushy specimens; where the flower buds are too numerous they should be thinned out, leaving them at regular distances apart. A portion of the stock should be placed under glass to get into bloom a little earlier, and the rest brought forward to succeed them. Bring forward Cinerarias and Chinese Primulas for winter flowering; fumigate the former whenever green-flies are detected, as the plants never thrive when infested with them.

#### FORCING DEPARTMENT.

Although, with the exception of Pines and Melons, this department is in an inactive state, yet preparations should be made to get everything in readiness for commencing the earliest Vinery, which, if very early Grapes are wanted, will require to be started by the beginning of November. If the Vines are not already pruned, it should be done at once, exposing them now to all weathers. Complete putting the roofs and sashes in repair, and let the front lights be washed, &c., and painted, and the heating apparatus made efficient for the season's work. Keep fires to houses containing ripe fruit, for which see former directions. **PEACH-HOUSE.**—We suppose the early house is now fully exposed, and the leaves entirely off; give the trees another look over, and cut away any further wood, which, now the leaves are fully off, may be found still too thick; unless the trees are weakly, the shoots need not be shortened yet, and when such is done, be quite sure to cut back to a healthy wood-bud. Attend to the ripening of the wood of the other houses, making slight fires on dull days to assist them, and removing the leaves as they become ripe enough to be detached without force. The last crop of Melons will require fire heat to keep up a temperature from 70° to 75°, allowing an increase in sunshine. Maintain a steady bottom heat of 80°, and provide regular ventilation. No water should now be given, unless the soil becomes very dry; and the atmosphere must be kept as dry as possible, to give what flavour it is possible to the ripening fruit at this season: Cucumbers require the same attention in regard to temperature, but as they are progressing they will require water often, and which, to those in a bearing state, should be manure water. Train carefully the young Vines, and fumigate on the appearance of green-fly. French Beans in pits may now have the sashes put over them by night; such as are not yet in bloom will require them on by day as well. On this point be guided by the state of the plants and weather; as the daily heat declines, the warmth of pits and frames must be kept up by applying a little fire heat, or by additions to the linings, when heated by fermented materials.

#### HARDY FRUIT.

The gathering of Apples and Pears will be continued when the weather permits. Take them in, as far as possible, in the rotation in which they ripen. The more choice kinds of Apples and dessert Pears should be laid singly on the fruit-room shelves; naming each kind as it is placed, and the date on which it was gathered being inserted on the label. The fruit-room must be kept dry, and scrupulously clean. Where the later keeping Apples and Pears are placed in drawers, label the outside of each drawer as above, that no confusion may arise when they are required for use; when the collection is a large one, two fruit-rooms are necessary; one should be devoted to fruit fit for immediate use, and to bringing forward the later ripening kinds; and the other kept entirely for preserving the principal crop until such time as it is wanted for dessert and culinary purposes. The conditions most favourable for preserving Apples and Pears for a length of time are a uniform temperature of from 40° to 45°—the total, or partial, exclusion of light—and an atmosphere neither dry nor moist, but in which the moisture arising from the fruit is carried off as formed by ventilation from the roof.

#### COTTAGERS' GARDENS.

As we may expect cold weather soon, any plants turned out into the border that are worth preserving, and that are likely to be injured by frost, had better be lifted and potted without delay. As soon as Scarlet Pelargoniums become unsightly they may be taken up, the soil shaken from their roots, the stems shortened back a little, and then put into small pots, in which they can remain through the winter. Place them in a dry situation, cool, but secure from frost, and give them little or no water. We have known them to be successfully preserved over winter hung up by the roots in a dry cellar. Plants in pots in the window should be sparingly watered, and after this time it should be given in the morning. Advantage should be taken of dry weather for digging up Potatoes where they are ready for lifting. After they are raised let all weeds, haulm, &c., be cleared away to the manure heap, for upon its accumulations the crops for next year greatly depend. Lettuces sown in August will now be in good condition for transplanting. This should be done in rows about 9 inches apart, and let the plants stand about 6 inches apart in the row; they like a rich, light, and, for winter, rather dry soil; the situation should be a warm border if possible. When these, and late Cauliflower plants are put in, little more will be needed in the planting way for some time. Keep a few Endive plants blanched, by inverting a flower-pot over them, closing up the hole in the bottom of the pot, in order to prevent wet and light from entering. Continue to gather fruit as it becomes ripe, taking particular care to prevent its being bruised or injured in any way; for the slightest bruise,

even although not visible on the outside at the time, will ultimately occasion premature decay. Grapes ripening on walls should be protected, if frosty nights are likely to occur.

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending Sept. 29, 1853, as observed at the Horticultural Gardens, Chiswick.

Sept.	Moon's Age.	BAROMETRA.		TEMPERATURE.				Wind.	Rain.
		Max.	Min.	Of the Air.			Of the Earth.		
Friday..	23	29.754	29.704	61	41	51.0	56	W.	.00
Saturday..	24	29.743	29.687	60	34	47.0	56	W.	.14
Sunday..	25	29.730	29.693	64	43	54.5	54	S.W.	.02
Monday..	26	29.810	29.562	57	32	44.5	52	S.W.	.00
Tuesday..	27	29.801	29.562	63	47	55.0	51	S.W.	.00
Wednesday..	28	29.802	29.834	66	44	53.0	53	S.W.	.02
Thursday..	29	29.935	29.835	65	45	55.0	55	S.W.	.25
Average..		29.766	29.660	62.3	41.1	51.7	54.0		.43

Sept. 23—Overcast; cloudy; very fine.  
24—Very clear; cloudy in evening; clear; lightning; rain at night.  
25—Rain; boisterous and showery; very boisterous at night.  
26—Clear and windy; dry air; overcast; slight frost.  
27—Slight fog; overcast and hazy; cloudy.  
28—Overcast throughout.  
29—Fine; overcast; rain.  
Mean temperature of the week 4 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Oct. 8, 1853.

October.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday..	63.2	43.9	53.6	16	0.8 in.	2	4	1	6	7	4	3	2
Mon..	62.9	44.7	53.8	15	1.01	1	3	1	8	9	3	2	3
Tues..	63.3	43.2	53.3	13	1.05	—	5	1	6	10	3	1	1
Wed..	62.6	40.7	51.7	11	0.57	1	3	2	1	5	6	1	1
Thurs..	61.4	43.7	52.6	11	0.73	1	2	3	3	8	6	2	1
Friday..	62.1	43.7	52.9	16	0.58	1	4	1	2	4	11	3	1
Satur..	60.2	41.6	50.9	11	0.63	1	4	3	2	4	6	6	1

The highest temperature during the above period occurred on the 5th, 1834—therm. 80 deg.; and the lowest on the 5th, 1830—therm. 23 deg.

#### Notices to Correspondents.

**BOOKS: J. C. M.** Have you ever seen Cobbett's "Cottage Gardener," or Paterson's "Manse Garden," or Neill's "Fruit, Flower, and Kitchen Garden?" They probably contain the information you want. We formerly published weekly such directions as you suggest, and will now renew them.—*Const. Sub.* Sweet's "Hothouse and Greenhouse Cultivator" will possibly answer your purpose best.

**FELLING TREES: B. F.** Always perform this operation in mid-winter. The whiteness of Holly and similar timber depends upon its not having been allowed to stand till it is too old.

**FLOATING ISLANDS: Q. uist.** These are formed by cutting into large masses the coarse sedges and other strong aquatic plants, which occur in some lakes, surrounding the mass with wattles, which are also interwoven among the sedges, &c., and then loading the area with a small quantity of earth. When cut adrift, such masses may be dragged into any part of a lake and moored there. The sedges, &c., will continue to grow and root while floating, and must be kept down by the scythes when they are in the way. Such islands will only continue to exist in pieces of water in which there is no current. You will find a full account of these, so abundant in the lake of Cashmere, by consulting the relations of Vigne and other travellers in that country.

**NAMES OF FRUITS: L. ees.** The leaf you sent perfectly agrees with that of the Chasselas Musqué.—*Z.* Ramsgate. 1, Williams' Bon Chrétien; 2, Ribstone Pippin; 3, Not known, it is cultivated in places under the erroneous name of Orange Pippin.—*T. P. B.* 2, Passe Colmar; 3, Beurré Diel; 4, Beurré Bosc; 5, Flemish Beauty; 7, Seckel; 8, Louise Bonne (of Jersey); 10, Brown Beurré; 11, Winter Nelis; 12, Knight's Monarch; 13, Passe Colmar. No. 4 is not a good specimen; 3 is small for the sort; the others are tolerably good, considering the season.

**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Ereum.* 460, Anthemis tinctoria; 470, Pyrethrum Balsamita; 901, Artemisia vulgaris; 79, Pyrethrum roseum.—*A. Hutton.* We are obliged to decline naming Cryptogamic plants having no relation to horticulture. No. 2 is only Bryum caespitium.—*Each.* Quite right. It is Monotropa Hypopitys.—*J. W.* Aerides flavidum.—*L. M.* Some species of Bomarea not determinable from such a specimen.—*Z.* Hordeum hexastichum, the six-rowed barley; Agrostis vulgaris, and some Pomaderris in an indeterminate state, but probably P. elliptica. It will open by-and-by.—*Geo. Berry.* The Saccabium is a small-flowered variety of guttatum. No other Orchid was in the box.—*Nova, Belfast.* Potamogeton densus.—*T. B. Notts.* Conferva intricata, or some allied species, is the nuisance you find in your lake. We know of no means of removing it unless you can keep the water in rapid motion.

**SCARLET RUNNERS: W. Noaks.** Yours appears to be white-seeded. It is doubtless a very good sort of Runner.

**SKELETON LEAVES: C. row.** You must trust to very long maceration in water for the means of preparing your leaves, and not to acids of any kind. Hydrochloric acid, when used, is merely for the purpose of bleaching.

**TRANSPLANTING: A. Sub.** You may now, with care and judgment, remove a plant of Taxodium sempervirens 12 feet high by 7 feet wide at the base. The enclosed Fern is Hymenophyllum Wilsoni.—*Old Sub.* Move your "Magnolia" now, and to a south wall.

**VINES: Constant Reader.** You may turn them out now, if the young wood is hard and ripe. They can be pruned and cleaned when you require them to be brought into the house again.

**WATER CRESSSES: Inquirer.** You will find full information on the subject of forming plantations of these in our volume for 1851, page 165.

**YELLOW ROSE: Cincinnatus.** The reason why the double yellow Rose so seldom flowers is uncertain. Many years ago we collected much information upon the subject, as you will see by consulting our early volumes. But we cannot say that the practical result was satisfactory. Upon the whole, it appeared to flower most willingly upon a gravelly soil, with a full exposure to wind. By no means cut off the branches of your *Ataucaria*.

\*As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9s. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO, the guaranteed import of** Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.

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**PERUVIAN GUANO.**—It is a well-established fact that the application of 250 lbs. of the best Peruvian Guano per acre, on well drained land, at the time of sowing Wheat in the Autumn, has, in many instances, increased the produce of grain 8 bushels, and the straw 10 cwt. per acre.

JOHN CLARANCE, Agriculturist's London Agent for Peruvian Guano and Superphosphate of Lime, 1a, Bishopsgate Street Within, London.

## MANURES—PERUVIAN GUANO.

**WHEAT MANURE**, made to meet the offer of a Prize by the Royal Agricultural Society of England, Superphosphate of Lime, Gypsum, Salt, Bone Dust, and all other Manures of known value on sale.

Also Foreign and English Linseed and Rape Cakes, Peat Moss Charcoal, &c.—Apply to MARK FOTHERGILL, 204, Upper Thames Street, London.

**MANURES.**—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites... .. " 5 0 0  
Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**SUPERPHOSPHATE OF LIME**, warranted the very best quality, with a full percentage of soluble Phosphate, Ammonia, &c. &c., delivered to any Railway Station in London, at 6s. per ton; also CORN MANURE for dressing, composed of substances yielding Nitrogen, Potash, and other chemicals essential for Corn crops. Concentrated Urates, Nitrate of Soda, Fishery, and Agricultural Salt, Sulphate of Potash, Ammonia, and every other Artificial Manure.

**PERUVIAN GUANO**, guaranteed the genuine importation of Messrs. A. GIBBS & SONS. A constant supply of LINSEED and RAPE CAKE. EDWARD PUSHER, Secretary. LONDON MANURE COMPANY, Bridge Street, Blackfriars.

**SAMUELSON'S PATENT DIGGING or FORKING MACHINE**, which obtained the SILVER MEDAL of the Royal Agricultural Society at GLOUCESTER, 1853; 5s. Prize of the YORKSHIRE SOCIETY, and 5s. Prize of the CLEVELAND SOCIETY; capable of cultivating 5 acres per day with four or six horses, may be seen at work at Ranbury, and in Kent, Middlesex, Surrey, Cheshire, Yorkshire, North Wales, Berwick, Gloucestershire, Worcestershire, Leicestershire, Herts, &c.

To meet the demand of SMALLER OCCUPIERS where horse power is limited, Mr. SAMUELSON has constructed an implement equal to 3 or 3½ acres per day, with a draught of three or four horses only. Price 27l. 10s. and 24l. 10s. respectively, at Banbury.

PRIZE at Gloucester (the eighth time) to SAMUELSON'S improved GARDNER'S TURNIP CUTTERS. Manufacturer of McCormick's Reaper (highly commended at Pusey), Anthony's Churns (3d prize at Gloucester), Liquid Manure Pumps, Chaff Cutters, Crushing Mills, Lawn Mowers, &c.

B. SAMUELSON, Britannia Works, Banbury.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Kortiicultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

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**WEIR'S IMPROVED GALVANISED WROUGHT-IRON LIQUID MANURE PUMP.**

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

## WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ n. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required. They are much used for supplying Hot, Cold, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

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Every description of Machinery for Raising Water; Fire Engines, &c.

## PRIZE CHURN.

**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BURGESS & KEY, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.

**WINTON'S PARKES' CELEBRATED STEEL DIGGING FORKS** never bend, strain, nor break, but retain their sharp points to the last, requiring no repair.

Mr. Mechi says:—"They answer admirably in breaking our heavy clays, and mixing the soil in an extraordinary manner, and facilitate labour quite 20 per cent."

BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London Agents, and also Agents to all the principal Implement Manufacturers in the Kingdom.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

## DRAINAGE AND IRRIGATION.

**HENRY WEBBER** begs to inform Landowners and the Public that, having had considerable practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by contract or on commission. Reference given.—Address, Halberton Court, near Tiverton, Devon.

## LAND DRAINAGE.

**MR. JOHNSON** (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five Shillings per acre; or if under 30 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

## ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.

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Students are admitted after the summer and winter vacations; also in April and October. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelve-month—though a longer time is recommended. There is a department for general as well as for agricultural education.

Prospectuses and information can be had on application to the Principal.

THE GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILEY, Cirencester. Price 1s.

## HIGHLAND AND AGRICULTURAL SOCIETY. EDINBURGH VETERINARY COLLEGE.

The Committee of the Highland and Agricultural Society of Scotland, appointed to superintend the Veterinary College, hereby intimate that the Session will commence, within the New Class Room, on MONDAY, November 7.

The Course of Study will be conducted as follows:—

1. Zoiatrics—Veterinary Medicine and Surgery ... .. Professor DICK
2. The Principles of Chemistry and Pharmacy ... .. Dr. GEO. WILSON, F.R.S.E.
3. General Zoology and Demonstrations ... .. Mr. BARLOW, V.S.
4. Zootherapeutics and Dietetics ... .. Mr. DUN, V.S.
5. General Practice ... .. Mr. WORTHINGTON, V.S.

By Order of the Committee. J.N. HALL MAXWELL, Sec. Highland and Agricultural Society, Edinburgh, October 1.

## COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.  
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuit of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College.

The terms, and other particulars may be had on application to the Principal.

The next term will commence on the 1st of October.

## MINERALOGY.—KING'S COLLEGE, LONDON.

—Professor TENNANT, F.G.S., will commence a Course of 16 LECTURES on MINERALOGY, with a view to facilitate the study of GEOLOGY, and the application of mineral substances in the Arts. The Lectures will be illustrated by an extensive collection of specimens, and will begin on FRIDAY, October 7, at 9 o'clock, A.M. They will be continued on each succeeding Wednesday and Friday at the same hour.

October, 1853. R. W. JELL, D.D., Principal.

## THE LANDOWNERS' DRAINAGE AND INCLOSURE COMPANY.

INCORPORATED BY SPECIAL ACT OF PARLIAMENT.  
Tenants for Life, Trustees, Mortgagees, Incumbents of Livings, &c., can have all works of Draining, Warping, Irrigating, Inclosing, and every other improvement to land, executed by the LANDOWNERS' DRAINAGE COMPANY, either by Contract or on Commission. They will provide the money by a permanent charge on the inheritance, or repayable by instalments. They are also ready to undertake the Drainage of Towns, and all works incident to such improvements. This Company having been engaged in extensive works for many years in most of the Counties of England, and having in their employ the largest Practical Staff in the United Kingdom, whose sole attention is devoted to such improvements, is the best guarantee for the success of their works.

Every information will be given at the Office of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter.

THOMAS MAY, Secretary.

## SMITHFIELD CLUB FAT CATTLE SHOW.

All Entries for the Christmas Show of Fat Stock, &c., must be returned to the HONORARY SECRETARY on or before SATURDAY, the 6th of NOVEMBER, 1853.

Prize Sheets, specifying the Classes, Prizes, and Medals (which amount to nearly 800l.), and the necessary PRINTED FORMS of Certificates for Entry, to be had on application to

B. T. BRANDRETH GIBBS, Honorary Secretary, Corner of HALF-MOON STREET, Piccadilly, London.

N.B.—It is particularly requested that all letters connected with the Exhibition, or on the Club's Business, may have the words "SMITHFIELD CLUB" written on the outside, in addition to the Honorary Secretary's name and address.

## AN EXHIBITION OF POULTRY AND PIGEONS

will be held at the Corn Exchange, Bedford, on the 30th November and 1st and 2nd December. Entrance to non-subscribers on the first day 2s. 6d., on the other days 1s. Subscribers of 10s. and upwards are entitled to admission throughout the exhibition. Prize lists and forms of entry can be obtained of Mr. H. J. Jones, Bedford; and Mr. Charles Howard, Biddenham, near Bedford. Entries to close on the 22d October, 1853.

## HITCHIN AND HOME COUNTIES DOMESTIC POULTRY ASSOCIATION.—OPEN TO ALL ENGLAND.

The Second Annual Exhibition of this Society will be held at the Corn Exchange, Hitchin, on the 18th, 19th, and 21st of November, 1853, when Prizes amounting to upwards of 80l. will be offered for public competition.

Hitchin is a first-class station on the Great Northern Railway, 30 miles from London; at which station is a Junction with the Cambridge and Eastern Counties Railway. Regulations and Prize Lists may be had on application to the Secretary, by enclosing two Postage Stamps. Entries for Exhibition close on the 1st of November. Admittance to the private view on Friday, November 18th, by a 5s. card (not transferable), which will be available for the three days of Exhibition. On Saturday, the 19th, and Monday the 21st, 1s. each.

SAMUEL GOODWIN, Secretary.

The Directors of the Great Northern and Eastern Counties Railways have agreed to run Cheap Trains on the occasion, and to give free passage to all Poultry for the Exhibition (at owner's risk), and to carry back free all that is unsold.

## POULTRY EXHIBITION.—AN EXHIBITION OF POULTRY

will be held at NEWTON ABBOT, in connection with the Newton Abbot Agricultural Society, on TUESDAY and WEDNESDAY, November 8 and 9.

Prize Lists will be forwarded on application.

ROBERT FLAMANT, Honorary Secretary.

## The Agricultural Gazette.

SATURDAY, OCTOBER 1, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 6—Agricultural Imp. Society of Ireland.  
THURSDAY, — 13—Agricultural Imp. Society of Ireland.

ONE of the most frequent and fashionable errors connected with breeding is the notion that there is some mysterious advantage connected with "PURITY OF BLOOD"—something which cannot be explained, and yet is not the less real. We regard this as a "Will-o'-the-wisp," in pursuit of which breeders have committed grievous errors, and been egregiously led astray. For example, many breeders of Southdown sheep have bred so pure that their sheep have so dwindled in size as to become no longer appreciated by the public. Other admirers of pure Hampshire sheep have, under the same delusion, pursued an opposite course, and preserved intact the colour of the face, and the size of the head in all its original ugliness. Others, unprejudiced, have not scrupled to mix these breeds; and, by careful selection, to maintain the size and disposition for early growth of the one breed and the symmetry and quality of the other. So, likewise, with regard to horses. Many persons believing that, unless a cart horse is wanted, one of the parents ought to be thorough bred, have carried the idea so far that the progeny have become so pure and so light as to be fit only to carry a feather weight in the parks, or, with a similar partner, to do one horse's work between them in some light carriage.

Let us, however, be understood. We have no wish to undervalue or depreciate good parentage, but we value this for its real advantages, and not for imaginary ones. We value a blood horse for evidence afforded by his faultless shape and the hidden virtues proved by his performances, and not because his descent proceeds directly from Flying Childers or the Darley Arabian. So, likewise, with regard to a cart horse; we estimate him for the emblems of strength and activity he exhibits, and not because he was got by *Thumper*, the son of old *Thumper*, whose footsteps could be heard at least a mile off, as we were gravely assured was the fact by one of the horse attendants at Gloucester, who seemed quite proud of the thumping qualities of *Thumper's* grandson, whose care he had.

We are by no means disposed to think that a good pedigree is of no importance, because we consider it in some measure as a guarantee for the possession of those qualities which are not visible to the eye; it shows that great care has been exercised in breeding, for certain faults which sometimes disappear in one generation and reappear in another are not likely to do so in an animal with a good pedigree. At the same time it must be borne in mind that by breeding much in one particular strain there is some danger of propagating the faults as well as the excellences which appertain to each particular breed, and which may possibly be obviated by some careful admixture from another source.

It is a very common opinion that, in breeding,



we should never go beyond a first cross; but this is well shown to be altogether erroneous in a paper in the last Journal of the Royal Agricultural Society of England, translated by Mr. PUSEY from the French, in which the writer, in crossing English with French sheep, has found that the offspring of the first-cross animals on both sides were so similar that they could not be distinguished from the first-cross sheep, the progeny of the French and English animals. Abundant evidence could also be adduced with regard to horses—no better animals being produced than many colts begotten by half-bred horses out of half-bred mares.

The beneficial effects of crossing are well shown in the case of swine, the various breeds of which have, no doubt, of late years been very considerably improved. It would puzzle STRAFFORD, or even DEBRETT himself, to trace the lineage of many of the animals who have gained prizes at Smithfield. Many advocates of pure breeding, in the case of other animals, have not hesitated in that of pigs, to infuse a little more Berkshire, or Sussex, or Essex blood, just (as the doctors say) "as occasion requires;" and even in the case of public sales, sometimes the names of half a dozen celebrated pig breeders are mentioned (by way of recommendation), from whose various stocks the pigs to be sold are descended. It would seem, almost, in the case of pig breeding, that the witches of MACBETH had presided with the incantation:—

"Black pigs and white,  
Spotted pigs and grey,  
Mingle, mingle, mingle—  
Ye that mingle may!"

The results at any rate militate strongly against the too great importance often attached to purity of blood.

The system successfully adopted in improving the breeds of sheep and other animals is to select the best males and females and to breed from them. This is also the case with regard to race horses, and, to a limited extent, with cart and carriage horses; but with roadsters and saddle horses of other kinds, their breeding being left for the most part to chance or whim, we cannot be surprised that such depreciation occurs as that which has called forth the little work which has led to our remarks. Fully agreeing with our author\* as to the national importance of the subject, and the magnitude of the evil at present existing, we would by way of remedy suggest two courses, either of which, if followed out, would, we are assured, be attended with considerable benefit.

Our first suggestion is, that our Government should form certain establishments, under competent management, for the breeding of powerful weight-carrying saddle horses; for this purpose the country should be searched, and wherever a powerful mare with good action can be procured, she should at once be bought and devoted to the stud. There are still good mares enough throughout the country to regenerate our breed of saddle horses, if they were all devoted to the purpose of breeding, instead of being worn out in ordinary work; but every year they become fewer. With the same view, the best half-bred stallions should also be procured. Such horses should be either the sons or grandsons of a thoroughbred horse, but with sufficient substance to carry 16 stones, and with good and safe action both in the walk and the trot. These considerations will imply nearly every other desideratum.

Our second suggestion is, that, with the view of encouraging the breeding of such horses as are required, a liberal sum should be devoted annually as premiums for the best mares and stallions of the character described. Two or three thousand pounds annually, arranged in prizes of 20%, to 50%, would be money well laid out in a national point of view. A precedent is afforded by the sum annually given for Queen's Plates, and which, we believe, is now perfectly useless so far as the public is concerned. A portion of these prizes could very properly be placed in the hands of the Royal Agricultural Society of England, and the remainder in those of the various local societies. By such means every district would soon be furnished with a good, well-bred, weight-carrying stallion; and the prizes bestowed on the best mares and foals would stimulate breeders to procure suitable mares, and devote them to the purpose of breeding.

We feel strongly impressed with the conviction that our second suggestion alone, if carried out, would, independently of the first, do much towards affording a remedy for the evil to which our author has called attention, and with the importance of which we entirely agree. *W. C. S.*

for a PIG-BREEDING FARM," having "never seen a farm appropriated exclusively to breeding and rearing of swine." We could for ourselves reiterate the same remark—we do not know, nor did we ever hear of one; and moreover we do not think a farm could be so exclusively appropriated with much hope of profit to the occupier. We have no objection—indeed, we would recommend our friend, as he appears to wish to breed and rear pigs—to keep an unusual quantity, and provide for them accordingly; but we object to the exclusive appropriation of the farm—the whole farm for this purpose.

In cultivating a farm to yield a profit, crops too valuable for pigs to feed upon, or rather graze, must be grown. Wheat is too expensive as a food for pigs. Barley is more adapted for fattening, and likewise too costly for growing store pigs. Oats and the pulse crops are equally expensive food; all these, however, given in mixtures, form most nutritious food, but they are all too costly and of very inadequate weight per acre to support a large herd of swine; and to breed and rear such a herd as our friend is hoping to obtain would require the whole farm to be covered with the usual root or other green crops, to the abandonment of the grain crops. This, we think, cannot be the most profitable mode of farming—indeed we should be altogether at a loss to know how to get a succession or any number of root crops without the usual intervening grain or straw crops, to say nothing of the requirements of hay, straw, &c., for the cart horses.

The fecundity of the sow is very great, and her progeny grow remarkably fast. No animal in domestic use is of equal value in producing food for man. She will generally produce two litters to average ten pigs each annually, and occasionally three; these again will produce litters at 12 months old, so that it is astonishing with what rapidity a stock of pigs may be obtained: the great thing is to find them suitable food. The sow, both immediately before and after farrowing, should be fed with nutritious food—milk-warm wash, whey, swill mixed with bran or meal—and this must be found. The young pigs, for several weeks, will require similar food. As they increase in size and age they will subsist and thrive moderately upon Potatoes and a slight mixture of farinaceous food; and, when well grown or reared, they will thrive upon every common esculent that can be grown; but in the rearing they will require tender and careful treatment, as the casualties to which young pigs are subject are very great. It is well known that store pigs will not yield a profit upon purchased food of the common kinds, bran, offal, grains, &c., but must be, in a great measure, supported by roots and herbage; they are very gross and enormous feeders, eating much and growing fast. They also, as store pigs, require much room, air, and exercise; this, together with cleanliness, is indispensable to the free and full growth of the animal. Young pigs, more especially, as also breeding sows, must be supplied with plenty of clean litter, and their sties be kept free from taint by frequent washings. Store pigs cannot be kept in sties to advantage. Sty-fed pigs ought to be fattened as quickly as possible, and we think AGRICOLA will do well to combine the two modes of management—breeding for sale as stores, and as fattened pigs. Pursue which course he may, he will find that all his animals must be kept well and in a progressive state; he will find that frequent changes of food will be requisite for his young pigs, and he cannot account them stores, and qualified to subsist on roots and herbage, under from 16 to 20 weeks' old; he will find that his sows will not always produce their litters at the precise time he desires, but often in the middle of winter, when they will require much good litter and careful nursing; he will find that his stores will also require well littered yards and beds to promote their comfort and speedy growth. Now these matters cannot be had or supplied without being produced on the farm; they cannot generally be purchased in sufficient quantities. We cannot recommend our friend to attempt converting a farm into one for the exclusive breeding and rearing of pigs, but we have attempted to show how far he may profitably carry out his project, and have endeavoured to point out the course of cropping he should adopt, &c., so as to provide most economically that which is needed both in food and litter. *C.*

#### WHICH IS THE MORE EFFICIENT END OF THE SPOKE?

THE reasoning in the latter part of the article in your last Number, to which the signature of "C. W. H." is attached, appears to me to be so questionable, that I hope you will allow me to make the following remarks upon it.

When a horse draws a cart at a uniform pace along a level road, a certain amount of resistance is experienced, which arises from two causes. 1st. Friction on the axis

of the wheel. 2d. Inequalities or roughness of the ground. Omitting for simplicity the consideration of the second, we will suppose the ground perfectly smooth, but susceptible of friction; the only resistance to be overcome, then, that of the axis of the wheel, which causes a friction or "bite of the wheel's periphery against the ground." This last friction will vary inversely as the diameter of the wheel, and in the present case will equal the force the horse exerts in keeping up the motion of the cart. This force, then, or its representative the bite of the wheel, acts perpendicularly to, and at the extremity of the spokes which serve as levers, and produces the rolling of the wheel round its axis. If instead of a cart we take a hay-making machine or a drill, in which the wheel carries a smaller concentric cog-wheel, by which a rapid rotatory motion is given to some part of the machine, the bite of the wheel is called upon for additional exertion, and has to produce this rotatory motion as well as to overcome the friction of the axis, which necessitates a greater and corresponding effort on the part of the horse.

If we now consider the roughness of the road, we shall find the labour of the horse increased by his having to surmount this additional obstacle; but this has no connection with any internal mechanical arrangement of the machine, and depending only on its weight, diameter of wheels, manner of hanging, &c., may be considered as not affecting the argument. To proceed, therefore:—

Though "no one need confound this motion," viz., the simple motion of a cart-wheel "with that of secondary revolution through multiplying media," viz., the revolution of the cylinder in the haymaker, or drill, the one being a simple the other a compound motion, yet both have the same immediate cause, viz., the "bite of the wheel against the ground," and no such distinction as that which "C. W. H." supposes is tenable; this will appear more plainly "if we go more closely" into the matter.

"When you pull a wheel round by the ends of its spokes you make it a lever; when you draw it along by its axis you use it as a roller." I have shown how, in the rolling process, the wheel acts as a lever, and therefore this distinction falls to the ground, as we shall see in discussing the examples "C. W. H." has given, that it ought to do.

Let us first consider the threshing machine, and see whether here we "generate secondary revolution" with such superior economy as "C. W. H." maintains.

1. The horses move in a circle; this it will at once be granted is not so favourable for exertion as if they moved in a straight line.

2. The horses draw obliquely to the levers. Here also it will be granted, is a considerable loss of power.

3. The horses draw at the ends of "long powerful levers." Here again is a loss. It must be remembered that the object is not increase of force, but of velocity of revolution. The longer are the levers the longer is the path the horses have to walk, and the period of revolution; the nature of the animal requires this large diameter of path, but the slowness of revolution consequent upon it has to be compensated by the introduction of additional multiplying power, which involves extra friction, which the engineer would gladly have dispensed with, had the nature of the moving power permitted him to dispense also with these "long powerful levers."

I may remark that the power of these levers, which depends on the proportion of their longer arm to their shorter, which is the radius of the large cog-wheel, is about 4 to 1.

Let us now consider the haymaker, and we shall not find any such great difference of principle in it, at any rate, not to its disadvantage.

1. The leverage is much the same—this is of no consequence either way, and would not have been noted had not "C. W. H." appeared to lay such stress on leverage. The power of the lever here will be represented by the proportion the spoke of the wheel bears to the radius of the large cog wheel, or about 3 to 1.

2. The horse works straight forward, and therefore to the best advantage.

3. His power applied through the "bite of the ground," acts perpendicularly to the levers, i. e. to the spokes of the wheel, and therefore to the best advantage. This force is approximately equal to the force the horse exerts in drawing the machine when in work, minus the force when drawing it "out of gear."

Where, then, is this "immense loss of force?"

That the working this machine may distress a horse is not surprising when we consider that he not only turns the machine, but draws it along clogged and loaded with hay. The distress, if any, is due to the great amount of work performed, and not to any error in principle or loss of power, unless the machine be a bad one.

While defending the conduct of revolving machines so long as they continue in their proper orbits, I agree with "C. W. H." in thinking that they are by no means adapted to the cultivation of land; I do not think that any machine can be found to invert a slice of land with much more ease than a two-horse plough does its furrow. To put, therefore, six or eight horses to a machine covering 10 or 12 times the width of a furrow, and to expect that by their united strength it can break up the whole width as fast as they can walk, arises, I think, from a misapprehension of the power of mechanics, and of the nature of soil. Tossing hay or drilling seed is one thing, and breaking up stiff clay or stony soil is another. That cultivators on a large scale will shortly be produced is, I think, certain; but we must look to the

\* Our remarks the other week on the management of pigs were intended as a reply to our correspondent "AGRICOLA," who, some time since, desired some "good-natured" fellow to supply him with "data

\* "The Deteriorated Condition of our Saddle Horses." T. HATCHARD.



gigantic and economical power of steam to break up the soil, while we must be content with our horses merely moving the machine to its work. *G. P. S.*

#### ON RECENT IMPROVEMENTS IN MACHINES FOR TILLING THE SOIL.

A Paper read before the Mechanical Section of the British Association for the Advancement of Science, at Hull, on the 12th September, 1853, by Mr. W. SAMUELSON, of Banbury.

(Continued from page 619.)

BESIDES a modification, proposed by Usher, of his steam plough, in which he substitutes rotary prongs for his points and mouldboards, involving, however, the difficulty that he loses the aid to progression which the latter afford him—two other steam cultivators have been projected, both of which possess, in common with that of Clott, the distinctive feature that the rotation of the cultivating tools is not derived from the progress of the carriage. The first is that of Stephen Brown, who had two series of rotary cutters, the second set working in intervals left by the first, and both driven through cross shafts from a small locomotive steam-engine, forming part of the implement, and which may either work its way across the field by its own adhesion, or be drawn by horses. The second is the Canadian machine spoken of by Mr. Mechi in a recent letter to the *Times*. It does not differ greatly from the preceding in its mode of operation, its novelty consisting in the arrangement of the parts, and in the adoption of a very light and compact form of engine. I have been requested by the inventor not to publish the details, as he has not yet secured his right to them in some foreign states.

I will now describe the most recent rotary cultivators that have been put practically to work, viz., Bleasdale's and my own. The former somewhat resembles Parker's subsoiler, but being calculated only to pulverise the surface soil, its weight is only about one-half that of Parker's, and that weight (1 ton), instead of resting on two discs only, is distributed over seven. The chief novelty in it is the cleaning apparatus, consisting of an additional cylinder, suspended at an angle of about 45 degrees above, and driven from the shaft of the primary or digging cylinder, and therefore revolving in the opposite direction to it. Its prongs act as a rotary comb in stripping the earth from those of the former. This machine was exhibited at the Gloucester meeting of the Royal Agricultural Society; and, on land previously broken by the plough, acted admirably as a pulveriser and weed extractor.

Whilst engaged in some experiments with a machine somewhat resembling that of Parker's, my attention was directed to the steel digging forks which have lately been substituted with so much advantage for the old trenching fork; and it occurred to me that by substituting light steel prongs for the wrought or cast metal ones hitherto used, in rotary implements, an efficient cultivating machine for horse power, strong yet comparatively light, might be made. In following out this idea, I have constructed my digging, or more properly forking machine not altogether unsuccessfully, as may be inferred from the number of them which are already in use, notwithstanding the recent date of its introduction.

The forks of my digging machine are made of the best cast-steel that I can procure, of a square section, slightly tapered, bent on the angle and in pairs, at a cherry heat, and allowed to cool gradually. They are curved, so as to enter the ground easily, but to lift the soil as they come out. The upper portion of six such pairs being laid between two half discs of cast-iron, grooved to receive them, the half discs being afterwards united by bolts, form a digging wheel of which the discs represent the boss, and the points of the forks the spokes; there is no hoop or tire. A number of these digging wheels (seven in a full-sized machine), are hung on a bar, around which they rotate freely. Between each pair of wheels, and on the same bar is hung a ring which keeps them apart, and cleans the sides of the bosses. The frame containing the bar with the digging wheel also holds a number of cleaners, the ends of which scrape the soil from the circumference of the bosses, and force it from the prongs. This frame, to which the shafts and draught links for the horses are also attached, is itself hung in front on another bar, connecting two segmental frames, one on each side of the digging frame. These contain the wheels on which the implement rests when it is not in action, and which also serve to regulate the depth to which the forks of the digging frame are allowed to penetrate the ground. The segments (at the back of the travelling wheel frames) being toothed, two pinions gear into them, the place of which on the segments determine the height at which the digging frame is sustained; a winch attached to the latter works the pinions.

When the horses move forward the attendant throws out of gear a pawl, which holds the pinions at any given point; the digging frame rolls down by its own weight, the prongs enter the ground, and the depth of their penetration is increased or diminished by turning the winch in opposite directions, thereby causing more or less weight to rest on the travelling and digging wheels respectively. Meanwhile the resistance offered by the earth in front of the prongs causes the latter to revolve and portions of the soil to be detached, which are thrown back, after having been lifted and broken by contact with the cleaning bars.

A full sized machine weighs a ton, and breaks up to a depth not exceeding 10 inches, a breadth of 3 feet at a time, equal to that of four ploughs, and equivalent to about five acres in seven hours. The draught required varies, according to the nature and state of the soil, from

four to seven horses. A smaller implement is made for occupiers of land whose horse-power is limited, capable of working about 3 acres, in the same time, with three or four horses. About 30 digging machines, corresponding with the description which I have given, are at work in various parts of this country; one of them in this immediate neighbourhood, on the estate of Mr. Robert Harrison, of Birmingham Hall.

Whilst speaking of my digging machine, I think it right to state that it possesses, in common with all other rotary implements hitherto made or proposed, this disadvantage, as compared with the plough, that it does not completely invert the soil. I believe, however, that the occasions for such an inversion are much more rare when we work with an instrument which leaves the ground broken, hollow, and mixed, like the digging machine, than with one which, like the plough, cleaves off a slice, and exposes its superficies only to the air, there being in fact, this essential distinction between the two machines, that one allows the air and water to descend, whereas in the other fresh soil must be brought up, if it is to be acted upon by the elements. Hence also an inconvenience is avoided by forking, which often accompanies the attempts to deepen the mould, by means of the plough, on plastic soils, namely that the fresh soil so brought up forms a compact coating, and is consequently, for several reasons, injurious instead of beneficial to vegetation.

I need hardly point out that even were as many horses required, for a given acreage, with the digging machine as with the plough, there would still be a great gain, both of horse and manual labour, by the use of the former, since it effects, at one operation, the work of several ploughings and harrowings, or scufflings; but I am in a position to add that it succeeded, during the dry weather in June, in preparing the ground for a crop on the strong clays in the vicinity of London, where a combination of the best implements, previously in use, could make no impression upon it. The forks tend to pull out and leave the weeds upon the surface, and it is therefore useful in eradicating the Couch-grass, the vegetation of which the action of the plough or scuffle, by cutting the tendrils, is calculated to promote. Besides the agricultural use of rotary forking machines, there are two others—one of them so obvious that I need hardly name it, viz., breaking up the ground, more especially on the clays and marls, for works of road and railway formation, to which purpose one of our most eminent contractors is about to apply it; the other, to prevent the silting up of the mouths of rivers and estuaries, by loosening the deposit at proper times, and allowing it to be carried away by the current or tide; and though the limits which I have assigned to myself in this paper, and indeed I may add, the absence of a thorough examination of this branch of the subject, prevent me from entering into any details as to the best mode of application, I cannot help stating my belief that a very simple modification of the forking machine, dragged behind the Austrian Lloyd's steamers which pass the Sulina bar of the Danube, would, without any dredging, have prevented the stoppage of the navigation, which has had such disastrous effects upon the shipping interests of Europe, and that an apparatus of very simple construction might be contrived even now, which would remove it at less cost, and with the application of less skill, than by the dredging machines.

Whilst these improvements have been in progression the spirit of invention has not slumbered, even at the antipodes, and we shall shortly see exhibited in this country an Australian forking machine, not differing very greatly from some of those which I have brought under your notice. Mr. Wilson, the inventor, appears to have taken his hint from noticing, in a track of a waggon wheel on soft ground, that the side of the tyre tends to abrade and throw back the earth; he prolongs the spokes of his wheels beyond the tyre, in the form of spuds, which are segments of an epicycloidal curve, with a view to their encountering the least resistance in front or behind, as they enter the ground.

Whatever may be the success of all or any of the cultivating machines which I have brought under your notice, enough has certainly been done to demonstrate that we have entered upon a new epoch in the mechanics of tillage; and that, how long soever the dominion of the plough may be destined to last, it is not henceforth to reign alone. Meanwhile I was anxious to direct the attention of our machinists to a branch of their profession, than which none stands more in need of cultivation, and none will more amply repay it. We are dealing with a department of industry which, until lately, was oppressed with an excess of human labour, whilst the whole of its produce was liable to be depreciated far more than any other, in value, by a comparatively trifling increase in its amount. But now the tables are turned, the supply of agricultural labour diminishes daily, whilst consumption is extending beyond all precedent, and the cultivator of the soil looks eagerly to the mechanic to cheapen his operations, and, jointly with the chemist, to aid him in making two blades grow where one only grew before.

#### Home Correspondence.

*Tiptree Hall Farm.*—"Still harping on my daughter," as old Polonius said of Hamlet; so Mr. Mechi on every occasion brings up the everlasting "balance-sheet" to the surface: whether before the Royal Society, at home, at Aberdeen, or in print, the balance-sheet is after all a profitable one; and, if so, I ask, why reiterate it year after year, but simply

because it is not believed to have been so? Now, to the point: Mr. Mechi in this balance-sheet produces the valuation made at the commencement of his experiment, and we find that no manure is included in that valuation. He produces his balance-sheet, and a sum of some 6000*l.* or 7000*l.* deficiency is the result, but after its appearance, as if by second thought, he says—but oh, I forget the manure!—and takes credit for all as a set-off against this large deficit, and then states that it was consonant with the practice of the district to do so. Well, assume such to be the case, then it would have been consonant to have charged the manure of the preceding year in the valuation at the commencement, or to have assumed the value of the excess in quantity to the credit of the balance-sheet. But, Mr. Mechi has stated in public that he did not begin to make a large quantity of manure from purchased food until the year of the experiment. Now let us see. In the month of April, 1850, immediately preceding the year in which Mr. Mechi commenced his experiment, the *Times'* commissioners visited his farm, and here is their statement:—"The stock kept on the farm are 150 sheep, 200 pigs, young and old, 24 fattening bullocks and cows. Besides roots, 10 sacks of meal are used daily in feeding them; 700 to 1000 quarters are bought annually for this purpose." "Mr. Mechi considers it proved that pork at 6*d.* a pound will pay for Barley at 36*s.* per quarter; and at 4*d.* a pound, for Barley at 24*s.* a quarter, over and above the manure." Refer to your last Number, and Mr. Mechi writes, "all animals are necessary evils." And again, "calculate on a direct loss on all you pay or grow for your live stock, including attendance, interest of money, lodging, and casualties, of at least 15 to 33 per cent." Again, he states, that "our farms might be garden like, with 4 sheep an acre all the year round;" truly so, after having sacrificed, in accordance with his first assertion, "33 per cent. on the food they have eaten." What can farmers and graziers think of such argument? Well, this is an age of experimenters! These gentlemen, however, deal too much in round numbers to catch old watchmen; take, for instance, the description of a field of Wheat of 100 acres—guano thereon, 2 cwt. per acre; increased produce on 98 acres so manured, 98 quarters, and so on; all very good by way of exemplification, but, like all such statements, rather doubtful. A man once under examination in a civil action, stated the width of a certain road to be 21 feet 3½ inches, and when asked by counsel how he came to know so accurately, said he supposed some fool might ask him the question, and therefore he had measured it. It is just the reverse with our new friends, they make all their statements in decimal numbers, as if in anticipation of the new decimal coinage. *Pro bono Publico.*

*Does Live Stock Pay?*—This seems a queer question to be entertained, and still stranger to see live stock styled by a "practical farmer" "necessary evils," when beef and pork are making 6*d.* per lb., and mutton 7*d.* We are led to infer that Mr. Mechi has either bought the wrong sort of stock, or bought his stock at too high a figure, as it is understood that his farm is not adapted for breeding. Go into the breeding districts and inquire if "live stock pays?" and you will not meet with a single negative. A good calf is worth from 30*s.* to 40*s.* as soon as dropped; a year old stirk is worth 5*l.* or 6*l.*, paying 4*l.* for the first year he requires very little attendance while running on ordinary grass-land at the rate of 2 or 3 per acre; at 2 years old he is worth 10*l.* or 12*l.*, paying 5*l.* or 6*l.* for the second year, which gives a good return for land, allowing the winter's keep to be fully paid for in manure, whether he feeds on straw only or has a full allowance of Turnips, or Mangolds and cake. "Necessary evils" indeed! Why, the herd of short horns are a continual feast to the eyes of the intelligent grazier, and his drove of feeding beasts are living monuments of his judgment; they are objects of pride and thankfulness to all about him, and if bought big enough in the spring, there is simply the balance of the salesman's account over the cost to pay his rent, and assist in the purchase of a choice lot when he can get them "in price" to fill his yards and bullock hovels for the winter; but I need hardly say that shelter may be too dearly purchased, cooking apparatus may be too complicated and expensive, the "times" and the epidemic may bring losses, but in how many instances are prime cattle sold from warm thatched hovels to the satisfaction of the "good judge of stock?" Buy well, and your bargain is half sold. Then again, as to sheep, Mr. Mechi thinks they "pull" the land. They may not be very profitable on heavy arable land, but this is the exception; on poor land they only want range enough, on mixed arable and pasture land of middling quality they only want change enough, and they will soon improve it. Culled and draft ewes are fetching upwards of 40*s.* each, good lambs are worth above 30*s.*, the fleece averages 10*s.* each; charging 4*d.* per head for rent of land, and attendance throughout the year, they leave a good margin for profit. He has heard that "the flock districts grow very little corn;" we grow in this neighbourhood as much corn as any district in the kingdom, and our belief is, that sheep aid us very considerably in its production; Turnips and Colseed in winter, Ryegrass and Clover in summer, sustain enormous quantities of sheep, and that our farmers are successful in their breed and management, one circumstance will testify, viz., the annual sale of rams by auction and otherwise at the great fair held here on October 2nd (it falls this year on the 3rd). Some 300 or 400 rams are then disposed of, one last year fetched above 40*l.*, and I believe that tups belonging to that gentleman averaged 16*l.* each. At Lincoln similar prices



are obtained, and the private sales and lettings are without number. In addition to all this "home" competition, if I may use the expression, there are a great many Leicester, Gloucester and Down sheep introduced here. At present prices they must pay the breeder, and by a diligent attendance at fairs and markets, and the exercise of ordinary care in selecting stock, I cannot help thinking they must also pay the feeder, unless the purchaser is led away by a too eager thirst for expensive novelty, or does not sufficiently respect old usages, and customary modes of treatment. "Pigs lose least," says Mr. Mechi; but surely if he has only one good sow, and gets two litters a year, the Turnips or Mangold or bad Potatoes, or tail Corn, with swill and grains, are badly bestowed if he cannot put something in his pocket, ay, if he cannot put a "10 pun-note" there to buy another "hydrant" or assist in bringing out some ingenious contrivance to benefit his neighbours, to instruct his audience, and thereby to animate "the agricultural interest." Pigs 6 months old are making 30s. each, they must pay with ordinary luck. Mr. Mechi says all animals are necessary evils; does he include horses? They require a little more care in selecting the parent stock, they require more field room to be brought up, but the prices are right; a good cart colt 2 years old will pay for rearing, he is worth more than the manure he makes! I do not recognise Mr. Mechi in this desponding mood. I have pictured him full of hope, sanguine, cheerful—is it soil only and sock wells that inspire him?—liquid manure and dead stock? Let him take a turn over the wolds or in fair pastures, and extract a hint or two from long travelled ways to success, from the old rewards of perseverance, as illustrated in the profitable management of live stock. *J. W., Peterborough, Sept. 19, 1853.*

**Soils.**—Wherever we go we find soils more or less varied, and generally or always composed of 12 to 14 constituents inorganic and organic, whatever their colour and agricultural capabilities, physical or chemical, may happen to be. Though we find them so varied in these two great characteristics, yet we find them all produced through one great cause, namely, the disintegration of rocks by chemical and physical causes combined together—the former first acting, and the latter, by gravitation, &c., finishing what the other by itself was unable to accomplish. But, whatever their agricultural capabilities may be, we find them composed for the most part of four great constituents, viz., sand or siliceous matter, clay or silicate of alumina, lime or calcareous soil, and organic matters. But the classification of soils is a difficult matter for many reasons and causes, such as the different terms the same soil is in different neighbourhoods liable to be called, and the vague manner in which they are described by agricultural writers, as fat and humus soils, &c.; but I will now proceed to give what seems to me to be a proper and good classification. Thus:—A calcareous soil I should term one which contained more than 20 per cent. of lime. A sandy soil, one which contains 80 per cent. or more of sand. A clay soil, that which has more than 50 per cent. of alumina [or clay]. A vegetable mould, one which contains more than 5 per cent. of organic matter (humus). A marly soil, one which contains more than 5 per cent. of lime, but less than 20; and 20 per cent. of clay, but less than 50. A loamy soil is one where the lime is less than 5 per cent., and where the proportion of clay varies from 20 to 50. As to the first, *calcareous soils*, they are such as cannot be properly described in a short space, as they differ so much according to the per-centage of lime; they are derived from oolitic rocks and limestone rocks; and whilst some are dry, friable, and open soils, and can be cultivated with some return for capital, others are poor and hungry, and contain too much lime; not that excess of lime in itself hurts vegetation, as we find leguminous plants (Vetches, Clover, Beans, &c.) require much lime, but it excludes other important inorganic matters as necessary for a plant's healthy growth as itself. *Sandy soils* are loose, open, friable, and easy to cultivate, if worth it; they retain and hold but little moisture, and, when excessively light, are termed hungry, not having sufficient stiffness to hold, absorb, and retain manure, and consequently are little benefited by it. They are rendered better by the addition of clay, lime, &c. Some of these soils, which contain clay and lime, are better, and are called Turnip soils, and are fitted for growing spring Wheat, &c., with advantage. *Clay soils* are just the opposite; stiffness, impenetrability, great power of absorbing and retaining moisture, and great specific gravity, characterise this class of soils. They can be much improved by draining; and next by burning them with branches of trees, Grass seds, faggots, &c., and any vegetable refuse matter; coal-ashes too, and even coal itself (if it can be got at a moderate price), would be beneficial. This burning acts chemically, by setting free potash in a soluble state, and also by conferring greater power of absorbing moisture and ammonia. The addition of lime, too, to these soils also acts by setting potash free. These soils would be benefited by mixing them with sand, clay, &c., which would make them more porous, and less difficult and expensive to work; but these soils, though difficult to work, often yield a beneficial return for labour and expense, and constitute in many parts of England some of the best corn-growing soils. *Humus soils* are especially fertile when they contain, as well as organic matter, all the mineral constituents which a plant requires; then plants flourish. But some of these soils contain much humus; and some, as peaty and boggy soils, contain 80 to 90 per cent. They are beneficially mixed with lime, clay, &c., which would supply inorganic constituents, and make

them stiffer and fitter for agricultural purposes. *Marly soils* are a sort of grade between calcareous soils and clays; they are not so impervious as the former, or stiff as the latter; they belong to the more generous class of soils. *Loamy soils* contain all the mineral constituents generally in a very finely divided state: perhaps next to rich garden moulds they are the best soils; they will grow nearly anything, and yield remunerative returns when properly cultivated. *Mr. Louch's Examination Paper: Royal Agricultural College.*

## Societies.

**NORTHAMPTON AGRICULTURAL SOCIETY.**—At the late annual meeting of this Society, the Rev. Sir G. S. Robinson, Bart., said, when labour was abundant and cheap, he was induced to try the experiment suggested by a clerical friend of his, Mr. Smith, of sowing strips of land with Wheat in alternate years, and leaving the alternate strips to a summer fallow. He began three years ago, and he had closely followed Mr. Smith's instructions. This harvest was the third of the experiment, and he would state the results. It was tried on  $4\frac{1}{2}$  acres of fair old arable land, having a subsoil of good loam and sand. In 1851 he sowed 9 bushels of seed, which gave 26 quarters and 5 bushels, or 6 qrs. to the acre. Next year the produce was 14 quarters and 4 bushels—showing a falling off. This year it was only 12 quarters 6 bushels, a little less still; but he thought, considering the character of the harvest generally this year, it was on the whole rather an improvement. But the whole question of success or failure turned on the cost. Now, the gain on the  $4\frac{1}{2}$  acres during the three years, taking last year as the test of the prices, was exactly 8*l.* He had allowed 2*l.* for rent. The increased prices of this year would, he dare say, have brought the profit up to at least 10*l.* Of course, so far as it was intended to assist the labouring classes it was no use going on with the experiment now, but he meant to try it a little further. The digging between the rows must be done by hand. The speaker then made some remarks depreciating the digging machine. —J. Yorke, Esq., referring to Sir G. Robinson's observations on the labourers, remarked that he made it a rule never to discharge a man except for grossly bad conduct. If after staying with him in winter labourers left him in the summer, he held it a good reason why he should not employ them again. If such men were taken on by other farmers without inquiry, the latter were greatly to blame, and the men encouraged in wrong doing. In the case of three or four men who had left his service recently, thinking they could get what they pleased, they went to a neighbour, and afterwards to Mr. Wood, Clapton, but both gentlemen, on ascertaining that they had been employed by him, refused to take them on, feeling sure something was amiss, and the consequence was their return and humble petition to be taken on again. This he did, as they acknowledged their error. If farmers would adopt the plan of making such inquiries and good character an object, they would find great good result from it. (Hear, hear.)—W. Levi, Esq., asked if Sir Geo. Robinson, in his calculation of profit by Mr. Smith's system of cultivation, had charged for the straw?—Sir G. Robinson: Yes; no manure being used on the land, he charged 15*s.* for it.—Mr. Levi: If so profitable on a small scale, could it not be done on a large one?—Sir George could not say, his farm consisting of but  $4\frac{1}{2}$  acres. He thought sufficient labour could not be procured.—Mr. Levi continued: He thought the farmers had not treated their labourers in a business-like way. He thought they should be paid higher wages, equal to those of "navvies," about, perhaps, 18*s.* a week. Three well paid did more than five badly paid, and he believed would prove much cheaper to the farmer.—Sir George remarked that the railway labourer worked on piece, and laboured under the disadvantage, in wet weather, of being turned adrift by the contractor, to lie in bed or kick up their heels where they liked.

## Reviews.

*The Journal of the Albert National Agricultural Training Establishment and Record of Industrial Progress.* No. 1. John Falconer, 53, Upper Sackville Street, Dublin.

We have received No. 1. of a new and, we suppose, quarterly periodical, issued from the Glasnevin Model School, near Dublin, to which the new designation of that admirably managed training establishment has been given. The Journal contains a number of very interesting and instructive papers, and deserves a wide circulation amongst those interested in agricultural education. The objects it purposes to treat of are the communication of information about the Glasnevin establishment, the printing reports of educational progress of all kinds, the publication of select agricultural and horticultural essays contributed by the conductors of agricultural schools and other intelligent correspondents, the answering agricultural questions, the noticing and review of agricultural works, and the record of meteorological observations. All of these objects are proper for an agricultural periodical, and most of them are well exemplified in the number before us. We select, as an illustration, a short paper by Mr. Moore "On the Changes effected by Drainage on the Natural Herbage."

"A generally admitted maxim in agriculture is, that proper drainage forms a necessary base for all sound

improvements of the soil to rest on. The truth of this is now being exemplified by the superior natural herbage growing on well-drained land, which, previous to the operation, produced only the inferior Grasses and other coarse plants. For example, the Phoenix Park, near Dublin, affords a good field for observation on a large scale, where the ground remains in its natural state, after being thoroughly drained, but no other means taken to improve the herbage. The scanty and sour nature of the vegetation which prevailed over the surface of a large portion of the Park within the last 10 years, will, no doubt, be remembered by many, but more especially by those who possessed sufficient botanical knowledge to enable them to judge of the different plants which composed it. To them the marked improvement which has since taken place will show more manifestly, but even the casual observer cannot fail to have this impressed on him, when either walking or riding over the ground. The brown harsh appearance which the turf presented during a great portion of former years has been changed to a more lively soft green, and in place of being wet and boggy under foot, is now firm and elastic. On comparing a note made on the herbage during the year, the drainage was commenced by Mr. Parks, with one taken on the same ground last June, the increase of the superior plants and decrease of the inferior will be seen. At the former period the prevailing Grasses were the following:—

Common fine bent Grass, <i>Agrostis vulgaris</i> , about 75 per cent.	
Brown bent Grass, <i>Agrostis canina</i> , and marsh bent	
Grass, <i>Agrostis alba</i> .....	10 "
Sweet-scented vernal Grass, <i>Anthoxanthum odoratum</i> .....	5 "
Crested Dog's-tail Grass, <i>Cynosurus cristatus</i> .....	5 "
Hard Fescue Grass, <i>Festuca duriuscula</i> .....	5 "

with very few others. The leguminous plants consisted chiefly of small quantities of White Clover and Bird's-foot Trefoil, *Lotus corniculatus*. On the low and damp places, the soft rush, *Juncus effusus*, hard rush, *Juncus glauca*, and marsh rush, *Juncus uliginosus*, were frequent, marking, as they invariably do, a soil surcharged with moisture. From that period up to the present, the superior Grasses and other good forage plants have continued to increase annually and replace the inferior kinds. A rough examination of the same open space of ground which afforded the foregoing data was made last month, when the principal Grasses composing the herbage were found to prevail in the following proportions:—

Common fine bent Grass, <i>Agrostis vulgaris</i> , about 25 per cent.	
Brown bent grass, <i>Agrostis canina</i> .....	10 "
Crested Dog's-tail, <i>Cynosurus cristatus</i> .....	15 "
Sweet-scented vernal, <i>Anthoxanthum odoratum</i> .....	10 "
Hard fescue, <i>Festuca duriuscula</i> .....	10 "
Meadow fescue, <i>Festuca pratensis</i> .....	5 "
Poa trivialis and pratensis .....	10 "
Cock's-foot, <i>Dactylis glomerata</i> , Bear-tail, <i>Alopecurus pratensis</i> , Soft Grass, <i>Holcus mollis</i> , and Cat's-tail, or Timothy, <i>Phleum pratense</i> .....	10 "

The leguminous plants have greatly increased, especially the White and Yellow Clovers, as so has the Bird's-foot Trefoil. The rushes have either disappeared altogether or are much lessened in quantity, and the common plantains, *Plantago lanceolata* and *Plantago major*, which do not seem to have been general before the drainage, are plentifully interspersed. Now this is only one instance among many hundreds where the improvement of the herbage has resulted from drainage alone, and has been selected because of its well-known locality, where the effects can be seen by those interested in the subject. It is, however, a fact of considerable national importance at the present time, when so much of the capital of Ireland is invested in cattle feeding. *Agrostis vulgaris*, which is the prevailing natural Grass in this country, and a very inferior species in nutritive properties to most of the superior kinds, gives way to them on the ground being dried and sweetened, and is soon replaced by good sorts. White Clover is a natural plant to all good pasture land in Ireland, especially that resting on the great limestone formations of the country, but only grows sparingly, if at all, when the ground is wet, yet immediately after drainage it increases rapidly without any seeds having been sown. How such should occur, and where the seeds come from, have given rise to some curious speculations, which may probably be considered in a future notice."

*A Guide to Form in Cattle.* By E. F. Welles. Simpkin, Marshall, & Co.

THE design of Mr. Welles, with which we have been for many years acquainted—to present instruction to young farmers and stock-breeders, by a series of sketches and pictures, rather than by chapters, on those faults and merits of form, the knowledge of which should guide their proceedings—is one which he is eminently qualified to carry out efficiently. And the present little book, a tract of 16 pages, each some 4 inches by 6 inches, interleaved with 7 or 8 lithographic plates, is in a cheap and simple unpretending way a very good development of the excellent idea which we know he has long entertained upon this subject.

## POULTRY.

**MALVERN POULTRY SHOW.**—Among the many exhibitions of poultry now taking place, that held last week at Great Malvern may rank among the most gratifying. If accessories have anything to do with success, it was highly favoured. It was in the beautiful promenade gardens of Mr. Davis, sheltered by the famous Malvern Hills, overlooking one of the most extended, varied, and beautiful views in the United Kingdom, so that visitors could refresh their sight in a beautiful garden,



and then return to a new contemplation of their feathered favourites. This advantage, however, can belong only to those shows held in the country and in the summer or autumn. But country committees will do well to follow this example, and to choose, not only the most attractive spot, but like the Malvern managers, to supply the locality with plenty of comfortable seats, and to take the admission money at the entrance to the ground or garden, and not to the show only. A similar plan was last year adopted at Cheveley Park, and in both instances we make no doubt it was appreciated. Another excellent novelty was a class for cottagers only, men renting under 10*l.* per annum, and producing certificates from the magistrates or ministers of the parishes in which they reside. For a first attempt it was not only successful but very creditable to the exhibitors of fowls, ducks, and geese. Our own sympathies are strongly in favour of these classes, and we believe them capable of effecting much good among those they are intended to benefit. People in easier circumstances do not sufficiently think on the importance of a prize of 2*l.* to a man who very often has to work a month for such a sum, or to the positive moral and social benefits to be derived from the occupation of the wife tending poultry in the midst of her children and her domestic duties, rather than the precarious and demoralising pursuits of field labour. But if in addition to this, the value of his little stock be doubled by his success, the comfort brought into his house, and the amelioration in his condition, cannot be sufficiently estimated by those who are placed higher in the scale of society. The object of these exhibitions should be two-fold. If they only point out the best breed their mission is but half accomplished. They must also increase the production of poultry, and render it accessible to the middle classes. This must and will be done by the cottager; he will be the most successful rearer, and through him, although it will not be an article of daily consumption, still it will be within the reach of classes, as a treat, who now cannot indulge in it, without deserving the imputation of extravagance. The introduction of this class is due to the Rev. F. Dyson, of Tidworth, Wilts, assisted by the Rev. Mr. Harris, curate of the Abbey Church, Malvern, and we heartily wish to the gentlemen God-speed in their endeavours. Mr. Dyson, from his celebrated strain of Dorkings, had eight cocks sent up in order to distribute them among cottagers whose birds showed they stood in need of such assistance. Poultry, like steam, has made rapid progress of late. Some years since the absence of a few celebrated breeders at once sunk a show below mediocrity, but now, thanks to the dissemination of good birds and of poultry knowledge generally, there is no lack of excellent specimens anywhere. There were above 300 pens exhibited, and all classes were on the whole good; while, with three exceptions, every one had birds of first-rate character. In the Dorkings the competition was great, and the commendations trod hard on the heels of their prize-taking brethren. The first and second pens belonged respectively to Mr. William Beach, Hanley Castle, and Mr. Joseph Smith, Henley-in-Arden; both new names, but with such birds they should often be before the public. In class 2, Mr. John Dain and Mr. Christopher Rawson had the prizes. The Spanish were excellent. The first prize was gained by Mr. Nelson, of Birmingham, whose breed seems to be fast improving. A very beautiful cock, belonging to Mrs. Stow, of Bredon, was disqualified, having moulted with numerous red feathers in each wing; he is otherwise a bird of unusual merit, and took first prize at the Surrey Gardens. The chickens belonging to the same lady stood first in their class, and are birds of much promise. It is a pity exhibitors are not more careful in selecting birds according to classes, as many prizes are lost by the mistakes that are made, and an unpleasant duty is forced upon judges, compelling them to disqualify birds that in their proper classes could not fail of success. This was the case with a beautiful pen of Partridge Cochins, belonging to Mr. Amplett, and exhibited in the buff and cinnamon class. Their success was certain had they been properly entered. Among the chickens in class 5, good birds were plentiful. Mr. Edward Farmer, of Spark Brook, took first prize. The old birds were in bad feather. Mrs. Stow, of Bredon, was here successful. The prize in dark birds would seem to belong to Mr. Mapplebeck, of Birmingham, as he again took it. The star of Mrs. Herbert, of Powick, was for once on the decline in the white Cochins; she exhibited beautiful birds, but Mr. Hodgkinson, of Birmingham, showed some better. Blacks were numerous and good so far as the pullets were concerned; but it would seem to be an impossibility to get cocks without the mixture of red and yellow feathers. The Hamburg classes were excellent. Poles and also. Every pen of silver spangled deserved a prize. Selbright bantams were badly represented. The geese were excellent, and the prize pen, bred between Toulouse and the old Irish were unusually heavy. The commended birds, belonging to Mr. Rawson, richly deserved a prize, but the judges had none to give. Both geese and ducks were very numerous and meritorious. Mr. Breavington, of Hounslow, had the prize for the latter. The conduct of this gentleman may be useful as an example to those who wish to be successful now that poultry shows are become general. At the Gloucester Show he gave an unusual prize for the prize ducks, but the prize lists of most subsequent shows will prove his investment was a better one than if he had purchased an ordinary pen at less money. Prize pens are like original pictures; here and there a first-rate connoisseur may buy a valuable

lot for a small price; but, as a rule, those that have successfully passed the ordeal are much cheaper at a high price than the discarded at a very low one. The "various" class deserved its name, and had the usual number of oddities. Our old friends the emus were there, but suffering from their peregrinations to all appearance, as they were evidently out of condition. There were some beautiful old English white bantams feathered to the toes, also a pen of very handsome and perfect black ones belonging to Lady Calthorpe. The limit of a report will not allow of more detail. Many most deserving pens were unrewarded, but the judges awarded all the prizes which were at their command, and wished for more. Altogether the exhibition was excellent, and the company included all the aristocracy and visitors of the neighbourhood. The best thanks of all who were there as exhibitors or otherwise are due to the Rev. F. Dyson, Mr. C. Archer, Mr. Davis, the Rev. Mr. Harris, and other gentlemen, who at some pecuniary risk originated and carried it out, cheerfully accepting the responsibilities, and from the first declining any possible advantage from it. An excellent and liberal prize list is in agitation for next year, and under such good management the Malvern show will not fail to rank among the great poultry treats of the kingdom. The Dorkings and Hamburgs were nearly all sold at good prices, but only the very best of the Cochins could find purchasers at moderate sums. All the birds that had to travel by railway had left before the show had been closed three hours. The judges were: J. T. Cottle, Esq., Pultney Villa, Cheltenham; Mr. John Baily, Mount Street, London.

**POULTRY:** *Dorking.* Coloured or grey feathers are not objectionable in the breast or tail of a Dorking cock, even for exhibition. Colour is secondary in this breed; at the same time, if two pens were of equal merit in every other respect, then, and then only, beautiful plumage would turn the scale. A purely black tail would be considered handsomer than one mixed with white. — *T U.* Silver pencilled Hamburgs are not of necessity impure because they have black spots on the neck and head, but it is an indication of degeneracy, and would disqualify at an exhibition. It may be some comfort to you to know, that both cocks and pullets as chickens are more spotted than adults. The spots, however, must disappear at the first moulting. — *H B.* The food for the cock should be cooling, and I would advise you to rub a little salad oil on the crown. Give a tablespoonful of castor oil, but do not shut him up. Look carefully at the skin of the head, and see that the feathers are not growing under it. If they are, put a stout needle under the tip of the growing feather and bring it through the skin; it will then grow well. — *E W H.* The chickens are dying of the gapes. The worms are in the windpipe; and a feather dipped in turpentine and gently pushed down will kill them. See that they have clean water, as the gapes generally come from dirty water. — *Pancier,* and "Scotland." If you want a learned book on poultry, read "Ornamental and Domestic Poultry," by the Rev. E. S. Dixon; if the opinions of many of our most successful breeders, read "The Poultry Book;" if you want a plain, practical little work, read mine. If the disease you wish to combat is the roup, I can send you some pills will do it. With all due respect to querists, it is the last time I can answer about poultry books, as I neither wish to puff my own nor to disparage others. — *Maad Tub.* You must watch when your hen lays, and take the eggs away immediately; after this has been done for a day or two, they will leave off eating them. If your fowls are not supplied with material for forming the shell of their eggs, throw them some bricklayer's rubbish down. They first eat eggs for the sake of their shells. *John Baily, 113, Mount Street.*

### Miscellaneous.

*Improvement in Drying Bricks and such other Articles as are or may be made of Clay;* by G. Knight, of Birmingham, and J. Heritage, of Warwick. Patent granted March 16, 1853. (No. 649).—Claim: The application of steam and hot water to the heating of kilns, ovens, flues, or chambers in which bricks and other articles made of clay are dried prior to the burning of the same, whether the said steam and hot water be applied as described, or in any other manner. *Mechanics' Magazine.*

### Calendar of Operations.

#### SEPTEMBER.

**BORDER OF THE FENS, Sept. 26.**—The agricultural year is nearly closed, and we have arrived at that last stage of operations which should reward the farmer for a long alternation of hope and fear; hopes long deferred, and fears too often realised by the shortcomings of his crops, and the heavy amount of his outgoings, when "the tithe of the whole" presents itself in the examination of his accounts. The reward comes at last in an unlooked-for manner, not from the overflowing of barns, and the abundance that spreads gladness around, but from high prices. The echoing murmurs of approaching scarcity, and the far-sounding preparations for an apprehended dearth around us, have been the sad consequences of inability to sow last "latter end," of the necessity of sowing again, again to lose the plant, of weeds rank and wondrous strange, of the early sown being thin, of the late sown being blighted, and lastly of the threshed corn yielding short of the expectation. This catalogue of complaints does not apply to the fens, where the crops have been bulky, but even there the produce is not so great as was anticipated, though altogether it has been a better season for the growth of Wheat than the Fens have experienced for several years. On good loamy land also, where well cultivated, the Wheat will be quite an average, but on silty or clay lands the return will be scanty and disheartening. On Saturday last Wheat 18 stones the comb made from 6*½* to 7*½* per quarter, and as the seed trade commences directly there is no prospect of a fall at present, but the reverse. Barley has been grown extensively in this neighbourhood, and will be a full average crop; the yield is spoken of as about 6 quarters per acre, which has been sold at from 2*½* to 3*½* per quarter, weighing 54 lbs. and 56 lbs. the bushel. Oats will also be a fair crop; the Beans are in some instances a heavy crop, and in many cases light, they are not yet harvested; Peas are light, and Tares very light, selling at 10*s.* per bushel. Second crops of Clover are good, and a great deal has been secured in excellent condition. Clover leys, where eaten close, have been ploughed and sowed in preparation for the Wheat sowing when they can be spared; an early ploughing for a fifth seems to bring a heavier and stronger plant than ploughing and sowing "In the breach," as it is termed. Wheat stubbles are being cleared and skimmed to get off the rubbish, and to be ready for a third winter ploughing when our horses can work them, to forward the ensuing fallow, or to lay

for spring cropping. Turnips continue to have more weeds than we like, and require continued attention; late-sown Coleseed also, where not too thick or too high, may still be cleared of the few weeds which have escaped notice, and which will shed seeds if not removed. Potatoes are much diseased—in many cases not one-third are good; they are selling at 10*s.* per sack of 2 cwt, and are being generally lifted and sent off to London or Birmingham. The business of a farmer for the next two months seems to be comprised in clearing the land of everything that can be taken off, then skimming or ploughing all vacant ground as soon as possible, then sowing first sufficient Tares with Rye, or half a peck of Wheat per acre, then to attend to Wheat sowing, and prepare for sowing winter Oats and winter Beans. In live stock, sheep now claim the first place; to select well-formed and healthy rams, and to sort out the ewes in number, and with qualities calculated to promote the due increase and improvement of the flock. I need hardly say that all weak, washy-headed, or cotty-skinned sheep should be excluded, as well as those that are known to have any impediment to the flow of milk from a small, fleshy, or diseased bag; all ulcerated sheep and the aged should also be culled, unless they are very good ewes, with at least teeth enough to serve themselves until they can raise a lamb. *J. W. Peterborough.*

**CHESHIRE.**—The last month has been an exceedingly busy one in harvest operations, commencing with the Oat crop, which was followed by the autumnal-sown Wheat; then the Barley, all of which is nearly secured; and, fourthly, the spring-sown Wheat, much of which has been cut in this immediate neighbourhood, but still remains in the field. The weather for the last three weeks has been most propitious for the harvest, and labourers have been more plentiful, and not so exorbitant in their demands for wages as was anticipated. This, in a great measure, is owing to the lateness of a portion of the Wheat crops, and the harvest labour being spread over a more lengthened period than usual. Wheat will not be a yielding crop, as we predicted in our last report, but Barley and Oats are considered quite an average. Turnips and Mangold Wurzel are growing fast, and we think will prove better crops than were expected a month ago. The Potato question is now decided in this part of the county; they have ceased growing, and the produce, except in very few instances, will be exceedingly small; generally speaking, they are not more than half their usual size, and of them one half are diseased. In the northern and eastern sides of the county the harvest is not so farward, but if the fine weather continues another week, the same report will, we think, apply generally to the county. The pleuro-pneumonia is still committing serious devastations amongst the dairy stocks in some parts of the county. *N. C.*

**SOUTH DEVON, Sept. 26.**—During the past week the harvest has been pretty well brought to a close, and taking it altogether cannot be called an unfavourable one, as far as the weather is concerned. How it may turn out with regard to quantity and quality is another point, and not easy of solution just yet, very little new corn having come to market, in short not sufficient to pronounce a judgment on a large district; the quality, as well as one can judge, is decidedly good. We are now feeling the effects of the bad hay harvest in the price of old meadow hay, which is now worth from 4*l.* 10*s.* to 5*l.* per ton; this, to some, may not appear high for this season of the year, but it is much above our usual mark. Farming operations are now directed to the Potato fields and preparing ground for Wheat; the latter is at present of great importance, there being no better time for sowing Wheat than the first and second weeks in October, although it is considered by some to be much too early; those who have tried it prove by their anxiety to be early again that they have derived benefit from it. The Potato crop, as far as yield is concerned, is only a middling crop, and much diseased, requiring two-hoe to be set aside; the late rains have no doubt added much to increase it. The young Clovers look well, and Grass is tolerably plenty. Bullocks have not, however, done as well this season as last; they take longer to get up and are deficient at the scale.

**WESTER ROSS, Sept. 27.**—A few of the farmers in this neighbourhood have got the harvest completed. The corn has been carted to the stack-yard in the best possible condition. With the exception of a few days at the commencement, we have got on without interruption; the wind was so moderate that, whilst none of the precious grain was lost, the stocks were thoroughly dried. Thus the occupants of the earlier and better-cultivated fields, and the more pushing farmers, have been given to rejoice over the ingathering of an ordinarily abundant and well-harvested crop. The farmers so fortunate are the exception, the rest being still a good deal to cut and much to gather in. On the 23rd, the weather became unsettled, and heavy showers fell; on the 25th, torrents of rain continued, throughout the whole day, to be impetuously driven against stook and stack by a tempestuous wind. As yet the cutting of the still standing crops progresses but slowly, from the falling of occasional showers, whilst carting to the stack-yard is altogether stopped. However, when the clouds exhaust themselves, we may yet have a long stretch of fine weather; and should it be so, and should the whole crop be safely stacked, and the anticipated prices be realised, this coming year will prove the most profitable that the farmer in the far north has for a long time seen. Little as yet has been threshed, and consequently we cannot speak confidently of the yield. Wheat and Barley are of fine quality; Oats are spoken of as being light, the consequence no doubt of a lack of moisture, without an abundant supply of which Oats do not well thrive. Potato disease has again made its appearance, but with little of its old virulence, and the highlander is delighted to think that his old friend the Potato is come off this season from the attack of its deadly enemy almost unscathed. Turnips are still unequal; some fields are good, whilst the progress of others is so slow that it would take to Christmas of good growing weather to bring their bulbs to a decent circumference, and hence the stiffness in the sale of lean cattle. Our last Muir of Ord market, although better than the previous one, was dull. Fat cattle, however, being scarce, sold well. A scarcity of sheep was complained of, and high prices were asked, and had to be given. Sheep farmers are now looking out for Turnips for wintering. 3*l.* to 5*l.* per acre are given according to quality, or 2*½* per head per week for hogs.

### Notices to Correspondents.

**BERRERY TARE: F W.** The neighbourhood of the Berrery tree does not exert any more injurious influence on the Wheat than that of any other bush. The thing was very well referred to and exposed in our Paper a week or two ago. (See page 556.)

**CARRARVONSHIRE AGRICULTURAL SOCIETY: V D.** We regret our inability to give you the information. The county paper would probably supply it.

**CARLISLE AGRICULTURAL SOCIETY: —** Thank you. We had, previously to receiving your note, seen the report, and concluded, in the presence of much matter judged to be of greater importance, not to publish. And since then the paper, for which we have to thank you, has been mislaid.

**"DANIELS": Plymouth.** What are they? We should be exceedingly obliged by information as to the provincial names of weeds. Whatever "Daniels" may be, they are to be destroyed, just like other weeds—by patience—in destroying what of them lives above, and removing what of them lives below the surface of the ground.

**DRAINS: E B.** You proceed upon the idea that wherever the drain is placed the soil will not part with any water until it is itself filled; but this is so obviously a mistake that your argument, built upon it, cannot stand. Does any other vessel, with a hole in the bottom of it, wait till it is filled before it leaks?

**FOOD FOR CATTLE, &c.: —** "One who wishes to improve." Many thanks for your reminder, of which we shall make use. The winter varieties of Barley, Beans, Tares, and even Wheat, are not botanically distinct species. The last named has indeed several distinct varieties, a Triticum hybernium and a Triticum aestivum, and they among the former varieties both the winter and spring Wheats; the Bellevue Talavera, which is strictly spring



Wheat, belongs to T. hybernium. From the same plant in the fourth or fifth generation, there may arise spring and winter wheats, differing therefore not in their botanical characters, but in those impressed by habit and treatment. You had better fill up the blanks in your Clover by scarifying the place, and then sowing winter Vetches.

**FOR A SANDY SOIL: Manchester.** Sow 1½ lb. of *Alopecurus pratensis*, 1 lb. *Anthoxanthum odoratum*, 1 lb. *Avena flavescens*, 3½ lbs. *Dactylis glomerata*, 2 lbs. *Festuca duriuscula*, 2 lbs. *F. pratensis*, 2 lbs. *F. rubra*, 6 lbs. *Lolium italicum*, 8 lbs. *Lolium perenne*, 1½ lb. *Poa nemoralis*, 1 lb. *P. sempervirens*, 1 lb. *P. pratensis*, 1½ lb. *Lotus corniculatus*, 1 lb. *Medicago lupulina*, 1½ lb. *Trifolium hybridum*, 1 lb. *T. pratensis*, 2 lbs. *T. p. perenne*, and 4 lbs. *T. repens*. In all, 41 lbs. per acre; with a light seeding of Barley—to be sown early in April. So says the "Agrostographia" of Lawson.

**HORSE FOOD: A. B.** We would as soon have 10 lbs. of Oats and 1 lb. of Linseed, the latter given as a soup with chaff, as 12 lbs. of Oats. We do not give these as chemical equivalents, nor do we say you ought to take off any of the Oats, because you had added the Linseed.

**LAMBS: J. P.** The usual practice is not to shear lambs the first year nor to breed from them. They may, however, be shorn with impunity; but it is not desirable to breed from them. W. C. S.

**MANURE: RUS.** We should prefer strewing it with charcoal-peat charcoal, for instance—to either chloride of lime or sulphuric acid. Just cover the layer with the charcoal.

**PIG BREEDING FARM: X Y Z** says:—Having read Mr. Edward Hulme's paper on a Pig-breeding farm, I am induced to ask him if he will be so obliging as to state in the *Gazette* his method of growing early Potatoes and Mangold Wurzel; also what time his early Peas and Tares are sown to have time to ripen; also what time does he sow his Swedes—after early Peas; also are root and salt the only manure he gives to his Carrot land? I have at present 2 acres of Carrots, but the produce is not more than one half of Mr. Hulme's. The land was double trenched and well manured, and the seed sown in drills 1½ foot apart. The manure used was farm-yard manure.

**SLUGS: H. S.** We have somewhere seen it asserted that the best plan is to send a man out on a dewy morning or evening to sow powdered quick-lime over the Clover. If any of it alight on them it will burn a hole in their jackets. Salt is more likely to be efficient than gas-lime; but it is also more likely to injure the Clover unless sown in wet weather. The success of either will depend on your applying it at the proper time, when the slugs are abroad. A waggon load of fresh gas-lime mixed with 4 or 5 cwt. of salt, and applied directly to the land, per acre, would injure the crop.

**TICKS, &c., IN SHEEP: An Old Subscriber.** Tar and grease of some sort make the best application; the purer the tar the better, as it is less likely to injure the wool. If butter is used, other kinds of grease or oil may be used. About 5 lbs. of tar to 6 lbs. of grease will be the proper proportions. In the south of England, nothing of this sort is used, but the lambs are dipped in a solution containing arsenic to destroy the tick. W. C. S.

**WINTER BEANS: F S W.** We know of only one sort, the small Russian or Common Winter Bean. If you sow guano you had better not depend on it alone. Let the ground, whether by the use of farm manure or otherwise, be in good order for Beans in autumn, and then sow 2 or 3 cwt. per acre of guano in early spring, and horse-hoe it in.

## Markets.

COVENT GARDEN, Oct. 1.

The market is pretty well supplied with Vegetables and Fruit, but trade continues dull. Good melting Peaches and Nectarines are, however, nearly over. English Grapes are abundant. Pears consist of Beurre d'Amanlis, Bon Chrétien, Brown Beurre, Bonne Louis, Gansel's Bergamot, and Marie Louise. Importations from the Continent of Potatoes (sound) and Tomatoes are still kept up; the latter fetch from 2s. to 3s. per dozen. Plums from the South of France fetch 4s. per basket. Carrots and Turnips fetch from 2d. to 3d. per bunch. A few Peas may still be had. Potatoes are becoming much more diseased, but prices for them are rather better. Mushrooms are much more plentiful, and a little cheaper. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

## FRUIT

Pine-apples, per lb., 3s to 6s  
Grapes, hothouse, p. lb., 1s to 3s 6d  
— Portugal, per lb., 6d to 1s  
Peaches, per doz., 1s 6d to 6s  
Nectarines, per doz., 1s to 4s  
Plums, per punnet, 1s to 2s  
Melons, each, 1s to 3s  
Apples, per bush, 3s to 6s  
— dessert, p. lb. sieve, 2s to 4s  
Pears, per doz., 1s to 3s

## VEGETABLES

Cabbages, per doz., 6d to 9d  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 2s to 3s  
French Beans, p. h. sieve, 1s 6d to 2s 6d  
Brussels Sprouts, do., 1s 6d to 2s  
Potatoes, per ton, 30s to 140s  
— per cwt., 3s to 5s  
— per bush, 2s 6d to 6s  
Turnips, per doz., 2s to 2s 6d  
Cucumbers, each, 2d to 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 1s to 2s  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

Figs, per doz., 1s to 2s  
Lemons, per doz., 1s to 2s  
Oranges, per doz., 2s to 3s  
Almonds, per peck, 5s  
— sweet, per lb., 2s to 3s  
Filberts, p. 100 lbs., 6s to 7s  
Walnuts, per 100, 1s to 1s 6d  
Nuts, Barcelona, per bush, 20s  
— Cobs, p. 100 lbs., 4s to 5s

Garlic, per lb., 6d to 8d  
Lettuce, Cab., p. doz., 6d to 8d  
— Cos, per score, 9d to 1s  
Radishes, per doz., 1s to 2s  
Small Salads, p. pun., 2d to 3d  
Horse Radish, p. bundle, 2s to 4s  
Mushrooms, p. pott., 1s to 2s 6d  
— per bushel, 6s to 8s  
Sorrel, per h. sieve, 6d to 1s  
Artichokes, per doz., 3s to 6s  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. doz. bunches, 2s to 4s  
Mint, green, per bunch, 2d to 4d  
Basil, do., per bunch, 6d  
Marjoram, do., do., 6d  
Watercresses, p. 12 bun, 3d to 4d

HOPS.—BOROUGH MARKET, Sept. 30.

Messrs. Patenden and Smith report that the hop market is again in a very excited state this morning, and prices keep rapidly advancing for all kinds of Hops. Duty 140,000.

COAL MARKET.—FRIDAY, Sept. 30.

West Hartley, 20s. 6d.; Wallsend Gosforth, 21s. 9d.; Wallsend Haswell, 23s. 6d.; Wallsend Stewarts, 23s.; Wallsend Tees, 23s.—Ships at market, 9d.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 29.

Prime Meadow Hay 90s to 110s  
Inferior do. ... 50 80  
Rowen ... 40 55  
New Hay ... 60 80

WHITECHAPEL, Sept. 29.

Old Clover ... 120s to 126s  
Inferior do. ... 90 95  
New Hay ... 80 84  
Inferior do. ... 86 60

WOOL.—BRADFORD, THURSDAY, Sept. 29.

There is very little doing by the spinners in the purchase of wools, and great caution is manifested; on the other hand, the staplers generally are not large holders, and with the difficulty they have to buy, there is no disposition to press sales, consequently prices are firm.

SMITHFIELD.—MONDAY, Sept. 26.

The supply of Beasts is considerably smaller, and consequently they are more readily disposed of; in a few instances prices are rather better, but on the average there is scarcely a quotable

advance. The number of Sheep is about the same as of late; the favourable weather causes a brisk trade, and choicest qualities are rather dearer. Good Calves are scarce, and sold at advanced rates. From Germany and Holland there are 2721 Beasts, 7920 Sheep, and 161 Calves; from Scotland, 60 Beasts; and 260 from the northern and midland counties.

Per st. of 8 lbs.—s. d. s. d.  
Best Scots, Herefords, &c. ... 4 2 to 4 4  
Best Short-horns ... 4 0 to 4 4  
2d quality Beasts ... 2 4 to 3 6  
Best Downs and Half-breeds ... 5 0 to 5 2  
Do. Shorn ... 0 0 to 0 0  
Beasts, 5654; Sheep and Lambs, 26,540; Calves, 250; Pigs, 380.

FRIDAY, Sept. 30.

The supply of Beasts is not large, but quite equal to the demand; there being very few of the choicest description on offer they are readily disposed of, but trade is very dull for other kinds. Owing to the non-arrival of foreign consignments, the number of sheep is very small, consequently Monday's prices are fully maintained. The demand, however, is very limited, this being Michaelmas week. Calves are dearer, in consequence of the short supply. From Germany and Holland there are 163 Beasts, 760 Sheep, and 103 Calves; from Spain, 220 Sheep; from France, 20 Sheep and 2 Calves; 500 Beasts from the northern and midland, and 80 Milch Cows from the home counties.

Per st. of 8 lbs.—s. d. s. d.  
Best Scots, Herefords, &c. ... 4 2 to 4 4  
Best Short-horns ... 4 0 to 4 4  
2d quality Beasts ... 2 4 to 3 4  
Best Downs and Half-breeds ... 5 0 to 5 4  
Do. Shorn ... 0 0 to 0 0  
Beasts, 844; Sheep and Lambs, 4890; Calves, 224; Pigs, 340.

MARK LANE.

MONDAY, Sept. 26.—Since Friday it has blown heavily from the W. and S.W., last night a perfect hurricane with occasional heavy showers of rain. The supply of English Wheat to this morning's market was small, and disposed of at an advance of fully 5s. per qr. upon the prices of this day's evening. Foreign met a lively inquiry at a similar improvement, but the market being excited at the opening, prices were somewhat irregular. Maltsting barley sells at the extreme prices of this day's evening; grinding and distilling 1s. to 2s. per qr. dearer. White Peas continue scarce, and command our extreme quotations; grey bring an advance of 1s. to 2s. per qr. Beans are 2s. per qr. dearer, a few new English Mazagans brought 39s. per qr. Oats sell at an improvement of 1s. to 2s. per qr. The top price of town-made Flour is raised to 70s. per sack, and barrels are 3s. dearer.

PER IMPERIAL QUARTER.  
Wheat, Essex, Kent, & Suffolk ... White 61-70 Red ... 59-66  
— fine selected runs ... ditto 66-76 Red ... 58-72  
— Talavera ... 66-80 Red ... —  
Norfolk ... 58-60 Red ... —  
Foreign ... 52-43 Malting ... 36-40  
Barley, grind. & distill., 34s to 38s ... Chev. 25-37 Malting ... —  
Foreign, grinding and distilling ... 17-21  
Oats, Essex and Suffolk ... 17-21  
— Scotch and Lincolnshire ... Potato 22-24 Feed ... 17-21  
— Irish ... Potato 21-23 Feed ... 19-20  
— Foreign ... Poland and Brew 17-27 Feed ... 18-25  
Rye ... 29-44 Foreign ... —  
Rye-meal, foreign ... 39-44 Harrow ... 59-44  
Beans, Mazagan, 40s to 42s ... Tick 39-44 Longpod ... —  
— Pigeon ... 44s to 46s ... Winds. 36-46 Egyptian 34-37  
— Foreign ... 56-60 Suffolk ... —  
Peas, white, Essex and Kent ... Small 40-43 Foreign ... 40-60  
— Maple ... 44s to 47s ... Grey 40-43 Yellow ... —  
Maize ... 40-43  
Flour, best marks delivered ... per sack 64-70  
— 2d ditto ... ditto 50-64 Country ... 50-64  
— Foreign ... per barrel 34-38 Per sack ... 54-60  
FRIDAY, Sept. 30. The arrivals of grain and Flour this week, both English and foreign, have been moderate. This morning's market opened with a fair attendance of country buyers, and Wheat was generally held for an advance of 2s. per qr. which however checked business; only a moderate amount resulted, on about the terms of Monday last for both English and foreign. Floating cargoes from the south are held at former rates, but we did not hear of any transactions. Barley, Beans, and Peas bring fully Monday's prices. Oats are 6d. to 1s. per qr. dearer. The business done in Flour is not extensive, but former rates are exceeded, and for an extra quality of Genesee 45s. per barrel was obtained.

## ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 670	Qrs. 520	Qrs. 760	1120 sacks
Irish ...	...	...	...	...
Foreign ...	8650	650	470	2310 bbls

## IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Aug. 20 ...	51 1	29 7	22 0	34 10	40 11	34 9
— 27 ...	43 6	29 6	21 6	33 8	41 1	36 6
Sept. 3 ...	50 4	30 4	21 10	32 3	41 1	37 2
— 10 ...	54 9	31 3	21 11	33 6	41 1	37 8
— 17 ...	56 7	34 9	20 6	35 7	41 9	39 8
— 24 ...	56 7	35 9	21 4	36 9	43 0	41 6
Aggreg. Aver.	53 0	31 10	21 6	34 5	41 6	37 10

## FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Aug. 20	Aug. 27	Sept. 3	Sept. 10	Sept. 17	Sept. 24
56s 7d ...	...	...	...	...	...	...
56 7 ...	...	...	...	...	...	...
54 9 ...	...	...	...	...	...	...
51 1 ...	...	...	...	...	...	...
50 4 ...	...	...	...	...	...	...
48 6 ...	...	...	...	...	...	...

LIVERPOOL, TUESDAY, Sept. 27.—At our Corn Exchange this morning there was a large attendance of the town and country trade, and an extensive business was transacted in Wheat and Flour for consumption and on speculation, at an advance, since this day week, of 9d. to 10d. per 70 lbs. on the former, and 2s. to 8s. per barrel and 4s. to 5s. per sack on the latter article, prime white American Wheat finding buyers at 10s. to 10s. 3d. per 70 lbs., and superior Western Canal Flour 31s. to 34s. 6d. per barrel. Oats met with a fair sale, at an improvement of 2d. per 40 lbs. oatmeal improved 3s. per load, being saleable at 30s. and 32s. per load respectively. Barley realised an advance of 2d. to 3d. per bushel in the sales made. Indian Corn was generally held for 6s. per qr. more money.—FRIDAY, Sept. 23.—The arrivals from Ireland and coastwise since Tuesday last are trifling. At this morning's market there was a good attendance of town and country dealers, and an extensive business was done in Wheat, both for consumption and on speculation, at an advance of 2d. to 3d. per 70 lbs. and 9d. to 1s. per barrel. Oatmeal was in active request, at an improvement of 2s. per load for both old and new. Oats and Barley were each rather dearer, and Beans brought 1s. per qr. more money. Indian Corn met with a very extensive sale, at an advance of 2s. to 3s. per qr.; fine yellow in store, having been sold at 36s. to 40s. per 480 lbs. Floating cargoes are scarce, and held for a similar improvement.

**CARSON'S ORIGINAL ANTI-CORROSION PAINT**, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for outdoor work at their country seats. The Anti-Corrosion is particularly recommended as the most durable outdoor Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

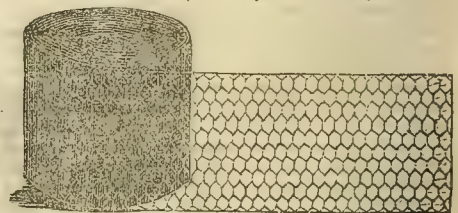
Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SONS, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

**HENRY J. MORTON AND CO., PATENT GALVANISED IRON ROOFING WORKS**, 9½, Albion Street, Leeds, Agents for PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES. The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



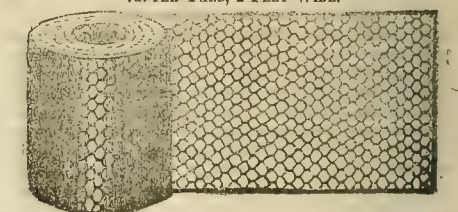
IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

**HENRY J. MORTON AND CO., 9½, Albion Street, Leeds.**—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING and cannot rust or corrode, made any width and length.



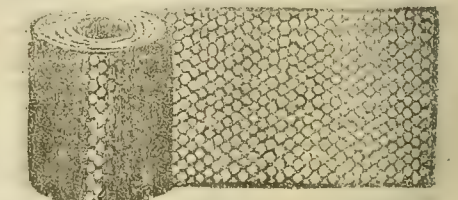
24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.  
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. 0½d. per yard.  
GALVANISED IRON SPOUTING, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.  
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalted Roofing Felt, &c. Apply at 9½, ALBION STREET, LEEDS.

**GALVANISED WIRE GAME NETTING.**—7d. PER YARD, 2 FEET WIDE.



2-inch mesh, light, 24 inches wide ... 7d. per yd. Galvanised.  
2-inch " strong " ... 12 " 9 " Galvanised.  
2-inch " extra strong " ... 12 " 9 " Galvanised.  
1½-inch " light " ... 8 " 6 " Galvanised.  
1½-inch " strong " ... 10 " 8 " Galvanised.  
1½-inch " extra strong " ... 14 " 11 " Galvanised.  
All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.  
Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

**CHEAP WIRE GAME & POULTRY NETTING**, 5d. per running yard. GALVANISED DITTO, 7d. per running yard, 2 feet wide.



24 in. wide, 2 in. mesh, 7d. per yard. ... 5d. per yard.  
30 in. " 2 in. " 9d. " ... 6d. " "  
36 in. " 2 in. " 10½d. " ... 7½d. " "  
48 in. " 2 in. " 1s. 2d. " ... 10d. " "  
Sparrow-Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlias, Roses, Garden Arches, Bording, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. FOX, City of London Wire Work and Iron Fence Manufacturer, 44, Skinner Street, and 6 and 8, Snow Hill, London.



**WHEAT DIBBLING.**—THE PATENT ECONOMIC DIPPER, with from six to nine depositors for inserting one grain (or more at required) in each hole. Price moderate.  
Mr. C. H. GABRIEL, Surrey Chambers, Arundel Street, Strand, London.

**FRIGI DOMO**, patronised by the Horticultural Society and the Zoological Society, a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and horticultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARNOLD, Carpet Manufacturer, 451, Oxford Street, London.—Manufacturer, Royal Mills, Wandsworth, Surrey.

**UPHOLSTERY AND CABINET FURNITURE**, damask, chintzes, Tournay, Brussels, and cut pile carpets, gilt cornices, pier and chimney glasses, chairs, in mahogany, rosewood, and walnut-tree, loo tables, dining tables, cheffoniers, dining tables, bookcases, sideboards, bedsteads, Arabian, French, four-post, and half tester, in mahogany and iron, well-seasoned bedding. The enamelled japanned bed furniture, to imitate maple, bamboo, and other woods.—At T. MADGWICK'S, 11, Pavement, Finsbury.

**REMOVING AND WAREHOUSING FURNITURE.**—Contracts entered into for the removal of Furniture to any distance. Every article requisite for the protection of the furniture provided, so that only the hire is charged. The Estimate if desired will include the entire responsibility and risk of removal, also the taking down, unpacking, and re-arranging the whole of the Furniture in the various rooms, altering and laying down Carpets, also fixing Cornices and Curtains. At T. MADGWICK'S, Upholsterer, Pavement, Finsbury.

**THE VINE DISEASE EFFECTUALLY CURED BY WATSON'S BLIGHT EXTERMINATOR AND PREVENTIVE.** For external application to Grape Vines, Fruit Trees, and all kinds of Shrubs liable to Blight or Disease. It insures a surprisingly vigorous and healthy growth and fertility.—Price 2s. 6d. per bottle. To be had of H. WATSON, 198, Shoreditch, High Street; and W. DENVER, Florist, &c., 82, Gracechurch Street, London.

**SIR WILLIAM BURNETT'S DISINFECTING FLUID.**—THE BEST CONCENTRATED "CHLORIDE OF ZINC."—GREAT REDUCTION OF PRICE.—The merits of this Fluid, invented by Sir W. BURNETT, M.D., F.R.S., &c., &c., for the Disinfection of Sick Rooms, Clothing, Linen, &c.; the Prevention of Contagion, the Preservation of Animal Matter from Putrescence, the Purification of Bilge-water, Cesspools, Drains, Water-closets, &c., are now so well known to the public as to render comment unnecessary.

Sold at the Office, 18, Cannon Street, City, London; and by Chemists, Shipping Agents, and others throughout the United Kingdom, in imperial quart bottles at 2s. 6d.; in pints at 1s. 3d.; in half-pints at 9d.; and in bulk at 6s. per gallon.

**CAUTION.**—Beware of Imitations.—The only genuine Disinfecting Fluid is sealed over the cork with the inscription, "Sir Wm. BURNETT'S Disinfecting Fluid," and accompanied with numerous testimonials of the highest order, and instructions for its use.

**SHIRTS.—FORD'S EUREKA SHIRTS** are not sold by any hosiers or drapers, and can therefore be obtained only at 88, Poultry. Gentlemen in the country or abroad, ordering through their agents, are requested to observe on the interior of the collar-band the stamp—"Ford's Eureka Shirts, 88, Poultry"—without which none are genuine. They are made in two qualities, the first of which is 40s. the half-dozen, and the second quality 30s. the half-dozen. Gentlemen who are desirous of purchasing shirts in the very best manner in which they can be made are solicited to inspect these, the most unique and only perfect fitting shirts. List of prices, and instructions for measurement, post free.—RICHARD FORD, 88, Poultry, London.

**FENDERS, STOVES, AND FIRE-IRONS.**—

Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTOS'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 24. 14s. to 57. 10s.; ditto, with ornate ornaments and two sets of bars, 57. 10s. to 122. 12s.; Bronzed Fenders complete, with standards, from 7s. to 31s.; Steel Fenders, from 21. 15s. to 61s.; ditto, with rich ornate ornaments, from 21. 15s. to 71. 7s.; Fire-irons from 1s. 9d. the set to 41. 4s. Silver-plate and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges.

1st.—From the frequency and extent of his purchases; and

2dly.—From those purchases being made exclusively for cash.

**DISH COVERS AND HOT-WATER DISHES** in every material, in great variety, and of the newest and most recherche patterns. Tin Dish Covers, 6s. the set of six; Black Tin, 11s. 6d. to 25s. the set of six; elegant modern patterns, 20s. to 52s. the set; Britannia Metal, with or without silver-plated handles, 6s. to 102s. the set; Sheffield Plated, 10s. to 167. 10s. the set; Black Tin Hot-water Dishes, with wells for gravy, 11s. to 25s. Britannia Metal, 20s. to 72s.; Sheffield plated, full size, 97. 10s.

**GAS CHANDELIERS AND BRACKETS.**—The increased and increasing use of gas in private houses has induced WILLIAM S. BURTOS to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Ironmongery Establishment the largest and most remarkable in the kingdom, viz., from 12s. 6d. (two lights) to 167. 6s.

**LAMPS OF ALL SORTS AND PATTERNS.**—The largest, as well as the choicest, assortment in existence of PALMER'S MAGNUM and other LAMPS, CAMPBELL, ARGAND, SOLAR, and MODERATE LAMPS, with all the latest improvements, and of the newest and most recherche patterns, in ornate Bohemian and plain glass, or papier-mache, is at WILLIAM S. BURTOS'S, and they are arranged in one large room, so that the patterns, sizes and sorts can be instantly selected.

PALMER'S CHANDELIERS, 8s. 6d. per lb.—Palmer's Patent Candles, all marked "Palmer."

Single or double wicks ... .. 8s. 6d. per lb.  
Mid size, 3 wicks ... .. 9d. "  
Magnum, 3 or 4 wicks ... .. 9s. 6d. "  
English Patent Camphine, in sealed cans 6s. 6d. per gallon.  
Best Colza Oil ... .. 4s. 6d. "

WILLIAM S. BURTOS has TEN LARGE SHOW ROOMS (all communicating, exclusive of the shop, devoted solely to the show of GENERAL IRONMONGERY (including Cutlery, Steel Silver, Plated and Japanned Ware), Iron and Brass Bedsteads, &c. arranged and displayed that purchasers may easily and at once make their selection.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

N. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place.

**MAW'S ENCAUSTIC TILE PAVEMENTS.**—

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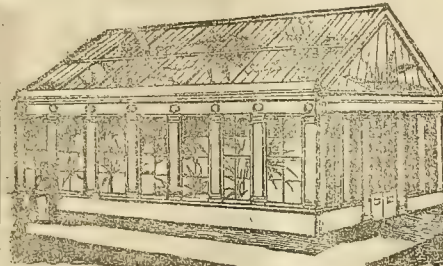
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**HANDLEY CROSS.** The publication of the Eighth Number of this Periodical is unavoidably postponed until the 5th of October.—11, Boniverie Street, Fleet Street.

**THE FIELD (ILLUSTRATED), of Saturday, October 1, 1853,** published in time for the Early Morning Trains, contains:—Magna Charta Island, drawn by T. H. Wilson; the Turf, by the Flying Dutchman; Full Report of Newmarket First October Meeting; the Life of a Race-Horse, Chap. XV.; "The Sale at Tattersall's;" Programme of Chester Autumn Meeting; Arrival of the Indian Mail; News from Australia; Escape of the Convict Mitchell; a Caffre Chief before the Police; Arrival of the Emperor of Russia at Olmutz; Destructive Effects of the Equinoctial Gales; the York Archers; Election of Lord Mayor and Sheriffs; Protestant Persecution in Tuscany; Arrival of British Men-of-War at Constantinople; Yachting in Ireland—Kinsale Harbour Regatta; Regattas in Australia; Rowing Match for the Championship of the Clyde; Cricket Matches of the Week; Chess; Angling; Poultry; Markets; Correspondence; all the News of the Week, &c. &c.—Price Sixpence.—Office, 4, Brydges Street, Covent Garden.

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**TO GENTLEMEN, NURSERYMEN, FLORISTS & OTHERS.**  
BAYSWATER.

**MESSRS. PROTHEROE AND MORRIS** are directed to Sell by Auction, on the Premises, at Craven Hill Nursery, Bayswater, on MONDAY, October 31, and following days, at 11 o'clock each day, by order of Mr. Horegood, in consequence of the ground being wanted for building, the whole of the valuable NURSERY STOCK, consisting of Fruit and Forest Trees of the finest description, in great variety; Shrubs, Choice Ornamental and Specimen Trees; Deciduous and American Plants; a large assortment of Evergreens; selected Standard and Dwarf Roses, Hardy Climbers, &c.; together with the Stone and Greenhouse Plants, comprising Ixora, Burchellia, Francisca, Justicia, Pentas carnea, Hoya, Poinsettia, &c.; 50 Large Double White Camellias, Azalea indica alba, yellow Noisette and Devonensis Roses, Acacias, Epacris, Chorozema, Myrtles, Hardenbergia monophylla, Correas, &c. &c.—May be viewed prior to the Sale; Catalogues may be had, 6d. each, returnable to purchasers, on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

**BATTERSEA.**

**TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.**

**MESSRS. PROTHEROE AND MORRIS** have received instructions from Mr. Ambrose to offer to Public Competition by Auction, without reserve, on the premises, King Street, Battersea, on MONDAY, Oct. 10th, at 11 o'clock, the whole of the valuable GREENHOUSE PLANTS, consisting of a fine collection of Indian Azaleas, amongst which are many fine specimens; Camellias, Ericas, Cytisus, Epacris, Diosma, Acacia, Daphne, choice Cinerarias, White and Purple Primula, Calceolaria, Stephanotis, Dielytra spectabilis, Rhododendrons, &c.; also about 20,000 Fancy and other Pelargoniums, which will comprise all the new and most improved kinds in cultivation; about 50 specimen plants of the newest kinds; together with 14 newly erected Greenhouses; 3 capital Boilers; about 800 feet of hot-water Pipe; several Pits; one, two, and three-light Boxes; Hand and Striking Glasses; Bricks; Wheel-burrows; Water Pots; Syringes; and sundry effects. The above Stock is particularly worthy the attention of Exhibitors enriching their collections, as well as the trade, from its excellent nature.—May be viewed one week prior to the sale; Catalogues (6d. each returnable to purchasers) may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLISTON EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitechapel, in the City of London, and published by them at the Office, No. 3, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed TO THE EDITOR.—SATURDAY, OCTOBER 1, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 41.—1853.]

SATURDAY, OCTOBER 8.

[PRICE 6d.]

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## TO ADVERTISERS.

### THE ADVERTISEMENT DUTY being now REPEALED, the PROPRIETORS of the GARDENERS' CHRONICLE

beg to announce that there will henceforward be a reduction from the customary charge for each Advertisement of 1s. 6d., the full amount of duty taken off by the Government.  
Advertisements of Gardeners out of Place, of not more than four lines in length, 1s. 6d. each.

### SEEDS DIRECT FROM THE GROWERS.

GARDENERS and others requiring REALLY GENUINE NEW SEEDS, true to their kinds, are respectfully recommended to apply early to the undersigned.

*The New Early Peas, Radish, French Horn Carrot, and other Seeds for early sowing are now ready.*  
SUTTON & SONS, Seed Growers, Reading, Berks.

### NEW SEEDS FOR THE COMING SEASON.

WILLIAM E. RENDEL AND CO., SEED MERCHANTS, Plymouth, are now harvesting and receiving from the Growers a choice assortment of all kinds of Garden and Agricultural Seeds. Their New Seed Catalogue will be ready early in December.

### CHRYSA nthemums.

J. AND J. FRASER have to offer very fine Plants of the above, amongst which are the best varieties in cultivation. The plants are from 2 to 3 feet high, very bushy, and full of flower-buds. Large-flowering varieties, 9s. per dozen; Pompones, or Liliputian, 12s. per dozen.—A Catalogue of the sorts may be had, on application.—Lea Bridge Road, Leyton, Essex.

THE NOVEMBER PROLIFIC PEA, FAIRBEARD'S NONPAREIL, and all other sorts of Seeds, may be obtained genuine, at the grower's prices, from  
SUTTON AND SONS, Seed Growers, Reading, Berks.

### ROSE NURSERIES, HERTFORD.

E. P. FRANCIS' NEW DESCRIPTIVE CATALOGUE OF ROSES is ready for delivery, and will be forwarded gratis upon application.

STANDISH AND NOBLE'S CATALOGUE for the present season is now ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagsbot, Surrey, Oct. 8.

A. VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to inform Amateurs and Nurserymen that his NEW CATALOGUE OF PLANTS is just published, and may be had free of his Agent, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London.

ROSES AND HOLLYHOCKS.—The extensive Collections growing at the Cheshunt Nurseries are still finely in bloom, where admirers of these Flowers are respectfully invited to view them. Trains of the Eastern Counties Railway almost hourly to Cheshunt or Waltham.

Priced descriptive Catalogues are now ready, and will be forwarded free by post for two postage stamps  
A. PAUL & SON, Nurseries, Cheshunt, Herts.

### DUTCH BULBS OF SUPERIOR QUALITY AT LOW PRICES.

Anemones, early flowering, brilliant colours .. 5s. per 100.  
Hyacinths, Dutch mixed, all colours .. 21s. per doz.  
— named, separate colours .. 6s. per doz.  
Folysanthus Narcissus, various .. 3s.  
Tulips, Dutch, mixed, early sorts .. 6s. per 100.  
Crocus, Dutch, mixed, all colours .. 10s. per 1000.  
Iris, mixed, all colours .. 5s. per 100.

Also Seed of the new and beautiful Annual *Leptosiphon luteum* (from Veitch's), 1s. per paper, well adapted for pot culture.

The above, with every other kind of Flower-roots, equally moderate in price, may be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch Street, London.  
Descriptive and priced Catalogues forwarded on application.

### ORCHIDS, STOVE, GREENHOUSE, & HARDY PLANTS.

ORCHIDS, Choice Species and Good Plants, 30s. to 40s. per dozen.

CONIFERÆ, Choice hardy species, 20s. to 30s. per dozen.

CAMELLIAS, well set with bloom buds, 30s. per dozen.

AZALEA INDICA, best varieties, 12s. to 21s. per dozen.

AZALEAS, hardy Belgian and American varieties, well set, 12s. per dozen.

RHODODENDRONS, hardy scarlet varieties, no buds, 10s. p. doz.

CHRYSA nthemums, best Pompon and show varieties, 10s. per dozen.

Catalogues of General Nursery Stock, by post, from Messrs. J. & H. Brown, Albion Nursery, Stoke Newington, London.

### NEW GERANIUMS OF OCTOBER, 1852.

BASS AND BROWN are now sending out from a fine and vigorous stock of plants, of the best new varieties of last year, well established in 4-inch pots. For Descriptive List of these, and others of their superb collection, see their New Autumn Catalogue, free by post, for three penny stamps.

12 superb new varieties of last season .. .. £2 4s.  
25 superb show varieties of previous year .. .. 2 0  
25 choice .. .. 1 2

— Fine varieties, 8s. to 9s. per dozen.

12 superb new fancy varieties of last season .. .. 2 2

— Fine varieties, 9s. to 12s. per dozen.

GUANO CARRIAGE FREE, with orders not under 20s., to all Stations on the Colchester Line between London and Norwich, or to all the London Terminals.

BASS AND BROWN,  
Seed and Horticultural Establishment, Sudbury, Suffolk.

### DUTCH BULBS AND FLOWER ROOTS.

THOMAS JACKSON AND SON respectfully inform their patrons and the public that they have received, in the finest condition, their annual consignment of BULBS and ROOTS and that they are of the largest size and very fine quality.

Good Double Hyacinths, per dozen .. 4s. 0d.  
Mixed Polyanthus Narcissus, per dozen .. 3 0

Their Priced List of Bulbs and Roots, and also their Priced Catalogue of Stove, Orchidaceous, and Greenhouse Plants, Shrubs, Trees, and Herbaceous Plants, may be obtained on application.  
Nurseries, Kingston, Surrey, Oct. 8.

### DUTCH BULBS.

T. APPLEYBY AND SON, NURSERYMEN AND SEEDSMEN, Uxbridge, beg leave to inform their Friends and the Public in general, that they have just received their annual importation of Dutch Bulbous Flower Roots, selected with great care from the best stock in Holland. They have arrived in excellent condition, and the Bulbs are very sound and firm. Catalogues, sent on application, will be sent on prepaid application.

T. A. & S. beg to observe, also, that their stock of Trained FRUIT TREES have made fine growth this last summer, and as they have at least 600 yards of walls on their premises, the trees are all well trained, consequently the wood is well ripened and much better than when trained with sticks in the open quarters of the Nursery. Orders are respectfully solicited. Carriage of all goods paid to London.  
Victoria and Hillingdon Nurseries, Uxbridge, Middlesex.

HUGH LOW AND CO. have to offer very fine strong bushy plants, full of flower buds, of CHRYSA nthemums, including the Continental varieties of the present season. Price, per dozen, 9s. DIELYTRA SPECTABILIS, extra large roots, suitable for forcing in winter, 21s. per dozen.  
Clapton Nursery, London.

NEW AND BEAUTIFUL GESNERACEOUS PLANT, the SCHEERIA MEXICANA.—A new plant of this charming species, which is just figured in "*Gardens Magazine*," by Sir William Hooker, may be had, price 10s. 6d. each, of WILLIAM MASTERS, Exotic Nursery, Canterbury.

EARLY CABBAGE, SUPERIOR SORTS.—Bedded Plants of CATTEL'S Barnes and Reliance, also Imperial, Nonpareil, Deptford, East Ham, and Paragon, 5s. per 1000, package included; packages of 5000 and upwards delivered, free of carriage, to London and to the Enderbury station of the South-Eastern Railway. A remittance to accompany all orders from unknown correspondents.  
Address, JOHN CATTELL, Nurseryman, Westerham, Kent.

DUTCH HYACINTHS, for Forcing, single and double, at 4s. per dozen. Also Narcissus, Tulips, Irises, Jonquils, Anemones, and Ranunculus. Price of Catalogues of which will be forwarded by post, from J. & H. COBBETT'S Italian and Foreign Warehouse, 18, Pall Mall.  
Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissus, 4s. per dozen.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 14 mile from Woking Station, South-Western Railway, begs to announce that he has just published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., &c., and may be had on application by enclosing two postage stamps.

### AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE OF RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagsbot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

NEW STRAWBERRY.—Ingram's PRINCE OF WALES, proved at the Royal Gardens to be the best for early forcing and fruiting in the autumn (from forced Plants), producing beautiful fruit through the months of September, October, and November. It has now a fine crop of fruit in perfection at the Royal Gardens, Frogmore. Fine plants may be had of J. and E. SMALL, Nurserymen, Colnbrook, Bucks; and of Messrs. Nutting, Seedsman, 46, Cheapside, London, at the following prices:—3s. per 100; 17. 15s. for 50; 17. 25s. The usual allowance to the trade when 300 are taken.

### BECK'S NEW PELARGONIUMS.

JOHN DOBSON begs to announce that he is now sending out, in 4-inch pots, strong and well-established Plants of the new and beautiful SEEDLING PELARGONIUMS raised at Worton Cottage. The success of Mr. Beck as a raiser of Seedlings, and the awards which the flowers have received, will be a sufficient guarantee that they are first-rate in every respect; they are quite distinct from anything out. A Catalogue, with full descriptions, may be had in exchange for one stamp.

Empress, vermilion, the finest variety ever offered, 42s.; Leah, 31s. 6d.; Neatness, 31s. 6d.; Picta, 15s.; Rebecca, 31s. 6d.; Marginalia, 21s.; Eliza, 21s. The new varieties of last season may be had at greatly reduced prices.

J. D., having a very large and healthy stock of the following, in 3 and 4-inch pots, begs to offer them at the following low prices; the plants require an immediate shift. Any 12 of the following (purchaser's own selection) for 42s.; hamper, package, and carriage to London included in this price:—Ariadne, Ariadne, Ambassador, Optimum, Basilisk, Exhibitor, Magnet, Enchantress, Eleanor, Spot, Zaria, Commander, Gertrude, Glowworm (new), Helen (new), Rosa, Astrua, Rubens, Laguna, Leonora, Prince Arthur, Rachel, Leader, Shylock, Painter Improved, and Virgin Queen. All Plants carefully packed, as noticed in the "*National Almanac*" for this year.—Woodlands Nursery, Isleworth.

TEN POUNDS REWARD.—On Tuesday night last Plants of a fine Seedling Hollyhock, named the Honourable Miss Ashley, and others, were stolen from the gardens of the Honourable Henry Ashley, Clewer Lodge, Windsor. Any person giving information which may lead to the detection and conviction of the person stealing the same shall receive the above reward.—THOMAS ROAKE, Clewer, Windsor.

THE HEXHAM FLORICULTURAL AND HORTICULTURAL SOCIETY'S ANNUAL SHOW OF FLOWERS, FRUITS, VEGETABLES, &c., for 1854, will be held on the 13th and 14th days of SEPTEMBER.

By Order, HENRY WALTON, Secretaries.  
Hexham, October 1. WILLIAM TURNER,

ROYAL HORTICULTURAL INSTITUTION AT GHENT, BELGIUM.—This Institution was founded several years ago by Mr. LOUIS VAN HOUTTE, Nurseryman, Editor of the "*Flore des Serres*," &c., under the special protection of the Belgian Government, and with the concurrence of the most eminent professors of the Ghent University, for the theoretical and practical education (given in French) of young men, who destined themselves to horticulture. The daytime is employed by practical labour in the extensive grounds and glass houses of Mr. VAN HOUTTE'S Establishment, under the special superintendence of an experienced Head-Gardener; the evenings are given up to Theoretical Lessons, comprising Botany, and all that is necessary for a well-educated Gardener to know.

The New School Year commences on the last day of October. Price for boarding, including washing, 20l. per annum.—Applications for prospectuses, to Mr. R. SILBERRAD, 5 Harp Lane, Great Tower Street; or to Mr. L. VAN HOUTTE, Director of the above Institution.

### NEW CATALOGUE.

JOHN and CHARLES LEE'S CATALOGUE OF STOVE and GREENHOUSE PLANTS for this autumn is just published, and may be had POST FREE on application.—Nursery, Hammersmith.

### ROSE CATALOGUE.

WOODLANDS NURSERY, MAREFIELD, NEAR UCKFIELD, SUSSEX.

WILLIAM WOOD AND SON beg to announce that the New Edition of their Rose Catalogue, for 1853-54, is now ready for distribution, and will be sent gratis on receipt of Two Penny Postage Stamps.

Their Catalogue of General Nursery Stock may also be had on the same terms.

### NEW PLANT CATALOGUE.

WILLIAM RUMLEY AND SONS beg to announce that their New Descriptive Autumn Catalogue of New and Choice Fuchsias, Verbenas, Geraniums, Cinerarias, Hollyhocks, Chrysanthemums, &c., at very reduced prices, is now ready, and may be had on application. For choice selections of the above, see their Advertisement in this Paper of September 17. Gilling, Richmond, Yorkshire.

### CARNATIONS, PICOTEES, PINKS, PANSIES, ETC.

JOHN SCHOFIELD AND SON have now ready their Autumn Catalogue of the above Florist Flowers, strong plants, in lots of not less than 12 pairs Carnations and Picotees, 12s. to 20s.; Pinks, 2s. 6d. to 12s.; Pansies, per dozen plants, 6s. to 15s. Fancy Seed, selected with the greatest care, 2s. 6d. per packet. The Catalogue sent free.—Knotthorpe, near Leeds, Yorkshire.

### CHOICE ANTIRRHINUMS.

R. LAING has now ready to send out Antirrhinum Seed, saved from a fine Collection of Seedlings. An extra prize was awarded for 18 of the varieties exhibited at the Isleworth Horticultural Show in June last. Packets, 2s. 6d. each. The Nursery, Twickenham, Middlesex.

### SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c., &c., and may be had by enclosing a postage stamp. Saffron Walden Nursery, October 8.

JOHN SCOTT, Florist, Bathford, near Bath, can supply good Plants of the following new GERANIUMS, hamper included, at 42s. per dozen:—Optimum, National, Eleanor, Richard, Astrua, Leonora, Cordelia, Laguna, Fortin, Butterfly, Knoll, Extravaganza.

Two following at 21s. per dozen:—Ambassador, Ariadne, Enchantress, Elise, Magnet, Meacham, Magellan, Lord Mayor, Ladbroke, Flying Dutchman, Purple standard, Ganymede, Picta, Christine, the 25 for 40s.

FLORISTS.—Banks' Glory, Lady Franklin, Duchess of Lancaster, and Mrs. Patterson, 2s. each.—Post Office Orders, payable at Bath, requested from unknown correspondents.



# JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.

N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

Their Autumn Catalogue of Pelargoniums, Cinerarias, Hollyhocks, and new plants of recent introduction and merit is now published, and can be had on application. A few good plants of the beautiful Yellow Begonia can still be supplied at 21s. each. Pine Apple Place, Edgeware Road, London.

HUGH LOW AND CO. would invite inspection of their extensive and fine Nursery Stock, more particularly CAMELIAS, INDIAN AZALEAS, ERICAS, EPACRIS, and other plants suitable for making a display during winter, all of which are well set with flower buds, and can be had of different sizes. H. L. & Co. are also Growers of Fruit Trees, and their stock this season of both Trained and Maidens is large and fine, including the leading varieties, which are grown in quantities for the trade.—Clapton Nursery, London, October 8.

GEORGE SMITH begs to offer the following NEW PELARGONIUMS of 1852. In Strong Plants, at 36s. per dozen, viz.:

FOSTER'S.—Optimum, National, Eleanor, Rachael. HOYE'S.—Astrea, Oscar, Leonora, Zaria, Laguna, Portia, Basilisk, Amazon, Butterfly, Medora, Albira, Kulla, Novelty, Ringleader.

BECK'S.—Spot, Vulcan, Gertrude, Harriet, Pasha. With all the leading varieties previously offered, at 18s. Both Show and Fancy Kinds.

NEW FUCHSIAS.—Gloria, Banks's; Lady Franklin, Smith's; Duchess of Lancaster, Henderson's; and England's Glory, Harrison's, at 2s. 6d. each, in strong plants; with all the new varieties of the last Spring, at 18s. per dozen.

NEW VERBENAS, 12s. per dozen. Fine strong plants of the beautiful Ageratum variegatum, at 1s. 6d. each. Tollington Nursery, Hornsey Road, Islington, London.

## NOTICE TO NURSERYMEN.

TRANSPLANTED FRUIT STOCKS.—We, the undersigned Cultivators of Fruit Stocks, beg to inform the Trade that the following prices will be charged during the ensuing season:—

Muscle Plum ... per 1000 30s.	Cherries ... per 1000 30s. to 35s.
Common do. ... 40s.	Pears ... 40s. to 50s.
Brussels do. ... 35s.	Crabs ... 30s.
Brompton or Mignonne ... 40s.	Paradise ... 50s.
White Pear Plum ... 40s.	Quince ... per 100 8s.

WATERER & GODFREY, Knap Hill, Woking, Surrey. DONALD & SON, Goldworthy Nursery, Woking, Surrey. GEORGE JACKMAN, Woking Nursery, Woking, Surrey.

GLENNY'S IMPROVED BALSAM SEED, in six Classes of Colours, 3s. 1d. in stamps; packet of all mixed, 1s. The extreme doubleness of the flowers this season has greatly limited the quantity of seed, therefore early applications are recommended.—420, Strand.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high. G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

LOUIS VAN HOUTTE, NURSEYMAN, at Ghent, Belgium, begs to inform his English Correspondents and the Public in general, that his NEW CATALOGUE OF PLANTS, No. 50, for the present season, is now ready, and may be procured of his agent, Mr. R. STEPHENSON, 5, Harp Lane, Great Tower Street, London. It contains extensive and choice collections of all the favourite plants for Stove, Greenhouse, and Out-of-door Cultivation, including all the leading novelties of the season, at very moderate prices, attention to which is most respectfully solicited. His GENERAL CATALOGUE, No. 48, is also still to be obtained from the same party.

ROSES, on 4 to 6-inch strong stems, and well adapted for Potting, or Planting out in beds, at 6s. per doz. —Géant des Batailles, Mrs. Bosanquet, Souvenir de la Malmaison, La Reine, Auberson, Baronne Prévost, Cornet, Dr. Amal, Duchess de Guélex, Duchess de Montpensier, Duchess of Sutherland, Jacques Laffite, Madame Lafey, Lady Alice Peel, Augustine Mouchelet, Madame Amies, Reine de Fleurs, Robin Hood, William Jesse, Charles Duval, Coupe d'Hebe, &c. Standards and Half Standards equally cheap.

BEST FANCY GERANIUMS, strong plants, not cut back; will do for Stock or Forcing, 9s. per doz. —Albani, Anais, Bouquet tout-fait, Defiance, Jehu, Exquisite, Ibrahim Pacha, Hero of Surrey, Jenny Lind, Lady Rivers, Marion, Picurata, Maid of Anjou, Minerva, Modesta, Orestes, Othello, Parodi, Prima Donna, Superba, &c.

BEST PINKS, at 6s. per doz. —Paris, Lady Midmay, Whipperin, Harriet, Double X, Melon, J. A. Morrison, Jenny Lind, Narborough Buck, Princess Royal, Queen of England, Laura, Purple Perfection, &c.

FUCHSIAS, at 2s. 6d. each: —England's Glory, Duchess of Lancaster, and Glory.

Begonia Prestonensis, 3s. 6d. each; Achimenes Margaretta, fine white, in store pots, 2s. 6d. each; ditto, six best sorts, in store pots, 1s. 6d. each; Verbenas, 12 best of 1853, 10s.; Crimson Rocket, 6s. per dozen.

SAMUEL WALTERS, Hilperton and Trowbridge Nurseries, Wilts.

## STRAWBERRIES.

### FOUR NEW AND DISTINCT VARIETIES.

NICHOLSON'S AJAX.—Very large and handsome, most exquisite flavour, unequalled as a dessert fruit, and forces well.

NICHOLSON'S RUBY.—Medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; also a good forcer.

NICHOLSON'S CAPTAIN COOK.—A first-rate market fruit; colour scarlet, very large size, great bearer, and bears carriage well; plants remarkably strong and hardy.

NICHOLSON'S FILL-BASKET.—Nothing can surpass this fine sort as a market fruit; in colour it is of a very bright scarlet; general shape round, gets very large, but never out of shape; excellent for preserving; a tremendous bearer, and will bear carriage a great distance. Plants very robust and healthy.

These splendid Strawberries have been admired by all who have seen them; the two first for their surpassing excellence as a dessert fruit; the two latter for their size, colour, abundance, and other good qualities as market fruit.

Gentlemen, Amateurs, and Market Gardeners wishing to possess these valuable Strawberries, can now be supplied with well rooted Plants, by WILLIAM NICHOLSON, only, at 1l. per 100; or 25 each of any two sorts for 12s., box included. Post Office orders made payable at Yarm, Yorkshire. Egglecliffe, near Yarm, Oct. 8.

## KNAP HILL NURSERY, WOKING, SURREY.

WATERER and GODFREY, Nephews and Successors to the late HOSIA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock. Cryptomeria japonica, 2, 3, 4, 5, 6, and 8 feet. Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are some very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.

Goveniana, 2 to 3 and 4 feet.

Funebris, 2 and 3 feet.

Chydoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet. Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.

repandus, 3, 4, 5, to 8 feet. Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.

Virginiana, the Red Cedar, 4, 5, 6, and 8 feet. Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high. Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.

Gold Striped, 1, 2 and 3 feet. do, worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

elegantissima (new striped), standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.

Dovaston, or Weeping Yew, fine standards. Pinus Douglasi, 3, 4, 5, and 7 feet; a few magnificent plants, 10 to 12 feet high.

insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed. cembra, 3, 4, to 6 feet.

Canadensis (Hemlock Spruce), 3, 4, and 6 feet. morinda, 3, 4, and 6 feet.

Menziesii, 3, 4, 6, and 8 feet. cephalonica, 3 to 4 feet.

Pinsapo, large and handsome, 3 and 4 feet. Nordmanniana, from seed, 1½ foot; a few larger, 2 feet.

a nobilis, stout plants, with perfect heads, about 1½ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.

Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.

aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 1½, 2, and 3 feet. This is a very distinct and beautiful plant of recent introduction. Our stock is large and good. Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

TO THE TRADE.—The Undersigned, having a large and fine stock of the following, begs to offer them cheap. Prices and samples on application.

ONE YEAR'S SEEDLINGS. Chestnut, Spanish, fine. Oak, English, fine. Horse, ditto. Sycamore, strong. Hazel, extra fine. An extensive stock of Transplanted Trees and Evergreens.

N.B. Two thousand to three thousand fine Maiden Cherries, in 30 sorts, at 45s. per 100; Plum, Maidens, in 60 sorts, 45s. per 100; Pears, ditto, in 120 sorts, at 45s. per 100; Camellias, 15s. 18s. and 24s. per doz.; Rhododendron Gibsoni, 18s. per doz.; Azaleas, indica, 50s. per 100, in 20 sorts; Cupressus Funebris, 75s. per 100; C. macrocarpa, 100s. per 100; Biotia aurea, 75s. per 100; Waddingtonia ericoides, 75s. per 100; Juniperus Bedfordiana, 50s. per 100; J. squamatus, 50s. per 100; J. tetragonus, 50s. per 100. With many others at equally low prices.

JOHN SCOTT MERRIOTT, Crewkerne, Somerset.

FOOD FOR PIGS, SHEEP, AND POULTRY.—DAMAGED WHEAT ... 28s. per qr. INDIAN CORN ... 42s. " LENTILS ... 44s. " RICE FLOUR ... 8d. per ton. OIL-CAKE, ENGLISH, best ... 11d.

JAMES MAY & CO., Finsbury Wharf, 34, Wharf Road, City Road, London.—Delivered within 4 miles free. Samples sent on receipt of two postage stamps.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturalists, and all interested in Gardening pursuits, are invited to examine DEANE, DRAY, & CO.'s extensive stock of GARDENING and PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Gidney's	Prussian	Potato Forks
Axes	Hoe	[Scissors]	Pruning Bills
Barging Hooks	Grape Gatherers and	"	"
Bills	Gravel Rakes and	"	"
" [Terms]	Sieves	"	"
Borders, various pat-	Greenhouse Doors &	"	"
Botanical Boxes	Hammers	"	"
Brown's Patent Funi-	gator [strutments]	Hand-glass Frames	"
Daisy Rakes	Hay Knives	Horticultural Ham-	"
Dibbles	mers and Hatchets	"	"
Dock Spuds	Hoes of every pattern	"	"
Draining Tools	Hotbed Handles	"	"
Edging Irons and	Ladies' Set of Tools	"	"
Shovels	Labbe, various pat-	"	"
Flower Scissors	terns, in Zinc, Por-	"	"
"	celain, &c.	"	"
"	Lines and Reels	"	"
"	Marking Ink	"	"
Fumigators	Mattocks	"	"
Galvanic Borders and	Monographs	"	"
Plant Protectors	Metallic Wire	"	"
Garden Chairs and	Milton Hatchets	"	"
Seats	Mole Traps	"	"
"	Mowing Machines	"	"
"	Rollers	"	"
"	Scrapers	"	"
"	Pick Axes	"	"

DEANE, DRAY, & CO., are Sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with their Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom. Also, Wholesale and Retail Agents for SAYNOR'S celebrated PRUNING KNIVES, used exclusively by the first Gardeners in the United Kingdom.

DEANE, DRAY, & CO. (Opening to the Monument), London Bridge.

## GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & CO., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

## ESTABLISHED ABOVE SIXTY YEARS.

ROBERT METTARN, BRITISH and FOREIGN WHOLESALE WINDOW GLASS WAREHOUSE, 30, Princess-street, Leicester-square.

16 oz. Sheet Glass in Boxes of 100 feet.	Sheet Glass cut to size, not exceeding 40 inches.
Under 6 ins. by 4 ... 1½d. p. foot.	16 oz. ... 3d. to 3½d. per foot.
6 by 4, under 8 by 6, 2d.	21 oz. ... 3½d. to 5d.
8 by 6 " 12 by 10, 2½d.	26 oz. ... 5d. to 7d.

Foreign Sheet Glass, packed in boxes of 200 feet each, large sizes—4½, 2½, 3½, 2d., per foot net.

Hartley's Patent Rough Plate Glass, Glass Tiles and Slates, and every description of Glass now manufactured. Estimates and Price Lists forwarded post free.

## ESTABLISHED MORE THAN 100 YEARS.

THOMAS MILLINGTON, Importer and Dealer in GLASS FOR CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.

WAREHOUSE, 87, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long.	Squares in boxes, 100 feet each.
Under 6 by 4 ... 12s.	6 by 4, 6 by 4½, 7 by 5½ } under 9 by 7 15s.
16 ounces ... 3d. per foot.	8 by 6, 8 by 6½ } 20s.
21 ounces ... 4d. "	9 by 7, 8 by 8, 12 by 9, 12 by 10 }
26 ounces ... 5½d. "	13 by 10, 14 by 10, 15 by 10 }
32 ounces ... 7½d. "	

Large Sheet of No. 16 very superior, packed in cases of 100, 200, and 300 feet, at 2½d. to 2½d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured.

Glass Shades, round, oval, and square, for Clocks and Ornaments, Fern Shades and Dishes.

GLASS—HYACINTH and FLOWER DISHES. 12 inches diameter ... 2s. 6d. 9 " ... 1s. 6d. 6 " ... 1s. 0d.

Hyacinth Dishes are a new article, intended to contain a number of roots bedded in sand and covered with moss, instead of the common Hyacinth Glass.

HYACINTH GLASSES. Common shape ... 4d. each ... 3s. 6d. per dozen. Improved ... 9d. " ... 7s. 6d. "

CROCUS GLASSES. Improved shape ... 2s. 6d. per dozen. Crocus Dishes ... 6s. "

## FERN SHADES.

A very neat style of Shade, with glass bottom (or stand), expressly for the growth of Ferns, which will be found much more ornamental than any previously made for the same description of plant.

Milk Pans, 21s. per dozen. Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, and every article in the trade.

London Agents for the sale of HARTLEY'S PATENT ROUGH PLATE GLASS, for Conservatories, Public Buildings, Manufactories, Skylights, &c.

JAMES PHILLIPS AND CO., Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

AUSTIN'S ARTIFICIAL STONE.—Garden Fountains and other ornamental works continue to be executed in this material by Mr. Austin's late partner, JOHN SEELY, at the original manufactory, Nos. 1 to 4, Keppel Row, New Road, near the Regent's Park. N.B. This material is strictly an artificial limestone, of an agreeably grey colour, and wholly free from the glazed and reddish appearance of Terra Cotta and other pottery. It is quite waterproof, and may be laid under water for any time without injury. The following list will give some idea of the variety of the stock:—

VASES, in all styles, from 10s. to 30l. each.

FOUNTAINS, more than One Hundred Designs.

STATUES copied from the Antique.

MODERN FIGURES, from 2 to 12 guineas.

BASKETS, with Suitable Pedestals, from 1. to 30 guineas.

SHELLS, from 12s. to 15l.

FIGURES OF ANIMALS and BIRDS.

CRESTS for GATE PIERS.

TAZZAS, or FLOWER BASINS, from 30s. to 24l.

MEMORIAL URNS and PEDESTALS.

SUN-DIAL PEDESTALS.

BALUSTADING in every Style.

BAPTISMAL FONTS.

WATERPROOF PATHS.—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

THE VINE DISEASE EFFECTUALLY CURED BY WATSON'S BLIGHT EXTERMINATOR AND PREVENTIVE. For external application to Grape Vines, Fruit Trees, and all kinds of Shrubs liable to Blight or Disease. It insures a surprisingly vigorous and healthy growth and fertility.—Price 2s. 6d. per bottle. To be had of H. WATSON, 198, Shoreditch; and W. DENTON, Florist, &c., 82, Gracechurch Street, London.



TULIPS.

HENRY GROOM, Clapham Rise, near London, by appointment Florist to her MAJESTY THE QUEEN, and to his MAJESTY THE KING OF SAXONY, begs to inform the AMATEURS of TULIPS, that having been most successful in their cultivation this season, he can supply excellent Bulbs of the finest quality at very moderate prices. He wishes to call the attention of Amateurs, so as to be well prepared for the GRAND EXHIBITION OF TULIPS, which is to take place in London next year. He also begs to state that he continues to put up beds ready arranged for planting, which have been found so very desirable for gentlemen commencing their cultivation. His Catalogue will be forwarded by post on application.

BASS AND BROWN'S NEW AUTUMN CATALOGUE is now complete. Copies supplied free for three penny stamps each. It contains a large number of the New Plants at reduced prices, comprising Geraniums and Cinerarias, of the best new varieties of October last, with finest of the older varieties; Azalea Indica, 50 varieties of the choicest; the best new Fuchsias, Verbenas, and Petunias; new and select Stove and Greenhouse Plants; Plants selected for Winter and Early Flowering; Roses, in select collection, of about 300 best; new and select Hardy Shrubs and Climbers; Conifers; and new and other best Chrysanthemums, Hollyhocks, Hardy Herbaceous and Rock Plants, collection of new Dwarf Rock Cistus, Choice Fruits, &c.

The BLUE and ROOT STOCK consists of Gladioli in upwards of 100 superb varieties, choice Ranunculuses, Anemones, superb collections of English, German, and other Iris, fine imported Dutch Hyacinths, Narcissus; Early, Double, and Late Tulips; Crocus, Lilies, Ixias, with a large collection of other roots. The Catalogue also contains a list of a few SEEDS FOR AUTUMN SOWING, comprising Geranium, Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Hollyhock, &c. &c., which have been carefully saved from our own superb collections, and can be highly recommended.

CHRYSANTHEMUMS.

A large stock of strong bushy plants for flowering this autumn. 12 best new large flowering varieties of last season ... 12s. 0d. 12 best new Liliupitium varieties of do. ... 12s. 0d. 60 splendid varieties, including the above ... 40s. 0d. 40 splendid varieties, 30s.; 25 do. ... 17s. 6d. Our importation of Dutch Roots comprises collections of the best and most favourite sorts, and are very fine. Goods (not under 20s.) Free to all the Stations in London; and with orders of 40s. and upwards, Plants and Roots gratis to compensate for long carriage.

BASS AND BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

THE PERPETUAL TREE VIOLET, or DOUBLE VIOLA ARBOREA.—The original grower of this, the true variety of the above beautiful Violet, now offers it to the public, and which has surpassed all others, and now stands without an equal in the size of flowers, fragrance, and perpetual blooming; and as a plant for the Conservatory or Greenhouse, nothing can equal it. Large plants, 6s. per dozen; smaller ditto, 3s.

DOUBLE WHITE TREE VIOLET.—This is also a fine variety, and resembles the other in many respects, with the exception of its colour. The stock of this is small, in consequence of the great demand for it last season; parties requiring plants should not delay their orders. 6s. per dozen.

THE RUSSIAN SUPERB VIOLET.—One of the finest of single Violets, large blooms, with long stems, and most delightful fragrance; will bloom well through the season if sheltered from the heavy rains and severe frosts during the dead of winter. Plants 3s. per dozen.

A TREATISE on the best and most effective mode of cultivating the VIOLET, post free for 12 stamps, or sent gratis with all orders above 5s.

OTHELLO CLOVE CARNATION.—A limited stock of five plants of the above beautiful dark Clove—colour and fragrance unequalled. 2s. 6d. per pair.

PURPLE WHITE CLOVE CARNATION.—This is also a beautiful variety. 1s. 6d. per pair.

NEW CLOVE PRINCE OF WALES.—A very striking variety, unequalled in colour, being a bright vermillion. 2s. 6d. per pair.

GIANT SCARLET BROMPTON STOCK.—Plants can now be had; they have always given the greatest satisfaction; will bloom next spring. 6d. per dozen, or 4s. per 100.

SWEET WILLIAMS.—Also a fine stock, consisting of upwards of 50 distinct and splendid varieties. 6d. per dozen, or 4s. per 100.

SEEDLING ANTIRRHINUMS.—saved from all the choicest, striped, and spotted flowers. 1s. per dozen, or 7s. per 100.

One dozen of each of the Violets, one pair of each of the Clove Carnations, and one dozen of each of the Brompton Stocks and Sweet Williams, with the Treatise on the Violet, will be sent, hamper and package free, for 1l.

STRAWBERRY PLANTS, of the following varieties, can still be obtained:—Ajax, 20s. per 100; Ruby, 20s.; Victoria, 5s.; Surprise, 3s.; Eleanor, 3s.; British Queen, 3s.; Alice Maid, 3s.; Zroffie, 3s.; Cremona's Perpetual, 3s., hamper and package free. The whole or any part of the above will be sent on receipt of a Post Office order or penny postage stamps which must accompany every order, when the Violets and Carnations will be sent package and postage free, the other plants hamper and package free.

EDWARD TILEY, Nurseryman and Seedsman, 14, Abbey Churchyard, Bath, Somerset.

NEW AND CHOICE GERANIUMS, FUCHSIAS, AND CINERARIAS.

SAMUEL FINNEY AND CO. have a large Stock of all the new and leading varieties, which they offer, in strong plants, at the undernamed prices:—

GERANIUMS, varieties of 1852.—Astrea, 3s.; Commander, 2s. 6d.; Gertrude, 3s. 6d.; Harriet, 3s. 6d.; Jupiter, 3s. 6d.; Kulla, 3s.; Leonora, 3s. 6d.; Laguna, 3s.; Optimum, 5s.; Pasha, 3s. 6d.; Queen of May, 3s. 6d.; Rachel, 3s.; Spot, 3s. 6d.; Vulcan, 5s.; Zaria, 3s. 6d.

Varieties of 1851.—Ambassador, 1s. 6d.; Arethusa, 2s.; Ariadne, 2s.; Beatrice, 1s. 6d.; Capella, 1s.; Chloë, 1s. 6d.; Chiffon, 2s.; Colonel of the Buffs, 1s. 6d.; Christine, 1s. 6d.; Commissioner, 1s. 6d.; Cynthia, 1s. 6d.; Enchantress, 1s.; Exhibitor, 2s.; Elise, 2s. 6d.; Genymede, 1s.; Gem, 1s. 6d.; Generalissima, 1s.; Herald, 2s.; Incomparable, 1s. 6d.; Lavinia, 1s. 6d.; Labache, 1s. 6d.; Little Nell, 1s.; Magnet, 2s.; Major Dome, 1s.; Melchiana, 1s. 6d.; Mountbatten, 1s. 6d.; Prince Alfred, 1s. 6d.; Purple Standard, 1s. 6d.; Purpurea, 1s. 6d.; Ruby, 1s. 6d.; Silk Mercer, 1s.; Silver, 1s. 6d.; Trianon Queen, 1s.

FUCHSIAS, varieties of 1852.—Dr. Lindley, 2s.; Duchess of Lancaster, 2s. 6d.; Glory (Bank's), 2s.; Incomparable, 2s.; England's Glory, 2s.; King Charles, 2s. 6d.; Lady Franklin, 2s.; Model, 2s.; Mrs. Patterson, 2s. 6d.; Perfection, 1s. 6d.; Purple Perfection (Bank's), 2s. 6d.; Premier, 2s.; other varieties, 6s. to 9s. per dozen.

CINERARIAS, varieties of 1852.—Charles Dickens, 1s.; Constance, 1s.; Charlotte, 1s.; Kate Kennedy, 1s.; Lovefulness, 1s.; Margaret, 1s.; Prince Arthur, 1s. 6d.; Rosalind, 1s.; other varieties, 6s. to 9s. per dozen.

A choice collection of Hollyhocks, Pansies, and hardy Phloxes, at 1s. to 1s. 6d. per dozen.

A large stock have received a large importation of Dutch Flower Seeds, which are in fine condition. Hyacinths, with names, from 6s. per dozen, ditto in mixture, colour separate, 1s. per dozen. A list of some of the above may be had on application. Remittances to be made to our unknown correspondent.

Greenhead Nursery, near Newcastle upon Tyne.

JUST IMPORTED,

DUTCH HYACINTHS, all Double, 4s. per dozen, or 30s. per hundred.

Per dozen.—s. d.	Per 100.—s. d.
Narcissus, mixed ... 1 0	Ranunculuses ... 3 6
Jonquills, do. ... 2 6	Crocuses, mixed ... 1 6
Gladioli, do. ... 2 6	Double Anemones ... 7 0
Iris, Spanish ... 0 9	Single ... 6 0
	Early Dwarf Tulips ... 7 6

Orders above 20s. Carriage Free.

Also, choice new varieties of the foregoing, by name, at higher prices. JOHN SUTTON AND SONS, SEED GROWERS, Reading, Berks.

CHOICE PELARGONIUMS.—A selection of 12, the best and most distinct varieties sent out last season, the set for 1l. 16s., or separately at the following prices:—Albira, 2s. 6d., Basilisk, 3s. 6d., Galatea, 3s., Heroine, 3s., Kulla, 3s., Leonora, 3s. 6d., Novelty, 3s., Optimum, 5s., Oscar, 5s., Portia, 3s., Queen of May, 5s., Zaria, 3s. 6d.; healthy, strong, bushy plants.

A selection of older varieties, any dozen of the following for 16s., or separately at 1s. 6d. each, excepting the sorts priced:—Arethusa, Cristine, Elise, Gaymède, Herald, Labache, Magnet, 2s., Magnificent, Melchiana, Pearl, Prince Arthur, Purple Standard, Flora, Emperor, Royal Standard, Virgin Queen, Volcano, Troubadour, 2s., Victory. The usual discount to the trade taking a set or separately, excepting Optimum, Queen of May, and Oscar.

A Descriptive Catalogue of the above, and also his fancy Geraniums, will be ready in a few days and may be had on application. ISAAC DAVIES, Larkfield Nursery, Wavertree, near Liverpool.

HYACINTHS, TULIPS, RANUNCULUSES, ANEMONES, AURICULAS, LILIES, AND GLADIOLI.

HENRY GROOM, Clapham Rise, near London, by appointment Florist to her MAJESTY THE QUEEN, and to his MAJESTY THE KING OF SAXONY, begs to recommend to the attention of the nobility, gentry, and amateurs, his extensive assortment of the above FLOWERS, which he can supply of the best quality. He begs to state that this is a good season of the year to make a selection of the various kinds.

25 HYACINTHS, in 25 fine sorts, named ...	1 5 0
100 TULIPS, in 100 fine sorts, named ...	7 0 0
100 do. in 50 do. sorts, named ...	5 5 0
Superfine mixtures, per 100 ... from 7s. 6d. to	1 1 0
100 RANUNCULUSES, in 100 superfine sorts, named ...	2 10 0
Superfine mixtures, per 100 ... from 6s. to	0 15 0
100 ANEMONES, in 50 superfine sorts, named ...	1 10 0
Superfine mixtures, per 100 ... from 6s. to	0 10 0
20 AURICULAS, in 20 superfine sorts, named ...	2 10 0
LILLIPUTIAN LANCIFOLIUM ALBUM, each, from 9d. to	0 1 6
Do. do. PUNCTATUM ...	3s. to 0 7 6
Do. do. ROSEUM ...	3s. to 0 10 6
Do. do. CRUENTUM ...	5s. to 0 10 6
Do. do. SEEDLINGS from RUBRUM ...	2s. 6d. to 0 10 6
Do. do. EXCELSUM ...	5s. to 0 10 6
Do. do. JAPONICUM, true, or BROWN ...	5s. to 0 10 6
Do. do. THOMPSONIANUM, new ...	5s. to 0 15 0
6 HYBRID SEEDLING LILIES, by name ...	0 15 0

H. GROOM begs to say that his Catalogue of BULBS, &c., is ready, and will be forwarded by post on application. Foreign Orders executed.

DUTCH ROOTS, GERANIUMS, ETC.

RENDEL'S DESCRIPTIVE CATALOGUE for the present Autumn is now ready, and can be had in exchange for one penny stamp. It contains descriptions of all the best Hyacinths, Tulips, Gladioli, and all kinds of Bulbs, as well as Geraniums and other Plants.

COLLECTIONS OF BULBOUS ROOTS, made up to suit various sized gardens, at 20s., 40s., and 60s. each. For varieties and quantities see front page of this Paper for SATURDAY, Sept. 24.

GERANIUMS—12 fine show flowers for 20s., or 20 for 1l. 10s. 12 second class varieties for 12s., or 20 for 18s.

Purchaser's own selection (see List at p. 611, Sept. 24). FANCY GERANIUMS—12 first class varieties for 20s., or 20 for 30s.

12 second class varieties for 15s., or 20 for 21s. SCARLET GERANIUMS—12 varieties for 12s., or 20 for 18s.

Purchaser's own selection (see List at p. 611, Sept. 24). Trollope's Queen Victoria Strawberries ... 7s. 6d. per 100.

Kittley's Goliath do. ... 4s. Cuthill's Black Prince do. ... 4s.

For descriptions of the above Strawberries, and for list of other choice varieties, see Advertisement, p. 611, Sept. 24. Orders above £2 will be delivered Carriage Free to any Railway Station between Plymouth, Paddington, and Birmingham, and to Cork, Dublin, and Belfast.

Apply to WILLIAM E. RENDEL & Co., Nurserymen and Seed Merchants, Plymouth. ESTABLISHED NEARLY 70 YEARS.

FOREST AND ORNAMENTAL TREES, SHRUBS, ETC.

JOHN PERKINS begs to call the attention of those engaged in Planting to the undermentioned articles, and his stock in general. Owing to the plants having been frequently transplanted, they are all fine and well rooted.

Araucaria imbricata, 1 to 5 feet; Abies cephalonica, 1 to 4 feet; do. Douglasi, 1 to 6 feet; do. Menziesi, 2 to 4 feet; do. nobilis, 1 to 2 feet; do. Nordmanniana, 1 to 2 feet; do. Pinsapo, 1 to 3 feet; do. Webbiana, 1 to 3 feet. Cedrus Decodara, 1 to 6 feet; Cedar of Lebanon, 1 to 8 feet. Cupressus pendula, 1 to 3 feet; do. Lambertiana, 2 to 6 feet; do. torulosa, 2 to 4 feet; do. funebris, 1 to 4 feet; do. Goveniana, 2 to 4 feet; Cryptomeria japonica, 1 to 8 feet; Juniperus Bedfordiana, 1 to 3 feet; do. recurva, 1 to 4 feet; do. communis pendula, 1 to 4 feet; do. English, 1 to 5 feet; do. Irish, 1 to 3 feet; do. excolata, 1 to 4 feet. Taxodium sempervirens, 2 to 6 feet. Arbor-vitæ, American, 2 to 8 feet; do. Chinese, 2 to 6 feet; do. Siberian, 2 to 6 feet. Auntha japonica, 1 to 3 feet. Arbutus, 1 to 5 feet. Berberis aquifolium, 1 to 2 feet; do. dulcis, 2 to 3 feet. Laurel, common, 1 to 4 feet; do. Portugal, 2 to 6 feet. Laurustinus, 1 to 4 feet. Box, 2 to 4 feet. Irish Yew, 2 to 6 feet; English Oak, 2 to 5 feet. Castanetum macrophylla, 1 to 3 feet. English Oak, 2 to 4 feet; Turkey Oak, 4 to 6 feet. Beech, 2 to 4 feet. Alder, 2 to 6 feet. Birch, 2 to 4 feet. Horse-Chestnut, 2 to 6 feet; Spanish do., 2 to 6 feet. Ash, 2 to 5 feet; Mountain Ash, 4 to 8 feet. Hornbeam, 2 to 6 feet. Privet, 1 to 4 feet. From 4000 to 5000 American Arbor-vitæ, 2 to 8 feet. 300,000 to 400,000 Larch Fir, 2 to 5 feet; do. Scotch, 2 to 3 feet; do. Spruce, 2 to 6 feet. 200,000 to 300,000 one and two years seedling Oak. 4000 to 5000 fine bushy English Yew, 2 to 5 feet. One to two million 2, 3, and 4 year old transplanted Whitehorn or Oak; do. Blackhorn, 1 to 2 feet. Fine standard Ornamental Trees. 4000 to 5000 Limes, 5 to 10 feet. Birch. Beech; purple do. Horse Chestnut; Spanish do. Elm, Oaks, Poplar, Aescula, Mountain Ash, Platanus, &c.

A large Collection of Fruit Trees, which are remarkably fine, consisting of standard and dwarf trained and untrained Peaches, Nectarines, Apricots, Plums, Pears, Apples, &c. Also an immense quantity of standard and dwarf Roses of the newest and best kinds in cultivation. Rhododendron and other American Plants, Herbaceous and Alpine Plants for Rockwork, Greenhouse Plants, &c.

In addition to the above-named plants, J. P. can supply all kinds of Nursery Stock, Catalogues of which will be forwarded on application. Nurseries, Bedford Road, and at Woking.

All communications to be addressed to JOHN PERKINS, Nurseryman, Seedsman, and Florist, Market-square, Northampton.

CHOICE HOLLYHOCKS.

WILLIAM HUSSEY begs to offer the under-named collection for 1l. 12s., package included. Fine strong plants. Bessy Bell, Comet, Crimson King, Elegans, Enchantress, Formosa, Magnifica, Marmion, National, Obscura, Optimum Improved, Penelope, Purify, Queen of Lillacs, Safrano, Spectabilis, Swansdown, Mr. Foster, Shaded Model, Purpurea, and Flower of the Day. Horticultural Gardens, Norwich.

ROSE CATALOGUE, ETC.

MESSRS. LANE AND SON, NURSERIES, Great Berkhamstead, Herts, beg to inform their patrons that the undermentioned descriptive CATALOGUES may now be had. General Rose Catalogue for two postage stamps; Tree and Shrub and Fruit Catalogue for two ditto; Azalea Indica, Camelli Hollyhocks, &c., for one ditto.

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THIS splendid and constant flower will be sent out early in October, at 10s. 6d. per pair. It is of large size, good form, and unsurpassed for regularity in marking, purity of white, and brilliancy of colour. Reference to Mr. Keynes, Salisbury; Mr. Slater, Cheetham Hill, Manchester; and to Messrs. Schofield & Son, Knowlthorp, near Leeds. Also see Midland Florist, and Gardeners' Chronicle for September.

Early application, to secure good plants, to Mr. J. BRAMMA, Cowper Street, New Leeds, Leeds; or to Mr. J. CAWTHORP, Borough Surveyor's Office, Leeds.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 8, 1853.

In another column will be found a description of the manner in which ASPARAGUS is forced in Paris, as collected from COURTOIS-GÉRARD's useful little book on Paris Market Gardening. We give it not so much because of any marvellous excellence which the French vegetable possesses, but because it represents the way in which a good supply of fair kitchen garden produce can be easily procured under ordinary circumstances.

That information upon this point is needed the poor samples so continually produced at tables where excellence is to be looked for sufficiently indicate. But we are far from thinking that M. COURTOIS has exhausted the subject; on the contrary, he misses that which, to private persons at least, is most important, the mode of obtaining the largest and most succulent, and therefore the best Asparagus for table.

Many years ago the manner in which the great Biscayan Asparagus is obtained was pointed out by a most intelligent correspondent in these columns (See Gard. Chron. for 1842, p. 187). Some of the details of the Spanish process were however unsuitable to English circumstances, and we believe it has never been imitated in this country. Another method by which enormous succulent shoots were obtained in Suffolk was briefly published in the Journal of the Horticultural Society (vol. vii., p. 206). That plan is described in the following words—"I set out my bed as follows:—

60 feet long,  
5 feet wide,  
4 feet deep.

The earth was all taken out and laid on one side the bed. I then placed at the bottom, 2 feet deep salt ooze, from the banks of the Alde; 1½ foot deep of the river weed (a long Grass). Two feet of the best vegetable mould was then placed on the top, and the young plants set out at 18 inches distance all over the bed." They were then buried in a few inches of rich soil.

Leaving the reader to compare this mode of forming a bed with the French and common English methods, we would invite attention to the following considerations, which greatly concern gardeners, now that the season for forming Asparagus beds is at hand. The grower of this vegetable ought to recollect that the two points of excellence in it are first size, and second succulence. It should be as thick as the thumb and as brittle as glass. To secure this result two things are indispensable; it must be produced by very vigorous plants, and it must grow very fast. These two cardinal points must be considered separately.

Its vigour will depend upon the soil in which it



grows, the quantity of manure it receives, and its general treatment. The long stout succulent fangs, or roots, of an *Asparagus* are so tender that they will not form freely in soil which offers much resistance. Nature places it in its wild state among sea sand, the most yielding of all earthy substances, never becoming dry, never remaining loaded with stagnant water, but at every tide receiving a supply of the saline particles that constitute an essential part of the food of the plant. Under such circumstances the roots meet with no obstruction to their full development. There is, however, no apparent necessity for sand; what is really wanted is some soft material, moistened with salt water, and so placed that while it is always wet, it will never become water-logged. How unlike this is to the hard, coarse earth, so often used for this plant we need not say.

But the natural *Asparagus* is never large; on the contrary, it is more like what is technically called "sprue." The cause of that is, we presume, to be sought in the want on the sea shore of the powerful manure on which it greedily feeds, when it can obtain it. The wild *Asparagus* has all that it requires for mere health; but it is ill fed; it differs from the fine garden plant just as lean kine differ from fat bullocks. Feeding makes all, or great part of the difference. Experience shows that no manure is too strong for this plant; its great spongy roots can take up any quantity with advantage, if applied at the right season. That season is after it has begun to move in the spring; applied at any other time the fat oozy slime which it loves is absorbed without being assimilated, and soon produces a fatal rot in the roots. Besides this, the plant must be cherished during summer while not under the knife, for it is only thus that its vital powers can be much increased. No exuberance of growth in the *Asparagus* stems can be regarded as excessive; nothing should be done to check it; every branch that a plant is able to form should be anxiously preserved, and if any means can be used to prevent the formation of berries, which we must remember is a process of exhaustion, these means should be adopted, provided always the little thread-like green leaves are in no way injured. Small as they are they conduce to the strength of the *Asparagus*, as much as its broad leaves to a forest tree. Such precautions having been taken, great buds, as large as Acorns, will appear in clusters from the crown of the roots, and out of them will rise gigantic shoots in the succeeding year. All these precautions will, however, fail if the *Asparagus* is called upon to bear a crop before it is old enough. Early bearing ruins plants as much as animals, and inevitably brings on premature debility. The older it is before the cutting begins the stronger, other circumstances being equal, will it be found. The exhaustion attending the production of a crop one year should also be made good by resting the *Asparagus* during the next year. In other words, giant *Asparagus* cannot be looked for if the bed is cut oftener than every other year.

The *Asparagus* being brought to the requisite state of vigour, the next question is how to secure the necessary succulence, which it never has beyond 2 or 3 inches in an English market, and not often anywhere else. That succulence will depend upon temperature as much as upon other causes. The warmer the *Asparagus* bed is kept while the sprouts are rising the more brittle they will be, provided the temperature of the soil does not rise above 75° at the most. Now, under ordinary circumstances, everything is done to keep it cold; buried 12 or 13 inches below the surface, the influence of the sun is slowly felt, and very imperfectly into the bargain. It is only when the roots are lightly covered by some rapidly conducting material that the sun can exercise his proper influence, unassisted by artificial contrivances. Hence, one of the greatest faults that the *Asparagus* grower can commit is to bury his plants deep. Only observe Mr. KENDALL's practice; his plants are just covered with soil resting upon a deep bed of the most nutritious matter. The earliest rays of the sun are felt in such a case, and as soon as the dormant energy of the plant is roused, it continues to be exercised without a day's interruption. It is true that the *Asparagus* thus obtained is green; and so it should be. Green-grocers and cook-maids are of a different mind, and we believe are the only authority to the contrary. Their opinions may, we think, be fairly examined by the evidence of the senses of those who have to eat this vegetable; and to that ordeal we have great satisfaction in committing them.

THE question of the origin of woody fibre, or, in other words, of the increase of trees in diameter, has for so many years been a subject of sometimes

more than brief debate in the French Academy, that it is no matter of surprise that M. TRÉCUL's researches should in some measure have revived the former interest on the subject, especially in the eyes of M. GAUDICHAUD. The more it is matter of debate the better, so long as that is carried on with common moderation; and we are therefore glad to find that HARTIG has taken it up in the *Botanische Zeitung*, though more perhaps with a view to state his own notions than to combat anything alleged by M. TRÉCUL, with whose views he seems, on the whole, to be in tolerable unison. His name is principally known in this country in connexion with his new theory of impregnation, and his views as to the structure and origin of cells; but his larger and more important work, which contains an immense mass of information and illustration as to the structure of forest trees, is little known beyond his own immediate sphere, and even there but partially, if we may judge from the extreme rarity with which it is cited, partly, perhaps, because it is expensive; but more especially as regards the greater portion of Europe, because his somewhat adventurous speculations, and WALLROTHIAN barbarism of nomenclature, were repulsive to extra-Germanic tastes.

The brief memoir, however, on the formation of the annual rings of Dicotyledons just published is, for the most part, clear enough, and we think that a short abstract of the more important parts may be useful to many of our readers.

HARTIG, we imagine, can scarcely have been ignorant of the experiments of DUHAMEL respecting the reproduction of tissue on exposed surfaces, but those of which he gives a short account in the commencement of his preface are a mere repetition of them, and with similar results. The question, in fact, is not as to the possibility of such reproduction, but as to the mode in which it is effected. We may pass over this part of the memoir, therefore, as also of the historical sketch which follows, and proceed at once to the statement of the author's views.

To this end it is requisite first to give his notion of the more normal structure of dicotyledonous stems. The general cellular tissue, omitting more especial organisms, as resin cysts and the like, may be comprised under two heads, vertical and horizontal, the first including all except the medullary rays. The vertical tissues may be divided—1, into radiating tissues, such as the woody fibre, the cells of the bast and inner bark; 2, into periphatic, as the pith, and the green bark, including the epidermis; and 3, into irregular tissue, as the fibrous fascicles of the bast, the milk vessels and other reservoirs of peculiar secretions, as in Elms and Firs. The peripheral tissues of the pith and green bark consist of independent cells not collected into bundles or elongated into fibres. The radiating tissue of the inner bark agrees in structure with that to which it succeeds; it springs generally from the epidermal cells and agrees with the radii of woody fibre and bast in the permanence of a single parent cell for each radius, and in the sterility of the cells derived from it. The radiating tissue of the wood and bast are distinguished from the last, at least when young, by the individual organs being disposed in horizontal layers whose longer axis is parallel to the main axis. When old, the ends of the cells wrap over each other, and the regular order is deranged. All these tissues at first form distinct radii, which in many cases may be traced from the pith to the green bark, though they are liable to be pushed out of place by the growth of neighbouring fibres, and the formation of wide ducts, especially when they arise from the union of several fibres, accompanied by the absorption of their septa. The cells of each radius are united with those of the succeeding radius, except in such cases as the Cypress and Yew, where the fibrous tissue of the bast is arranged peripherally as well as in radii. The primitive and secondary fascicles of the bast are remarkable for the irregular position of the threads of each individual fascicle, and are thus distinguished from the radiating tissue of the wood and bast. The primitive fascicles themselves are constantly disposed irregularly, the secondary, on the contrary, in some cases regularly, peripherally for instance, in *Taxus* and *Cupressus*, and radially in *Corylus* and *Carpinus*. The horizontal medullary rays unite the pith and green bark, and may be regarded as a strongly compressed parenchymatous tissue—strongly modified, however, when in contact with fibrous fascicles. M. J. B.

#### FRENCH ASPARAGUS.

IN the market gardens of Paris, *Asparagus* is almost entirely cultivated for forcing. This operation has been traced back to at least the year 1738; and at the present day it has acquired great importance. The plant is treated in two ways; the first consists in forcing it on the beds, without taking up the plants. It is then called *Asperges blanches* (blanched *Asparagus*). By the other mode the roots are taken up and placed on hot-beds, the

produce of which is called *Asperges vertes* (green *Asparagus*).

*Blanched Asparagus*.—Before entering into any detail about the mode of forcing this, it will be necessary to describe the way in which the planting is performed. In the month of March a favourable situation is chosen; the ground is divided into beds 4 ft. 4 in. wide, and an alley about 20 inches in width is left between each of these. The beds should be laid out so as to present their sides to the south, in order that the *Asparagus* may enjoy every advantage resulting from a good aspect. After the beds are marked out, 10 inches of earth are taken off the first bed, and laid upon the last one. If at this depth the earth is not of good quality, another spade's depth is removed, and this is replaced with the same quantity of good mould. In either case, a layer of cow-dung or other good manure is spread over the bottom of the trench, because *Asparagus*, to succeed well, requires a light and sandy soil, which has also been well manured; the bed is next covered with a few inches of good earth taken from the second bed; the whole is raked so as to make it level and get rid of the stones, and four rows are marked out at equal distances from each other, and so that the two outer rows may be 6½ inches from the edge of the bed. Plants one or two years old, which have been taken up carefully with the fork, in order to avoid breaking the roots, are then placed at the distance of 8½ inches from each other in the line; and after the roots have been well spread out they are covered with 4 inches of earth taken from the second bed. The second bed is planted in the same way as the first, the earth for covering the dung and the plants being taken from the third bed, and the planting is continued in the same way to the last bed. When that is done some earth remains which is kept in reserve. When the beds have been all equally covered, a top-dressing of half rotten dung is laid upon each. In the autumn of the following year the old stems are cut, the ground is slightly forked, and as the beds have necessarily settled, they are again covered with earth as in the preceding year, and each receives a top-dressing of half rotten dung which ought to be repeated every year. After the second year's growth the plants may be forced; but it is better to wait till after the third year, as the produce will in that case be finer.

The beginning of November is the time at which the forcing of the *Asparagus* is usually commenced, and it is continued successively till February. The following is the method followed: after the frames are placed on the beds to be forced the latter are covered with a layer of vegetable mould, the earth is next dug out of the alleys to the depth of about 20 inches, and laid on the beds so as to cover them to the depth of about 13 inches; this is done with the view of making the *Asparagus* much longer. The alleys are then filled up with a lining of fresh stable dung as far as the sashes of the frames. Before the sashes are put on, a layer of dung is spread over the beds in order to induce more rapid vegetation; but care must be taken to remove the dung as soon as the *Asparagus* begins to make its appearance out of the earth. Whatever be the state of the weather no air is given. At night and during bad weather the sashes are covered with good straw mats, in order to confine the heat. The linings are turned every fortnight or 10 days, adding a greater or less quantity of fresh dung, according to the state of the weather, in order to keep up the heat under the sashes to not less than 59°, nor more than 77°. This *Asparagus* is usually ready for cutting in 20 or 25 days, according to the state of the weather, after the forcing has been commenced.

The crop is cut every two or three days, until it is over. In order that the plants may not suffer from a sudden transition from heat to cold, the sashes are left on for some time. After having removed the dung from the alleys, the sashes and frames are taken off, and then the earth taken out of the alleys and deposited on the beds is replaced. It is usual to force only half the number of beds which there may be, in order that the same beds may not be forced in two successive years.

*Asperges vertes*.—The cultivation of *Asparagus* plants is a subject of speculation among the cultivators of the commune of St. Ouen. They have sown and planted *Asparagus* every year for a long period, in order to supply roots to market gardeners. An acre will produce from 2000 to 2200 plants, which will sell for about 30*l.* or 34*l.*, according to the demand. The cultivators usually begin to take up the roots about the beginning of October, and they continue to do so as the stools are required; but before the approach of frost a supply ought to be secured.

When forcing is to be commenced, a good hot-bed 2 feet or 2½ feet thick is prepared, the temperature of which should be from 68° to 77°. The hot-bed should be formed of one part of fresh stable-dung, one part of decayed dung, and one part of cow-dung, the whole well mixed together and moistened if necessary. When the bed is raised to the requisite height, the frames are put on, the paths are lined half way up with dung, and the bed is covered with a few inches of vegetable mould, as the roots can be better placed on it than on the dung. When the heat of the bed has a little abated, the stools are placed side by side on the hot-bed, without shortening their roots, beginning at the back of the frame, and so going on till it is quite full. The roots are left in this state for several days. When it is thought that they are about to grow, they are slightly covered with vegetable mould, and the paths filled up to the sashes with long dung; at the same time taking care to watch the fermentation of the hot-bed, and if it become too hot the height of the linings must be diminished.



On the other hand, in order to keep up or increase the heat of the bed, the linings should be turned as often as it is found necessary to do so. The sashes are covered up at night with straw mats in order to keep in the heat; and as soon as the plants begin to push air must be given during the day, at least if the weather permit of doing so. At the end of 12 days or a fortnight, the Asparagus begins to produce, and it is cut during the whole time that it lasts, that is to say, for about three months. When the crop is over the roots are of no further use, and, after having turned the bed and linings, other Asparagus roots may be planted, if the season is not too far gone. *Courtois-Gérard.*

#### SCARLET BOUVARDIAS.

THESE are plants of very easy culture, forming with little trouble nice compact specimens, which bloom abundantly and for a long period in succession; nevertheless they appear to be very little used for pot culture. Few plants, however, better repay the cultivator for his care, or have a more pleasing appearance, than *B. triphylla* when seen in the form of a good sized specimen covered with clusters of scarlet blossoms, which, under proper treatment, may be had in perfection from June to October.

Propagation by means of pieces of the branches is said to be somewhat difficult; but as bits of the roots treated as cuttings form plants with the greatest facility, and are readily obtained at the proper season, this is of little consequence. The stronger pieces of the roots are the best for the purpose, and should be cut into lengths of about 1½-inch, planted in light sandy soil, leaving a small bit of the cutting exposed to the light, and placed in a bottom heat of about 75°. If properly tended with water they will soon throw out shoots, and form nicely established plants; they should be potted singly in small pots, before the roots get sufficiently advanced to be injured in separating the plants. After potting replace them in a warm moist situation until they get established, and stop any over vigorous shoot, in order to induce a compact habit of growth. When the plants have become well established after potting, remove them to a cooler situation, where air can be freely admitted on favourable occasions, placing them close to the glass. Shift into pots a good size larger than those they occupy, as soon as the roots require more space, and maintain a moderately moist atmosphere; give a sprinkling with the syringe on the mornings and afternoons of bright days. During summer the plants may occupy either a light airy position in the front of the greenhouse, or a cold frame; and, with proper attention for a little time after removal, they will do better in either situation than if retained in a warm moist house, where they would produce a mass of useless wood, and flower very sparingly. If propagated early, and well attended to afterwards, they will be ready for shifting into 8 or 9-inch pots early in June, and this should not be deferred so long as to allow the roots to get pot-bound. Keep the atmosphere rather close and moist for a fortnight after potting, but when the roots strike into the fresh soil expose freely to light and air, with a view to induce stocky flowering growth. When vigorous, they will be found to throw up strong gross shoots from the roots, which must be tied out so as to admit light and air amongst the branches, and maintain the desired form of specimen; previous to August they may be stopped if desirable, but stopping should not be practised later in the season, as the after growth would be produced too late to flower well.

In autumn, when blossoms have become too scanty to render the specimens effective, gradually lessen the supply of water at the root and aim at having the wood well ripened previous to the occurrence of damp foggy weather; for unless the wood is well ripened in autumn, it will be apt to damp off in winter. While in a dormant state they should occupy a cool airy situation where they will be free from damp, and no water should be given to the soil. Having once obtained a stock of strong plants it will be very easy to have a continuous supply of blooming specimens from early in spring till late in autumn, but the Bouvardias are most suitable for summer and autumn flowering. Some six or eight weeks before the plants may be wanted in blossom turn them out of their pots, and after clearing away the exhausted soil trim the roots, and cut back the shoots to sound eyes, thinning them as may be necessary. Repot in fresh soil, using pots only sufficiently large to admit the roots. Place them in a nice moist growing temperature, and apply water sparingly to the soil until the plants start into growth, and if time is an object, a gentle bottom-heat will greatly assist in starting them. Specimens intended for blooming at their natural season, however, should not be allowed to remain in bottom-heat except to start the roots, and should be placed in a cool airy situation as soon as healthy growth is obtained, and be attended with water, pot room, and training, &c., as recommended for last season's growth.

If very large specimens are desired, they may be readily obtained by placing three plants in a pot, after discarding the plants in spring. It is, however, of importance in attempting to produce great masses in large pots, to not only thoroughly drain the soil, but to fill up the pots to within about 7 or 8 inches of the surface with potsherds or lumpy pieces of charcoal, for when allowed too much soil they seldom flower so well as when the roots are kept near the top.

Nice, light, sandy, turfy loam, and good turfy peat or leaf-soil, in the proportion of three parts of the former

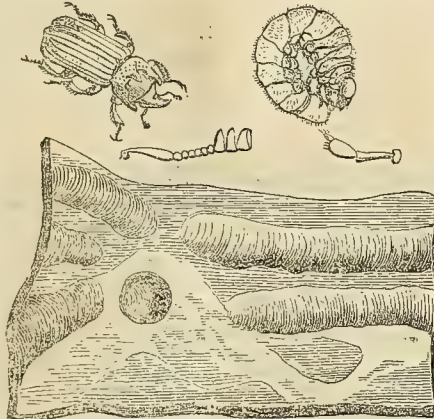
to one of the latter, will form a suitable compost for the growth of Bouvardias. The loam and peat should be broken up into small pieces, and liberally mixed with sharp sand, to ensure efficient drainage. *Alpha.*

#### ENTOMOLOGY.

##### SINODENDRON CYLINDRICUM.

AMONGST the many interesting illustrations of economic botany recently added to the museum at Kew Gardens are a series of specimens of different woods, showing the attacks of insects, presented by the Rev. Professor Henslow, one of which forms the subject of the present paper, the learned professor having been so kind as to furnish me with living specimens of the insects by which this and other injuries to different trees are produced.

The specimen in question is a piece of Walnut tree, showing a number of large and wide channels filled up with detritus left by the insects, by the larvæ of which they are formed, and with cylindrical burrows formed by the perfect insect for its exit. The insects by which this mischief is accomplished are the larvæ of a beetle belonging to the family Lucanidae, named *Sinodendron cylindricum*. From information received from Prof. Henslow, it appears that these larvæ were found to have attacked a decaying Walnut tree, living in the dead portion contiguous to the sound inner part. They always occur in a doubled up or curved position, and it is somewhat mysterious to understand how they pass by the rejected matter in their burrows. The generic name *Sinodendron* has been given to them from their being supposed to injure trees, being derived from the Greek *sino* and *dendron*, and hence the mode of spelling the name *Synodendron*, adopted by Curtis and others, is incorrect; at the same time it is questionable whether this insect is the real cause of injury to the tree, as it is found only in decaying and dead ones. The Rev. W. T. Bree, indeed, in an article published in London's "Gardeners' Magazine" for 1833 (Vol. VI. pp. 327—335), entitled "Some Remarks relating to the Fall of an aged Ash Tree," considers them to be blameless in this respect. "The small stag beetle," he observes, "and its congener the *Sinodendron*, like the wood-peckers, I am satisfied, commit no injury on the living and sound



wood; attacking such only as they already find far gone in a state of decay, which, in the present instance, they had perforated in all directions. Many were found pursuing their occupation in the decayed timber at the distance of 18 feet from the ground, to which height they must have worked their way from the bottom. These two insects are the usual inhabitants of the interior of decayed Ash trees, dwelling together promiscuously, and as it should seem, in perfect harmony and good-will." The *Sinodendron* does not confine its ravages to the Ash and Walnut trees, since Mr. Ingpen many years ago gave me a specimen of the larva found in decaying Oak, and Mr. Dale met with it in old rotten Apple trees; it is also found in Pear, Cherry, and Maple trees.

The cylindrical form of the perfect insect, and the short compact structure of the spined legs, are eminently fitted for enabling it to make its way in its burrows in the wood; it must indeed, in this respect, differ materially from its ordinary associate, the *Dorus parallelipipedus*, which is of a much flatter and broader form. The small size of the perfect insect in comparison to that of the larva is also worthy of notice, the cylindrical burrow being evidently the work of the perfect insect, as proved by its much smaller size.

The larva bears a close general resemblance to that of the common cock-chaffer represented in our article on that insect (1849, p. 484). It is of a whitish grey colour, tinged with buff, the head more fulvous, the whole body clothed with very short and fine erect reddish hairs; unlike the larvæ of the Melolonthæ and other Lamellicorn beetles, however, the segments of the body are not transversely wrinkled, and the terminal segment is not so large as the preceding; the terminal aperture of the body also, instead of being transverse, is longitudinal, as in the larvæ of the stag beetles, as described by M. de Haan in his fine memoir on the Lamellicorn larvæ; the under jaws also are divided into two lobes, each terminating in a curved and acute point. In all these characters the insect is found to agree with the Lucanidæ, and it is interesting to find the relation of the genus with that family, derived as it has hitherto only been

from a consideration of the characters of the perfect insect, fully borne out by those of the larvæ, which are now for the first time detailed. The perfect insect differs from the genuine Lucanidæ in having the upper jaws not exposed, and in the labium or terminal portion of the lower lip exerted and not covered by a large horny mentum.

The largest specimens of the beetle, *Sinodendron cylindricum*, *Latreille* (*Scarabæus cyl.*, *Linnaeus*), are about two-thirds of an inch long, the females being considerably smaller; they are of a shining black colour, much chagreened with punctures, the disc of the thorax of the male being smoother and more glossy than the rest of the body; in this sex the head has an obliquely elevated horn in front, that of the female having only a small tubercle; the front of the thorax on the latter is not nearly so much excavated, and the tubercle in the middle is almost obliterated. It is found throughout the north of Europe, and it seems to be generally distributed over our own island.

In company with the larvæ of the *Sinodendron*, Prof. Henslow found *Elater* (*Melanotus*) *fulvipes* and its larvæ, which, however, seemed to prefer the actually decayed parts of the tree. As the identification of several of the forms of the larvæ of the *Elateridæ* (all of which, including the wire-worm, are great enemies to the horticulturist and agriculturist), is yet incomplete, it may be interesting to mention that the larva sent by Professor Henslow agrees with the figure 24, 20 in my "Introduction to the Modern Classification of Insects," i., p. 323. *J. O. W.*

#### BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Continued from p. 629.)

SECTION D.—ZOOLOGY, &c.—On a curious Exemplification of Instinct in Birds, by the Rev. F. F. STATHAM.—The author commenced by stating that his communication partook more of the nature of an anecdote than of any elaborate disquisition, but that he apprehended that a great portion of the science of Natural History consisted in the careful collation of such anecdotes, with the inferences to which they naturally led. He made some references to the theory of the facial angle, as indicative of the amount of sagacity observable in the animal race, but expressed his conviction that this theory was utterly at fault in the case of birds: many of those having a very acute facial angle being considerably more intelligent than others having scarcely any facial angle at all. Size also seemed to present another anomaly between the two races of beasts and birds—for while the elephant and the horse were among the most distinguished of quadrupeds for sagacity and instinct, the larger birds seemed scarcely comparable to the smaller ones in the possession of these attributes. The writer instanced this by comparing the ostrich and the goose with the wren, the robin, the canary, the pigeon, and the crow; and made some amusing allusions to the holding of parliaments or convocations by birds of the last species, while the ostrich is characterised in Scripture as the type of folly. The author then proceeded to describe in detail the particular case of instinct which formed the burden of his paper. It referred to the poisoning of two young blackbirds by the parent birds when they found that they could neither liberate them nor permanently share their captivity. The two fledglings had been taken from a blackbird's nest in the garden of S. Swonnell, Esq., of Surrey Square, London, and had been placed in a room overlooking the garden, in a wicker cage. For some time the old birds attended to their wants, visited them regularly, and fed them with appropriate food; but at last, getting wearied of the task, or despairing of effecting their liberation, they appeared to have poisoned them. They were both found suddenly dead one morning shortly after having been seen in good health; and on opening their bodies, a small leaf—supposed to be that of *Solanum nigrum*—was found in the stomach of each. The old birds immediately deserted the spot, as though aware of the nefarious deed befitting their name. The reading of this paper led to the notice of several instances of instinct amongst animals.—Dr. Horner stated that rooks built in the Infirmary trees at Hull, but never over the street. One year a young couple ventured to build over the street, and for eight mornings in succession the older rooks proceeded to destroy the nest, when at last the young ones chose a more fitting place.—Mr. A. Strickland, after referring to the tendency of birds to build their nests of materials of a colour resembling that around their nests, related an instance in which the fly-catcher had built in a red-brick wall, and used for the nest mahogany shavings. He also referred to the meetings of rooks for judicial purposes. He had once seen a rook tried in this way, and ultimately killed by the rest.—Dr. Redfern drew attention to the distinction to be made between instinct, intelligence, and reason. Instinctive actions were dependent on the nerves, intelligence on the brain, but that which constituted the peculiar qualities of the mind of man had no material organ.—Mr. Allis stated, that in proportion as the brain was developed in relation to their size in birds, was their intelligence. Thus, the goose and ostrich had small brains—but the canary and wren very large ones.

On the Utricular Structure of the Endochrome in a Species of *Conferva*, by Prof. ALLMAN.—The plant which constituted the subject of the communication is closely allied to *Conferva linum*, and the author showed that the deep green endochrome, when liberated from



the cell, is seen to possess a very definite utricular structure. Each utricle is filled with homogeneous green matter, which surrounds one or more peculiarly formed starch granules. In many instances, utricles were met with of a large size, and filled with a brood of secondary utricles, each containing homogeneous green contents, surrounding a nucleus-like starch granule.—A long discussion followed the reading of this paper—which ultimately turned upon the distinctions existing between the animal and vegetable kingdoms. Dr. Redfern dwelt on the importance of recognising the function of cell contents, as well as of cell walls. Physiologists were too prone to recognise the cell wall, to the exclusion of what it contained. Dr. Walker Arnott stated that he had recently heard that starch had been found in the Medusae. If this were the case, the existence of starch could be no longer claimed as characteristic of the vegetable kingdom. Prof. Allman agreed with Dr. Lankester that the best expression to be found for animal and vegetable life at present was, the general fact of vegetable tissue giving off oxygen gas, and absorbing carbonic acid, whilst animal tissue absorbed oxygen and gave off carbonic acid.

(To be continued.)

### Home Correspondence.

**Late Peas.**—Having noticed in your report of the Horticultural Society's Garden, at p. 567, some account of a trial of late sown Peas, I beg to add that I have made similar trials for the last three years, but without success, although my sowings have not been later than the 24th July, while those sown in the Horticultural Gardens are 10 days later. I find that all the early sorts sown at a late season here have become attacked with mildew, more or less. I find Knight's Tall Marrow to be the very best for late use, and it is less subject to mildew than other sorts, but it requires to be sown not later than the 10th July, in order to secure a crop. As this Pea is very prolific and lasts a long time in bearing, it will carry a crop until late in November, unless the frost has been very severe indeed. The British Queen is also a good autumn Pea, but rather unmanageable in windy weather, on account of its tall growth. The Champion of England is a most prolific early variety, but it should not be sown later than May, on account of its being more subject to mildew than many other kinds. Those who are not fond of seeing varieties may get an excellent supply from the above named sorts, to which may be added Prince Albert, for an early sort, or the Paradise Pea substituted for a third early sort (instead of the British Queen), would be no loss. The Paradise is new, but an excellent Pea. *Thorp Perrou.*

**Stanwick Nectarine.**—Much as I respect the opinion of Mr. Rivers on the subject of fruit, I cannot see his remarks on the Stanwick Nectarine pass unnoticed, as the greater parts of his statements are contrary to my experience. The late Earl of Ducie purchased two of the earliest plants, and being under the impression that the merits of the fruit were first-rate, had them planted in his Peach-houses, and that too, under what I presume Mr. Rivers would designate "favourable conditions." The trees were trained at 16 inches from the glass, the border was quite free from stagnant water, the soil was a light fibrous loam, and the treatment was the same as what has for many years enabled me to produce good Peaches. Mr. Rivers's opinion, that, even under glass, the Stanwick Nectarine cannot be ripened without the aid of fire-heat is incorrect, as, in our late house no artificial warmth was applied, and there it ripened as well as in the early house. As regards the fact that this Nectarine will not ripen on the exposed garden wall, Mr. Rivers and I are of the same opinion. Whether forced early, or allowed to flower naturally under glass, the fruit sets freely, and the progress is satisfactory, till it becomes the size of a pigeon's egg, when more than half the crop shrivels, and drops off—an occurrence which generally happens at the time of stoning. As to the "delicious flavour and unique proportions," which Mr. Rivers imputes to this Nectarine, all who have tasted it here pronounce it unworthy of cultivation, and very inferior to the Elruge; and to mark Earl Ducie's dissatisfaction, he ordered the trees to be destroyed. In both our houses, without the least exception, the fruit cracked in three or four places, from the stalk to the apex—a fault certainly less considerable than want of flavour, but sufficient to prevent its appearing on the dessert table. *A. Cramb, Gardener, Tortworth Court.* [How it has happened that the marvellous excellence of this fruit at Stanwick should not have been secured so far to the south as Tortworth, we are quite unable to decide. That the quality of the variety, when properly ripened, is all and more than has been said of it, all who have tasted it; when fully ripe, well know. Until quite ripe it is worthless.]

**Striking Cuttings of Bedding Plants.**—Your correspondent's failure in striking such things as Salvias, Cupheas, and Petunias, reported at page 630, must be attributed to other causes than their having been placed in a cold frame and shaded, as, when taken off early, these plants root so very freely, that scarcely anything but gross mismanagement could prevent their doing so. I fear, however, that he has carried his "shading" process to excess, and probably his watering also; full exposure to the sun is certainly preferable to extreme shading, yet these plants are the better of a little shade in ordinary summers, but the Scarlet Geraniums, of which he also speaks, require no shade at any time; cuttings taken off about the middle of August, and inserted in a sunny border of light sandy soil, root with scarcely any excep-

tion; and, by being taken up at the end of September, some of the best may be indulged in separate pots, where there is room to store them away; the others may be planted thickly in wide-mouthed pots, to stand the winter in, and in spring they may be divided and potted off accordingly. I have followed this plan for some years with perfect success, my object being to save the greatest possible number of plants through the winter in the least space. This season my stock of Geraniums extends to thousands, and they are all treated as above; their winter management I will give at another time, if required. *Vindex.*—Your correspondent complains that his cuttings, although kept in a cold frame carefully shaded (when necessary) look wretched, whereas, his friend's cuttings placed in the open air have rooted, and are vigorous without any shading whatever; when, I would ask, in this case, was the shading employed necessary? It is my opinion, that glass and shading accelerate in a high degree the formation of roots, when used judiciously; but the shading should be as light as possible, a little litter, for instance, which will not exclude all the light, but still breaks the force of the sun's rays, will answer; and the lights or glasses should be removed twice every day, in order to get rid of the vitiated air accumulated under them. I have seen cuttings of Verbenas, Petunias, Calceolarias, Geraniums, &c., merely pricked out in a border under a south wall, watered and left to their fate, and they nevertheless succeeded admirably. *J. R.*

**The Holly Tree.**—Your correspondent, "A Country Clergyman," quotes some lines of Southey's on the Holly, which infer that the spines are designed as a defence against cattle, and that when the bush grows out of reach it loses its spines. Another version attributes the spineless leaf to age. I believe that poets are lovers of Nature in general, but not always observant of particulars, and therefore little to be trusted for correct observation. I may elucidate this by another poetical attempt at description, far from the truth as Southey's lines.

Observe the Holly, whilst a fruitless tree,  
Thicket with spines, as ever it can be;  
These spines its strength, its native armour shown,  
Horrid its front, no mercy here is known;  
Each kindred leaf a fierce defiance lowers,  
And everlasting war reigns in the Holly bowers.  
But, mark the change! when from the self-same root,  
The mighty Holly, turns its strength to fruit,  
Spineless and harmless, war's fierce game it leaves,  
And crimson berries shine among the leaves.  
So man, uncultured, his fierce nature shows,  
In spiny words, and still more spiny blows;  
Wild are his ways, and yet the self-same root,  
Cultured, will bear fair blossoms and fine fruit;  
His nature changed—he, like the Holly tree,  
Will drop his spines, and ever fruitful be.

I have learnt from observation that the Holly will sometimes grow spiney from top to bottom, near the ground, or far out of the reach of cattle, and whether young or old. I have met with instances where the whole bush was spineless, yet almost entirely without fruits, and hitherto I have not been able to learn the cause of these variations. The general rule, I believe to be, that the Holly has a spiney leaf. *T. C. Brown, Cirencester.*—There being a considerable latitude allowed to poets to indulge their fancy in, it need not create surprise if some of their descriptions of Nature be either overdrawn or fall short of the mark, but that to which a "Clergyman" calls attention at p. 630, would seem to have been recognised by parties who, above all others, are expected to investigate such matters—I mean the botanists; for the quotation is found everywhere. Johnson has it in his "Berwick Flora," and Hooker in his "Flora of the British Isles." Other local "floras" have also availed themselves of the passage. Now when a statement is backed by such close-seeing observers as botanists should be, it may seem preposterous for gardeners to hold a contrary opinion; nevertheless, I must say that I have often looked in vain for that distinctive difference which the lines quoted would imply, and though the tree when surrounded by others often produces leaves having but few or no spines on them, I have seldom been able to discover much difference between the bottom and the top leaves in that respect, and I don't remember ever seeing a tree in an exposed situation which did not abound in prickly leaves up to its summit; true, there might be more plain ones near the top, but then these are more plentiful in the interior or central parts, and that beautiful arrangement of Nature, which is said to guard the tree against cattle, is certainly only exhibited in the intensity of the spines on fully exposed trees, as compared with inclosed and sheltered ones, rather than by the lower parts presenting a more formidable front to their predators than the top leaves do. The imaginative genius of the poet has therefore led him, I conceive, into error. *Vindex.*

**Tokens of Winter.**—On the morning of the 2d inst. the ground in this neighbourhood (the centre of Kent) was all covered with hoar frost, indicating a degree of cold unusual at this early period, but the next morning it was repeated with greater severity, destroying, or irreparably damaging, most tender things, such as French Beans, Vegetable Marrow, &c., as well as Dahlias, and other tender flowering plants. Having kept a register of the weather for some years, I have never witnessed so early a frost before, the thermometer being down to 26° on the 3d inst.; it is needless to say that a bright day followed, which hastened the destruction of the injured plants. *Vindex.*

**A Visit to Hitcham Village Horticultural Society.**—On Wednesday, the 28th ult., the second meeting of this Society was held on the lawn of the rectory at Hitcham, under the active superintendence of the rector, the Rev.

Professor Henslow. It is well known in Suffolk, at least, that Mr. Henslow a few years ago established this Society in his parish with the object of rewarding industry and encouraging a taste for the pleasures, the beauties, and the usefulness of the garden among his poor parishioners. I wish I could say that his example had been more generally followed—but with the exception of a Society formed at Thornham under the superintendence of Lord and Lady Hemiker (a report of which I will send you next week), I am afraid in this county, at least, I must say no other effort of the kind has been attempted. Village Horticultural Societies are pre-eminently deserving the support of all who feel a real interest in the welfare and happiness of the poor. I confess myself, without any reservation, as one of those who consider that the poorer classes of society in this country have been too much kept in the background by those upon whom the duty devolves of endeavouring to raise them in the social scale. I do not deny that as a rule much charity and benevolence still exists among, and is practically shown by the rich towards the poor; but I look at something beyond either charity or benevolence—I am thinking of the moral duty which devolves upon the educated classes to do all they can to raise the condition of their fellow creatures among whom ignorance is the effect of poverty, and whose crimes are too often the offspring of ignorance. Among the means of removing this ignorance I think village horticultural societies have some considerable claims to our notice. Books are not the only means of acquiring knowledge. A man who knows how to grow a Potato better than his neighbour is more learned than he is—and if by a little kind instruction he is told the principles upon which his success depends, if he is led by principles to learn something of the Divine law, by which nature works out her mysteries, in the growth and perfection of her works; surely the knowledge of such to man, by leading him up from the plant to its Creator, must be productive of happiness, and by giving a higher tone to his mind must raise his status in society, and thus indirectly promote the welfare of the whole human family. If this digression will be pardoned I will proceed at once to our horticultural meeting. Upon arriving at the rectory grounds, I found in different parts of the lawn three tents, and I will say a few words about the contents of each. In the first tent I was at once attracted by about 50 or 60 bags containing samples of Wheat from the parish allotments, which were arranged for competition in two classes, white and red, and which I was informed by the judges were very superior samples indeed; about eight prizes in each class were awarded. Then followed a long row of Potatoes, in two classes also, to which about a dozen prizes were given, and which were generally very well grown; Cabbages, Onions, Carrots, Parsenips, Turnips, collections of vegetables, Windsor Beans, dessert and kitchen Apples, Plums, Damascenes, Grapes, Hollyhocks, Dahlias, German Asters, and Zinnias made up the list of the exhibition, and did great credit to the competitors, displaying an amount of skill in cultivation which few who did not see it would believe could exist in a remote country village. In the second tent, to which I now directed my attention, I found a beautiful model, the work of Miss Henslow, of a cricket field, with players, tents, and spectators; while in the centre played a real miniature fountain, constructed by a pail of water hid among Laurel branches at the top of the tent, a gutta percha tube and a glass globe containing various coloured pith globes, which were kept in constant motion by the upward pressure of the water as it was forced out of the perforated mouth forming the jet. The third tent was a museum for the day, containing a choice collection of some of Mr. Henslow's specimens in natural history. Skulls of various animals, birds, reptiles, and fish, skulls collected in the parish of Hitcham, among which I saw the somewhat rare *Helix lapidea*; collection of British birds' eggs; drawers of insects, among which the caterpillar, chrysalides, and perfect insects of the swallowtail butterfly, death's-head sphinx, and goat moth were conspicuous. Crustaceans and Centripeds, the latter being illustrated by a large bunch of barnacles attached to the bottom of a glass bottle found at sea, were among the animal specimens exhibited. In botany there were fine illustrations of the three great classes of plants, as shown in the cones of Fir trees, fruits of the Mahogany tree, Calabash and Snake Nut trees; of the Ivory and Coquilla nuts, the oils of the Seychelles and Cocoa-nut Palm trees, puff balls, plant animals, &c. In the mineral kingdom suites of the principal metallic ores; and among the miscellaneous objects exhibited there were trays of coins; felted vegetable fibre and hair balls in animals; calculi from horse and man; idols, and a model of a Swiss cottage, sent by the Rev. J. Gedge. These various objects were, from time to time, explained, and commented upon by Mr. Henslow, and excited much attention. The various prizes were then called over—various spades, forks, rakes, and half-crowns, shillings and sixpences given out to the successful competitors. Then a large party (almost all the poor of the parish) were regaled with tea and cake, &c.; "God save the Queen" was sung, and the party broke up, none the worse, I ween, for being kindly treated and thoughtfully cared for. There is something far beyond affectation or display, or a popularising feeling, in these attempts to diversify with amusement and practical instruction "the simple annals of the poor." May the reward I know he covets most, that of success, meet the hard-working exertions and the kindly intentions of the most worthy rector of Hitcham. *C. R. B.*



## Foreign Correspondence.

*Nymphaea gigantea*.—This beautiful aquatic, which was one of the last and certainly the most remarkable of the late Mr. Bidwill's introductions from Australia, is now in full flower with me; this, so far as I know, is the first instance of its flowering in Europe. My plant is still young, and is far from having attained its full development, but it gave me an opportunity of proving its perfect identity with the *N. gigantea*, figured and described in the "Botanical Magazine," and showed at the same time that it certainly will turn out a most magnificent and truly noble plant. Its rich dark blue colour, nearly approaching to violet, is far superior to any other blue *Nymphaea*, and combining this advantage with the extra size, the great abundance and the noble cupped form of the flowers, the *N. gigantea* will fulfil the prognostication of the late Mr. Bidwill, who proclaimed it a dangerous rival even to the royal Victoria herself. *L. Van Houtte, Ghent, October 3.*

## Notices of Books, &amp;c.

*The A B C, or Alphabetical Railway Guide*, for October, 1853. Tweedie.—At last we have the satisfaction to announce the appearance of a railway guide worthy of a rational country. That Bradshaw's slovenly, higgledy-piggledy, ill-printed, incomprehensible books should have found favour with travellers, could only be accounted for by the singular fact that few cared to contend with him for the golden profit belonging to the undertaking. Practically the "Railway Guide" was a monopoly which the world left undisturbed, and the public reaped the usual consequences. A rival has now appeared, in which the most convenient of all arrangements, the alphabetical, is taken as the foundation of the work, and a slight superstructure of railway routes is built upon it. This plan has all the merits of a good dictionary, and is so simple in use that there is no exaggeration in the publishers saying that it is as easy as A B C. The typographical execution, here almost as important as the arrangement itself, is executed by Messrs. Clowes & Son, in a manner worthy of their reputation as printers. At present the work is only a guide to the manner of going from London to the different stations in the country and returning; but we take for granted that the plan will be extended by degrees to all the great towns in the kingdom. The little book is at present deserving of all praise; we hope that hereafter, when advertisements pour in, there will be the same skill shown in classifying them, and in separating them from the body of the work, as is now displayed in indicating the travellers' routes.

*The Potato Disease, its Origin and Cure*. W. M. Clark.—Under this ambitious title Mr. J. Stratton, "formerly in the employ of his Grace the Duke of Athol, and Flower Gardener to Vice-Admiral Sir Adam Drummond, of Megginch," has favoured the world with his practical opinion respecting that which no one has yet been able to explain. Mr. J. Stratton thinks that "our scientific horticulturists" deserve censure because of their "sleepy indolence and inattention" to divers schemes and "obscure manifestations;" and this has forced upon him the duty of explaining what they should have explained long ago. Therefore he has written a pamphlet, in which, for the modest sum of sixpence, he teaches the world how plants have perception—how there is a Holy Ghost plant, native of North America—how, "to the best of his knowledge," it belongs to the same class and order as the "Columbine"—how its flowers resemble those of Snapdragons—how it is a hybridous plant, whose flowers snap up all sorts of unfortunate insects—and how it may be seen in the Royal Botanic Garden at Edinburgh. The learned author further assures the world that the antenna of an insect is a sucker—that many poisonous plants are in bloom during the time the Potato fields are in flower—that the original Potato came from Santa Fé—that the Larch is a native of North America—that the universal Potato disease broke out in 1835—that there is "a rank high-tasted Potato, generally termed yams, an esculent root that grows spontaneously throughout the wilds of North America, especially in low marshy swamps, and also in abundance in the South Sea islands"—that the pollen of the Bizort resembles swarms of lizards—that of Horse-radish fiery balls—that of Monk's-hood blue worms. In short, there is no end of the edifying discourse in which Mr. J. Stratton indulges. Is there no kind friend who will take the necessary means to have him placed in a lunatic asylum?

*John Waterer's Catalogue of American Plants* contains a well-arranged select list of the finest Rhododendrons and similar plants in cultivation. The collection of hardy scarlet varieties is particularly rich. We need not say Mr. John Waterer's nursery, at Bagshot, is one of the richest in the kingdom in all sorts of handsome hardy evergreen plants.

## New Plants.

## 10. WARREA QUADRATA.

*W. quadrata*. Warcezewiczella: labelli lobo medio orbiculari reflexo, lobulibus semicirculis convexis, appendice carnosa subapiculata; calicibus apice lobulatis.

This Orchid approaches very nearly to *Warrea discolor*, both in habit and general form. The flowers, however, are larger and more fleshy, with no purple except upon the centre and upper half of the lip; otherwise the blossoms are a clear uniform straw colour, with

a green tip to the sepals. It is essentially known by the appendix at the base of the lip being nearly square, about 3-toothed in front, and deeply furrowed; that of *W. discolor* is uniformly digitate in all the specimens I have seen. Messrs. Jackson, of Kingston, have lately flowered this species. It is probably one of Warcezewitz's plants from Central America.

Pseudo-bulbs none. Leaves pale green, about 6 inches long, very obscurely veined, oblong acute, flat, except at the base, where they are much narrowed and channelled. Peduncle not quite so long as the leaves, with one tight sheath near the base, and a pair of nearly opposite very unequal bracts, from between which rises the solitary flower. The lateral sepals are abruptly bent back, but remain perfectly straight, with the lower edges auriculate and involute. The upper sepal is ovate-oblong and quite erect. The petals have the same form and size as the last, but are rolled back above the middle. Of the lip, which is circular with a retuse termination, the edges are bent downwards so as to give it a somewhat angular appearance, and the lateral lobes are long enough nearly to meet over the column. The appendix at the base is slightly tinged with violet; the unguis is yellow with a slight tubercle; the column, which is downy in front, is pure white.

11. DIASTEMA QUINQUEVULNERUM, *Planchon and Linden, in Flore des Serres*, t. 832.

A little hothouse herbaceous plant, neat and pretty, but not striking, allied to *Achimenes*, and especially to *Niphaea*. It seems to grow about 6 inches high, with stalked oblong downy opposite leaves. The flowers are from two to 10 in number, in terminal stalked racemes. The corolla is about an inch long, downy, with a yellowish tube, and a flat white 5-lobed limb with a small purple spot at the base of each lobe. It grows naturally in damp and shady ravines near Mesa-rica, in the province of Ocaña, at 5000 feet above the sea, whence it was sent to Mr. Linden by Mr. Schlim. Those who are acquainted with what is called in Gardens *Achimenes candida*, will form a correct idea of this species, except that the latter is the more handsome of the two.

## Garden Memoranda.

MR. WARD'S GARDEN, CLAPHAM.—One of the most interesting gardens in the immediate vicinity of London, and probably that in which the greatest variety of vegetation is compressed within the smallest compass, is that of N. B. Ward, Esq., of Clapham, well known to the gardening world as the originator of the glazed cases which are identified with his name, and which have proved of such signal value for the transport of living plants. Mr. Ward's garden is of the usual suburban form—a narrow slip flanked by parallel walls—but not of the usual suburban trimness, for the object has been rather to imitate the freeness and wildness of nature than to follow the prescriptions of art. The result is very satisfactory to those who admire the face of nature in this shape, and have anything like a zest for botanical pursuits. The surface being limited, it has been Mr. Ward's object to extend it as much as possible by raising irregular banks of earth, and then to make the most of this gain by covering the whole with vegetation. It is really surprising how great a variety of plants it is possible to accommodate within a little area by adopting this mode of arrangement, and those who have paid no attention to the subject can have no idea of the perpetual source of interest which is furnished by even a little garden, if judiciously planted, every season being preceded by its herald, and attended by its floral train. It is from such philosophical gardeners as Mr. Ward that practical gardeners very frequently learn many a useful hint. Every gardener, for instance, who has tried to cultivate some of our choice wild plants in the neatly-kept borders of his flower garden, where the surface is from time to time hoed, raked, or scarified with scrupulous punctuality, must have found that sometimes they refuse to grow, even when no apparent difficulties of soil or situation exist, but the probability is that the recusant plant is pining for its companions, and that say a July sun, acting on the bare and dried soil around it, produces just the opposite conditions to those under which it is naturally placed, surrounded by the exhalations of other plants, humbler it may be, and weed-like in their character, but adapted, we cannot doubt, to some wise purpose in the economy of Nature. This, we believe, is Mr. Ward's view, and it is to the practice of covering the entire surface with vegetation, that he attributes his success in cultivating satisfactorily, and in close contiguity, species which are naturally placed wide apart, and individually under differing conditions. Certain it is, that on these hillocks, made up of sods of loam and peat, such plants as the Alpine Primroses, the hardy Heaths, Saxifrages, Rhododendrons, Gentians, Violets, Tritomas, and a host of other plants, thrive admirably; while in a meandering rill *Osmunda*, *Menyanthes*, *Acorus*, the Himalayan Bamboo, &c., appear to vary the scene. In one part, facing south, has been the finest bloomed *Weigela* which we have anywhere seen. The beauty in which some of the Primroses of the Alps bloom year after year, in an old case placed under the west wall of the garden, indicates how much of floral beauty in the early spring might be realised, even in the suburbs of London, in an Alpine rock house; that is to say, a glass house without artificial heat, arranged interiorly in the form of rock-work, and planted with the choicest spring-blooming Alpines. They are, indeed, beautiful in favoured localities without any such protection; but when it is remembered how often their deli-

cate forms give way beneath the influences of our boisterous spring weather, and how their pure and brilliant colours are sullied in our fitfully changing climate, some idea may be formed of the great degree of interest which would attach to such a garden scene. Another feature, and one of some novelty, which was noticed in Mr. Ward's garden, was the employment of perforated bricks in the construction of walls for the growth of Alpine plants. The object in this case was to shut off an unsightly corner, and the alterations were a wood fence or ordinary wall with creepers, or an Alpine wall such as has been constructed. The bricks used are of the ordinary form, but with three or four oblong vacuities passing transversely through them. It is into these openings, filled up of course with soil, that the plants are inserted, the centre of the wall being also filled with earth in the process of construction. The face is built a little sloping, by setting back the courses of bricks as much as may be required. This wall has not been constructed for a time sufficient fully to test its capabilities, but the experiment promises to be in every way successful. Thus it is that an unsightly fence, which one would feel necessitated to hide by planting it out, may be converted at once into an ornament as well as an efficient protection; beside that, the space it occupies is increased manifold in capacity for the purposes of plant culture. We have not yet mentioned Mr. Ward's greenhouse, which is constructed and maintained on the principle of a Wardian case—that is, almost without ventilation, and with the plants planted out on raised banks of soil. Under this treatment, and with a very moderate degree of artificial heat, the temperature being frequently as low as 45° in winter, a very interesting picture of tropical vegetation is produced, in which such striking forms as Palms, Ferns, Musas, Cannas, Calocasias, Calatheas, *Hedychia*, &c., appear conspicuous, accompanied by continuous blooming Roses, *Lycopods*, *Achimenes*, *Fuchsias*, *Cupheas*, &c. *Chirita sinensis* was at one time noticed growing admirably in this house. In another small case is an old plant of the double white Primrose, which has bloomed profusely, and in the highest vigour for several years past, and continues in the most perfect health notwithstanding its confinement.

## FLORICULTURE.

POT CULTURE OF THE CAMELLIA.—The Camellia may be propagated by cuttings; but the usual practice is to graft or inarch on the single and Middlemiss reds, cuttings of which root freely. After being prepared, and potted in very sandy soil and watered, they should be placed in a cold frame till callused, and then introduced into gentle bottom-heat, where they will soon form roots; they may be potted singly in small pots early in spring, or as soon as they are rooted, and kept close and warm until they have completed their growth, when they should be gradually hardened off. The best plants will be ready to be used for stocks at the proper season, but the smaller ones will require another year's growth. Grafting is generally performed in autumn, and the plants should be kept in a close house or pit until a union is effected. The best time for inarching is just before the plants begin to grow. A soil consisting of equal parts light turfy loam and fibry peat, broken up into pieces about the size of a nut, and liberally mixed with broken bones, lumps of charcoal, and sharp sand, will be found to suit perfectly. In potting, care must be taken to secure perfect drainage. It will be found best to select some of the most fibry pieces of the peat, and to cover the draining materials with them; this, mixed with small pieces of bone or charcoal, is more liked by the roots than moss. The proper time for potting, perhaps, is when the plants are about to start into growth; but some growers prefer potting after they have made their wood. Water must be carefully supplied after shifting, until the roots get hold of the fresh soil. With a sufficient stock of plants, and the necessary accommodation, a supply of Camellia blossoms may be obtained from August to May. To secure this, place a portion of the stock in a temperature of 60° or 65° in January or early in February, and others at intervals of a month or six weeks, leaving the latest batch to make their wood and set their flower-buds in a cool house; it may, however, be necessary to remove the late plants to a higher temperature to induce them to form flower-buds; but, except in the case of very vigorous young plants, this will hardly be required. The plants should be freely supplied with weak manure-water at all seasons, and especially while growing, and they will be benefited by frequent syringings. As soon as they have made their wood and formed their flower-buds, they should be removed to a cooler situation; and when the weather will permit, they may be placed in a sheltered shady place out of doors. Those which were in heat in January or February will probably be in flower in August; but if not, they may be transferred to a warmer atmosphere, to encourage them to push their buds. When they have done flowering, they should be permitted to have a season of rest, and should not be over-watered, nor excited by a high temperature; from 35° to 45° will be sufficient at that time. It is also necessary to select for early growth such plants as have their wood buds in a forward state. The Camellia, if well managed, will seldom get into ill health; but if it should, the plants had better be turned out of their pots, all sour soil removed, and then repotted in smaller pots, using soil of a more sandy nature than that in which they have been growing. They should also be cut back, and, as soon as convenient, place them in a gentle bottom-heat,



and keep them close and moist, but water very carefully until the roots have become established. When they have done growing, harden them off, and remove some of the flower-buds. The plants will probably be in a fit state for a moderate shift at the beginning of next year; but they must not be allowed to bear more than one flower to a shoot this season. Indeed, no doubt ill health is frequently induced by allowing the plants to carry more flowers than they can support; two on a shoot are as many as ought to be permitted upon small plants; and if they are weakly, this number should be reduced. M.

**INSECTS ON CARNATIONS.**—During the past month I have found numbers more than ordinary of a small black fly nestling in groups in the hearts and on the tender leaves of the Carnations and Picotees under my care; my Camellia buds were similarly attacked last season. I have found an infusion of the young tips of Elder (scalded by boiling water, and when cold used through a fine roset pot over-head) not only to destroy the black fly, but to keep away the green fly also; and it does not prove in any way injurious to the growing stock; a slight discolouration of the foliage may follow its application, but this is removed by the first shower of rain. *J. Creed, Wace Cottage, Holloway.*

**NATIONAL FLORICULTURAL SOCIETY, Oct. 6.**—Mr. Dean in the chair. A First Class Certificate was awarded on this occasion to Dahlia King of Yellows (Collier), a medium-sized flower of good outline and deep petals, which are well defined and smooth; colour bright yellow. Certificate of Merit to Verbenas Mrs. D. Tysson (Robinson), a blush sort, with a bold decided crimson eye, and good habit. Ditto to Fuchsia Dominicana (Vetch), a hybrid between *F. spectabilis* and *F. serratifolia*. Two plants of it were exhibited, well covered with large crimson scarlet spectabilis-like flowers, which were set off to much advantage by an ample glossy foliage. Label of Commendation to Dahlia Mount Alexander (Skynner), a rich deep yellow of good outline, but ribbed in the petals, and rather low in the centre. Ditto to Fuchsia Telegraph (Smith), a useful kind, with crimson scarlet tube and sepals, and purple corolla. Dahlia Guido (Skynner), was shown, and would probably have obtained an award had more than two blooms of it been produced. It is a rosy salmon, of apparently good general qualities.

#### SEEDLING FLOWERS.

**FUCHSIAS:** *W. J. E.* A pretty dark variety with stout broad sepals, that reflex well. The colours are good, but it is faulty in the tube, which is too slender.

**PELARGONIUMS:** *T. E.* Badly shaped, and altogether of little value.

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

**STOVE.**—Reduce the supply of water to such plants as are going out of bloom, and gradually induce them to a state of rest. As room occurs, bring forward from time to time a succession from the reserve pits for winter flowering. *Justicias* will now be in perfection, and some *Gesneras*, especially *Gesnera zebrina*; *Conoclinium ianthinum*, *Eranthemum pulchellum*, *Poinsettias*, and *Enphorbia splendens*, with other plants, should be encouraged into bloom. A few *Gardenias*, *Orange trees*, and *Luculias*, may be added to bloom early. Select for this purpose plants with well-ripened wood and good buds; *Pancratium speciosum* and *distichum* and *Hedychium coronarium*, &c., are invaluable at this season, for the fragrance of their flowers and the ease with which they may be got into bloom almost at any season. Any *Amaryllises*, which were started some time back for the chance of autumn blooming, should be taken to the stove as the flower spikes appear. **ORCHID HOUSE.**—Here most of the inmates will be requiring a cooler and drier atmosphere; *Bletias*, *Cyrtopodiums*, and similar plants usually grown in pots, if the bulbs are ripened, and the leaves turning yellow, may be removed to cooler quarters and kept dry; let everything however be done gradually. If there is the convenience of separate houses, no difficulty will occur in providing a suitable temperament for each class; they should have nearly the same watchful care when at rest as during the growing season; some require no water whatever, and the whole should be frequently examined to see that insects, woodlice especially, are not injuring their roots, and that they are free from drip. Continue to those growing, as *Saccolabiums*, *Vandas*, &c., a moderately humid atmosphere; a little air may be admitted each fine day; the night temperature may be 65°, rising to 80° by day. *Laelias* which are now showing bloom, should be kept in a house moderately dry and cool, to prolong their beauty.

**GREENHOUSE.**—Give air night and day to hard-wooded plants—the sunless summer has but imperfectly ripened their wood, which must be completed by artificial means; for which a moderate fire will be necessary on wet days. Mildew will most likely be prevalent, for which, apply sulphur immediately. *Pelargoniums*, and other soft-wooded plants generally, must be kept near the glass; but, like the former, air for some time longer must be liberally supplied. Be cautious in the use of water, and keep down green-fly by the usual means directly it makes its appearance.

#### FORCING DEPARTMENT.

**PINERY.**—A good supply of ripe fruit for the next three months is almost indispensable in the gardens of the wealthy; and if our previous directions have been carried out, an adequate number for the demand will now be in various stages of growth, from fruit just beginning to swell to others which have nearly completed their work; the former will require assisting with liquid manure occasionally, and a mild bottom-heat ranging between 80° and 90°. We have before adverted

to the ill effects produced by moving Pine plants while swelling off their fruit—the fruit often becoming prematurely ripe in consequence; and therefore, when the bottom-heat declines, work out a portion of the plunging material from between the pots, without disturbing them, and fill up the space with fresh tan or leaves. Expose the ripening fruit fully to the light, and keep (particularly on dull days), a rather brisk fire heat, to allow for extra ventilation, to bring the fruit up to its proper colour and flavour. These remarks will be applicable for Pines ripening through the winter. The general stock for next season's fruiting, and the young stuff, will require less water as light decreases, and as evaporation is somewhat arrested by the increased dampness of the air of the house; to obviate this a dry atmosphere should be maintained by fire heat, as the great object for the next two months will be to mature the season's growth—attainable by a drier atmosphere, full exposure to light, and a gradual decrease in the use of water to the roots. Keep the bottom-heat steady as above; and while the thermometer may range between 70° and 85° by day, 60° will be sufficient for the house to stand at 6 A.M. When the young plants are grown by dung linings, keep up the heat by timely additions.

**LATE VINERY.**—Here fire will be daily required to keep the houses with ripe fruit in them dry, to preserve the berries from becoming mouldy. Unless, however, the Grapes are not fully ripe, no more fire-heat should be employed than is sufficient to effect this end, as the berries will remain longer without shrivelling in a moderately cool and dry atmosphere than in one overheated. The fires, too, should be made each morning, attended with ventilation, and suffered to go out before night, unless frost is apprehended, when only sufficient to keep it out should be used. Strawberries in pots for forcing will require some temporary protection during heavy rains; keep them clear of weeds and keep them thin, to admit air freely to their foliage. Keep the roots from growing into the material below them by shifting them frequently. Collect leaves as they fall, and stable dung, to be in readiness for linings, and the forcing of *Seakale* and *Asparagus* next month.

#### FLOWER GARDEN AND SHRUBBERY.

The frost of the 3d inst. has, in exposed situations, considerably damaged the beauty of the flower-garden; and *Dahlias* and any other tender plants killed should be cut down, the former to within a foot of the ground, drawing afterwards a little earth round the stem, to preserve the crown, in which state they may remain for the present, as at this time a host of things is requiring attention; foremost among these are *Pelargoniums*, for where these are largely grown, numbers of the choicer kinds must be lifted annually and kept through the winter, as they not only bloom in greater profusion when a year or two old, but help to furnish a supply of cuttings, which, when large quantities of the slow-growing kinds are wanted, are difficult at all times to obtain. *Calceolarias*, *Lobelias*, *Bouvardias*, *Salvias*, *Lantanas*, and many similar things, may be successfully managed the same way, especially the rare kinds; as the above are taken up, pack them closely in frames, &c., until time can be spared for potting them. Many kinds of *Pelargoniums*, &c., if not wanted for stock, may be packed closely in shallow boxes in moderately dry earth, after being pruned, to bring them within a moderate size; and by this means a large number of plants may be wintered in a comparatively small space. Besides the above, single specimens of half-hardy plants (planted out for effect) should either be lifted and potted or protected by night when frosts are likely to occur, for some time longer. Common plants which are propagated easily, such as *Verbenas*, *Petunias*, &c., may remain in the ground while they keep in bloom. The beds cleared off should be dug over, and filled immediately with the requisite bulbs, shrubs, &c., as may have been previously determined upon, for furnishing the spring display of flowers. Give air to the struck cuttings in frames, and get them hardy, agreeably to previous directions.

#### FLORISTS' FLOWERS.

Make up *Pink beds* without delay. These plants luxuriate in rich compost, though some florists plant them in soil only moderately so, giving them a good top-dressing of rotten manure in March. Plant out *Hollyhocks*. An immense improvement has taken place in these flowers of late; and at our exhibitions they divide the palm with the *Dahlia*. Get for a commencement *General Wedderburn*, *Bella Donna*, *Charles Barron*, *Captain Peat*, *Black Prince*, and *Comet*; these are very distinct and beautiful. Look over *Dahlias*, and collect seed-pods; cover the crowns, to prevent injury by frost. Plant offset *Tulips*, and get the best bed in good condition for planting. *Auriculas* should now be carefully examined preparatory to their removal to winter quarters; if the pots evince symptoms of bad drainage, it should be seen to; look also to the lights of the frames, in order that they may be water-tight when required.

#### COTTAGERS' GARDENS.

As was stated last week, advantage should be taken of the first favourable weather for digging up *Potatoes*, *Carrots*, *Parsnips*, *Beet-root*, &c., where these are ready for lifting, which will be indicated in the case of *Potatoes* by the haulm becoming withered, and the tubers parting readily from the roots. These crops, when got up during dry weather, and stored away in a dry state, not only keep much better, but the ground is not injured by the operation of lifting, which is the case when they are taken up in wet weather, especially in stiff clayey soils. In various parts of the country it is customary to put *Potatoes* in some convenient place, and after covering

them with straw, a layer of earth is thrown over them sufficiently thick to keep out frost; but the best method, perhaps, for a cottager, is to store them up in a dry, dark shed or cellar, where they will be secure from frost, and where they may be turned over occasionally when they begin to sprout. *Carrots*, *Parsnips* and *Beet-root* keep well packed in sand or ashes, in a dry room or cellar. "I choose," says a correspondent, "a sunny day in October for taking up these roots, which I allow to remain in the open air till the evening, when I house them in some dry shed or stable for three or four days, leaving the green heads attached. Previously to packing them, I cut the tops off within half an inch of the crown, and store up the roots in a dry place with alternate layers of sand. In this way they keep sound and good for many months. Care must, however, be taken to separate the bruised roots from those that are perfect, and the sand in which they are packed cannot be too dry."

#### STATE OF THE WEATHER NEAR LONDON,

For the week ending Oct. 6, 1853, as observed at the Horticultural Gardens, Chiswick.

Sept. and Oct.	Month's Age.	BAROMETRES.		TEMPERATURE.					Wind.	Rain.
				Of the Air.			Of the Earth.			
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.		
Friday..	30	29.991	29.916	61	38	49.5	55	55	N.W.	.20
Saturday	1	29.831	29.661	61	34	47.5	54	55	W.	.08
Sunday	2	29.861	29.730	54	27	40.5	53	51	N.W.	.00
Monday	3	30.013	29.938	55	28	41.5	50	53½	N.	.00
Tuesday	4	29.965	29.668	58	52	55.0	50½	53	S.W.	.33
Wednesday	5	29.847	29.853	57	38	47.5	51	51	S.	.32
Thursday	6	29.901	29.871	53	47	50.0	51	52	S.W.	.08
Average ..		29.757	29.639	57.0	37.7	47.3	52.1	53.6		.93

Sept. 30—Frost: very fine; clear; lightning, with rain at night.  
Oct. 1—Overcast; heavy clouds; clear.  
2—Clear; very fine; clear; frosty at night.  
3—Frosty; clear; frosty at night.  
4—Rain; densely clouded; night 24 deg. warmer than the preceding night.  
5—Rain, and densely overcast; constant rain; clear at night.  
6—Very damp, with dense fog; uniform haze.  
Mean temperature of the week 6 deg. below the average.

#### STATE OF THE WEATHER AT CHISWICK,

During the last 27 years, for the ensuing week, ending Oct. 15, 1853.

October.	Average Temperature.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
				N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9	59.3	43.4	51.3	16	0.52 in.	1	6	1	1	1	1
Mon. 10	61.1	43.3	52.2	12	0.63	1	2	3	1	2	1
Tues. 11	62.1	43.4	52.7	12	0.31	1	2	2	2	2	1
Wed. 12	60.0	42.3	51.1	14	1.00	3	4	1	1	6	4
Thurs. 13	59.7	42.4	51.0	13	0.53	3	4	3	1	7	2
Friday 14	59.4	41.4	50.2	12	0.50	1	4	1	1	7	4
Satur. 15	57.8	40.4	49.1	11	1.04	2	2	3	1	7	4

The highest temperature during the above period occurred on the 14th, 1845—temper. 76 deg.; and the lowest on the 15th, 1843—temper. 25 deg.

#### Notices to Correspondents.

**A GROUP:** *R. F. H.* *Acer palmatum*, *Pavia macrostachya*, *Cornus roscia*, *Cephalanthus occidentalis*, and *Ribes speciosum* or *sanguineum*. The deciduous *Magnolias* are too large, with the exception of *obovata*, which is not handsome enough. By means of the pruning-knife these may be kept to any form or size. The *Pavia* should be the principal object.

**A HEDGE:** *H. O. M.* We do not believe you will find anything better suited to your purpose than the red *Pyrus japonica*; the white we cannot recommend; *Berberis aquifolium* might be made to alternate with it, forming a row somewhat in front. But you may take the *Pyracantha*. Were the climate better, we should have recommended *Laurostema*.

**EDGINGS:** *G. M.* Next week.

**FRUIT TREES:** *A. H.* The *Apricot* is not adapted for a north wall. You may plant the *Violette Hative* Nectarine against a west wall. The Washington grows vigorously when young, and consequently does not then bear; but it is an abundant bearer once it does begin. The Purple Gage Plum is unquestionably preferable to the one you mention.

**GHERNEY LILIES:** *Reader.* You will find some account of the culture of these in our volume for last year, p. 742.

**NAMES OF FRUITS:** *T. J. Bellons*. 2, *Fearn's Pippin*; 6, *Old Golden Pippin*; 9, a sort of white *Summer Colville*; 10, *Good-year Pippin*; 11 and 26, *Hawthorn*; 18, *Red Streak*. 2, *Pear* is probably *Messire Jean*. The names of the others cannot be ascertained at present. Most of them appear to be wild or cider Apples, quite unknown about London. — *Pomona*. *Jean de Witte*; 2 and 8, *Beurre Die*; 3, *Doyenné Gris*; 4 and 5, *Winter Nelis*; 6, *Louise Bonne* (of Jersey); — *Shem*. 1, *King of the Pippins*; 2, *Winter Pearmain*; 3, appears to be *Cockle Pippin*; 4 and 5, *Hughes's Golden Pippin*; 6, *London*, or *Five-crowned Pippin*; 8, *Grange*, not *Graine's Apple*; 9, *Catillac Pear*.

**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*L. C.* Quite indeterminate. It may be some *wiry-leaved Fescue*.—*H. F.* Some species of *Solanum*.—*Sub.* They are both *Cattleya Loddigesii*.—*Mary*. *Erica medeolana*.—*R. C. H.* *Carex digitata*.—*R. C.* *Geranium nepense*.—*W. K.* *Spiranthes autumnalis*.—*W. C. T.* Some *Triumfetta*, probably *oblongata*.

**OVERHANGING BOUTONS:** *T. Hale*. You have an undoubted legal right to remove all branches which hang over your occupation. Tell your neighbour this, and he will, it is to be hoped, do something to abate the inconvenience. If he refuses, cut them off yourself.

**POTATO DISEASE:** *Murphy*. We have always endeavoured to show that there is no good ground for the supposition that the species or varieties of plants wear out or become exhausted. You will find abundant discussion of this point in our columns; and we may refer you to an article written so lately as the 8d of September last, p. 563, for an explanation of our views upon the subject.

**SEEDS:** *G. A.* If any plant bears the name of the "life of man," we can only say that it is one which has been given by some person in some place unheard of by men of science. We know nothing about it.

**SERBATE-LEAVED HORNBREAM:** *Carmel*. It is not at all uncommon to find the *Hornbeam* (and *Beech* also) sporting like your specimen. The variety called the *Fern-leaved*, in gardens, thus originated.



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**PRIZE CHURN.**

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29th Sept. 1853.

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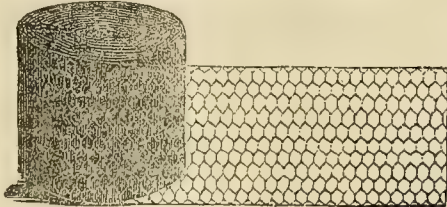
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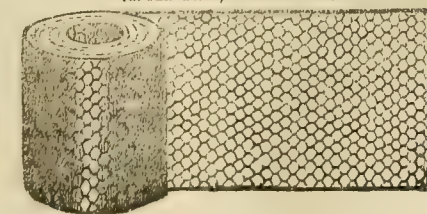
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**FAT STOCK AND POULTRY SHOW at LEEDS,** on DECEMBER 6, 7, 8, and 9, 1853 (Open to the United Kingdom), when Prizes will be offered for Stock, £184, and Two Gold Medals.

" " Poultry ... £121.

" " Roots, Seeds, &amp;c. £20.

The "Entry" closes on November 15 next. Prize Sheets and Certificates are now ready, and may be had of M. M. MILBURN, Secretary.

**THE BIRMINGHAM EXHIBITIONS OF STOCK**

**AND DOMESTIC POULTRY.**—THE FIFTH GREAT ANNUAL SHOW will be held in BINGLEY HALL, BIRMINGHAM, on the 13th, 14th, 15th, and 16th of December next.

Prize Lists, Certificates of Entry, and any further information may be obtained from JOHN MORGAN, Jun., Secretary. The Entries Close on Saturday, November 12.

Offices—39, Bennett's Hill, near the News Room, Birmingham.

**AN EXHIBITION OF POULTRY AND PIGEONS**

will be held at the Corn Exchange, Bedford, on the 30th November and 1st and 2nd December. Entrance to non-subscribers on the first day 2s. 6d., on the other days 1s. Subscribers of 10s. and upwards are entitled to admission throughout the exhibition. Prize lists and forms of entry can be obtained of Mr. H. J. Jones, Bedford; and Mr. Charles Howard, Biddenham, near Bedford. Entries to close on the 22d October, 1853.

**THE GREAT NORTHERN ASSOCIATION for**

THE IMPROVEMENT OF THE BREED OF PIGS, POULTRY, PIGEONS, and RABBITS (Open to all England). Upwards of 150l. given in prizes.—THE SECOND ANNUAL EXHIBITION will be held in the New Market House, Doncaster, on WEDNESDAY and THURSDAY, November 30, and December 1.

The Certificates of Entry are now ready, and may be had of the Honorary Secretary. No Entries can be received unless they are made on the Forms of Certificate issued for that purpose, and accompanied by the amount of Subscription or Entrance Fee. The Entry closes on Saturday, October 29.

The Directors of the Great Northern, Midland, and Lancashire and Yorkshire Railways, have agreed to carry back to the Exhibitors, free of charge, all stock from the Exhibition if unsold. High Street, Doncaster. HENRY MOORE, Hon. Secretary.

**SMITHFIELD CLUB FAT CATTLE SHOW.**

All Entries for the Christmas Show of Fat Stock, &c., must be returned to the HONORARY SECRETARY on or before SATURDAY, the 6th of NOVEMBER, 1853.

Prize Sheets, specifying the Classes, Prizes, and Medals (which amount to nearly 2000l.), and the necessary PRINTED FORMS of Certificates for Entry, to be had on application to

B. T. BRANDRETH GIBBS, Honorary Secretary, Corner of HALF-MOON STREET, Piccadilly, London.

N.B.—It is particularly requested that all letters connected with the Exhibition, or on the Club's Business, may have the words "SMITHFIELD CLUB" written on the outside, in addition to the Honorary Secretary's name and address.

**The Agricultural Gazette.**

SATURDAY, OCTOBER 8, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 13—Agricultural Imp. Society of Ireland.

THURSDAY, — 20—Agricultural Imp. Society of Ireland.

It bids fair for the solution of a great question when it has come to be connected with a great want, and to be discussed with however varying opinions, by many tongues. "Man is the Interpreter of Nature," says the great father of that inductive system of philosophy which has taken the practical form of Modern Science; well, therefore, may the wholesome conflict of opinion be looked on as the very Flint-and-Steel from which the sparks of natural truth are to be elicited. Of the three centuries that have elapsed since that celebrated sentence was uttered, as the leading words and text of the imperishable work that first directed men from theory to fact, from thoughts to things, from mind as the arbitrator upon matter, to matter itself as the coagent of mental progress—of these three centuries the Steam Engine has not been in existence one: yet to attempt to recapitulate the changes in nearly every branch of industry, the addition to the material comforts of all classes of society, in a word the altered condition of human life, which has flowed from that invention, would be to write the annals of the greatest revolution that the world has ever seen.

And whilst raiment, fuel, tools, weapons, means of locomotion by land and sea, in short every article of necessity or luxury that stands below the first place in the catalogue, offers its separate evidence of



the universality of the change,—and a secret hint, perhaps, deducible from all, points beneficently towards the gradual emancipation of human and even of brute labour from its severest forms of drudgery,—while all this has been for more than half a century in progress,—one single and striking exception has persisted throughout, refusing all participation in the change around; and this exception is to be found in that eldest and most honoured branch of labour, commonly used and regarded as the very type of Labour itself—the cultivation of the soil.

The mere statement of this fact, could it be stated as it deserves, might furnish a volume of commentary, for those who had time to indulge it, on the short and simple text that the new-invented power which has handled every other element upon which labour is employed, has not yet touched that one upon which the Sentence itself of Labour was pronounced. The Steam-engine is still negative to the Soil. Is it that the more ancient the art, the more slow to accept the aid of modern appliances? or is it due to some occult law that, for certain wholesome purposes, exempts husbandry from the wholesale, and as some would say, the 'capitalising' effects of Steam-power? We have heard this theory seriously suggested: we fully disbelieve it; we believe it founded on misapprehension of the whole ethical history of the world's material progress. We lean far more to the simpler and more secular view before expressed, viz., that political causes almost coterminous with the history of the steam-engine, have choked up the natural outflow of its inventive application to one branch of industry, and left Husbandry still staring with innocent wonder and incredulity as it illustrates anew, by the side of a different element, the HORATIAN motto—"Rusticus expectat."

But if this much-desired application of the power of Steam has been, from whatever causes, long delayed, almost overlooked, and, from sheer want of mental habituation, even derided heretofore, it cannot be said that the present state of the public mind is adverse to, or the time deficient in, experiments upon the machinery of cultivation, which, whether immediately successful or not, all evince that unshackling of many minds from customary form and usage which almost always precedes if it do not actually produce the discovery of a more perfect system. And whatever the cause or causes that have led to it, the fact is significantly obvious even to a mere reader of the daily papers, that 'circular,' 'cycloidal,' or 'rotary' machines (whichever term may respectively be most applicable, or least incorrect) constitute the direction towards which invention or experiment has chiefly been addressed, whatever the nature of the 'power' employed. There is every reason why it should be so; the more habituated the eye becomes to the forms in which machinery most commonly presents itself, the more it may be expected to gravitate towards this form of motion and action. But it may do this unreflectingly; and while bearing in a true and even scientific direction in the aggregate, may still be committing incidental errors in gearing on horse-power to machinery, of a kind not unlike that, indeed almost the converse of that, which began by harnessing the steam-engine to the plough. The latter stage of experiment has passed its meridian, and seems to need no further refutation; the former appears fresh and fresh every day, and deserves the most careful scrutiny.

Animal physiologists have shown that muscular action is produced by repeated impulses from the brain. When a man sends a message by the electric telegraph to tell some distant friend to perform some particular act, he uses the obedient wire to move the obedient friend, in a manner not merely similar to, but almost identical with that in which the brain transmits through the proper nerve the mandate, or 'shock,' which contracts the muscles of the arm, or leg, to the degree and in the manner required for the particular stroke, or step, or effort of any kind, that may be wanted. As long as the labour required is primary and simple in its nature, adapted to the power employed—that is, capable of direct accomplishment by successive strokes or efforts, sometimes vigorous, sometimes relaxed, but upon the whole irregular however slightly in recurrence—and unequal however slightly in degree—the only limit, or evil, to which the process is subject is the weariness of the muscle employed; that is, its inability to contract with the same vigour or rapidity as before, and the consequent need of bodily repose to restore, and food to reinforce, the local wear and tear. This is the true sphere and vocation, so to speak, of animal power, whether of man or brute; to this, even though over-taxed, the efforts of flesh and blood, the constitution of brain, nerve, and muscle, are natural and positive. The hill may be

steep, or the soil may be stiff, or the battle may be long, but a merciful irregularity in the very forms, densities, and incidents of matter itself, supplies a wholesome suitability of the task to the nature of the force employed, which is as much a part of the great moral fitness of physical things as the adaptation of the laws of light to the retina of the eye.

But when Machinery is brought upon the stage, when cogwheel works into cogwheel, and a clockwork continuity of motion is demanded and set up—when this wheel with mathematical precision must perform five or ten revolutions while that revolves once, and not an instant for relief reaction or renewal interrupts the incessant stress, the monotony of heavy unchanging motion—the whole scene is changed;—that electric battery (for such the animal brain may with almost literal accuracy be called), which can only work by repeated shocks or discharges of force—after an hour or two of vigorous effort, another of struggling endurance—a succeeding stage of fainting prostration, at that soul-crushing treadmill to which it is harnessed, sinks under the unsuited task. A heavy unhealthy-looking sweat over the head and round the eye, loss of appetite, deadened functions of the heart, lungs, and digestion (all directly dependent on the healthy state and vigorous action of the brain), betray the existence of a kind of distress as unlike that of ordinary muscular fatigue, as a fainting fit is unlike common sleep. Who does not know that blindness is the common fate of a mill-horse? and who can wonder that it should be, who bears in mind that the nerves of the eye embrace a third of the whole substance of the brain, that presiding organ which when thus employed, is in fact undergoing one of the severest forms of 'secondary punishment,' exhausting its vital energy upon a task that has no alternation, no resiliency, no breathing instant for re-collected nervous force, or even the merciful employment of an antagonist muscle.

In the running stream, in the driving wind, in the coiled spring, in the hanging weight, or in that last-found and greatest of all—steadier than the wind, more portable than the stream, stronger and more equal than the spring, and more convenient of appliance than the weight—the inimitably versatile steam-engine—we may recognise Nature's own team of cattle for cogwheels and machinery, powerful horses in truth, but without nerves brains or eyes to be crushed by the Juggernaut of cruel ignorance that knows not nor can judge of what it inflicts.

The recent disclosures of the Birmingham and Leicester Gaol-committees have furnished a useful body of evidence to show how possible it is for men, under the idea of enforcing a scientific system, to commit errors the fearful character and effects of which science revolts at as much as humanity. Do not let us, by grasping too hastily after the forms of action and motion rightly perhaps anticipated for Steam-Culture, subject our horses to an intermediate 'experimental' purgatory of 'secondary revolutions,' either in field or fold, which if their dumb committee could make a 'Report' would be found identical in distressing effect, and requiring at least the same humane caution and moderation as the 'secondary punishments' of a gaol.

It is not meant that this description of labour—the working of machinery—is never to be committed to animal power. The fact that it can be, for limited periods, without special injury, is perhaps evidence enough that it may be. And, besides cases of necessity,—a refractory horse may be as usefully committed to the horizontal treadmill of the threshing or any other machine, strictly so called, as an unruly biped to the vertical form of the infliction. Our main object at present is to show that to take a horse from the plough or cart and put him to work at cog-wheels, whether in a straight line or a circle, under a notion of agricultural advancement, amounts to something very like what non-agricultural speakers mean when they use the figure of 'putting the cart before the horse.' C. W. H.

It seems that the English experiment in the collection of AGRICULTURAL STATISTICS has hardly yet commenced. The schedules to be filled by the different occupiers of land in Norfolk were only last week transmitted to the different clerks and classifiers in the various unions of the county of Norfolk. The course the matter is to take, according to the published scheme of process, is as follows:—

On or before the 1st day of October instant, a sufficient number of schedules (A) and (B) will be transmitted from the Poor Law Board to the clerks, or other persons appointed to act as classifiers, of the rural unions and incorporations of Norfolk.

After receiving such schedules, each clerk or classifier will deliver to persons appointed to act as enumerators, in his union or incorporation, as many schedules as may be required in order to the delivering of one schedule (A) to every occupier of 2 acres and upwards in each

relieving officer's district; and also two copies of schedule (B) for every parish in each such district.

Each enumerator will then obtain from the statistical committee of the union, through the chairman of the board of guardians, a recommendation to the officers of every parish to give him aid and assistance, as well in addressing and delivering the schedules to each occupier of 2 acres in every such parish, as in persuading those occupiers to fill up the schedules by the appointed day; and upon this recommendation the relieving officers will proceed to act without loss of time.

When an occupier holds more than one farm in the same parish, one schedule will be sufficient; so also if the same farm lies in two parishes. But when an occupier has two or more farms or holdings in different parishes within the same enumeration district, separate schedules must be issued for each.

As the schedules (A) are collected in, or received by the relieving officers, or enumerators, they should be carefully marked off on the list of occupiers. The enumerators will thus be able at once to ascertain the names of those who have failed to make their returns, and will thereupon apply to the members of the respective Statistical Committees to use their influence to induce such persons to comply with the earnest request addressed to them, on the part of the Government, by Sir John Walsham.

Sir John Walsham expects, however, with much confidence, that the farmers of Norfolk will not refuse information sought from them solely in the public interest. But should the relieving officers, or enumerators, though backed by the influence of the Statistical Committees, meet, nevertheless, with positive refusals to fill up section No. 2, of schedule (A)—for Sir John Walsham anticipates no difficulty in reference to section No. 1—then the alternative proposed in the observations endorsed upon schedule (A) should be urged upon the recusants. Or, it may be suggested to them that two, three, or more farmers of the same parish might enter the gross amount of their joint crops and stock in one schedule, so that the exact manner in which any one farm has been cropped and stocked will not be indicated. But neither of these alternatives should be resorted to, unless the feelings of particular farmers leave no other course open.

In the improbable event of persons refusing altogether to furnish any part of the information requested, the relieving officers, or enumerators, must fill up duplicates of the schedules addressed to such persons, according to the best means of information available to them; noting on every schedule so filled up that the details are merely approximations to the reality, owing to the occupier, who had been requested to furnish them, having formally declined to do so.

The above is extracted from the printed instructions which have been issued; and the whole, with other details which it has not been thought necessary to publish, seems to present a very ably-devised plan, which we doubt not will result in collecting a body of information of great agricultural and political value. The Scottish results, including the estimates of produce for the present year, have not yet been published. When both shall appear, there will be seen a woful contrast; between the English and Scottish returns this year. The latter have had an unusually good season, while the former have been so unfortunate, that in the counties of Norfolk and Suffolk, at any rate, the higher prices will be nothing like a compensation. We have seen letters which relate such incidents as the following—"One farmer sold white Wheat on Saturday at 34s. per comb, but he has only one quarter per acre!"—"A neighbour said to me last night, 'I met a farmer the other day with an acre of Peas in his cart—just six bushels!' We actually have no bulk—no crop—and what will be the consequence I cannot tell."

#### WHEN IS A WHEEL A LEVER?

I REALLY had thought that the very ghost of the old question "When is a wheel a lever" had been long ago laid. In a 'miscellaneous' class-examination paper at Oxford, in 1832, it was given in this form, "What power is employed in the locomotion of a carriage by its wheels?" A large majority of the candidates answered "The Lever;" and great, we heard, was the laughter when this answer got wind at Cambridge—that so large a proportion of Oxford men should have fallen into Mr. —'s 'wheel-trap,' as it was called. Your correspondent 'G. P. S.' resumes the question almost with the freshness of a new one. I will do my best in reply to give it all the new illustration in my power.

Take the case of a piece of Timber: a pair of horses are hooked on, and cannot move it. Two or three rollers are put under, and it moves readily. Increase the diameter of the rollers, till their axes are raised to the usual point of traction: are these rollers become levers? or were they levers from the first?

Neither one nor the other. They were rollers at first, and they are rollers now. Now, cut away all useless bulk, and reduce them to their lightest and most elegant form—viz., a mere hoop, connected by radii with a central pivot. The pivot is the 'nave,' the radii are the 'spokes,' and the hoop is the tire-and-felloes: place one at each side, with an axle-tree to unite them, and now your roller is fined-down to a 'pair of wheels.' To prevent them running from under the 'timber,' now



converted into the 'body,' they are pinioned into the place where they roll: a railway carriage is the best instance, because there wheel and axle-tree roll together.

Well, now we have a real roller transformed into real wheels. Now, pull the carriage as a horse does, or push it as a railway-porter does, or incline the road (or rails) a little down-hill: in either case the 'carriage' rolls,—and, in the latter, *continues rolling*, of itself, for a time, especially on rails, where the SURFACE-RESISTANCE is reduced to its lowest point. *Where is the lever?*

The use of wheels is simply to get rid of 'surface-resistance,' with its accompanying friction: and the more completely this is done (as in the case of the iron wheel on the iron rail) the more perfect the result. Does anybody pretend that the facility with which a man can move a carriage weighing several tons, on a railway, is due to any *better leverage* there than on a common road, where he could not stir a sixth of the weight? If not, what has the lever to do with the matter?

Your correspondent, 'G. P. S.,' is misled—if he will permit me to say so—by picturing to himself a single 'spoke' descending from the axle to the ground, and the horse pulling, as it were, at the top of the spoke, horizontally: the point of contact with the ground the 'fulcrum,' the spoke the 'arm,' and the axle the 'arc of motion.' That, I presume, is what appears to him a lever. So it would be, if the spoke were isolated. *Down* it would come, by the pull of a child, whose little arm would have, in the ground, a *fixed fulcrum* to act upon, and work his lever by. A wheel pulled by its axle has no such thing: the running periphery of its tire takes up the horizontal impulse of motion, whether from before, from behind, from inertia, or from the inclination of the road, with equal readiness, precisely as a roller, a billiard-ball, or a bowled hoop would do: and surely these are not 'levers'?

A lever must have a 'fulcrum,' and the fulcrum must be *fixed*, and the 'arm' of the lever must act as a radius describing an arc concentric to that fixed point. The spoke of a wheel holds no such relation to the ground or to any point of it at any moment, though there is an *instant when it appears to do so*, just when it is perpendicular from the axis. This is merely deceptive: it is simply, in its turn, the momentary support of a parallel motion which is constant, and never suffers any spoke to make a fulcrum of the ground or describe the arc of a lever's arm relatively to that point it rests upon for the instant.

The spokes of a carriage wheel do not act the part assigned to them by 'G. P. S.' They are merely the connection between the box and the tire, to complete the dish, or hoop, or roller, or by whatever other name it may be called, upon which the carriage *runs*. But, *fix your fulcrum*: let the axis be a *fixed point*, as in the windlass over a well, or the capstan of a ship, and let your 'spokes' project as arms, and set on a few hands at work at their extremities, pulling them down one after another, and there you have a lever: there you have the true and genuine, but unfortunately-named, 'wheel-and-axle power,' which has misled so many by a mistaken transference of its mechanical power to the simple rollers that go underneath a carriage, and upon which it slides along, avoiding SURFACE-RESISTANCE, and the more easily, the more completely that is overcome.

Unless I have quite failed in my explanation, I need hardly follow 'G. P. S.' through the rest of his arguments upon the threshing-machine and the 'haymaker.' He will surely see that his *two* objections in the case of the former—1st, that the horses move in a circle, and 2dly, that they draw obliquely to the levers, are *one* objection stated twice. The disadvantage of the circle (which of course I admit, but which applies generally to the 'wheel-and-axle' form of the lever, both vertical and horizontal) consisting in the obliquity of the pull. It has no other, of a mechanical nature.

One sentence, however, I must notice. He says:—"The horses draw at the 'ends of long powerful levers.' Here, again, is a loss. It must be remembered that the object is not increase of force but of velocity of revolution." Pray what is the difference? I have always heard that 'velocity' and 'force' were transmutable terms, in mechanics. If 'drawing at the end of long, powerful levers is a loss,' he must have been a fool indeed who said, "Give me a lever long enough and I'll move the earth." Yet that man, saving the bravado, was counted something of a mechanician.—"The longer the lever-arm of the threshing-machine the greater distance the horses have to walk through." Of course, that is not an objection, but a mere statement of the element by which the power of the lever is in all cases obtained. The longer the levers, the greater the aggregate of power concentrated at the pivot which is the fulcrum of them all. Horses at work at a threshing-machine are horses working a powerful capstan, *horizontally*—the only way in which they can work it; and as slowly as you please, provided that 'what you lose in speed you gain in power' to produce revolutions sufficiently rapid in the drum. To compare an operation like this with the hay-tender, the *conceivable* leverage of which, from the ground-bite of the wheel upon the fulcrum of the axle, is all *against* the horses, operating as so much additional weight or resistance to the motion of the wheels, is, I must say, a kind of reasoning which will hardly do much to advance the mechanics of agriculture, which are in need of all that can be done for them.

I must not omit to thank 'G. P. S.' for his correction on other points, nor to apologise if my reply to

his remarks have run too fast to escape the usual friction of discussion. C. W. H.

## LIQUID MANURE AND IRRIGATION.

LETTER IV.

[This takes up the subject where it was dropped at page 171.]

I resume my observations and speculation on this subject. The whole manure question is in my opinion still an enigma to be solved, and I venture (rather rashly) to predict that it will be ultimately found that its principal effect is to dissolve the inorganics and enter with them into the circulation of the plant for its ultimate and perfect development. If we believe this, we shall at once admit Liebig's great and (in my humble opinion) truthful theory of mineral or inorganic structure, as a necessary physical and mechanical condition of the plant. I am led to these conclusions by the extraordinary effect of liquified, as compared with solid manures. This superiority cannot be accidental—if not, why not?

Mr. Way's painstaking and sagacious experiments have shown (Royal Society's Journal) that ammonia is the great base or solvent of silica and alumina, displacing by its superior affinity or solvent power—1st, lime; 2d, soda; 3d, potash; thus probably entering into the circulation of our cereals, with its compounds. I hope Mr. Way will further test its action on other inorganic substances.

I think if Liebig had been aware of this action of ammonia on those substances, many of the objections to his theory would have been prevented. Mr. Way has clearly shown that as an alkaline base ammonia has superior powers, and that when applied to clay soils, either as a sulphate or muriate of ammonia, the acid passes away and the ammonia is retained by earthy affinity. What an evidence is this that it is there required to dissolve and prepare the inorganics for the necessary formation of plants.

But in all our calculations based upon fertilising applications, we should never forget that it is the form in which they are presented to the roots of plants, that is so indispensable and important. Water which forms 75 per cent. of our own bodies and from that to 90 per cent. of the substance of plants, is as necessary to their development as the dry ingredients of earth and manure. One without the other would be worthless; Liebig truly says "however great may be the supply of food in a soil, it will be sterile for most plants, if water be deficient;" again, he says, "the action of rain is much more striking and wonderful to the superficial observer than that of manure;" and again, "water plays, doubtless, a decided part in the growth of plants, by virtue of its elements, but, at the same time, it is a mediating member of all organic life." The whole of this chapter xiii. should be carefully read and digested.

The fact is, liquid-manuring means in plain English, solution, diffusion, and circulation—without solution you can have neither diffusion nor circulation, and without the latter you cannot have vegetation. The dry and oft-turned dung-heap is an agricultural monstrosity, that will cease with the increase of scientific agricultural knowledge. The sole object is to rot the straw, and in doing this the most precious portion of the manure is either washed away or evaporated. Why does a farmer love the sheep fold? Simply because he is sure of a subsequent crop, although he may not know the scientific cause. There is no dung-heap, no rotting straw in the sheep fold, and yet it surpasses the other and the more expensive method. The nitrogen or ammonia contained in the urine at once enters the soil, and becomes there fixed, or rather effects its object by entering into combination with the inorganics of the soil. So important is it that the liquid should enter the soil, rather than remain on an exposed surface, that on part of a Clover lea, unscarified and folded, the Wheat crop was very inferior to that portion scarified before folding; this was three years since, and the farmer tells me that the difference was visible even in this year's crop. The ground was hard and dry when folded, and no doubt much of the nitrogen was wasted by evaporation on the unscarified portion of the bare Clover lea. I find the jet useful, following the sheep fold. Water, then, is our friend, it is three-fourths of our precious selves, and often more than three-quarters of our food, and so it must be of our manures, in order to give us every advantage. If we can multiply the number of our rainy days for our green and root crops by the hose and jet, whilst we supply the proper inorganics, we shall increase our meat and manure-making powers, and thus add to our ultimate growth of corn.

The well-diluted sewage of our towns is precisely the material for our well-drained fields, filling the subsoil during summer with heat as well as fertility.

The appearance of too many Wheat-fields in May indicates the necessity for an amelioration of the under soil. The early vivid green, so grateful to the farmer's eye, is then changed for a sickly yellow, testifying too painfully that the descending roots have touched a soil deficient in the proper conditions of fertility—either from want of necessary manure or removal of stagnant air and water by drainage, the early growth of a plant makes little demand on the soil; but, like the gestation of animals, in the later period of development, immense requisitions are made, and unless responded to by a sufficient nourishment the result is a diminutive imperfection. It is for want of food in the subsoil in an available form or condition that the leaves of Mangold Wurzel in September turn yellow, and the plant ceases

growing. The demand for food is enormous, and if supplied in a liquid state, they may be kept in a flourishing and increasing condition so long as the sunbeams shed their genial rays and cause elaboration and appropriation. Unlike a natural growth of plants, over-stimulating manures necessitate a continuous supply of moisture to carry out and perfect their earlier creations. An over-fed plant, like a highly-fed animal, soon indicates by its appearance an absence of continuous supply.

In a former paper I said that we often cause our drains to discharge from irrigation, at a depth of 5 feet, in very strong plastic clays. Now this discharge is actually coloured, and occasionally smells. Mr. Way's experiments lead us to suppose that all the ammonia is fixed. Be that as it may, we evidently lose fertilising matter, for the Grass growing in the ditches through which the fluid runs, shows by its luxuriance its exact flow. I have heard market gardeners often regret that where they manure heavily, their drains discharge an immensity of highly coloured and fertilising solutions; but although we lose some, I find that the more we put on the more we grow, and the extra supplies are indicated by an obvious line of demarcation in every crop. I think Prof. Wilson once showed, by an analysis of drainage water, a considerable loss of fertilising matter. I hope Mr. Way will kindly enlighten us on this matter.

The advantages of liquified over solid manure are so obvious that there must be many causes for its superior success. Amongst these, most probably may be the vapour of evaporation, which evidently is most abundant where liquid manure is applied—the plants enjoying the vapour by day, and at night it descends as dew, retaining the heat of the soil by preventing its radiation. Recent experiments have shown the value of ammonia to plants when offered to their leaves by the medium of air and vapour. I. J. Mechi.

## MICHAELMAS RENTS ON CORN AVERAGES.

From the many inquiries made last year with reference to the average price of Wheat, and of Wheat, Barley, and Oats for the year ending on Michaelmas-day, I have no doubt the rent of many farms has been fixed subject to that average; I therefore beg to send you the following statement, which in such cases will be found useful, and perhaps at the present time not uninteresting to the general reader:—

AVERAGE PRICE PER IMPERIAL QUARTER IN ENGLAND AND WALES.

	WHEAT.	BARLEY.	OATS.
For Quarters ending—	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Christmas, 1852 ...	40 5	29 3	18 2
Lady-day, 1853 ...	45 7	31 0	18 6
Midsummer " ...	44 6	30 9	19 0*
Michaelmas " ...	51 10	30 7	21 6
For the year ending Michaelmas, 1853 ...	45 7	30 4	19 3

\* The averages for the quarter will be one penny less, if the decimal parts of a penny be omitted in the weekly averages.

Charles M. Willich, 25, Suffolk Street, Pall Mall, Oct. 3.

## SECONDARY REVOLUTION.

WHEN a rev. baronet, occupying  $4\frac{1}{2}$  acres of land, gets up after an agricultural dinner and says that a digging machine has rolled over the top of his Clover ley like a ball over a bowling-green, and that when the teeth entered the ground to the full depth they only penetrated some 7 or 8 inches—these and similar statements may safely be left uncontradicted. But when your correspondents "C. W. H." and "G. P. S.," who are not unacquainted with mechanics and their application to the cultivation of the soil, take up the subject of forking machines, and discuss the efficacy of horse-power in producing "secondary revolution through multiplying media" by the "bite of the wheel's periphery against the ground," in its application to such machines, I may perhaps be excused if I inform your readers that in the horse-forking machines hitherto constructed and put to work by different inventors, no such secondary revolution exists at all; so that unless their discussion be understood to relate to some imaginary horse-power cultivator, as compared with an equally imaginary cultivator by steam, it is quite beside the subject. It is true there are wheels to some, though not to all, of these machines, as there are wheels to the plough and scarifier, and the office of these wheels is the same as in the latter implements, namely, to carry them to and from their work, and to regulate the depth to which the cultivating prongs are allowed to penetrate.

Again, when "G. P. S." states that six or eight horses cannot break up ten or twelve times the width of a plough furrow, he merely asserts a truism; but no forking implement has ever yet been made wider than four furrows, so that the work it is expected to do is about one-third of what "G. P. S." asserts that it cannot do.

I cannot help thinking that when persons who have the capacity to understand a subject, endeavour to enlighten the public upon it, they should first acquaint themselves with the facts. The case is different with after-dinner speakers like the rev. baronet, who amuse their hearers with a fancy sketch of these "now-fangled things which are to do away with the plough;" of them no such research is to be expected, and a random shot on such occasions is often not out of place, and very much more agreeable to listen to than the round of compliments with which gentlemen at the cross-table are accustomed to favour each other in certain localities.



If your correspondents will reflect for a moment on the difference between the resistance to a blunt and wedge-shaped tool which compresses the ground in front of, as well as below it, and a series of pointed prongs which tear off a clod, shake it to pieces, and throw it behind, they will understand how it happens that a given breadth of land may be more effectually pulverised by the same power with the latter than with the former.

The question of the application of steam is one apart from the relative economy of horse-power as between ploughing and forking; it would be prejudging the former to discuss it when several steam cultivating machines are about to be brought before the public. I should not have troubled you with these observations but for the misapprehension of facts by your correspondents. I shall refrain from the argument as to the circumstances under which the inversion of the soil is and is not needed. With the exception of some few cases which admit of no doubt, it is entirely a matter of practical experiment, and, recent as is the introduction of forking machines, I hope before long to lay before your readers the result of comparative trials, bearing out my anticipations of benefit to the crop by the use of these machines as compared with the old instruments of tillage. *B. Samuelson, Banbury.*

#### AGRICULTURE IN SWITZERLAND.

Your readers may like to have a report from a traveller in Switzerland on the farming there, and of the crops in France and Germany, seen in going to and returning from Switzerland.

The Rye was partly cut and the Wheat nearly ripe in the middle of July in the great plains forming the land levels of the Rhine in Belgium and Germany; they were so much beaten down by wind and rain that it was difficult to judge of the quantity; no doubt the crop was injured by it, and it was weedy. The crop, therefore, must be deficient. In the end of August the only corn out in the undulating plains south-east of Paris was Oats, a scanty crop, not 16 bushels to the acre. The Wheat and Rye were all carried, and the stubbles ploughed.

The great power of the sun, the less skill of the husbandman, and the want of sufficient capital, combine to render the average produce of corn small in this great district. Excepting near the large towns, little manure is procured. No stock is kept on the land. Water is seldom to be met with, excepting in the river valleys; so that fertility is confined to the vicinity of towns and to the valleys. The produce must, therefore, be strictly natural, such as the experiments of Dr. Daubeny showed land capable of by simple tillage without manure, which this district of light soil ploughed in August gets; the sun not only destroying weeds, but also separating those elements which the crop requires from the soil. This district is a perfect contrast to green England, with her flocks and herds, her store of Turnips, rich natural Grasses, and Clover, with the assistance of farm implements and artificial manures, with abundant capital, and skill to apply it. About the great towns, as Strasbourg, fine crops of Carrots, Poppies, Hemp, Tobacco, and Clover are met with, and on the slopes the Vine is cultivated. The capital and the manure of the towns alter the face of things; but these favoured districts form small part of the whole. Poor proprietors are generally the occupiers, often working and living as labourers.

*Switzerland.*—We must know the climate, the soil, and the elevation above the sea, before we can understand the agriculture of this country. The mountains and their glaciers are the chief attractions to travellers, but the valleys are the most important to the natives. These valleys vary from 1200 to 2000 feet above the level of the sea; such elevations in England and Wales would be almost unproductive—arid, rocky, or boggy; but there are few arid spots in Switzerland, and very little bog. The slopes of the mountains are generally too steep for bog. The valleys are fertilised by irrigation, and the deposits of glacier sand (a very fertile material derived from the granite which their artificial water-courses spread over a large extent of pasture land, and to which we must attribute the large produce in Grass, and the great size of their timber and fruit trees.) The Walnut and the Cherry, and, in North Italy, the Spanish Chestnut, are found in great numbers, and growing to a large size in their valleys.

We have nothing in England to equal the fertility of some of their valleys; for, in addition to the moisture of their perpetual streams, Switzerland has a greater summer heat than England. Were it not for the greater elevation of the whole land, and cooling influence of snow and ice, it would possess the heat of Italy. The soil is light; you never see clay; and in southern exposures, and where the valleys admit the sun, corn is grown, and occasionally the Vine. In the high Alpine district, pasturage is exclusively found, and this in stages. The high pastures feed in July and August, and the lower slopes later in the year, until winter comes and the cattle are housed. Many cows are constantly kept in houses, on board floors; the under portion or a side part of their dwelling-houses contain all the provender required for man or beast in winter. A great provision of hay is made, almost always secured in fine order, and stored in their chalets, which are strong sheds, built of whole timber and roofed with wood cut from the neighbouring forest, and which are very durable. Nothing can exceed the sweetness of their hay, in which the natural flowers form a considerable part, for the pastures of Switzerland are as

gay with flowers as the gardens of England. Cheese and butter are the great produce. The summer is spent in haymaking and in making cheese and butter. In winter they find employment in felling timber, and tending their housed cattle. The cheese is the gruyere, or of that kind, a close waxy substance with holes in it, all good, some of fine quality, and which keeps well in a hot climate; it is made in cool cheese houses, often from the milk of many proprietors. They generally possess the power of preserving their milk sweet in chalets, through which a stream of ice-cold water flows.

Their cows, the dun, are well-shaped animals, with a silky skin, and excellent milkers. Some spirited agriculturist should devote a summer to select and transport a herd of them into England. They would form a valuable breed for housing.

The influx of travellers into Switzerland is immense, they must spend millions of Napoleons every summer there; it is the great source of the wealth of Switzerland, directly in the immense demand it occasions for the produce of the land; and indirectly, in providing capital to carry on their numerous manufactures, and their foreign trade.

The present summer has been dry and warm for a mountain district. At Domo D'Ossola on Sunday, the 31st July, there was a great procession of priests and people with banners, the Virgin, &c., and prayers were chanted for rain, and on the same day throughout Piedmont. We were told the dust was 4 inches thick at Milan; but amidst the mountains of northern Italy, there was no appearance of burnt pastures, and the Vine, the Chestnut, and the Walnut, were covered with luxuriant foliage, excepting where the Vine disease had committed its ravages, which was the case in some places, particularly in Italy. The horses are good, spirited, active, and strong. *Thos. C. Brown, Cirencester.*

#### Home Correspondence.

*The Berberry Shrub.*—The writer of the short note signed "South Hants" felt obliged for the notice taken of it in a subsequent Number; but, though not of a capacious temper, he cannot defer to the conclusion of your correspondent, because he states there is a road and low wall between his shrubbery in which the plants stand and the field in which his corn grows, and consequently a thorough draught. I would not be afraid to converse with a person in the scarlet fever with a road between us; from my fields I look over a valley through which flows a considerable river, and we often see the clouds coming over from the west, and on approaching the stream, pass downward instead of following their direct line; this we attribute, in our simple philosophy, to the strong current of air on the stream, and this I apply to the case in point respecting the Berberry. Since this subject has been mooted, I have often mentioned it in company; and whilst, on one side, many persons are positive and are ready with numerous instances, on the other side there are as many say "pooh!" I have run my 4 acres through the machine, and have just two sacks to the acre; so that these pretty shrubs, supposing them the cause, have done me injury to the amount of 20l. or 30l. this harvest, and therefore I must root them out. Will any one have them? *South Hants.* [We do not mean to say that the growth of the blight on the Berberry and that on the Wheat may not both be favoured by a common cause, and so often occur together; but that that of the Wheat can be caught from that on the Berberry is impossible, for they belong to two different genera, so that "it would be no less rational to maintain that a field of Wheat should spring up if we should sow Berberries, than that the rust growing on them should produce the corn rust." At the same time it is possible that Berberry bushes, like other bushes, may by checking free currents of air facilitate the growth of rust in Wheat.]

*Italian Rye-grass.*—Your correspondent "J. W.," who asks for information respecting this plant, I am afraid only borrows the *Gazette* occasionally, or is not a very attentive reader, as in a few Numbers back I read a communication sent you by "Delta," describing the whole history of the Grass, time and manner of sowing, consumption by sheep, seed time, process of threshing, use of haulm, number of bushels per acre, and price; and that on strong land, which is his desideratum. If "Delta's" experience can be relied upon, what more can be desired? I mention this because your space is necessarily confined, and the object of your correspondents should be to make their communications as short as possible, subject of course to their being perspicuous and intelligible; and not to ask for information in September which was published by you in August. *Censor.*

*Charlock.*—I have a word or two to say on the subject of this troublesome weed, so prevalent in some districts, and which has this last season been particularly gay. I had a field (Swedes last year) so thoroughly cleaned that I would have ventured to sow Carrots, but it suited my purpose to sow Turnips (seeds of my own growth), when, lo! I had the thickest plant of Charlock I ever saw; the hoe was useless, and so I fed it off, sowing the field again, and now my sheep are luxuriating in a fresh crop! The farmers hereabouts say "it breeds itself," what does that mean? If the seed were in the soil, and so near the surface, why did it not spring up last year? But even this weed is not altogether unprofitable, as a friend assured me he sold many bushels last year at 5s. a bushel (the price of Wheat), to be manufactured in the London market for mustard. You may rely on the

truth of this; and, after all, the fact is not so surprising, as Mustard, I am persuaded, is only cultivated Charlock: and within the last week I have sown 3 bushels from this year's corn, with tilling Wheat and winter Oats, for sheep feed, as other farmers sow Mustard purchased at 8s. the bushel. And here let me inform you of a very bright idea which once occurred to my mind; I fancied that Charlock seed boiled would make a beautiful mucilaginous mixture for manure, and I purposed buying up all the Charlock near me. But I had the good sense to make the experiment first; to my astonishment the hot water had no effect on the seed, the water remaining as clear as when first put in, while the seed was not even swollen. I was more satisfied with the result on finding that, when bruised in blotting-paper, no stain of oil remained on it; is there oil in Mustard seed? *D.* [Certainly there is.]

*Mr. Mechi.*—I consider the public are much indebted to this gentleman for the energy with which he carries on his experiments, and the spirit with which he communicates their results to all those who take any interest in agriculture; and though it may appear a small matter, I am sure many a labourer would bless him for bringing into use the steel fork. On his recommendation, conveyed in your useful journal, I sent for two; on their receipt my men smiled with incredulity, the blacksmith especially; so light and elegant a tool they thought could never stand any sort of work. After a long experience they are convinced there never was an instrument invented better calculated to save labour; it is used for every purpose—digging, couching, earthing, in the stable and yard, and everywhere and for every purpose. I observed one man (lately come into my service) lay it by for the old-fashioned prong; I asked him, a tall man, why he did not use the steel fork, he said it was too short; "No," said I, "it is you who are too long!" *Clericus.*

*Draining a Clay Soil.*—Having lately undertaken the superintendence of a large estate, consisting principally of a stiff clay, varied with occasional beds of stone, which I suppose belong to the inferior oolite series. I am surprised and annoyed to find that much of the land which has been drained is still very wet. The drains have been laid up the furrows, 3 feet deep from the surface, varying in width according to the lands, but in many cases as much as one chain, and seldom less than 11 or 14 yards wide. Now it immediately occurred to me that the cause of failure must be the great distance between each drain, and that a drain carried up, say at 4 feet deep, between the present drains would remedy the evil. This view of the case is not, however, coincided in by the farmers and others in whose occupation the land is; they imagine that had the drains been taken right across the lands (that is to say, across the fall of the land), instead of up the furrows, the case would have been very different, and the land thoroughly drained; for, say they, if we carry the drains across the fall, then we shall cut off the water as it is following the natural fall of the land, and thus lay the surface dry; in fact they believe the motion of the water under the surface to be the same as above-ground, and the use of a drain identical to that of a water-furrow across the lands, which appears to me absurd reasoning; they are, however, very positive on the subject, and profess to have had practical experience to prove it. If the views held by our most eminent draining authorities be correct, I imagine the water will enter a drain from below, after it has once established a passage, as readily, or more so, if the drain be laid with the fall of the ground as if across it; and certainly the water, when once in, will get away faster. I am perfectly aware that in cases where the rock appears, as it often does on the brow of a hill, a drain laid along the line of the rock, will often take the whole of the water from the latter; but then the case is totally different, for the rock forms a sort of cistern—is, in fact, Nature's drain for the surrounding clay—and consequently, if tapped, can be rendered dry. Still, although in principle it would appear that drains laid at proper depth and width, with the fall of the land, ought to remove the water much better than drains crossing it, yet I have lately found so many people (quite ignorant of the principles of draining) advocating the latter system from professedly practical experience, that I am very desirous of obtaining the opinions of more practical men than myself; and for this reason I have detailed the above, hoping that, should you insert it in your valuable journal, it may meet the eyes of some of your correspondents, who will kindly favour myself and the public with their opinions on this interesting subject. *C.*

*Pig Farming.*—As at a glance it is palpable, in reference to your scheme of a pig farm, mentioned in the last *Gazette*, that without a regular supply of green food, such a farm could not be carried on; and that, in order to supply that constant want, great attention to the rotation of the crops cultivated on the farm would be required, as I have paid great attention to the subject of rotation, and have a "tenderness" for the pig tribes, I offer no better apology for thus intruding on your columns. If I can throw a useful and practical light on the subject, I am satisfied. In the first place, as a large supply of the best description of bedding would be indispensable, I propose to introduce Wheat oftener than otherwise might be thought prudent, being perfectly satisfied the extra richness of pig-made manure would amply compensate for any scouring influence such a repetition might be thought to produce. Then a moderate supply of leguminous produce would be of inestimable value, as the Beans especially are such excellent antidotes to the scouring effects of over succu-



lent food. The green crops on which the chief dependence would be placed in summer might be all consumed on the ground, save and except that portion which the sows, &c., might require; even some of the root crops might be consumed on the ground, if larger hurdles on wheels were used. This would save much expense in carting. Pigs thrive wonderfully on Clover, and will graze as closely as a horse, so for the summer months little need be provided for them except good fences and plentiful food. The size of the farm must entirely depend upon the demand in the neighbourhood for its chief produce, or the facility with which it may be conveyed to a good market; but that would not interfere with its general management on the rotation; the number of stock kept must be entirely regulated by the amount of produce, so that it is easily effected. The following course of crops present, I believe, features peculiarly adapted to such a farm:—1st year, Mangold Wurzel, of two varieties, one for earlier consumption than the other. 2d year, Wheat which thrives well after the former crop; Clover to be sown in spring. 3d and 4th years, Clover pastured both years. 5th year, Potatoes and Carrots, neither of which succeed well after immediate application of manure, but in this method would find the ground in a sufficiently rich state to produce good crops without it. 6th year, Wheat; white Mustard. 7th year, Kohl Rabi and Cabbage, which would be of use after the Swedes were finished, and would have the effect of saving the Mangold Wurzel for later use. 8th year, Barley, which would bear later sowing than other white crops. 9th year, Swedes, stored before the end of November. 10th year, Wheat. 11th year, Peas and Beans, if early enough off; Turnips. 12th year, Oats for horses. 13th year, Sainfoin for six years, or until worn out; 5 acres of Lucerne. This would put the whole farm (if under 200 acres) into one rotation, which would be easily managed with four good strong quick-stepping horses per hundred acres. A little dry Grass land would be of great service, especially for young pigs and sows near to the steading. The breed must depend on situation in a great measure, but if the variety fixed on was the Berks improved, they would find ready sale if they were sold in three divisions yearly; the first at four months old for porkers, the second division at nine, and the last quite fat as bacon hogs at 14 months. This last division I hold would be as profitable, if not more so, than the others. Their food for the last two months of their existence should be boiled or steamed, or mixed with malt dust and Barley-meal, which might be done with little trouble. A small steam-engine would also be of great use, the boiler of which might be applied when threshing, or not, to steaming roots, &c., for the fattening stock. All the straw used should be cut into 6-inch lengths, as it then would be in the most advantageous form for litter. This might be easily effected by a self-feeding cut being so placed that all the straw as threshed would be cut, and removed when cut to be stored in the straw-house ready for use. It would add greatly to the comfort and health of the fattening hogs if they were regularly washed once a week. Great cleanliness ought always to be observed both in reference to their food and bedding. Though I am no advocate generally for such a precarious mode of farming, as one necessarily is that makes the farmer depend on one description of produce alone, still from the feasibility of the plan, and the obvious advantage one such farm in a neighbourhood would have, I have been led to send these few remarks on the subject to you, as they may be found useful by any who contemplate the occupation of such a farm. *W.P.*

*Seed Wheat.*—A practice prevails very generally amongst farmers of using small and inferior Wheat for seed, on the ground of its cheapness. Some analogous cases might lead to the conclusion that the best sample of Wheat used as seed would produce the finest crop; and, if so, it may be the reverse of economical to sow the inferior grain. I should be glad to learn through the medium of your journal whether experiment has sufficiently determined this question, which is obviously of some importance. *Z. S.* [In some experiments by the Hon. and Rev. V. Harcourt, published in a past volume of our journal, "chicken corn" (as it was called) produced as good a crop as first-rate seed; nevertheless, we believe it will be good policy always to select well and healthily-ripened grain for use as seed.]

*Sowing Wheat.*—In reply to the interrogations on Wheat sowing of "South Hants," last week, we can say that sowing both early and thick is ridiculous, as it causes debility in the plants, and no doubt has subjected his former winter proud crops to various vicissitudes of weather; whereas by sowing early, thin, and singly, the plants are enabled to resist frost, slugs, and insects, being more short, robust, and hardy. Thus, fears need not be entertained of the plants becoming too winter proud by early planting. If only two plants are allowed to grow together, it will greatly retard the natural capabilities of both; much more so, if from two to 20, or more, is persisted in, as is the practice of some; and it is no more presumptuous to plant as many Cabbages, Turnips, or Mangold Wurzel in a bunch, with a view of obtaining a full crop, than of corn. What we have said of Wheat is truly applicable to Barley and Oats; they will all titer proportionately to earliness, thinness, and singleness of planting; from 20 to 80 ears on a plant is not uncommon with us. We are satisfied on this point ourselves; but not so sanguine as to declare that every soil and climate will admit of the practice. Hence we wish that all persons interested in so important an object would only try it first on a small scale, and give fair results of their own experience for

the public good; for, as we said on a former occasion, "more corn must be grown and spared in this country, by hook or by crook, to meet the exigencies consequent on free trade in corn;" and these observations are now too truly exemplified by the present scarcity. *Hardy & Son, Seed-growers, Maldon, Essex.*

#### POULTRY.

*Exhibition Fowls.*—Before entering into descriptions of the various breeds now competing at the different shows in the United Kingdom, it may be well to name a few imperative rules applicable to them all. The competition is now so great that something more than mere merit is required to gain prizes, unless it be where they are valueless from the absence of those names in the list which are a guarantee for the quality of the beaten birds. They must be in excellent condition, not merely fat, but in full flesh, health, and spirits. It is necessary, in order that they may show to the greatest advantage—nothing is more important than this in fowls intended for exhibition—they should take the eye at first sight, and to do this, they must be in first-rate condition. This will not be accomplished by extra feeding for a fortnight, but by keeping them well from the time they are hatched, and this is more economical than the wretched and short-sighted practice of alternate starving and over-feeding, because in the former case the fowls suffer no check, and grow and furnish accordingly. Fowls intended for competition in December should be selected from March or April chickens, and the cocks and pullets kept separate till a short time before the show, when they should run together, that they may agree when in confinement. Inattention to this latter particular is the cause of the scalped pullets so common in pens, and these not of game fowls, but of all breeds, even the least pugnacious. They will not always agree unless they are used to be together, and as the unfortunate pullet cannot escape, she is often killed, and a pen spoiled. Those who know the difficulty of getting three good pullets of equal merit to form a pen, will readily admit that such a circumstance often spoils a season, and is the cause of empty pens. Uniformity comes next in importance, and this also is an essential. I would advise every exhibitor to pen his fowls at home before he sends them away, and to judge them many times himself. We are all a little disposed to admire our own property—but judges (and every exhibitor should be one) look first for beauties and then for defects. Many of the latter are imperceptible while fowls are running at liberty, but they are prominent when they are in a small pen. They should match in size, colour, age, and even carriage. Competition is often very close, and if judges have to give perhaps two prizes to a class numbering 150 entries, it will easily be understood that any little incongruity, unimportant at another time, is fatal to a pen so far as honours are concerned. There are breeds, of which we shall write hereafter, where colour is not a first point, and yet if two competing pens were equal in every other respect, if one were more uniform than the other, that pen would carry the prize. No one who has never judged, can understand the importance of these apparent trifles, or the relief it affords to judges to discover them, when, as is often the case, an hour has been spent over five or six pens selected from 100.

They should be in perfect plumage. To insure this they should be properly packed, and my experience is in favour of a round basket—it has many advantages—it offers no corner where fowls can huddle up and trample each other, and as the fowls in moving go round, the feathers, especially the tails of the cocks, follow and are not broken. The basket should allow the fowls to stand upright, and should be covered with canvas. Plenty of clean Oat or Barley straw should be put at the bottom, and the birds should not be packed till it is absolutely necessary. They should not for economy's sake in carriage be packed too close, or too many in a basket. The best test of the proper size is to choose one which will allow all its occupants to sit down at the same time. Whatever breed is exhibited, the owner should always send his best, for it is tiresome to hear people say when defeated, they could have sent better birds, and it is always a sorry sight when fowls of undoubted merit lose even a commendatory notice for want of condition, or from ragged plumage caused by bad catching. As a rule, a person unaccustomed to handle fowls should take them by the legs, raising the bird from the ground the moment they hold it, otherwise injury is done in struggling, and by beating the wings and breast against the ground. *John Bailey.*

#### Calendar of Operations.

##### OCTOBER.

WHAT SOWING is one of the principal operations of this month. The Clover stubbles will to a considerable extent have been ploughed (they may be rolled or pressed immediately after it), and the Bean stubbles also, by this time; the Potatoes also are being or have been harvested, and towards the end of the month some of the Turnip land, too, may be ready for sowing, part of the early crop having been by that time removed from the land, or consumed on it. All or any of those fields on which it may be intended to sow Wheat, will, after one or two double turns of the harrows (the Turnip land being first either ploughed or scarified), with the use of the fork to dig out any patches of root weeds that may have established themselves, be ready for the seed. The quantity sown may be from one to two bushels per acre. Five or six pecks are quite sufficient on good land in midland and southern England, if it be well drained and not liable to injury by game; upwards of two bushels may be needed where waters are nearer, and the risk of loss greater. The use of the drill is always advisable; the grain should be sown in rows 9 inches apart. This seed before use is "pickled" for the purpose of insuring it against smut and bunt at harvest time; or, to speak

according to the mode in which the process is supposed to act, for the purpose of destroying or washing from off the surface of the grain sown, the spores or germs of the fungus to which these diseases are attributable. The seed should not be allowed to remain unsown after it has dried. A drilling machine, sowing a width of 5 feet 6 inches, should get over one acre per hour. The land should be somewhat moist when sown with Wheat, but not so wet as to knead under the treading of the horses. A single, or at most one double turn of the harrows, either across or along the ridges, will be required after the drill. The furrows should then be cleaned out by plough and spade, so as to leave a free passage for water, which might otherwise stagnate during winter. This, however, will be unnecessary where the land has been thoroughly drained, or is naturally dry. On light and free soils the seed furrow for Wheat should be given two or three weeks before sowing, in order that the land may become consolidated. Winter Beans should be sown this month, on any Wheat or other stubble that has been prepared for their reception. The stubble should be worked in the first place with the grubber or cultivator, then manured broadcast with such a quantity of farm manure, up to 12 or 16 tons per acre, as the yards may be able to supply, then well harrowed, and ribbed over by the plough with shallow furrows, at intervals of 18 to 24 inches. The object of this is, that the seed—sown by the drill in these furrows, and covered by two double turns of the harrows—may be deposited at a depth at which the drill, if not thus assisted, could not place them. Or the seed and manure may be ploughed under together; the former being sown by the barrow in every second or third furrow by the plough. Another mode of sowing Beans, whether of the spring or winter variety, which is adopted in Scotland, is to plough in the seed and manure every second furrow. The land, if light, is first ribbed across as soon as possible after the corn crop has been removed; then, just before sowing the Beans, harrow down the furrows, lay on the manure, cover in with two ploughs following each other, and drill the seed in the bottom of the furrow behind the last one. The dung can either be drawn into each furrow with forks, or all placed above the seed as may be considered desirable. The seed should not exceed two bushels per acre. Where it is desired to cultivate Carrots or Turnips between the rows of Beans, as may often be done with advantage, sufficient space should be left between adjacent couples of Bean rows for the purpose. The two rows of Beans need not be more than 15 inches apart, and the spaces between the couples may be 7 feet, room enough for the two rows of Carrots which are to be sown in spring. Winter Tares or Vetches may be sown during this month—some having been sown during the previous month—only for a successful next May and June. If tried in Scotland, however, this crop must be confined to rich and sheltered land. Three bushels per acre should be drilled in rows, 6 inches apart, on land that has borne corn the past season, and that has been manured, ploughed, and harrowed as for Beans. It is well to sow half a bushel per acre of winter Rye among the Tares. Rye, of the winter sort, may be sown in October, three or four bushels per acre broadcast, on a corn stubble, which has been prepared by ploughing and harrowing; and the crop will be ready for use early in June. But the proper seed-time of winter Rye is in September, by which an earlier crop is obtained—one whose removal leaves the land ready in good season for Swedish and other Turnips. Potatoes should be harvested during this month. They may be taken up either by the common or by the double-mouldboard plough, which is made to undermine and throw open every other row, the tubers being gathered by women and children; and the alternate rows are to be similar to the first after these are completed, or, by spade and husbandry, in which case the whole operation is left to a party of men, who dig or fork up the tubers, and employ children to sort and gather them. This costs from 20s. to 25s. per acre. When the plough is used, the field is afterwards to be harrowed, to expose any tubers that may remain. In either case, the produce is to be carted home and secured in pits, or otherwise, against the frost. To secure them in a sound condition, no fermenting matter should be near them. Perfectly dry "houses" thickly thatched to the ground, with channels to carry off the water, will secure the store for sale or consumption. That portion intended for seed should be "green'd," or air-hardened before storing, and, if possible, kept so cool and dry as to prevent sprouting. Turnips, Mangold Wurzel, and Carrots may be harvested during this month, if the weather is so dry that the soil is not unduly moist on the land where they have grown. But this, excepting on wet and clay soils, is more properly work for the early part of November. On clay soils, however, advantage should be taken of dry weather to cart off early Turnips; the work can then be done without injury to the soil, and with ease to the horses. Rape or Coleseed will be ready for receiving the stock to be fed upon it. Stubbles may be ploughed during October, in ridges up and down the field. It is a good plan to leave the last or cleave furrow of the ridge unploughed, especially on clay soils, because when the plough is drawn by two horses walking abreast, the last furrow cannot be turned over unless one of the horses (the near-side one) walks on the ploughed land, which is, in consequence, more or less poached; and another advantage resulting from leaving the furrow last is, that in the spring cross-ploughing, the plough can run much closer to the side passing through these furrows, besides the land is left flatter and better adapted for subsequent operations. No implement of cultivation is so efficient as a winter's frost, and every field should, by deep culture, be as early as possible placed in the circumstances most favourable to its efficient action. Stubbles should, if foul, receive a thorough cleansing by scarifier, plough, and harrow during autumn. It is well if the farmer find himself possessed of sufficient manure in his yards, at this season, to apply on all the land which requires it, that is to be cropped early in spring. All land for spring Beans, early-sown Pease, Carrots, and Parsnips, should thus, if possible, be manured in October. That intended for the two last crops should be ploughed an extra depth, and, if convenient, subsoil ploughed. *Blackie's Cyclopædia of Agriculture.*

**BENKWICKSHIRE FARM, Oct. 3.**—The weather during the last week of August and beginning of September, when the season was general, was marked by heavy rains from the east, which rendered operations very much. This was succeeded by a few fine windy days, which tempted us to begin leading (i. e., carrying); but we were soon stopped by damp and rainy weather, with little wind, by which we lost nearly a week. The 18th, however, ushered in a week unequalled for fine west winds, which dried the stocks splendidly, though at times so high as to make leading a work of some difficulty. By this time reaping (except spring Wheat and Beans), was over in the Merse, and progressing with vigour in Lammernuir. Yesterday week was a day of rain, which wet the sheaves to the heart; and the moderate west winds which followed were scarcely sufficient to dry them rapidly enough without assistance. Leading progressed steadily however, and by a judicious rejection of wet sheaves, and spreading them out in the forenoon to dry, we flatter ourselves that the most of our grain is stacked in pretty good condition, though some of it might have been much better. Peas and Beans are yet in the field, in many instances not cut. These two or three days there have been heavy hoar frosts; and on Saturday night there was a deal of thunder with a clear sky and hard north-west wind. Wheat is generally a light crop, and covers not one-half of its usual acreage; the quality also is in many instances inferior. In Barley there is a want of straw, owing to the late seed time; but the quantity and quality of the grain are pretty fair. Oats are very bulky, and promise to yield well, though some of our neighbours, especially to the westward, experience quite the reverse. Beans are good, but Peas a light crop. All sorts of grain are selling briskly at good prices, and live stock maintain their value, though with less activity, excepting that horses are scarcely to be got at any price. Turnips look better than was expected, and at an earlier period; for the rain in the August had done them wonderfully. Swedes are good, but owing to the failure of late sown breaka, the crop cannot reach an average. *J. S.*



### Notices to Correspondents.

**ANALYTIC CHEMISTRY:** *T. Clark*, Parnell's work is, we believe, as good as any. It is on chemical analysis generally. Griffin, of Glasgow, publishes a work by Professor Liebig on organic analysis, and the concluding pages of Professor Johnston's "Agricultural Chemistry" contain instruction on the analysis of soils.

**BREWING:** *A. B.* We do not find the answer to which you allude, and fear that we are unable to cheapen Mr. Long's saccharometer. But there are little floating contrivances for indicating the density of fluids much cheaper than his.

**CARLISLE AGRICULTURAL SOCIETY:** Notice—reading our note of last week on this subject, it seems somewhat liable to misconception. The fact which must excuse our non-publication of nine-tenths of the reported meetings of societies which reach us, is not their non-importance, but the extremely limited space at our command. This forces us to select such instances as that of last week—not where the principal portion of the information given is the list of prizes, of great interest and of great importance locally no doubt, but where matter of general interest and importance has come up in the course of the discussions at the meeting.

**DASHELS:** *H. S. T.* Our correspondent knew very well, no doubt, what he meant by "Dasheles." It was *we* who were ignorant. So "Dasheles" are Thistles; we should be much obliged for any further provincial names. **GLASS LIME:** *H. C.* It can be used as a manure after long exposure to the air, during which it loses its causticity, and, in fact, becomes gypsum to the extent to which before it was not more lime. A ton or even two may be used per acre after this long exposure to the air.

**GRASS:** *A. B.* Judging from our experience with store cattle in a yard, we should think that by using a hot and salt Linseed soup, containing 4 or 5 lbs. of Linseed meal, thrown over 40 or 50 lbs. of good Oat chaff, your five heifers will be induced to eat that quantity, and so will do very well during winter in "a Grass field only half fed off at present."

**NUISANCES FROM A DRAIN:** *J. D. G.* We should be disposed to wash a lot of charcoal powder through the drain for a few hours. That would remove all smell for the time. If you first sent down some chloride of lime, that would also decompose and remove the cause of smell.

**OLIVE:** *A. Housekeeper* observing that the immunity of the Jews (in this country) from cholera is attributed to their free use of Olive oil, would be glad to know from any of our correspondents the relative value of butter, lard, fat pork, and Olive oil; also the various ways in which the latter is used by Jews. [The relative value of these substances depends upon the uses to which they are to be applied.]

### Markets.

#### COVENT GARDEN, Oct. 8.

The market is well supplied with most kinds of Vegetables and Fruit, but trade continues dull. Good melting Peaches and Nectarines are, however, scarce. English Grapes are abundant. Pears still consist of Beurré d'Amanlis, Bon Chrétien, Brown Beurré, Bonne Louis, Gansel's Bergamot, and Marie Louise. Imports from the Continent of Potatoes and Tomatoes are still kept up; the latter fetch from 2s. to 3s. per dozen. Plums from the South of France fetch 4s. per basket. English Plums are nearly over. Carrots and Turnips fetch from 2d. to 4d. per bunch. Potatoes are much diseased, but prices for them are rather better. Mushrooms are much more plentiful, and a little cheaper. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

#### FRUIT.

Pine-apples, per lb., 3s to 6s  
Grapes, hothouse, per lb., 1s to 3s 6d  
— Portugal, per lb., 6d to 1s  
Peaches, per doz., 1s 6d to 6s  
Nectarines, per doz., 1s to 4s  
Plums, per punnet, 1s to 2s  
Apples, per bush, 3s to 6s  
— dessert, h. sieve, 2s to 4s  
Pears, per doz., 1s to 3s

#### VEGETABLES.

Cabbages, per doz., 6d to 9d  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 2s to 3s  
French Beans, p. h. sieve, 1s 6d to 2s 6d  
Brussels Sprouts, do., 1s 6d to 2s  
Potatoes, per ton, 60s to 160s  
— per cwt., 5s to 7s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 2s to 2s 6d  
Cucumbers, each, 2d to 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 1s to 2s  
Peas, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

#### HOPS.—BOROUGH MARKET, Oct. 7.

Messrs. Pattenden and Smith report that the market continues very brisk, at a gradual advance in prices. Duty from 135,000l. to 140,000l.

#### COAL MARKET.—FRIDAY, Oct. 7.

Eden Main, 22s.; Tanfield Moore, 19s. 3d.; Howard's West Hartley, 22s.; Wallsend, 20s. 6d.; Wallsend Harton, 21s.; Wallsend Lambton, 22s. 9d.; Wallsend Stewarts, 23s.; Wallsend Tees, 23s. —Ships at market, 90.

#### HAY.—Per Load of 36 Trusses.

SMITHFIELD, Oct. 6.  
Prime Meadow Hay 90s to 110s  
Inferior do. ... 50 80  
Rowen ... 45 55  
New Hay ... 45 55

#### CUMBERLAND MARKET, Oct. 6.

Prime Meadow Hay 112s to 118s  
Inferior do. ... 40 86  
New Hay ... 40 86  
Old Clover ... 120 135

#### WHITECHAPEL, Oct. 6.

Fine old Hay ... 100s to 108s  
Inferior do. ... 90 95  
New Hay ... 80 84  
Inferior do. ... 40 55

#### WOOL.—BRADFORD, THURSDAY, Oct. 6.

WOOL.—There is no new feature in this branch of the trade. Caution is exercised by the spinners to an unusual extent, and the purchases made during the week are very limited. In price there is a slight giving way, but not to such an extent as to induce any extended operations.

**YARNS.**—Since our last report fresh contracts have had to be made by the manufacturers, which have been difficult to arrange satisfactorily, spinners preferring to curtail their production rather than reduce their prices below the current rates. The result is that a very large stoppage of spinning frames took place, and either short time working or idle machinery is the rule of the trade. The manufacturers have a very profitless avocation, and it is computed that not less than 8000 looms are thrown idle at the present time.

**PRICES.**—We have only a dull market to report. The very unsettled state of the money market, coupled with the disturbed

state of the continent, are both severely felt by all engaged in the export trade. Prices are ruinously low.

#### SMITHFIELD.—MONDAY, Oct. 6.

The supply of Beasts is shorter, especially of good qualities. Prices on the average have advanced, but several inferior remain unsold. The number of Sheep is about the same as of late; trade is heavy, and last Monday's quotations cannot be supported, neither can a clearance be effected. Good Calves maintain Friday's prices, but middling ones are lower. The season for Lamb is now at an end. From Germany and Holland there are 1923 Beasts, 5055 Sheep, and 142 Calves; from Spain, 1310 Sheep; from Scotland, 100 Beasts; and 2000 from the northern and midland counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Here-  
fords, &c. ... 4 4 to 4 6  
Best Short-horns 4 0 4 4  
2d quality Beasts 2 4 3 6  
Best Downs and  
Half-breeds ... 5 0 to 5 2  
Do. Shorn ... 0 0 0 0  
Beasts, 5421; Sheep and Lambs, 27,200; Calves, 277; Pigs, 385.

#### FRIDAY, Oct. 7.

The supply of Beasts is large; owing to unfavourable weather they cannot all be sold. Choice descriptions are not plentiful, and are therefore sold as dear as on Monday. There are a few more of the air, during which it loses its causticity, and, in fact, becomes gypsum to the extent to which before it was not more lime. A ton or even two may be used per acre after this long exposure to the air.

Per st. of 8 lbs.—s d s d  
Best Scots, Here-  
fords, &c. ... 4 4 to 4 6  
Best Short-horns 4 0 4 4  
2d quality Beasts 2 4 3 6  
Best Downs and  
Half-breeds ... 4 10 to 5 2  
Do. Shorn ... 0 0 0 0  
Beasts, 1119; Sheep and Lambs, 6580; Calves, 250; Pigs, 390.

#### MARK LANE.

MONDAY, Oct. 3.—The weather since Friday, although showery, has been fine for the season, with westerly winds, veering from north to south, and last night a white frost. The supply of English Wheat to this morning's market was small, and the quality generally being indifferent, met a slow sale on the terms of this day's contract. The market was tolerably attended by millers from the country, who purchased foreign only in retail at our quotations. Of English Barley there was a good supply, the quality very various. The finest sold readily at last week's prices; secondary and inferior are difficult of disposal. Beans and Peas are unaltered in value. Oats sell slowly at an advance of 6d. to 1s. per qr. For Flour the demand was not extensive, but in the sales made the extreme prices of last week were realised.

PER IMPERIAL QUARTER.  
Wheat, Essex, Kent, & Suffolk ... 61-70 Red ... 59-66  
— fine selected runs ... ditto 66-76 Red ... 58-72  
— Talavera ... 66-80  
— Norfolk ... Red ...  
— Foreign ... 58-80  
Barley, grind. & distil., 34s to 38s ... 40-43 Maltstg. 36-40  
— Foreign ... grinding and chiv. 25-37 Maltstg. ...  
Oats, Essex and Suffolk ... 17-21  
— Scotch and Lincolnshire ... 22-23 Feed ... 17-21  
— Irish ... 21-23 Feed ... 18-20  
— Foreign ... Poland and Brew 17-27 Feed ... 18-25  
Rye ... 29-44 Foreign ...  
Rye-meal, foreign ... 37s to 42s ... Tick 39-44 Harrow ... 39-44  
Beans, Mazagan ... 44s to 46s ... Winds. 36-46 Egyptian 34-37  
— Pigeon ... 44s to 46s ... Small 36-46 Suffolk ...  
Peas, white, Essex and Kent ... 40-43 Boilers 40-43 Foreign ... 40-60  
— Maple ... 44s to 47s ... Grey 40-43 Foreign ... 40-60  
Maize ... 64-70 White ...  
Flour, best marks delivered ... per sack 64-70  
— 2d ditto ... 60-64 Country ... 50-61  
— Foreign ... per barrel 34-35 Per sack ... 54-60

FRIDAY, Oct. 7.—The arrivals of grain of all sorts this week have been moderate. This morning's market was thinly attended, and only a small business in Wheat transacted on the terms of Monday. Floating cargoes on the coast might probably be obtained on somewhat easier terms. Spring corn is unaltered in value, with the exception of Oats, which bring an advance of 6d. per qr. The Flour trade is firm, at Monday's prices.

#### ARRIVALS THIS WEEK.

	Wheat.	Barley.	Oats.	Flour.
English ...	Qrs. 3930	Qrs. 2410	Qrs. 120	2530 sacks
Irish ...	8140	2970	500	8060 bbls
Foreign ...	8140	2970	1900	8060 bbls

#### IMPERIAL AVERAGES.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Aug. 27	s. d. 48 6	s. d. 29 6	s. d. 21 6	s. d. 33 8	s. d. 41 1	s. d. 36 6
Sept. 3	50 4	30 4	21 6	33 8	41 1	37 2
— 10	54 9	31 3	21 11	33 6	41 3	37 8
— 17	56 7	34 9	20 6	35 7	41 9	39 8
— 24	56 7	35 9	21 4	36 9	43 0	41 6
Oct. 1	59 6	37 0	22 2	36 11	42 10	42 11
Aggreg. Aver.	54 4	33 1	21 6	34 9	41 10	39 3

#### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Aug. 27.	Sept. 3.	Sept. 10.	Sept. 17.	Sept. 24.	Oct. 1.
59s 5d	...	...	...	...	...	...
56 7	...	...	...	...	...	...
56 7	...	...	...	...	...	...
59 4	...	...	...	...	...	...
50 4	...	...	...	...	...	...
48 6	...	...	...	...	...	...

LIVERPOOL, TUESDAY, Oct. 4.—At our Corn Exchange this morning there was a good attendance of millers from the interior, and several from Ireland, all of whom bought tolerably freely of Wheat, at the extreme prices of Friday last, which were 1d. to 2d. per bushel higher than on this day's night. Flour also commanded very full prices. Oats improved 1d. to 2d. per bushel on the week, and the market very bare. Oatmeal fully supported late rates. Beans, Peas, and Barley all scarce, and bring the extreme prices of last week. Indian Corn was quiet in demand, but held very firmly. FRIDAY, Sept. 30.—Some extent of business has been passing in Wheat and Flour in Brunswick Street, and at Manchester yesterday, at the full advance realised on Tuesday for both articles. The weather has been equally and unsettled, and the northern harvest has made slow progress. At this morning's market there was a good attendance of country millers, who bought to a fair extent of Wheat, paying the full prices of Tuesday last, and for good useful samples of red advance of 1d. to 2d. per bushel was obtained. Flour also sustained extreme prices, and in some instances rather exceeded. Beans and Oats are very scarce; the former advanced 1s. to 2s. per qr. and Oats 2s. per bushel. Oatmeal improved 6d. per load on old, and 2s. per load on new. In Corn was held very firmly for full prices.

### LANDSCAPE GARDENING REVIVED AS AN ART.

**MR. THOROLD**, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure-grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

**JOHN T. WILLMER, JUN., Auctioneer, Sunbury.** Middlesex, begs to inform Nurserymen and Florists having stock to dispose of by Auction, that he undertakes the same at the lowest charges.

### GARDEN FRAMES, GREENHOUSES, PITS, &c.

—TRANSPARENT SHEETING, a substitute for Garden Mats, admitting light to plants, and keeping out frost, 1s. per yard, runs nearly 2 yards wide; thick canvas ditto, 1s. per square yard; large waterproof capes, to protect a man from wet while stooping down, 3s.; cart and wagon covers, 2s. per square yard; made-up horse's loin cloths, driving aprons, &c.—**R. RICHARDSON, 21, TORRIDGE PLACE, NEW ROAD, LONDON.**

N.B. 3000 London Police Waterproof Capes, fresh dress 18s. and 24s. per dozen, for gardeners and farm labourers. A small Fire Engine for sale, price 10l., with a quantity of Hose, &c., complete for use.

### IRON AND WOOD HOUSES, TENTS, CARTS.

Iron Houses from 12l., Wood from 8l.; Improved Chisholm Tent, 12 ft. square, 4l.; smaller, much cheaper; Soldier's Tent, 42 ft. round, 3l.; Carts, 6 ft. by 4 ft., and 2 ft. deep, 8l. Drawings and full details of Houses and Tents sent free. Houses and Tents to be seen erected.—**R. RICHARDSON, corner of Judd Street, New Road, near King's Cross. N.B. An Iron Shop, with plate-glass front, on view; also a large Store, 100 ft. by 30 ft.**

### WIRE FENCING, 3d per square foot, less than

2-inch mesh, painted, in various widths, from 1 foot wide to 6 feet wide; the 6 feet wide, 1s. per yard run, or 6yd. per yard, 1 yard wide. The Wire-work is made by powerful machinery, and is little more than half the price of the cheapest article of the kind in the market. It is worked in oil, and warranted not to rust, or require paint half so often as the ordinary wire-work. Also on sale, Rabbit-proof Iron Hurdles, 6 feet by 3 feet, 5s. to 6s. 6d. each. The Wire-work is Rabbit-proof.—**R. RICHARDSON, 21, Torrbridge Place, New Road, near Euston Square, London.**

### SHIRTS.—FORD'S EUREKA SHIRTS are not

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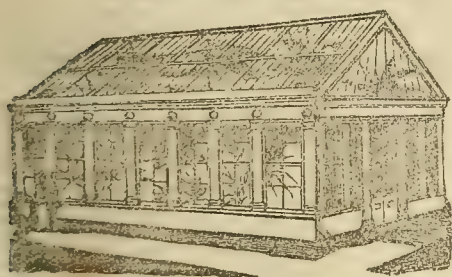
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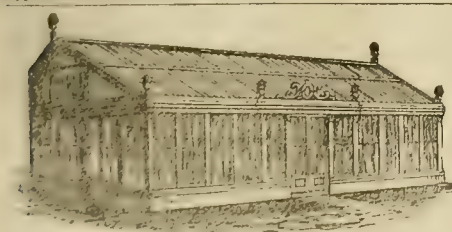
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CONTENTS:—

- I. THE INSTITUTE OF FRANCE.
- II. MURDER OF THOMAS A'BECKET.
- III. THE DAUPHIN IN THE TEMPLE.
- IV. THE HOLY PLACES.
- V. DIARY OF CAUSAUBON.
- VI. ELECTRO-BIOLOGY AND MESMERISM.
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## INVESTMENT.—HOLLAND.

**FOR SALE**, with immediate possession, an ESTATE of 1162 ACRES, 1000 of which are covered with a valuable deposit of peat, which being the fuel in universal use in Holland, from the high price of coals, always commands a ready market. The Estate is intersected by canals for the conveyance of the peat, and these communicate with one of the chief canals in a northern province of Holland, and by these means there is direct and cheap water communication with the towns and cities in which the fuel is consumed; 150 acres are cleared and already in excellent cultivation, exposing a fertile soil, and 12 acres in wood. On the estate is a comfortable Dwelling House, two Farmhouses, 14 Cottages, a Large Barn, and Cattle Sheds. There are also for sale all the implements required in digging the peat and cultivating the land, together with eight Horses, 20 head of Cattle, &c., also a Thrashing Machine, &c.—For further information, apply, by letter, to J. C. M., at the Office of this Paper.

## TO NURSERYMEN AND MARKET GARDENERS.

**TO BE LET**, 10½ miles from London, on the Great Western Railway, from 10 to 20 Acres of MARKET GARDEN GROUND, with extensive range of Brick Wall, 12 feet high, a south-west aspect, and one-third of a mile in length. The above is well worth the attention of parties obliged to move from the neighbourhood of London in consequence of building.—For terms, apply to Mr. MEEKIN'S, Dawley Court, near West Drayton; or to Mr. STRANSON, Auctioneer and Surveyor, Uxbridge, and 57, Lincoln's Inn Fields, London.

**TO BE LET**, with immediate possession, an extensive Forcing Establishment, within 7 miles of London. There are six Peach and Nectarine Houses, six Vineries, three Strawberry Houses, three large Pine Pits, with smaller Pits and Frames, the whole in good repair, and well stocked with good kinds of Fruit, by the present occupier, who is wishing to let, in consequence of declining health. There is a good Dwelling-house, with Stable, Sheds, and every convenience, together with 8 Acres of fine Land, the greater part under Fruit, the whole to be let on lease for the unexpired term of 20 years. This is an opportunity that seldom offers.—For particulars, apply to Mr. GEORGE MILLS, Uxbridge Road, Ealing.

**FARM WANTED**, to Rent, about Fifty Acres of well-drained Arable Land (deep clayey loam), with comfortable modern dwelling-house (or in the cottage style) attached, &c.; near a railway station and market, from 5' to about 100 miles of London.—Address "Agricola," Mr. Bailey's, Cirencester.

**WHITE, BROWN, AND PIED CHINESE OR SWAN GESE.**—Any of these varieties, of which the first is nearly equal to the swan in beauty for small pieces of water, for Sale.—Apply to Mr. P. DUTTON, Delamere Rectory, Chester.

**COCHIN CHINA CHICKENS**, from Prize Hens, three months old.—Mr. THOMAS GILBERT, Wine Merchant, Grays, Essex, has for sale 80 first-class Birds, selected from a breed of 300, at 20s., 25s., and 30s. each. Strains of Sturgeon and Pottis; also Eggs at 16s. per dozen, from light-buff and extremely well-feathered Hens, sent to any part of England on receipt of a Post Office Order. A Cinnamon Cock and two Pullets for sale, price 3l. 5s.

## Sales by Auction.

## COCHIN CHINA AND SPANISH FOWLS.

PERIODICAL SALE BY AUCTION, ON TUESDAY, OCTOBER 18, 1853.

**MR. J. C. STEVENS** begs to notify that in the next Periodical Sale, at his Great Room, 38, King Street, Covent Garden, will be included some FIRST CLASS COCHIN CHINA FOWLS, from Mr. A. Stainton, Hornsey Road, many of the Pullets and Cockerels being by his late celebrated bird breeder, 50 lots from Captain Squire, of Milden Hall, bred from his prize birds, and many other Cochins and White-faced Spanish from provincial amateurs.—May be viewed the morning of sale, and Catalogues had by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

## ORCHIDS AND STOVE AND GREENHOUSE PLANTS.

**MR. J. C. STEVENS** will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, 14th October, at 12 for 1 o'clock, a COLLECTION OF ORCHIDS, including *Phalenopsis grandiflora*, *Saccolabium guttatum*, *Cypripedium caudatum*, *Vanda Coerulea*, and other choice species, and a small importation from Guatemala; also some Stove and Greenhouse Plants, the property of a gentleman who is giving up his country residence in Sussex.—May be viewed the morning of Sale, and Catalogues had.

## THE IPSWICH NURSERY GROUND.

TO NURSERYMEN, FLORISTS, AND SEEDSMEN.

**MR. ROSS** has received instructions to dispose of with immediate possession, the old-established IPSWICH NURSERY, situate on one of the principal roads out of Ipswich, within five minutes' walk of the centre of the town, and being the only establishment of the description within several miles. The premises consist of convenient Dwelling-house, with Seed Shop, three Greenhouses, Propagating Houses, Frames, and Pits, and about two Acres of productive Garden and Nursery Ground, well stocked with choice American Plants, Evergreen and Flowering Shrubs, and Fruit and Forest Trees of every description. The stock is to be taken by valuation. Mr. ROSS, in bringing the above highly desirable concern before the public, begs to state that a most profitable trade has been carried on upon the premises by Mr. Jeffries, the proprietor (who now retires from business), and his family, for upwards of half a century.—Apply to Mr. ROSS, Auctioneer and Estate Agent, Ipswich.

## MONKHAMS, WALTHAM ABBEY, ESSEX.

IMPORTANT SALE OF SHOR-THORNS, &amp;c.

**MR. STRAFFORD** is favoured with Instructions from B. COLVIN, Esq., to announce for Sale by Auction, without reserve, on TUESDAY, the 18th October next, at Monkham's Hall (in consequence of the same being let) his entire Herd of Pure-bred SHOR-THORNED Cattle, consisting of 35 head of Bulls, Cows, and Heifers, bred from stocks of the highest repute; also a quantity of Boar and Sow Pigs, of the Yorkshire breed. After which will be offered, a choice selection of 12 Cows and Heifers, from the far-famed herd of J. S. Tanqueray, Esq., Hendon, Middlesex. And a few very superior young Cows and Heifers, bred by J. Kinder, Esq., Sandridgebury, St. Albans.—Catalogues with the Pedigrees may be had upon application to Mr. STRAFFORD, 89, Guildford Street, Russell Square, London.

## TO GENTLEMEN, NURSERYMEN, AND OTHERS.

A CONSIGNMENT FROM BELGIUM FOR ABSOLUTE SALE.

**MESSRS. PROTHEROE AND MORRIS** will Sell by Auction, at the Mart, Bartholomew Lane, about the middle of October, 500 Giant Azaleas, 300 Azalea indica, 300 Camellias, 600 Standard and other Roses, 100 Kalmia latifolia. The whole furnished with bloom-buds, with a variety of Greenhouse Plants.—On view the morning of Sale; Catalogues may be had at the Mart; or of R. SILBERRAD, 5, Harp Lane, Great Tower Street; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## ILFORD.

TO GENTLEMEN, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will submit to public competition by Auction, on the Premises, Ilford Nursery, Green Lane, Ilford, Essex, on FRIDAY, Oct. 14, at 11 o'clock (by order of the trustees), the whole of the NURSERY STOCK, consisting of Evergreens, Fruit and Forest Trees, and Deciduous Shrubs; also Greenhouse Plants—comprising Double Camellias, Azaleas Indica, Geraniums, &c. May be viewed prior to the Sale.—Catalogues may be had on the Premises; the Red Lion Inn, Ilford; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone.

## NURSERY STOCK.

TO GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will Sell by Auction, on the Nursery Ground adjoining York Place, Stoke Newington, on MONDAY, October 17th and following day, at 11 o'clock each day, fine Ornamental and Deciduous Trees, Evergreens, and Flowering Shrubs, consisting of Aucubas, Portugal and Common Laurels, Variegated and Green Hollies, Arbor-Vitae, Bayes, Yives, Lilacs, Arbutus, Box, Limes, Acacias, Poplars, Evergreen Privets, Azaleas, and fine Rhododendrons, set with bloom buds; a fine assortment of Fruit Trees, comprising Standard and Dwarf Trained Peaches, Apricots, Nectarines, Cherries, Plums, Pears, Gooseberries, Currants, Grapes Vines, &c. May be viewed prior to the Sale; Catalogues may be had on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. ADAMS, to Sell by Auction, on the Premises, Brompton Park Nursery, Park Lane, Brompton, near the Hoop and Toy, on WEDNESDAY, October 19, and following days, at 11 o'clock each day, in consequence of a portion of the land being required by the Commissioners of the Great Exhibition for the New National Gallery. The extensive NURSERY STOCK, consisting of a valuable assortment of large Evergreens, and Deciduous Shrubs, from 5 to 8 feet high, fine Ornamental and Fruit Trees, American Plants and Flowering Shrubs.—May be viewed one week prior to the Sale; Catalogues may be had (6d. each, returnable to purchasers) on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO NOBLEMEN, GENTLEMEN, FLORISTS, &amp; OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will Sell by Auction, on the Premises, St. Stephen's Nursery, near St. Alban's, on WEDNESDAY, October 26th, and following day, at 11 for 12 o'clock precisely, by order of Messrs. D. Spriggins & Co. (dissolving partnership), the whole of the valuable NURSERY STOCK, consisting of Standard and Dwarf Roses, about 6000 of the choicest Perpetual kinds; about 2000 trained and untrained Fruit Trees of the most approved varieties; 30,000 fine Evergreens, of every variety, in considerable quantities; 30,000 fine Spruce, Scotch, and Larch Firs, &c., &c.—May be viewed any time prior to the Sale; Catalogues may be had (6d. each, returnable to purchasers) of the principal Seedsmen in London; of Mr. W. FELT, Nurseryman, Hitchin; Mr. W. COXWELL, Nurseryman, Barnet; at the Peabody Inn, St. Alban's; on the premises of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO GENTLEMEN, NURSERYMEN, FLORISTS &amp; OTHERS. BAYSWATER.

**MESSRS. PROTHEROE AND MORRIS** are directed to Sell by Auction, on the Premises, at Craven Hill Nursery, Bayswater, on MONDAY, October 31, and following days, at 11 o'clock each day, by order of Mr. HOSGOOD, in consequence of the ground being wanted for building, the whole of the valuable NURSERY STOCK, consisting of Fruit and Forest Trees of the finest description, in great variety; Shrubs, Choice Ornamental and Specimen Trees; Deciduous and American Plants; a large assortment of Evergreens; selected Standard and Dwarf Roses, Hardy Climbers, &c.; together with the Stove and Greenhouse Plants, comprising *Ixora*, *Eurcellia*, *Franciscana*, *Justicia*, *Pentas carnea*, *Hoya*, *Poinsettia*, &c.; 50 Large Double White Camellias, *Azalea indica* alba, yellow *Noisette* and *Devonians* Roses, *Acacias*, *Eupacris*, *Chorozema*, *Myrtles*, *Hardenbergia* *monophylla*, *Correae*, &c., &c.—May be viewed prior to the Sale; Catalogues may be had, 6d. each, returnable to purchasers, on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## BATTERSEA.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** have received instructions from Mr. Ambrose to offer to Public Competition by Auction, without reserve, on the premises, King Street, Battersea, on MONDAY, Oct. 10th, at 11 o'clock, the whole of the valuable GREENHOUSE PLANTS, consisting of a fine collection of Indian Azaleas, amongst which are many fine specimens; Camellias, *Ericas*, *Cytisus*, *Eupacris*, *Diosma*, *Acacia*, *Daphne*, choice *Cinerarias*, White and Purple *Primula*, *Calceolaria*, *Stephanotis*, *Dielectrica*, *speciosa*, *Rhododendrons*, &c.; also about 20,000 *Pansy* and other *Polegoniums*, which will comprise all the new and most improved kinds in cultivation; about 50 specimen plants of the newest kinds; together with 14 newly erected Greenhouses; 3 capital Boilers; about 800 feet of hot-water Pipe; several Pits; one, two, and three-light Boxes; Hand and Striking Glasses; Bricks; Wheel-burrows; Water Pots; Syringes; and sundry effects. The above Stock is particularly worthy the attention of Exhibitors enriching their collections, as well as the trade, from its excellence.—May be viewed one week prior to the sale; Catalogues (6d. each returnable to purchasers) may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## LIVE AND DEAD STOCK, AND HAY.

AT WALKER BURY FARM, NEAR STEVENAGE, HERTS.

**MR. HUMBERT** will sell by Auction, by direction of the Earl of Essex, the farm being let, on WEDNESDAY next, the 12th day of October, at 10 for 11 o'clock, all the valuable Live and Dead Stock, comprising 11 Cart Horses and Harness, 45 Teds and 19 Lambs (most of them fit for the butcher), a Tup, a Boar, 11 Sows, 27 Store Pigs, 8 fine Hereford Oxen, 14 head of Horned Cattle, a quantity of Poultry, 6 Ploughs, a Drill, 3 Horse Hoes, Pressers, Scufflers, Harrows, Harness, and 6 Carts, with Tools and numerous Implements, most of them new within two years and of the best kind. Also 40 loads of prime old Hay, and upwards of 40 loads of new Hay, well got, a rick of Tare Hay, and some Furniture.

May be viewed the day before the Sale, and Catalogues may be had at the Inns in the neighbourhood; at the White Lion Inn, Paddington; and free by post of Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FRANKLIN MURRAY, Esq., of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul, Covent Garden, and County of Middlesex, where all Advertisements and Communications are to be Addressed to the EDITOR.—SATURDAY, OCTOBER 8, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 42.—1853.]

SATURDAY, OCTOBER 15.

[PRICE 6d.

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**THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—Notice is hereby given that an Election of Two Pensioners on the Funds of this Charity will take place in January next. All persons desirous of becoming Candidates will be required to send in their testimonials to the Committee on or before the 3d of November next, after which time they will not be received. By Order of the Committee, E. R. CUTLER, Sec. 97, Farringdon Street, Oct. 12.

P.S.—Printed forms of Petition may be had upon application. No person will be allowed to vote whose subscription for 1853 is unpaid.

**NEW SEEDS FOR THE COMING SEASON.**  
**WILLIAM E. RENDLE AND CO., SEED MERCHANTS,** Plymouth, are now harvesting and receiving from the Growers a choice assortment of all kinds of Garden and Agricultural Seeds. Their New Seed Catalogue will be ready early in December.

**OXFORD, WORCESTER, AND WOLVERHAMPTON RAILWAY.**  
**JOHN SUTTON AND SONS** have the pleasure of acquainting their patrons in the locality of the above Railway that by a special arrangement with the Company they have been enabled to add the whole of this important Line to the numerous other Railways on which their Goods will be delivered free of all charge to their Customers.  
Reading Nursery and Seed Warehouse.—October, 1853.

**DANE CROFT PROLIFIC MARROW PEA.**  
**THOMAS BARNES** begs to offer the above most desirable PEA. It is hardy, a great bearer, and of fine flavour. Height, 3 to 4 feet; Price, per quart, 3s. per peck, 20s. Dane Croft Nurseries, Stowmarket, Suffolk.

**NEW ROSES.**  
**DUCHER, FLORIST,** Rue du Vivier, la Guillotière, Lyons, France, has on sale the following:—  
**ALPHONSE LAMARTINE**, hybrid perpetual, very vigorous, branches straight and very thorny, foliage dark green, flowers medium size, very full, perfect form, and very odoriferous; delicate rose tint. Price 15 francs.  
**MADAME MILSON**, hybrid, very perpetual, very vigorous, branches straight, foliage elongated and light green, flowers medium size, full, cup-shaped; beautiful violet-tinted rose, and the reverse of the petals whitish. Price 15 francs.

**SUPERB DOUBLE HOLLYHOCKS.**  
**WILLIAM CHATER** has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.  
Saffron Walden Nursery, October 15.

**ROSES AND HOLLYHOCKS.**—The extensive Collections growing at the Cheshunt Nurseries are still finely in bloom, where admirers of these Flowers are respectfully invited to view them. Trains of the Eastern Counties Railway almost hourly to Cheshunt or Waltham.  
Priced descriptive Catalogues are now ready, and will be forwarded free by post for two postage stamps.  
A. PAUL & SON, Nurseries, Cheshunt, Herts.

**HUGH LOW AND CO.** have to offer very fine strong bushy plants, full of flower buds, of **CHRYSAETHYMUMS**, including the Continental varieties of the present season. Price, per dozen, 9s. **DIELYTRA SPECTABILIS**, extra large roots, suitable for forcing in winter, 21s. per dozen.  
Clapton Nursery, London.

**A. VERSCHAFFELT, NURSERYMAN,** Ghent, Belgium, begs to inform Amateur and Nurserymen that his NEW CATALOGUE OF PLANTS is just published, and may be had free of his Agent, Mr. R. ELLENBAUM, 6, Harp Lane, Great Tower Street, London.

**TULIPS.**  
**HENRY GROOM, Clapham Rise, near London,** by appointment FLORIST to her MAJESTY THE QUEEN, and to his MAJESTY THE KING OF SAXONY, begs to inform the AMATEURS OF TULIPS, that having been most successful in their cultivation this season, he can supply excellent bulbs of the finest quality at very moderate prices. He wishes to call the attention of Amateurs to the GRAND EXHIBITION OF TULIPS, which is to take place in London next year, and would suggest the necessity of their being well prepared with fine flowers. He also begs to state that he continues to put up beds ready arranged for planting, which have been found so very valuable for gentlemen commencing their cultivation. His catalogue will be forwarded by post on application.

## TO ADVERTISERS.

**THE ADVERTISEMENT DUTY** being now REPEALED, the PROPRIETORS of the **GARDENERS' CHRONICLE** beg to announce that there will henceforward be a reduction from the customary charge for each Advertisement of 1s. 6d., the full amount of duty taken off by the Government. Advertisements of Gardeners out of Place, of not more than four lines in length, 1s. 6d. each.

**NEW CATALOGUE.**  
**JOHN AND CHARLES LEE'S CATALOGUE** of STOVE and GREENHOUSE PLANTS for this autumn is just published, and may be had POST FREE on application.—Nursery, Hammersmith.

**ROSE CATALOGUE.**  
**WOODLANDS NURSERY, MAREFIELD, NEAR UCKFIELD, SUSSEX.**  
**WILLIAM WOOD AND SON** beg to announce that the New Edition of their Rose Catalogue, for 1853-54, is now ready for distribution, and will be sent gratis on receipt of Two Penny Postage Stamps. Their Catalogue of General Nursery Stock may also be had on the same terms.

**STANDISH AND NOBLE'S CATALOGUE** for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 19. They respectfully refer plant buyers. It contains choice plants.—The Nursery, Bagshot, Surrey, Oct. 10.

**GEORGE JACKMAN, NURSERYMAN,** Woking, Surrey, 1½ mile from Woking Station, South-Western Railway, begs to announce that he has just published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c. &c., and may be had on application by enclosing two postage stamps.

**DUTCH HYACINTHS, for Forcing, single and double, at 4s. per dozen.** Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR COBBETT'S Italian and Foreign Warehouse, 18, Pall Mall.  
Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of the Narcissi, 4s. per dozen.

**NEW STRAWBERRY.—Ingram's PRINCE OF WALES,** proved at the Royal Gardens to be the best for early forcing and fruiting in the autumn (from forced Plants), producing beautiful fruit through the months of September, October, and November. It has now a fine crop of fruit in perfection at the Royal Gardens, Frogmore. Fine plants may be had of J. and E. SMALL, Nurserymen, Colnbrook, Bucks; and of Messrs. Nutting, Seedsmen, 46, Cheapside, London, at the following prices:—3s. per 100; 11s. for 50; 11s. for 25. The usual allowance to the trade when 300 are taken.

**DUTCH BULBS AND FLOWER ROOTS.**  
**THOMAS JACKSON AND SON** respectfully inform their patrons and the public that they have received, in the finest condition, their annual consignment of BULBS and ROOTS, and that they are of the largest size and very finest quality.  
Good Double Hyacinths, per dozen ... 4s. 6d.  
Mixed Polyanthus Narcissus, per dozen ... 3 0  
Their Priced List of Bulbs and Roots, and also their Priced Catalogue of Stove, Orchidaceous, and Greenhouse Plants, Shrubs, Trees, and Herbaceous Plants, may be obtained on application. Nurseries, Kingston, Surrey, Oct. 15.

**JUST IMPORTED,**  
**DUTCH HYACINTHS, all Double, 4s. per dozen, or 30s. per hundred.**  
Per dozen.—s. d. Per 100.—s. d.  
Narcissus, mixed ... 1 0 Ranunculuses ... 3 6  
Jonquils, do. ... 2 6 Crocuses, mixed ... 1 6  
Gladioli, do. ... 2 6 Double Anemones ... 7 0  
Irises, Spanish ... 0 9 Early Dwarf Tulips ... 7 6

Orders above 20s. Carriage Free.  
Also, choice new varieties of the foregoing, by name, at higher prices.  
**JOHN SUTTON AND SONS,** SEED GROWERS, Reading, Berks.

**CHOICE FRUIT AND VEGETABLES WANTED, DURING THE ENSUING WINTER AND SPRING, INCLUDING**  
**PINE APPLES** **GRAPES**  
**FORCED STRAWBERRIES** **CHOICE PEARS**  
**MUSHROOMS** **ASPARAGUS**  
**EARLY CUCUMBERS** **EARLY POTATOES**  
**CHOICE FLOWERS, &c. &c.**

Apply to  
**GEORGE TAYLOR, Jun.,**  
Fruit Salesman,  
St. John's Market,  
Liverpool.  
Terms: Cash on receipt of goods.

**AMERICAN PLANTS.**  
**JOHN WATERER** begs to announce that his NEW CATALOGUE OF RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.  
The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.  
The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.  
The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

## NEW GERANIUMS OF OCTOBER, 1852.

**BASS AND BROWN** are now sending out from a fine and vigorous stock of plants, of the best new varieties of last year, well established in 4-inch pots. For Descriptive List of these, and others of their superb collection, see their New Autumn Catalogue, free by post, for three penny stamps.  
12 superb new varieties of last season ... £2 4s.  
25 superb show varieties of previous date ... 2 0  
25 choice ditto ... 1 2.  
Fine varieties, 6s. to 9s. per dozen.  
12 superb new fancy varieties of last season ... 2 2  
Fine varieties, 9s. to 12s. per dozen.

GOODS CARRIAGE FREE, with orders not under 20s., to all Stations on the Colchester Line between London and Norwich, or to all the London Termini.

**BASS AND BROWN,**  
Seed and Horticultural Establishment, Sudbury, Suffolk.

**CAMELLIAS, ETC.**  
**CHANDLER AND SONS, NURSERYMEN,** Wandsworth Road, Surrey, continue to supply good Plants of CAMELLIAS, well set with flower-buds, 30s. to 42s. per dozen. CHRYSAETHYMUMS, bushy Plants of the best sorts, large and dwarf varieties, for flowering this autumn, 12s. per dozen. A good assortment of Dutch Bulbs just imported. Fine Hyacinths, from 6s. to 12s. per dozen. Narcissus, Tulips, &c.

**NEW & CHOICE SHOW PELARGONIUMS.**  
**HENRY WALTON, FLORIST, &c., Edge End,** Marsden, near Bury, Lancashire, having a very large stock of all the leading SHOW PELARGONIUMS sent out last autumn, is prepared to send out strong plants, in 4-inch pots, at 36s. and 40s. per dozen.  
FANCIES, a very large collection of all the new Scotch and other varieties—18s. per doz.; older varieties, 6s. 9s., 12s. per doz.  
CINERARIAS, choice varieties, 6s., 9s., 12s. to 18s. per doz.  
FUCHSIAS all the newest varieties out, 18s. and 21s. per doz.  
FALSIES (Salter's New Improved), very fine, 9s. per doz.  
Descriptive Lists of the above are now ready, and may be had on request.  
Older varieties of Pelargoniums, and all the Florist Flowers, &c., at very reduced prices. Camellias, well set with buds, and other Greenhouse and Stove Plants equally cheap.

**JUDSON'S**  
**RICHMOND VILLA BLACK HAMBURG VINE.**  
**ARTHUR HENDERSON AND CO.** have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-prized Vine at 5s. each; extra strong plants, 7s. each.  
N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.  
Their Autumn Catalogue of Pelargoniums, Cinerarias, Hollyhocks, and new plants of recent introduction and merit is now published, and can be had on application. A few good plants of the beautiful Yellow Begonia can still be supplied at 21s. each.  
Fine Apple Place, Edgeware Road, London.

**CUTHILL'S PRINCE OF WALES AND BLACK PRINCE STRAWBERRIES.**—Very fine strong plants of Prince of Wales at 15s. per 100, or 10s. for 50; Black Prince at 5s. per 100. See former Advertisements. Also, CUTHILL'S Pamphlet on the Potato, &c., price 2s., or by post, 2s. 4d.; also, his Market Gardening Round London, 1s. 6d., or by post, 1s. 8d. Post Office orders to be made payable at Camberwell Green.  
JAMES CUTHILL, Camberwell, London.

**H. AND R. STIRZAKER, NURSERYMEN, &c.,** beg to announce that their Catalogue of Forest, Evergreen, and Ornamental Trees is now ready and will be forwarded, post free, upon application; from the lowness of prices coupled with quality, which cannot be surpassed, from hardness of growth, we feel assured every inducement will be offered to purchase. Having a surplus Stock of Transplanted Ash, Sycamore, Larch, Spruce, Silver Fir, Black American Spruce, Beech, Privet, Laurestinus, &c., we shall offer to the Trade at uncommonly low prices.—Skerton, near Lancaster, Oct. 15.

**ROSES on 4 to 6-inch stems, fine, 6s. per dozen;** best FANCY GERANIUMS, 9s. per dozen; best PINKS, 6s. per dozen pairs; new VERBENAS, &c. For description see page 642.—S. WALTERS, Hilperton and Trowbridge, Wilts.

**HUGH LOW AND CO.** would invite inspection of their extensive and fine Nursery Stock, more particularly CAMELLIAS, INDIAN AZALEAS, ERICAS, EPACRIS, and other plants suitable for making a display during winter, all of which are well set with flower buds, and can be had of different sizes.  
H. L. & Co. are also Growers of Fruit Trees, and their stock this season of both Trained and Maidens is large and fine, including the leading varieties, which are grown in quantities for the trade.—Clapton Nursery, London, October 15.

**GEORGE BAKER** begs to say that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT AND FOREST TREES, &c., may be had by enclosing two postage stamps.  
G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.  
G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.  
American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

**SURPLUS STOCK.**—8000 Old English Grafted Elms, varying from 4 to 12 feet; 2001 to 4000 Chesnuts, 5 to 6 to 8 feet; 100,000 Ash, 3 to 4 to 6 feet; 2000 to 3000 Yews, 2 to 3 feet; 2000 to 3000 Siberian Arbor-vite, 2 to 3 feet; 10,000 to 12,000 Berberis aquifolium, 2 feet; 8000 to 10,000 Common Laurels, 3 to 4 feet. The above have been frequently transplanted, are fine healthy plants, and all applications for terms will be duly attended to by Messrs. L. D. SMITH, Nurserymen, Stamford, Lincolnshire.  
N.B. Catalogues of General Nursery Stock may be had on application.



## MESSRS. YOEUELL AND CO.

BEG TO OFFER THE FOLLOWING:—

**ERICAS.**—Fine bushy blooming plants, in large 48s, of the following sorts, at 12s. per dozen varieties, viz.:—*Aggregata*, *Bowell*, *Deventryana*, *Gavendishii*, *colorans*, *\*densa*, *\*daphnifolia*, *chiflora*, *\*coccinea*, *\*Eweriana*, *\*gracilis*, *\*hyacinthoides*, *intermedia*, *\*Linnæoides*, *nova*, *levis*, *alba*, *mirabilis*, *mammosa*, *reticulata*, *bicolor*, *\*nigrita*, *\*ovata*, *pyramidalis*, *propendens*, *perspicua*, *nana*, *\*rubens*, *rubra*, *calyx*, *grossula*, *transparens*, *nova*, *Westcottii*, *\*Wilmorea*, *superba*, *Walkerii*, *viridiflora*, *\*ventricosa*, *breviflora*, *\*v. Bothwellii*, *\*v. coccinea*, *\*v. carnæa*, *\*v. dependens*, *coccinea*, *\*v. fasciculata*, *rosea*, *\*v. f. longiflora*, *\*v. f. superba*, *\*v. hirsuta*, *\*v. perispicoides*, *\*v. superba*, *\*v. tenuiflora*, *\*v. tumida*.

**ERICAS.** in small and large 60s, nice bushy plants, many of them set for flower. All the above named marked with an asterisk, as well as the following, at 9s. per dozen varieties, viz.:—*Denticulata*, *moschata*, *elata*, *hyemalis*, *hybrida*, *scabriuscula*, *Sindryana*, *grossula*, *rubra*, *umbellata*, *verticillata*, *ventricosa*, *cinta*, *rubra*, *v. densa*, *carnæa*.

**EPACRIS.**—The following choice varieties, in 48s, well set for bloom, at 12s. per dozen varieties, viz.:—*Ardentissima*, *Alteana*, *campanulata*, *alba*, *c. grandiflora*, *c. maxima*, *Cope-Jandica*, *carnæa*, *coruscans*, *densiflora*, *incarnata*, *elegantissima*, *formosa*, *grandiflora*, *hyacinthiflora*, *hyac. candidissima*, *impres-sa*, *imp. alba*, *imp. magna*, *linuata*, *magnifica*, *miniata*, *nivalis*, *onosemiflora*, *pulchella*, *major*, *purpurescens*, *sanguinea*, *Tautoniensis*, *the Bride*, *variabilis*.

**Abelia uniflora**, small, 12s. per dozen.  
**Abutilon insignis**, Lindley's fine new species, 2s. 6d. each.  
**Aphelaxis**, in 4 fine varieties, strong, bushy plants, in large 48s, well set for flower, 12s. per dozen; in small 48s, 9s. per dozen.  
**Acacia virgata**, large flowering plants, in large 48s, 12s. per doz.

**CAMELLIAS**, of the finest kinds in cultivation, strong plants 1 to 14 ft. high, well furnished with flower-buds, 21s. and 30s. per doz.  
**Cassia corymbosa**, a good winter-flowering plant, in 48s, 9s. p. doz.  
**Ceanothus rigidus** and *dentatus*, in large 60s, 12s. per dozen.  
**Chorozema Lăwrenclianum**, strong flowering plants of this charming variety, in large 48s, 12s. per dozen.

**Ditto varium nanum**, strong flowering plants, 12s. per dozen.  
**Correa speciosa** major, bicolor, delicate, Harris, and Cooperi; strong flowering plants, 12s. per dozen; brilliant, 2s. 6d. each.  
**Daphne collina**, 12s. per dozen; *indica* rubra, 18s. per dozen; *Dauphine*, 18s. p. doz.; *Fiontana*, fine strong plants, 18s. p. doz.

**Deutzia gracilis**, small, 9s. per dozen.  
**Diosma ericoides** and *capitata*, nice bushy plants of these sweetly-scented species, 9s. per dozen.  
**Dipteracanthus spectabilis**, strong plants, 1s. 6d. each.  
**Eutaxia myrtifolia**, strong bushy plants of this fine old favorite, in large 48s, 9s. per dozen; *floribunda*, in 60s, 9s. per dozen.

**Eunonymus fimbriatus**, strong plants of this handsome evergreen, 2s. 6d. each.  
**FUCHSIAS**: Choice of the new kinds of this season, including *Duchess of Lancaster*, *Glory (Banks)*, *England's Glory*, *King Charles*, &c., 24s. per dozen varieties.

**Kennedyia inophylla floribunda**, 1s. 6d.; *nigricans*, 1s.; *Mary-ryatte*, 1s. 6d.; *monophylla*, 1s.; *ovata*, 1s. 6d.; *ovata alba*, 2s. 6d.; and *rubicunda* maxima, 1s. 6d.

**Lardizabala bitermata**, a fine hardy evergreen creeper, 5s. each.  
**Leschenaultia formosa**, strong, 4s. each.  
**Mandevilla asnuvelens**, certainly the finest greenhouse or conservatory climber we possess, 9s. to 12s. per dozen.  
**Mitrasia coccinea**, strong flowering plants, 2 to 3 feet, 3s. 6d. each.  
**Olea fragrans**, 24s. per dozen.

**Passiflora racemosa** cerulea, in large 48s, 12s. per doz.; *Bellotti*, fine new peach-coloured variety, 1s. 6d. each; *Buonaparti*, 1s. 6d. each.  
**Philadelphus mexicanus**, an elegant shrub with large white flowers, more fragrant than the Orange, 2s. 6d. each.  
**Pimelea decussata**, 9s. per dozen; *hispidula*, 12s. per dozen.

**Sollya Drummondii**, strong, 1s. 6d. each; *heterophylla*, 12s. p. doz.  
**Statice puberula**, large flowering plants of this elegant winter-blooming species, 9s. per dozen.  
**Swainsonia Osborniana**, new, 12s. per dozen.  
**Tecoma australis**, 1s. 6d. each; *jasminoides*, 12s. per dozen; *rosea*, 1s. 6d. each.

**Tetradlea ericifolia**, small, 18s. per dozen.  
**Geranium Flower of the Day**, strong, 6s. and 9s. per dozen; new crimson fly leaf, 7s. 6d. each.

## STOVE.

**Gloxinia amabilis** (Yoeuell's), a new and distinct variety, the ground colour being a remarkably pure white; the contrast is very striking between it and the scarlet throat, 3s. 6d. each. In fine variety, 9s. per dozen.

**Passiflora racemosa**, the scarlet, strong, 2s. 6d. each.  
**Hexacentris mysorensis**.—This fine new stove creeper, 7s. 6d. each.

## HARDY SHRUBS.

**Berberis Darwinii**, 12s. per dozen; *Fortunei*, 12s. per dozen; *dulcis*, strong, 4s. per dozen.  
**Bays** (sweet), fine plants, 2 to 2½ feet, 6s. per doz.; 35s. per 100.  
**Chimonanthus fragrans**, Seedlings, 4 inches, 12s. per dozen.

**Clematis azurea grandiflora**, strong, 12s. to 15s. per dozen; *Sieboldii*, strong, 12s. to 15s. per dozen; *Montana*, strong, 12s. per dozen; *flammula*, or sweet scented, in pots, 9s.  
**Escallonia macrantha**.—Strong plants of this most charming evergreen flowering shrub, 12s. per dozen; *monte-vidensis*, strong, 12s. per dozen; *organensis*, strong, 2s. 6d. each.

**Ilex Castanifolia**, strong, 3s. 6d. each; *Cunninghamii*, strong, 3s. 6d. each; *latifolia*, strong, 6s. to 3s. 6d. each; *Sheppardii*, fine strong, 1s. 6d. each; *taugo*, strong, 5s. each.  
**Jasminum nudiflorum**, strong, 9s. to 12s. per dozen; *revolutum*, strong, 12s. per dozen.

**Ligustrum ovalifolium**, new species, 12s. per dozen.  
**Passiflora cerulea**, strong, 9s. to 12s. per dozen.  
**Quercus Fordii**, 2 to 3 ft., 24s. per dozen; *Ilex Humel*, 2 to 3 ft., 30s. per dozen; *ballota*, 2s. 6d. each; *rotundifolia*, 2s. 6d. each.

**ROSES**.—*Queen Victoria* (Paul's), standard and half standard, 30s. per dozen; "Prince Albert", strong, in pots, 5s. each; standards and half standards, of best kinds, 15s. to 18s. per dozen; *dwarfs* on own roots, 6s. and 9s. per dozen.  
**Springa Emodi**, strong, from cuttings, 1s. 6d. each.  
**Wistaria sinensis**, strong, 12s. to 24s. per dozen.  
**Weigela rosea**, strong bushes, 2 to 3 feet, 9s. per dozen; *amabilis*, small, 3s. 6d. each.

**Yucca gloriosa superba**, strong, 60s. per dozen.

## IPSWICH NURSERY.

**WILLIAM B. JEFFRIES**, NURSERYMAN, SEEDSMAN, and FLORIST, in removing from the London Road to the extensive grounds on the Henley Road, which are known as the Ipswich Arboretum, situated within five minutes' walk of the centre of the town, begs to thank his numerous Friends and Patrons for the very liberal support he has received from them, since his taking the business of his Father, and trusts by his assiduous and unremitted attention to merit a continuation of the same.

W. B. J. begs to assure his friends that the terms upon which he has taken the above Grounds will enable him to supply all articles connected with the Nursery and Seed Trades at much lower prices than have usually been charged.

## HYACINTHS, DUTCH BULBS, ETC.

W. B. J. takes this opportunity of offering his extensive collection of Dutch and other Flower Roots, which have arrived in the best possible condition, and are now offered at the lowest prices at his Seed Establishment on the Corn Hill (near the Corn Exchange), where all orders for the Nursery are respectfully requested to be sent and will be punctually attended to.

## CHOICE HOLLYHOCKS, PANSIES AND OTHER HERBACEOUS PLANTS, BULBS, ETC.

**HOLLYHOCKS**.—The following fine varieties, in strong plants, well established in pots, 12s. per dozen varieties:—*Bicolor*, *Black Prince*, *Comet*, *Commander-in-Chief*, *Conspicua*, *Delicata*, *Eclipse*, *Fireball*, *Flower of the Day*, *Formosa Improved*, *Lilac Perfection*, *Magnifica*, *Magnum Bonum*, *Maiden's Blush*, *Mr. Charles Baron*, *Mulberry Superb*, *Obscura*, *Perfection*, *Princess Alice*, *Princess Helena*, *Princess Royal*, *Queen*, *Rosa Alba*, *Rosea Rubra*, *Snowflake*, *Venosa Rubra*, *Walden Gem*.

**PANSIES**.—The following choice kinds, at 10s. per dozen varieties:—*Alba Superba*, *Androcles*, *Blanche*, *Cesar*, *Calysto*, *Caroline*, *Commander-in-Chief*, *Crystal Palace*, *Drusilla*, *Duchess of Rutland*, *Elegant*, *Emma*, *Euphemia*, *Glory*, *Helen*, *Heroine*, *Indian Chief*, *Isabella*, *Junius*, *Lady Carrington*, *Lady Franklin*, *Lady Harding*, *Lord Jeffery*, *Marchioness of Lothian*, *Masterpiece*, *Miriam*, *Miss Talbot*, *Mrs. Beck*, *Penelope*, *Polypheia*, *Post Captain*, *Prince Arthur*, *Princess*, *Queen of England*, *Rubens*, *Sambo*, *Smolensko*, *The Rajah*, *Uttometer Hero*, *Vicory*, *Yellow Prince*.

**Daisies**, new Belgian, in 50 fine varieties, 4s. per dozen.  
**Dielstra spectabilis**, 9s. per dozen.  
**Funkia grandiflora**, 2s. 6d. each.  
**Hepatica**: single and double pink, and single blue and white, 6s. per dozen.

**Rockets**, double white, 15s. per 100; purple, 4s. per dozen, or 30s. per 100; crimson, 1s. 6d. each.  
**Oxalis rosea**, one of our prettiest hardy herbaceous plants, and nearly always in flower, 6s. per dozen; *floribunda*, 6s. per dozen.  
**Pæonies**, herbaceous, in 25 fine varieties, 12s. per dozen.

**Phloxes**, in numerous fine varieties, 9s. to 12s. per dozen.  
**Potentilla M'Nabiana**, and other choice kinds, 6s. per dozen.  
**Primrose**, double white, 4s. per dozen; double yellow, 4s. per dozen; double purple, 4s. per dozen; double lilac, 3s. per dozen; double crimson, 12s. per dozen.

**Silene maritima plena**, fine double white, 9s. per dozen.  
**Statice latifolia**, strong, 9s. per dozen; *psudo armeria*, 6s. per dozen; *maritima* rosea, very pretty and distinct, 6s. per dozen.  
Choice selection of Herbaceous Plants, 25s. per 100.

**Tigridia conchiflora**, the yellow spotted tiger flower, a very desirable summer and autumn blooming bulb—it makes beautiful beds, 15s. per 100.  
**Gladiolus insignis**, one of the handsomest of the genus; the flowers, which are produced freely, are of a glowing scarlet, suffused with purple, 24s. per 100.

**Lilium celestium**, a magnificent new species, with lemon-coloured flowers, 7s. 6d. each; *lancifolium album*, flowering bulbs, 9s. per dozen; 1. rubrum, flowering bulbs, 18s. per dozen.  
**Lily of the Valley**, strong roots, for forcing, 5s. per 100.

**TULIPS**, choice named kinds, viz.:—*Norwich Black Baguets*, *Rose Blanche*, *Gloria Mundi*, *Prince Regent*, *Firebrand*, *Trafalgar*, *Rising Sun*, *Pompe Funebre*, *Lord Nelson*, *Princess Coburg*, *Roi de Siam*, *Holmes King*, *Washington*, *Triumph Royal*, *Rose Nova*, *Rose Matilde*, *Duc de Bronte*, with many other fine kinds, 12s. per dozen. Fine mixtures, all from named flowers, 12s. per 100.

**CARNATIONS AND PICOTÉES**: beautiful Selections from their superb and extensive Collections, at 18s., 24s., and 30s. per dozen pairs; fine mixed, for borders, 9s. per dozen pairs. True Old Clove Carnation, 12s. per dozen pairs.

**PINKS**: 4 fine sorts by name, 9s. to 12s. per dozen pairs.  
**CHRYSANTHEMUMS**: the most choice and showy of the large and pom-pom flowering varieties, strong blooming plants, 9s. per dozen.

## FRUITS.

**APPLES**, standard, in choice variety, good heads, 9s. per dozen.  
" dwarf " " " 6s. " "  
" trained " " " 30s. "

**PEARS**, standard " " " 12s. "  
" dwarf " " " 8s. "  
" trained " " " 30s. "

**PLUMS**, dwarf " " " 9s. "  
" trained " " " 36s. "  
**PEACHES**, dwarf trained, in fine strong plants, 36s. to 60s.  
**NECTARINES**, dwarf trained, " 36s. to 60s.  
**APRICOTS**, " 36s. to 60s.

**CHERRIES**, standard, in fine variety " 12s. "  
" dwarf " " " 9s. "  
" trained " " " 36s. to 42s. "

**GOOSEBERRIES**, 25 of the finest varieties (good bushes), selected for size and flavour, 30s. per 100; 4s. per dozen.  
**CURRANTS**, improved large white Dutch, Black Naples, Ruby Castle (red), and Large Red Grape, 4s. per dozen; *Knight's Sweet Red*, 6s. per dozen.

## STRAWBERRIES.

The following are strongly recommended, and can be supplied, in strong plants, true to name:—

Per 100.—s.d. Per 100.—s.d.  
**British Queen** (Bates's fine variety), the largest and very best in cultivation 3 6  
**Cuthill's Prince of Wales** 5 0  
**Black Prince** 3 6  
**Myatt's Eleanor** 3 6  
**Globe** 3 6  
**Prolific** 3 6  
**Grove End Scarlet** 2 6

**RASPBERRIES**, *Fastolf*, 15s. per 100; *Large White*, 25s. per doz.; *large monthly fruiting*, 25s. per 100.  
**RHUBARB**, *Myatt's Victoria*, 9s. per dozen; *Royal Albert*, 9s. per doz.; *Linnæus*, 9s. per doz.; *Tobolsk*, 6s. per doz.

**SEAKALE**, extra strong, 2 years, 6s. per 100; 3 years, 8s. per doz. **ASPARAGUS**, extra strong, for forcing, 5s. per 100; 3 years old, 3s. 6d. per doz.; 2 years old, 2s. 6d. per doz.

\* Less quantities than those named above supplied at the same prices. The usual Discount to the Trade.  
Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or by any Railway Station within 150 miles of the Nursery.—Royal Nursery, Great Yarmouth.

**EARLY CABBAGE, SUPERIOR SORTS**.—Bedded Plants of *CARTER'S* *Perpetual* and *Reliance*, also *Imperial*, *Nonpareil*, *Deputy*, *East Ham*, and *Paragon*, 6s. per 1000, package included; packages of 5000 and upwards delivered, free of carriage, to London and to the Edenbridge station of the South-Eastern Railway. A remittance to accompany all orders from unknown correspondents.

Address, JOHN CATTELL, Nurseryman, Westerham, Kent.

## NOTICE.

**TO GARDENERS AND OTHERS**.—I would feel more than obliged to all parties forwarding goods to me, if they would in future enclose inside every package containing Fruit an invoice stating the weight, count, or measure, with sender's name and place of residence, as, in consequence of the multiplicity of goods I am daily receiving from all parts of England, Ireland, and Scotland, errors and mistakes frequently occur through the senders' omitting to enclose an invoice with their goods.—I am, yours obediently,

GEORGE TAYLOR, JUN., FRUIT SALESMAN.  
St. John's Market, Liverpool, Oct. 15.

## CARTER'S PROLIFIC RASPBERRY.

**JOHN CARTER, JUN., NURSERYMAN**, Keighley, begs to announce that he purposes sending out his **RASPBERRY** the first week in November, and has the most perfect confidence that it will give universal satisfaction to those who may favour him with their orders. As a Dessert Raspberry it is unrivalled, and when gathered in bunches has a beautiful appearance. It has been admired by all who have seen it growing, and the following opinions will testify to its merits:—

"If the Raspberry sent us some days ago be constant, and bears like the sample, it cannot fail to be an acquisition. If there be still any fruit, we should like half-a-dozen of the berries by post, in a little box, to see how the late ones come."—*Glenny*, in *Lloyd's Paper*, August 15, 1852.

"CARTER'S Prolific Raspberry has been exhibited to us previously to its coming out in the autumn: we named it from the extraordinary quantity of fruit, which was of high flavour."—*Glenny's Almanack*, 1853.

George Glenny, Esq., says—"CARTER'S Raspberry is a heavy cropper, a fine berry, and the plants that grew with us ripened all the fruit about the same size."—*Lloyd's Paper*, July 31, 1853.

"I have grown your new Raspberry sent me for trial, and think it quite an acquisition. It makes wood freely, and is certainly a most abundant bearer. The fruit is of good size, very fine flavour, and ripened equally. I consider it much superior to *Fastolf*."—*John Palmer*, *Annan*, *Dunfries*, August 4, 1853.

Orders sent out in the rotation received, and additional plants added to compensate for carriage. Price per 100, 5l.; per doz. 12s.

London Agents: Messrs. HURST and M'OLLEN, Seedsmen, 6, Leadenhall Street.

**GEORGE WHEELER, NURSERYMAN, Warminster**, Wilts, begs to offer the following, of which strong plants are now ready to send out:—

**CINERARIA CONSPICUA** (WHEELER'S), which obtained Certificates in April last at the "National," also at the Bath Horticultural Exhibition. The habit is good, dwarf and compact, producing a very fine head of bloom; flowers large, colour white, heavily tipped with rosy purple; will prove attractive in the greenhouse, and a very desirable exhibition plant. 5s. each.

**DIANTHUS WHEELERI**, a bright, rose-coloured, double morn. Pink, blooming profusely from May till September; universally admired, and considered the best thing of the kind ever offered. The Plants having been grown in the ground, could not be properly exhibited, or must have obtained certificates, 5s. each.

**CALCEOLARIA SEEDLINGS**, from G. W.'s fine collection sown this autumn, established in store pots, but for transit by post or otherwise the soil may be shaken from them without injury. 4s. per dozen.

**CHINESE LARKSPUR**, choice varieties, mixed, at 4s. to 6s. per dozen, according to age and strength of roots.

## SEEDS PER PAPER.

	s. d.
Calceolaria, from finest varieties	2 6
Cineraria, from a fine collection	1s. to 2 6
Chinese Larkspur, from finest varieties	1 0
Pansy, from named kinds	1s. to 2 6
Antirrhinum, from fine sorts	1 0
Sweet William, from double flowers	1 0
Hollyhock, from a fine collection	1 0
Ingram's hybrid white spine Cucumber	1 0
King of Cucumbers	1 0
Champion of England ditto	1 0
Trentham Hybrid Melon	1 0

Remittances expected from unknown correspondents.—Oct. 15.

## KNAP HILL NURSERY, WOKING, SURREY.

**WATERER and GODFREY**, Nephews and Successors to the late ROSEA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

**Araucaria imbricata**, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.  
**Cryptomeria japonica**, 2, 3, 4, 5, 6, to 8 feet.  
**Cedrus Deodard**, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

**Cedar of Lebanon**, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.  
**Cupressus macrocarpa**, or *Lambertiana*, 2, 3, 4, 5, 6, and 8 feet, all from seed.

" *Goveniana*, 2 to 3 and 4 feet.  
" *Funebris*, 2 and 3 feet.  
" *thyoides* variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

**Juniperus Bedfordiana**, fine plants, 3, 4, and 5 feet.  
" *Chinese*, 2, 3, 4, 5, 6, and 10 feet.  
" *repandus*, 3, 4, 5, to 8 feet.  
" Upright *Irish*, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.

" *Virginiana*, the Red Cedar, 4, 5, 6, and 8 feet.  
**Taxodium sempervirens**, 2, 3, 4, 5, and 7 feet.  
" *Yew*, common, 3, 4, 5, to 8 feet high.

" *Irish*, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.  
" *Gold Striped*, 1, 2, and 3 feet.  
" do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

" *elegantissima* (new striped), standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.

" *Davoston*, or *Weeping Yew*, fine standards.  
**Pinus Douglasii**, 3, 4, 5, and 7 feet; a few magnificent plants, 10 to 12 feet high.

" *insignis*, 2, 3, 4, 5, 6, and 7 feet; all from seed.  
" *cembra*, 3, 4, to 6 feet.  
" *Canadensis* (Hemlock Spruce), 3, 4, and 6 feet.

" *morinda*, 3, 4, and 6 feet.  
" *Menziesii*, 3, 4, 6, and 8 feet.  
" *cephalonica*, 3 to 4 feet.

" *Pinsapo*, large and handsome, 3 and 4 feet.  
" *Nonmarianus*, from seed, 1½ foot; a few larger, 2 feet.  
" *nobilis*, stout plants, with perfect heads, about 1½ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

**Thuja Arbor-vitæ**, American, 3 to 6 feet. We recommend this plant for hedges.  
" *Weariana*, 3 to 6 feet, one of the few really hardy and most useful evergreens.

" *aurea*. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

**Libocedrus chilensis**, 1½, 2, and 3 feet. This is a very distinct and beautiful plant of recent introduction. Our stock is large and good.

Independent of the foregoing we have very large holders of the most useful Evergreens, Dendroids and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.



**DUTCH ROOTS, GERANIUMS, ETC.**  
**RENDLE'S DESCRIPTIVE CATALOGUE** for the present Autumn is now ready, and can be had in exchange for one penny stamp. It contains descriptions of all the best Hyacinths, Tulips, Gladioli, and all kinds of Bulbs, as well as Geraniums and other Plants.

**COLLECTIONS OF BULBOUS ROOTS**, made up to suit various sized gardens, at 20s., 40s., and 60s. each. For varieties and quantities see front page of this Paper for SATURDAY, Sept. 24.

**GERANIUMS**—12 fine show flowers for 20s., or 20 for 10s. 12 second class varieties for 12s., or 20 for 15s. Purchaser's own selection (see List at p. 611, Sept. 24).

**FANCY GERANIUMS**—12 first class varieties for 20s., or 20 for 30s. 12 second class varieties for 15s., or 20 for 21s. **SCARLET GERANIUMS**—12 varieties for 12s., or 20 for 15s. Purchaser's own selection (see List at p. 611, Sept. 24).

**Trollope's Queen Victoria Strawberries** ... 7s. 6d. per 100. **Kidley's Goliath do.** ... 4s. **Cuthill's Black Prince do.** ... 4s. For descriptions of the above Strawberries, and for list of other choice varieties, see Advertisement, p. 611, Sept. 24. Orders above £2 will be delivered Carriage Free at any Railway Station between Plymouth, Puddington, and Birmingham, and to Cork, Dublin, and Belfast. Apply to **WILLIAM E. RENDLE & Co.**, Nurserymen and Seed Merchants, Plymouth.

ESTABLISHED NEARLY 70 YEARS.

**STRAWBERRIES.**

**FOUR NEW AND DISTINCT VARIETIES.**  
**NICHOLSON'S AJAX.**—Very large and handsome, most exquisite flavour, unequalled as a dessert fruit, and keeps well.

**NICHOLSON'S RUBY.**—Medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; also a good forer.

**NICHOLSON'S CAPTAIN COOK.**—A first-rate market fruit; colour scarlet, very large size, great bearer, and bears carriage well; plants remarkably strong and hardy.

**NICHOLSON'S BILL-BASKE.**—Nothing can surpass this fine fruit as a market fruit; in colour it is of a very bright scarlet; general shape round, gets very large, but never out of shape; excellent for preserving; a tremendous bearer, and will bear carriage a great distance. Plants very robust and healthy.

These splendid Strawberries have been admired by all who have seen them; the two first for their surpassing excellence as dessert fruit; the two latter for their size, colour, abundance, and other good qualities as market fruit.

Gentlemen, Amateurs, and Market Gardeners wishing to possess these valuable Strawberries, can now be supplied with all rooted Plants, by **WILLIAM NICHOLSON** only, at 1l. per 100; or 25 each of any two sorts for 12s. box included. Post Office orders payable at Yarn, Yorkshire. Egglecliffe, near Yarn, Oct. 15.

**BASS AND BROWN'S NEW AUTUMN CATALOGUE** is now complete. Copies supplied free for three penny stamps each. It contains a large number of the New Plants at reduced prices, comprising Geraniums and Cinerarias, of the best new varieties of October last, with finest of the older varieties; Azalea Indica, 50 varieties of the choicest; the best new uchiass, Verbenas, and Petunias; new and select Stove and greenhouse Plants; Plants selected for Winter and Early Flowering; Roses, in select collection, of about 300 best; new and select hardy Shrubs and Climbers; Conifers; new and other best hyacinthiums, Hollyhocks, Hardy Herbaceous and Rock plants, collection of new Dwarf Root Cistus, Choice Fruits, &c.

The **BLB and ROOT STOCK** consists of Gladioli in upwards of 100 superb varieties, choice Ranunculuses, Anemones, superb collections of English, German, and other Iris, fine imported Dutch Hyacinths, Narcissus; Early, Double, and Late tulips; Crocus, Lilies, Ixias, with a large collection of other roots. The Catalogue also contains a list of a few SEEDS FOR AUTUMN SOWING, comprising Geranium, Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Hollyhock, &c. &c., which have been carefully saved from our own superb collections, and can be highly recommended.

**CHRYSANTHEMUMS.**

A large stock of strong bushy plants for flowering this autumn. Best new large flowering varieties of last season ... 12s. 6d. Best new Liliputian varieties of do. ... 12s. 6d. 50 splendid varieties, including the above ... 40s. 6d. 50 splendid varieties, 30s.; 25 do. ... 17s. 6d. Our importation of Dutch Roots comprises collections of the best and most favourite sorts, and are very fine. Goods (not under 20s.) Free to all the Stations in London; and all orders of 40s. and upwards, Plants and Roots gratis to compensate for long carriage.

**BASS AND BROWN,**  
Seed and Horticultural Establishment, Sudbury, Suffolk.

**FOREST AND ORNAMENTAL TREES, SHRUBS, ETC.**

**JOHN PERKINS** begs to call the attention of those engaged in Planting to the undermentioned articles, and his stock in general. Owing to the plants having been frequently transplanted, they are all fine and well rooted.

**Araucaria imbricata**, 1 to 5 feet; **Abies cephalonica**, 1 to 4 feet; **L. Douglasii**, 1 to 6 feet; **do. Menziesii**, 2 to 4 feet; **do. nobilis**, 2 to 6 feet; **do. Nordmanniana**, 1 to 2 feet; **do. Pinsapo**, 1 to 3 feet; **do. Webbiana**, 1 to 3 feet; **Cedrus Deodora**, 1 to 6 feet; **Cedar Lebanon**, 1 to 8 feet; **Cupressus pendula**, 1 to 3 feet; **do. Lamartiana**, 2 to 6 feet; **do. torulosa**, 2 to 4 feet; **do. funebris**, 1 to 4 feet; **do. Goveniana**, 2 to 4 feet; **Cryptomeria japonica**, 1 to 5 feet; **Juniperus Bedfordiana**, 1 to 3 feet; **do. recurva**, 1 to 5 feet; **do. communis**, pendula, 1 to 4 feet; **do. English**, 1 to 5 feet; **do. Irish**, 1 to 3 feet; **do. excelsa**, 1 to 4 feet. **Taxodium sempervirens**, 2 to 6 feet. **Arbutus-vitis**, American, 2 to 8 feet; **do. Chinese**, 2 to 6 feet; **do. Silberman**, 2 to 6 feet. **Aucuba japonica**, 1 to 3 feet. **Rhodod.**, 1 to 5 feet. **Berberis aquifolium**, 1 to 2 feet; **do. dulcis**, 1 to 3 feet. **Laurel**, common, 1 to 4 feet; **do. Portugal**, 2 to 6 feet. **Cornus**, 1 to 4 feet. **Bux**, 2 to 4 feet. **Irish Yew**, 2 to 6 feet; **Andalus**, 2 to 5 feet. **Cornucaster macrophylla**, 1 to 3 feet. **English Oak**, 2 to 4 feet; **Turkey do.**, 4 to 6 feet. **Beech**, 2 to 4 feet. **Alder**, 2 to 6 feet. **Birch**, 2 to 4 feet. **Horse-Chestnut**, 2 to 6 feet; **Spanish do.**, 2 to 6 feet. **Ash**, 2 to 5 feet; **Mountain ash**, 1 to 5 feet. **Hornbeam**, 2 to 5 feet. **Privet**, 1 to 4 feet. From 100 to 5000 American **Araucaria**, 2 to 8 feet. 300,000 to 400,000 **Yew**, 1 to 2 to 5 feet. **do. Scotch**, 2 to 3 feet. **do. Spruce**, 2 to 6 feet. 200,000 to 300,000 one and two years seedling **Oak**. 4000 to 6000 fine bushy **English Yew**, 2 to 5 feet. One to two million **do. Scotch**, 1 to 2 feet. Fine standard **Ornamental Trees**. 4000 **do. Limes**, 5 to 10 feet. **Birch**. **Beech**. **purple do.** **Horse Chestnut**. **Spanish do.** **Elms**, **Oaks**, **Poplar**, **Aescia**, **Mountain ash**, **Planes**, &c.

A large Collection of Fruit Trees, which are remarkably fine, including of standard and dwarf trained and untrained Peaches, cherries, Apples, Plums, Pears, Apples, &c. Also an immense quantity of standard and dwarf Roses of the newest and finest in cultivation. Rhododendron and other American shrubs. Herbaceous and Alpine Plants for Rockwork, Greenhouse, &c.

In addition to the above-named plants, J. P. can supply all the best of Nursery Stock, Catalogues of which will be forwarded on application. Nurseries, Bedford Road, and at Wootton. Correspondence to be addressed to John Perkins, Nurseryman, Seedsman, and Florist, Market-square, Northampton.

**DELPHINIUMS.**

**NEW SEEDLING DELPHINIUMS.**—**DELPHINIUM ANNIEUM**; rich blue slightly intermixed with white, tinged with dark bronze, centre white (fine), 7s. 6d. each. **DELPHINIUM WOODSIDE**; dark double blue, tinged with purple (extra), 7s. 6d. each.

**DELPHINIUM WELTONI ALBUM**; white, flower form of Weltonia, habit of plant superior, erect and very compact (an acquisition), 7s. 6d. each. The above varieties allowed to be more double than any ever offered to the public.

**DELPHINIUM BRONZEUM**; a very fine blue with a tinge of lake in each petal, double (good), 5s.

**DELPHINIUM CÆRULESCENS ALBA-PLENO**, light sky-blue (novel), 7s. 6d. each.

**DELPHINIUM MARGINATUM**; single blue, with a deep belt of dark bronze round each flower (large), 5s.

**DELPHINIUM CŒRULEUM**; single, a fine sky-blue, very attractive, 5s.—The Set for 2l.

**D. Wood**, Nurseryman, Welton Nursery, near Brough, Yorkshire.—October 15th, 1853.

**TESTIMONIALS.**

"To D. W.—Your Larkspur flowers are all very beautiful, and apparently profuse bloomers."—Dr. Lindley, see *Gardeners' Chronicle*, July 31st, 1852.

"D. Wood's Seedling Delphiniums," see *Gardeners' Record* for Sept. 1852, Edited by Mr. J. T. Neville, Secretary to the Royal Society London Horticultural Society.

"See Delphiniums, W. Welton."—The *Midland Florist* for Sept. 1852, Edited by J. F. Wood, 3 H.S., page 277.

"Dear Sir,—Having seen your New Seedling Delphiniums when in flower, I have much pleasure in saying that they far exceed anything of the kind I ever saw; and having as well a fine habit, they cannot fail pleasing all who may purchase them. I am, dear Sir, yours truly, EDWARD HOLMES.

To Mr. D. Wood, Welton.

AGENTS: Messrs. FISHER, HOLMES, & Co., Handsworth Nursery, Sheffield, Yorkshire.

N.B. \* per hundred; \* per dozen.—**DELPHINIUMS**: the following sorts may also be had on reasonable terms, viz., \*Barlowi, \*Hulmi, \*Azurum, \*Azurum pleno, \*Weltonia, \*Wheeleri, \*Magnificum, \*Hendersoni, \*Grandiflorum, \*Mesoleucum, \*Elatum pleno and \*Siniensis.

D. Wood, Welton Nursery.

**NEW AND CHOICE**

**GERANIUMS, FUCHSIAS, AND CINERARIAS.**

**SAMUEL FINNEY AND CO.** have a large Stock of all the new and leading varieties, which they offer, in strong plants, at the undernamed prices:—

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Varities of 1851.—*Ambassador*, 1s. 6d.; *Arethusa*, 2s.; *Ariadne*, 2s.; *Beatrice*, 1s. 6d.; *Capella*, 1s.; *Chloe*, 1s. 6d.; *Chieftain*, 2s.; *Colonel of the Buffs*, 1s. 6d.; *Christine*, 1s. 6d.; *Commissioner*, 1s. 6d.; *Cynthia*, 1s. 6d.; *Enchantress*, 1s.; *Exhibitor*, 2s.; *Elise*, 1s. 6d.; *Ganymede*, 1s.; *Gem*, 1s. 6d.; *Generalissimo*, 1s.; *Herald*, 2s.; *Incomparable*, 1s. 6d.; *Lavinia*, 1s. 6d.; *Labiache*, 1s. 6d.; *Little Nell*, 1s.; *Magnet*, 2s.; *Major Dom*, 1s.; *Mochanna*, 1s. 6d.; *Monteith*, 1s. 6d.; *Painter Improved*, 1s. 6d.; *Purple Standard*, 1s. 6d.; *Purpurea*, 1s. 6d.; *Rubens*, 1s. 6d.; *Silk Mercer*, 1s.; *Shylock*, 1s. 6d.; *Tyrian Queen*, 1s.

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A choice collection of Hollyhocks, Pansies, and hardy Philoxes, at moderate prices.

S. F. & Co. have received a large importation of Dutch Flower Roots, which are in fine condition. Hyacinths, with names, from 6s. per dozen; ditto in mixture, colours separate, 4s. per dozen. A Catalogue of the above may be had on application. Remittances expected from unknown correspondents. Gateshead Nursery, near Newcastle-upon-Tyne.

**THE PERPETUAL TREE VIOLET, or DOUBLE**

**VIOLA ARBOREA.**—The original grower of this, the true variety of the above beautiful Violet, now offers it to the public; it has surpassed all others, and now stands without an equal for its size of flowers, fragrance, and perpetual blooming; and as a plant for the Conservatory or Greenhouse, nothing can equal it. Large plants, 6s. per dozen; smaller ditto, 3s.

**DOUBLE WHITE TREE VIOLET.**—This is also a fine variety, and resembles the other in many respects, with the exception of its colour. The stock of this is small, in consequence of the great demand for it last season; parties requiring plants should not delay their orders. 6s. per dozen.

**THE RUSSIAN SUPERB VIOLET.**—One of the finest of single Violets, large blooms, with long stems, and most delightful fragrance; will bloom well through the season if sheltered from the heavy rains and severe frosts during the dead of winter. Plants 3s. per dozen.

A TREATISE on the best and most effectual mode of cultivating the VIOLET, post free for 12 stamps, or sent gratis with all orders above 5s.

**OTHELLO CLOVE CARNATION.**—A limited stock of fine plants of the above beautiful dark Clove—colour and fragrance unequalled. 2s. 6d. per pair.

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**NEW CLOVE PRINCE OF WALES.**—A very striking variety, unequalled in colour, being a bright vermilion. 2s. 6d. per pair.

**GIANT SCARLET BROMPTON STOCK.**—Plants can now be had; they have always given the greatest satisfaction; will bloom next spring. 6d. per dozen, or 4s. per 100.

**SWEET WILLIAMS.**—Also a fine stock, consisting of upwards of 50 distinct and splendid varieties. 6d. per dozen, or 4s. per 100.

**SEEDLING ANTIRRHINUMS.**—saved from all the choicest, striped, and spotted flowers. 1s. per dozen, or 7s. per 100.

One dozen of each of the Violets, one pair of each of the Clove Carnations, and one dozen of each of the Brompton Stocks and Sweet Williams, with the Treatise on the Violet, will be sent, hamper and package free, for 1l.

**STRAWBERRY PLANTS**, of the following varieties, can still be obtained:—*Ajax*, 20s.; *Ruby*, 20s.; *Victoria*, 5s.; *Surprise*, 3s.; *Eleanor*, 3s.; *British Queen*, 3s.; *Alce Maud*, 3s.; *Proline*, 3s.; *Cromwell's Perfection*, 3s., hamper and package free. The whole or any part of the above will be sent on receipt of a Post Office order or penny postage stamps, which must accompany every order, when the Violets and Carnations will be sent package and postage free; the other plants hamper and package free.

EDWARD TILLEY,

Nurseryman and Seedsman, 11, Abbey Churchyard, Bath, Somerset.

**EARLY FLOWERS, adapted for Blooming in-doors**

and in the Borders, in the Winter and early Spring.—The Undersigned beg respectfully to intimate to the nobility, gentry, and the public that they have imported a choice stock of Dutch and other Flower Bulbs, of the finest possible quality, and take the liberty of offering the following assortment for 10s., viz.:—Half dozen best Hyacinths for Glasses, half dozen good Hyacinths for pots, 50 Crocuses (four separate colours), 50 double Snowdrops, half dozen double Van Thol Tulips, half dozen early Van Thol Tulips, one dozen double white sweet-scented Narcissus, half dozen double Jonquils, one dozen Winter Aconites, 12 splendid mixed Tulips, one dozen beautiful mixed double Anemones.

CLARKE & Co., Seedsman and Florists, 88, High Street, Borough, about 30 doors from London Bridge Railway Terminus.

**CHOICE PELARGONIUMS.**—A selection of 12, the best and most distinct varieties sent out last season, the set for 1l. 16s., or separately at the following prices:—*Albira*, 2s. 6d.; *Basilisk*, 3s. 6d.; *Galatea*, 3s.; *Heroine*, 3s.; *Kulla*, 3s.; *Leonora*, 3s. 6d.; *Novelly*, 3s.; *Optimum*, 5s.; *Oscar*, 5s.; *Portia*, 3s.; *Queen of May*, 5s.; *Zaria*, 3s. 6d.; healthy, strong, bushy plants.

A selection of older varieties, any dozen of the following for 15s., or separately at 1s. 6d. each, excepting the sorts priced:—*Arethusa*, *Cristine*, *Elise*, *Ganymede*, *Herald*, *Labiache*, *Magnet*, 2s.; *Magnificent*, *Mochanna*, *Pearl*, *Prince Arthur*, *Purple Standard*, *Flora*, *Emperor*, *Royal Standard*, *Virgin Queen*, *Volcano*, *Tronbadour*, 2s.; *Victory*. The usual discount to the trade taking a set or separately, excepting *Optimum*, *Queen of May*, and *Oscar*.

A Descriptive Catalogue of the above, and also his fancy Geraniums, will be ready in a few days and may be had on application. ISAAC DAVIES, Larkfield Nursery, Wavertree, near Liverpool.

**The Gardeners' Chronicle.**

SATURDAY, OCTOBER 15, 1853.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, October 18—Horticultural ..... 3 P.M.

THREE quarters of the current year have already passed by, and the general season of growth may now be considered nearly over. That the weather has been, in many respects, unfavourable to vegetation is well known; but it may be interesting to know its peculiar characters, so far at least as they are connected with the growth and ripening of crops. The latter cannot be perfect under a deficiency of temperature. Unusually cold seasons preceded periods of unusual scarcity, or famine, in times when cultivation was in a less advanced state; for then, we may presume, it was little known that plants required a certain amount of bottom heat for their roots, as well as atmospheric heat for their tops; and that, by draining and trenching, this requisite amount of bottom heat could be insured in ordinary seasons, and that even in bad seasons the otherwise extreme coldness of the soil would, by the same process, be somewhat mitigated. When we see good crops produced where scarcely anything could formerly be grown, by merely rendering the subsoil pervious to warm rain and air, and thereby affording heat for the roots—when we are aware that cultivated plants would not grow in soil constantly saturated with stagnant water, maintaining a steady coldness of 47° winter and summer, till drained, and then from the soil acquiring a temperature of 60°, crops grew luxuriantly, we must conclude that the temperature of the earth, as far as the latter is penetrated by the roots of plants, is an important consideration, and one which deserves more attention than it has hitherto received.

The following tables exhibit the temperatures of the air, and likewise that of the earth, in the present year, comparatively with that of their averages in other years.

Mean Temperature of the Air in the shade in the following Months, on the Average of 27 years (1826-1852), compared with the Mean Temperature of the corresponding Months of 1853.

	Jan.	Feb.	March.	April.	May.
Average 1826-1852	36.59	39.36	42.41	47.22	53.95
" 1853	40.85	32.53	37.41	45.44	51.27
Difference ...	+3.96	-6.83	-5.00	-1.78	-2.68

	June.	July.	Aug.	Sept.
Average 1826-1852	60.56	63.22	62.12	57.04
" 1853	59.16	61.94	59.69	55.45
Difference ...	-1.40	-1.28	-2.43	-1.59

Where the sign (+) is prefixed to a difference, it indicates that the temperature of 1853 was so much higher than the average; and the sign (-), the contrary.

Average Mean Temperature of the Earth, at 1 foot and 2 feet deep, from 1841 to 1852 inclusive, compared with that in 1853.

	Jan.	Feb.	March.	April.	May.
Average 1841-1852	40.33	40.53	41.61	46.55	53.90
" 1853	42.22	36.52	38.12	44.60	50.49
Difference ...	+1.87	-4.01	-3.49	-1.95	-3.41

	June.	July.	Aug.	Sept.
Average 1841-1852	59.47	62.62	61.70	57.99
" 1853	57.27	60.16	60.09	55.98
Difference ...	-2.20	-2.36	-1.70	-1.92

From the above, it appears that the mean temperatures of the earth and air were below the average in every month, with the exception of January. In remarking more particularly the peculiarities of the seasons, it may be observed, in the first place, that owing to the great quantity of rain which fell



in 1852, the ground at the end of that year was saturated with moisture. The mean temperature of last December was unusually high, being upwards of  $46\frac{1}{2}^{\circ}$ ; in other words, it was nearly equal to that of April, and was even a degree higher than that of April of the present year. It exceeded the mean of any December since 1806. The earth was also  $3\frac{1}{2}^{\circ}$  warmer than it usually is at that season. The temperature of January was also above the average. Thus, vegetation in these two winter months was in a warm, moist condition, which rendered it the more liable to be injured by the low temperature, averaging but little above the freezing point, to which it was exposed in February. A considerable quantity of rain fell in January, so that the ground was still kept in a very wet state; and in February it became very cold; and it continued so throughout March; and even in April it scarcely reached the point from which it fell in the previous December. In consequence of this cold state of the ground vegetation was greatly retarded, and much seed perished, so that the crops came up but thinly in many cases, although the seed was known to be good. Such things as Kidney Beans refused to vegetate, and rotted in the ground. May was not favourable; on the contrary the frosts, on several nights, were destructive to many things. The temperature on the night of the 10th was  $5^{\circ}$  below freezing. On the 9th of May the ground was exactly as cold as it was last Christmas. The temperature of June, as regards the atmosphere, was not so much below the average as that of the preceding month; but wet and cloudy weather prevented the sun's rays from heating the ground, and the latter was relatively colder than the atmosphere. The same remark applies to July. The first fortnight of August was finer, and although north-east winds were prevalent, yet the sun's rays warmed the ground so as to bring it nearer the average than it had been for the previous five months. When the earth acquires its average temperature in July, it affords heat to the atmosphere in August; but this was not the case in the present season to the usual extent, and accordingly it will be seen from the table that the air in August was much colder than usual.

It may be supposed that a few degrees above or below the average cannot make much difference as regards crops. A considerable variation from the mean, if only continued for a week, does not greatly affect vegetation, unless of a tender description; but a few degrees of variation from the mean, if continued for weeks and months, and always below, as in five months of the present year, does produce marked effects. We must remember that the hottest and coldest years differ in temperature not more than  $3^{\circ}$  or  $4^{\circ}$  from the mean. If we take, for example, the means of the last 50 years, we find that the year of highest mean temperature was 1834= $52^{\circ}.08$ , and the lowest 1816= $46^{\circ}.57$ . The former of these extremes is above the mean,  $49^{\circ}.66$ , scarcely  $2\frac{1}{2}^{\circ}$ , whilst the latter is below that mean very little more than  $3^{\circ}$ ; yet 1816 was a remarkably bad season. The mean temperature of its spring months bears much resemblance to that of the corresponding months of the present season.

	Jan.	Feb.	Mar.	April.	May.	June.
1816 .....	36.13	33.39	39.24	45.21	51.30	57.54
	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	59.74	59.00	54.21	49.95	37.26	35.89
1853 .....	40.85	32.53	37.41	45.54	51.27	59.16
	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	61.94	59.69	55.45	.....	.....	.....

These temperatures approximate more than those of any other for the same months during the present century; and it appears that February, March, and May, were this year colder than the corresponding months of the bad year 1816; but  $2^{\circ}$  warmer in June and July of the present year has produced a better harvest than that of the year referred to. About  $3^{\circ}$  of monthly mean temperature below the average, in four successive months, namely, June, July, August, and September, and after a late spring, occasioned in 1816 the worst crop that has since been produced. In March of that year the price of Wheat was 74s.; but in consequence of the deficient crop, it rose to 136s. per imperial quarter. This rise of upwards of 3l. per quarter, in addition to a previous high price, as there was no war, must be attributed chiefly to the  $3^{\circ}$  of deficiency in temperature in the four months above mentioned.

From these statements, the general character of the first nine months of the year, as regards temperature, will be readily understood; it corresponds with that of the worst of seasons, to the end of May; and then the weather improved so as to prevent the

serious consequences which must have otherwise been the result.

The following table exhibits the mean maximum,

Months.	1853.			1826—1852.		
	Mean Maximum.	Mean Minimum.	Amount of Rain.	Average Mean Maximum.	Average Mean Minimum.	Average Amount of Rain.
January ..	deg. 47.35	deg. 34.35	inches. 2.14	deg. 42.43	deg. 31.36	1.71
February ..	38.32	26.75	0.59	46.11	32.62	1.61
March .....	47.32	27.51	1.48	50.86	33.95	1.36
April .....	55.36	35.53	2.58	57.50	38.94	1.61
May .....	62.67	39.77	1.67	64.87	43.03	1.77
June .....	69.70	48.63	2.54	71.94	49.18	1.88
July .....	71.67	52.22	4.17	74.46	51.97	2.37
August .....	70.03	49.35	1.87	73.16	51.08	2.49
Sept. ....	65.00	45.90	2.41	67.42	46.67	2.56
Average ..	58.61	40.00	19.38	60.97	41.57	17.36

mean minimum, and the amount of rain in each month of the present year, up to the end of September, together with their respective means for the corresponding months on the average of 27 years, 1826—1852 inclusive. ||

#### INDIGOFERA DECORA.

AMONGST comparatively new plants there is scarcely one more useful for decorative purposes than this Chinese *Indigofera*. It soon forms a large specimen, and flowers abundantly for several months in succession.

Cuttings made of short-jointed bits of young wood in a half ripe state (which are readily obtained from growing plants in autumn), inserted in light sandy soil, and set in a close place, soon emit roots, and may be allowed to remain in the cutting pot until spring, or potted off and established in small pots as may be most convenient. In February, or as early in spring as convenient, place the young plants in a moist growing temperature of from  $50^{\circ}$  to  $60^{\circ}$ , and sprinkle them frequently with the syringe, to induce them to start into growth. As soon as active growth commences see to the state of the roots, and give a liberal shift, if the pots are moderately filled with healthy roots, say into pots two sizes larger; but unless the roots are in an active state defer potting until such is the case. Apply water cautiously for a fortnight or so, until the roots lay hold of the fresh soil, after which a liberal supply will be necessary, and the syringe should be used morning and evening to keep the foliage in a clean healthy state. The plants had better not be subjected to a higher night temperature than from  $50^{\circ}$  to  $55^{\circ}$ , and they should be removed to a cold frame as soon as the weather will admit. If the frame is placed so as to be screened from the mid-day sun, the plants will be less liable to the attacks of red spider, and unless such is the case, a thin shade should be thrown over the glass on the forenoons of bright days.

This *Indigofera* is a vigorous grower, and healthy plants will require a second shift; they will probably be ready for this early in June, and it should not be deferred after it is wanted, otherwise the growth of the plants will be checked, and it is desirable to have the pots well filled with roots before winter. Very little attention will be required in training the specimens in any desired form. The branches should be held up at regular distances apart, so as to admit light and air, and any shoot which inclines to take a decided lead must be stopped, so as to maintain a compact regular form of growth. After about the middle of August the object should be to ripen the wood, and to effect this it will be necessary to expose them freely to sun and air, and to lessen the supply of water at the root. When damp weather occurs, unless the wood is well matured, remove the plants to the front of the greenhouse, or to any airy position where the ripening of the shoots will be completed. Plants, the growth of which is properly matured, will winter safely anywhere out of the reach of frost, and a few degrees of this will not injure them, but improperly ripened wood is apt to damp off, therefore it is worth while being at some trouble to get the young shoots thoroughly matured previous to the damp foggy days of November. Water should be altogether withheld while the plants are in a dormant state.

In cases where it is desired to obtain large specimens without loss of time, the plants may be placed in growing circumstances early in spring, taking care to bring the soil into a moist healthy state, and to keep the foliage clean and healthy. By attention to potting, &c., during the season, as recommended in our last, large specimens will be obtained previous to winter. The treatment under which I have found full grown specimens to flower most profusely, and continue the longest in perfection, is to keep them dry at the root during winter, and till late in spring, and then thoroughly moisten the soil, letting the plants occupy a place in the closest part of the greenhouse, and moistening them over head frequently, until they commence flowering, which may be about June, or early in July, according to the time at which they are started into growth. By giving a liberal supply of manure-water during the period the plants are in bloom and keeping them in a close part of the flower house, they will go on growing and flowering in great perfection for some two or three months in succession, and few plants are more handsome than large well bloomed specimens of this *Indigofera*. A moderate shift should be afforded the specimens annually as long as this can be conveniently done; and when the size of the pots renders this impracticable the balls may

be reduced and the plants repotted in the same sized pots, using rich fresh soil. The best time for disrooting the plants is after their beauty is over in autumn, and they should be afforded a close growing atmosphere for a fortnight or so after potting, to induce the roots to strike into the fresh soil, after which they may be removed to their winter quarters.

Good rich turfy loam and decayed leaves form an excellent compost for the growth of this plant. The loam should be broken into moderately small pieces, rejecting all but the prime fibry portions, and be well intermixed with the leaf soil, adding about one part in four, and a proportionate quantity of sharp sand, according to the nature of the loam, and a sprinkling of lumpy pieces of charcoal or broken potsherds will also assist in keeping the soil open and ensuring perfect drainage. *Alpha*.

#### BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Continued from p. 629.)

SECTION D.—Mr. SOLLITT read a paper, prepared by himself, in conjunction with Mr. R. Harrison; *On the Diatomaceæ found in the vicinity of Hull*; showing that the fresh-water and marine Diatomaceæ were exceedingly numerous in this locality, the beauty of the varied forms of which were such as to delight the microscopist, and, at the same time, some of them are highly useful as forming that class of test objects for microscopes which are the best calculated of all others for determining the excellence and powers of object glasses. As test objects they were first discovered by the Hull microscopists,—and have now been adopted as such by all the microscopists not only in this but in all other countries. Mr. Harrison and Mr. Sollitt discovered the markings on those delicate siliceous coverings as early as 1841. It was shown that the markings on those shells were so fine as to range between 34,000 to 130,000 to the inch; the *Plurosigma strigilis* being the strongest marked, and the *Navicula Acus* the finest. It was afterwards pointed out that a large bed of fossil fresh-water Diatomaceæ, of at least 2 feet in thickness, had been discovered in Holderness,—and that in a submerged forest on the coast of Holderness numbers of fossil fresh-water Diatomaceæ had been discovered, although the sea flows over the part at every tide. The paper concluded by pointing out that, at least and upwards of 150 species of marine and fresh-water Diatomaceæ had been identified in the neighbourhood of Hull.—The reading of this paper was followed by a long discussion. First, in relation to the microscopic powers and the structure of the instruments employed by the Hull observers. Secondly, with regard to the nature of the lines found on the surface of the Diatomaceæ. Thirdly, on the question of the vegetable or animal nature of the Diatomaceæ. From the statement of Mr. Sollitt and Mr. Harrison, it appeared that the lenses which they had employed for the minute markings were object-glasses of Natchet's manufacture, the one-sixteenth and the one-eighth of an inch focal distance, with angles of aperture of  $115^{\circ}$  and  $105^{\circ}$  diameter; and for the larger markings one-fourth of Smith's, with an aperture of  $46^{\circ}$ . With these glasses they had detected markings whose interspaces numbered 130,000 to the inch. Mr. Sollitt regarded the lines as consisting of rows of minute tubercles, which gave the appearance of continuous lines.—Dr. Walker Arnott considered that these curious beings must now be regarded as plants.—Prof. Allman looked upon them as the starting-point of nature in which the mineral, animal, and vegetable laws of creation were struggling for ascendancy.—Mr. Sollitt and Mr. Harrison regarded them as animals, and quoted the opinion of Prof. Bailey of New York.—Prof. Bal-four referred to their resemblance to Desmidiæ, and the conjugation observed amongst them as conclusive proofs of their relation to the *Conferve*, whose vegetable nature no one doubted.—Dr. Lankester referred to Schleiden's objection, of their possessing a highly complicated structure, and pointed out their resemblance to the *Foraminifera* which all agreed to be animals. It had, however, been asserted that the Diatomaceæ possessed starch, and as yet this had not been discovered as a secreted product in beings recognised as truly animals, whilst starch was universally present in true vegetable productions.

*On Preserving the Balance between Vegetable and Animal Organisms in Sea-water*, by R. WARRINGTON.—The public were first indebted to Mr. Warrington for a statement of the conditions in which animals could be kept in fresh-water without changing the water. It is not sufficient that there be plants alone; but where the higher animals, such as fish, are kept, it is necessary that some beings should exist which will feed on the decaying vegetable matter. This desideratum is supplied by the various forms of phytophagous Mollusca. The author's success with fresh-water led him to try experiments with sea-water, and the results of his investigations were given in this paper. The most important fact established was, that marine animals could be kept in sea-water without changing in the same manner as in fresh. The conditions of the existence of sea-water creatures are, however, much more varied than those of fresh; hence the difficulty had been proportionally great in arriving at a successful issue. The nature of the plants in the first place is a matter of importance. The author found that the green sea-weeds answered better than the red or brown. In introducing animals they should be healthy and uninjured. Those



should not be put together which devour each other. Crabs, especially the common crab, are very destructive; so are gobies, blennies, and rock-fish. The sea-water should be kept of a proper gravity. It should be 1.026 at a temperature of 60°. Rain or distilled water should be added from time to time to supply any loss. All dead animal or vegetable matter of any kind should be removed.—Dr. Daubeny stated that he had erected some fresh-water tanks at Oxford; but the difficulty which he had to contend with was the growth of *Confervee*, which interrupted the growth of the other plants.—Dr. Walker-Arnott stated that he had no doubt the reason why the green sea-weeds answered better than the brown or red was that the latter were deep sea, whilst the others were shallow water plants. The brown and red sea-weeds also had a much denser tissue externally than the green sea-weeds, and did not grow so fast.

*On a Method of Accelerating the Germination of Seeds.* by R. HUNT.—The process consisted in covering the germinating seeds with glass coloured blue with cobalt. The author read a letter from the Messrs. Lawson, in which they stated that by allowing seeds to germinate under blue glass, they had succeeded in raising a larger number of seeds in a given time as well as producing germination in a shorter time.

(To be continued.)

## MANAGEMENT OF CIDER APPLE TREES.

(Continued from page 629.)

**FINAL PLANTING.**—Considerations relative to the Soil, Situation, Aspect, Distance between the Trees, Choice of Varieties, &c.—The soil most favourable to the prosperity of cider fruits is one consisting of clay, sand, and carbonate of lime in nearly equal proportions; yet they will grow in any land that is not very barren. Flinty soils suit the Apple; its fruit in such is of very good quality; the Pear likes a deep, moist soil.

The most convenient place for the establishment of a cider orchard is near the homestead. When we can choose the aspect, a south one is to be preferred in cold lands, but east and west are more suitable in light and dry ones, although in situations open to the west, the wind from that quarter often proves injurious to the trees. We should avoid planting too many fruit trees in arable land, because they prove an obstacle to cultivation, and because the trees are often bruised and excoriated by the implements; yet this does not prevent them from prospering better there than in orchards that are not cultivated; but this is to be ascribed to the manuring and stirring of the soil. In dry and barren lands the trees are often planted rather closely together, with the view of shading the crops from the burning rays of the sun; and also because they do not usually attain any considerable size. But in strong clay lands, planting in the cultivated fields should in general be confined to the sides of the roads and to the boundaries. There, as in the rich pastures of Bray, shading the soil is avoided, because the alimentary products and fodder are more to be regarded than the produce from the trees. In these cases, the Apple trees are generally from 50 to 65 feet apart, very rarely so close as 40 feet. Planting good land too closely only causes a loss without compensation. The first cost is greater; there is a marked diminution in the under crops; and the trees depriving each other of air and light at their sides, do not produce fruit except on their upper parts; the result is, that the quantity of fruit is not proportionate to the number and size of the trees.

With regard to the selection of varieties, 1st, Those that flourish best in the locality and which there produce the best cider are to be preferred. 2d, Trees that ripen their fruit at the same time should be planted together. 3d, Those which have tender flowers or that blossom early should be planted in sheltered situations, because, if otherwise, the flowers are liable to suffer from late frosts. 4th, We should plant the sides of roads and arable land with varieties, the branches of which grow upright, and not with those that have spreading heads.

**Preparation of the Soil.**—Trenching the whole of the ground to be planted would be a very beneficial operation, at least for orchards, as it would allow the roots to spread readily in all directions; but as fruit trees are planted so far apart, this would prove very expensive. The holes should be broader than deep, and as wide at bottom as they are at top. They should not be less than 6½ feet in diameter. The depth should vary from about 2 feet to 2 feet 8 inches, according to the nature of the soil, for it would be hazardous to make a deep hole in thin land having a bad subsoil, because the hole being of course filled with good soil the roots would soon penetrate amongst it to the bottom of the hole; they would then be inclosed as if within the impenetrable sides of a vase; and in consequence of this the tree would stop growing, and a progressive decline would follow, because when roots are deeply situated it is very difficult for them to reascend to the proper level. In low grounds, subject to inundation, it is advantageous to make the holes deep, and to fill them almost entirely up with chalk lumps, or small stones; thorns are laid on these, then earth, or turf, with the grassy side downwards, so that the lowest roots of the trees are nearly on a level with the surface of the ground. The foot of the tree is surrounded with a hillock, or mound of earth, of the same diameter as the hole, and of sufficient thickness; this is formed with the earth previously thrown out of the hole. In order to prevent the sides of the mound from slipping, it is well to cover it with turf.

When an orchard is to be planted, or where there are many rows, the quincunx arrangement is always the

best, because, by that mode, each tree is equi-distant from its neighbours, and each has an equal portion of air and light; it is also the best for lining in all directions. The rectangular mode of planting (Fig. 2) is only fit for avenues. The quincunx arrangement is based on an equilateral triangle, at each angle of which a tree is planted. To trace out on the ground the lines for the quincunx, which must not be confounded with the rhomb, we first form a base line by means of poles, or with a line; on this line pegs are fixed at the places where we intend to plant, at the distance determined on, say at 42 feet. In order to mark out the second line we take two measures, each 42 feet long, placing the end of one of them against the first peg in the first line, as at *a*, and the end of the second against the second peg, *b*; we then bring the two measures together at their other ends and a peg is put in at the point where they meet, at *c*. The three pegs thus form an equilateral triangle. This operation is repeated at the other end of the first line, and the two pegs last put in give the second line, which is then filled up like the first with pegs, 42 feet apart. The whole of the ground being thus marked out, we obtain the result shown in Fig. 1. Each tree is equi-distant from the six adjacent trees surrounding it, which cannot be the case either in the rectangular or in the oblique square form.

[Note.—In the Quincunx mode of planting, it will sometimes happen that the distance between the rows

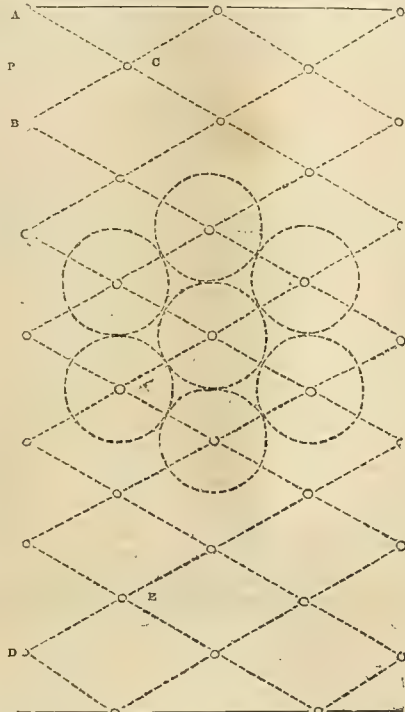


FIG. 1.—PLANTATION IN QUINCUNX.

running parallel to AD is determined; and sometimes the distance of the trees in these rows, as AB is fixed. It is necessary to know, from having one of these distances given, how to find exactly the other. We must

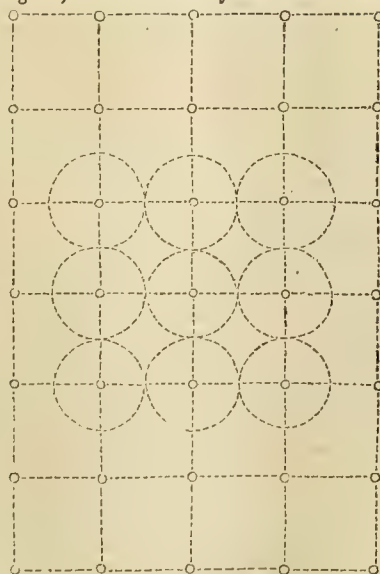


FIG. 2.—PLANTATION IN SQUARES.

repeat the word—exactly; for, supposing the row should contain as many as 50 trees, and the distances AB, or CP, should be only half an inch wrong, some trees, or even rows, would be two feet out of their right position. The trees could easily be placed so as to line in one direction, but this being done, it would be seen that they were, in consequence, put quite as much out of line in

another direction. Stake after stake may be altered, to an indefinite period, without forming correct lines, if a wrong principle has been adopted in starting. To prevent such confusion, to save time and expense, and to make sure of staking out the whole satisfactorily, the following will prove very useful.

1. The distance CP between the lines AD, CE, being given to find the distance AD between the trees in the line AD.

$$CP^2 = AB^2 - \left(\frac{AB}{2}\right)^2 \quad \text{This reduced becomes}$$

$$4CP^2 = 3AB^2$$

Hence the rule: multiply the square of the distance CP by 4 and divide the product by 3; the quotient is the square of the distance AB. Or, to the square of CP add one-third thereof, the sum is the square of AB.

2. The distance of the trees in the line AD being given to find the perpendicular distance CP between the lines AD, CE.

Multiply the square of AB by 3, and divide the product by 4; the quotient is the square of CP. Or, from the square of AB subtract one-fourth thereof, the remainder is the square of CP. [R. T.]

It will be readily observed from the annexed diagram, that in square planting, a tree neither is nor possibly can be at an equal distance from all those which surround it; and that when four trees grow till their branches cross each other on four opposite points, there is at the same time a large space left elsewhere unoccupied between these trees.

To mark out the holes, we take a piece of cord, at one end of which we make a loop which is put on a peg where a tree is to be planted, and then fastening a pointed peg on the other end of the line, at the distance of the semi-diameter of the hole, we trace a circle with the pointed peg, which circle is the circumference of the hole. It is advantageous to make the holes some time before planting, and to leave them open, so that the earth may benefit by the action of the air. This operation should always be performed in dry weather; each kind of earth should be laid in a separate heap at the side of the hole, and so as not to interfere with the lines of the plantation; that is to say, the earth should be laid in the four angles formed by the crossing of the two principal lines, and not in the direction of those lines.

**Filling in the Holes.**—Where the soil is light, we may fill in the holes a considerable time before planting. The case, however, is different with regard to clayey soils, because the season of planting (November and December) being generally rainy, the soil recently replaced in the hole absorbs and retains the water, thus forming a sort of puddle in which it would be improper to plant; whereas by remaining in conical heaps on the sides of the hole, it is never saturated with wet, it dries quickly, and becomes as much divided as its nature will permit. We therefore ought not to fill the holes in this kind of soil until the very day in which we plant.

In order to form a drainage in the holes made in clayey soils, it is proper to put in the bottom Furze, Brambles, hedge prunings, or other brushwood, and sometimes old plaster and mortar, more or less pulverised, covering it with turf if it can be got. These not only facilitate the escape of water, but they also ameliorate the soil.

The Furze and brushwood are in course of time reduced to a layer of mould, which is only an eighth part of their original thickness, and as the earth which is above also settles a sixth or a tenth part of its thickness, allowance must be made for these circumstances in planting, otherwise the tree will eventually sink too low, and it is always better to plant too high than too low, because the roots strike down much more readily than they come up to the proper level again. If the sinking of the earth and brushwood cannot be well estimated, a circular mound of 16 or 20 inches in diameter should be left undisturbed in the middle of the hole. This mound is brought down to the depth at which it is intended to plant the tree, and the brushwood and earth are then filled in, and neither the mound nor tree will participate in the sinking that ultimately takes place.

(To be continued.)

## Home Correspondence.

**Variegated Leaves.**—If variegation proceeds from a disease in the plants, the following account of a variegated Holly shows that some plants fatten pretty well in their illness. I cannot ascertain the age of the tree, but the circumference of the stem, one foot from the ground, is 5 feet 6 inches; and six feet from the ground, 4 feet 10 inches; diameter of the branches, 30 feet; and height of the tree 35 feet. It would have been larger if it had got fair play, but it is much injured by its neighbours, which are two large trees, namely, an Ash and an Elm. P. Mackenzie.

**The Stanwick Nectarine.**—My experience of this Nectarine being in unison with that of Mr. Rivers, I beg to lay it before you, this being the first year in which we have obtained any fruit from it. I had a small tree under pot culture, in an orchard-house, the blossoms on which were plentiful this spring and set well, but all with the exception of five dropped off in the stoning. These have swelled to a good size, but, unfortunately, all of them began to crack in the beginning of last September. About the middle of the same month I had the plant removed to a Vinery, where the fruit appears to be arriving at maturity, but, of course, very much deformed by cracks, which continue to increase as the ripening proceeds. However, I have been fortunate



in obtaining one perfect fruit from a bud which I inserted in an old Peach tree in a Peach house in 1851. I had a fine shoot in 1852, and an abundance of blossom this spring, four of which set, and the fruit swelled to a large size, but in the process of stoning all dropped off but one. This grew large and handsome, agreeing with Mr. Rivers' description of its form, and my employers described it as being a fruit of the very finest quality and the most delicious flavour—even surpassing, in these respects, anything of the kind they had ever tasted before. *James Napier, Corehouse Gardens, Oct. 6.*

**Pear-pecking Birds.**—The blackbirds in some parts of the country are working mischief freely this season among the Pears that are ripe, and others that are not ready for gathering. A neighbour of mine shot in a very short time eight blackbirds that were making sad havoc among his Jargonelles; there were plenty of birds left, but they became rather shy in approaching the tree where so many of their companions paid their reckoning so suddenly. *P. Mackenzie, West Pleam, Stirling.*—With me, near Tamworth, blackbirds not only peck my Pears, but eat them half away, unless prevented by nets propped from the wall by sticks a foot long. Plums, too, unless protected in the same way, are devoured wholesale. *D., October 11.*

**The Holly Tree.**—I remember many years ago, when I read the lines by the late laureate on the Holly, that I went and examined a considerable number of old Hollies, and I found leaves near the ground "smooth and unarm'd" as a Laurel leaf, and many again "wrinkled and keen" 30 feet high. *P. Mackenzie.*—I have lived the greater part of my life in the midst of forest scenery, and my experience induces me to differ from your two correspondents who have written at p. 646 respecting the Holly tree. It is quite true that the Holly is sometimes furnished with spiny leaves above the reach of cattle, and it is also very probable that a variety may occasionally be found in which the whole plant is less prickly than common, but this is most probably owing to some local cause. There are at this time dozens of trees standing on Epping Forest, and particularly on what is called the Upper Forest, in which the leaves of the lower branches are abundantly set with spines, whilst those on the higher boughs are furnished with only one, and that at the point of the leaf; these leaves are less undulated at the margins than the lower ones, and the whole appearance of the upper part of the tree is distinct in a striking degree from the lower or under part, partaking somewhat of the character of *Ilex barbaricus*. I do not think that the formation of fruit has any effect whatever on the character of the leaves, for I have seen small bushes, say from 4 to 10 feet in height, literally covered with berries, and the trees mentioned above bear fruit annually both on the upper and lower branches indiscriminately and plentifully. I have sometimes remarked specimen trees of the Holly planted on lawns, and in hedges, and kept trimmed to a certain shape to retain their spring leaves to a considerable altitude—but may not this be attributed to the pruning? *J. R., Hammer-smith.*

**"Life of Man"** (see p. 648).—When I lived in Hampshire the *Tigridia pavonia* was frequently asked for by this name, and it became quite a custom to speak of it as the "Life of Man." *William Dean, 5, Blenheim Place, St. John's Wood.*

**Red Hamburg Grape** (see p. 630).—The Hamburg Grape, when grown under glass, may or may not become black, according to circumstances. Heat, light, and moisture, with an abundant supply of healthy food for the roots, will produce an exuberant development of both bunch and berry, the resulting effect of which will be a thinness of the skin, a juicy but less firm pulp, and when fully ripe a full compliment of sugary matter; but there will be a deficiency of colour; the Grape will be what is called Red Hamburg, instead of possessing the Sloe-like bloom of the black. That the berries of the Hamburg Grape when grown in perfection are black there is now little doubt. I have been acquainted with a Vinery for these 30 years past, in which I have observed many good crops, but never until this season have the Grapes been really black, and such as the Hamburg will always be if the conditions necessary are observed. To have the Hamburg Grape black and well bloomed there must be a circulation and change of air in the house to a greater extent than is generally allowed—not by fits and starts admitting cold draughts here and there to lower the temperature, so that the thermometer may indicate a certain degree of heat, as is too frequently the case; but a steady, equable, and imperceptible circulation throughout the house, by whatever means obtained. Certain it is that red Grapes may be approved of by many, and considered equal to black; but the development of black colouring matter and a fine bloom are attributes of the Hamburg Grape which must always be present as evidences of high cultivation when sent to an exhibition. *Tassel.*

**High-dried Potato Sets.**—Although many have given you the result of their trials in Professor Bollman's treatment of Potatoes, it may not be uninteresting to become acquainted with the experience of others. I informed you, I believe, before, that I had placed mine in two separate portions for three weeks and ten days on the hot-house flue, and when absolutely dry they were planted out about the 1st of July; that they came up very well certainly, not less so than could have been supposed to be the case with Potatoes repeatedly deprived of their shoots to preserve them as sets so late in the season. About the same time all the growing Potatoes hereabouts were affected, these exhibited unequivocal signs of malady, and lost the whole of their

tops, and all now examined have the tubers badly diseased, to the full as much as those near at hand, with the exception of a few planted in sheer coal-ashes. I regret extremely that I did not close cover some with hand-glasses in time, before attacked, considering that it would have placed them in a totally different state from those in forced frames, which of necessity are repeatedly exposed. This I hope to be able to do next year, and I wish others to do likewise as a means of proving if the state of the atmosphere has anything to do with it. *C. P., York.*

**Meeting of the Village Horticultural Society at Thornham Hall, Suffolk.**—The year 1853 will be memorable in the annals of bad weather. Two feet of snow in May can be borne as a natural curiosity, which one expects to see once in life, and to ponder upon as something most wonderful among meteorological phenomena. But it requires all our patience and love of country to enable us to bear a summer without sun, and an autumn of wind and rain—cold, bitter, miserable, drizzling, unmistakable wet. Englishmen are always grumbling, say our mercurial neighbours across the channel, about the weather. I believe the charge to be a just one; but I will venture to say that in the year of our Lord 1853 we have had good reason for grumbling. If you will be good enough to imagine a day of interminable wet, with a constant cold, driving wind, you have a correct impression of the 4th of October, the day fixed upon for a *fête de jardin* at Thornham Hall, the seat of the Right Hon. Lord Henniker. Founded upon the same plan as the Hitcham Society, that at Thornham has risen up to be a child of goodly stature, bidding fair to rival its parent in the race of usefulness and rational enjoyment; and notwithstanding the adverse elements, its meeting on the 4th was as successful as any of its predecessors, while it was rendered still more instructive by an excellent lecture from Professor Henslow. Two tents and the quadrangle of the house abutting on the garden were devoted to the exhibitions of the day. In the quadrangle, which I will notice first, were arranged the productions of the members, not being cottagers, who on these occasions break a lance with each other. In this department Dahlias, Roses, Verbenas, and Zinnias, among the flowers, were conspicuous, and many of them excellent specimens for the season. The first prizes in each were carried off by the Rev. T. L. French, the Rev. T. Sill, the Rev. J. Beddingfield, and the worthy rector of the parish, the Rev. James Reeve. The devices in flowers were very superior, and deserve especial notice. In the centre of the table the arms, crest, and motto of Lord Henniker were beautifully worked out in flowers of the proper colour, by Miss Western—this obtained an extra prize, that given by the society having been carried off by a beautiful model of a garden with rocky scenery, woodland bridges, old stumps covered with Ivy, and an arbour of shrubs containing a pair of real, live doves! producing a novel and very pleasing effect. Next to this was a wax figure of Flora, most gallily dressed, with flowers in her hand, which she was offering as stated by an inscription below, to "Professor Henslow, the orator of the day." I must not omit to notice a very pleasing nursery and boudoir, with cradle and baby and all, which was exhibited by the Hon. Miss Henniker Major; and kites, baskets, &c., shown by the Hon. Major-Helen and Edward Henniker, each trying to be the gayest among the gay. The first of the two tents was devoted to the exhibition of the cottagers' productions, and it is here where the success of the society is mainly tested. I was especially glad to find a manifest improvement in the specimens of vegetables. Potatoes, spite of disease, were shown in fair condition. The flowers are beginning to appear something like showable specimens, and two or three prizes were given as an encouragement to future exertions. The second tent contained most of the specimens mentioned as being in the museum marquee at Hitcham, kindly brought over by Professor Henslow for the occasion. In addition there were some beautiful French ornaments and magnificent cases of foreign birds and shells exhibited by Lady Henniker—some water from the River Jordan and a bamboo net by the rector, Mr. Reeve, to whose exertions the society is very much indebted. There were also suspended in the tent admirably executed drawings of Lord and Lady Henniker, and their four children, done by Herr Von Fischer, who has been staying in the house for this purpose. Round the inside of the tent there were also hung a series of drawings by Mr. and Mrs. Charles Bree, illustrating, on a very magnified scale, the insects which attack the Wheat plant, with the larvae of *Cecidomyia Tritici*—the Wheat midge, and the *Ichneumonidae*, which are so effective in destroying this great pest. After the judges had finished their duties, and the visitors, who despite the rain were a goodly number, had done theirs by inspecting and criticising their productions, the cottagers were taken into the museum marquee to hear Professor Henslow's *lecturette* upon the various things exhibited. Commencing with the minerals, and describing from specimens on the table their various conditions as metals, oxides, and salts, with how to find them, and what uses to apply them to, he proceeded to the botanical department—seeds, fruits, barks, &c., and terminated with insects and their transformations. Mr. H. occupied about an hour in a clear, instructive, and very pleasing exposition. A few words from Mr. Reeve, and a kind and humorous speech from Lord Henniker, closed the proceedings in this tent, the lateness and dampness of the day preventing a promised description of the Wheat midge from Mr. Bree. The prizes in the cottagers' tent were now delivered by Lord and Lady Henniker. Spades, rakes, forks, hoes,

and hats to the men, in addition to the money prizes, and gowns and bonnets to the women, were freely distributed. Lord Henniker then again addressed them most kindly, and was succeeded by Dr. Colenso, the Bishop (designate) of Natal, who with his lady was a visitor in the house. Dr. Colenso first spoke of their obligation to those who kindly instituted these pleasing gatherings—then exhorted them to good conduct in life, and after some most feeling and appropriate allusions to the connection which subsisted between their earthly pursuits and the great end and aim of all our ambition—the attainment of happiness hereafter, he spoke briefly of the great missionary work he had undertaken, which was soon to land him thousands of miles from his native home into the land of the savage and the heathen; and promised if it pleased God to spare him to bring with him where he returned something to exhibit at a future meeting. This concluded the routine business of the day. I need not say that the rites of hospitality were most elegantly and bountifully dispensed by the noble host and his lady. The union of a scientific with an horticultural exhibition is quite new, and I trust will find many imitators. The "lecturette," as Mr. Henslow terms it, is a pleasing addition to the amusements of the day; it serves to divert the attention when the more practical horticultural exhibition has been well examined. Perhaps a word or two about the scene of the day's amusement may be interesting. Thornham Hall is a handsome pile of building, almost rebuilt by the present lord. It consists of two wings joined together by a long corridor or picture gallery. The north wing contains entrance hall, study, library, and drawing-room; and the south wing, the dining-room, and a most magnificent saloon, occupying entirely the end of the house. It is in white panel and gold with beautiful mouldings, and is fitted up and finished with much taste and elegance in the style of Louis Quatorze. The house stands in an entrance park of several hundred acres, well wooded with fine and venerable Oaks, among which—with all honour to the noble lord be it said—the hawk and the owl are permitted to spend their lives unscathed by a keeper's gun or trap. The gardens are laid out with exquisite taste in the Dutch style, the situation being flat. A month ago the various beds were sparkling with beauty, and the contrast of colours had a most pleasing, and I was going to say, enchanting effect. There is no style of gardening half so brilliant and effective as that by which large masses of fine colours are brought into contrast. There is also a large arboretum occupying several acres, and planted with some of our rarest Pines and shrubs, intersected with alleys of soft green velvety well mown turf. P. Douglas, among the well grown trees, is very conspicuous. The gardens and conservatories are under the management of Mr. Perkins, who is a very intelligent and obliging person. The church of Thornham, which is seen from the house, has been recently most beautifully restored at his lordship's expense. Lord Henniker has represented the county in three Parliaments, and stood two severe contests. He was one of the few members who, having become convinced of the wisdom or necessity of Sir R. Peel's policy, though representing a Conservative constituency, resigned his seat and retired into private life, an act which was never properly appreciated by the Conservative party in the county; and it is a singular illustration of the mutability of things—I was going to say of the fickleness of men—that the seat vacated by Lord Henniker is now filled by a gentleman who voted for a repeal of the Corn-laws. *C. R. Bree, P.S.* Since my last communication (see p. 646), I learn with pleasure that the Rev. H. Kirby, of Great Walsingham, has established a village horticultural society in his parish, and that his meeting this year was attended with great success. In the same communication please to make the following corrections:—For Miss Henslow read "Misses Henslow;" for Centripeds read "Cirrhipeds;" and for skulls read "shells;" or I fear the rev. gentleman will be accused of getting specimens in his churchyard. *C. R. B.*

**Sulphur v. Vine Mildew.**—As it appears that mildew on Grapes is still spreading through the country, I am anxious to bear testimony to the efficacy of sulphur as a preventive, and also a cure for this very troublesome disease. Last year it made its appearance here, for the first time, and being quite unexpected, made some progress before it was perceived; after, however, a good deal of trouble and anxiety, I succeeded, principally by dusting, in saving the greater part of the crop. This year, however, as a preventive, I syringed all my Vines, just previous to their expanding their bloom, twice over with a strong mixture of sulphur and water, and with the exception of two or three bunches, all my Grapes have been entirely free from its attacks during the season. The following facts are therefore, I consider, fully established. 1. That sulphur is a certain remedy for mildew after it has made its appearance, but that there is considerable trouble in its application. 2. That it is a sure preventive, with but little trouble, provided it is applied with the syringe, previous to the blooming season. 3. That little or no injury is caused to the Vines by its application when mixed in water. *A. Saul, Castle Hill.*

**Timber Felling.**—If old Evelyn had been alive at the present day, I think Mr. Preller's invention would have pleased him highly, for he seemed to think that Oak felled over late, and when the sap begins to get forward, is very subject to the worm; whereas, being cut about mid-winter, it neither casts, rifts, nor twines. Happy, therefore, were it for our timber if some real invention of tanning, without so much bark, were to become



universal, that trees being more early felled, the timber might be better seasoned and conditioned for its various uses. *P. Mackenzie.*

**Oak and Apple Tree Disease.**—I have not observed the particular disease to which your correspondent alludes, in this neighbourhood, or in Berkshire, but here many of the Oaks, *Quercus pedunculata*, have diseased leaves, the under part being more or less beset with scales, and the leaves so affected become spotted and yellow, whereas the Turkey Oak is quite free from this disease. And whilst on this subject I remarked in June the leaves of the Hawthornden Apple becomes spotted with dirty black spots, every other kind being free from it in the same locality. As the fruit advanced in growth it became spotted also, and not so large as usual, and what appeared very singular, a tree grafted with two kinds of Apple, the Hawthornden only was affected. These are the facts; is it that the leaf of the Hawthornden is more tender than that of other species, or what is the cause? *T. C. Brown, Cirencester.* [No doubt the "scales" on the Oak leaf are the well known galls called Oak spangles. What may have happened to the Hawthornden Apple tree we cannot judge.]

**Tree Labels.**—What is the best article to affix to trees in an arboretum or pinetum, to give the name, native country, estimated height in feet, or other particular feature which each tree might possess? Does slate cut into wedge-shaped slips answer well, or does it lose the paint? Cast-iron tallies with a slip of glass in the face look well, but I fear the putting, &c., will soon expose the paper behind to the action of the weather. I should be obliged by some of your correspondents giving the results of their experience on the matter. *A. F. G.* [We cannot answer this question. But we understand that a new kind of label will be exhibited by Mr. Branstons at the next meeting of the Horticultural Society.]

**Swallow Pear.**—The tree which produces the Swallow Pear is *Pyrus edulis*, which is of the family to which the Mountain Ash belongs, and on which it can be grafted. I have often eaten the fruit in Sicily, and I can assure you it is very delicious when ripe. I have four or five small trees in my garden (two of them raised from pips), which stood the greatest frosts for the last two years without the least protection. These trees are more ornamental than the Mountain Ash, and I much wonder why they are not cultivated in this part of England. The fruit is shaped like a Pear, and nearly as large as a Medlar. When unripe its juice is very astringent and sour. It is gathered green, and in the course of a month or so it gets brown and ripens. Can your correspondent inform me in what town of the west of England he saw the fruit, and whether it was sold cheap or dear? *J. W. H., 31, George's Road, Liverpool.*

**Late Peas.**—These may still be obtained, but with me they have not done well these two or three years past. The time of sowing has, however, little to do in the matter, as I sowed a row of Knight's Marrow about the 3d of August last, and they are now covered with good Peas, which in a few days will be fit to gather, while from those of last year, sown in the beginning of July, I never gathered a Pea. *Cambridge, Oct. 12.*

**Pears.**—A few years ago I planted a garden with the best sorts of Pears, and they are gradually coming into bearing. Last year Jersey Gratioli bore, but the fruit, instead of ripening, turned black in the centre and rotted. This year they have not rotted, but instead of being "honeyed" are so watery and tasteless as to be utterly useless. Rousselet de Rheims, though well coloured, has rotted like a Medlar without ripening at all. Will the bad season account for this, or does it arise from the fact of my garden being about 2° colder than Chiswick? Perhaps they are varieties unsuited to cold situations. Williams' Bon Chretien has been excellent this year, and in former years Thompson's and Marie Louise have ripened perfectly. [The bad season has probably been the cause of your want of success.] Cobbett (no great authority) speaks of the Long Island Autumnal Pear, and the L. I. Perry Pear as the two best he ever tasted. Allow me to ask whether the Horticultural Society has proved them, and if so, with what result? *X.* [Cobbett's Long Island Autumnal Pear, and his Long Island Perry Pear were never in the Society's collection, at least under these names. Mr. Cobbett states in his "English Gardener" that he brought cuttings of them from America; but nothing has been heard of the trees in this country.]

**Watery Pine-apples.**—Can any of your correspondents inform me why my Pine-apples are full of stagnant water? They have been under my care six months, during which time I have paid them every attention. They have been moderately watered once in six days with rain-water, impregnated with rabbit's dung. The greatest evil in their treatment has been bad crocking. A few days ago I cut a Queen, weighing 2 lbs.; I found it to be hollow, and to contain a common winged glass of water. This fruit had been cut from the plant 14 days, and had been hanging up in a cellar. I have cut several others previously to this one in a similar condition. What can be the cause of the mischief? *A. Suberger, Stafford.*

**Trout Spawn and Sugar Maple.**—I should be glad to know if there are any persons in the west of England who would undertake to send trout spawn properly impregnated to a given direction.—Would not the sugar Maple tree which grows in Canada grow in England? And if not, would it yield sugar? [It is hardy, but does not thrive, owing to want of summer heat.]

**The Climate.**—Can any of your readers inform me whether it is possible that the continued dull cloudy weather and remarkable absence of sun, which are now experienced, can in any measure be caused by the

number of railways now intersecting the country. The clouds of steam which are continually pouring out, night and day, all over the country, seem to me to cause so much moisture in the air that I have often wished to be satisfied on this point, and it does not appear that persons in foreign countries, where the railroads are scattered over the country at much greater distances, have observed the power of the sun to be weakened of late, which it certainly is in our own climate. *G. L. E.*

**Cuthill's Black Prince Strawberry.**—On the 17th of May last you inserted a few practical remarks I wrote regarding the value of this Strawberry as a good sort for forcing, as well as being a most abundant bearer and of good flavour. I am very anxious to make a few more remarks, feeling convinced they will prove acceptable to those who are interested on this point. After gathering a very good crop from the plants I forced in the spring, I turned them into the open ground; they went on well, and at the beginning of September most of the plants bloomed freely, and on Friday, the 30th Sept. I put on my employer's table a "large" dish of Strawberries, similar in size, colour, and almost equal in "flavour" to those I gathered in the early part of the season. There is at this moment abundance of blossom, fruit ripe and ripening; but as we have had a few frosty nights, I have now placed glasses over the plants, and have no doubt I shall gather several more dishes before the end of October. *Thos. Webb, Gardener to Sir Jasper Atkinson, North Frith, Hallow, Kent.*

**"Ne Plus Ultra"—a fine Late Broccoli.**—Pre-eminent among the few really superior new vegetables which from time to time come before the public, stands this new Broccoli, being by far the best variety of that esteemed vegetable that has yet come under my notice; and possessing as it does all the good qualities which its name implies, I feel I shall be doing the public a service by making its merits more generally known. For the last three years I have grown this sort along with others of known excellence, with the same unvaried result in favour of the "Ne Plus Ultra," and during the last year, a season of unparalleled fatality to Broccolies, whilst others were killed this sort stood uninjured, producing its fine heads in May and June, equal if not superior to other sorts in favourable seasons. The chief merits of this Broccoli consist in its being very hardy, possessing a dwarf habit, with large and compact rich cream-coloured heads, which are protected by ample smooth glaucous foliage, and it has the richest flavour in the whole tribe. Need I say more than this, that it possesses all the finest qualities of the far-famed Penzance Broccoli, in addition to a hardness which has long been a desideratum in that otherwise excellent sort. No garden, however small, should be without it. *H. Mitchell, Tremorah Gardens, Plymouth, October 3.*

**Law of Lopping.**—In your Paper of Saturday last (Oct. 8), you inform a correspondent that, after notice given, he may remove the overhanging boughs of his neighbour's trees. Such is the common-sense view of the case; but, query, is it law? I understand that, at a late trial at Doncaster, it was held that, if a man wants to build a wall, he may in so doing cut away overhanging boughs; but, if they merely injure him by their shade, he has no remedy but an action on the case—a remedy worse than the disease. *X.* [We have no doubt that the law is as we stated. If our correspondent will turn to our vol. for 1851, p. 483, he will find what we think is perfectly conclusive. As country trials do not generally find their way into legal reports, we know nothing of the Doncaster case, concerning which we should be greatly obliged for some information.]

## Notices of Books, &c.

**Botanical Expedition to Oregon.**—The committee have issued a thin 4to pamphlet, consisting of two leaves of letter-press, and five good plates, explaining the names, &c., of the seeds in the last consignment from Mr. Jeffrey. The plates represent cones and leaves of the Coniferous plants; respecting which we must remark that "Pinus Murrayana Oreg. Comm. (!)" is *P. muricata*, and "Picea lasiocarpa" *Abies amabilis*. The others were previously unknown, with the exception, perhaps, of "Thuja Craigiana Oreg. Comm.," which must be compared with *T. gigantea* of Nuttall. It is true that Sir W. Hooker and Dr. Lindley are stated to have pronounced it new; but, we presume, they merely intended to say that it is new to gardens. Our own herbarium being inaccessible just now, we are unable to examine the question. For the same reason we are obliged to leave as we find them the other new names, published under the authority of Oreg. Comm., whoever that gentleman may be. It appears that the managers of Mr. Jeffrey's expedition are desirous of engaging his services for another year, and subscribers are invited to signify whether the proposal is acceptable to them or not.

**BOOKS RECEIVED.**—*Bees, their Habits, Management, and Treatment.* By the Rev. J. G. Wood. Routledge, 12mo., pp. 114.—*Moore's Illustrations of Orchidaceous Plants.* Part II.—*The Chemist.* New Series, No. 1; published monthly. Higley. Among other useful papers in this number may be named "Demonstration of the Capabilities of the Fire Annihilator," "Girardin on the Guanos of Commerce," and a sharp and not over-fair attack upon the scientific witnesses examined in the late celebrated Torbancill case, in which it was attempted to determine whether a certain mineral was coal or not, without settling in the first instance what is meant by the term coal.

## New Plants.

12. *Scheeria Mexicana.* *Stemmen in Bot. Mag. t. 4743; alias "Achimenes Scheerii Hort. Germ."*

Under this name there has appeared a figure of a very handsome stove herbaceous plant, with the habit of an Achimenes. Mr. Frederick Scheer, after whom it is named, presented tubers to Kew and the Horticultural Society, in both which establishments it has flowered; he had received them from Chihuahua, in Mexico. It is a very handsome plant with rich purple stems, deep green serrated leaves purplish underneath, and single axillary flowers as large as those of *Digitalis purpurea*. The corolla has a white tube and a rich violet coloured border divided into five rounded nearly equal denticulate lobes.

We doubt whether the plant ought to be separated from *Gloxinia*, to some reputed species of which it is very nearly related, as for instance *G. Sarmentiana* of Gardner and *G. Antirrhina* of De Candolle, also a Mexican plant, with which the subject of this notice ought to be compared.

13. *ALONSOA ACUTIFOLIA.* *R. and P., Bentham in D. C. Prodr., X. 250.*

To this seems referable a half-shrubby greenhouse plant, of which seeds from Bolivia were presented to the Society by J. B. Pentland, Esq. It is very like the old and well-known *A. incisefolia*, from which it differs in having the anthers about equal in length to the filaments. The flowers are bright scarlet, and render it a species worth growing. Its stems are from 1½ to 2 feet high; the leaves pale-green, narrowly lanceolate, simply and sharply serrated. The flowers are in long, loose, terminal racemes. *Hort. Soc. Journal.*

14. *ONCIDIUM HARTWEGII.* *Lindl. in Pl. Hartw. p. 151.*

A plant presented to the Society by Mr. Skinner, under the name of *O. micranthum*, has proved to belong to this species, found by the collector whose name it bears on rocks near Loxa, in the month of July.

It is a straggling plant, with the habit of *O. alissimum*. The pseudo bulbs are deeply and ruggedly grooved; the leaves are about 1½ inch long, broadly lanceolate, and very much shorter than the long, narrow, racemose panicle. The flowers are small, brownish, with some yellow spots, especially at the angles of the lip. The crest of the lip bristles with fine stiff white hairs, by which circumstance, among others, it is known from *Oncidium deltoideum*. *Hort. Soc. Journal.*

15. *SPECULARIA PERFOLIATA.* *Alph. De Cand. Mon. Camp. p. 551.—Campanula perfoliata Linnaeus.*

This annual has been raised in the Garden from seeds purchased of Mr. Carter, as a species from California, which country, in common with a large part of the American Continent, it inhabits. It is a weak glabrous plant, with long trailing stems, and cordate, amplexicaul, sharp-pointed, crenato-dentate leaves. The flowers are axillary, sessile, deep violet, but small, fugitive, and unattractive. It has no importance in horticulture. *Hort. Soc. Journal.*

## FLORICULTURE.

**CULTURE OF THE GLADIOLUS.**—The genus *Gladiolus* now comprehends many brilliant species and varieties, and is fast increasing in interest with the floral world. The variety of colours, together with the beauty of its varied stripes and markings, and its graceful habit, recommend it as well worthy the attention of the florist or amateur. Like most bulbous plants, *Gladioli* thrive and flower with less care than most florists' flowers. Being comprised of early and late kinds, they blossom at various seasons; the earliest sorts commence flowering in June when planted in the open air, and many of the late kinds continue in blossom up to the very approach of winter. They are perfectly hardy, and may be grown in any common garden soil not retentive of moisture; but should the soil be heavy where they are intended to be planted, it should be removed to a depth of about two feet, and replaced by a light rich soil, composed of a mixture of sandy loam and leaf-mould, or sandy loam and peat, allowing six or nine inches for drainage. The early varieties, which flower in June and July, are best planted in October and November; the later sorts may be put in from November to January or February, and the varieties of *Floribundus* and *Gandavensis* from January to March. The *Colvilli* kinds come very early into flower; they are of taller growth than others of the early sorts, and are of erect, slender habit. They include *Colvilli*, *Colvilli blandus*, *Colvilli superbus*, *odoratus*, *tristis*, and others; they are succeeded by a more numerous class, which generally commence flowering about two weeks later; the latter are composed of varieties varying from a foot to a foot and a half in height; they comprise great diversity of colours. Of these, the following are very beautiful and showy:—*Albus*, striped with bright pink on a clear white ground, and having lemon spots. *Curviflorus*, rose-colour, with white and lemon stripes. *Dobri*, a fine rich crimson scarlet. *Herberti*, deep rose, with white and crimson stripes. *Hubranthus robustus*, fleshy pink, with white and crimson stripes. *Insignis*, a very large flowering variety, of a rich rose-colour. *Loddigesii*, a fine deep pink striped with crimson and white. *Minerva*, beautiful deep rosy red striped with white, and continues to flower longer than most of the early kinds. *Rex rubrorum*, a comparatively new variety, of a rich dark colour, with beautifully expanding petals and fine-shaped flower. *Venus*, delicate cream-colour, beautifully



marked with pink. The following varieties are later, and mostly commence flowering about the end of July, or in August; they are of stronger habit than the preceding kinds, and exceedingly rich, though not so varied in their colours as the earlier sorts. They produce a longer succession of flowers; many of them throw up lateral spikes of bloom to the latest period of autumn; and vigorous plants, lifted and potted, continue to bloom during the winter. Of the above character are:—Prince of Wales, a very splendid variety, of a rich scarlet colour. Queen Victoria, scarlet and crimson. Specious, scarlet striped with white. Vitellinus, bright rosy scarlet, with white stripes. Formosissimus, rich crimson striped with white. Ramosus, shaded rose, large and fine. Robin Hood, clear pink, with white stripes. Rosa Mundi, rose striped with white, and having a purple shade. The varieties of Floribundus, Gandaveusis, and other late tall-growing varieties, chiefly come later into flower than most of the above. Of these, Splendens is a very noble variety, of a rich orange scarlet, with larger flowers than Gandaveusis. Psittacinus sanguineus is a good dark one. Brechlyensis is another excellent addition to this class. For pot-culture the Gladiolus is very suitable, making a beautiful show among other plants in the greenhouse or conservatory, and, where a large collection is kept, some may be had in flower nearly all the year round. In potting, the roots should not be cramped; they require a fair portion of pot-room. Sandy loam and peat, or leaf-mould, or any light rich soil, the pots being well drained, suits them well. When first planted, as is the case with most other bulbs, they will not bear forcing; they should be allowed to progress gradually, by placing them in a cool frame or pit, and keeping the soil in a tolerably dry state till they have made considerable growth; after which they may be brought into the greenhouse, or where they are required to flower. They make fine specimens when planted several bulbs in a pot. This lovely tribe of plants opens a wide field for the hybridist, and the amateur would find it an interesting engagement, in which his skill and time might be richly rewarded. In endeavouring to obtain crosses, the choice should not only be directed to the colour and size of the flowers, but chiefly to their expanding habit and breadth of petals; for although there are many fine sorts which do not possess each of these latter qualities, yet they should be the points to be aimed at in our progress towards the improvement of the tribe. Seedlings of the early varieties usually flower the second summer after sowing, and the later varieties the third. *S. Brown, Sudbury, Suffolk.*

**DOUBLE ANEMONES.** *G. A. Messrs. Tyso* say the soil for these should be a friable loam, in which gritty particles abound. Decayed turves form an excellent basis for compost. The manure to be added should be vegetable, in preference to animal, and be incorporated with the soil rather than deposited in a layer below the tubers. There are two seasons for planting, viz. the middle of October and the end of January. The early vegetation of such roots as are left in the ground would intimate that the former is the most natural season, and undoubtedly October-planted tubers make stronger plants, throw up more flower-buds, flower earlier, and when the season is favourable, mature finer blossoms than those planted in spring. The main drawback is, that the blossoms expand before frosts have ceased, and hence a larger amount of care and protection is requisite. A bed planted the first week in October, 1849, was in beautiful bloom the 12th of May, 1850; and on the 16th of that month the thermometer, only a few yards distant, registered 25°, which would have ruined the blossoms had they not been sheltered. Make a bed of your prepared compost in a sheltered spot in the garden, where the subsoil is pretty well drained. Three feet four inches will be found a convenient width, and at least 15 inches in depth. Protect it from heavy rains, so that it be tolerably dry when required for planting. Rake the surface level, and mark the bed in cross rows. Plant five roots in a row, which will allow 6 or 7 inches apart. As the tubers are varied in form and size, the hand or a trowel should be used to make the holes, 2 inches deep, and large enough to admit the root to rest evenly on the soil, avoiding much pressure, as the limbs of the tubers are often slenderly attached to the crown, and are easily broken off. Strew over the surface of the bed 2 inches of half-decayed leaves, for a protection against frost; but as the plants come up, attention must be given to liberate the rising foliage; the decaying leaves matted together by rains will sometimes obstruct and injure it. As the leaves and flower-stems protrude through the ground in a double or folded form, they disturb the soil, and the surface around the plants should be eased, broken fine, or pressed, as may appear needful. Should the protecting materials be thought untidy, as the spring advances, they may be carefully drawn off, and a top dressing of short decomposed stable dung and leaf-mould applied, which will be useful in nourishing and sustaining the plants.

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

In order to complete the hardening and ripening of greenhouse plants, air should have free entrance on all favourable occasions, regulated so as to avoid draughts, which, under any circumstances, are injurious; dry weather should also be taken advantage of to clean the surface soil of pot plants, and to wash the outside of the pots, to promote free evaporation from the soil during damp weather; great attention should likewise be bestowed in keeping the shelves, stages, and paths free from dirt, decayed leaves, &c. These little attentions to order will give the house an agreeable look at a season when flowering plants are getting scarce. The conservatory and stove creepers trained under the roof will require an additional cutting in, to allow more light to pass to the plants underneath; such as have done blooming may be well thinned out at once, and the remaining shoots tied somewhat closer together. Hardenbergias, Kennedys, and other early spring flowering creepers, should, however, not be disturbed

at this season, or it will materially diminish their beauty in spring. Before putting Gloxinias, Achimenes, and similar habited plants to rest, let each plant be labelled, that no confusion may arise when they are wanted for potting in the spring; all of the above keep much better in the pots in which they grow, and should be placed to winter in a room or shed, where there is no danger of frost. Gloxinias, and some Gesneras, in fact, require a moderate temperature to winter in, and should be frequently looked at, to see that they are free from dampness, which often destroys the best bulbs. Keep only moderate fires to the stove by night, and endeavour, by a low night temperature and liberal admissions of air by day, to harden the plants sufficiently to carry them through the winter without excessive fire-heat. Bring on Chrysanthemums; they will now require liquid manure frequently; thin out the terminal and lateral buds, so as to produce a succession of flowers. Allow them a light situation, that the blooms may expand freely and come a good colour.

#### FORCING DEPARTMENT.

**VINERY.**—If Grapes are expected to be ripe by the end of March, or beginning of April, no time should be lost in closing up the house, premising the border has been covered with some dry, non-conducting material this fortnight past. The stems should be dressed, if not previously done, with the composition above noticed, and tied in regular order to the trellising, unless in the case of young Vines (which, however, should never be forced so early, if it can be avoided), whose upper buds are apt to break before the lower ones; and which, in consequence, should be kept to nearly a horizontal position, till the buds are all evenly started. Fires will scarcely be necessary the first fortnight, but close early in the afternoon on sunny days, to assist the night temperature. Use the syringe freely, particularly when the house is closed in the afternoon, to create a damp atmosphere in the evening. When pot Vines are started, instead of permanent ones for the first crop, they may (after being dressed), be plunged into a pit or deep frame, and have the advantage of dung linings to swell their buds; a very slight bottom heat will be useful at first, but allow it gradually to decline, as the buds swell, or a check will occur when they are removed to their fruiting house. **PEACH HOUSE.**—The early house may now have the necessary pruning, preparatory to putting the sashes on early next month. The other houses should be untied and exposed to the weather, unless they are for the present used as shelters to some description of plants; where such is the case, as much air as is consistent with the safety of the plants should at all times be kept on. To grow Cucumbers through the winter, a good command of heat and light is essential. The winter plants should now be progressing fast. Keep the bottom heat steady at 90°, and the thermometer may reach that point during bright sun; 70° should be the maximum night temperature. In giving air, avoid letting currents of cold air come in contact with the foliage, but try to keep up a gentle circulation; and stop every appearance of mildew by sulphur. The boxes or beds should occasionally have a slight surfacing of turfy loam, to encourage surface roots; water with clear soot or diluted fowl-dung water each alternate time, using it at the temperature of the house.

#### FLOWER GARDEN AND SHRUBBERY.

In most localities the beauty of the flower-garden will have become greatly impaired. Proceed with potting such plants as it is desirable to preserve; and if practicable, a little artificial heat should be applied, to help them to make root before winter. In general a show of spring-flowering plants is fully as acceptable as the more gaudy plants of summer; and steps should now be taken to fill up the beds as they are cleared, for the purpose of contributing to the enjoyment of spring. A miscellaneous mixture of dwarf early-blooming shrubs, perennial plants, and bulbs, is most commonly planted; but in regularly laid out, or geometric flower-gardens, the disposition of colour should be carefully considered, as there is an abundance of spring-flowering plants and bulbs to form a rich and varied display, if properly arranged and carried out. Lawns will at this season require daily sweeping, to present anything like neatness; roll constantly, wherever the turf is hollow, to keep a firm sward. Well clean the gravel-walks for the winter, and afterwards let them be well rolled, that the water may pass freely off the surface. All operations of planting, re-laying turf, and border-making, should be proceeded with, whenever the weather may permit.

#### COTTAGERS' GARDENS.

The taking up and storing away the various winter crops is now the principal thing to be attended to. When that is accomplished let the cleared ground be ridged, or roughly dug, in order to expose as large a surface as possible to the mellowing influence of the winter's frosts. All weeds and vegetable refuse should be cleared away to the manure heap. By this means the ground is rendered much neater, weeds are thus prevented from seeding, and consequently much labour is saved next year. Advantage should also be taken of fine days, of which many can scarcely be expected after this time, to clean every corner of the garden against winter. Let the flower border be stored up and neatly raked over; remove decaying blooms from Dahlias. If fruit is not already got in, look sharply after it; little will be gained after this time, but much lost by allowing it to remain much longer upon the trees. The best season for planting fruit trees is as soon as their leaves have fallen, provided the soil is sufficiently moistened to admit of the trees being taken up.

#### STATE OF THE WEATHER NEAR LONDON.

For the week ending Oct. 13, 1853, as observed at the Horticultural Gardens, Chiswick.

Oct.	Month's Age.	BAROMETERS.		TEMPERATURE.					Wind.	Rain.
		Max.	Min.	Of the Air.			Of the Earth			
				Max.	Min.	Mean	1 foot 2 feet 3 feet deep.			
Friday..	7	29.418	29.359	56	47	51.5	50.3	54	S.W.	.12
Saturday	8	29.475	29.469	60	41	50.5	52.9	54	N.W.	.46
Sunday	9	29.743	29.586	62	38	48.5	52	54	S.W.	.40
Monday	10	29.836	29.697	62	48	55.0	52	54	N.	.05
Tuesday	11	29.717	29.657	58	42	50.0	53	54	N.E.	.12
Wednesday	12	29.684	29.634	57	49	53.0	54	55	E.	.19
Thursday	13	29.714	29.664	58	50	54.0	53	54	E.	.08
Average ..		29.692	29.585	59.0	44.5	51.8	52.7	54.2		1.02

Oct. 7—Hazy and damp; fine; rain.  
 8—Rain; fine; thunder and lightning, 4 to 6 p.m., with heavy rain.  
 9—Foggy; fine; clear at night.  
 10—Foggy; very fine; rain.  
 11—Fine; uniformly overcast.  
 12—Rain throughout; heavy rain at night.  
 13—Overcast; hazy; rain.  
 Mean temperature of the week equal to the average.

#### STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending Oct. 27, 1853.

October.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 16	58.3	41.1	49.7	11	0.52 in.	1	1	1	1	1	1	1	1
Mon. 17	58.2	41.8	50.0	8	0.13	1	1	1	1	1	1	1	1
Tues. 18	58.1	42.5	50.3	13	0.35	1	1	1	1	1	1	1	1
Wed. 19	59.6	39.6	49.6	11	0.14	1	1	1	1	1	1	1	1
Thurs. 20	59.3	40.7	50.0	12	0.34	1	1	1	1	1	1	1	1
Friday 21	58.4	39.7	49.5	11	0.61	1	1	1	1	1	1	1	1
Satur. 22	58.1	44.4	51.3	17	0.50	1	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 21st, 1830—therm. 73 deg.; and the lowest on the 21st, 1842—therm. 20 deg.

#### Notices to Correspondents.

**ASPARAGUS:** *R. H.* Certainly sea-weed is not necessary. All that need be done is to imitate it. Rich vegetable mould, and an occasional watering with water as salt as the sea, and not much more so, are sufficient. We prefer the latter to heavy doses of salt to be washed in by rain.

**CHAMOMILE:** *W. M.* We do not know why Chamomile roots, in two places in different parts of England, have never produced flowers, although every means have been tried to induce them to bloom, while in other places (not far distant) they have bloomed luxuriantly without any care at all. Perhaps some of our correspondents may be able to explain the matter.

**DRIED PLANTS:** *E.* The best substance for fixing Ferns in a book is thin carpenter's glue.

**EDGINGS:** *G. Minnett.* Hogg's edging tiles are very substantial looking, and have a good form. So far as appearance goes there is nothing to object to; quite the contrary. But out of 20 specimens furnished to the Horticultural Society by the inventor himself, six gave way during the last mild winter. Thirty per cent. of loss, under circumstances by no means trying, destroys altogether the apparent value of this kind of edging.

We can offer no opinion respecting the reason why they do not stand; we can only report the fact as known to ourselves.

**GRAPES:** *J. B. Yes.*

**HYBRID MELON:** *Mr. H. Deagrie,* of Tring Park Gardens, has sent for opinion a Melon, obtained by crossing the "Cabul and Tretham Hybrid." It is a fine-looking yellowish fruit, not unlike the Tretham, and of very good quality, sweet, delicate, and tender.

**INSECTS:** *E. L.* Wash your cages with spirits of turpentine from time to time, and drip oil into the crevices. *M. L. V.* The insects which have injured the young shoots of the Pinus insignis are the common sawfly *Hydrangia piniperda*, which feed upon the young wood of the shoots, which should be laid open as soon as they appear to be infested, and the beetles killed. *W.*—In consequence of Mr. Westwood's continued absence from England, several entomological queries must remain unanswered till next week.

**MCGILSHAN'S APPARATUS.** If *Newcastle on Tyne* will have the goodness to write to Mr. McC., Sculptor, Edinburgh, he will be able to gain the information he seeks. We have heard nothing of the apparatus since March last.

**NAMES OF FRUITS:** Received, *W. W. M., W. A. Shem., T. G. 1.* Yellow Ingestrie; 2, unquestionably the true old Golden Pippin; 3 is not; and 4 is the Downton, sometimes called the Golden Pippin, and Knight's Golden Pippin; but *The Golden Pippin* is the one you sent labelled No. 2. *Dalla.* 1, Golden Reinette; 2, 7, Court of Wick; 3, Minshall Crab; 5, Braddick's Nonpareil; 6, Margill; *E. W. S.* 2, Winter Queen; 3, Ross Nonpareil; 6, London Pippin; Knight's Monarch is not ripe, but appears to be correct.

**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time. *Chatsworth.* The plant which you received in September, 1852, as *Nymphaea* is quite different from the magnificent species so named in the *Botanical Magazine*. It appears to be merely a form of the very inferior *N. scutifolia*. The Cattleya is *C. superba*.—*Reader.* Vallota purpurea. *Z. N.* Maxillaria squallens.—*F.* It is named correctly.—*Enquirer.* It is not determinable. Dry a specimen neatly now that it is in flower, another when the fruit is quite ripe, and then send them to us with an exact account of the place whence the plant came. You shall then have an answer.—*Harold F.* Phalaris canariensis.—*J. S.* Plants without flowers cannot be named; 2 is, however, *Rhus baccata*. Heaths may be struck at any time when you can get young wood about half ripe to make cuttings of. Shrubs may be layered in the way you mention; but it must be done with care. For common thistles the query is unnecessary.—*J. Stone.* *Eucynymus atropurpureus.*

**PRIZES:** *Beginner.* They should be applied for. The clause to which you allude was merely made with a view to enable the society to get rid of such prizes as remain long in its possession after they should have been taken up.

**VINES:** *W. N.* Vines will do very well in a span-roofed house, the latter, however, will be more expensive, and will require more fire than would be necessary for the same extent of glass against a wall. Vines may be trained along the length of the house, but you cannot fill the house so soon with bearing wood. The size you mention is proper enough.—*A Reader.* One Vine for each 24 feet light is quite enough. The Royal Muscadine will hang for a considerable time after it is ripe; and for a very late sort, Oldaker's St. Peter's is to be preferred. McIntosh's "Book of the Garden" will afford you full information on the subject.

**MISC.** *Irish Sub.* Strawberry runners may still be planted; but as it is now late in the season perhaps they had better remain where they are till spring. Stout wires stretched along the face of your wall through eye-studs and made fast at the ends, will possibly be found the best trellis for your creepers, where the wall is well plastered, and you wish to save it.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

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AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO,** the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.

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**PERUVIAN GUANO.**—It is a well-established fact that the application of 250 lbs. of the best Peruvian Guano per acre, on well drained land, at the time of sowing Wheat in the Autumn, has, in many instances, increased the produce of grain 8 bushels, and the straw 10 cwt. per acre.

JOHN CLARANCE, Agriculturist's London Agent for Peruvian Guano and Superphosphate of Lime, 1a, Bishopsgate Street Within, London.

## MANURES—PERUVIAN GUANO.

**WHEAT MANURE,** made to meet the offer of a Prize by the Royal Agricultural Society of England, Superphosphate of Lime, Gypsum, Salt, Bone Dust, and all other Manures of known value on sale.

Also Foreign and English Linseed and Rape Cakes, Peat Moss Charcoal, &c.—Apply to MARK FOTHERGILL, 204, Upper Thames Street, London.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—

Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**THE LONDON MANURE COMPANY'S WHEAT MANURE,** made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec. Bridge Street, Blackfriars.

## LAND DRAINAGE.

**MR. BAILEY DENTON'S TABLES OF COST,** &c., price 1s. 4d. Sold by METCHIE, Parliament Street.  
**MR. BAILEY DENTON'S WORKMAN'S A LEVEL,** price 1l. 10s. Sold by JONES & Co., High Holborn, London.

## LAND DRAINAGE.

**MR. JOHNSON** (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five Shillings per acre; or if under 30 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

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**HENRY WEBBER** begs to inform Landowners and the Public that, having had considerable practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by contract or on commission. Reference given.—Address, Halberton Court, near Tiverton, Devon.

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Mr. C. H. GABRIEL, Surrey Chambers, Arundel Street, Strand, London.

## PRIZE CHURN.

**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BUTCHERS & KEY, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.

REDUCTION IN PRICE.  
WEIR'S IMPROVED GALVANISED WROUGHT-IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

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Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required. They are much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.

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Every description of Machinery for Raising Water; Fire Engines, &c.

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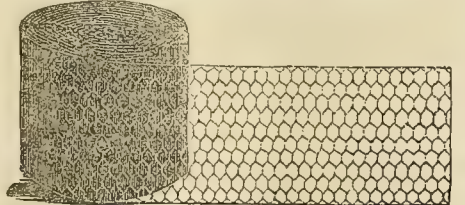
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

**HENRY J. MORTON AND CO., PATENT GALVANISED IRON ROOFING WORKS,** 9½, Albion Street, Leeds, Agents for PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES. THE PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



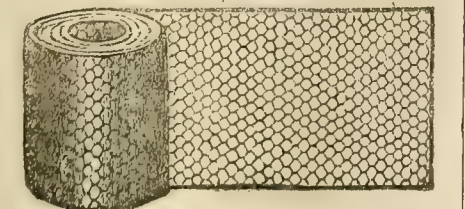
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**HENRY J. MORTON AND CO., 9½, Albion Street, Leeds.**—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING and cannot rust or corrode, made any width and length.



24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.  
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. 0½d. per yard.  
GALVANISED IRON SPOUTING, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.  
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphaltic Roofing Felt, &c. Apply at 9½, ALBION STREET, LEEDS.

## GALVANISED WIRE GAME NETTING.—7d. PER YARD, 2 FEET WIDE.



	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	8d. per yd.
2-inch " strong "	9 " "	10 " "
2-inch " extra strong "	12 " "	14 " "
1½-inch " light "	8 " "	9 " "
1½-inch " strong "	10 " "	11 " "
1½-inch " extra strong "	14 " "	16 " "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised Sparrow-proof Netting for Pheasants, &c., per square foot. Patterns forwarded post free.  
Manufactured by BARNARD & BUNN, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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INCORPORATED BY SPECIAL ACT OF PARLIAMENT. Tenants for Life, Trustees, Mortgagees, Incumbents of Livings, &c., can have all works of Draining, Warping, Irrigating, Inclosing, and every other improvement to land, executed by the LANDOWNERS' DRAINAGE COMPANY, either by Contract or on Commission. They will provide the money by a permanent charge on the inheritance, or repayable by instalments. They are also ready to undertake the Drainage of Towns, and all works incident to such improvements. This Company having been engaged in extensive works for many years in most of the Counties of England, and having in their employ the largest Practical Staff in the United Kingdom, whose sole attention is devoted to such improvements, is the best guarantee for the success of their works.

Every information will be given at the Offices of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter.

THOMAS MAY, Secretary.

**ENLARGEMENT OF BINGLEY HALL.**—The COUNCIL of the BIRMINGHAM SOCIETY have the satisfaction to announce that the Trustees of Bingley Hall have determined to ENLARGE that Building, by the addition of a new Bay, 206 feet by 57 feet, which will be used for the ANNUAL EXHIBITIONS OF DOMESTIC POULTRY. THE FIFTH GREAT SHOW OF CATTLE, SHEEP, PIGS, and POULTRY, takes place on the 13th, 14th, 15th, and 16th of December next; and the Prize Lists, Certificates of Entry, and any further information, may be obtained from JOHN MORGAN, Jun., Secretary. The Entries CLOSE on Saturday, the 12th of November. Office—39, Bennett's Hill, near the News Room, Birmingham.

## YEOVIL AND WEST SOMERSET POULTRY IMPROVEMENT ASSOCIATION.

President—W. H. P. GORE LANGTON, Esq., M.P. The ANNUAL EXHIBITION of this Association will be held in YEOVIL, on WEDNESDAY, November 2.

Prize Lists, Forms of Entry, and the Rules of the Association may be had on forwarding a postage stamp to the Honorary Secretary. Entries to be made on the Forms only, on or before October 19. R. SHORT, Honorary Secretary.

Yeovil, October 15.

## SMITHFIELD CLUB FAT CATTLE SHOW.

All Entries for the Christmas Show of Fat Stock, &c., must be returned to the HONORARY SECRETARY on or before SATURDAY, the 5th of NOVEMBER, 1853.

Prize Sheets, specifying the Classes, Prizes, and Medals (which amount to nearly 800l.), and the necessary PRINTED FORMS of Certificates for Entry, to be had on application to B. T. BRANDRETH GIBBS, Honorary Secretary, Corner of HALF-MOON STREET, Piccadilly, London.

N.B.—It is particularly requested that all letters connected with the Exhibition, or on the Club's Business, may have the words "SMITHFIELD CLUB" written on the outside, in addition to the Honorary Secretary's name and address.

## The Agricultural Gazette.

SATURDAY, OCTOBER 15, 1853.

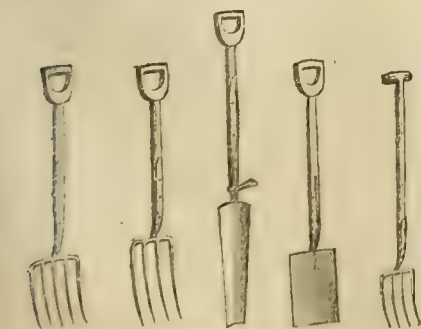
MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 20—Agricultural Imp. Society of Ireland.

THURSDAY, — 27—Agricultural Imp. Society of Ireland.

It certainly is "pro bono publico" that sound principles should be enunciated on fitting occasions; but it is not "pro bono publico" that they be urged on mistaken grounds. The principle itself may thus lose credit in the hands of its injudicious advocate; and, more than this, injustice may be done to those implicated in his erroneous illustrations of it. Our correspondent, who adopts this phrase for his signature at page 635, falls, we think, within the scope of this remark. We allude, now, to the latter part of his communication, where he asserts the impolicy of "round number" reports of agricultural experiments. This is the principle which he enunciates, and of its soundness we have no doubt whatever. An agricultural experiment is the subject of so many influences besides the one on which the experimenter has his eye, and its result therefore has to be corrected for so many sources of error before it can be read aright, that unless an exact report of it be given a correct inference from it is impossible. The whole remarkable, though not very useful, history of agricultural maxima and minima illustrates the extraordinary influence of these out-field causes—so to speak—which so often upset anticipations founded on the best knowledge of the character of the special influence that the experimenter puts in exercise. And it is plain that if the gross result of all be not accurately reported, much less can we hope to obtain a correct remainder as the result of any one of these influences, after the long process of correction needed for the effect of all the others. "Pro Bono Publico" does well therefore to condemn those agricultural reports which "deal too much in round numbers." But what is the illustration by which he proves his proposition? A report by Mr. CAIRD, of Baldoon, of an experiment illustrative of the value of guano as a manure, which was published in the Times newspaper some weeks ago, is thus referred to: "Take, for instance, the description of a field of Wheat of 100 acres—guano thereon 2 cwt. per acre—increased produce on 98 acres so manured 98 quarters and so on—all very good by way of exemplification, but like all such statements rather doubtful;" the paragraph finishing with a sarcastic remark on "our new friends, who make all their statements in decimal numbers, as if in anticipation of the new decimal coinage."

We said that the evil of an unjust quotation in behalf of a sound principle fell not only on the person responsible for the former, but also on the credit due to the latter: and both of these considerations apply in the case before us. For, in the first



## WINTON'S PARKES' STEEL DIGGING FORKS.

I hereby give notice that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. BUTCHERS & KEY, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.

20th Sept., 1853.

Signed, FRANCIS PARKES.



place, "round numbers" are justifiable in certain cases. When a large number of experiments are collated, their *average* in round numbers is trustworthy—more trustworthy than any one of them by itself, however exactly its individual testimony may have been recorded. And even in the case of a single experiment, when the extent has been considerable, and the circumstances remarkably uniform and natural, the inference may with confidence be given in general terms by a judicious and vigilant experimenter. And, so we believe, that had this "100 acre" report been open to the criticism here levelled at round numbers—which it is not—this is a case in which that criticism would have failed of its application. The land was a flat alluvial field of very uniform quality, the portion of it chosen for the experiment was a faithful index of the whole—and the experimenter was a judicious, vigilant, and intelligent man. In fact, the second aspect of this criticism—the injustice done by it to the person criticised—is the more important of the two. "The 'Old Watchmen'" do little service to the cause of agriculture, by throwing doubt on the testimony of such men as Mr. CAIRD. One who has for nearly 20 years been engaged in the active management of land on a large scale, paying a rent of more than 1000*l.* a year; who has for the last few years more than any man in the country had the opportunity of becoming acquainted with its agricultural condition and necessities, is not likely to be caught tripping in so simple a matter as the report of an agricultural experiment—and "Pro Bono Publico" has done wrong to quote this report as an instance of the "round number" fallacy, for the facts are as they were stated. The precise measurement of the field in question is 100.390 acres—the precise produce of two of its average acres, one guanoed and the other not, was ascertained by threshing—and "round numbers," which may in general be justly condemned, had no place in the report, which is as follows:—

"Last autumn," says Mr. CAIRD, "in sowing a large field, exactly 100 acres, I directed the person who was laying on the guano to pass over an acre in the centre of the field, all the rest of which received 2 cwt. per acre, at the time the Wheat was sown. The produce of this and the adjoining acre were cut and kept separate from each other, and from the rest of the field, and were threshed last week, yielding as follows:

One acre, with 2 cwt. guano	... 44 bush., and straw	40 cwt.
One acre, without guano	... 35 " "	30 "
Increase of Wheat	9 " "	10 "

"The cost of the guano (Peruvian) on the field was 10*s.* per cwt. or 1*l.* per acre, so that I have 9 bushels of Wheat for 1*l.* The acre selected for the experiment was an average of the field, and I have no reason to doubt that for an expenditure of 100*l.* in guano on that field last autumn I have now reaped an increased produce of 900 bushels of Wheat. This tallies very closely with the experience of Mr. LAWES in Hertfordshire, where 2 cwt. of guano gives an increase of 8 bushels of Wheat. The land on which the above experiment was made is a strong Wheat soil of good quality, thoroughly tile-drained, sown in good order after a bare fallow, on the 20th of September, and reaped on the 10th of August."

"Pro Bono Publico" speaks of "our new friends" and of "the old watchmen;" while we frankly confess that our sympathies lie with the former, we readily admit that the office which he has taken to himself, as one of the latter, is of great importance and great usefulness, if its duties are rightly performed. It is because we believe that he has erred in the present instance that we have called attention to his remarks. We cannot suppose that the "doubt" which he has expressed was intended as an imputation on the good faith of the reporter; it was excited, we suppose, only by the apparently general terms in which the results were reported; but, whatever its origin, we have shown that it was baseless. And that being the case, it is well thus prominently to make known the mistake, for "Pro Bono" will agree with us that nothing can have a more mischievous influence on agricultural progress than unjust attacks upon the credit of trustworthy agricultural teachers. That Mr. CAIRD stands high on the list of these is what very few agriculturists in this country will be found to dispute.

We have referred above to the importance of using sound arguments in the defence of trustworthy propositions. We are fortunately able to illustrate our meaning not only negatively, as we have done above—but positively—by a case in point. For in the following communication not only is the general principle advocated one of great moment—but the illustrations used by its advocate are perfectly applicable and just. And we are much obliged to the very intelligent correspondent who thus clearly

directs the attention of our readers to a most important point in the economy of agriculture:—

"When it is in contemplation to sink capital on a permanent work it is not the first outlay that should be looked to, but it is whether the annual value of the use of the work will compensate the annual expense incurred thereby. In this view, the first item to be set down is the *interest* of the money sunk, and in addition to that interest a sum for wear and tear, and another addition for chance of disuse; that is for the chance that some superior contrivance may supersede the one in question. This fact has been called to mind by discussions at the mechanical section of the British Association on the subject of REAPING MACHINES. It was then admitted that of all such machines hitherto brought forward, BELL's does its work the most efficiently; but it was alleged against it that it costs 40*l.*, whereas either M'CORMICK's or HUSSEY's can be procured for 20*l.*, making a difference of 20*l.* in prime cost. Now supposing, we will say, 10 per cent. to be set down on this difference as interest on extra capital sunk, for extra wear and tear, and for extra chance of disuse, this would show BELL's reaper to cost annually forty shillings a year more than either M'CORMICK's or HUSSEY's. The question of superiority, therefore, as regards *£.s. d.*, is simply the following—will the wages of a man for gathering the corn for the number of days during which the reaping-machine would be employed amount to 40*s.*; or would the man's wages be of a less amount? The sole object of this note is evidently that of drawing attention to the above mode of estimating the profit, or the loss, which would result from the obtaining of any machine for farm purposes; or indeed of buildings or permanent works of any description. True, there are many real improvements for which no money value in the way of rent can be assigned; but in regard to such cases, were but an *ideal* value set down, much facility would result in coming to a determination respecting them, and doubtless many an uncompensating expense would be avoided in farm buildings and machinery; whilst, on the other hand, many an advantageous building or implement would be introduced, though its first cost might seem to forbid its adoption."

#### IRRIGATION AND LIQUEFIED MANURE.

No. V.

I PURPOSE, in this paper, to say something of Pumps and Pumping. There is no action so simple as pumping, and yet which, in my case, occasioned us more vexation. Pumping water is easy enough, provided your valves fit closely on their seats, and provided you have no pin hole above the water, for, however minute the aperture, your pump will draw air instead of water. Many have been plagued considerably by force pumps attached to high pressure steam boilers; I was for a long time, and from a simple cause. When the supply of water was shut off from the force pump, in its attempt to form a vacuum, it drew air through the packing, and forced it back again, and thus afterwards when it should have drawn water, drew air. I have now in the pump barrel a small tap, which we open before turning off the water, and through this the air enters and escapes without distressing the packing,—great has been its comfort. I believe in Mr. Garrett's steam engine he has an arrangement for pumping the water round, when not going into the boiler.

#### PUMP VALVES.

I have not, at present, been able to satisfy myself with these. In the first place provision should be made to have immediate access to them, for in pumping semi-fluid manure occasional obstructions will occur by pieces of Turnips or Mangold, sticks, straws or bones getting under them, thus preventing their striking equally on the seats; the wear on them is considerable, seeing that they are struck down fifteen times a minute with a sledge hammer blow, or at 60 lbs. per inch about 450 lbs. each blow. When these valves get fixed, or do not act, much time is lost in unscrewing the traps. It would be very desirable to have the power of flushing them with water by a pipe and tap from a cistern above, which would often remove the obstruction. I should be glad to receive hints about the best valves for pumping such a heterogeneous mass as our solid manure liquefied. I have been told that ball valves are preferable, which I can easily believe, seeing that water itself is globular; much friction would be thus economised.

The valves and their stalks should, when not a ball, be of strong wrought iron, all in one piece. My original cast brass or iron stalks snapped off like glass, and were hurried away like straws. This reminds me that under the pump barrels should be a cast iron roomy box, easily accessible, where pieces of iron, stones, &c., that are drawn in may, when deposited, be occasionally removed, and thus prevent the ends of the barrels striking upon them to their injury. The threads of all the screw bolts should be very deeply cut, and everything should be extra strong, otherwise with a pressure of 60 or 70 lbs. things will be all to pieces.

So dense has been the fluid of our manure, as compared with water, that the valves should have a sufficient weight to drop on their seat quickly, otherwise, as in my case, the semi-fluid manure will obstruct their

descent and prevent their action. We were annoyed with this a long time, until we accidentally discovered the cause. I find it perfectly unnecessary to have expensive brass valves; where the pumps are in frequent action the friction of the fluid keeps them free and smooth. My pump barrels are of brass, 5 inch diameter and 20 inch stroke. Had I known what I do now they should have been of iron, as a cheaper material and equally useful. They work through a packing of soft hempen cord, saturated with melted Russian tallow. This same tallow I use in a cup with tap, to lubricate my slide valve above the cylinder of my steam engine.

The various taps in connexion with the pumps and the subterranean pipes should be all repacked occasionally with well greased rope, and if set fast by rust, in consequence of not being recently used, a little oil insinuating itself between the substances will render their detachment easy. In the first instance, for want of knowledge in these matters, I have seen three or four men straining with levers and destroying property where a boy could with ease have turned the taps or stop-cocks. Now, however, we scarcely know what it is to have an impediment.

I find it convenient that my engine will drive a pair of 4 feet 4 mill-stones, and also work one barrel of my pumps, throwing at 30 revolutions per minute 50 gallons per minute. I reckon four-horse power for the stones and two for the pump. If we work the two barrels, two jets should be open. The resistance of the jet or fountain costs some power; for when removed and the liquid merely flowing out of the 1½-inch or 2-inch pipe, the engine runs off as if it had little to do.

There is a great convenience in the fountain-like jet, especially amongst growing crops, where a man must not move about, and can thus command 50 or 60 feet on each side of him; but it is at some cost of power and waste of ammonia. If the pipe were pierced with holes like the eyes in a lamprey, the liquor would flow through easily, cheaply and without the same loss of ammonia. There would be more labour in moving it.

Whether electricity is developed by the friction of the jet is a question also to be considered. When pumping manure up a steep incline, it is desirable to finish off by pumping water to cleanse the pipes; or at all events to turn off the tap, to prevent the return of the liquid, which would dribble away into the lower grounds from the solid matter, and leave it to encrust or choke the pipe. The only case in which we had a subterranean stoppage was from this cause; the tap was not turned off, and the other fields being lower, the liquor naturally flowed back, each day of pumping. Not having occasion to return to that field for three months, some of the pipes were found choked with solid manure.

It is very easy to ascertain where the stoppage is by drilling a pin-hole, from which will spin out a high fountain.

Since writing the foregoing I find that with 200 yards of gutta percha tubing, half of it 2-inch and half 1½ inch diameter, one of our pump barrels throws more than these pipes can carry, showing the great additional resistance of much length of small pipes, and confirming my previous view that an extra quantity of subterranean 3-inch pipe and less length of moveable pipe between the hydrants is very desirable. A hydrant for 6 to 8 acres is more profitable than one for 11 acres. It is desirable, also, to have a hydrant close to the cattle-boards or sheds, with a jet and hose for daily washings.

A simple covered farm-yard might be constructed, all the animals being on open boarded floors, with merely a close boarded passage, under which the engine-man or washer might direct his jet, sheltered from the droppings of the animals. The man would flush both sides by his jet, the slopes having a good fall towards the centre, and in a few minutes all the solid and liquid manure of many animals would flow into the suction tank.

Much importance is attached to fermentation of the liquefied manure. Are we to infer that nitrogen alone is free from the attraction of silica and alumina, and that it is only when it becomes ammonia by affinity with hydrogen that clays have the power of fixing it? I hope Mr. Way will enlighten us on this. Fermentation evidently warms the liquor. J. J. Mechi.

#### ON REAPING MACHINERY.

[The following is an abridgment of the Paper on the subject, read by Mr. Crosskill, of Beverley, before the British Association at Hull. The subject was well placed in the hands of Mr. Crosskill, the manufacturer of the successful machine of the season. We may mention that having received at the Yorkshire Agricultural Society the Medal for the best Reaper, Mr. Crosskill has with great good taste and right feeling presented it to the Rev. Mr. Bell, of Carmylie, the inventor of the machine, as an acknowledgment of the credit long due to that gentleman, which has only recently been generally admitted.]

IN 1812, the late Mr. Smith, of Deanston, brought out a reaping machine, which appeared at intervals with different modifications until the year 1835, when it worked very successfully at the meeting of the Highland Agricultural Society at Ayr. At that time, it consisted of a revolving cutter, 5 feet diameter, composed of thin steel segments bolted on an iron ring, and the gathering of the cut corn was effected by rakes, placed on an upright cylinder just above the cutter, which brought it off in a regular swathe. The horses walked behind the machine, and were fastened to it by a pole or by shafts.

In 1815, a Mr. Scott, of Ormiston, made a similar machine to Mr. Smith's, which soon shared the fate of all its predecessors; and in 1821, an attempt at reaping with a large circular cutter was made by a Mr. Mann, of Raby, in Cumberland, but unlike other inventors who had used the same form of cutter, he placed the horses before the



machine, and they walked by the side of the standing corn, like the American reapers brought to the Great Exhibition of 1851. In 1822, a Mr. Ogle, of Rennington, near Alnwick, invented a reaping machine, which was worked upon Wheat and Barley, but as it received no encouragement only one was made. A description and drawing of it were published in 1826 in the fifth volume of the "Mechanics' Magazine," and it is rather a remarkable circumstance that this description answers in almost every particular to McCormick's machine, which was invented 10 years later, and at a distance of 5000 miles.

We need not be at a loss for an explanation of the failure of all these schemes, many of which possessed considerable merit. Until the last two or three years manual labour has been easily obtained in this country, and at harvest time especially a large number of Irishmen came over to England, and obtained a livelihood by assisting the farmers to gather in the crops. Owing to the rapid increase of emigration, however, this temporary assistance becomes every year more and more precarious, and will in all probability entirely cease; and by a fortuitous coincidence, the demand for reaping machines thus occasioned, occurred at a time when public attention was directed to them, in consequence of the prominent position they occupied in the Great Exhibition of 1851. Amongst the American contributions in the Crystal Palace, were two reaping machines, one invented by McCormick, of Chicago, and the other by Hussey, of Baltimore, models of which I have on the table. They are by no means the only reapers in use in the United States, the great demand in that country having called into operation numerous inventions for that purpose, but the two above-mentioned are very extensively patronised. The annual sale of McCormick's machine amounts to above 1500, and that of Hussey's from 600 to 1000.

It will be seen in both cases that the horses draw the machines after them, and walk by the side of the uncut corn. In both, also, the main wheel that carries the machine gives a reciprocating motion to a bar which has double-edged knives fixed upon it, and these knives pass between guards or fingers, against which the corn is cut. The shape of the knives and guards varies in both machines, as may be seen by the models. McCormick's cutters form an angle with the bar of from 20° to 30°, and have their edges serrated. The cutting of these is very little assisted by the guards or fingers, but they have an action similar to a saw, and the slight inclination of the cutters prevents the corn from yielding as it might do from a straight knife. The cutter of the first machine brought by McCormick into the Great Exhibition consisted merely of a straight serrated edge, but the knives with edges inclined both ways are far superior to those originally used.

A reel or fan is employed to press the corn towards the cutter, and it is also useful to raise and collect that which is laid, or which inclines from the machine. An objection is made by some farmers to the use of this reel, as they imagine it will beat out the grain when the corn is ripe, but in practice this is not found to be the case. The corn when cut falls upon a wooden platform, and a man riding upon the machine rakes it off at the side in sheaves or bundles, which are out of the way of the horses the next time they come round. The cutters used by Hussey make an angle of 70 or 80 degrees with the bar, and are much more acute than those used by his rival. They are plain-edged, and their action is to chop the corn between them and the guards through which they pass. This form of knife is found objectionable here, from the soft and yielding nature of many of our English Grasses and weeds, which, instead of being cut, bend through the guards, and in time choke up the knives. To obviate this, it has been found advisable to shorten and give them a serrated edge, similar to the improved ones used by McCormick; and it is very remarkable that both Hussey's and McCormick's cutters, which differed so widely when first brought by their respective makers into this country, have given place to a very similar knife which is now used in both machines. Hussey's machine has no fan or reel, but a man rides upon it in such a position that he can, by using a rake, bring against the cutters that corn which lies away from them and requires his assistance. When cut it falls upon a platform, and after a sufficient quantity to form a sheaf has accumulated, the man pushes it off with his rake.

These two machines have been repeatedly tested, both in this country and in the United States, and the question of superiority between the two is far from being decided; both have warm advocates, and they have received an equal share of honour and prizes at various agricultural meetings and trials. At the Great Exhibition of 1851, the Council Medal was awarded to McCormick. Mr. Hussey not being in this country, and having no one to exhibit his machine in action, did not receive a similar honour. In the September of that year he arrived in England, and by working his machine in competition with McCormick's before practical farmers, he obtained for it a large share of public approbation. In 1852, Hussey's machine was victorious at the meeting of the Royal Agricultural Society at Lewes, and at various trials of less importance, while McCormick's carried off the prize at the Great Yorkshire Agricultural Society at Sheffield, and achieved other victories. After such an equal division of honours, agriculturists and others interested in the question looked forward with some anxiety to the decisions of this year, when practical farmers who act as judges at the various trials had obtained more experience on the subject, and might be expected to arrive at a definite

conclusion on the matter. Both machines have, however, been defeated at every trial this season by a third candidate, which I shall now proceed to describe.

In the year 1826, the Rev. Patrick Bell, now minister of Carmylie in Forfarshire, invented and constructed a reaping machine, and succeeded in making it work so well that in the year 1829 the Highland Agricultural Society awarded to him the sum of 50*l.* for his invention. During that and the following years, above a dozen were made in and about Dundee, and some of them used by practical farmers, but the redundancy of manual labour, coupled with the difficulty of keeping in order machines of a somewhat complicated character, operated so decidedly against their use, that most of them were gradually laid aside. Mr. George Bell, the brother of the inventor, has, however, persevered in working the machine, and has had one in use every year since 1830, by which he has obtained great experience, and become thoroughly acquainted with the various obstacles to be encountered in the harvest field. In 1852, when the American reapers were sent northward, Mr. Bell put his old machine into thorough repair, and met Hussey's at the meeting of the Highland Society at Perth. The superiority of an implement with self-acting delivery over one which required the assistance of a man to take the cut corn off the platform was so evident, that the judges unanimously awarded the prize to Bell's machine, and the same result has occurred at every trial in which it has since been engaged. We see from the model that this machine is different from both the Americans, and certainly Mr. Bell is entitled to praise for the novelty of his invention, no resemblance existing between it and Smith's, Mann's, Orme's, or any other that had been made before it, except that the horses follow the machine, a mode of propulsion which, as we have seen, was in use at the time of the ancient Romans. The cutting is performed by a series of shears or scissors, each moving blade being double-edged, and cutting both ways. The edges of the knives are 12 inches long, they therefore do not require to move so fast as short ones fixed on vibrating bars, which materially diminishes the wear and tear of the machine. As the corn is cut, it is pressed back by the revolving reel upon the canvass, which has a rapid motion sideways, and which turns it off in a continuous swath. The canvass is inclined at a considerable angle, and the corn in falling turns partly over, so that the heads lie all one way, with far more regularity than any one would believe who had not seen the implement at work. The horses walk behind the machine, and propel it by means of a pole passing between them, to the extremity of which they are yoked; a man walks after them, and by means of this pole guides the implement. By the three bevel wheels the canvass can be reversed, so that the corn can be delivered on either side of the machine, a very great advantage over those which have the horses before them, as they are restricted to one particular direction in cutting. The power of the machine to go into a crop without any previous preparation by manual labour, is an advantage much dwelt upon by practical judges, and there is nothing which so forcibly strikes the spectators who see the implements for the first time as it progresses through the middle of a crop, making a broad avenue for the horses to follow, and laying the cut corn on one side of it. It has often been suggested that difficulties must arise in getting strange horses to work the machine, as they will be liable to start and plunge when they see it in motion before them, but in practice the difficulty is soon overcome. All steady horses, when they feel the implement move forward, will readily follow it, and after half-an-hour's work, they understand it as well as going in the plough. The machine cuts a width of full 6 feet, and in the heaviest crops is fair work for two horses going at the rate of 2 miles an hour, or ordinary plough speed. This is equal to 1½ acre per hour, but many farmers prefer driving the horses faster and changing them every three hours, by which means they do more work. The cost of working the machine with two men and four horses (being two pairs, to be changed every three hours) can, under no circumstances, exceed 30*s.* per day, and taking 15 acres to be the work done, the cost of cutting will only be 2*s.* per acre, or about half what is usually paid for hand labour.

In acknowledging our debt of gratitude to the Americans for bringing over their machines, and directing public attention to the subject, and also for demonstrating in a manner that must have convinced the most sceptical and prejudiced, that reaping by machinery was as practicable as thrashing, it must be a source of national pride to find that we had in Great Britain an implement superior to any brought from foreign countries, and which only required an opportunity to be fully appreciated.

There is one more ingenious invention, which we owe to our transatlantic brethren, namely, Atkins's automaton, or self-raking reaper. This was brought over last autumn, and exhibited in motion at the Polytechnic Institution, London. The horses go before the machine, and the corn is cut and delivered on to the platform by a reel similar to McCormick's, but instead of being drawn off by a man, a rake with an action similar to the human arm gathers up the cut corn, and deposits it on the ground in sheaves. This invention was tried at the meeting of the Royal Agricultural Society at Gloucester this year, and failed, not from any defect in the delivery, but owing to the inefficiency of the cutting apparatus, which had not been tried before it was taken into the field. Being in the hands of such men as the Messrs. Ransomes, of Ipswich, no doubt its capabilities will be

fully developed; but as each bundle is grasped and lifted by the machine, it is probable that, however well it may work on straight corn, the undeviating motion of the rake will make irregular work in laid or crooked pieces.

In looking forward to the improvements to be made in reaping machines, it must not be forgotten that the hasty flight of the seasons renders a succession of experiments almost impossible. A day's work will enable the farmer or manufacturer to see the defects in his machine, but the season passes away, and 10 or 11 months must elapse before they can be remedied or any improvements tried.

### Home Correspondence.

*New Implement.*—A spirited discussion on the merits of agricultural implements is one of the results of free trade in grain. In former days the plough and the harrow were the capital stock of many farmers. The drill, the horse-hoe, the scarifier, and the cultivator are of more recent times. It would appear now that the plough is to be superseded by a digging machine. I am one of those who think we plough too much, and that the plough will give place occasionally to implements of more general utility; but that it will be superseded is out of the question. All implements employed in agriculture should have these requisites: they should be simple in structure, strong enough for all descriptions of soil, and be applicable to general cultivation. The plough has these requisites, but the slow progress it makes does not keep pace with the spirit of the age; it must and will therefore partly give place to implements that will perform a greater breadth of work in a given time. All implements that till the ground may be termed cultivators; but as yet there are few of this class that are really efficacious, and of general use. I noticed at work last week an implement of the cultivator order, which, from the simplicity of its structure, and its great power, led me to examine it; it consisted of three open iron beams in parallel lines, with cross beams at either end. At the tail end of each beam is fixed a strong time or share, much in form like the tines of the Ducie cultivator, fastened by double bolts, with a screw to adjust the depth of working. In the front are fixed three small wheels on the three beams, and from the tines are three draught rods pointing in the direction of the horses' collars, bringing the draught power direct from the tines. The field in which the implement was at work was a lean stubble of the strongest clay, well matted with Couch Grass, 10 acres in extent, and formed two sides of a deepish valley, and the work was made up and down the hill, with eight horses. The tines buried themselves in the ground about 7 inches, and tore up the retentive soil in a most masterly manner, and scattered or rather shivered the pieces in most admired confusion, leaving the field in a fit state to be operated upon by a lighter implement going across the work. The quantity of work done in the day was five acres, and consequently the 10-acre piece, which would have required ten ploughs with four horses each for one day, was completed with eight horses and one implement in two days—a saving in labour to the amount of 24 horses in one field; and what is of more importance, the great advantage to the land in being moved in dry weather. On inquiry I learnt that the implement was modelled and manufactured by Mr. W. Smith, of Little Woolston, near Newport Pagnel, who is a proprietor and practical farmer, and that he has taken out a patent for it. Now, whether this implement is perfect or not, time will show; but I am quite satisfied that to gain sufficient power to work our strong clay soils, the implement must work under the surface and not over it. It seems to me quite impossible that sufficient power can be had, even by the aid of steam, to till the ground by rotatory means, and I fear the enterprise and ingenuity and zeal of our friend Mr. Mechi will fail to accomplish the laudable object he has in view, and also that the digging machines will shortly slumber amongst the many speculative implements which may be seen resting from their labours in the shelter hovels of our most enterprising agriculturists. P.

*Cattle with loose horns.*—I have seen in St. Kitt's, West Indies, a great many very fine cattle, with loose or swinging horns, which are attached to the head apparently by a tendon about an inch long. They are quite useless as horns. I believe the breed came from England, but I am not sure. Can you give me any information on the subject? Of what breed—in what county? By what means is the horn attached to the head? If cut off, would others grow? &c. *Philobos.*

*Mr. Romaine's Steam Farmer.*—The accompanying extract, from the *Peterborough Review* (Canada), throws a little additional light on the origin and progress of Mr. Romaine's steam farmer. I trust it may satisfy the mind of our esteemed friend "C. W. H.," that there is some originality about Mr. Romaine. Your readers will be glad to learn that the machine is well "under weigh." I am connecting with it Burran's patent boiler, which will give us additional power without increased weight. I have great faith in Burran's patent boiler, which is scarcely yet known. I hope we shall have all ready for a fair start in three or four weeks; my faith increases in its success. I shall work the boiler at 100 lbs. per inch; my present one is always worked at from 70 to 110. Can you tell me why the Royal Agricultural Society of England have limited the pressure in their trials to 45 lbs.? Everything is comparative, and I cannot conceive what law there is as to pressure, except ample strength of boiler. I know



a farmer who works in perfect safety at 190 lbs. per inch, his boiler proved accordingly. We shall never have economical and light engines until we work at higher pressures. I hear my 190 lbs. friend only consumes 3 lbs. coals per horse. *J. Mechi.*—[The extract quotes Mr. Mechi's letter to the *Times* newspaper, and proceeds as follows:—

It is now about four years since the attention of Mr. Romaine was first directed to the subject of steam ploughing, or a system of complete pulverisation as a substitute for the present mode of cultivating the soil. At that time he conceived the project of making a machine, which, while it abandoned the idea of the plough altogether, would combine all the advantages of spade labour and the rapidity of the harrow. The writer of these lines sketched one of the first plans of the machine about that time, and from then until the present, Mr. Romaine has been busily engaged in perfecting his invention. After having succeeded in constructing such an instrument as in his opinion would answer the purpose designed to be accomplished, he was compelled to lay it aside for want of means, and would, in all probability, have abandoned it altogether, when an application to the Bureau of Agriculture was suggested to him, and accordingly made. Mr. Cameron, and other members of the administration, together with his Excellency, Lord Elgin, examined the model and drawings of the pulveriser, and after having obtained the opinions of the most eminent mechanics and agriculturists available, agreed to advance Mr. Romaine the sum of £500, to assist him in carrying it out. Furnished with letters of introduction from private individuals and from the Government, Mr. Romaine left for England in June last, and we have the result of his mission so far, in the letter published below. That great advantage will result from such an instrument as that invented by Mr. Romaine, no one can doubt. David Christie, Esq., the member for Wentworth, in a letter on the subject, stated his conviction, that if practicable, it would "revolutionise the system of agriculture." And when we tell our farming friends that it is calculated to perform the work in one day, in performing which nine are now occupied—when we tell them that it entirely dispenses with the plough, subsoil plough, clod-crusher, harrow, &c., that it enters the unbroken ground, and in one passage leaves it not only in a fit state to receive the seed, but with the seed actually deposited, and the surface rolled, we think that they will be inclined to agree with Mr. Christie, that it is calculated to revolutionise our system of agriculture.]

**Land Drainage.**—Your correspondent "C." should abandon his superintendence of drainage, and advise his employer to place it under the management of a competent practised drainage engineer. It is quite evident that "C." has been draining at a comparative loss to his employer, and it is also evident from the context of his remarks, that he is unable to inform his dissatisfied tenants upon those simple laws which science and experience have established as guides in draining, as in all other hydraulic operations. After this rub, "C." is not likely to employ me; nor should I offer any remark did I not foresee in the doings of your correspondent another boasted instance of the failure of drainage, against which I feel bound to protest. It is by such instances that prejudice manages to contort and deface generally accepted principles. Men base their proceedings upon partial reading and superficial talking, and seek information on some one point (which is necessarily dependent on others) through the medium of a newspaper paragraph; and such data they consider sufficient to warrant their expending thousands of pounds. I will not presume to show "C." where he has done wrong and why he has failed; but I will venture to advise him to dig a hole, 5 feet cube, in the clay soil he speaks of, and, placing himself in it, study the power of gravity by observing which sides of the square let in the most water. With all respect due to an anonymous correspondent I will wager him a pair of goloshes that the two sides following the dip of the hill shall weep more water than the two sides crossing its slope. All I shall ask of him will be, not to dig the hole in the furrow. If "C." will do this he will not want proof of the fallacy of intercepting drains; but I do not say he will satisfy the tenants who have urged their adoption on the strength of their experience. To expect that is too much. But I shall expect the goloshes. *J. Bailey Denton.*

**Labour and Loos Weedon Cultivation.**—[We have received a copy of the following letter, sent also to the *Northampton Herald*, from which we extracted, the other week, a notice of the agricultural meeting at Oundle, in which Mr. Levi's remarks on this subject seem to have been misreported.]—As you have been pleased, in an article on the agricultural meeting at Oundle, to notice some remarks which I made upon Sir George Robinson's statement relative to Mr. Smith's system of cultivation, which would lead the readers of it to a conclusion entirely at variance with the opinions I entertain, and which I expressed at that meeting, I must request you to do me the justice to state what I did say upon the occasion. Upon Sir George Robinson denying my proposition (in consequence of the scarcity of labourers), that what could be carried out on a small scale could be equally on a large, I stated that I thought three good labourers could do the work of five so-called farm-labourers; and I instanced the amount of work executed in a short period in the formation of the London and North-Western Railway. Upon which a gentleman exclaimed, "Navvies have 18s. a week;" and I replied that it would be cheaper to give three such men 18s. per week than 12s. to five agricultural labourers, and I further stated that the time had arrived when the farmer (not having now the fear of the union expenses) must treat his labourers in a more business-like manner, and that in doing so we should equally study the interests of the labourer, as the present system of paying all men alike was very unjust to the good labourer. *William Levi, Woughton House, October 5.*

**Alleged Degeneracy of Horses.**—As an old sportsman and breeder of horses, allow me to thank you for your article in last week's *Gazette* on the degeneracy of our present breed of roadsters. Rely on it, that even for hunters we are getting too fine. Youths may get on with long-backed, spindle-shanked, daisy-cutters—I ut

not so the old ones. Britons are by nature burly after 30, and require bone and substance as well as blood to carry them. Your suggestion with regard to giving the Queen's Plates to local societies, as premiums for the best roadsters, is an excellent one, and if carried out, cannot fail to work good. These plates are utterly useless for racing purposes, but would induce many a farmer to breed a strong roadster, well knowing that if he could not dispose of him at a satisfactory price, he would get his bread on his farm. I sincerely hope the different local papers will take this subject up, and memorialise the Home Secretary (a breeder himself) to adopt your suggestion. *An old Subscriber.*

**Breeding.**—To possess a breed of animals combining symmetry with the power of feeding up good solid meat for the butcher in a short time, is an advantage worth the consideration of the farmer as a means of making his land pay well. The true criterion of profitable farming is to prepare in the cheapest manner the best stock for sale. Over-fat brutes hide imperfections—wholesome, juicy flesh is required on the table, not tallow. At the late exhibition at Gloucester it was distressing to look at unfortunate quadrupeds panting under loads of fat. Amongst the pigs, when lying down (their usual position), it was almost impossible to distinguish the head from the tail. At the meeting of 1854 it will be well to classify exhibitors—those who show for the butcher and those who favour the chandler. A farmer who prides himself on having a well-shaped pig in fine condition for increasing stock has no chance of obtaining a prize, if size is to carry the day irrespective of breeding qualities, so essential to the agriculturist, who has not only to live on his farm, but by its produce. It may be an amusement for an amateur, as well as holiday people, to gaze upon a pig whose face and eyes are concealed from view, the point of the nose and the tips of the ears only visible, the rest of the countenance being buried in blubber; but to the great majority of practical men, such an object at the Royal exhibition is useless and disgusting. It was instructive to touch some of the swine; the finger almost disappeared in a flabby substance resembling dough. There is a medium of fatness; a pig should not be thin—it would be out of character with the nature of the beast; let his ribs be well covered, as if he enjoyed his food with an appetite, not pampered up till life becomes a burthen, and he groans out his days in misery, his respiration resembling an asthmatic steam-engine. Many of the rams also looked like feather-beds covered with a Witney blanket, and must have been of little value as sires. A sow too fat often produces dead young ones, and if they are alive, lies upon half of them. A boar in the same extraordinary garment of lard will be more expensive than he is worth. Setting aside the offensive and unnatural aspect of an animal stuffed to repletion, rendering his limbs incapable of the motion they were intended for, the only sign of life being a strange sound between a moan and a grunt, dying into a wheeze, how does the ease stand with respect to the profit of the moderately fat and firm carcass, against the pasty, greasy mass, called, by courtesy, bacon and pork? The former does more credit to the breeder and feeder, pays him better, and is more economical in a household, though the cook may be the loser, who has the privilege of selling dripping. No stomach, but that of an ostrich, could pretend to digest 3 or 4 inches of fat on mutton, beef, or pork. A joint is purchased in the market, professing to weigh 10 lbs. of consumable meat; by the time it arrives in the dining room its proportions have been sadly reduced by the action of the fire, in consequence of the enormous quantity of fat attached to it; but this is not the worst of the bargain, for when placed before a parcel of hungry children, half of what remains is not eatable, a dead loss to the family account. The butcher receives a fair price for the food furnished, only fit for a Russian or an inhabitant of the polar regions, quite unfit, however, for the digestive powers of a European living in a temperate climate. Nothing could be more magnificent than the display of agricultural implements at the Royal Agricultural Society's meeting at Gloucester, from the steam-engine to the pig-trough; the interest excited in the county and neighbourhood particularly was shown by the numerous visitors who attended in spite of wind and weather; the pouring rain seemed only to damp the outside, the inward man was too intent upon admiring the treasures collected. Indeed, vast numbers of the softer sex, who might have been deterred from braving the elements, considering the muddy state of the walks and the moisture overhead, nevertheless went through the stands gallantly, excitement being at the high-pressure point. Amongst the splendid animals exhibited, the horses appeared the weakest point, the powerful hunter and well-shouldered hack being absent, the latter in these days of steam being sadly neglected; too much blood may be introduced for the turnpike. Daisy-cutters are disagreeable to ride on macadamised roads. *Falcon.*

**The Crop of Wheat in Norfolk.**—The agricultural intelligence in the leading articles of your Paper is generally so accurate, that I was quite amazed at the manner in which in your last Number you alluded to the results of the late harvest in Norfolk. Who your informant may be who grew one quarter, or as we should say in Norfolk two combs per acre, I know not, but I can assure you that in the north-west district of the county we have no crops of that sort. In this important, well-farmed, corn-growing part of the county, including the Holkham, Walsingham, Fakenham, and Holt districts, I think I can with safety give you the following as a statement of the crops:—Wheat, a fair average

quantity of remarkably fine heavy quality; in fact, the best and heaviest sample that has been grown for many years. Barley, a good crop, of fine quality. The show before harvest was so promising that the farmers have been disappointed in the east. There remains, however, a good crop of good Barley. The crops in the Fens and in the heavy clay farms of the Midland Counties have been, I am aware, very deficient, but such was not the case in Norfolk. Should, therefore, the returns asked for by the Government be taken as a general average for the country at large, they may lead to very erroneous conclusions. *A. B.* [The district from which we quoted our intelligence was in the county of Suffolk.]

**The Extraordinary Potato Disease** is this year very destructive. The effect on the following sorts, planted in February, 1853, was as follows:—1, Scotch Reds, for late use, half bad. 2, York Regents, on first taking up, the middle of September, fine both in quantity and quality, scarcely a bad one amongst them; a fortnight after being stored in a dry barn, one-third became bad; about the same time, those remaining in the ground suffered in the same proportion; large yield. 3, Oxford Kidneys, one-third bad; small crop. 4, Irish white Potato, from the neighbourhood of Rathkeale, a late sort—a splendid crop; only one-fifth diseased. A few early Purples, very indifferent in every way. *Falcon.*

### Farmers' Club.

**VALE OF EVESHAM ASSOCIATION.**—At the last annual meeting of this association the following discussion took place between some of the neighbouring agriculturists: Mr. William Woodward was afraid that even with increased prices many of the farmers must suffer distress, and that such prices would not put many farmers in the position they would have occupied had they much lower prices but better crops. Landlords must not lose sight of the fact that arrears of rent could not be paid with such crops as were grown in this and most other districts this season. The farmers could not be in a position to pay their rents in many places, however high prices might go.—Mr. Henry Hudson said since the last show he had had the pleasure of visiting, in company with other gentlemen, an extensive estate belonging to his honourable friend Mr. Foley, and situated in the northern part of this county. On a certain day the tenants had met together to exhibit their Swedish Turnips, &c., grown on an estate of about 3000 acres, all in one ring fence. He saw some of the finest Swedes he had ever met with in his life. These were not on one solitary farm, for every farm was alike. He asked the judge how it was that so many farmers in the district could display such beautiful bulbs of Swedish Turnips. The judge replied, that at first, when Mr. Foley began to offer premiums for Swedes, there was very little trouble in distinguishing the best; but since the premiums had been continued, the difficulty of distinguishing the best had become so great that he was compelled to make the matter one of great study, and devote several days to render himself well acquainted with the merits of the various crops. The judge had no doubt that these farms had been brought into the highest state of cultivation by the offering of premiums by Mr. Foley. If the practice of giving premiums could thus widely improve the crop on 3000 acres, a similar system of premiums might produce a like effect upon 30,000; and this showed that societies like the one to which they belonged were not only largely useful, but that they were of the very greatest assistance to the agriculturists.—The chairman said he never once doubted about this society in respect to its permanency. He rose to propose the health of Mr. B. Workman—if any man had made greater strides since he joined this society, let them point him out. (Laughter.) The vigorous way in which Mr. Workman carried out his agricultural views, and the interest he took in improvements, had made him the holder of a premium this day. All cordially greeted him with congratulation for his success. Everybody must hope that the progeny of Mr. Workman's fine ram would be taken care of, and that it would shine in this part of the country. (Cheers.)—Mr. Workman, in acknowledging the compliment, said that the ram was admitted on all sides to be excellent, and in fact to be far the best shown in the yard. He would endeavour to prove this. Mr. Bakewell, who was the improver of the Leicester sheep—which, though somewhat derided in this quarter, were the origin of most of the best sheep now grown in this country—followed some very simple rules. He tried to get animals of perfect symmetry, small in bone, plentiful in best quality of mutton, coupled with the best description of wool. That was the sort of animal which Mr. Bakewell liked to see produced; and the ram shown to-day possessed great symmetry, plenty of the best wool, and would make excellent mutton. He accorded his praise to the productions of Mr. Randall and Mr. Adcock in cross-bred sheep, but he wanted to know from them, for the benefit of discussion, how they proposed to keep up a perfect description of animal, such as these shown to-day, without having recourse to the original or pure stock of one or other of the original breeds of this country. He ought to have said distinct breeds, because there was little doubt that the breed, such as was found in Charnwood Forest, was the indigenous stock of this country, and, no doubt, were the chronicles not lost, might be traced to the patriarch's sheep in Asia. He meant such breeds as the old Leicesters, the new Leicesters, the Lincolnshires, the Cotswold—could the cross-breeders (he hoped he should not drop a word to make them



cross) keep up a splendid stock of cross-bred sheep without going back to a pure original? He maintained that they could not, and he fortified himself both by what he observed and by the opinion of others, who were esteemed first-rate men. Dr. Parry, of Cheltenham, who 50 or 60 years ago was considered a great authority in sheep, was one to whose opinion he should refer. The Merino was imported from Spain into Germany by Frederick Augustus, one of the Electors, with a view to improve the Saxony wool, and it was imported thence into England by George III. Dr. Parry stated that if an unimproved ewe were placed with a pure sheep, the progeny would partake of the qualities of the sire to the extent of about 50 per cent. If the progeny were again crossed, but not with the same pure blood, the characteristics of the pure blood in the first cross would gradually die out.—Mr. Randall: You will not succeed by going to the full-bred animal: by using half-bred males you might.—Mr. Workman: But can you retain perfection?—Mr. Randall: It is the only way.—Mr. Workman quoted Mr. Fiske, a good authority upon sheep, who said that if crossing was continued, the breeds became ultimately as distinct in the flock as at the commencement. He would caution Mr. Randall—it might seem impertinent to give him advice—but that ram of Mr. Randall's had more of the Cotswold in him than of the blackface. (Laughter.) It was true he (the ram) had got smut upon his face, but he would be coarse in his fat, and not have gravy. It might have early maturity, but maturity could not be got without lean; and epicures still told them that mutton was not mutton till it was five years of age. (The President: "Four will do.") The Cots, after all, were a chief part Leicester; they came from the Dishley breed—all the breeds had been improved by the Leicester. What they wanted was plenty of wool and plenty of mutton, and both of the best quality. (Laughter.) In reference to a remark by Captain Rushout, he said that the man who did not keep a good stock of sheep could not make two grains of corn good where only one grew before, and that of all animals the sheep was the most useful in a national view. Man was fed by it, clothed by it, and it was the most remunerative to him of all the animals he kept. He did not share the gloomy apprehensions of Mr. Woodward, but he thought that meat would be too high. He would rather see the price 6*d.* than 7*d.*, and he considered that Wheat was too high also, with other things that constituted the food of the people.—Mr. Randall, in reply to the observations of Mr. Workman, said that Mr. Workman admitted the cross-bred sheep exhibited to-day to be as near perfection as possible, but doubted whether that degree of excellence could be maintained without going regularly back to the pure-bred sheep. His answer was that the sure way to damage that excellence was to go back to the pure-bred ram. Such was the result of every trial he had made. The way in which he had produced the animals he had shown here this day, animals which he thought might almost be compared with Mr. Workman's ram (laughter), was by crossing a half-bred ram with a half-bred ewe. He had always found when he went to a pure-bred ram, whether a long-wooled or a short-wooled, that the result was a loss of weight both in wool and carcass. It might appear strange that by going to a Cotswold sheep there would be a loss in weight of wool, but such was really the case. Mr. Workman seemed to quarrel with his (Mr. Randall's) ram because it partook too much of a Cotswold character, in its wool especially; but Mr. Woodward hit upon the very cause which rendered his wool coarser in appearance. He had been kept in a barn all the summer, except a few hours in the day, and was nearly always under cover. That, he (Mr. Randel) was convinced, made his wool appear so much coarser: than the wool he ever had bred before. From the way in which his wool grew, he had been twice shorn this season. He was shorn bare in May, and again in the latter part of June, so much was he disposed to make wool. What he (Mr. R.) wanted was a half-bred ram similar in character to his own flock, in order to charge the blood. He wished to keep up the weight, and he did not see why they should not as well have a fleece of 11 lbs. as well as one of 5 lbs., for he was certain that the weight of wool did not interfere with the production of weight in mutton. He had found no complaint by the staplers of the quality of his wool. A ram he had been using now four years had never given less than 11 lbs. of wool.—Mr. Workman: Your original breed is made up of five or six different sorts.—Mr. Randall said the only blood he had used were the long-wool and the Shropshires. He had a flock of Leicesters; these he crossed with some Cotswolds, and the produce was put to a Shropshire Down. The result was a half-bred stock that he had persevered with ever since. It had been thought there was a mixture of Hampshire blood in his flock. It was not so. He tried it more than once, but unsuccessfully. His method was to breed from rams of the same character as the ewes. No doubt in all breeds excellence had been obtained by selection. Violent crossing—such as long-wool with a short-wool—produced a mixed character in the flock, and was to be avoided. Some time or other he might claim for his flock some better title than that of cross-bred. His idea of cross-bred was that it applied to the first cross, when animals of distinct breeds were put together; but that a different title was due to the new breed, which was the produce of cross-bred animals carefully selected for possessing similar characteristics. He hoped to be able to designate them as Worcestershire Downs, or Vale of Evesham sheep, instead of double-dyed mongrels which some had called them.

President bantered Mr. Workman a little about his ram, and then went on to narrate the experience of a French gentleman in attempting to improve the breed of sheep in his neighbourhood, by means of a pure English ram. The experimentalist was at first unsuccessful, but by a long course of crossing his half-bred ewes with other French breeds he succeeded in producing a useful flock with them on returning again to the English ram. The Leicesters (the President proceeded to say) were produced by Mr. Bakewell breeding in and in.—Mr. Adcock wondered how any man could doubt for a moment the success of the cross-breeding system. He and Mr. Randall had gone on year by year cross-breeding, and their sheep to-day proved that they went on increasing in excellence. Not a pure Leicester man—not a Down man durst show against them (Laughter). He had himself taken the prize four years in succession with cross-bred sheep against all others. He called his Shropshires, but they might call them Vale of Evesham sheep if they liked.—Mr. Bayzand expressed his determination to persevere in breeding pure sheep. He admired the cross-bred sheep as a class, but still thought that recourse must be had to the pure breeds to keep up the quality. He had been a large contributor to-day, and had sent 50 Leicester theaves from his flock to show Mr. Randall what could be done, and perhaps to make him a convert. Mr. Randall and Mr. Adcock deserved the compliment which had been paid to their sheep, but he should stick to his own breed (applause).—Mr. W. Woodward inquired which would produce the most wool and mutton per acre?—Mr. Bayzand: The Leicester. The theaves of mine have been running ten to the acre. None will stock so thick as the Leicester.—*Abridged from Worcester Herald.*

## Reviews.

*The Architecture of the Farm—a series of Designs for Farm Houses and Farm Steadings, Factors' Houses and Labourers' Cottages, with Descriptions.* By John Starforth, architect. William Blackwood & Son, Edinburgh and London.

The contents of this handsome quarto volume are accurately described in the title quoted above. We will at present only add that the work is got up in the very first style, and that both author and publisher may well be congratulated on the result of their labours.

## POULTRY.

*Prize Fowls.*—In exhibiting Cochín China fowls, nothing is more important than matching in colour, because there are classes for different ones, and if a cinnamon cock be put with buff pullets, of course, success cannot be hoped for. It is a mistake to suppose, because the prize list class buff and cinnamon together, that birds of both colours may be put in one pen. It must be entirely of one or the other, and in such a class judges can give no preference to either, but must decide according to the other merits of the birds. Choose them with small, upright, straight, well-serrated combs; naturally small tails; ample fluff, and well feathered yellow legs. Select them as large as you can, but recollect size is not the only merit, nor is it the most important point. Look for sharp intelligent heads, legs as short as possible, colour uniform throughout. Do not be discouraged if your fowls are not very heavy, but at the same time, make them as good as you can. Hens 8 lbs. each, and cocks 9 lbs. to 10 lbs. have little to fear. Above all, avoid any trimming or mutilation, which, meant for improvement, can only end in disappointment and disqualification. Dorking fowls, like all others, should match in form and colour; not because colour is any indication of purity in this breed, but because it is essential to ensure success, that every possible precaution should be used; and as I have before written, if the competition be very close, as it always is where the entries are numerous, perfect uniformity may turn the scale. Pullets of a dark chocolate ground, with white spots or splashes, should be put with either a black-breasted red cock or a red and white speckled cock, with black and white mottled breast. Brown hens with black speckles may go with the same cocks, or with a very dark cock, with a little ginger in his hackle, saddle, and wings. Grey hens of every shade should be put with a cock having black breast and tail, silver hackle and saddle. Cuckoos must be all alike; in these birds alone can cocks be found with precisely the same plumage of the hens; the combs should always be uniform. Choose birds with fine heads, very deep bodies, good carriage, head and tail erect, short white legs, five claws distinctly defined, and prominent breasts; 6½ lbs. for hens, and 9 lbs. for cocks are capital weights. No fowls are so heavy in small compass as the Dorkings; their compactness takes away the appearance of size. Without being deterred by the accounts you will sometimes read of impossible fowls, and marvellous weights, if you can select them right in colour and about the weight I have mentioned, exhibit them with confidence, and even if they are somewhat lighter. Hundreds of successful exhibitors have been surprised to find themselves possessors of large silver medals and valuable prize stocks, when they imagined they were barely “mediocre.” *John Baily.*

### Miscellaneous.

*Treatment of Labourers.*—The master of horses, when summer labour is done, has to feed his horses through the winter. If he said to his horses, "Quadrupeds, I

have no longer work for you ; but work exists abundantly in the world. Are you ignorant (or must I read you political economy lectures) that the steam-engine always creates in the long run additional work ? Railways are forming in one quarter of the earth, canals in another—much cartage is wanted. Somewhere in Asia, Europe, Africa, or America—doubt it not—you will find cartage. Go, and seek cartage—and good go with you.” They with protrusive upper lip snort dubious, signifying that Europe, Asia, Africa, and America lie somewhat out of their beat—that what cartage may be wanted is not too well known to them. *They* can find no cartage—they gallop distracted along highways all fenced in to the right and to the left—finally, under pain of hunger, they take to leaping fences, eating foreign property, and—we know the rest. *Thomas Carlyle.*

### Notices to Correspondents.

"A WORD IN SEASON:" *C H.* We have not got it beside us; but any bookseller can get it for you through his London correspondent.—"*Low's Elements of Practical Agriculture.*"  
DRAINING: *W D.* Certainly you can drain into your own ditch, the other side your own hedge.

MANURE: *Charley*.—A bullock, stall-fed for six months upon 112 lbs. of Turnips and 4 lbs. of oilcake per day, and straw *ad libitum*, may be supposed to make in that time, presuming the animal to weigh at the end of six months, when fat, between 60 and 70 stones of 14 lbs. each," about six or seven tons of dung, besides two or three tons weight of urine, which the quantity of litter supposed to be used will not absorb—and which will therefore run to the tank or to waste. You will see the subject very fully discussed in the article "Manure," by Mr. Haxton, in "Blackie's Cyclopaedia."

**PAYING FOR STABLES:** *Canterbury.* The best is common paving-stone, tooled in the direction in which you wish the water to run.

RIVETT'S WHEAT: *JH W.* It is a late, but productive, Wheat. It does not fetch so high a price in the market as the unbearded kinds.

STEAM JET: A Landlord asks—Has the steam jet been used in Hop oasts to remove the "reek" so much complained of by the dryers? The power of the steam jet to cause a current of air is well known to be wonderful. The expense would be trifling, as the surplus heat of the furnace might be turned to account in

the drying process.

**WIREWORM:** *G. M.* If your soil is of a free texture, with open subsoil, you may put almost any quantity of salt per acre now without injuring the seed to be sown in spring. We should be disposed to cultivate the field thoroughly now, and throw it up for the frost to act on it, sowing 10 cwt. per acre of salt broadcast over it, as soon as it was well worked.

## Markets.

COVENT GARDEN, Oct. 15.

The market continues to be well supplied with Vegetables and Fruit, but trade remains dull. Good melting Peaches and Nectarines are over. English Grapes are abundant. Pears now consist of Beurre d'Anglais, Brown Beurre, Bonne Louis, Gansel's Yellow and Golden Wonder. Imports of Potatoes from the Continent are still keen. Plums from the South of France fetch 6s. per basket. English Plums are nearly over. Carrots and Turnips fetch from 2d. to 4d. per bunch. Potatoes are much diseased, but prices for them are rather better. Mushrooms are much more plentiful, and a little cheaper. The following are the most plentiful: Marigolds, Fuchsias, Roses, Mignonettes, and Tree Carnations.

## FRUIT

Pine-apples, per lb, 3s to 6s	Lemons, per doz., 1s to 2s
Grapes, hothouse, per lb, 1s to 3s 6d	Oranges, per doz., 2s to 3s
— Portugal, per lb., 6d to 1s	Almonds, per peck, 5s
Plums, per punnet, 1s to 2s	— sweet, per lb., 2s to 3s
Apples, per bush, 3s to 6s	Filberts, p. 100 lbs., 65s to 80s.
— dessert, p. hf sieve, 2s to 4s	Walnuts, per 100, 1s to 1s 6d
Pears, per doz., 1s to 3s	Nuts, Barcelona, per bush., 20s
	— Cobs, p. 100 lbs., 80s to 100s

## VEGETABLES.

Cabbages, per doz., 9d to 1s	Garlic, per lb., 6d to 8d
Calli-flowers, each, 2d to 4s	Lettuce, Cab., p. doz., 6d to 8d
Greens, per doz., 2s to 3s	— Cos, per score, 9d to 1s
French Beans, per half sieve, 3s to 4s 6d	Radishes, per doz., 1s to 2s
Brussels Sprouts, do., 2s to 2s 6d	Small Salads, p. pun., 2d to 3d
Potatoes, per ton, 60s to 160s	Horse Radish, p. bundle, 2s to 4s
— per cwt., 6s to 7s	Mushrooms, p. pott., 1s to 2s 6d
— per bush., 2s 6d to 5s	— per bushel, 6s to 8s
Turnips, per doz., 2s to 3s	Sorrel, per hf. sieve, 6d to 1s
Cucumbers, each, 2d to 3d	Artichokes, per doz., 3s to 6s
Celery, per bundle, 9d to 1s 6d	Fennel, per bunch, 2d to 3d
Carrots, per doz., 4s to 6s	Savory, per bunch, 2d to 3d
Spinach, per sieve, 1s to 2s	Thyme, per bunch, 2d to 3d
Beet, per doz., 1s to 1s 6d	Parsley, p. doz. bunchs., 2s to 4s
Onions, Spanish, p. doz., 1s to 3s	Mint, green, per bunch, 2d to 4d
Leeks, per bunch, 3d to 4d	Basil, do., per bunch, 6d
Shallots, per lb., 6d to 8d	Marjoram, do., do., 6d
	Watercresses, p. 12 bun., 3d to 4d

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Oct. 13.					
Prime Meadow Hay	90s to 115s	Clover	...	...	90s to 126s
Inferior do. ...	50 80	Second cut	...	...	70 110
Rowen ...	45 55	Straw...	...	...	36 42
New Hay ...	— —				E. J. DAVIS.

WHITECHAPEL, Oct. 13.			
Fine old Hay	...100s to 105s	Old Clover ...	...120s to 126s
Inferior do. ...	... 80 90	Inferior do. ...	...100 110
New Hay ...	... 80 86	Fine new do.	...100 108
Inferior do. ...	... 36 55	Inferior do. ...	... 80 99

ENGLISH TIMBER,—Oct. 15.

	ROUND TIMBER.	PLANK.	INCH BOARD.
	Per load.	Per foot cub.	Per foot superf.
Oak .....	£5 0 to £6 10	3s. 0d. to 5s. 0d.	0s. 4½d. to 0s. 6d.
Ash .....	3 10 — 4 10	2 0 — 3 0	0 3 — 0 4
Elm .....	2 15 — 3 15	1 3 — 1	0 2 — 0 3½
Beech .....	2 10 — 3 10	1 3 — 1	0 2 — 0 3
Lime .....	3 0 — 4 0	1 6 — 2 0	0 3½ — 0 4½

ENGLISH AND FOREIGN BARK.

No alteration has occurred in this article. Good samples will find buyers at our quotations.

English Coppice, p. load of 45 cwt.	... £14	10	0	to	£15	10	0
" Timber " "	... 13	0	0	to	15	0	0
Antwerp Coppice, per ton	... 5	5	0	to	6	0	0
" Timber, " "	... 5	5	0	to	6	0	0

WOOL.—The staplers are beginning to feel the effects of short time working. The actual sales for the week are trifling, and prices barely supported. Nells and short wool remain without change in value, which may be attributed to the reduced quantity now making.

**YARN.**—The stoppage of spinning frames during the month of October cannot be short of 50 per cent., reckoning the machinery working short time; in fact, such irregularity was never heard of in the return of years. The turn-out in Lancashire and the idle looms around here have caused great interruption to the whole



**THE TEETH AND BREATH.**—A GOOD SET OF TEETH ever insures favourable impressions, while their preservation is of the utmost importance to every individual, both as regards the general health by the proper mastication of food, and the consequent possession of pure and sweet breath. Among the various preparations offered for the purpose, ROWLANDS' ODONTO, or PEARL DENTIFRICE, stands unrivalled in its capability of embellishing, purifying, and preserving the teeth to the latest period of life. Prepared from Oriental Herbs with unusual care, transmitted to this country at great expense. This unique compound will be found to eradicate all tartar and concretions, and impart a pearl-like whiteness to the enamelled surface, remove spots of incipient decay, render the gums firm and red, fix the teeth firmly in their sockets, and from its aromatic influence impart sweetness and purity to the breath.—Price 2s. 9d. per box. CAUTION.—The words "ROWLANDS' ODONTO" are on the label, and "A. ROWLAND & SONS, 20, Haton Garden," engraved on the Government Stamp affixed on each.—Sold by the Proprietors and by Chemists and Perfumers.



## GLASS FOR CONSERVATORIES, ETC.

**HETLEY AND CO.** supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES AND SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

## GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

**JAMES PHILLIPS AND Co.** have the pleasure to hand their present prices of Glass for Cash:—

SHEET SQUARES. In Boxes of 100 feet.	CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£ s. d.
6 by 4, and 6 1/2 by 4 1/2	0 12 6
7 " 5, " 5 1/2 " 5 1/2	0 13 0
8 " 6, " 6 1/2 " 6 1/2	0 15 0
9 " 7, " 7 1/2 " 7 1/2	1 0 0
10 " 8, " 8 1/2 " 8 1/2	1 10 0

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 8 1/2d. per square foot, according to size.  
21 oz. " 3 1/2d. to 5d. " " "  
26 oz. " 3 1/2d. to 7 1/2d. " " "  
Squares for Orchard Houses, on Mr. Rivers' plan, 20 by 15, 20 by 14, 20 by 13, and 20 by 12 always on hand. Cases of Sheet-Glass, size about 40 by 30, 16 oz. to the foot, 2l. 2s. per Case of 200 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

## ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON**, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.

WAREHOUSE, 57, BISHOPSGATE STREET WITHOUT, LONDON.

Cut to any size squares, not above 40 inches long. Squares in boxes, 100 feet each.  
Under 6 by 4 ... 12s  
6 by 4, 6 1/2 by 4 1/2 ... 13s.  
7 by 5, 7 1/2 by 5 1/2 } under 9 by 7 15s.  
8 by 6, 8 1/2 by 6 1/2 }  
9 by 7, 9 1/2 by 7 1/2 } 20s.  
10 by 8, 10 1/2 by 8 1/2 }  
11 by 9, 11 1/2 by 9 1/2 }  
12 by 10, 12 1/2 by 10 1/2 }  
Large Sheet of No. 16 very superior, packed in cases of 100, 200, and 300 feet, at 2 1/2d. to 2 3/4d. per foot.

Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments, Fern Shades and Dishes.

## TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, &amp; SANITARY WORKS.

**PATENT GLASS TUBES**, Iron Coated with Glass, Gutta Percha, Comminated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

**FREEMAN ROE,**

HYDRAULIC ENGINEER,  
70, Strand, and Bridgefield, Wandsworth.

## BAKER'S FOUNTAINS.

THE PHEASANTY, BEACFORT STREET, KING'S ROAD, CHELSEA.  
**MESSRS. BAKER** can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

**AUSTIN'S ARTIFICIAL STONE.**—Garden Fountains and other ornamental works continue to be executed in this material by Mr. Austin's late partner, JOHN SEELEY, at the original manufactory, Nos. 1 to 4, Keppel Row, New Road, near the Regent's Park. N.B. This material is strictly an artificial limestone, of an agreeable grey colour, and wholly free from the glazed and reddish appearance of Terra Cotta and other pottery. It is quite waterproof, and may be laid under water for any time without injury. The following list will give some idea of the variety of the stock:—

VASES, in all styles, from 10s. to 30l. each.

FOUNTAINS, more than One Hundred Designs.

STATUES copied from the Antique.

MODERN FIGURES, from 2 to 12 guineas.

BASKETS, with suitable Pedestals, from 1 to 30 guineas.

SHEELS, from 12s. to 15l.

FIGURES OF ANIMALS AND BIRDS.

CRESTS FOR GATE PIERS.

TAZZAS, or FLOWER BASINS, from 30s. to 24l.

MEMORIAL URNS and PEDESTALS.

SUN-DIAL PEDESTALS.

BALUSTADING in every Style.

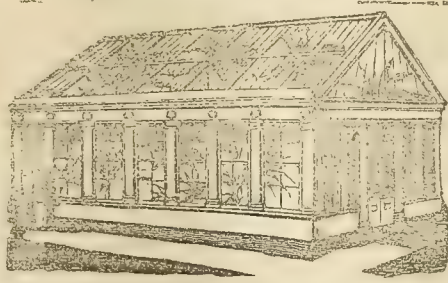
BAPTISMAL FONTS.

**WATERPROOF PATHS.**—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of this mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It runs then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, no water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON**, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

**GREEN AND HOT-HOUSES** made by machinery, at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. 14-inch Greenhouse Lights, at 3d. per foot; 2-inch, at 4 1/2d. per foot. The Trade and Merchants sending Sashes to Australia supplied at wholesale prices. List of Prices by enclosing two postage stamps.

## HORTICULTURE IN ALL ITS BRANCHES.



**J. WEEKS & Co., King's Road, Chelsea,**



## HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.

## LIGHT, CHEAP, AND DURABLE ROOFING.

**CROGGO'S PATENT ASPHALTE ROOFING** FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by unpractised persons. Price ONE PENNY PER SQUARE FOOT. Croggo's Patent NON-CONDUCTING FELT for steam-boilers and Pipes, saves 25 per cent. of fuel. Samples and testimonials sent by post on application to Croggo & Co., 2, Finsbury Hill, London, who also supply SLIP-SHEATHING FELT and INODOROUS FELT for damp walls, and lining iron houses, to equalise the temperature.

## UPHOLSTERY AND CABINET FURNITURE.

damask, chintzes, Tournay, Brussels, and cut pile carpets, gilt cornices, pier and chimney glasses, chairs, in mahogany, rosewood, and walnut-tree, too tables, dining tables, cheffonières, dining tables, bookcases, sideboards, bed-rooms, Arabian, French, and Chinese. The enamelled japanned bed furniture, to imitate maple, bamboo, and other woods.—At T. MADGWICK'S, 11, Pavement, Finsbury.

## REMOVING AND WAREHOUSING FURNITURE.

Contracts entered into for the removal of Furniture to any distance. Every article requisite for the protection of the furniture provided, so that only the hire is charged. The estimate if desired will include the entire responsibility and risk of removal, also the taking down, unpacking, and re-arranging the whole of the Furniture in the various rooms, altering and laying down Carpets, also Blinds, Cornices and Curtains. At T. MADGWICK'S, Upholsterer, pavement, Finsbury.

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**MR. THOROLD**, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure-grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

**A LANDSCAPE GARDENER** in successful Practice offers to serve by the year or otherwise, to design Horticultural Erections; also heating them on a new improved and economical principle. Lands Drained or improved for the Farm or Garden. New Grounds laid out, and old ones improved with taste and economy. The general management of neglected Estates taken to improve.—J. N., Landscape Gardener, 32, High Street, Bloomsbury, London.

## FRIGI DOMO, patronised by the Horticultural

Society and the Zoological Society, a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ANGLER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

## CARSON'S ORIGINAL ANTI-CORROSION

PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for outdoor work at their country seats. The Anti-Corrosion is particularly recommended as the most durable outdoor Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SOY, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

## SIR WILLIAM BURNETT'S DISINFECTING

FLUID.—THE BEST CONCENTRATED "CHLORIDE OF ZINC."—GREAT REDUCTION OF PRICE.—The merits of this Fluid, invented by Sir W. BURNETT, M.D., F.R.S., &c., &c., for the Disinfection of Sick Rooms, Clothing, Linen, &c.; for the Prevention of Contagion, the Preservation of Animal Matter from Putrescence, the Purification of Bilge-water, Cesspools, Drains, Water-closets, &c., are now so well known to the public as to render comment unnecessary.

Sold at the Office, 18, Cannon Street, City, London; and by Chemists, Shipping Agents, and others throughout the United Kingdom, in imperial quart bottles at 2s. 6d.; in pints at 1s. 3d.; in half-pints at 9d.; and in bulk at 6s. per gallon.

CAUTION.—Beware of Imitations.—The only genuine Disinfecting Fluid is sealed over the cork with the inscription, "Sir Wm. Burnett's Disinfecting Fluid," and accompanied with numerous testimonials of the highest order, and instructions for its use.

## EUREKA.—PATTERNS of the new coloured

shirtings in every variety of colour, upwards of 200 different styles for making FORD'S EUREKA SHIRTS, including sprigs, spots, stripes, &c., sent post free, on receipt of six stamps, price 2s. the half dozen. List of prices and mode of self measurement sent post free.—RICHARD FORD, 35, Poultry, London.

N. B.—Agents are now being appointed in all towns. Terms, &c., forwarded on application.

## FENDERS, STOVES, AND FIRE-IRONS.

Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ormolu ornaments and two sets of bars, 5l. 10s. to 12l. 12s.; Bronzed Fenders complete, with standards, from 7s. to 32l.; Steel Fenders from 2l. 15s. to 6l.; ditto, with rich ormolu ornaments, from 2l. 15s. to 7l. 7s.; Fire-irons from 1s. 9d. the set to 4l. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges, 1st.—From the frequency and extent of his purchases; and, 2dly.—From those purchases being made exclusively for cash.

## DISH COVERS AND HOT-WATER DISHES

in every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 6s. the set of six; Block Tin, 12s. 3d. to 27s. 2d. the set of six; elegant modern patterns, 32s. 3d. to 57s. 6d. the set; Britannia Metal, with or without silver-plated handles, 7s. to 14s. 6d. the set; Sheffield Plated, 10l. to 16l. 10s. the set; Block Tin Hot-water Dishes, with wells for gravy, 18s. to 19s.; Britannia Metal, 20s. to 72s.; Sheffield plated, full size, 9l. 10s.

## GAS CHANDELIERS AND BRACKETS.—The

increased and increasing use of gas in private houses has induced WILLIAM S. BURTON to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Ironmongery Establishment the largest and most remarkable in the kingdom, viz., from 12s. 6d. (two lights) to 16l. 6s.

## LAMPS OF ALL SORTS AND PATTERNS.—

The largest, as well as the choicest, assortment in existence of PALMER'S MAGNUM and other LAMPS, CAMPHIRE, ARGAND, SOLAR, and MODERATEUR LAMPS, with all the latest improvements, and of the newest and most recherché patterns, in ormolu, Bohemian, and plain glass, or papier-mâché, is at WILLIAM S. BURTON'S, and they are arranged in one large room, so that the patterns, sizes, and sorts can be instantly selected. PALMER'S CANDLES, 8 1/2d. per lb.—Palmer's Patent Candles, all marked "Palmer."

Single or double wicks ... 8 1/2d. per lb.  
Mid. size, 3 wicks ... 9d. "  
Magnums, 3 or 4 wicks ... 9 1/2d. "  
English Patent Camphine, in sealed cans 6d. 6d. per gallon.  
Best Colza Oil ... 4s. 6d.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the above, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel, Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, no arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.



Price 2s. 6d.,

**FOLIA ORCHIDACEA.**—Part IV. By Professor LINDLEY. Containing the conclusion of EPIDENDRUM, HEMISCLERIA, PINELLA, ACACALIA, AZOLA, ONCIDIUM, COCHLIODA, CUEIRADENTIA, ACAPTEA, VANDA, LITHIA.  
Published for the Author, by J. MATTHEWS, at 5, Upper Wellington Street, Covent Garden, London.

This day is Published, Price 1s.

**A SUPPLEMENT TO THE HORTICULTURAL SOCIETY'S CATALOGUE OF FRUITS**; printed uniformly with the last edition, so that it can be bound up with it.  
21, Regent Street, and all Booksellers.

Complete in One Volume, 8vo, price 21s. cloth, or 24s. 6d. half-bound morocco.

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London: BRADBURY & EVANS, 11, Bonny Street.

**NEW WORK BY THE AUTHOR OF VANITY FAIR.**

This day is published, price One Shilling, No. I, of

**"THE NEWCOMES."** By W. M. THACKERAY.  
With Illustrations by RICHARD DOYLE.  
London: BRADBURY & EVANS, 11, Bonny Street.

**THE FIELD (ILLUSTRATED)**, of Saturday, October 15, 1853, published in time for the Early Morning Trains. Contains:—Harvest—the Last Load, drawn by Harrison Weir; the Turf, by the Flying Dutchman; Full Report of Newmarket Second October Meeting; the Latest State of the Odds; A Hint for the Cambridgeshire; Gloucester Cavalry, and other Races; The Life of a Race-horse, Chap. XVII.; Arrival of the Overland Mail; the Turkish Declaration of War; the Railway Accident in Ireland—the Inquest; Rather Dramatic, drawn by H. K. Browne; Despatches from the Arctic Expedition—Discovery of the North-West Passage; Loss of an Emigrant Ship—Three Hundred and Forty-eight Drowned; Disclosures on the Low Diet at Winchester Gaol; Yachting in the United States; Meetings of the Royal London, Prince of Wales, and other Clubs; Safety of the May-day Schooner; Richmond Amateur Bowing Regatta; Regatta at Stornaway; Cricket Matches; Coursing; Chess, Angling, Poultry; Markets; General Correspondence; All the News of the Week, &c., &c. Price Sixpence. Office, 4, Brydges Street, Covent Garden.

**THE GARDENERS' CHRONICLE, &c.**, forwarded with regularity to all parts of the world by MUDIE & SONS, 15, Coventry Street, Inyarnmarket, London.

**MUDIE AND SONS, MANUFACTURING STATIONERS**, 15, Coventry Street.—Stationery at the lowest advertised prices. Crests or Initials stamped without charge.

**GLENNY'S GARDEN ALMANACK** (17th year), November 1st. Is. Whoever may desire to have Fruits, Flowers, Plants, Vegetables, Books, Implements, or Garden Matters noticed, must send specimens or samples to Mr. GLENNY, 420, Strand.

**THE GARDENERS' ALMANACK**, Edited by GEORGE W. JOHNSON, Esq., will be published in November, price 1s.

This year it will be richer even than usual in information. Besides ALL the usual contents of an Almanack, some of which were omitted last year, there will be a detail of the Gardening Instructions and Insects found in each Month. Lists of the best Florists' Flowers, Tables useful to the Cultivators of the Soil, &c.  
London: Published for the Company of Stationers, by JOSEPH GREENHILL, at their Hall, Ludgate Street.

**ALMANACK FOR AGRICULTURISTS AND COUNTRY GENTLEMEN.**

**MOORE'S ALMANACK IMPROVED** and ENLARGED; or, WILL'S FARMER'S and COUNTRY-MAN'S CALENDAR for 1854, will be published in November, price 9d.

\* \* \* This very popular and useful Almanack now contains a List of Fairs in England and Wales.  
London: Published for the Company of Stationers by JOSEPH GREENHILL, at their Hall, Ludgate Street.

**MOORE'S ALMANACK for 1854**, price 6d., will be published in November. Containing, besides the usual Calendar, a full Account of the Eclipses and other Astronomical Phenomena of the Year, the Stamp Duties, Summary of the Alterations in the Law, Taxes, and Tariff affecting the Farmer and Country Resident, Cal Regulations, and other Miscellaneous Information.  
London: Published for the Company of Stationers by JOSEPH GREENHILL, at their Hall, Ludgate Street.

Cheaper Editions, 3s. 6d. each.

**READINGS IN SCIENCE.**  
READINGS IN POETRY.  
READINGS IN ENGLISH PROSE LITERATURE.  
READINGS IN BIOGRAPHY.  
London: JOHN W. PARKER & SON, West Strand.

NOW READY.

**MURRAY'S MODERN DOMESTIC COOKERY** BOOK. A New and Cheaper Edition, most carefully revised and improved. With 100 Woodcuts. Price Five Shillings, strongly bound.  
Of this popular work, more than 210,000 Copies have been sold.  
JOHN MURRAY, Albemarle Street.

**THE QUARTERLY REVIEW**, No. CLXXXVI, is Published this day.

CONTENTS:—

- I. THE INSTITUTE OF FRANCE.
- II. MURDER OF THOMAS A'BECKET.
- III. THE DAUPHIN IN THE TEMPLE.
- IV. THE HOLY PLACES.
- V. DIARY OF CASABON.
- VI. ELECTRO-BIOLOGY, MESMERISM, AND TABLE-TURNING.
- VII. LIFE OF HAYDON.

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Now ready.

**THE PRINCIPLES OF GEOLOGY**; or, the Modern Changes of the Earth and its Inhabitants, as illustrative of Geology. By SIR CHARLES LYELL, F.R.S. Ninth and most thoroughly revised Edition. With numerous Woodcuts. 8vo. 18s.

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JOHN MURRAY, Albemarle Street.

## THE ARCTIC DISCOVERIES.

**THE ATHENÆUM** of this day, Oct. 15, contains full particulars of Captain McClure's Discovery of the North West Passage, with an OUTLINE MAP.

## NOTICE TO NURSERYMEN.

**TRANSPLANTED FRUIT STOCKS.**—We, the undersigned Cultivators of Fruit Stocks, beg to inform the Trade that the following prices will be charged during the ensuing season:—  
Muscle Plum ... per 1000 30s. Cherries ... per 1000 30s. to 35s.  
Common do. ... " 40s. Pears ... " 40s. to 50s.  
Brussels do. ... " 35s. Crabs ... " 30s.  
Brompton Mignonne, ... 40s. Paradise ... " 50s.  
White Pear Plum ... 40s. Quince ... per 100 8s.

WATERER & GODFREY, Knap Hill, Woking, Surrey.  
DONALD & SON, Goldthorpe Nursery, Woking, Surrey.  
GEORGE JACKMAN, Woking Nursery, Woking, Surrey.

## TO FORESTERS AND OTHERS.

**WANTED** immediately, from 10,000 to 15,000 HAZEL or ASH RODS, from 7 to 9 feet in length, and from 1 to 1½ inch diameter.—Apply by letter, stating price, to Messrs. PETER LAWSON & SON, Seedsmen, &c., Edinburgh.

**MR. LEWIS**, 5, Christopher Street, Finsbury Square, has orders to sell One Thousand CAMELLIAS, well set with Flower Buds, one-third 18 inches, one-third 2 feet, and one-third 2½ feet high; all in one lot, or in several lots of not less than 50 plants, and at 15d. per plant, package included. The lots will contain from 12 to 15 names, viz., Colvilli, Delicatissima, Rubra plena, Ochroleuca, Palmer's Perfection, Alba plena, and similar names.

**GLENNY'S IMPROVED BALSAM SEED**, in six Classes of Colours, 3s. 1d. in stamps; packet of all mixed, 1s. The extreme boldness of the flowers this season has greatly limited the quantity of seed, therefore early applications are recommended.—420, Strand.

**FOOD FOR PIGS, SHEEP, AND POULTRY.**—  
DAMAGED WHEAT ... 30s. per qr. 50 lbs. per bush.  
INDIAN CORN ... 42s. " 54lbs. "  
LENTILS ... 44s. " 52lbs. "  
RICE FLOUR ... " 8s. per ton.

JAMES MAY & CO., Finsbury Wharf, 34, Wharf Road, City Road, London. Samples sent on receipt of two postage stamps. Orders from the country must be accompanied with a Post Office Order, or references in London.

**JOHN T. WILLMER, JUN.**, Auctioneer, Sunbury, Middlesex, begs to inform Nurserymen and Florists having stock to dispose of by Auction, that he undertakes the same at the lowest charges.

## INVESTMENT.—HOLLAND.

**FOR SALE**, with immediate possession, an ESTATE of 1162 ACRES, 1000 of which are covered with a valuable deposit of peat, which being the fuel in universal use in Holland, from the high price of coals, always commands a ready market. The Estate is intersected by canals for the conveyance of the peat, and these communicate with one of the chief canals in a northern province of Holland, and by these means there is direct and cheap water communication with the towns and cities in which the fuel is consumed; 150 acres are cleared and already in excellent cultivation, exposing a fertile soil, and 12 acres in wood. On the estate is a comfortable Dwelling House, two Farmhouses, 14 Cottages, a Large Barn, and Cattle Sheds. There are also for sale all the implements required in digging the peat and cultivating the land, together with eight Horses, 20 head of Cattle, &c., also a Thrashing Machine, &c.—For further information, apply, by letter, to J. C. M., at the Office of this Paper.

## Sales by Auction.

## COCHIN CHINA POULTRY.

**EXTRA SALE BY AUCTION, ON TUESDAY, OCTOBER 25, 1853.**  
**MR. J. C. STEVENS** begs to announce that there will be a sale of FANCY POULTRY, at his Great Room, 28, King Street, Covent Garden, on TUESDAY next, the 25th of October, at 12 precisely, in which will be included many choice Birds, from the renowned yards of Dr. Cust Wynne and R. J. Simpson, Esq., both of Sandbach, and Wm. Symonds, Esq., of Weymouth.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 28, King Street, Covent Garden, London.

## TO FLORISTS AND OTHERS.

KINTBURY, NEAR HUNGERFORD, BERKS.

**MR. JELF** will sell by Auction, on FRIDAY, October 21, at 11 o'clock, a very large and valuable assortment of both fancy and show varieties of DAHLIAS, many of them seedlings which have not yet been sent out, the property of that well known and most celebrated cultivator, Mr. W. R. WHEALE, late of Elett.—Hungerford, October 15.

## MONKHAM'S, WALTHAM ABBEY, ESSEX.

## IMPORTANT SALE OF SHORT-HORNS, &amp;c.

**MR. STRAFFORD** is favoured with Instructions from B. E. COLVIN, Esq., to announce for Sale by Auction, without reserve, on TUESDAY, the 18th October next, at Monkham's Hall (in consequence of the same being Let) his entire Herd of Pure-bred SHORT-HORNED CATTLE, consisting of 36 head of Bulls, Cows, and Heifers, bred from stocks of the highest repute; also, a quantity of Boar and Sow Pigs, of the Yorkshire breed. After which will be offered, a choice selection of 12 Cows and Heifers, from the far-famed herd of J. S. Tanqueray, Esq., Hendon, Middlesex. And a few very superior young Cows and Heifers, bred by J. Kinder, Esq., Sandridgebury, St. Albans.—Catalogues with the Pedigrees may be had upon application to Mr. STRAFFORD, 89, Guildford Street, Russell Square, London.

## FULHAM ROAD.

**MESSRS. PROTHEROE AND MORRIS** will submit to public competition, by Auction, on the Premises, Stewart's Grove Nursery, Fulham Road, Chelsea, on FRIDAY, October 23, 1853, and following day, at Eleven o'clock each day, by order of Mr. Westmacott, leaving the business, the whole of the choice GREENHOUSE PLANTS, consisting of Camellias and Azalea indica, well set with Bloom Buds; 3000 Geraniums of the leading varieties; 1000 well-grown Myrtles; Cactus, Acacias, Cyttus, Daphnes, Double Primulas Begonia, Callas, Ferns and Mosses, Passiflora, Fuchsias, China, Half-Standard, and Tea-Scented Roses, in pots; Cyclamen, large Specimen Epiphanis floribunda, Hoya carnea, Schubarbia graveolens; also a quantity of Dutch Bulbs; Vegetable and flower seeds; a capital Nest, 350 Seed Drawers; Frames; a large quantity of Rotten Dung, Compost, &c.—May be viewed two days prior to the Sale. Catalogues may be had 6d. each, returnable to Purchasers, on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## NURSERY STOCK.

TO GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will Sell by Auction, on the Nursery Ground adjoining York Place, Stoke Newington, on MONDAY, October 17th and following day, at 11 o'clock each day, fine Ornamental and Deciduous Trees, Evergreens, and Flowering Shrubs, consisting of Aucubas, Portugal and Common Laurels, Variegated and Green Hollies, Arbor-Vitæ, Bay, Yew, Lilacs, Arbutus, Box, Limes, Acacias, Poplars, Evergreen Privets, Azaleas, and fine Rhododendrons, set with bloom buds; a fine assortment of Fruit Trees, comprising Standard and Dwarf Tree-bearing Peaches, Apricots, Nectarines, Cherries, Plums, Pears, Gooseberries, Currants, Grape Vines, &c. May be viewed prior to the Sale; Catalogues may be had on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO NOBLEMEN, GENTLEMEN, FLORISTS, &amp; OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will Sell by Auction, on the Premises, St. Stephen's Nursery, near St. Alban's, on WEDNESDAY, October 26th, and following day, at 11 for 12 o'clock precisely, by order of Messrs. D. Spriggins & Co. (in partnership), the whole of the valuable NURSERY STOCK, consisting of Standard and Dwarf Roses about 6000 of the choicest Perpetual kinds; about 2000 trained and untrained Fruit Trees of the most approved varieties; 30,000 fine Evergreens, of every variety, in considerable quantities; 30,000 fine Spruce, Scotch, and Larch Firs, &c., &c.—May be viewed any time prior to the Sale; Catalogues may be had (6d. each, returnable to purchasers) of the principal Seedsmen in London; of Mr. W. FELL, Nurseryman, Hitchin; Mr. W. CONY-WELL, Nurseryman, Barnet; at the Peahen Inn, St. Alban's; on the premises of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO GENTLEMEN, NURSERYMEN, FLORISTS &amp; OTHERS. BAYSWATER.

**MESSRS. PROTHEROE AND MORRIS** are directed to Sell by Auction, on the Premises, at Craven Hill Nursery, Bayswater, on MONDAY, October 31, and following days, at 11 o'clock each day, by order of Mr. Horroon, in consequence of the ground being wanted for building, the whole of the valuable NURSERY STOCK, consisting of Fruit and Forest Trees of the finest description, in great variety; Shrubs, Choice Ornamental and Specimen Trees; Deciduous and American Plants; a large assortment of Evergreens; selected Standard and Dwarf Roses, Hardy Climbers, &c.; together with the Stove and Greenhouse Plants, comprising Ixora, Burchellia, Francisca, Justicia, Pentas carnea, Hoya, Poinsettia, &c.; 50 Large Double White Camellias, Azalea indica alba, yellow Noisette and Devon's early Roses, Acacias, Epacris, Chovozema, Myrtles, Hardenbergia monophylla, Correas, &c., &c.—May be viewed prior to the Sale; Catalogues may be had, 6d. each, returnable to purchasers, on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. Adams to sell by Auction on the premises, Brompton Park Nursery, Park Lane, Brompton (near the Hoop and Toy), on WEDNESDAY, October 19th, and following day at 11 o'clock each day (in consequence of a portion of the land being required by the Commissioners of the Great Exhibition from the New National Gallery), the extensive NURSERY STOCK, consisting of a valuable assortment of large Evergreens and Deciduous Shrubs, from 5 to 8 feet high; fine Ornamental and Fruit Trees, American Plants, and Flowering Shrubs.—May be viewed on week prior to the Sale. Catalogues may be had (6d. each, returnable to purchasers) on the premises; the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO GENTLEMEN, NURSERYMEN, AND OTHERS.

A CONSIGNMENT FROM BELGIUM FOR ABSOLUTE SALE.

**MESSRS. PROTHEROE AND MORRIS** will Sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, Oct. 21st, at 12 o'clock, 500 Ghent Azaleas, 300 Camellias, 600 Standard and other Roses, 100 Kalmia latifolia, &c. The whole well furnished with bloom buds, with a variety of Greenhouse Plants.—On View the Morning of Sale; Catalogues may be had at the Mart; of R. Silberrad, 5, Harp Lane, Great Tower Street; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## FULHAM.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, &amp;c.

**MESSRS. PROTHEROE AND MORRIS** are commissioned by Mr. T. LOCKHART, to Sell by Auction, on the Premises, Farson's Green Lane, Fulham, on MONDAY, October 24, at 11 o'clock, a costly and extensive collection of Bulbs and Flower Roots, Flower Seed, Fruit Trees, Box Edging, Standard and Moss Roses; about 10,000 Strawberry Plants, in 10 sorts; a collection of Dahlias, two 3-light Boxes, several Dutch Bulb Cases, and Sundries.—May be viewed three days prior to the Sale; and Catalogues may be had (6d. each, returnable to purchasers) of Mr. LOCKHART, on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO TULIP FANCIERS, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. TYSO, of Wallingford, to sell by Auction, at the Mart, Bartholomew Lane, opposite the Bank of England, London, on TUESDAY, October 25, 1853, at Twelve o'clock, the whole of his costly and justly celebrated collection of TULIPS, comprising among the Bizarres, Tyso's Seedlings, Polydora, Emulata, Amelia, and Orestes; Dickson's Duke of Devonshire, Fortunatus, Glory of Abingdon, &c. In Erythronia, Thalia, Pandora, Louis XVI., Queen of Beauties, Tyso's Eugenia, Evander, &c. Among the Roses, Tyso's Herculean, Dutch Fonceau, Louis XVIII., Marchioness, Lavinia, Lady Mayores, &c. Together with a select assortment of Ranunculuses, including many choice Seedlings.—May be viewed the morning of Sale. Catalogues may be had at the Mart; of Mr. Tyso, Wallingford; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

## VALUABLE STOCK OF NURSERY PLANTS.

**T. M. FISHER AND SON**, will Sell by Auction, on the Premises, in the Mottram New Road, Hyde, by order of the assignees of J. Bowker, on MONDAY, TUESDAY, and WEDNESDAY, the 17th, 18th, and 19th days of October, sale to commence punctually at 11 o'clock each day, the extensive and valuable STOCK of FOREST TREES, ORNAMENTAL SHRUBS, EVERGREENS, &c., &c., now standing in the above Nursery; all the Plants properly acclimated and ready for immediate planting.—Further particulars and Catalogues can be had on the Premises; from Mr. ANDREW, solicitor, 31, Princes Street; or from the Auctioneers, 82, Kennedy Street, Manchester.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLER EVANS, of No. 7, Church Lane, in the Parish of St. Dunstons, both of the County of Middlesex, Traders, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, in the County of London, in the said County, where all Advertisements and Communications are to be addressed to THE EDITOR.—SATURDAY, OCTOBER 15, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 43.—1853.]

SATURDAY, OCTOBER 22.

[Price 6d.]

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## TO ADVERTISERS.

THE ADVERTISEMENT DUTY being now REPEALED, the PROPRIETORS of the GARDENERS' CHRONICLE beg to announce that there will henceforward be a reduction from the customary charge for each advertisement of 1s. 6d., the full amount of duty taken off by the Government. Advertisements of Gardeners out of Place, of not more than four lines in length, 1s. 6d. each.

## NEW CATALOGUE.

JOHN and CHARLES LEE'S CATALOGUE of STOVE and GREENHOUSE PLANTS for this autumn is just published, and may be had POST FREE on application.—Nursery, Hammersmith.

## FANCY GERANIUMS.

J. AND J. FRASER beg to call attention to their fine STOCK of the above. The Collection comprises about 100 varieties, amongst which are strong plants of the following fine sorts:—Magnum Bonum, Resplendens, Darling, Princess Alice Maude, Berryer, Erubescens, Richard Cobden, Triumphans, Cleopatra, Hero of Surrey, Lady Downes, and Formosissima. Collection of 12 varieties ... 12s. Ditto, ditto (new) ... 18s. to 24s. Lea Bridge Road, Leyton, Essex, October 22, 1853.

## CHOICE FRUIT AND VEGETABLES WANTED, DURING THE ENSUING WINTER AND SPRING, INCLUDING

PINE APPLES  
FORCED STRAWBERRIES  
MUSHROOMS  
EARLY CUCUMBERS  
CHOICE FLOWERS, &c. &c.

Apply to  
GEORGE TAYLOR, JUN.,  
Fruit Salesman,  
St. John's Market,  
Liverpool.

Terms: Cash on receipt of goods.

## PYRAMIDAL AND STANDARD FRUIT TREES.

WOODLAND NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WILLIAM WOOD AND SON beg to offer fine healthy clean grown trees as under. Per dozen:—

Apples, standards, 10s.  
— pyramidal trees, 10s.  
Cherries, standards, 15s.  
— pyramidal trees, 12s.  
— fine dwarf bushes on the Mahaleb Stock, suitable for potting, 15s.  
Medlars, standards, 15s.  
Mulberry, white, 4s.  
N.B.—Catalogue of Fruits may be had in exchange for two penny postage stamps.

## RARE AND HARDY CONIFERS.

Per dozen.—s. d.  
Abies Douglasi, 4 to 6 in. 12 0  
" khetrow, 6 to 9 in. 9 0  
" " 12 to 15 in. 12 0  
" " 2 to 3 ft. 24 0  
" Menziesi, 9 to 12 in. 9 0  
" " 12 to 2 ft. 12 0  
" orientalis, 4 to 6 in. bushy 12 0  
" " 6 to 9 in. do 18 0  
" pumila (Waterer's), very strong 24 0  
" Smithiana, 1 yr., 60 0  
" Wilmannia " 60 0  
Araucaria imbricata, 1 yr. per 100 42 0  
" " 1 1/2 to 2 ft. 60 0  
" " 3 ft., each 15 0  
Cedrus Atlantica, 9 to 12 in. 20 0  
" Deodara, 1 year, per 100 20 0  
" " 2 years " 35 0  
" " 12 to 15 in. 100 0  
" " 18 in. to 2 ft. 150 0  
" " 2 to 2 1/2 ft. 30 0  
" " 3 to 4 ft. 72 0  
" " 5 to 6 ft. each 21 0  
" Libani, 1 1/2 to 2 ft. 18 0  
" " 2 to 3 ft. 30 0  
Cryptomeria japonica, 3 to 3 1/2 ft. each 5 0  
Cupressus Tourneforti, 1 year ... per 100 5 0  
" " funebris, 4 to 6 in. 9 0  
" " 6 to 9 in. 12 0  
" " tortulosa, 12 to 18 in. 18 0  
" " Goveniana, 12 to 15 in. 24 0  
" " 1 1/2 to 2 ft. 42 0  
" " 2 to 2 1/2 ft. 60 0  
" Lambertiana, 12 to 15 in. 24 0  
" " 18 in. to 2 ft. 42 0  
" " Udeana, 9 in. 12 0  
" " 12 to 18 in. 18 0  
" " 18 to 24 in. 30 0  
" " Whiteley " each 5 0  
" new species, from the Himalaya, 5 in., 1 year 60 0  
Dacrydium Franklini, 4 to 6 in. " 24 0  
Fitz-Roya Patagonica, each 5 0  
Juniperus Bedfordiana, 6 in. 9 0  
" " 9 to 12 in. 9 0  
" " 1 to 1 1/2 ft. 18 0  
YUILL & Co. beg to refer to their Advertisement in last week's Gardeners' Chronicle.

Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 160 miles of the Nursery.—Royal Nursery, Great Yarmouth.

## SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp. Saffron Walden Nursery, October 22.

## NOBLE SPECIMENS

OF  
CONIFERÆ.

LUCOMBE, PINCE, AND CO., beg to call attention to their unrivalled Stock of the above, prices and sizes of which can be had on application to them. Exeter Nursery, Exeter.

## CHINESE AZALEAS.

J. AND J. FRASER having a very large and fine Stock of the above, beg to offer them at the undermentioned prices. The Plants are very healthy, and beautifully set with flower buds.  
12 distinct sorts ... 18s.  
12 do. (very fine plants) ... 24s.  
Lea Bridge Road, Leyton, Essex.—Oct. 22.

## CHRYSANTEMUMS.

J. AND J. FRASER have to offer very fine Plants of the above, amongst which are the best varieties in cultivation. The plants are from 2 to 3 feet high, very bushy, and full of flower-buds. Large-flowering varieties, 9s. per dozen; Pompones, or Lilliputian, 12s. per dozen.—A Catalogue of the sorts may be had, on application.—Lea Bridge Road, Leyton, Essex.

## WAITE'S NEW EARLY PEA.

DANIEL O'ROURKE.—The earliest and best Pea in cultivation; a week earlier than the Emperor, longer pods, and a much better cropper; height 2 1/2 to 3 feet. If this Pea does not give general satisfaction the money charged will be returned. Trade price to be had on application to J. G. WAITE, Seed Merchant, 181, High Holborn, London.

THE NOVEMBER PROLIFIC PEA, FAIRBEARD'S NONPAREIL, and all other sorts of Seeds, may be obtained genuine, at the grower's prices, from SUTTON AND SONS, Seed Growers, Reading, Berks.

HUGH LOW AND CO. have to offer very fine strong bushy plants, full of flower buds, of CHRYSANTEMUMS, including the Continental varieties of the present season. Price, per dozen, 9s. DIELYTRA SPECTABILIS, extra large roots, suitable for forcing in winter, 21s. per dozen. Clapton Nursery, London.

HUGH LOW AND CO. would invite inspection of their extensive and fine Nursery Stock, more particularly CAMPELLIAS, INDIAN AZALEAS, ERICAS, EPACRIS, and other plants suitable for making a display during winter, all of which are well set with flower buds, and can be had of different sizes.

H. L. & Co. are also Growers of Fruit Trees, and their stock this season of both Trained and Maidens is large and fine, including the leading varieties, which are grown in quantities for the trade.—Clapton Nursery, London, October 22.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement. American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

RENDLE'S NEW AUTUMN CATALOGUE OF FOREST TREES, SHRUBS, AND FRUIT TREES, is just issued from the press, and can be had in exchange for one penny stamp.

The Catalogue should be obtained by all who intend Planting this Autumn, as the prices of many of the articles are very low, in consequence of the large Stock we have of many of the sorts.

We have to offer the following:—  
800,000 Seedling and Transplanted SCOTCH FIR.  
600,000 do. do. LARCH FIR.  
200,000 do. do. PINUS AUSTRIACA.  
150,000 do. do. THORNS or QUICKS.

As well as all other Forest Trees in proportion.

All orders above 10l. will be delivered carriage free to all the Railway Stations in Scotland, West of England, and to Cork, Dublin, and Liverpool by Steamers.

For Catalogues and further particulars apply to  
WILLIAM E. RENDLE AND CO.,  
NURSERYMEN AND SEED MERCHANTS,  
ESTABLISHED 1786. Plymouth.

## DUTCH BULBS.

T. APPLEYBY AND SON, NURSERYMEN AND SEEDSMEN, Uxbridge, beg leave to inform their Friends and the Public in general, that they have just received their annual importation of Dutch Bulbous Flower Roots, selected with great care from the best stock in Holland. They have arrived in excellent condition, and the bulbs are very sound and firm. Catalogues are ready, and will be sent on prepaid application.

T. A. & Son beg to observe also that their stock of Trained FRUIT TREES have made fine growth this last summer, and as they have at least 600 yards of walls on their premises, the trees are all well trained, consequently the wood is well ripened and much better than when trained with sticks in the open quarters of the Nursery. Orders are respectfully solicited. Carriage of all goods paid to London.  
Victoria and Hillingdon Nurseries, Uxbridge, Middlesex.

SEEDS DIRECT FROM THE GROWERS. GARDENERS and others requiring REALLY GENUINE NEW SEEDS, true to their kinds, are respectfully recommended to apply early to the undersigned.

The New Early Peas, Radish, French Horn Carrot, and other Seeds for early sowing are now ready. SUTTON & SONS, Seed Growers, Reading, Berks.

## NEW SEEDS FOR THE COMING SEASON.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, are now harvesting and receiving from the Growers a choice assortment of all kinds of Garden and Agricultural Seeds. Their New Seed Catalogue will be ready early in December.

## CHOICE ROSES.

LUCOMBE, PINCE, & CO. have now a very healthy stock of strong plants of all the NEWEST AND BEST ROSES, on their own roots, and also budded on clean healthy stocks, which they can offer very cheap. Lists of the sorts and their prices can be obtained on application to them.—Exeter Nursery, Exeter.

## NEW ROSES.

DUCHER, FLORIST, Rue du Vivier, la Guillotière, Lyons, France, has on sale the following:—ALPHONSE LAMARTINE, hybrid perpetual, very vigorous, branches straight and very thorny, foliage dark green, flowers medium size, very full, perfect form, and very odoriferous; delicate rose tint. Price 15 francs. MADAME MILSON, hybrid, very perpetual, very vigorous, branches straight, foliage elongated and light green, flowers medium size, full, cup-shaped; beautiful violet-tinted rose, and the reverse of the petals whitish. Price 15 francs.

## ROSE NURSERIES, HERTFORD.

E. P. FRANCIS' NEW DESCRIPTIVE CATALOGUE OF ROSES is ready for delivery, and will be forwarded gratis upon application.

ROSES on 4 to 6-inch stems, fine, 6s. per dozen; best FANCY GERANIUMS, 9s. per dozen; best PINKS, 6s. per dozen pairs; new VERBENAS, &c. For description see page 642.—S. WALTERS, Hilperton and Trowbridge, Wilts.

A. VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to inform Amateurs and Nurserymen that his NEW CATALOGUE OF PLANTS is just published, and may be had free of his Agent, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London.

GLADIOLUS GANDAVENSIS, the finest roots yet offered. Per dozen, 6s. HUGH LOW AND CO., CLAPTON NURSERY.

NEW AND BEAUTIFUL GESNERACEOUS PLANT, the "SCHEERIA MEXICANA."—A few Plants of this charming species, which is just figured in "Curtis's Magazine," by Sir William Hooker, may be had, price 10s. 6d. each, of WILLIAM MASTERS, Exotic Nursery, Canterbury.

## CUTHILL'S PRINCE OF WALES AND BLACK

PRINCE STRAWBERRIES.—Very fine strong plants of Prince of Wales 18s. per 100, or 10s. for 50; Black Prince at 5s. per 100. See former Advertisements. Also, CUTHILL'S Pamphlet on the Potato, &c., price 2s., or by post, 2s. 4d.; also, his Market Gardening Round London, 1s. 6d., or by post, 1s. 8d. Post Office Orders to be made payable at Camberwell Green. JAMES CUTHILL, Camberwell, London.

## STANDISH AND NOBLE'S CATALOGUE for the

present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the Gardeners' Chronicle, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Oct. 22.

## DUTCH HYACINTHS, for Forcing, single and

double, at 4s. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR COBBETT'S Italian and Foreign Warehouse, 15, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1 1/2 mile from Woking Station, South-Western Railway, begs to announce that he has just published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c. &c., and may be had on application by enclosing two postage stamps.







## JUDSON'S

## RICHMOND VILLA BLACK HAMBURG VINE.

**ARTHUR HENDERSON AND CO.** have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.

N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

657 Their Autumn Catalogue of Pelargoniums, Cinerarias, Hollyhocks, and new plants of recent introduction and merit is now published, and can be had on application. A few good plants of the beautiful Yellow Begonia can still be supplied at 21s. each. Pine Apple Place, Edgeware Road, London.

## NEW ROSES FOR 1853-54.

**A. PAUL AND SON** beg to offer the following New Roses, the entire Stock of which is at present in their possession.

**PRINCESS ALICE, Moss (Paul's).** Flowers bluish pink, centres large and full, produced in great abundance; buds well mossed. This variety introduces a new style among Moss Roses, having the deep centre and pale edges of the Celestial Rose; the growth is very vigorous, and it quickly forms an unbranched tree, the branches well clothed with handsome foliage. It has received Certificates from the National Floricultural Society and the North Wilts Horticultural Society, the only places where exhibited for a Prize, and is figured in the "Florist" for September. Strong Plants in November. 10s. 6d. each.

**VIVID, Hybrid Bourbon (Paul's).** Flowers vivid crimson, petals of good substance, containing a great body of colour, which imparts to the flower a rich velvety appearance. The flowers are of medium size, not large enough for an Exhibition Rose; but being an abundant bloomer, of vigorous growth and handsome foliage, this is highly recommended as a brilliant dark pillar or climbing Rose; and whether grown as such or as a standard, it produces a rich effect in the Flower Garden. Certificate from the National Floricultural Society. Plants in November. 7s. 6d. each. See also Rose Catalogue, just published. Nurseries, Cheshunt, Herts, October 22.

## ROSE CATALOGUE.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

**WILLIAM WOOD AND SON** beg to announce that the New Edition of their Rose Catalogue, for 1853-54, is now ready for distribution, and will be sent gratis on receipt of Two Penny Postage Stamps.

Their Catalogue of General Nursery Stock may also be had on the same terms.

Collections of ROSES will be supplied on the following terms, when the selection of sorts is left entirely to Wm. Wood & Son:—Extra tall Standards, 4 to 8 feet, with 3 to 6 best varieties of Climbing and Perpetual Roses, in each stem, suitable for training, &c., 3s. 6d. to 5s. each.

Tall Standards, fine picked stocks, from 4 to 6 feet, with large heads, of the most showy kinds, for planting in conspicuous situations on lawns, &c., 3s. 6d. per dozen.

Extra superior selected Standards, 18s. to 24s. per dozen, or 7s. to 10s. per 100.

Fine Dwarf and Dwarf Standards, 10s. to 16s. per dozen, or 4s. to 6s. per 100.

Superb do. do., the best sorts for exhibition, 18s. per dozen, or 7s. 10s. per 100.

Fine Dwarf, on own roots, in 50 varieties, 2s. 10s. per 100.

Fine Climbing and Noisettes, 9s. to 12s. per dozen.

Hybrid Perpetuals, budded on 6-inch stems, or on own roots in pots, 12s. to 18s. per dozen, or 5s. per 100.

Te de Bourbon, in pots, or budded on 6-inch stems, 12s. to 18s. per dozen, or 5s. per 100.

China, in pots, 9s. to 12s. per dozen.

Tea-scented, in pots, 12s. to 18s. per dozen.

Climbing Roses, mixed, without names, for covering banks, 14. 10s. per 100.

Good Dwarf, on own roots, without names, 1s. 10s. per 100.

## FRUIT TREES.

**THOMAS RIVERS** begs to submit to the Public a SYNOPSIS of his FRUIT TREE CULTURE. The names of varieties, with descriptions and prices, are given in his descriptive Catalogue of Fruits, just published, sent post free for six postage stamps.

**APPLES.**—Standards for Orchards, and Pyramids and Dwarfs, on Crab Stocks; Pyramids and Dwarfs, and Dwarfs Trained, for Gardens, on Paradise Stocks.

**APRICOTS.**—Dwarfs, Dwarf Trained, Standards, Standards Trained, and Dwarf Bushes in pots, for culture under glass.

**CHERRIES.**—Standards for Orchards, Dwarf, and Dwarfs Trained on the common wild Cherry Stock, Dwarfs for Bushes or for potting for culture under glass, Dwarfs in pots, and Dwarfs trained on the Cerasus Mahaleb Stock.

**CURRENTS.**—Bushes and Pyramids.

**FIGS.**—Dwarf Bushes in a bearing state, in pots.

**GOOSEBERRIES.** Bushes, 80 large Lancashire varieties, 20 small half-flavoured ditto.

**GRAPES.**—Vines from eyes, in pots, for Vineries and hot-houses, fine and well-ripened under glass; Ditto hardy kinds for walls, also from eyes growing in the open quarters; plants fine 7 to 8 feet in height; Dwarf Bushes, in pots, for culture in orchard houses.

**MEDLARS.**—Standards, Dwarfs, and Pyramids.

**NECTARINES AND PEACHES.**—Dwarfs, Dwarf Trained, Standards, Standards Trained, and Dwarf Bushes in pots in a bearing state, for culture under glass.

**NUTS AND FILBERTS.**—Dwarfs and Standards for garden culture, the latter grafted on the Spanish Hazel Nut. These form very prolific trees.

**PEARS.**—Standards for Orchards, Pyramids, Dwarfs, and Dwarfs Trained on Pear Stocks; Pyramids from one to six years old, 1s. 6d. to 3s. 6d. and 5s. each; the two latter descriptions capable of bearing a good crop the first summer after planting. Dwarf Bushes for potting and Dwarfs Trained for espaliers or walls on Quince Stocks. Many acres are devoted exclusively to the culture of Pears.

**PLUMS.**—Standards for Orchards, Standards Trained, Pyramids, Dwarfs and Dwarfs Trained for espaliers or walls. The Pyramids are nearly all in a bearing state, so as to be able to give fruit the first summer after planting. Dwarf Bushes in a bearing state, and Dwarf Bushes in pots for culture under glass.

**QUINCES.**—Standards of the common, and Pyramids of the large Portugal Quince, the finest and most abundant bearer, even when young of all the Quinces.

**RASPBERRIES.**—Canes of all the select varieties.

**STRAWBERRIES.**—Plants of all the varieties worthy of cultivation.

**MULBERRIES.**—Standards and Dwarfs. Some fine Standards can be supplied 35 to 40 years old. These are 6 to 7 feet high, perfectly straight, and measure from 8 to 16 inches in girth, 5 feet from the ground. They have all been removed within three years, and will transplant with safety.

In connection with fruit tree culture, the following works can be supplied: **THE MINIATURE FRUIT GARDEN**; or, the Culture of Pyramidal Fruit Trees. Fifth edition. Sent free per post, for 24 postage stamps. **THE ORCHARD HOUSE**; or, the Culture of Fruit Trees in Pots under Glass. Second edition. By T. Rivers. Per post for 24 postage stamps. Sawbrough, Herts, Oct. 22.

## DUTCH ROOTS, GERANIUMS, ETC.

**RENDLE'S DESCRIPTIVE CATALOGUE** for the present Autumn is now ready, and can be had in exchange for one penny stamp. It contains descriptions of all the best Hyacinths, Tulips, Gladioli, and all kinds of Bulbs, as well as Geraniums and other Plants.

**COLLECTIONS OF BULBOUS ROOTS**, made up to suit various sized gardens, at 20s., 40s., and 60s. each. For varieties and quantities see front page of this Paper for SATURDAY, Sept. 24.

**GERANIUMS**—12 fine show flowers for 20s., or 20 for 15s.

12 second class varieties for 12s., or 20 for 15s.

**Purchaser's own selection** (see List at p. 611, Sept. 24).

**PANCY GERANIUMS**—12 first class varieties for 20s., or 20 for 15s.

12 second class varieties for 15s., or 20 for 12s.

**SCARLET GERANIUMS**—12 varieties for 12s., or 20 for 15s.

**Purchaser's own selection** (see List at p. 611, Sept. 24).

**Trolopee's Queen Victoria Strawberries** ... 7s. 6d. per 100.

**Kidley's Goliath do.** ... 4s. "

**Cuthill's Black Prince do.** ... 4s. "

For descriptions of the above Strawberries, and for list of other choice varieties, see Advertisement, p. 611, Sept. 24.

657 Orders above £2 will be delivered Carriage Free to any Railway Station between Plymouth, Paddington, and Birmingham, and to Cork, Dublin, and Belfast.

Apply to **WILLIAM E. RENDLE & Co.**, Nurserymen and Seed Merchants, Plymouth.

ESTABLISHED NEARLY 70 YEARS.

**MESSRS. J. AND H. BROWN** offer the following selected PLANTS, FRUIT TREES, &c., which they will forward to any part of the kingdom.

25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name for ... 20 0

25 American Azaleas do. do. do. ... 15 0

25 Hardy American Plants, one of a sort, by name ... 10 0

12 Hardy Heaths and Kalmias, one of a sort ... 6 0

12 Rhododendrons, including Scarlet, White, and Rose, hardy varieties ... 12 0

New hardy Yellow Rhododendrons, each ... 5s. 6d. to 7 6

Fine hardy Scarlet Rhododendrons, 2 feet, per dozen ... 10 0

6 Fine hardy Magnolias, one of a sort ... 10 0

Cedar of Lebanon, 3 feet, well grown in pots, per dozen 10 0

(Araucaria, Cryptomeria, and Conifers of all kinds, see List.)

Climbing Roses, of choice sorts, in pots, per dozen ... 6 0

Roses, standards and half standards, per dozen, 12s. and 15 0

Yellow Roses, Persian and others, per dozen ... 12 0

12 Tea-scented Roses, one of a sort, by name, in pots ... 9 0

Wistaria sinensis, extra fine, in pots, 15 to 30 feet, each 3 6

12 Hardy Passifloras, Jasmines, and Clematis of sorts ... 10 0

12 Greenhouse Azaleas, one of a sort, blooming plants ... 25 0

12 Choice Camellias by name ditto ... 30 0

50 Choice Greenhouse Plants, one of a sort, by name ... 45 0

24 Choice Ericas, one of a sort, by name ... 16 0

12 Orchidaceous Plants, choice species, and good plants ... 40 0

Cinerarias and Calceolarias, new sorts, per dozen ... 12 0

Chrysanthemums, Show and Pompones Varieties, do. ... 10 0

**SUPERIOR FRUIT TREES.**

Fine dwarf and standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries; the best and most approved of their respective kinds, to name, each 2s. 6d., or, per dozen ... 24 0

Untrained or Maiden ditto, 1s. 6d. each, or, per dozen ... 15 0

Apples, dwarfs and standards, of best sorts, per dozen ... 15 0

Fine Gooseberries, Currants, and Raspberries, per dozen ... 3 0

Fine Figs, Medlars, Walnuts, and Mulberries, each ... 2 0

Strong Vines from eyes and layers, in pots, per dozen ... 15 0

Filberts, new, thin-shelled and red-skinned, per dozen ... 3 0

Garden Seeds of all kinds and Catalogues for the season.

Albion Nursery, Stoke Newington, London, Oct. 22.

**GEORGE WHEELER, NURSERYMAN, Warminster,** is now ready to send out:

**CINERARIA CONSPICUA (Wheeler's)**, which obtained Certificates in April last at the "National" also at the Bath Horticultural Exhibition. The habit is good, dwarf and compact, producing a very fine head of bloom; flowers large, colour white, heavily tipped with rosy purple; will prove attractive in the greenhouse, and a very desirable exhibition plant. 5s. each.

**DIANTHUS WHEELERI**, a bright, rose-coloured, double mule Pink, blooming profusely from May till September; universally admired, and considered the best thing of the kind ever offered. The Plants having been grown in the ground, could not be properly exhibited, or must have obtained certificates. 5s. each.

**CALCEOLARIAS, SEEDLINGS**, from G. W.'s fine collection sown this autumn, established in store pots, but for transit by post or otherwise the soil may be shaken from them without injury. 4s. per dozen.

**CHINESE LARKSPUR**, choice varieties, mixed, at 4s. to 6s. per dozen, according to age and strength of roots.

**SEEDS, PER PAPER.**

Calceolaria, from finest varieties ... 2 6

Cineraria, from a fine collection ... 1s. to 2 6

Chinese Larkspur, from finest varieties ... 1s. to 2 6

Pansy, from named kinds ... 1s. to 2 6

Antirrhinum, from fine sorts ... 1 0

Sweet William, from double flowers ... 1 0

Hollyhock, from a fine collection ... 1 0

Ingram's hybrid white spine Cucumber ... 1 0

King of Cucumbers ... 1 0

Champion of England ditto ... 1 0

Trentham Hybrid Melon ... 1 0

Remittances expected from unknown correspondents.—Oct. 22.

**CARTER'S PROLIFIC RASPBERRY.**

**JOHN CARTER, JUN., NURSERYMAN, Keighley,** begs to announce that he purposes sending out his RASPBERRY the first week in November, and has the most perfect confidence that it will give universal satisfaction to those who may favour him with their orders. As a Dessert Raspberry it is unrivalled, and when gathered in bunches has a beautiful appearance. It has been admired by all who have seen it growing, and the following opinions will testify to its merits:—

"If the Raspberry sent us some days ago be constant, and bears like the sample, it cannot fail to be an acquisition. If there be still any fruit, we should like half-a-dozen of the berries by post, in a little box, to see how the late ones come."—*Glenny, in Lloyd's Paper, August 15, 1852.*

"CARTER'S Prolific Raspberry has been exhibited to us previously to its coming out in the autumn; we named it from the extraordinary quantity of fruit, which was of high flavour."—*Glenny's Almanack, 1853.*

"George Glenny, Esq., says:—'CARTER'S Raspberry is a heavy cropper, a fine berry, and the plants that grew with us ripened all the fruit about the same size.'—*Lloyd's Paper, July 31, 1853.*

"I have grown your new Raspberry sent me for trial, and think it quite an acquisition. It makes wood freely, and is certainly a most abundant bearer. The fruit is of good size, very fine flavour, and ripened equally. I consider it much superior to Fastolf."—*John Palmer, Annum, Dumfries, August 4, 1853.*

Orders sent out in the rotation received, and additional plants added to compensate for carriage. Price per 100, 5s.; per doz. 12s. London Agents: MESSRS. HUNTER AND M'MULLEN, Seedsmen, 6, Leadenhall Street.

## THE PLANTING SEASON.

CLEARANCE OF LARGE ORNAMENTAL TREES, SILVER AND SPRUCE FIRS, &c. &c.

**WILLIAM WOOD AND SON** have the pleasure of inviting attention to their extensive Nursery, consisting of an area of 50 acres of ground, which contain (independent of a most extensive stock of Roses) a very large quantity of Standard Ornamental and Fruit Trees, American Evergreens, and Flowering Shrubs, but more especially the following, which they propose clearing off at once, viz:—

Per 100.—Spruce Firs, 4 to 6 feet, 30s., 3 to 4 feet, 20s.; Silver Firs, 2 to 4 feet, 20s., 1 to 2 feet, 10s.

Per 1000.—Scotch Firs, 2 to 3 feet, 25s.; two-year seedlings one-year bedded, fine, 5s.; Larch Fir, 3 to 4 feet, 30s., 2 to 3 feet, 20s., 1 to 2 feet, 15s.; one-year seedlings, one-year transplanted, fine, 5s. to 7s. 6d.

Maple, Norway, 8 to 10 feet, per dozen 6s., per 100, 30s.; Maple daycarpon, red wooded, very ornamental, per dozen 6s., per 100, 30s.; White Mulberry, leaves are used for silk-worms, 25s. per 100; Gleditsias, 4 to 6 feet, very fine, 25s. per 100. And every other kind of Ornamental Trees.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

## STRAWBERRIES.

FOUR NEW AND DISTINCT VARIETIES.

**NICHOLSON'S AJAX.**—Very large and handsome, most exquisite flavour, unequalled as a dessert fruit, and forces well.

**NICHOLSON'S RUBY.**—Medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; also a good forcer.

**NICHOLSON'S CAPTAIN COOK.**—A first-rate market fruit; colour scarlet, very large size, great bearer, and bears carriage well; plants remarkably strong and hardy.

**NICHOLSON'S ELLI-BASKET.**—Nothing can surpass this fine sort as a market fruit; in colour it is of a very bright scarlet; general shape round, gets very large, but never out of shape; excellent for preserving; a tremendous bearer, and will bear carriage a great distance. Plants very robust and healthy.

These splendid Strawberries have been admired by all who have seen them; the two first for their surpassing excellence as a dessert fruit; the two latter for their size, colour, abundance, and other good qualities as market fruit.

Gentlemen, Amateurs, and Market Gardeners wishing to possess these valuable Strawberries, can now be supplied with well rooted Plants, by **WILLIAM NICHOLSON** only, at 1s. per 100; or 25 each of any two sorts for 12s., box included. Post Office orders made payable at Yarm, Yorkshire.

Egglecliffe, near Yarm, Oct. 22.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his NEW CATALOGUE OF RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

657 The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

**HEAVIEST LANCASHIRE SHOW GOOSEBERRY BUSHES**, 6s. per dozen. Finest Show CARNA-

TIONS and PICOTEES, 12s. to 20s. per dozen pairs. 12 pairs Finest Show PINKS, 6s. to 10s. 12 plants Finest Show FANSIES, 6s. to 10s. 12 plants Fine Show AURICULAS, 12s. to 18s.

12 plants POLYANTHUS, Finest Show Varieties, 12s. to 18s. Selected PANSY SEED, from best varieties, 1s. and 2s. per packet. A few packets of very choice AURICULA SEED, 2s. 6d. per packet.

**JOHN HOLLAND'S** Priced and Descriptive Catalogue is now ready, and may be had for one postage stamp.

**JOHN HOLLAND**, Bradshaw Gardens, Middleton, near Manchester.—Oct. 22, 1853.

**H. AND R. STIRZAKER, NURSERYMEN, &c.,** beg to announce that their Catalogue of Forest, Evergreen, and Ornamental Trees is now ready and will be forwarded, post free, upon application; from the lowness of prices coupled with quality, which cannot be surpassed, from hardness of growth, we feel assured every inducement will be offered to purchase.

Having a surplus Stock of Transplanted Ash, Sycamore, Larch, Spruce, Silver Fir, Black American Spruce, Beech, Privet, Laurestinus, &c., we shall offer to the Trade at uncommonly low prices.—Skerton, near Lancaster, Oct. 22.

**MITCHELL'S NEW HYBRID PERPETUAL ROSE, "LADY SHELLEY."**

**JAMES MITCHELL** begs to offer for Sale the above magnificent New Perpetual Rose, which has been the admiration of every one at the principal Shows during the season, and has been justly pronounced by the metropolitan judges first-class; it has also been submitted to Dr. Lindley for his opinion, who says, for perfume alone, it is worth one-half our autumn Roses. Form exquisite, colour rosy lilac, shaded with carmine, and very distinct; fragrance the very acme of perfection, surpassing all others in this class. Price 10s. 6d. per plant. No discount unless three are ordered. Cash or reference from unknown correspondents.—Pitdown Nurseries, Maresfield, Sussex.

**DUTCH BULBS AND FLOWER ROOTS.**

**THOMAS JACKSON AND SON** respectfully inform their patrons and the public that they have received, in the finest condition, their annual consignment of BULBS and ROOTS, and that they are of the largest size and very finest quality.

Good Double Hyacinths, per dozen ... 4s. 6d.

Mixed Polyanthus Narcissus, per dozen ... 3 0

Their Priced List of Bulbs and Roots, and also their Priced Catalogue of Stone, Orchidaceous, and Greenhouse Plants, Shrubs, Trees, and Herbaceous Plants, may be obtained on application.

Nurseries, Kingston, Surrey, Oct. 22.

## The Gardeners' Chronicle.

SATURDAY, OCTOBER 22, 1853.

The mean temperature of a country may be high compared with that of other countries which are nevertheless more favourable for the growth and perfect maturation of crops; for this may be effected where the winters are intensely cold, provided the summer months, June, July, and August, are sufficiently warm. In this country the temperature of these three months does not rise so high as in many other parts where the rest of the year is much colder than we ever experience; hence such countries are not so much affected by a season in which the temperature of these three months is a



few degrees below the average, as is the case with us. On the whole, the climate of the United Kingdom is unlike that of any other country on the face of the globe within the same parallels of latitude. The seasons are frequently not congenial to vegetation, and crops are consequently often defective to a considerable extent; at the same time it is now well ascertained that no country, extending from 50° to 60° of latitude, has so high a temperature on the average of the whole year. According to the earliest authenticated records, Britain was noted for being more temperate than countries situated farther to the south. CÆSAR, in speaking of it says, "the climate is more temperate than that of Gaul, the cold being less intense (*Loca sunt temperatiora quam in Gallia, remissioribus frigoribus*). We have now, however, the means of stating more precisely the peculiar character of the climate, from the numerous meteorological observations which have been made in various parts of the world. These observations have been collected to a vast extent by Professor DOVE, of Berlin; and, with immense labour, he has reduced them to a state of comparison. In his work, "Distribution of Heat on the Surface of the Globe," he has so illustrated the subject by maps and isothermal lines, with other curves of temperature, that it is easy to see the high position which this country occupies as regards temperature, in comparison with others within the same parallels of latitude. Looking at these maps, it can be perceived that one might traverse the globe in following a certain line of temperature, say between 45° and 50° Fah., with comparatively little deviation of his course towards either north or south, till he approach Britain; and then, following the same indication of temperature, his tract will form a curve, like an obtuse cone, stretching northwards. A warmer space than is to be found on either side, east or west of it, includes Britain, and extends towards Spitzbergen. This space, in the form of a blunt cone, enters the polar circle, considerably within which it bends the line which marks the limits of a mean annual temperature below 32° Fah.; everywhere else this line is outside the polar circle, and it describes a tolerably regular obovate figure, having its broadest end near Irkutsk, in Eastern Siberia, lat. 55°; whilst its opposite end includes Hudson's Bay, in lat. 51°, nearly that of London. But the outline of the figure is indented on the Spitzbergen side, where the mean annual temperature of 32° Fah. occurs at Bear Island, in lat. 75°. This cold space does not therefore form a circle round the pole, but an ovoid extending east and west, with a remarkable sinuosity opposite the north-west coast of Scandinavia, as if the Gulf Stream had made an inroad. That the current of equatorial waters does proceed in that direction is allowed to be the case; and when it carries its heating influence so far, it is evident that the British Isles, which lie in its track, and are situated so much nearer its source, must derive from it a much higher temperature than they would otherwise possess.

The extent to which the climate of the British Isles is modified in consequence of their peculiar situation can be estimated from an inspection of the lines of temperature which Professor DOVE has so carefully traced on one of his maps—the one which shows that in every month of the year the decrease of temperature from the equator to the poles is extremely different under different meridians. But he obtained the mean temperature of thirty-six points on each of a number of parallels, and, using his own words, "the mean of these thirty-six points I call, in each case, the *normal temperature*, i.e. that which it would have everywhere, if its actual, but variously distributed temperature were uniformly distributed." Now, we find that as regards the British Isles, the differences from this normal temperature are, in every month, on the side of higher temperature; and how much higher will be seen by the following results of their inspection, as indicated by Professor DOVE's lines:—

*Excess of temperature in the British Isles, above the respective average temperature of other places on the same parallels of latitude.*

January	Orkney, 31°5'; Edinburgh, Dublin, 27°; London, 18°.
February	Orkney, 27°; Edinburgh, Dublin, 22°5'; London, 15°.
March	Orkney, 22°; Aberdeen, Glasgow, Dublin, 18°; London, 14°.
April	Orkney, 13°; Middle of England and Ireland, 9°; London, 6°.
May	Great Britain and Ireland, between 4° and 5°.
June	Ditto, about 2°.
July	Ditto, about 2°.
August	Ditto, about 3°.
September	Great Britain, 4°5'; Ireland, 3°.
October	Great Britain and Ireland, 9° to 14°.
November	North of Scotland, 22°; Edinburgh, Dublin, 18°; London, 14°.
December	Hebrides, 27°; Orkney, Dublin, 22°; Cornwall, 18°; London, 16°.

From the above it will seen what a favourable climate we have, compared with others in an equally high latitude. If our Januarys were 18° colder than

they are, we should frequently have such frosts as was predicted by that gentleman who assumed the name of "MURPHY," and which memorable frost occurred in 1838. In that case we should have to take a last view of most of our finest evergreen shrubs, which now show themselves the more conspicuously as the approach of winter renders naked the deciduous trees. As it is, we are enabled to grow many things which are indigenous to countries very much farther to the south; for example, the Fig succeeds without protection near some parts of the coast, especially where the subsoil is favourable.

But whilst we enjoy comparatively mild winters, it will be observed that in the three months in which the growth and maturation of crops are chiefly effected, namely, June, July, and August, the temperature is, on the average, little above that which is due to the latitude; and in seasons that prove indifferent, or bad, we have in these months a temperature even lower than that of the generality of places on the same parallels. Crops of fruit and grain are then defective, and the latter are not adequate for the usual period of supply, consequently a greater importation becomes necessary. A fortunate circumstance may be here remarked, which is, that when the summers are cold in this country, they are, on the contrary, warm in North America.

Having exhibited the nature of the climate in a somewhat different light from that in which it has been usually represented, we may now be permitted briefly to observe that the mean temperature of a country may be comparatively high, taking the average of the whole year, and yet the months of June, July, and August, may not possess that amount of heat which is necessary for bringing crops to perfection. Again, the weather in these months may be mild day and night, so as to produce a fair average temperature; but under these circumstances, crops will not arrive at such perfection as if the same mean temperature were attained by a higher temperature in the day and a lower one at night. Hence the maxima temperatures of the days become the most important consideration. It is well known that fruits may grow in dull, warm, damp weather, but in such they cannot acquire their due colour and flavour, nor can grain crops coming in flower under such circumstances bloom with fertility, neither can the straw be substantially formed, nor the grain well filled. We should therefore direct special attention to the mean maxima temperature of the three months above-mentioned, for these maxima have the greatest influence on the more important crops, and consequently form the best criterion, and one which includes, in combination, to a considerable extent, the effects of sun-heat: a high daily temperature being connected with a large amount of that essential element in vegetation.]]

In a former article we explained as briefly as possible the views entertained by HARTIG of the structure of the stem of Dicotyledons, with a view to the better understanding of his notions as to their mode of increase in diameter. The radiating tissue, then, of the wood and bast is bordered on the one side by the pith, on the other by the inner bark, and inclosed between the horizontal layers of the medullary rays. In mature one-year shoots a circular line is easily discernible, which distinguishes the bast from the wood. In winter the limits cannot be mistaken, as in all cases the inmost tender-walled fibres of the sap lie immediately on the outermost thick-walled fibres of the wood. Besides, on this side of the wood, the outermost threads, though of the same diameter, are constantly flatter than the inner, whose horizontal section is nearly round. These latter are punctuated on the side which is nearest to the medullary rays, and this distinction is most important, because there are many kinds of wood, and more especially the Mistletoe, in which the annual rings can only be distinguished by the alternation of these round and flat fibres. The organs of the wood, irrespective of the vascular fibres which surround the pith, are of three kinds; 1, simple woody fibre, with the walls more or less thickened; 2, parenchymatous woody cells\* resembling the first in form but divided into chambers by internal cells, containing fecula, either arranged in peripheral interrupted layers or round large ducts; 3, the large ducts themselves arising from the union of the woody fibres and highly porous, serving to carry back the sap which has been elaborated in the leaves, and distinguished from the woody and cellular threads, as well as the true spiral vessels, by the normal absorption of the septa, and communicating by pores with the medullary rays. In Conifers they appear to be replaced by the resin ducts. The perfect bast-layers contain perfectly analogous organs to each of these, but distinguished by the cribriform dotting. The thick-walled simple woody fibre is

represented in the bast by the thick-skinned bast-thread. The parenchymatous woody-cells, even to the abnormal dotting, exactly resemble those of the bast. The ducts, again, are analogous to the wide cribbled cells whose septa have reticulated pores. In these it is that the sap of the Sycamore moves with such activity. Now, if the winter wood of Dicotyledons, with the exception always of Conifers, be examined, we observe between the last formed woody-fibres and the layers of sap which are distinguished by the fascicles of thick-skinned irregularly disposed threads, a more or less broad stratum of tender fibres, remarkable for the regularity of their arrangement, and the similarity of their sections, which diminish gradually as they are more distinct from the wood. It is this layer which has given rise to the notion of a zone of renovation, which survives the winter; though from the delicacy of the cellular membrane, it is very difficult to get clean sections. M. HARTIG has convinced himself that this is nothing more than the incomplete tissue of the bast in which the metamorphosis into parenchymatous fibres, fibrous bundles, and cribbled ducts has not yet taken place.

If this be examined just when active growth is commencing, having first applied sulphuric acid reduced to 3-5ths of its normal strength, it will be found that for every radius of fibres there are but two parent cells situated at the confluence of the wood and bast, and as it were lying back to back, incorporated like the Siamese twins, and producing in opposite directions the sterile daughter-cells of the radii of the wood and bast by division, while from time to time a division in the direction of the radius takes place, increasing the number of the radii, and of the mother cells which belong to them.

This, in point of fact, is very near the explanation of the matter just recently proposed by M. TRÉVET, though in other words, and perhaps too palpably theoretical.

An ingenious mode of exhibiting this to the eye has been devised as follows:—A round disc is taken to represent a cross section of the wood, and in this a deep furrow is made from the centre to the circumference, which is filled with a solution of soap and covered with a glass plate. Two glass tubes united together are then inserted into the furrow at a point representing the juncture of wood and bark, so that one end of each of the tubes is in the fluid, the other free. The two immersed apertures represent the two permanent mother cells. If air be now blown into the tubes, a double stream of bubbles proceeds from them—one towards the centre, the other towards the circumference, which represent the cells formed by division, and which undergo no further partition. Each repetition of the inflation produces two new rows of bubbles. The interval between each inflation represents the winter rest, and the produce of the new ring of wood and bast-tissue.

The sterility of the infant cells distinguishes clearly the radial from the periphery. Every cell of the latter, as long as it lives, is capable of division. In smooth barked trees, as the Beech and Hornbeam, the green bark continues active to the most advanced age of the tree, whereas, normally, all the infant cells of the radial tissue are barren. This is absolutely the case with the woody fibre and thick-walled cells of the bast, but the delicate cribbled cells and ducts, in consequence of injury, may become reproductive. They generate, in common with the cellular tissue of the green bark and the medullary rays of the bast, the marginal swelling, and in this the true adventitious buds, in cross sections of the trunk; as the cellular tissue of the medullary rays of the wood produces the new coat of bark where the surface of the wood has been laid bare.

As the parent cells have in the first instance a similar form, the infant cells at first are perfectly similar, though subsequent changes take place principally by modification of the lining membrane. M. J. B.

#### ON THE USE OF LIQUID MANURE BY THE CHINESE.

[We are indebted for the following interesting communication to a gentleman long resident in China.]

"The best agriculturists appear to doubt whether the application of manure in its solid state is not a great mistake."

The above quotation is taken from an article on "the Friern Manor Dairy Farm," which appeared in the *Illustrated London News*, No. 627, of the 11th of June last; and as the subject is one of considerable importance, not only to agriculturists but to the public at large, as benefiting by an increased produce of land, the writer of this paper deemed it would be acceptable to many to know that what in the *Illustrated* is so carefully put as a matter of doubt, is, in China (one of the greatest agricultural countries in the world), a settled principle, about which there appears to be no manner of doubt whatever.

Long absence from one's native country necessarily

\* De Bello Gallico, v. 12.

\* Such at least is the nomenclature adopted by SCHACHT for HARTIG's *Zellfasern*.



entails considerable ignorance on the practical, I will not say theoretical, advances made in agricultural chemistry ; but taking the quotation referred to in connection with other written evidence which has come under my notice, I am fain to conclude that much remains to be done in developing the capabilities of a science which every observer of causes and effects must hold to be one of deep importance, and more valuable to mankind than discoveries of gold fields, except in so far as the latter are a means and end employed by the Dispenser of all good, to effect by an act consonant with the harmonious construction of the great scheme of Nature, the equitable adjustment of the human race over the face of the earth, and the peopling and bringing into cultivation the waste tracts of the hitherto uninhabited portions of the globe.

In making these preliminary remarks, I do not venture to question the value of the discoveries and improvements already made, but I make them to call attention to the fact that much remains to be done ; and if the few observations I have to offer, or the slight information I have to give respecting the management of manure by a people who for some ages have been a populous and self-supporting nation, be productive of any good as exciting investigation of the principles on which they act, the object I have in view will in some degree be gained.

The Chinese, as is well known, are an agricultural people ; their food consists chiefly of grain, pulse, and vegetables ; few, and those only in better circumstances, eat animal food ; fish and Rice are their principal staples. The extent of land in China capable of being brought into cultivation is by no means so great as is generally supposed ; but few of the 18 provinces into which the empire is divided are strictly agricultural districts ; their success, therefore, in supplying so large a consumption affords the great proof of their skill. The five great provinces of Shan-tung, Che-kiang, Foo-kein, Quang-tung and Kwang-see, forming the eastern and maritime boundary of the empire, are mountainous and barren, and it is only by ridging the sides of the hills, and cultivating the banks of the rivers, and the low land extending for some miles inland on the eastern portion of Quang-tung that grain is produced at all ; and even then in quantities by no means equal to the consumption, the people being dependent on importation for supplies. The adjoining provinces, inland, Keang-see, Honan, and Kwei-chow, are broken and rugged, and although the land is more level in their northern portions, and the garden of China may be said to commence, still the country is sufficiently hilly to interfere greatly with agricultural operations, and confine them almost entirely to the growth of tea. The grain-producing districts are found in the provinces of Keang-soo, Keang-see, portions of Gan-hwuy, and Sung-ming-heen, and the land adjoining the great river Yang-tze-Keang ; here is found the rich soil, which seems inexhaustible in fertility, and where the peculiarities of Chinese farming are seen to the best advantage.

The manure chiefly used by the Chinese is the produce of the towns and villages, and such as in Europe is considered inadmissible for agricultural purposes. But Europeans forget, or do not know, that cattle are comparatively scarce in China ; the people eat neither beef, milk, nor cheese ; consequently beasts sufficient to plough the land are all that are required ; hence the scarcity of animal manure, and hence the necessity of depending on other sources for supplying a means of invigorating the land. For this purpose, near every farm-house is found a pit about 10 feet wide by 15 feet deep, and bricked both sides and bottom ; here is accumulated the questionable exudation, to which water being added, fermentation, hastened by the sun's power, quickly follows ; and this having subsided, the liquid is fit for use. The Chinese say the older it is the better, and they often keep it for 12 months or more. Notwithstanding all animal matter is decomposed and precipitated, and its original appearance lost, the odour arising from it when used is extremely offensive. Animal dung undergoes much the same process in preparation.

We now come to the application of this renovator of exhausted soils. Manure in its solid state is seldom used by the Chinese ; occasionally they will place a small heap at the roots of young Beans as a protection from the frosts ; but land is never dressed with it, nor is it ploughed in as with us ; lime sometimes is used as dressing, but not often. Late in the autumn the seed is sown, and is generally well up by the time the frosts set in. The manuring commences the moment the spring turns and the Wheat begins to shoot ; then are to be seen the Chinese labourers with a couple of buckets filled with the liquid from the pit diluted with water, distributing it over the land ; this operation is performed with the aid of a bowl fixed to the end of a pole, which being dipped into the bucket and filled with the manure disperses it over the crops by means of a circular sweep given by the arm of the labourer to the pole. Sunset is the time for applying the manure, for a very obvious reason. When the Grass averages a foot high or so the manuring ceases, except on the weakly looking patches ; and to this we would call the attention of our readers, who will see that by this system a farmer is enabled to bring forward any portions of a crop which may be from one cause or other more backward than the rest. Indeed considerable care and judgment, acquired by practice, appears employed in regulating the times for manuring and the quantities used ; the result, however, is rapidly developed in the great strength shown by

the young Wheat, its evenness in growth, and the out-turn, which, in a fairly dry season, is generally heavy for the small class of plant usually found in the North.

Before proceeding to glance at a second form of manure, urine, used by the Chinese, I will make a few observations on the preparation of the land by their farmers.

The Chinese ploughing is but surface work compared with ours ; they are satisfied to plough sufficiently deep to give a new face to the land ; heavy ground is usually turned up with a three-pronged hoe of peculiar construction : this instrument it will be well to describe. Three iron prongs having a flat surface and slightly bent, about 2 feet long and 6 inches apart, or a little more, are set or welded into a strong back piece of iron, to which there is a socket attached at right angles to the prongs ; in this socket a Bamboo or strong Ash pole is placed, from 6 to 7 feet long ; perhaps the form of the implement will be better understood by imagining one of our flat-pronged Potato forks, with the socket for the handle, bent to a right angle with the prongs, and a long pole inserted therein. When land is to be turned up with this fork, the labourer, holding the handle at its extremity, raises the fork above his head, and buries it in the ground with a sharp blow, then raising the handle with the right hand as a lever, the clod of earth is turned up by the prongs. The people generally work in pairs. The forks penetrating the ground at the same time and close to each other, the clod is prized up in large masses at a time. The work is very rapidly and easily performed, and these forks are always used on heavy soils, or where from want of space, or otherwise, a plough cannot work. Their weight is considerable. The fact is, the Chinese do not seek for renewed vigour in exhausted soils by deep delving ; to the surface they look for the sustenance of the plant, and to the surface they apply a manure easily absorbed and taken up, from its being liquid, and freed by previous fermentation of the deleterious gases evolved by decomposition, which we hold to be the chief advantage gained by this mode of application.

On urinal manure there is little to be said ; in its fresh state, and diluted with water, it is used principally for vegetable products, a little being applied to the root of each plant, or poured over it ; it is also in solution generally with the first-mentioned manure. Without question the virtues of this manure consist in the substance, ammonia, with which it is charged, the invigorating qualities of which, to plants, is, we believe, generally acknowledged. To us its effects appear at times marvellous, in developing their properties, and giving freedom of action to their respiratory functions, without which no plant thrives ; it may in truth be termed "vegetable physic." But like all other medicines, it must be administered with care ; an overdose often producing weakness and death. Another important point presents itself in the liquid and urinal or ammoniacal system of manure, which is worthy of attention. Ammonia is fatal to insect and creeping life, and the peculiar qualities with which the liquid is charged after fermentation is no less destructive to those pests of the farmer and gardener. I have often turned up ground which has been subjected to these manures, particularly the urinal one, and neither worm nor grub was to be seen, and our impression from some experience is, that if not total, they are at least very considerable destroyers of vegetable vermin. Now, raw manures, on the contrary, are promoters and fosterers of such ; the more heavily land is dressed with it, the more full it becomes of corruption and creeping life, and the gases exuded by decaying matter. In this hotbed of noxious acids our crops germinate, and carry with them in their growth the taint of disease, which ultimately, as is witnessed in the failure of the Potato crops, breaks out without any visible cause, and sweeps off whole fields of produce at once. I would call, therefore, the attention of our agriculturists to the cleansing of their land ; prejudice may prevent their resorting to such means as the Chinese use, but chemistry will supply others. Ammonia is to be obtained in any quantities, and this substance, amalgamated with fermented liquid animal manure, might possibly answer the purpose. This, however, is expensive, and trial alone can show ; and therefore I am not prepared to advance more than a suggestion. There is no question that in the out-turn of crops few nations, if any, can compete with the Chinese, and how they bring that about by the use of liquid manure it has been the object of this paper to endeavour to demonstrate. *R., China, August, 1853.*

#### BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Continued from p. 669.)

SECTION E: GEOGRAPHY AND ETHNOLOGY.—On the Production of Gold in the British Islands ; by J. CALVERT.—From his own exploration, from researches in various works, and from communications, Mr. Calvert stated that gold was found in 40 counties in these islands, and over an area of 50,000 square miles. He thus classified the gold regions :—the West of England, North Welsh, Mid-England, Northumbrian, Lowland, Highland, Ulster and Leinster. The West of England region might be divided into three districts—Cornwall, Dartmoor and Exmouth, or West Somerset. In Cornwall the tin strata, which were of the same composition as gold diggings, had long been known to contain nuggets and coarse dust, or hops of gold, but had only been slightly worked by Sir Christopher Hawkins, at Ladoch. The largest Cornish nugget was not worth

more than about ten guineas. The Cornish districts were very rich in gold. The Dartmoor district contained gold in its northern and southern streams. A miner named Wellington got about 40l. worth of gold at Sheepston, and Mr. Calvert had obtained gold from the granite by this process. In West Somerset were four companies for working gold ores. From 55 tons of Poltimore ores, 102 ounces of gold were lately reduced, being at the rate of 16 dwts. per ton, or twice the rate of the St. John del Rey ores. The West Somerset district probably embraced gold sites at Combe Martin and the Mendips. The North Wales district might embrace all the western counties of the principality. There were no reported river deposits, but gold ores had been worked at Carnhusian, Issu, Berthillywyd, Dolfrwynos, and other places. The Northumbrian regions embraced Alstone Moor ; but the chief known gold-field was in Westmoreland and Cumberland. In the Goldscoop mine gold had been found in the copper for ages, and he (Mr. Calvert) had discovered it in many of the ores and rivers of the district. He showed specimens from High Treby, Caldebeck Fells, the Buttermere and Crumwick-road, Borrowdale, Buttermere, Bassenthwaite, and a fine lump of gold gossan, which weighed originally 57 oz. The South of Scotland district had only been worked for its river deposits in Clydesdale and Nithsdale, but in his (the lecturer's) opinion it extended throughout the lowlands. Gold was found in about forty brooks or gullies, and all of the miners have gold for sale, obtained in their holiday excursions. Mr. Calvert mentioned that in the manuscripts of Queen Elizabeth's time the diggers relied on keele, a reddish earth, as an indication of gold, and the miners do now. He had seen it also in Westmoreland, and had recognised it also in Australia and elsewhere. He found gold in the Lowther Burn, Long and Short Cleuch Burns, Mannock Water, Kepple Burn, Glengomar, Elvanwater, Goldscoop, and other places. At Waulock-head he saw gold in the midst of the town. At one place the miners, two years ago, got gold, which at Glasgow they sold for 42l. Gold was reported in Perthshire, Fifeshire, Stirlingshire, and Linlithgowshire. The Highland gold regions were unexamined. Gold localities had been reported in Aberdeenshire and Sutherlandshire. The Wicklow diggings were only shortly referred to. It appeared, by returns obtained from the Dublin goldsmiths, that the present supply of the peasantry was about 2000l. a year. In Ulster the peasantry work the auriferous mountains in Antrimshire, and the Mayola streams in Londonderry yielded gold. The yearly produce of gold in these islands was now about 5000l. a year, which might be largely increased. The number of gold bearing streams known was one hundred. Gold had been found in nearly all the clay-slate districts. Many of these were worked in the Middle Ages, and probably also by the Romans. Gold, in ores, was found associated with silver, lead, copper, iron, and zinc ; with quartz, granite, slate, oxide of iron, sulphate of iron. These ores have only been worked of late in Devonshire and Merionethshire. The river deposits were rudely worked by the miners or peasantry in Wicklow, Lanarkshire, Antrimshire, and Devonshire. The washing of gold-stuff in our home districts was very rude, and not equal to that in Australia, nor had there been for a long time any deep workings. Many rich gold ores were thrown away, and much metal was produced from which the gold was not refined. The only two gold-fields which had yet been worked had yielded considerable amounts. The Lanarkshire district from a quarter of a million to half a million, the Wicklow above 100,000l. The largest known nuggets were 3 lbs. from Lanarkshire, and others of 2½ lbs. from there and Wicklow. The importance of attending to this branch of the national resources was strongly urged. Mr. Calvert concluded by stating that he considered the clay-slate formations of Canada would soon be discovered to be a vast gold-field.

(To be continued.)

#### CORN SALAD.

In Paris two varieties are cultivated, namely, *Mâche ronde* and *Mâche d'Italie*, or Italian Corn Salad.

*Mâche ronde*.—This is sown from the 15th of August till the end of October. It is sown broadcast ; the seeds are raked in, a thin layer of vegetable mould is spread over, and water is given when necessary. The August sowing will be fit for use in autumn, the September one in winter, but this crop must be protected with long litter during severe frosts ; and finally, the crop sown in October will be fit for use in spring.

*Mâche d'Italie*.—This is sown in October alone, or amongst the *Mâche ronde*, for this sort is later than the one last named, and forms a succession. It is sown thinly, and in exactly the same manner as the *Mâche ronde*. *Courtois-Gérard.*

#### Home Correspondence.

Preserving late Gooseberries and Currants from Rain, Birds, &c.—Under ordinary circumstances and where no kind of protection is employed, it is rare to see these kinds of fruit much later than August ; owing to the ravages made by birds and other vermin at that season of the year, when most kinds of field crops are gathered in, together with the unfavourable effect of rain on the ripe fruit. We have sorts which, if preserved from the above-mentioned casualties, would hang on the trees till the end of October, or even longer if not destroyed by frost. In large gardens, where there is a sufficiency of wall to allow of devoting a portion to this purpose,



protection is easily applied; but in the majority of places, the walls are exclusively occupied with other kinds of fruit, which is considered of more importance; and the only protection afforded to Gooseberries and Currants is a few mats, which are tied closely round the trees so as to entirely deprive both fruit and foliage of light and air. Now this is directly opposite to the treatment we give the Vine at this stage; and the same process is in operation in the foliage of the one as in that of the other, viz., the conversion of the sap into its proper state for the perfect ripening of the fruit, and also for supplying the wood with its required amount of nourishment for the development of the next year's crop; light and air are therefore as essential to the well-doing of the one as the other. Hence it is that fruit gathered from trees which have been matted up for some time has that watery insipid taste which it almost invariably acquires under such unfavourable circumstances, and which tends materially to lessen its value compared with other fruits. In addition to this, trees which are subjected to this kind of treatment year after year must be ultimately rendered incapable of producing fruit worth notice. It is not my intention to put these fruits on an equal with Grapes or Peaches, nor shall I in endeavouring to preserve them to a later period incur an expense equal (in proportion to their relative values) to that required for Grape or Peach culture. The plan I shall recommend is both simple and cheap, and an expert garden labourer would be able to do all the work connected with its erection. A piece of ground about 7 or 8 feet wide having been drained and otherwise prepared for a plantation, might be edged round with bricks or some similar material most easy of access; a double trellis, 1 foot wide and  $4\frac{1}{2}$  feet high, might be fixed in the centre, the whole length of the bed, and at  $2\frac{1}{2}$  feet distance on either side a single one 3 feet high; the trellises should be made of galvanised wire, so as to keep the portions of branches coming in contact with them from cankering. Thus there will be room for four rows of trees, which should consist of good and late keeping sorts. The tallest growing varieties should be planted to the centre trellis, and the dwarfier kinds to the outside ones. The mode of protection which is now the next subject for consideration may consist of a structure just high enough to cover the trellises; 5 feet in the centre and 3 feet at the sides would be a very convenient height. It should be so constructed as to put up and take down with the greatest facility, therefore the ends and the middle supports should each be permanently fitted together, and made to let into sockets in the ground, at convenient distances apart; a doorway should be made in one end, to go in at, to gather the fruit when wanted. The sides and roof will consist of frames made so as to reach from one support to the other; those for the roof should be covered with stout canvas, which would in a great measure exclude the wet, those for the sides and ends might be covered with Haythorne's hexagon netting, which would admit more light and air to the interior. Two pieces of board, each about 4 inches wide, should be nailed together to cover the ridge of this span-roofed house, as it were, and the structure is now complete, and two men would either put it up or take it down in less than half an hour. These frames when not wanted for this purpose might be applied to many other uses, such as covering pits in winter and shading in early summer; or where pit room is short in spring, as is frequently the case, this structure might be erected over a lot of bedding out plants for a few weeks previous to turning out their summer quarters, a convenience of which many gardeners are sadly in want. T. W.

**Diseased Araucaria.**—I have an Araucaria imbricata which has been in the same situation for seven or eight years, viz., on a sloping lawn open to the south and west, and sheltered from the north and east unencumbered by trees. Till last autumn the tree grew well and looked healthy; then it turned yellow, and has got worse and worse ever since. I observed, some six weeks ago, what appeared to me at the first glance to be the blight, commonly called cuckoo spittle. On examining I saw that this affected the tender extremity of almost every branch, and on touching it I felt it was resinous. In the winter of 1852 I found another Araucaria that was in a damp place, looking very sickly, and being sure it would die there, I was induced to move it; and though the weather was most disadvantageous it has recovered, and it is growing nicely in its new habitat. I am disposed, from this experience, to lift my sick tree and drain under, and mound it. The hopeless part of the matter is that there is no reason to suspect the situation of being damp. The plant, however, is not moulded. It is about 5 feet high. Can you advise me how to try and save its life? for I am convinced it will die where it is. *Jack, Castle Carey, Somerset.* [We are unable to answer this enquiry.]

**Ringling.**—It might be agreeable to many if, at some spare time, you would inform them in what position the ringling or circumcising of hard wooded plants for production of fruit or blossom now stands. Both what degree of reputation it now enjoys, and what rules experience has established. Does the theory of autumnal ringling to obtain fruit, and vernal ringling to improve it, stand its ground? It was early laid down that stone fruit trees could not be thus treated, because of their tendency to canker. But as the application of the knife does not injure them, it might be doubted whether narrow rings, sharply and cleanly made, would necessarily be injurious. It was as positively said that the Fig tree was impatient of decoration; but that was soon refuted by Sir Charles Monck. What Mr. Williams

related of the summer ringling of Vines seems too explicit to be discredited (*Hort. Soc. Trans.*, Vol. I.), and may, perhaps, obtain increased importance at present, when that plant is subject to ailments. Perhaps the general introduction of root pruning has, in great measure, done away with a practice which (at best) inflicts some little injury. But if the retrenchment of roots renders unnecessary the ring for throwing the plant into blossom, it does not appear that it ought to supersede that operation, as directed to the improvement of the fruit. A. H.

**American Asparagus.**—I observe some discussion, about Asparagus; is the sort known in England, which is grown in the United States? At Louisville, Kentucky, I saw it early in the spring out of doors; it is not large, and almost quite white, having only a point of about half an inch in length green; but it is quite tender to the very end of the stalk, and of most excellent flavour. S. G.

**Walks on Hilly Ground.**—In a season like the present, when heavy drenching rains succeed each other in quick succession, the comforts of a good gravel walk can scarcely be over-rated; it is, therefore, a serious drawback when paths are not good; and there are many that are not so, owing as much to the injudicious manner in which they have been made, as to the indifferent materials of which they are composed; but there are walks likewise with which in ordinary weather no fault can be found—but which after heavy rains present a guttered and broken appearance; such walks are those on hill sides when the water is sure to break them up into gullies, more or less deep; now to obviate this defect, many walks are provided with outlets at the sides, where the water is caught by an earthenware pipe, which conveys it to some subterranean channel. Now these outlets or eyes as they are called, are, to say the least of them, but clumsy appurtenances to a walk, and they must be pretty numerous, otherwise the accumulation of water does all the mischief they are intended to remedy. Any plan, therefore, that would bind the walk together, so as to resist the flow of water, without, at the same time, rendering it unpleasant to walk upon, must be an acquisition, provided it be capable of general application. Now, the following, though possibly nothing new, will effect this object:—Pound some good lime (not slake it), and convey some of it to the damaged walks, then mix it with the gravel in something like the proportion of one part lime to four or five of gravel; a small quantity only ought to be mixed at a time with water and then laid on immediately, beating and smoothing accordingly; then another quantity, and so on, until the whole is done; the mass by this means becomes so consolidated that it is years before water can have any effect upon it. The process being in fact what builders call "cementing," and one which I certainly like better than asphalt, besides being so much cheaper; for in districts where lime is plentiful and good, it may be used less sparingly, but it is not an expensive affair at any time, and to those who have been suffering from the effects of thunder showers and other heavy rains I advise a trial of a little of it in the most exposed place, and I think I may warrant its answering. *Vindex.*

**Variegated Plants** (see p. 661).—I quite agree with Mr. McKenzie's remarks, that if variegation is a disease, it is one under which most shrubs grow luxuriantly; with the following plants, however, the opposite would appear to be the fact, viz., striped Vine, variegated Ivy, Geraniums, Alyssum saxatile, and Arabis caucasica and lucida. Whether in pots or in beds these are all weaker and the flowers paler than the species from which they spring; this, therefore, furnishes some grounds for supposing that, if not a disease, variegation is at least a condition antagonistic to vigorous health, as is also proved by the fact that plants in that state are more tender than their originals. *R. Miles, Kingsdown.*

**Hartley's Rough Plate Glass.**—Having had three different sorts of glass supplied by different dealers, as Hartley's Patent Rough Plate, can you by description inform me of the true character of it? The last, and seemingly the best, had one side closely covered with narrow raised ribs. *Jus. J. Peach, Rector, Holme Pierrepont.* [The last appears to have been Hartley's; the rest must have been spurious.]

**Potato Blight.**—A plot of ground in which Potatoes had been grown and extensively affected by blight last year, was left this spring for a crop of winter Kale, and preparatory to being dug up, stable manure in small heaps was laid upon it. As, however, spring advanced, young Potato plants sprung up from the remains of the diseased tubers which had been left in the ground of the preceding year's crop; and these promising to yield a crop were left undisturbed, in order to ascertain the character of the Potatoes growing from such seed. On taking up the roots at the proper time in the autumn, full one-half were found to be so diseased as to be wholly unfit for use. But those under the heaps of manure, and within their immediate vicinity, were not only very fine, but entirely free from blight. Perhaps I ought to add, that the proportion affected by blight in the crop grown the diseased tubers was not greater than that of other crops grown from sound seed in the same garden. *E. Duke, Gardener to Mr. Dugmore, The Firs, Hampstead Heath.*

**Watery Pine-apples.**—Your Stafford subscriber must have watered his Pine plants over head while the fruit was in bloom, or kept the atmosphere too moist during that period. When I find my plants showing fruit, I give all the air I can, which I find not only beneficial to those in bloom, but to those that are coming up, giving the fruit time to come up strong and form pips,

thereby avoiding large crowns. *A Welsh Goat.* [There can be no doubt that the mischief has been caused by excessive damp, in some shape, uncorrected by sunlight and free ventilation.]

**Chamomile.**—Permit me to inform your correspondent (see p. 664), that a bed of Chamomile which was cut in spring, and kept clear of weeds through the season, and which has a northerly aspect, free from sun, on a gravelly soil, produced a very fine crop of flowers. *J. C. S., Beasley Heath.*

**Tree Labels.**—I am of opinion that nothing equals thin sheet lead for this purpose; it is very pliable and durable; the letters should be stamped on it, and the labels soldered to small iron stakes, or nailed to the wall, as the case may be. I have seen labels of this kind which had been in use for 60 years to all appearance as good as they were the day they were made. Putty, paper, or wood, are more fit for the boudoir than to stand the test of the seasons. They want renewing every 5 or 10 years, but this is not the case with lead, which is very lasting. *W. Brown, Merevale.*

**Variegated Vine.**—I herewith forward, for your inspection, some leaves taken from a variegated Grape Vine, a seedling of my own raising, which I inarched last March on another Vine; it has grown since 13 feet. Every leaf is beautifully variegated. It was very much neglected till I inarched it; it now has a beautiful appearance. *Robert Josling.* [This is handsome enough, but the white is not sufficiently distinct; there are too many blotches of middle tint to allow it to be placed among first-rate variegations.]

**Lost Peach.**—About 25 years ago, we had in a garden at Taunton a Peach, large, white, with brilliant crimson streaks on the sunny side, ripening very early, always a week or two before any other Peach, and having an exceedingly rich sweet flavour, and very melting. The tree withered and died. I have never seen the same Peach (which I should instantly recognise by sight) in Covent Garden; nor, indeed, anywhere but in Taunton market, where one fruiterer only sold it, and told me she obtained it from a gentleman's garden in the neighbourhood. She is dead, so I am unable to trace it. Could any of your readers oblige by informing me if this Peach is known to them, what its name, and where I could procure some trees? *E. W. C.*

**Cobbett's Peas.**—If "X." will address a line to Mr. Crump, of Chorley, near Bridgnorth, he may obtain the information he wishes respecting Cobbett's Peas. *Anon.*

## Societies.

**HORTICULTURAL, Oct. 18.**—E. BRANDE, Esq., in the chair. The subjects of special exhibition on this occasion were Peas, green Peas, and hardy annuals. Of Peas there were no fewer than 11 exhibitions, most of them consisting of good-looking fruits, considering the unfavourable season in which they have been ripened. As much, however, cannot perhaps be said in favour of their flavour; for owing to the great want of bright sunshine we have had this summer, that has been found to be anything but good. Among the different exhibitions produced, that from Mr. Ingram, gr. to Her Majesty at Frogmore, was certainly the best, the whole of the fruits of which it consisted being fair sized specimens, quite ripe, and correctly named. The sorts were Beurré Bosc, Van Mons Léon le Clerc, Marie Louise, Louise Bonne of Jersey, and Autumn and Gansel's Bergamot. A Banksian Medal was awarded. The second best exhibition came from Mr. Braid, gr. to H. Perkins, Esq., of Hanworth Park; it consisted of Duchesse d'Angoulême, Marie Louise, Napoleon, Brown Beurré, Belle et Bonne, and Hacon's Incomparable. A Certificate of Merit was awarded. In other collections furnished by Messrs. Snow, Hill, Meredith, Atkinson, Busby, Judd, and Alderson, we remarked the following varieties in good condition, viz., Beurré d'Aremberg, Althorpe Crassane, Williams' Bon Chrétien, Marie Louise, Louise Bonne of Jersey, Gansel's Bergamot, Glout Morceau, Beurré Bosc, Bishop's Thumb, Chaumontel, Comte de Lamy, Ambrosia, Beurré d'Amanlis, Doyenné Gris, Flemish Beauty, Duchesse d'Angoulême, Brown Beurré, Beurré de Capiaumont, Passe Colmar, Forelle or Trout Pear, and Seckel. A collection of foreign Peas, large and beautiful specimens, for which a Banksian Medal was awarded, was contributed by Mr. L. Solomon, of Covent Garden. The sorts were named Crassane, Beurré Magnifique, Duchesse, Le Curé, and Belle Angeline. In addition to the above, Mr. Rivers, of Sawbridgeworth, sent a well varied and extremely interesting collection of Peas, many of them new and others good specimens of well known kinds, chiefly from pyramidal trees on Quince stocks; but a few from trees under glass in his orchard houses. Among the latter were Brown Beurré large and fine, and so different in appearance from fruit of the same kind ripened out of doors as to be easily mistaken for another variety. Of novelties those which struck us as most remarkable were Nouveau Poiteau, Josephine de Malines, Laure de Glymes, and Triomphe de Jodoigne. The Laure de Glymes is a medium-sized very attractive Pear, with a warm colour something like the Beurré de Capiaumont; the Triomphe de Jodoigne is a large green Pear, said to be of first-rate quality.

The best Peas came from Mr. Evershed, market gardener, Godalming, who sent a dish of British Queen and Prolific, young and tender, though the pods in this as in all the other exhibitions were spotted and somewhat discoloured, the effect, doubtless, of the cold and damp to which they have been subjected. Dishes of



as were also contributed from Kent, Buckinghamshire, Beds, Sussex, and Hants, by Messrs. Fry, Atkinson, Busby, Daniels, Passfield, and Judd. The sorts are Neapolitan Marrow, Early Emperor, Hairs's Mammoth, Knight's Dwarf and tall Marrows, and a tall called Jay's Conqueror. Of these, Hairs's Mammoth, sown on the 11th of June, was stated to have been fit to gather by the middle of August and to have continued bearing up to the present time.

Among plants by far the most remarkable was Messrs. Veitch's Impatiens Jerdoniae, mentioned in the other column. This received a Knightian Medal, which it well deserved; a Certificate of Merit was also awarded to the same firm for Fuchsia Dominiana, described in a previous number. It is certainly by far the most noble and handsome of all the Peruvian race. Messrs. Standish and Noble received a Certificate for a Peruvian Calceolaria named hyssopifolia, a kind with all clear yellow flowers and good foliage. It was stated to be a free bloomer, and that it would probably be valuable for bedding, the specimen exhibited having been potted from the open ground, where it had a very gay effect. The fact of its being well provided with broad leaves may also render it useful in the hands of the florist in putting a better foliage on some of the finer evered sorts. Messrs. Henderson, of Pine Apple Place, furnished the yellow Begonia xanthina in blossom; but it was a small specimen, and poorly preserved, not at all like the handsome figure of this ally fine plant recently given in the "Botanical Magazine." From the Tooting Nursery came a collection of Orchids; but these, as well as a yellow-flowered, white-striped leaved Aphelandra, from M. Van Houtte, Ghent, but shown by the Messrs. Rollisson, arrived late to receive any award. Among the Orchids were Epidendrum varicosum, a charming species with a large and yellow lip; the Blue Vanda, a very ornamental plant at this season; Sophronitis grandiflora, suffering from want of bright sunlight, but nevertheless extremely gay; Miltonia Morelana, which is only a simple variety of M. grandiflora; the pretty Cattleya veli, Lælia Perini, and one or two other species. J. Summerfield, gardener to J. S. Venn, Esq., contrived a good Dendrobium chrysanthum, for which a Certificate of Merit was awarded.

OF FRUIT, Mr. Higgs, gr. to Mrs. Barchard, sent a Moscow Queen Pine-apple, weighing 3 lbs. 9 oz., and a dish of Barchard's Seedling Apple, apparently a good one. A Certificate of Merit was awarded for the Pine-apple. Pine-apples were furnished by Mr. Jones, gr. to Lady Charlotte Guest, in the shape of three specimens of Black Jamaica, weighing respectively 4 lbs. 10 oz., 3 lbs. 4 oz., and 4 lbs. 2 oz. A Banksian Medal was awarded. A similar award was made to Mr. Butcher, Stratford-on-Avon, for three fine bunches of Barbarossa grape, quite black and covered with a fine bloom. Mr. Fry, of the Queen's Graperies, Brighton, sent well preserved Black Hamburgh ripened without fire heat.

Busby, Stockwood Park, Luton, also showed bunches of this kind of Grape. The same exhibitor likewise received a Certificate of Merit for a seedling of the Grape, said to have been raised between a Black Hamburgh and the Dutch Sweetwater, the latter being male parent. The berries are large and somewhat in shape, and were reported to be delicious. It will doubtless prove an acquisition. Mr. Fraser, gr. to J. Leigh, Esq., of Luton Hoo Park, produced three bunches of Black Morocco Grape, a coarse kind not generally liked. A dish of Coe's Golden Drop Plums in good condition came from Mr. Fry, of Manor House, Kent. Mr. Robertson, gr. to Miss Thackeray, the late Mrs. Lewisham, sent eight Seville Oranges, all of first-rate examples of good growth. A Certificate of Merit was awarded. Some red Astrachan grapes were exhibited by Mr. Busby, and from Mr. H. H. gr. to C. G. Thornton, Esq., came a dish of what has been called Marden Hill Seedling, a medium sized Apple, reported to have much merit. R. Crawshaw, of Crosby Hall, received a Certificate of Merit for bunches of white Spanish Onions, grown in Surrey, quite as large as the average of imported ones to be seen in the shops, but not so well ripened. "I measured 100," says Mr. Crawshaw, "the land which produced them, and besides what my large family have consumed during the summer from the same beds, I had at the end of upwards of 20 tons weight per acre. The land was thoroughly well prepared for them; they were well and well attended to all the summer." Other specimens of exhibition consisted of various garden labels.

Messrs. Branton & Co., of Red Lion Square, Shropshire. They were made of galvanised cast iron, very like in appearance, the name, &c., being printed in large letters, on a plate of glass let into the square of the label, and hermetically sealed, so as to preserve them from the action of the weather. They varied in size, 20 to 14. 6d. each. One, a large and handsome label, costing 3s. 6d., was made of strong wrought iron, with the head riveted on, so that it could not be broken, which cast iron ones are apt to do. It cut sharply with a roller, or other heavy implement. From the Garden of the Society came the flowering Pompona Chrysanthemum called Pomponi, a variety of Thunbergia alata named Pomponi, a Prilla japonica, a deep purplish brown small flowered annual, with a strong and by no means disagreeable perfume; flowers of Cestrum aurantiacum, which blossoms freely several times a year in a conservatory, and cut flowers of the following annuals (the only collection produced) viz. — a ranunculus-like Centa turbinata, and t. formosa;

Vendium calceolaceum, Dianthus Gardneri, the white-flowered Gypsophila Steveni (which has been extremely gay all the season), Gilla tricolor, Viscaria oculata, Eucharidium grandiflorum, Erysimum Perofskianum, three kinds of Coreopsis, Calliopsis Drummondii, seven varieties of Lupine, Lobelia gracilis, Gnaphalium bracteatum, Campanula viniceflora, Senecio albus, Schizanthus peduncularis, the Bladder Ketrum, Tagetes miniata striata, Limnanthes alba, the ugly Tropæolum Shurmanianum, canariense, and Lobbianum; Godetia rubicunda and lepidia, Mignonette, Sweet Alyssum, Brompton Stock, Impatiens glanduligera, Cosmos bipinnatus atro-purpureus, Chinese Pink, and Pot Marigold. These were all flowering in great perfection until the frost of the 3d inst. arrived, which very much impaired their beauty, and altogether killed more tender kinds. The garden also furnished the following Pears, viz., Duchesse d'Angoulême, Beurré Diel, Marie Louise, Gansel's Bergamot, Seckel, and King Edward's Pear, so named, it is said, because it was first planted by a King Edward, near Winchester. It is a good Pear and grows very large in favourable seasons. Accompanying these were, likewise, Aubergine Violet, Large Spanish Capsicum, a mild kind, grown and ripened in Ewing's glass wall; Saracha viscosa, described in a former report of the garden; Physalis Peruviana; Pomeranian and Winnigstadt Cabbages, and the Early Ulm Savoy, an extremely useful sort, which does best in soil not too rich, and which may be planted at 1 foot apart. It may not be generally known that if the head be cut close to the lower leaves, small heads will again push, like Brussels Sprouts, and almost as delicious.

### New Plants.

16. IMPATIENS JERDONIÆ. "Wight Ic. Plant. IV., t. 1602." Bot. Mag. t. 4739.

A specimen of this new greenhouse herbaceous plant, exhibited by Mr. Veitch, at the last meeting of the Horticultural Society, received a Silver Knightian Medal, in testimony of its singular beauty and horticultural value. It forms a tuft of fleshy or tuberous stems, about a foot high, of a deep purple colour, concealed by numerous narrow, deep-green leaves, from among the uppermost of which appear great numbers of flowers in general form like those of any other Balsam, but of a brilliant brick-red, relieved by yellow and green. The red belongs to a large, bag-shaped, curved pouch, which hangs down in front of the flower stalk; the yellow and green, confined to the small sepals and petals, form a helmet-shaped body, which seems to terminate the pouch. The figure in the "Botanical Magazine" was taken from a very ill-coloured specimen. It will no doubt propagate easily by cuttings, if not by seed, and cannot fail to be a universal favourite. Mr. M'Yor sent the tuberous stems from the Neigherry garden, at Ootacamund, to the Royal Botanic Gardens, Kew, where it first flowered in June, 1852.

17. LEPTOSIPHON CILIATUM. Bentham in Pl. Hartweg, p. 325.

A rather neat annual, with quite the habit of other Leptosiphons, but with very long, transparent jointed hairs covering the deeply divided leaves. The flowers are smaller than in L. densiflorum, with a slender brown hairy tube, a yellow throat, and a deep rose-coloured border. Not very pretty. The seeds were bought of Mr. Carter. Hort. Soc. Journal.

18. BURLINGTONIA REFRACTA.

B. sepalis anteriore integerrimo acuminato refracto calcar depressum spatulatum involuente, petalis obovatis apiculatis apice recurvis, labello apice semi circulari emarginato medio contracto infra medium undulato lamella dupliet carnosâ plantâ in discum lineisque 2 elevatis utrinque, columnæ glabræ alis calvis 2 linearibus erectis 2 oblongis dimidiatis porrectis.

A stemless plant of no beauty, with recurved 5-7 flowered racemes, shorter than the solitary oblong leaves. The scentless flowers are dirty white, a little stained with purple, about as large as in B. candida. The double front sepal, instead of curving upwards beneath the lip, is directed backwards, and entirely envelopes a long narrow depressed spur. The small wings of the column are sometimes longer, sometimes shorter than the anther, the front of which is blunt and hooked downwards. The elevations of the lip are spotted with dull red. We received a live specimen the other day from Mr. Skinner, without any information concerning its native country. Our herbarium, however, contains good specimens gathered in Santa Martha by Purdie, for which we are indebted to Sir William Hooker.

### FLORICULTURE.

WINTER TREATMENT AND PROPAGATION OF EPACRISSES. — These will have now completed their growth and formed their flower-buds. See, therefore, that they are in a proper condition for wintering — their pots clean and the drainage complete, for to have drainage perfect is of more consequence during winter than at any other season; if it is imperfect, the water will lodge in the soil and turn it sour; the young roots will then perish, and the plant will soon show the ill-effects of such conditions. This fact cannot be too strongly pressed upon the attention of the young cultivator. Should any worm-casts appear on the surface of the soil, means must be taken to get rid of them; if only one or two pots are infested, the most certain remedy is carefully to turn the ball out of the pot, and if the worms are outside, to gently remove them, without disturbing the roots; but if they are embedded in the soil, they will be more difficult to come at. If the ball be

gently struck with the hand, they will creep out of their hiding-places, and may then be destroyed. Should these means fail, let the plants become moderately dry, and then give a good watering with lime-water; this will effectually displace them. The green-fly sometimes prevails in the early part of winter on the young shoots; these are easily got rid of by smoking with tobacco. The application of water during winter is necessary, but only in very moderate quantities, merely just sufficient to keep the soil somewhat moist, care being taken that the ball is moistened to the centre. All the artificial heat that is needed for the Epacris is just enough to keep out frost. If the plants, or part of them, are kept in cold pits, they should be securely covered up every night when frost prevails; in very severe long-continued frost, it may be necessary to keep them covered closely up even during the day. They have been kept so covered up for a week together without injury; but on all favourable occasions uncover them, and give them fresh air to dry up damp and keep the plants fresh and healthy. Air must also be given plentifully to the greenhouse, both to keep down the temperature and sweeten the atmosphere. Once or twice during the winter let the surface of the soil be stirred, and all Mosses and Lichens removed as well as weeds. Towards the spring, when the flower-buds are beginning to push, a top-dressing of fresh mould will be acceptable and useful. In order to perpetuate choice varieties already known, the only way is to strike them from cuttings; they are by no means difficult to propagate in this manner, though certainly not so easy as a Geranium or a Chrysanthemum. The materials necessary are, some good sandy peat, some pure white silver-sand, and two or three clear bell-glasses, together with a rather warmer house to place the cutting pots in than the greenhouse. The best time is when the plants have plenty of young shoots upon them, which generally happens about the end of May. The best cuttings are such as are growing on the side-shoots, because these are not so gross and full of sap as the leading branches. The shoots being in a fit state to take off for cuttings, select some pots of such a size as will allow the bell-glass just to fit within them; fill the lower parts of the pots with broken potsherds for drainage, lay upon the drainage a thin layer of the rougher parts of the peat, then fill up with roughly sifted peat to within an inch of the top, and fill up the remainder with pure silver-sand; give a gentle watering from a very fine-rosed watering-pot to settle the sand, then prepare the cuttings; take them off about 1½ inch long, trim off the lower leaves carefully with a very sharp knife, without injuring the bark; set the bell-glass upon the sand to make a mark, and within that mark put in the cuttings in neat rows across the pot, keeping each variety to itself. Proceed till the number desired to be multiplied is all planted; then give a second gentle watering to settle the sand close to the cuttings, let them stand half an hour in the shade to dry the wet off the leaves; then place the bell-glasses upon them, and set them in a gentle heat, shading them every day when the sun shines, also let the glasses be wiped dry every morning for a month, and by that time the cuttings will begin to grow. To check them from drawing up weakly, uncover them for an hour or two every morning; and when they are rooted, remove them into a cooler house for three or four weeks, leaving the glasses off in dull weather, and shading them from hot sunshine; by that time they will be fit to pot off. If there is a considerable number, and room is scarce, they may be put into 3-inch pots, four in a pot, and allowed to remain in them till the following spring. When they are potted off out of the cutting-pot, place them in a cold frame close to the glass, and shade till they are fairly established. To cause them to form branches close to the pots, nip off the tops as soon as they begin to grow afresh; and when they have filled the small pots with roots, re-pot them, and afterwards treat them in the same manner as the established plants. T. Appleby.

PELAGONITUM: A. H. Your specimen bottoms which have been disrooted and have got well established, should be shifted at once into their blooming pots. Indeed this should not have been deferred so long, more especially with plants required for May. As regards soil, Mr. Dobson, in his treatise on this flower, says, "I use the top-spit off a meadow full of fibre, and laid up together with one-third green stable dung, well mixed together and laid in a heap, and well chopped over during winter; after about the second year it will be ready for use. Mix up with the loam, before potting, four shovels of rotten cow-dung, the older the better, to one barrow of mould, to this add an 8-inch pot full of silver sand. Mould, except for cuttings, should not be sifted but chopped over with a trowel." Water sparingly, and light a slight fire now and then in the mornings to dry up damp and test the efficiency of the heating apparatus for more active work which may now soon be expected.

SEEDLING FLOWERS.

GLADIOLUS: R. & B. A very handsome kind, which we think cannot fail to become a favourite.

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

BEFORE arranging plants finally for the winter, attention should be directed to the kinds of plants it is intended to winter in each house, that in filling up the stages and shelves such plants as require much air and light through the winter may be accommodated with the best situations; this will be more necessary where plants of different habits are grown together. Heaths, Helichrysums, and delicate New Holland plants, should occupy the lightest and most airy places; while Azaleas, Daphnes, and Camellias especially, may be placed towards



the back, as a partial shade will not affect their well-doing. As a matter of course, the pots have been clean washed, and the surface soil freshened up, previous to their being arranged. Although water must be given to each plant when it becomes dry, yet as the more active growth of plants ceases, and evaporation is brought to the minimum point, a longer time will elapse before they again require it; and it should be a point not to water before the ball becomes somewhat dry, and then to moisten it thoroughly. With the exception of Camellias and Chrysanthemums, swelling their buds, liquid manure should be dispensed with. The next thing requiring attention will be the ventilation, which in some respects will have to be governed by the state of the weather, bearing in mind, however, that during mild weather air must be given freely, assisted by slight fires on wet days, to promote a more complete circulation, as well as to dry the internal air. When the nights are mild, a small portion of air should be permitted to remain; these precautions will do much to assist plants to go through the winter harmless, which might not be the case if kept at all close, owing to the imperfectly ripened state of the wood. Should mildew appear, dust the plants with dry sulphur, and expose them to the most favourable conditions for arresting it, viz., light and dryness. Pelargoniums intended to bloom early next season should now be potted in the pots in which they are to flower, selecting those plants which were first disrooted, and which will now be sufficiently advanced for the purpose. Early struck cuttings may now likewise be potted; as before noticed, have the soil in a dry state; after potting, place those intended for specimens near the glass, and at a good distance apart; water must be given cautiously, and gentle fires will be requisite to keep a temperature of 55° by night. Cinerarias and Calceolarias will grow well with the above treatment; these must be potted as they require it, and kept free from insects. As Cinerarias advance, water them occasionally with liquid manure.

#### FORCING DEPARTMENT.

**VINERY.**—As the wood in the houses intended to be started in succession ripens, and the leaves fall, the Vines may be pruned in the order in which they are to be brought into work, that the wounds may have time to heal over before fire heat is applied. If they are not exposed, the Vines may have the loose bark removed, and the stems dressed over with the sulphur composition, and afterwards tied up. The house will then be at liberty for holding extra plants, Chrysanthemums, or bedding out stuff till required for forcing. As soon as leaves can be procured, a good coating should be put over the border of the late house, and thatched, or dry Fern may be used for the same purpose, that of preventing the border from becoming colder. We find our late Vines keep their leaves green till January by protecting their roots; and consequently the Grapes keep fresh and plump for some time afterwards. Late Grapes must have fires daily—see previous directions.

**PINERY.**—Pines growing in pits and frames must have the heat kept up by linings of fresh dung; exclude the steam from the heating materials getting into the pit, and promote as much dryness as possible. Air freely on sunny days. Strawberries for forcing should now be removed to spare pits, frames, or empty Vineries, where protection from heavy rains and severe frosts can be afforded them. Where room of this kind is scarce, stack them up, laying the pots on their side, and packing the pots in ashes or old tan.

#### FORCING GROUND.

Where a supply of forced vegetables is required early, the time has arrived when active preparations for the season should commence. Beds of Rhubarb, Asparagus, and Sea Kale, grown for the purpose of forcing, will by this time have ripened their leaves, which may therefore be removed forthwith; long litter should then be placed over the crowns, to exclude frost; and enable them to be taken up as wanted. Where the assistance of pits heated by pipes or flues is at hand, both Rhubarb and Asparagus are best managed in them. For the earliest crops, a slight bottom heat should be got up, on which place 3 or 4 inches of soil, and immediately on this pack the roots (which should be taken up carefully without injuring the crowns) as thick as they can be placed, filling up the interstices between the roots with fine earth. A moderate watering may then be given them. Rhubarb should be kept at a distance from the glass in proportion to the length of stem desired, and the kind grown; but the closer Asparagus is kept to it the better will be the quality. When once planted forcing may commence as the crop is required to come in, allowing 5 or 6 weeks from the time of starting, as the slower forcing is carried on the better the quality of the article. Rhubarb, however, may be successfully forced by inverting large pots over the crowns, and covering them with leaves and dung, similar to Seakale; or the roots may be taken up, and packed in a Mushroom house, or warm cellar; and thus a supply of this useful vegetable may easily be obtained through the winter. French Beans in pits must have fire heat daily; after the pods are set, they may be sprinkled overhead on fine days, and the heating apparatus damped to keep down red spider; water when dry; bring on fresh crops by sowing once a fortnight in small pots, to transfer to larger pots or boxes; these may usefully occupy the spare shelves of the Pine pits through the winter. Proceed with making Mushroom beds; where a continuous supply is wanted a bed should be made each month or five weeks; while the droppings are being collected keep them under a dry shed, and

frequently turn, that they may not heat too violently when put together; add about a third part of turfy loam when making the beds. Beds in bearing keep up to 58° or 60°. Air may be given now and then to sweeten the atmosphere, which at the same time should be kept moderately moist.

#### FLOWER GARDEN.

Proceed in completing the planting and arranging of the beds for the spring display. When the ground is wet, boards should be placed on the turf during the operation, to prevent the workmen from injuring it. Carry on the requisite clearing up of leaves, &c., as the weather permits. Bulbs and tubers of Dahlias, Gladiolus, Tigridias, Marvel of Peru, and similar things, should be taken up and placed in a shed or spare Vinery, to dry before stowing them away for the winter; let the name of each kind be carefully fastened to the root by copper wire, that no confusion may arise when wanted for propagation in the spring. Keep the stocks of cuttings hardy, by fully exposing them on all occasions, removing, however, everything out to shelter of some kind, for fear of frosts. Scarlet Geranium cuttings and some kinds of Calceolarias may yet be put in, if the stock is not sufficient; though the weather is generally unfavourable for out-door operations, on account of the continuous rains, yet planting, when in hand, should be proceeded with, as the damp weather we experience will prove beneficial to newly-planted trees and shrubs, evergreens more especially.

#### HARDY FRUIT GARDEN.

Apples and Pears should be taken in when the weather is dry, nothing will be gained by allowing them to be out longer; keep the fruit-room well ventilated, to carry off the excess of moisture, which the newly-gathered fruit will produce. Peaches, Nectarines, and Apricots, &c., will be benefited by passing a light besom over the foliage in the direction of the growth. This will detach the ripened leaves, and admit more sun and air to the remainder. Any out-door Grapes not yet ripe may be cut with a piece of the shoot, and hung up in a warm room or hot-house, to try the chance of their ripening, which in this vicinity has been very imperfect. The present will be the best time for lifting or root-pruning any fruit trees which are growing too strong to be productive; when once up, take the opportunity of reducing the depth of soil they grow in, at the same time you reduce their roots, or you will gain but little by the operation; after planting, stake securely those not against walls, and mulch the roofs with half rotten dung.

#### KITCHEN GARDEN.

The young seedling Cauliflowers, Lettuces, Cabbages, &c., must be carefully watched, to see they are not injured by slugs; give them a dusting of soot now and then, which will help them, as it will Spinach and Parsley. Select the strongest Cauliflower plants for transplanting under hand-glasses, and when the rest are large enough, prick them into shallow frames, to have the protection of glass; in winter a portion should likewise be reserved for pricking into 3-inch pots, for turning out in spring. The remaining plants from seed-beds may be pricked out in some very sheltered spot, or along the foot of a south wall, to stand their chance through the winter; the Bath and Paris Cos Lettuces, raised at the same time, may be similarly treated, if there is room; the latter, when true, is so much the preferable kind that some pains should be taken to preserve them through the winter. As the frost of the 3d inst. has most likely destroyed the Scarlet Runners and Dwarf Beans, remove the decayed haulm from the ground and dig it over, to be in readiness. Should the weather become dry, pass the hoe once again through the young growing crops. Carrots, when they show indications of being ripe, should be taken up; as, if suffered to remain longer in the ground, they get attacked by the maggot. Salsify, Scorzonera, Red Beet, and Parsnips, should likewise be lifted as they complete their growth, and stowed away, either in the root-house or in dry sand, and thatched with straw. Parsnips, however, may remain longer if desired. Mustard, Cress, and Radishes should now be sown where they can get protection of some kind from frost.

#### COTTAGERS' GARDENS.

The beauty of most of the plants which enlivened the flower border with gay blossoms in summer is now nearly over; and little remains to cheer us at this season except some late flowering Phloxes; the different varieties of Chinese Chrysanthemum will, however, soon be very ornamental, more especially when tied up so as to show their flowers to advantage. Cut down the stems of all plants that have done blooming. The roots of Dahlias will survive moderately severe winters in the open ground, if protected by a covering of dry litter or Fern; but treated in this way they do not flower so well, and on that account it is better to take them up as soon as their leaves and flowers have become blackened by frost. Leave about six or eight inches of the stem attached to the tuber. They may be preserved over winter in any dry cool place where they will be free from frost. When the flower-border is dug and put in order for the winter, which should be done as soon as the leaves have fallen from the trees, any plants that have become too large should be reduced, and such as are not wanted may be removed altogether. Let decaying leaves and other refuse be taken to the manure-heap, which should be turned over occasionally; any drainings from it should not be allowed to be lost; they should either be thrown back over the heap, or they should be made available for some useful purpose.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON, For the week ending Oct. 20, 1853, as observed at the Horticultural Gardens.

October.	Month.	BAROMETER.		TEMPERATURE.			Wind.
		Max.	Min.	Max.	Min.	Mean.	
Friday..	12	29.745	29.672	64	36	50.0	S.
Saturday	13	29.657	29.322	58	42	50.0	S.W.
Sunday	14	29.401	29.318	54	28	41.0	N.E.
Monday	15	29.242	29.070	56	33	41.5	S.W.
Tuesday	16	29.147	29.396	57	34	45.5	W.
Wednesday	17	29.152	29.910	58	46	49.5	E.
Thursday	18	29.810	29.373	56	32	44.0	N.W.
Average ..		29.493	29.327	56.8	35.8	46.3	

October 14—Fog; very fine; cloudy; rain at night.  
 15—Heavy dew; fine; cloudy; rain.  
 16—Rain throughout; clear at night; frosty.  
 17—Rain throughout; overcast.  
 18—Clear and very fine.  
 19—Densely overcast; heavy rain.  
 20—Densely overcast; fine; clear.  
 Mean temperature of the week 43 deg. below the average.

STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending Oct. 29, 1853.

October.	Month.	Average Temp.	Average Dew Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Wind.				
							N.	N.E.	E.	S.W.	W.
Sunday 23		57.5	41.2	49.3	18	0.46 in.	3	1	1	1	3
Mon. 24		52.8	40.2	46.5	13	0.53	2	2	2	2	2
Tues. 25		52.4	38.4	45.7	11	0.7	2	2	2	2	2
Wed. 26		55.6	37.8	46.7	10	0.52	5	3	2	1	1
Thurs. 27		54.4	40.0	47.2	21	0.92	3	1	1	1	1
Friday 28		53.7	37.2	45.4	14	1.06	2	2	2	2	2
Satur. 29		53.0	35.0	44.0	12	0.42	3	2	2	2	2

The highest temperature during the above period occurred on the 21st 1853—therm. 68 deg., and the lowest on the 26th, 1850, and 29th, 1854, therm. 23 deg.

#### Notices to Correspondents.

**BOOKS:** *J. M.* There is no such book as "Abercrombie on Landscape and Market Gardening;" nor did Abercrombie ever write upon landscape gardening.

**CINERARIAS:** *J. C. M.* These thrive perfectly under the shade of low north walls, without any kind of protection. They appear to be, in fact, as hardy there as a Portugal Laurel. But although they flower freely their flowers are small, and are usually spoiled by the spring night frosts. We have no experience to their power of resisting wind, but we see no reason why they should not.

**CELERY:** *An Admirer.* The leaves appear to be suffering from a fungus upon them, produced by wet and absence of sun-light; we do not find a fungus upon them. Names next week.

**CLIMBERS:** *T. W. Kennedy.* Marryat and Hardenbergia macrophylla may possibly answer your purpose.

**FERNS:** *W. W. C.* We never recommend dealers. Those who have these kinds of plants for sale should advertise them.

**GATHERING FRUIT:** *Hortensia.* Quinces, Ne plus Meuris Pear and generally all Apples and Pears yet remaining out may be gathered.

**INSECTS:** *Shem.* Thank you for your note about the name *Sidion* and its derivation. Our reference was of course to the "British Entomology," and not to the second edition of his "Guide." The primary meaning, both of *Sino* and *Sinon* is to hurt or injure, and if the insect does not injure the tree (which, however, we do not assert), the name is inapplicable. *A. Novice.* Your leaves are infested with the small common spider (*Acarus* sp.). Repeated careful fumigations with sulphur or tobacco, and subsequent syringing the trees with fire water, is the best means of getting rid of them. If the trees are small, they might successively be placed under a small pap petticoat, and fumigation applied more effectually. *J. F. T.* Myriads of small black flies which, in the latter part of September and the early part of October, swarmed in the air, injured the Turnips at Haddington, Scotland, and also the foliage of your Peaches and Nectarines, as well as Cherries (*C. Linnaeus*), which, owing to some peculiarly favourable state of the atmosphere, were developed to this extraordinary degree. The circumstance is not, however, of unusual occurrence in certain seasons, but the conditions of temperature, &c., accompany such developments have not been noted. *C. M. A.* The "cho flies" you have sent us from Tesmond, near Newcastle-upon-Tyne, are identical with those received from Haddington mentioned in the last answer. Your explanation of their name and appearance is on the whole correct. We do not consider the species to be ordinarily a general feeder, but the numbers developed may have led to their being found on many plants. They doubtless pass the winter in the state *W.*

**KEEPING FRUIT:** *T. C. I.* Apples and Pears likewise are best in a cool dry place, not subject to sudden changes of temperature. A left with double ceiling and walls lined with answers exceedingly well.

**NAMES OF FRUITS:** *J. M.* 1, Northern Greening; 2, Nons Bachelier Pippin; 3, Alexander. The Pear is cracked consequence of having been attacked by the smut fungus prevalent almost everywhere this season. The sort is, per the Beurre d'Am, but it is so disfigured that nothing can be said of it. *C. B. A.* 1, Flemish Beauty; 2, Beurre d'Am; 3, Winter Pearmain; 4, Purse-mouth Red Streak. *—* 1 is probably the Orme Apple; 2, 26, Dumelow's Seedling Wellington; 3, Rhode Island Greening; 4, Yorkshire Greengage; 5, Russet Nonpareil; 6, Golden Reinette; 7, Urbanis White Doymene; 8, Old Colmar. We do not know any called Tartanella. The name Glout Moreau is of French origin; Moreau in French signifies Morsel. The meaning of Glout is uncertain; Dr. Adrian Diehl thinks name, in German, signifies Frass-bissen. *—* *W. D.* 1, Quatre; 2, Louise Bonne (of Jersey); 3, 4, Easter Beau Glout Moreau; 6, Flemish Beauty; 7, Wyken Pippin; 8, Lord Nelson. *—* RECEIVED: *Inquirer*, R. Smith *Cavanensis*.

**NAMES OF PLANTS.** We have been so often obliged reluctantly declining heaps of dried or other plants, that we v to request our correspondents to recollect that we never could have undertaken an unlimited duty of this Young gardeners, to whom these remarks more especially should bear in mind that, before applying to us for assistance they should exhaust their other means of gaining information. We cannot save them the trouble of examining and then for themselves; nor would it be desirable if we could. Can do is to help them—and that most willingly. It requested that, in future, not more than four plants may us at one time. *R. T. C.* The so-called Arctostaphylos macrophylla; the aquatic is the beautiful little Riccia *—* *T. W. J.* 1, Pilea muscosa (Urticaceae); 2, Phyllanthus 3, Talium patens; 4, Angelonia salicifolia. *S. —* Lastropium Tobira. *W. W.* It looks like a young *F. Lastropium cristata* "grown under stones." We have not that perfect fronds, a foot or more in height, of the species, will be found in the neighbourhood growing in open or between stones. *S. —* *Mary.* A. B. A. Young Gardener, others. Next week. Our herbarium and library are inaccessible. *—* *H. G. L.* Dendrobium chrysanthum; Skinner, a bad variety; Warrenia discolor. *J. W.* I like xanthina, but cannot be named without leaves and flowers.

**ROSE STOCKS:** *Novice.* You may remove the ligatures buds now with safety.

**VINEGAR PLANT:** *J. C.* It is the spawn of a Fungus called cillium glaucum.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9s. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

PERUVIAN GUANO, the guaranteed import of MESSRS. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.

WILLIAM INGLIS CARNE, 10, Mark Lane, London.

## WHEAT SOWING—IMPORTANT TO FARMERS.

PERUVIAN GUANO.—It is a well-established fact that the application of 250 lbs. of the best Peruvian Guano per acre, on well drained land, at the time of sowing Wheat in the Autumn, has, in many instances, increased the produce of grain 8 bushels, and the straw 10 cwt. per acre.

JOHN CLARANCE, Agriculturist's London Agent for Peruvian Guano and Superphosphate of Lime, 1a, Bishopsgate Street Within, London.

## THE LONDON MANURE COMPANY'S WHEAT

MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.

Bridge Street, Blackfriars.

## MANURES.—The following Manures are manu-

factured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0

Office, 69, King William Street, City, London.  
N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## SEWAGE CHARCOAL MANURE.—This highly

fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt., for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.

It may also be had from Messrs. G. GIBBS & CO., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

## WHEAT DIBBLING.—THE PATENT ECONO-

MIC DIBBLE, with from six to nine depositors for inserting one grain (or more if required) in each hole. Price moderate.

Mr. C. H. GABRIEL, Surrey Chambers, Arundel Street, Strand, London.

## SAMUELSON'S PATENT DIGGING OR

FORKING MACHINE, which obtained the SILVER MEDAL of the Royal Agricultural Society at GLOUCESTER, 1853; 5s. 5s. Prize of the YORKSHIRE SOCIETY; and 5s. Prize of the CLEVELAND SOCIETY; capable of cultivating 5 acres per day with four or six horses, may be seen at work at Banbury, and in Kent, Middlesex, Surrey, Cheshire, Yorkshire, North Wales, Berwick, Gloucestershire, Worcestershire, Leicestershire, Hert, &c.

To meet the demand of SMALLER OCCUPIERS where horse power is limited, Mr. SAMUELSON has constructed an implement equal to 3 or 3½ acres per day, with a draught of three or four horses only. Price 27l. 10s. and 24l. 10s. respectively, at Banbury.

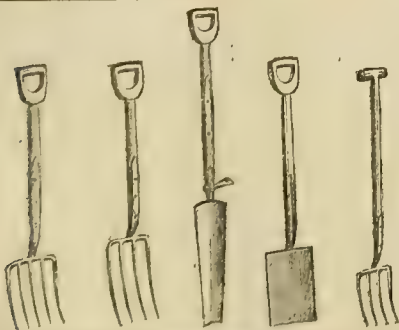
PRIZE at Gloucester (the eighth time) to SAMUELSON'S improved GARDNER'S TURNIP CUTTERS.

Manufacturer of McCormick's Reaper (highly commended at Pusey), Anthony's Churns (3d. prize at Gloucester), Liquid Manure Pumps, Chaff Cutters, Crushing Mills, Lawn Mowers, &c.

B. SAMUELSON, Britannia Works, Banbury.

## PRIZE CHURN.

ANTHONY'S PATENT AMERICAN.—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BUTCHES & KEY, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.



## WINTON'S PARKES' STEEL DIGGING FORKS.

I hereby give notice that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them 'Winton's Parkes' Forks,' were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. BUTCHES & KEY, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.

20th Sept. 1853.

Signed, FRANCIS PARKES.



## IMPROVED GRASS-CUTTING &amp; ROLLING MACHINE.

ALEXANDER SHANKS & SON, MACHINE MAKERS, Arbroath, Forfarshire, respectfully solicit notice to their IMPROVED GRASS-CUTTING AND ROLLING MACHINE for Lawns, the complete success of which, and its acknowledged excellence and superiority over all other machines of the kind, have now been fully established.

Testimonials and further particulars will be immediately franked on application.

WATERPROOF PATHS.—Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

## WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required.  
They are much used for supplying Hot Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

## JOHN WARNER &amp; SONS,

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

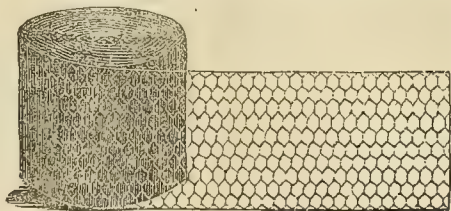
## HENRY J. MORTON AND CO., PATENT GALVANISED

IRON ROOFING WORKS, 93, Albion Street, Leeds, Agents for PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES. The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

HENRY J. MORTON AND CO., 93, Albion Street, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING and cannot rust or corrode, made any width and length.



24 inches wide, 3-inch mesh, 4½d. 6d., and 8½d. per yard.

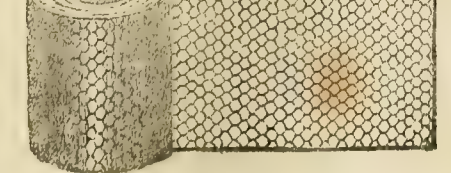
24 inches wide, 2-inch mesh, 7d. 9½d., and 1s. 0½d. per yard.

GALVANISED IRON SPOUTING, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalt Roofing Felt, &c. Apply at 93, ALBION STREET, LEEDS.

## GALVANISED WIRE GAME NETTING.—

7d. PER YARD, 2 FEET WIDE.



	Galvan- ised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong	9 "	6½ "
2-inch " extra strong	12 "	9 "
1½-inch " light	8 "	6 "
1½-inch " strong	10 "	8 "
1½-inch " extra strong	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, &c. per square foot. Pattern forwarded post free.

Manufactured by BAIRD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## LAND DRAINAGE.

MR. JOHNSON (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five Shillings per acre; or if under 30 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

## DRAINAGE AND IRRIGATION.

HENRY WEBBER begs to inform Landowners and the Public that, having had considerable practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by contract or on commission. Reference given.—Address, Highberton Court, near Tiverton, Devon.



## WEIR'S DRAINING LEVEL, PRICE 30s.

These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

## STEPHENSON AND PEILL, 61, Gracechurch Street,

London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

## "FRIGI DOMO."—Patronised by Professor Lindley

for the Royal Horticultural Society, the Royal Zoological Society, by his Grace the Duke of Northumberland at Syon House, and many cultivators of first class Horticultural and Floricultural produce.

"FRIGI DOMO," a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ASCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

## HITCHIN AND HOME COUNTIES DOMESTIC

POULTRY ASSOCIATION.—OPEN TO ALL ENGLAND.—

The Second Annual Exhibition of this Society will be held at the Corn Exchange, Hitchin, on the 18th, 19th, and 21st of November, 1853, when Prizes amounting to upwards of 80l. will be offered for public competition.

Hitchin is a first-class station on the Great Northern Railway, 30 miles from London; at which station is a Junction with the Cambridge and Eastern Counties Railway. Regulations and Prize Lists may be had on application to the Secretary, by enclosing two Postage Stamps. Entries for Exhibition close on the 1st of November. Admittance to the private view on Friday, November 18th, by a 5s. card (not transferable), which will be available for the three days of Exhibition. And on Saturday, the 19th, and Monday the 21st, 1s. each.

SAMUEL GOODWIN, Secretary.

The Directors of the Great Northern and Eastern Counties Railways have agreed to run Cheap Trains on the occasion, and to give free passage to all Poultry for the Exhibition (at owner's risk), and to carry back free all that is unsold.

## BRISTOL AGRICULTURAL SOCIETY AND

POULTRY SHOW.—This SHOW OF POULTRY will take place on the 6th, 7th, and 8th of December, at the GREAT ROOM at the BRISTOL TERMINUS of the GREAT WESTERN RAILWAY, which has been kindly lent for the purpose by the Directors.

N.B.—The time for return of Certificates has been extended from the 1st to the 10th day of November, after which none can be received. The CATTLE SHOW will take place on the 7th December, at the CATTLE MARKET. Full particulars of the Premiums and the Terms of Competition can be obtained by application to the Secretary. It is particularly requested that all communications be addressed, "To the Secretary of the Bristol Agricultural Society and Poultry Show, 10, Corn Street, Bristol."

J. MARMONT, Hon. Sec.

## THE BIRMINGHAM EXHIBITION OF STOCK

AND DOMESTIC POULTRY.—The Fifth GREAT ANNUAL SHOW will be held in Bingley Hall, Birmingham, on the 13th, 14th, 15th, and 16th of December next. Prize Lists, Certificates of Entry, and any further information, may be obtained from JOHN MORGAN, Jun., Secretary. The Entries close on Saturday the 12th of November. Offices, 39, Bennett's Hill, near the News Room, Birmingham.

## SMITHFIELD CLUB FAT CATTLE SHOW.—

All Entries for the Christmas Show of Fat Stock, &c., must be returned to the HONORARY SECRETARY on or before SATURDAY, the 5th of NOVEMBER, 1853.

Prize Sheets, specifying the Classes, Prizes, and Medals (which amount to nearly 800l.), and the necessary PRINTED FORMS of Certificates for Entry, to be had on application to

B. T. BRANDRETH GIBBS, Honorary Secretary,

Corner of HALF-MOON STREET, Piccadilly, London.

N.B.—It is particularly requested that all letters connected with the Exhibition, or on the Club's Business, may have the words "SMITHFIELD CLUB" written on the outside, in addition to the Honorary Secretary's name and address.

## The Agricultural Gazette.

SATURDAY, OCTOBER 22, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 27.—Agricultural Imp. Society of Ireland.  
WEDNESDAY, Nov. 2.—Agricultural Society of England.  
THURSDAY, — 3.—Agricultural Imp. Society of Ireland.

THERE are some particulars in farm practice in which theory and practice are so manifestly at variance that one or other must be in error. And when the latter is not only persistent but extending in spite of repeated remonstrances on theoretical grounds, it may be assumed that these are at fault.

Perhaps no better illustrative instance of this kind exists than the gradual disappearance of the



ox as a beast of labour, in spite of the clearest proof that it is much more economical and profitable than the horse.

Compare the two—consider them under their several aspects of first cost, annual expense, and ultimate value—the first and second obviously to the advantage of the ox, and the third no less so; and yet notwithstanding its greater cheapness, and its increasing value as it grows, the ox is losing ground, while the horse is gaining as a beast of labour. Every year fewer acres are ploughed, fewer loads are carried by ox-labour, while every now and then an indignant remonstrance tries in vain to waken our farmers to the advantages they are most unaccountably allowing to slip from between their fingers. Of this kind is a little pamphlet just published by Mr. JOHN STOKES, of Cannon Street, City,\* “after a satisfactory experience of 30 years’ employment of ox-labour.” The truth, however, is that, after all, farmers understand their business and their interests tolerably well—sufficiently so, at all events, to make it altogether improbable that the gradual decadence of a once almost universal practice is the result either of ignorance or supineness.

Mr. STOKES is mistaken in supposing that the subject has not been previously discussed in agricultural books; but let us hear what can be said for it as he conducts the argument.

First as to capital:—“My calculation shall proceed on the supposition, which will be admitted to be pretty correct, that to every 100 acres of land, be it clay, sand, or loam, there will be required a strength of four horses, costing upon the average 25*l.* each, or a capital of 100*l.* for horse power. Eight oxen, in the place of four horses, may be bought, at two years old, for 7*l.* 10*s.* each, or 60*l.*”

Then as to the cost of harness:—“The employer of ox-labour will find a considerable reduction in the cost of his gear, the harness of the ox costing about 30*s.* each, while that of each horse will amount to not less than 6*l.* each, complete.” So much for the original cost of the animals as they stand ready for work: now for their relative annual expense—“First, in the employment of oxen we altogether dismiss the blacksmith, because the hoof being elastic, contrary to that of the horse, which is brittle, no protection in the shape of shoe is needed; we also to a great extent diminish the visits of the veterinary surgeon.” Again, the ox “feeds himself at leisure in the Grass field or yard without the help of man; nor does he require man’s attendance after the labour of the day, who is thereby released from this duty and enabled to attend to other work.”

Now, all this puts the thing as forcibly for the oxen as it can be put: the oxen are purchased at 7*l.* 10*s.*, which is certainly a low price, and they are harnessed cheaply, while the horse gear costs 6*l.* a piece, as certainly a high price. And the most is made that can be made of the absence of veterinary bills, and of the improved value of the ox after labour for the stalls. What, then, is the grand result to which our author leads us, and on which he contends for the superior economy of ox-labour? Simply this, that on a 100-acre farm, at the end of eight years, the balance of cost against horses is 1385*l.* 12*s.*, while in the case of oxen the cost of labour during the same period is 1298*l.* 8*s.* The advantage of the latter, upon the showing of a warm advocate, does not exceed 2*s.* per acre per annum. Well! 2*s.* per acre per annum, small as it seems as the result of such vigorous advocacy, is nevertheless worth saving; and if it can in this way be earned, we have to thank Mr. STOKES for his attempt to put us right. We have no doubt, however, that the universal practice is the correct one, and that to urge a return to the days of ox-labour will find as little favour at the hands of farmers generally as it will at those of Mr. MECH, to whom the tract is dedicated.

We have heard neatness of arrangement and elegance and fitness of design in farm buildings urged, and we doubt not with justice, on the ground of their influence on the habits and feelings, and therefore the efficiency of farm-labourers; but how much more powerfully must such a consideration tell in a case of the kind before us. We have seen a man, two boys, and four pair of oxen “dragging” a fallow field at the rate of 1½ mile an hour; it might admit of discussion whether the land was receiving more harm or good from the operation, but there could be no discussion as to its influence on the labourers who were superintending it; and we believe that the true secret of the rise of the horse upon the ruins of the ox as a beast of labour, in spite of speculative estimates and remonstrances to the contrary, is to be found in the mischievous influence of the latter on the whole style and character of farm labour. An energetic agriculturist, who knows his business, will not adopt a system by

which his men and boys are taught to walk at the rate of a mile and a half per hour, even though it should effect for him the saving of two shillings per acre in the draught labour of the farm!

AGRICULTURAL SHOWS AND GATHERINGS are increasing upon us. The Highland Society hold their first winter meeting at Edinburgh this season—a show of fat cattle being proposed for the 12th and 13th of December, and one of poultry, dairy produce, roots and seeds, on the 26th and 27th of the same month. This, with the Smithfield and Birmingham shows, is now a sufficient patronage of the art of feeding. That of breeding one would think is also sufficiently cared for by our great national gatherings in July and August; but it seems that the spirited body with whom the prosperous midland counties December meetings originated, have resolved that an exhibition of store stock and agricultural implements at or about midsummer, shall for the future be established by the Birmingham Society.

“That such exhibition of store stock and implements should be held once in every three years, and that the first meeting for this purpose should take place in the month of June, 1854. That in those years in which a store show is not held it will be, in the opinion of this committee, most desirable to hold an exhibition of sheep and boars and sows only, for the purpose of encouraging the sale and letting of rams, and the sale of ewes and breeding pigs, such show to take place in Bingley Hall, in the month of August or early in September.”

This triennial arrangement will, we hope, enable these energetic gentlemen, and our National Agricultural Society to keep clear of one another. There is room enough, no doubt, for both; but it will be very easy for them to damage one another’s interests, unless each take special care to avoid interference with the other’s plans.

There is one feature in the scheme as put forth by the Birmingham Society which deserves notice, and we think commendation. It is expressed in the following announcement:—

“Young stock only will be eligible to compete for prizes; and this principle, which forms the main feature of the list, appears to the Council to be absolutely necessary to give to these meetings a strictly practical and useful character. The mere exhibition of stock, which is not intended for sale, has produced no beneficial results; and the Council have, therefore, determined to invite breeders to show such animals as they would in most cases be prepared to sell, the number of sales supplying the only proper test of the real value of each Exhibition. Exhibitors will be requested in all cases to state on the certificates the price at which they will sell the stock entered for competition; and the amount named will be printed in the catalogues. A prohibitory price may, of course, be fixed, if the breeder or owner is disposed to retain the stock in his own possession.”

We quote the following from the *Midland Counties Herald*:—

“The objects of the Council in establishing a Show of Breeding Stock are thus distinctly stated; and it will be perceived that the new project, like that which has been for several years in successful operation, will be distinguished by the introduction of some novel features, which are the result of careful consideration. The exhibition of young stock alone will, it is believed, at once relieve the managers of the show from many of those difficulties which are found to embarrass the older societies; and for this reason, that there will be no hesitation in applying, in the case of young animals, stringent rules to discourage over-feeding. One—in reality the primary—object of the Council being to encourage the sales of stock, it will no doubt be found, generally, most convenient that, to the other information usually found in the catalogue, the price at which the animal is to be sold should also be stated. This regulation will place in a prominent point of view the legitimate intention of these meetings, which is to encourage farmers generally to become purchasers of superior stock, while they afford the best opportunity for making a judicious selection.

“The prize list has also been prepared on a very liberal scale, the gross amount offered in prizes for stock being not less than 840*l.* The sum is divided as follows:—Cattle, 280*l.*; horses, 200*l.*; sheep, 240*l.*; and pigs, 120*l.*”

A VERY useful and seasonable discussion was lately conducted before the IRISH FARMERS’ CLUB—an institution which has grown out of the Royal Agricultural Improvement Society of Ireland, under the vigorous management of Mr. HARKNESS, its secretary—on the subject of AUTUMN CULTURE. We have in type portions of the report of this discussion as it has appeared in the Society’s Journal, but regret that we cannot give it publication in the present Number. The policy of the practice of attempting to give stubble a fallowing during autumn, instead of the mere furrow it has usually received before winter, is unquestionable. We are sure that it is no new idea—but has been adopted for many years wherever intelligence, and energy, and common sense have characterised cultivation. Mr. HARKNESS nevertheless feels that it requires some-

thing more than demonstration to satisfy an audience of practical men, and accordingly he perfectly overwhelms any opposition by the weight of authority in its favour which he quotes. It is not the first time that he has adopted the useful plan of bringing testimony from all quarters to bear on specific agricultural practices. On other subjects, both as secretary to the Irish Society, and before his appointment to that office, he has enlightened agricultural readers in this way, and his success in the present case has no doubt been facilitated by his previous experience. The opinions of Mr. PUSEY, Mr. RAYNBIRD of Suffolk, Mr. HANNAM of Yorkshire, Mr. CHAMBERLAIN of Leicestershire, Mr. CROFTON of Durham, Mr. SWAFFIELD, of Derbyshire—Messrs. TODD, LUNDIE, LAWRIE, ADAIR, ROLT, SNODGRASS, and GRANT, of various districts in Ireland—of Messrs. GREY of Dilston, WILSON of Windsor, HENDERSON of Edinburgh, DUDGEON of Spylaw, and DOUGLAS of Athelstanford, as bearing on practice in the north of England and Scotland—were collected and laid before a numerous and intelligent audience of Irish farmers and landowners—and discussed and corrected with reference to the circumstances of Irish agriculture: and the whole is presented to the agricultural reader, forming one of the most valuable papers which have yet appeared in the pages of the “Journal of the Royal Agricultural Improvement Society of Ireland.” We have selected for publication the evidence furnished by three of the many correspondents whom Mr. HARKNESS consulted, and hope to find room for them, and for further remarks on this subject, in our next week’s Number.

#### WHEN IS A WHEEL A LEVER?

YOUR correspondent “C. W. H.” has accused me of raising a ghost; perhaps he may not be aware that, through most of his reply, he has been pursuing a phantom. If he will again read my remarks, he will not find that I was misled by “picturing to myself” a lever such as he describes. I stated nothing of the kind. The question about which I was at issue with him was not the use of a wheel in assisting the locomotion of a carriage over rough ground, nor did I attempt to explain this; on the contrary, I omitted expressly the consideration of it as not affecting my argument. It was the power of the wheel to overcome friction, or any other resisting force at or about the axis, such as that produced by the cog-wheel of a hay-maker, that I wished to explain. As “C. W. H.” has not at all gone into my argument, but taken a very different direction, I can merely refer him to it again, and will, with your permission, make one or two remarks on what he has said.

If I rightly understand his argument, it stands thus: A roller is not a lever; give it axes, and fix the carriage to them instead of its resting on the top of the roller. It has now become a wheel. Because the roller was not a lever, so neither is the wheel into which it was transformed. Now, if this is stated as a logical sequence, it is a false one, inasmuch as the wheel and roller have very different effects, e.g., the roller has more than double the efficiency of the wheel; therefore what holds good of the roller does not necessarily hold good of the wheel. But further, the action of a wheel may be considered either as sustaining motion or as initiating it.

In the former case, the question assumes a dynamical form, involving impact, change of velocity, &c. In the latter, it may be considered statically; and if it be required to find the force requisite to overcome the obstacles or friction of a road, or to find the conditions of equilibrium of a carriage on the point of moving, I hope “C. W. H.” will not be much shocked if I hint that the idea of a lever may enter into the solution of this question, and be used to explain how a roller or wheel facilitates the motion of a heavy weight; how a billiard ball, hoop, or such thing, may be put in motion; how a carriage on a rough road commences its motion with less facility than on a rail, having an inferior leverage; how, in fact, a wheel may in some cases act as a lever.

Again, “C. W. H.” avers that the axis of a wheel never describes the arc of a circle, but always moves constantly parallel—I presume, in a straight line. Now, I must be allowed to state, that in practice it never moves parallel, but is continually describing arcs relatively to the obstacle the wheel surmounts at that instant. To prove my assertion, let “C. W. H.” take an hour’s ride in a cart without springs over a street paved with pebbles.

But, to come to the original subject of dispute, the much maligned “hay-maker.” Let us suppose, that instead of the machine being drawn over the hay, that the hay-field were drawn under the machine in an opposite direction, supporting its weight, thus causing its wheels to revolve, the ground on which the horse stands not being moveable; the revolution of the wheels of the machine (out of gear), and the strain upon the horse, will be the same as if he walked along with it with the same relative velocity. Let the machine be now put in gear. It will at once commence its work; the friction of the ground on the periphery of the wheel causing its rotation, and producing the work performed, on the principle of a wheel and axle, in the same manner and with the same strain on the horse as if he walked along with it.

He would upon the hypothesis be saved the labour of

\* The Ox as a beast of burden in place of the Horse, &c. PELHAM RICHARDSON, 23, Cornhill.



overcoming the inertia of the machine, but when the machine was once in motion and fully at work, the effects in the hypothetical and actual case are the same; and here we have a system of levers, or a wheel and axle acting to advantage. "C. W. H." complains that the (converse!) leverage is all against horses, *i.e.*, operating as additional resistance; would it not be an extraordinary thing if it were with the horses, *i.e.*, diminishing the resistance? Why, we should then have hay-making machinery attached to every carriage in the country, and what a distracting noise and dust would be the consequence; better, by far, that the mechanics of agriculture should retrograde. But, in soberness, I verily believe there is no more loss of power in the hay-maker than in the roller or clod-crusher; it is almost over-thrifty, making its arms, as it were, do the work of legs also.

I must add, that my first two objections to the threshing machine are not one objection stated twice. The first, "the horses move in a circle," is a physical impediment to their working easily to themselves. This is manifest from their awkward leg-twisting motions; also, as "C. W. H." has just stated, from their occasionally losing their sight. The second objection, "the horses draw obliquely to the levers," is perfectly distinct from the former, involving considerations purely mechanical. Again, I stated, "the horses draw at the end of long powerful levers. Here again is a loss. It must be remembered that the object is not increase of force, but of velocity." "Pray," says "C. W. H.," "what is the difference?"

But this question I am quite content to leave to the father of mechanics, and I must put it in the following form:—"Here, O venerable mechanician, is a lever most unequally divided at the fulcrum on which it rests. How wilt thou use this power, to move the earth or to break oilcake? How wilt thou use it, to tap smartly the ripe ears of corn, or to strike lightly the hay into the sunny air?" For "C. W. H." hath asked, "What is the difference?"

May I conclude by proposing the following simple problem to "C. W. H.," as it strikes me that the consideration of it may produce more similarity of idea as to the action of wheels (though, I think, we must misunderstand each other), than at present exists between us. Let  $P$  = pressure on piston of cylinder of a locomotive;  $r$ ,  $R$  = radii of crank and driving wheel respectively; required the propelling force at the two periods in the revolution of the wheel, when the piston is perpendicular to the crank, the cylinder being supposed, for the sake of simplicity, to be on the oscillating principle. *G. P. S.*

P. S. Mr. Samuelson finds fault with me for mistaking facts with regard to digging machines. The only one I have seen was at the Exhibition, and, to the best of my recollection, about the width I mentioned; but be that as it may, if they are now only to cover one-third that space, I do not think much will be gained over the plough. This, however, must remain a matter of experiment, and if Mr. S. will turn out any machine of this kind that does its work properly, he may reckon me among the numerous customers his skill and ingenuity will command.

May I take this opportunity of suggesting to Mr. S. and other machinists, whether reaping machines would not be conveniently much reduced in width, say one-third or one-half, thereby saving labour of horses, man, and the number of men to tie, all of which, I understand, are excessive. *G. P. S.*

#### CROSS-BREEDING.

In the *Agricultural Gazette* of the 1st of October there was an article on the advantages of cross-breeding as compared with the regular practice of keeping up the purity of descent, which appeared to me so important, and so well reasoned, that I wonder it has not led to further communication on the subject. But there are some other points which appear to me so very essential in breeding, particularly horses and dogs, that although I am laughed at by all my acquaintance whenever I broach these opinions, I am yet so convinced that they deserve attention, that I do not hesitate to offer them for publication in your columns.

In breeding horses and dogs you not only require excellence of form, but temper, pluck, endurance, and a healthy constitution; now I have long been of opinion, from facts which have come to my knowledge (and which, though they could not well be published here, I should be glad to communicate to any one who thought them worth an inquiry), that these qualities depend in a great measure on the condition of the parents at the time of conception; and with this view I have, in the little I have had to do with the breeding of horses, taken care that the mare should be in as good training as was consistent with breeding condition, and that both she and the horse should be put on their mettle, but not overworked, by a short gallop just before being brought together. There is a cause for every effect, and the great differences we find in progeny from the same parents both in temper, appearance, and all other sensible qualities, must be owing to some cause or other; whence does it arise that one child is sprightly, good-tempered, and handsome, whilst another having the same father and mother differs in every respect from the other, although, so far as is known, the bringing up has been exactly similar? How is it that a race horse may be perhaps the best of his year, whilst the year before or the year after another from the same parents is not worth his keep. These are not propounded as

axioms, but as suggestions, which are perhaps worthy of some attention from breeders.

It may be asked how has the experiment succeeded with myself. Very well, so far as it has been tried, but the instances have been too few, and the progeny is too young to speak decisively; however, I submit it for the criticism and consideration of your readers.

In the breeding of cattle I have been urging on every one that I thought likely to carry out the suggestion, how very desirable it would be to establish a new breed by crossing the Highland Scot with the short-horn. The first cross is an admirable one—the size is much preferable, the quality of the meat better, and the hardness of constitution much superior to that of the pure short-horn; and if this first cross could be perpetuated (of which I have no doubt if the attempt were persevered in) we should have a breed combining more good qualities than any other I am acquainted with.

The short-horn grows too large to suit the butcher, at all events in our small country towns, whilst the Scot, weighing from  $4\frac{1}{2}$  cwt. to 5 cwt. (dead weight) brings the highest price in the market, and the cross between the Scot and the short-horn has so many of the excellences of the former, and a fair size, as to be an exceedingly valuable animal. *J. G.*

#### Home Correspondence.

*Garden Farming.*—In reply to your correspondent, "X. Y. Z.," I have much pleasure in sending the plan I follow in growing Mangold Wurzel and Early Potatoes. During the winter dig the manure well in; embrace the first opportunity in February or March to put in the Potatoes (an early sort, to take up not later than July), draw shallow drills one yard apart, place the sets about 15 inches from each other in the drills; a man or lad following drops one handful of soot and ashes (wood ashes are preferable) on each set, then cover them up, forming a slight ridge over them; when they appear above-ground in April, deep hoe them, cleaning at the same time; when about 4 to 6 inches high, draw the earth slightly up to them, increasing the former ridge; they will thus lay high and dry, in the most favourable position to resist disease and ripen early. About the last week in April run the horse-hoe between the rows, previously sprinkling a little guano, ashes, and salt; place a line exactly between the rows, and dibble the Mangold Wurzel seed 15 inches apart. The tillage the ground will receive in the process of digging the Potatoes will promote the growth of the Mangold Wurzel. Respecting the growth of Peas and Tares, and Swedes after—the Tares are cut green in May and June, thus having the Swedes sown in time for a full crop, but those after Peas must be transplanted, and the Peas must be a very early variety, and when cut must be harvested upon a Grass field. The only sorts of Carrots I grow are the white and Yellow Belgian, and I was careful not to state a high produce. I have known 30 tons per acre in suitable land and proper care. Indeed the system of double cropping requires scrupulous care—every rood must be equally and thoroughly done, no shading with trees, and scrambling over the headlands and resting satisfied with the crop standing anyhow; proper seed-beds should be prepared and sown about a month earlier than the general crop, to allow for the check they receive at transplanting. The manure I prefer for the Carrot crop is, per acre—soot, 20 bushels; guano, 1 cwt.; salt, 3 cwt., mixed with burnt earth and wood ashes, spread over the ground and forked in. *E. Hulme.*

*Drainage.*—I see from the *Gazette* of the 8th inst. that your correspondent "C." is in a dilemma with his draining operations. If it be any consolation to "C." I can inform him that he is not the only one. It was only a few days ago that I was instructed by my employer to survey some grounds about to be drained. I was asked by the occupier in which direction I would run the drains. I directed his attention to the point where I could obtain the greatest fall. I was at once met by the following decided and triumphant reply: "I am an older man than you, and I have drained ever since I was a boy, and must know something about it; and I am willing to forfeit my existence that if two drains were run across that hill, they would drain it better than all the drains you propose to put in it the other way." What was to be done? Here was a man of some 40 or 50 years' practical experience so confident in the soundness of his views, that left no hope for any effort on my part to change his conviction on the subject. I contented myself by saying that there was improved experience in draining, as well as in travelling, since he was a boy, and it has been discovered that water runs faster down a hill than across it; still, with all due deference to those lessons of experience, I would advise your correspondent "C." to make a fresh start, and not to patch a bad job, but to set out his drains at regular intervals of from 24 to 34 feet apart, according to the texture of the soil, to run them with the fall of the ground; and if the drains are cut with an uniform inclined bottom at an average depth of not less than 4 feet, with due attention to have the pipes well jointed, he may rest satisfied the result will be satisfactory. At the same time I beg to caution "C." that the task may be more difficult than he is inclined to suppose; and judging from the following passage in "C."s communication, I suspect a little practical training would not be lost on him. "C." writes, "I am perfectly aware that in cases where the rock appears, as it often does on the brow of a hill, a drain laid along the line of the rock will often take the whole of the water from the

latter." How can this action take place if, as "C." admits, the water enters the drain at the bottom? Would the water not run under the pipe rather than into it? In practice I have frequently had to continue the drain over the brow of the hill into the rock some distance before I could find the water. If "C." has much draining to do, it may be wise in him to obtain the advice of some acknowledged authority before taking any decided step. There are two draining companies in London; the engineer for the one is Mr. Hewitt Davis, and for the other Mr. Bailey Denton, either of whom would answer his purpose. *P. M.*

*Early Sowing.*—Note from my farming book. Sowed my Wheat last week on the recommendation of Messrs. Hardy and Son, published in the *Gazette*; should it turn out winter proud or club-footed as it has heretofore been from early sowing, may I look to them for redress? Perhaps not, as instead of sowing it singly as they advise, I have sown 3 bushels to the acre. *Delta.*

*The Health of Towns, Farm-yards, &c.*—I recollect it being stated in your valuable Paper a short time ago, that a moderate sized Geranium, or other plant in a sleeping room, was unwholesome only to about the same extent as a mouse in a room, each giving out nearly the same quantity of carbonic acid gas; but as the scent of some plants acts on the brain or otherwise, it is of consequence which plant is in the room; for example, I am acquainted with a learned judge of our land who is sickened by the scent of the sweet Mignonette; and I believe that it is generally considered unwholesome to sleep to windward of, or nigh to a field of broad Beans when in bloom, and even death to sleep under an Upas tree. The notion of the air in a stable, cow-house, or badly ventilated school-room for youth being wholesome, is I hope entirely exploded, it being capable of proof that carbonic acid gas (which the inmates give out) is destructive to life, although the breath of a healthy cow is not disagreeable. Connected with this subject, may I ask you to inform your readers (in these days of cholera) if the gases evolved from the fresh dung of well-fed horses are injurious? [Probably they are; but dung does not remain "fresh," and the putrefactive fermentation which soon sets in unquestionably yields mischievous products.] Ammonia, if Mr. Mechi is an authority to guide us, is not so; he remarks that it is used and enjoyed by the delicate ladies of our land. But if carbonic acid gas, sulphuretted hydrogen, and other injurious gases are evolved from such dung, the authorities ought to insist on the mews lanes (behind the palaces of Westbourne Terrace, &c.) being cleaned out daily. *W. S.*

*Syphon Draining.*—I have a piece of land lying next a brook, and so nearly on a level with it that it is impossible to drain any depth, and where the main drain would discharge is very frequently under water. I have read somewhere lately of a nobleman who has successfully carried out syphon draining, but there was no description of it. Can you give me any information about this? I presume that where the mouth of the main laid as low as the brook and a syphon attached to it, it would not discharge even though the ground from which a good deal of the water came rose to a considerable height some distance from the outlet. I shall be most obliged for any information respecting this; perhaps if you have not heard of the case mentioned, some of your correspondents may be able to give a description of it. *Leisurely.* [See our miscellaneous section.]

*The Cattle with Loose Horns.*—Which your correspondent "Philobos" saw in St. Kitts, may probably have originated in a cross between the cattle called polls, which have not any horns, and the horned breed, as I knew when residing in Jamaica several instances of cows without horns, whose progeny by a horned bull had such horns as your correspondent describes. The loose horns were sometimes broken off, and sores were produced in consequence, and the breed was got rid of. *A Subscriber.*

*Draining of a Clay Soil.*—Has your correspondent "C." read Mr. Trimmer's article in the "Journal of the Royal Agricultural Society," Part I, No. XXXI, 1853; "Notes on the Geology of the Keythorpe Estate," &c. He will there find a description of a certain condition of the lias, which will very likely remove his difficulty at once. *J. C. C.*

*Cattle at St. Kitts.*—Your correspondent when mentioning the peculiarity of a breed of cattle which he met with at St. Kitts, hardly gives us an idea of the outward contour which they have assumed; by which it would be possible to form an opinion of their origin. Still he tells us, he believes they originally were imported from England; allow me a little latitude, and suppose they came from Scotland. Here and only here do we find, in any breed, the peculiarity he mentions of pendent horns, or, in other words, only the horny shell of the horns secreted, the bone never having been found, in the (usually) polled Galloway; it is well known that instances are not uncommon of the partial development of the horns, and also that the strong ligament by which they are attached to the head may be severed with impunity. I attribute this to the practice which was formerly in vogue of scooping the horns "out of the head," as soon as they made their appearance, which practice was usual in the district extending west from St. Abbshead. Professor Low says as to the cause, "It may either be due to the physical circumstances of the country, which produces this constitutional character, or to the effects of selection in breeding, or to the combination of these causes." When we see so many other types produced, simply by por-



severance in one strain of breeding, it will easily be believed that it will account satisfactorily for this also. Still the horns in this breed (when any) are only about 6 inches long; to account for the difference in length, in the two breeds under consideration, I can only suppose that, as is generally the case with all importation, that some other animals of the same species have been introduced, and so produced the peculiarity permanently. W. P.

**Crops in Yorkshire.**—We have now had nearly a fortnight of continued wet weather, and farmers are beginning to feel it deeply. There is much spring sown Wheat yet in the fields in this Riding, and this morning I found no difficulty in taking out ears of Wheat with nearly every grain sprouted. Where the stocks have been hooded the covered sheaves have suffered little except in straggling ears near the tail of the sheaf; these are nearly all grown or ready for growth. Some Oats which are set up in single sheaves (called galls), I found had the grain sprouted, although the sheaf was standing quite upright. There are many thousands of acres of corn still in the fields in this county, and I think it will all be unsound in a greater or less degree. Potatoes too have suffered dreadfully. I had some taken up this week which were calculated at 300 bushels per acre, and I am pretty sure more than two-thirds of them are diseased. When your returns respecting the crops were sent in, a bad or tainted Potato could not be found in this field. *Roaldus, Richmond, Oct. 13.*

### Farmers' Club.

**WITHAM.**—At the annual meeting of the Society the other day the following addresses were delivered. The chairman, Lord Rayleigh, gave "The Health of Mr. Mechi." Mr. MECHI said—

I assure you it affords me great pleasure once again to meet you at this table, in furtherance of the objects of the Witham Society. It is called the Labourers' Friend Society, and perhaps on that account I shall not be considered an intruder, as you are aware I have spent a good deal of money on my small piece of land at Tiptree, and whether judiciously or not it is quite certain that it has conducted largely to the comfort and the morality of the neighbourhood. When I look at the million of bricks I have used, and the some 120 or 130 miles of drains I have made, nearly all of which was labour, I feel convinced it was a happy day for the neighbourhood that I was so inclined to spend my money, although it was a great source of satisfaction to me in other respects of view. I do not admit I was wrong in so spending my money. I do not say I did everything as cheaply as it might be done; but I do think an investment in brick and slate is very much cheaper than board and thatch. I think it is a matter worthy the consideration of gentlemen, both landlords and tenants, that brick and slate are the things, after all, particularly for cottages and farm buildings; at the end of 10 or 12 years they are as good as the first day they were put up, and are, therefore, the cheapest things we can use. I now see a hope that my operations will remunerate me. I have been for a long time asked for my balance-sheet, and a few days ago I set myself quietly down to my books to examine the accounts of the year; I called in my neighbour here to assist me in the valuation, and we both agreed that we were entitled to a larger valuation for the cottages than last year; viz. laying it at the same. I found that I not only derived an improved rental, but I derived a profit of at least 300*l.*, taking the Wheat at 16*s.* a load, and with the present price of Wheat perhaps I shall get 400*l.* (Hear, hear.) But I beg to state that the difference has arisen in a great measure from the stock account, and my improved system of irrigation, from its enabling me to keep double the amount of stock on the same amount of land; that has influenced my crops more or less, and though I have purchased 700*l.* of food, I find the difference has been very much in my favour. To that, quite as much as to the general advance in price, I attribute my success; I am now in a better condition than I ever was—more ready to produce better crops in future; and I may say I may fairly congratulate myself on being now safely landed in the harbour of profit. (Cheers.) The system of irrigation I have adopted certainly does wonderful things. It will change a bad pasture into a good one in the course of a year. There is not a person in this meeting who will not be able to confirm what I say, that do what you will, and spend what you will, it is difficult to get good pasture on the hard yellow clay; but the irrigation appears to make the old plants die out, and brings you in a new stock of Grasses and Clover, that makes the animals look better, and enables you to keep more per acre. (Hear.) That brings me to the question of drainage; and the more carefully I consider that, the more I am convinced I am right in this principle, for I assure you that the liquid manure not only saturates the ground to the depth of 3, 4, or 5 feet, but runs through these solid clays, coloured highly, and smelling, and you may trace it in the ditches for 200, 300, or 400 yards. Now I am desirous that every particle of manure should be employed in the soil in nourishing the plant, but we lose a great deal in filtration through the drains, and the more this runs off the less the land will be fertilised. I press this upon practical men present for two reasons—first, that they may have a larger portion of rich soil at the disposal of the plant; and, secondly, that they may no longer think it is unnecessary to drain heavy clay soils, because the water cannot get through them, for if liquefied manure will gain its way through the clay 4 or 5 feet deep to the drain, you need not fear that water will do the same thing. I think that great calamities have arisen to the heavy lands of Essex, the Dengie clays, this year, for want of drainage. How is it that this year we hear such woe of accounts of small crops in Dengie Hundred?

Mr. Wm. HUTLEY.—From not seeding; there was not half put in. Mr. MECHI.—I am aware of that, but where it was put in I hear of 3 sacks an acre; in fact 3, 4, or 5 sacks an acre is this year a good crop there.—[Mr. HUTLEY.] "That's within a sack of what you got."—I believe a great deal of that has resulted from the absence of drainage. I know this has been a disputed question, and I leave it. And now as to the future prospect of cultivation; I can only say that we are making our digging or forking machine at Kelvedon; I hope in the course of three weeks it will be in a triable state, and should I find it acts at all decently, I shall invite all agriculturists that like to come to see it, not only one day, but day by day while it is at work, when they can form their own conclusions. I have a strong opinion, which is confirmed more and more every day, that steam will shortly be the power to cultivate most of our soils, and for this simple reason, that horses soon get tired of hard work. We never allow them to plough more than an acre a day, when they are then taken off and sent home, because you know it would be against your interest to make them do more. On the road, the power of a horse regularly worked is exhausted in an hour; he takes a coach 7 or 8 miles, that is one stage, and he is then taken off for the remainder of the day—he is worked one hour and he rests 23, and he cannot do that more than six days out of the seven. But if you get a steam horse, and feed him with coals and water, you may keep on to the end of time or till it is worn out. I believe that steam power is as important in the cultivation of the land as in any of the other operations in which it is employed. The great difficulty of the matter has been to get the great weight that was

thought necessary to give the power on to the land, but I think by our machine we shall get the power of 10 or 12 or 15 horses concentrated into the weight of two tons; and if we do get it in two tons with the power of 15 horses, we shall be able to move a great deal of soil at little cost. Whether the tilling of the soil, the preparing of it, and the seeding, can be done all at one time remains to be seen. The inventor says that a rabbit when it scratches up a piece of ground, covers it by what is scratched up from that which follows. This will be the principle of the machine. If it make a hole it will fill it up in the same way; and if it succeed in that and roll the land it will be a great convenience to the farmers. Also to state that the new American threshing machine has arrived; the boxes have been sent down to my farm, and I have suggested to the party that we should have a trial of it on the same day as the digging machine. If that should succeed, I have seen a model of it, and I think, on the whole, it is an improvement on the others we have in the threshing and dressing part. He says it will thresh 2 bushels a minute. I shall be satisfied if it does one; but this I am rather surprised at—it is worked by horse power. We, of course, shall use steam. As to the steam-digging machine, I ought to state that the power will be applicable to all other objects in farming—threshing, pumping, or anything on the farm; and if it should succeed, it will be let out as drills are for small farmers, I have no doubt. I should mention there is another large plan of steam cultivation under consideration, in which, by the introduction of a system of railways and endless ropes, the farmer will be able to use an engine of 30 or 40 or 50-horse power; that is under consideration, and I have seen the drawings, but I am not in a condition to say whether it will be carried out. But I think in seven years you will see 40 different plans for cultivating land by steam. I can only say that so long as I commit any follies or do anything worth looking at, you will be quite welcome to come and look at it whenever you please. There is an important principle connected with the manufacture of bricks, a matter connected with agriculture, and if it should lead to our getting them at a smaller price and a better quality it would be a great advantage. I do not know whether any of you have seen Bear's patent bricks, the manufacture of which is carried on by Mr. Fox, of Sudbury. I do not know exactly what they are a thousand—(Mr. W. Hutley said about 22*s.* or 23*s.*)—but this brick is well thought of by many engineers and practical men. It is perforated with 20 holes, the weight is not more than half that of the ordinary brick, and Mr. Ransome told me he had tested it, and he could crush the common brick with the weight of a ton and a half, but it took 5 tons to crush this. It takes less mortar in building, and altogether I think it very advantageous for agricultural purposes. Another point is the introduction by Baron Palm of a new kiln for burning bricks, the kiln being divided so that one part may be emptied and filled again while the process of burning was going on in the others. But if you do these things—if you adopt these improvements—you must invest capital, and that necessarily implies you would have a larger demand. I am glad to hear that the system of covered yards is being so generally adopted, and that so many are being put up by Mr. Beadell, whom I should have been glad to have seen here. There is another point—a gentleman told me to-night that he had tried it, and he believed that the liquid manure of sheep is the best portion of it. Mr. W. HUTLEY.—I think it is the only valuable part.

The health of the Vice-Chairman was then drunk.

Mr. WILLIAM HUTLEY said—

I assure you it is a great pleasure to me to meet you on an occasion like this, for I think by means of this Society we do a vast deal of good to the poor, as I see every day and every week that my men exert themselves and plough against each other that they may fit themselves to come to our meetings. As far as my neighbours are concerned, I think they are rather little-minded—and I know this will go to the public, and I am not afraid to say what I did was through Mr. Lucey that by these meetings we teach the landlord something. Now, I like the landlord to know something—I have no objection to that; but I believe we have kept away, because one made an observation here, and his lordship told him of it afterwards. (Laughter.) They will not join us because they think they would assist in teaching the landlords. Now, I think any improvement we make, the landlords should know as well as we; but a large crop after successful cultivation is what we should have, and there is no harm in speaking of it, for I never had a man in my life who took advantage of it. It so happens that my landlord says to me, "No one shall take advantage of your spending money on the land," and he has cancelled my lease, which has six years to run, and given me one for 21 years at the same rent. In reference to sheep manuring, what I did was through Mr. Lucey. He came to me one day when I had a large flock of sheep in the field, and you might sweep up these nubbies by the peck; and he advised me to put a bushel to the rod on fresh sown Barley, and mark it by sticks in the field. I did so, and it was visited by my friends, but you could not see that it did a particle of good. There was not a better crop at all. Therefore I think it does no good after the dung is exposed to the atmosphere. This part produced no more than the other Barley. I never could see any difference. I have heard flock-masters say that flocks of ewes do as much good again on land as wethers, because the ewes make more urine. I am glad to see Mr. Mechi again here, for I always said I thought his liquid manure a step in the right direction. I think a vast deal too much is laid out that will not pay him, but this will pay him.

Mr. MECHI.—Has your mind undergone any change as to the drainage of clays?

Mr. HUTLEY.—Not the least.

Mr. MECHI.—I have found practically that by liquefying solid manure it all goes into the land, and you do not see you have put any on; it all goes in, and you can hardly tell there has been any at all on the surface.

The CHAIRMAN said they had one gentleman there who usually gave them something of interest, and he begged to give the health of Mr. Dixon. (Drunk with cheers.) Mr. DIXON said—

This Society, of its origin, has differed very much from other societies of the like kind, as this is one usually constituted for inquiry and observations, and the bringing out of useful information by discussion. I was much struck with the produce shown in the field to-day from a piece of allotment ground in my immediate neighbourhood, and I was pleased to find the man carried away the largest prize; it was not only the prodigious crops, but the extraordinary number of things that he cultivated on his piece of ground. Now I think an inquiry into the system on which the manure was used had advantages, and by which in produce he beats all right and left, whether my friend Mr. Mechi there, or Mr. Hutley, who grows corn enough apparently to support all this neighbourhood, and half the kingdom besides. I say the poor man on the allotment ground beats all. How is this done? An inquiry into this success would lead to important results. There are two circumstances connected with it, I think plain enough—first, that the cultivation is of unusual depth compared with that of the farmers, and next, that the top soil is well enriched with such manure as this man picks up, for he never keeps a pig, nor has he bought artificial manures, but it is from what he picks up in the road, and from neglected sources of wealth, that he gets such crops as we never see in the common way of farming. I asked him how he manured, and he said by putting the manure on the top—his ground was deeply cultivated and his manure was put on the top. There was another man to-day who was successful in an important prize, and had two sovereigns for bringing up a well-regulated, well-taught, and excellent family of young children; that man had an allotment crop worth 100*l.* an acre, and it was not sold for an unusual price. It is of roots, and I mean to say it is worth 100*l.* an acre; and when I do this I speak advisedly, for he has sold part of it, and I know what he grew. Now, this was as good land, but no better than

Mr. Hutley farms. (Mr. Hutley: "Yes, yes.") There are many acres on your farm as good. This man spends no money in artificial manure, but still there is a crop which for all practical purposes is worth 100*l.* an acre. Therefore I say that inquiry into the produce of such men, their mode of cultivation, and the means they employ, would lead the farmers to cultivate more ground in a much better way than is now done. (Hear.) It is by this means that improvements are effected. It is the gardener who hybridises roots, gets a better variety of plants, tries experiments in these things, and does all skilfully; and when he has succeeded, the result is advantageous to the farmers; for if you look at Cabbages, at Peas, or other things of that kind that the farmer grows, you will find that it was not the farmer that effected the improvement in it or produced the variety, but the gardener. This man that has got the crops I have alluded to is a reading man; that is, he has read all the small works on the subject, and perhaps Paxton's work; he understands what he does, and he is a better farmer than many who farm 20 or 50 times the quantity, yet he goes to his day-labour. Now, in reference to other circumstances that seem to mark the improvement of agriculture, I cannot help remarking on the system of Mr. Mechi, for I have watched it with great care, and I have no hesitation in saying, from an accurate measuring and weighing of his crops, that he has produced greater crops of roots than I ever saw in this county before. (Hear.) I do not say that he has invariably succeeded in it, but in certain fields—and he has some of the worst land in England—I have seen some of the largest crops of Mangold Wurzel that I have ever seen in this country; and if he has not the same large crops this year, as I believe he has not, I conclude that it is because in a season like that which we have had, he cannot cultivate his land on that system so well as he can in dry weather. I believe that to be the cause—if it is not, I can only say that his land is not so well cultivated. Now as to root crops, I have myself for many years been a grower of Mangold, and I do it without farm-yard manure; I grow them on banks, 27 inches apart. In the month of June I plough the ground up deeply with the subsoil plough; on the top I put 1½ cwt. of guano, and then I plough it in, so that the roots take it well supplied with food for several weeks after, and the increase in weight is several tons an acre, well repaying me for the cost of guano. Then I come to another subject, which has been under the notice of the agricultural community—I mean as to Mr. Smith's cultivation, at Lois-Weedon, in Northamptonshire. Now, I have conversed with several gentlemen well acquainted with it, and I know, as a matter of fact, that extraordinary results have been produced by that system. Sir Thomas Parkinson told me he could vouch for the accuracy of Mr. Smith's statement as to his crops, for he had himself weighed them out, and he found that 64 bushels per acre, and 43 tons of Swedes, were the produce of the crops that he superintended the measuring and the weighing of. (Hear.) I have tried an experiment with the system myself, but I cannot say that I have been so successful. I planted a row of winter Beans in single rows 5 feet apart, and also various kinds of produce, as Turnips, Potatoes, Onions, Parsnips, and Carrots. The Beans were put in on ploughed land; the space between was dug 2 spits deep, and thrown out from 18 to 20 inches deep; I put the top spit with manure on it at the bottom, and I put the new soil at top, and on this soil I grew these root crops. The crop of Beans was 16 bushels to the acre, and the Mangold Wurzel produced 7300 roots to the acre, weighing a little over 16 tons—it was taken up this morning; and it is my intention to test these with my ordinary crop of Mangold Wurzel grown 27 inches apart, which is an excellent piece, to see whether its weight of that in the single rows beats that grown in the usual way; and I feel quite certain there is quite half as much again in the single rows. (Hear.) For the Potatoes I put in manure whatever, but they were planted in the rows apart, and they came out well; I had much fewer rotten or diseased Potatoes than anywhere else, and I had a little over a bushel a rod. The Turnips were not well planted, and I fed them off, and did not measure them. Of Parsnips I had 32 bushels, on two-tenths of an acre, that is not a considerable crop; and of Carrots about a like quantity. Now, I am satisfied with my crop of 16 tons of Mangold Wurzel an acre. I have now got at the bottom of the land thus cultivated, the 15 cart loads of manure I put in last year; and it really appears to me that if the land is well drained and the bottom is well filled with manure, there would seem to be no end of the crops. I shall give the system another trial; I shall put in three rows of Wheat on the 5 feet, and as near as I can a single kernel in a hole, on the piece of land on which the Mangold Wurzel grew, and I shall be glad to find it answer, as it undoubtedly has under Mr. Smith's management, for all who have seen him bear testimony to his veracity. Mr. MECHI said, I went down to see the plan of Mr. Smith, and I saw the fifth crop of Wheat grown on the same land in succession, without manure, and I have no hesitation in saying that he had a very large crop of bearded Revit Wheat; I thought 5½ quarters to the acre, but he said 6. It was grown three rows on the 5 feet. I also examined his root crops, and there was much more on his than on the adjoining land farmed on the four-course system. I should state that the schoolmaster grew Wheat on the same plan and with the same success. What is a little extraordinary, his Rye-grass and his winter Oats are grown on the same principle, and they were all laid and were as heavy a winter crop of Oats as I should wish to see. (Hear.) I adopted this system in one field, but I was too late; I had 2 quarters of Beans weighing 19 stones an acre, and a good piece of Mangold Wurzel; but certainly the field was not in a condition to give it a fair trial.

Mr. Wm. HUTLEY: This has been the best day I have seen for some time, and I will explain what has happened. The CHAIRMAN: I had a small field that I thought I might try the experiment on, and I began last autumn to cultivate it on Mr. Smith's plan, but I was too late; for part of his plan is to get the Wheat in early to tiller before Christmas, whereas I did not get mine in till October. I had the crop threshed, and the result is that I have 2½ quarters per acre. (Laughter.) I am going on with it, on the part that was fallow last year, and that will make the third crop of Wheat.

Mr. THEBAM said—

Hitherto I have been in the habit of trying some experiments, the results of which have been laid before this meeting; but being wet last year a total failure took place, and I have nothing of the kind to communicate. I think as regards this seeding, that is now a settled question, for we had too much of that last year; and I think it is undoubtedly that more damage arises from a failure of the plant than from over seeding; so that I think 6 pecks an acre is much better than to trust to 3 or 4 pecks. (Hear.) As the question of statistics has been mentioned as that which I was thought to be partial about, I must confess to this year I am sorry I am in the dark, for all that we know or can learn is the quantity of our imports and the number of the population. Further we know that one quarter of Wheat produces about the average from 360 lbs. to 370 lbs. of flour—that is about 1 lb. per head per day for every male and female. On this calculation, if we take our population at 16, 18, 20, or up to 24 millions, there will not be less than 18 millions of quarters required for the general annual consumption. Now it is a fact well known that the year when we had the greatest importation of corn was 1847, and in that year the total amount imported was something under 5 millions of quarters. If, then, in this last year we consumed 18 millions of quarters, and had an importation of about 2 millions, and taking the crops of the present year in comparison with that of the year before, we have 5½ quarters or quarter of an acre, in the last we grew only this year we are 1½ millions deficient in the supply. Now taking the calculation of the consumption for the next 10 months at 100,000 quarters per week, it will take the 4 millions that on the lowest calculation will be necessary to feed our population. [Hear, hear.] It is true that a system of statistics of our annual agricultural produce has been mooted, but I think it would be difficult to arrive at any certain calculation as to the amount of



our home growth. The number of acres might be given, the different kinds of corn might be ascertained, and the head of stock, but there would be vast difficulty in obtaining the amount of produce per acre, if it were left in the hands of the farmers. The vice-chairman says that he is ready to state what he grows, but I think there would be great delicacy, and fear (perhaps honest fear) in giving information that they thought would be injurious to their interests. *Chelmsford Chronicle.*

### Miscellaneous.

**Drainage of a Loch by Syphon.**—The *Wigtonshire Free Press* of 13th of September describes the successful use of a syphon for the drainage of Culhorn loch and its borders, the property of the Earl of Stair. It was found in the commencement, after working 30 hours, that air had been gradually lodging near the summit, and finally cut off the connection and stopped the discharge. This was calculated upon; and to overcome this evil, two air-pumps 3-inches diameter, 10-inch strokes, and 20 strokes per minute, were attached to draw off the air as it lodged. A small water-wheel to work these pumps was placed at the low end of the syphon to be driven by the water as discharged. The pumps are connected with the syphon by  $\frac{1}{2}$ -inch lead pipe conducted to near the summit level at a point where, on an experimental glass model, the air seemed to lodge, and this contrivance has been so far successful. The wheel has gone on working night and day, the pumps drawing air when there is any, or if not, water, till the loch is now lowered 9 feet under its former level. It might be drawn lower still, but much difficulty has arisen from the sludge pressing in towards the mouth of the syphon, and from the whole bottom of the loch consisting of a great depth of an impalpable sludge, which must take some time to consolidate and become workable. The syphon referred to is 880 yards long (exactly half a mile) and is 7 inches in diameter. It has now drawn off 9 feet deep of the water in the loch, which it is expected will give fall to enable the proprietor to drain properly the marsh already referred to, and to reduce the loch to an ornamental pond. The highest part of the syphon is 21 feet above the present surface of the loch, and the longest limb of the syphon is 10 feet under the level of the water, giving 10 feet of fall. The discharge of the water at the present time is about 200 gallons per minute, but at first, when the loch was at its original height, and the fall greater, of course the discharge was much more. The main part of the syphon consists of cast-iron pipes five-eighths of an inch thick, with spigot and faucet joints very carefully joined and made air-tight with lead. The contract expense of the iron pipe laid, when complete, was 7s. 6d. per yard.

### Calendar of Operations.

#### OCTOBER.

**GREENSBURG, Oct. 19.**—The anticipations we indulged in with regard to the harvest in our last report have not been fully realised, although much of the late sown corn, Beans, and second crops of Clover were secured during the few days of fine weather last week. There is in some parts of the county Wheat and Beans still in the field, and judging from the present unfavourable weather, it is likely to remain for some days to come. The farmers, especially those who have clay soils to deal with, are becoming most anxious to put in their Wheat, having suffered so much last year from the delay in sowing, consequent upon the wetness of the season. The threshing of Wheat, more especially for seed, has commenced partially, and the deficiency, as compared with last year, is found to be from 25 to 30 per cent. upon some of the best crops. Barley and Oats are very scarce in the markets, and will in all probability remain so until Wheat sowing is further advanced, and the stocks of cattle are taken into the building to consume the straw. Mangold Wurzel has again had a check from the wetness of the weather; and as there is now no prospect of an increase in the crop, the dairy farmers are beginning to pull and store the roots for spring use, and are giving the tops to the cattle daily. Turnips will not be so good generally as was expected a month ago, and Potatoes are decidedly the worst crop we have known for years. *N. Cox, Stapleford Hall.*

**SOUTH HANTS, Oct. 17.**—Since the harvest ended we have been able to judge better of the extent of the mischief caused by a year of heavy rains. The Wheat crops are the lightest ever known, and what has been threshed out (as none scarcely save for seed), shows a bad yield, and the quality and sample very unequal. There is much talking on the whole, the last year's crop, though light in weight and inferior to former years, is better than this of 1853. Seed Wheat has been offered at 19s. to 20s. per load of 5 quarters. Many are sowing old Wheat, which is quite as good as to yield, only it is longer coming up. The evil of late sowing, in addition to the plant being weak before the frosts set in, is its being liable to the depredations of small birds, larks, &c. At present sowing has come to a halt, by reason of very heavy rains, as bad as occurred at this season last year; besides this evil, the temperature of the soil is many degrees lower, by want of hot suns and warm weather—we can scarcely say we have had any summer at all, and already we have had cold and frosty nights. Rag-fallows and lands after leguminous crops, which have had much turning about, will be the better for these rains, rendering the land firmer and stiffer for the seed-furrow—a condition the Wheat plant and future crop flourish in—only we hope dry weather will set in, and then everything will be to our hearts' content. Peas have been in most parts a poor crop, and even the best crops will not yield six sacks an acre, but as prices are high, will save the farmer as to expense, &c., of growing this uncertain crop, and in most cases would pay him better to clean his land and make a fallow, as late harvests give short time to clean these foul acres preparatory to receiving a Wheat crop. The same may be said of Tares, which commonly make the land very foul. Turnips are not so good as some years, and Mangold Wurzel inferior. Very few have a tolerable crop of these roots, "the mother of meat as well as muck." We never saw broads of Turnips so foul and full of weeds as at this season; they, in part, have choked the crop. Some have ploughed their Wheat stubbles in part. Winter Tares and Trifolium have been sown, but the land is infested with slugs by reason of a dripping season. Manures mostly carted out, and in some few instances a portion of the Wheat crop has been sown for 1854. May it be a good one! *Q. R. S. Hants.* (\* What are rag-fallows? )

**WEST SUSSEX, Oct. 17.**—There is little that we can report in the way of progress, for we have had for the past two weeks rain almost every day, and sometimes very heavy, consequently the low flat lands are far from workable. Most people are now anxiously waiting for sowing weather, but we may say there is yet no Wheat got in, although a great part of the land is ploughed, and with fine weather there will be a busy time sowing. From

the mildness of the season there is still a great quantity of Grass in the fields, which is so far well, as we are not likely to be driven to the use of hay so soon; but if we have a hard winter it will not be so well for stock, as hay is scarce, good hay especially, and it will hardly be in the market at any price. Turnips are in most places a fair crop except on the flat lands, where the wet season has been against them. On every side we hear how bad the Wheat returns are; they were not expected to be great, but they hardly come up to what they were estimated at, and even with the high prices farmers will not be much better off than in a year of plenty with low prices. Barley will yield rather better, so that with the price it will be more remunerative. Oats are heavier than last year and a fair crop. All kinds of stock still commands a high price, and from the abundance of keep are in good condition generally. There is more Grass in the stubbles than usual, and though we might have wished it otherwise, yet we find that the sheep do well upon it, and they will require little else for some time, and it will be desirable to keep them from the Turnips as long as possible, as they are not yet grown to maturity. *G. S.*

### Notices to Correspondents.

**CYDER.** A Sub. Gather the fruit when thoroughly ripe and dry, and store it in some cool room in heaps. Grind in November in cold weather. Add sugar or malt wort to bring the juice to specific gravity 1070 or 80; ferment in a vat until the specific gravity is reduced to 1060. Transfer it to casks, and shift it from one vessel to another to check fermentation, until at length it may be transferred to a clean barrel, previously filled with sulphur vapour, and placed in a cool cellar.

**DISEASED POTATOES.** *Allotment Landlord.* You will find the whole subject discussed, we were going to say *ad nauseam*—for really, excepting Mr. Cuthill's plan, very little of trustworthy value has come of it—in past numbers and volumes of this journal. Where Potatoes are undoubtedly attacked we should be disposed to pull up the leaves, and, if not too late in the season, sow white Stone Turnip seed broadcast over the field or plot.

**LOIS WEDON CULTIVATION OF WHEAT.** *F. E. The pamphlet, "A Word in Season,"* is published by Ridgway, Piccadilly. **SUDDEN INFLAMMATION.** *J. W. N.* says: "Mine is a clay farm, in Herefordshire, but banky, and therefore has always been a good sheep farm till this year, when for the last four months I have lost ewes and lambs about every fortnight, apparently from inflammation, but terminating so suddenly that bleeding has no effect upon the quickness of breathing, which comes on, after all seeming well in the morning, about middle day, and dead before night, though bled freely; if more died and oftener, I might think it some distemper, but when attacked the sheep have been in good condition. Some of your readers may be able to account for it, and state what treatment is desirable to pursue." (In the absence of any account of the appearances after death, we can only say, give the food or change the stock. *W. C. S.*)

**WORMS IN HORSES.** *Plymouth.* Give the following, every evening for six days, in a mash:—Tartarised antimony, 2 scruples; submuriate of mercury, 14 do.; sulphate of iron, 2 do.; after which, 2 pints of Linseed oil, or apply to your veterinary surgeon. *W. C. S.*

### Markets.

#### COVENT GARDEN, Oct. 22.

Vegetables and Fruit continue to be well supplied, but trade remains dull. Most kinds of English Grapes are abundant. Pears chiefly consist of Beurré d'Amanlis, Brown Beurré, Gansel's Bergamot, and Marie Louise. Importations of Potatoes from the Continent are still kept up. Plums from the South of France fetch 6s. per basket. English Plums are nearly over. Carrots and Turnips fetch from 2d. to 4d. per bunch. Potatoes are much diseased, but prices for them keep up. Mushrooms are more plentiful, and a little cheaper. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

#### FRUIT.

Pine-apples, per lb., 3s to 6s  
Grapes, hothouse, p. lb., 1s to 3s  
— Portugal, per lb., 6d to 1s  
Plums, per punnet, 1s to 2s  
Apples, per bush, 3s to 6s  
— dessert, p. hf sieve, 2s to 4s  
Pears, per doz., 1s to 3s  
Figs, per doz., 1s to 2s

#### VEGETABLES.

Cabbages, per doz., 9s to 15s  
Cauliflowers, each, 2d to 4d  
Greens, per doz., 2s to 3s  
French Beans, per half sieve, 3s to 4s 6d  
Brussels Sprouts, do., 2s to 2s 6d  
Potatoes, per ton, 60s to 160s  
— per cwt., 5s to 7s  
— per bush, 2s 6d to 5s  
Turnips, per doz., 2s to 3s  
Cucumbers, each, 2d to 6d  
Celery, per bundle, 9d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 1s to 2s  
Beet, per doz., 1s to 2s  
Onions, Spanish, p. doz., 1s to 3s  
Leeks, per bunch, 3d to 4d  
Shallots, per lb., 6d to 8d

Lemons, per doz., 1s to 2s  
Oranges, per doz., 1s to 2s  
Almonds, per peck, 5s 6d  
— sweet, per lb., 2s to 3s  
Filberts, p. 100 lbs., 9s to 10s 6d  
Walnuts, per 100, 1s to 1s 6d  
Nuts, Barcelona, per bush, 10s  
Cobs, p. 100 lbs., 10s to 11s  
Garlic, per lb., 6d to 8d  
Lettuce, Cab., p. doz., 6d to 8d  
— Cos, per score, 9d to 1s  
Radishes, per doz., 1s to 2s  
Small Salads, p. pun., 2d to 3d  
Horse Radish, p. bundle, 2s to 4s  
Mushrooms, p. pott., 1s to 2s 6d  
— per bushel, 6s to 8s  
Sorrel, per hf. sieve, 6d to 1s  
Artichokes, per doz., 3s to 6s  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. doz., bunches, 2s to 4s  
Mint, green, per bunch, 2d to 4d  
Basil, do., per bunch, 6d  
Marjoram, do., do., 6d  
Watercresses, p. 12 bun, 3d to 4d

#### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, Oct. 20.**  
Prime Meadow Hay 90s to 115s  
Inferior do. ... 60 80  
Rowen ... 45 60  
New Hay ... 100 110  
**CUMBERLAND MARKET, Oct. 20.**  
Prime Meadow Hay 108s to 112s  
Inferior do. ... 40 90  
New Hay ... 40 88  
Old Clover ... 12s 13s  
**WHITECHAPEL, Oct. 20.**  
Fine old Hay ... 105s to 108s  
Inferior do. ... 80 95  
New Hay ... 80 84  
Inferior do. ... 36 70

**HOPS.—BOROUGH MARKET, Oct. 21.**  
Messrs. Pattenden and Smith report that the Hop market is improving for all fine coloured Hops. Duty, 140,000.

**COAL MARKET.—FRIDAY, Oct. 21.**  
Hollywell, 21s. 5d.; Eden Main, 23s.; Wallsend Haswell, 24s. 4d.; Wallsend Lambton, 23s. 6d.; Wallsend Stewarts, 24s.; Wallsend Tees, 24s.—Ships at market, 178.

**WOOL.—BRADFORD, THURSDAY, Oct. 20.**  
WOOL.—Scarcely a sale is making, the spinners are all working as close as possible, and lower prices must be submitted to. Nolls and broken are scarce, and the quantity making is very limited.

**YARNS.**—There is no improvement in the demand for yarns on spools, and the irregularity of working referred to in our last continues; the quantity of machinery wholly idle is immense, and short-time working never so general at any previous period.

**PRICES.**—The coldness of the season has induced a little more inquiry for winter goods, but the declaration of war in operation on our goods market, and there is no alternative but adding to the already large number of idle looms.

#### SMITHFIELD.—MONDAY, Oct. 17.

The supply of Beasts is very large, and a considerable proportion are of inferior quality. Trade is dull for all kinds, still the choicest are not much lower. The number of Sheep is larger than for some time past, and the trade is exceedingly dull; prices are not much lower for the best qualities, but it is difficult to dispose of inferior kinds. Trade is considerably worse for Calves, owing to the unfavourable weather. From Germany and Holland there are 2697 Beasts, 7060 Sheep, 186 Calves, and 36 Pigs; from Spain, 430 Sheep; and 3000 Beasts from the northern and mid-land counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Here-	Best Long-wools... 4 4 to 4 6
ford, &c., ... 4 0 to 4 2	Do. Shorn ... 0 0 — 0 0
Best Short-horns 3 8 — 4	2d quality 3 4 — 4 3
2d quality Beasts 2 2 — 3 0	Do. Shorn ... 0 0 — 0 0
Best Down and	Lambs ... 0 0 — 0 0
Half-breds ... 4 8 — 4 10	Calves ... 3 0 — 4 4
Do. Shorn ... 0 0 — 0 0	Pigs ... 3 4 — 4 6

Beasts, 6080; Sheep and Lambs, 31,950; Calves, 242; Pigs, 405.

#### FRIDAY, Oct. 21.

The number of Beasts is large, and trade for them on the average no better; choicest qualities, being very scarce, make rather more money. The supply of Sheep is small, and mostly consist of those left over from Monday last. The few fresh consignments are disposed of at a slight advance, but the attendance of buyers is so very limited, that a clearance cannot be effected. The best Calves are rather dearer. From Germany and Holland there are 696 Beasts, 2220 Sheep, and 154 Calves; from Spain, 340 Sheep; from France, 20 Beasts; 300 from the northern and midland, and 80 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Here-	Best Long-wools... 4 4 to 4 6
ford, &c., ... 4 0 to 4 2	Do. Shorn ... 0 0 — 0 0
Best Short-horns 3 10 — 4 2	Ewes & 2d quality 3 6 — 4 0
2d quality Beasts 2 6 — 3 4	Do. Shorn ... 0 0 — 0 0
Best Down and	Lambs ... 0 0 — 0 0
Half-breds ... 4 8 — 5 0	Calves ... 3 0 — 4 4
Do. Shorn ... 0 0 — 0 0	Pigs ... 3 4 — 4 6

Beasts, 1235; Sheep and Lambs, 4540; Calves, 318; Pigs, 367.

#### MARK LANE.

**MONDAY, Oct. 17.**—The supply of English Wheat to this morning's market was moderate; the best samples met a quick and the inferior a slow sale on the terms of this day's night. The market being well attended by country buyers, foreign Wheat was in improved inquiry, and a fair business was transacted at our quotations, recovering the depression of Friday last. Fine malting and grinding Barley meets a fair sale at last week's prices, inferior was rather cheaper and difficult of disposal. Beans are unaltered in value. For white Peas there is less demand than of late, and the few sales made are at a reduction of about 2d. per qr.; grey bring fully late rates. Oats are a fair sale at the prices of this day's night. In Flour there is but little doing.

PER IMPERIAL QUARTER.	s. s.	d.	s.
Wheat, Essex, Kent, & Suffolk ... White	61-70	Red	53-66
— fine selected runs	66-76	Red	53-63
— Talavera	66-80	Red	—
— Norfolk	58-80	Red	—
— Foreign	40-43	Malting	35-40
Barley, grind. & distil., 34s to 38s ... Chey	25-37	Malting	—
— Foreign, grinding and distilling	17-21	—	—
Oats, Essex and Suffolk	22-24	Feed	17-21
— Scotch and Lincolnshire ... Potato	17-23	Feed	19-20
— Irish	17-23	Feed	15-25
— Foreign	29-44	Foreign	—
Rye	39-44	Foreign	—
Rye-meal, foreign	36-46	—	—
Beans, Mazagan ... 35s to 42s ... Tick	39-44	Harrow	39-44
— Pigeon ... 44s — 46s ... Winds	—	Longpod	—
— Foreign	36-46	Small	34-37
Peas, white, Essex and Kent ... Boilers	62-66	Suffolk	40-58
— Maple ... 44s to 47s ... Grey	40-43	Foreign	—
Maize, best marks delivered ... per sack	64-70	Yellow	—
— 2d ditto	50-56	Country	50-64
— Foreign	34-38	per sack	54-60

**FRIDAY, Oct. 21.**—The arrivals of foreign grain this week are again large, and good of Flour; of other grain moderate. This morning's market was well attended, and a fair amount of business transacted in Wheat, at an improvement of about 2s. per qr. upon Monday's prices for red, and 1s. per qr. upon Dantzic. In floating cargoes from the South there has been a good business doing, at an advance of 2s. per qr. Barley, Beans, and Peas fully maintain Monday's rates. Oats sell at an advance of 6d. to 1s. per qr. For Flour there is a good demand, and America brings 1s. per barrel more money.

#### IMPERIAL AVERAGES.

	Wheat	Barley	Oats	Rye	Beans	Peas
Sept. 10	54 9	31 3	21 11	33 6	41 3	37 8
— 17	56 7	34 9	20 16	35 7	41 9	39 8
— 24	56 7	35 9	21 4	36 9	43 0	41 6
Oct. 1	59 5	37 0	22 2	36 11	42 10	42 12
— 8	64 0	38 7	23 9	39 1	44 3	44 4
— 15	68 4	40 1	23 10	39 11	45 8	45 4
Aggreg. Aver.	69 11	36 8	22 1	37 0	43 2	41 12

Duties on Foreign Grain 1s. per qr.

#### ARRIVALS THIS WEEK.

	Wheat	Barley	Oats	Flour
English	Qrs. 1710	Qrs. 2660	Qrs. 140	3390 sacks
Irish	— 400	— 7710	— 11360	14260 bbls
Foreign	26620	7770	11360	—

#### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Sept. 10	Sept. 17	Sept. 24	Oct. 1	Oct. 8	Oct. 15
68s 4d	...	...	...	...	...	...
64 0	...	...	...	...	...	...
59 5	...	...	...	...	...	...
56 7	...	...	...	...	...	...
56 7	...	...	...	...	...	...
54 9	...	...	...	...	...	...

**LIVERPOOL, TUESDAY, Oct. 18.**—At our Corn Exchange this morning there was a full attendance of the town and country trade, and many large millers from the interior, and an extensive demand was experienced for Wheat for consumption and on speculation, at an advance of fully 4d. per 70 lbs., as much as 10s. 6d. having been paid in several instances for prime new white American Flour was not so much inquired for, but where sales were made an advance of 2s. to 2s. 6d. per barrel was realised. Western Canal bringing 35s., and Baltimore and Philadelphia 36s. per barrel. Sack Flour was generally held for 2s. per sack more money. Oats and Oatmeal met with a fair sale at late rates. Barley and Beans realised full prices. Indian Corn was neglected, and scarcely as dear. **FRIDAY, Oct. 14.**—At this morning's market there was a good attendance of the town and country trade, and of buyers from a distance, and Wheat and Flour met with an active demand, at an improvement of 2d. to 3d. per 70 lbs., and 1s. to 2s. per barrel, and 1s. per sack. Oats and old Oatmeal were in moderate request, but new was difficult to move unless at a reduction of 6d. to 9d. per load. Barley and Beans fully maintained their value in the sales made. Little business was done in Indian Corn, although inferior qualities were offered on lower terms.



GLASS FOR CONSERVATORIES, ETC.

**HETLEY AND CO.** supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.  
See *Gardeners' Chronicle* first Saturday in each month.

ESTABLISHED MORE THAN 100 YEARS.

**THOMAS MILLINGTON**, Importer and Dealer in GLASS for CONSERVATORIES, GREENHOUSES, GARDEN FRAMES, and DWELLINGS.

WAREHOUSE, 87, BISHOPSGATE STREET WITHOUT, LONDON.  
Cut to any size squares, Squares in boxes, 100 feet each.  
not above 40 inches long. Under 8 by 4 12s  
6 by 4, 6 by 4 1/2 13s.  
16 ounces ... 3d. per foot. 7 by 5, 7 1/2 by 5 1/2 under 9 by 7 15s.  
24 ounces ... 4d. " 8 by 6, 8 1/2 by 6 1/2 " 20s.  
26 ounces ... 5d. " 9 by 7, 8 1/2 by 8, 12 by 9, 12 by 10  
32 ounces ... 7d. " 13 by 10, 14 by 10, 15 by 10  
Large Sheet of No. 16 very superior, packed in cases of 100, 200, and 300 feet, at 2 1/2 to 2 3/4 per foot.  
Improved Patent Rough Plate from one-eighth to 1 inch thick. Glass Milk Pans, Preserve Jars, Bee and Propagating Glasses, Plate Glass, Patent Plate, Plain, Ornamental, and Coloured, as well as every description of Window Glass now manufactured. Glass Shades, round, oval, and square, for Clocks and Ornaments, Fern Shades and Dishes.

ESTABLISHED ABOVE SIXTY YEARS.

**ROBERT METTAM**, BRITISH and FOREIGN WHOLESALE WINDOW GLASS WAREHOUSE, 30, Princess-street, Leicester-square.

16 oz. Sheet Glass in Boxes of 100 feet. Sheet Glass cut to size, not exceeding 40 inches.  
Under 6 ins. by 4 ... 1 1/4 p. foot. 16 oz. ... 3d. to 3 1/2 d. per foot.  
6 by 4, under 8 by 6, 2d. 21 oz. ... 3 1/2 d. to 5d. "  
8 by 6 " 12 by 10, 2 1/2 d. " 26 oz. ... 5d. to 7d. "  
Foreign Sheet Glass, packed in boxes of 200 feet each, large sizes—4ths, 2 1/2 d.; 3rds, 2 3/4 d. per foot net.  
Hartley's Patent Rough Plate Glass, Glass Tiles and Slates, and every description of Glass now manufactured. Estimates and Price Lists forwarded post free.

**JAMES PHILLIPS & Co.**, 116, BISHOPSGATE STREET WITHOUT.

**HARTLEY'S PATENT ROUGH PLATE GLASS**, for CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTORIES, SKYLIGHTS, &c.

Packed in Crates, for Cutting-up of the sizes manufactured.	In Squares cut to the sizes ordered.	PRICES OF		
		1/4th inch thick.	3/8th inch thick.	1/2 inch thick.
30 inches wide and from 40 to 50 long } Or 20 " " " 50 " 70 " } " " " above 70 " }		s. d.	s. d.	s. d.
		0 5 1/2	0 7 1/2	0 9
		0 6	0 7	0 9 1/2
Under 8 by 6	Under 8 by 6	0 4	0 5	0 6
8 by 6 and under 10 by 8	8 by 6 and under 10 by 8	0 4 1/2	0 6	0 7
14 by 10 " 1 1/2 ft. sup. if the length does not exceed 20 inches, or if above 20 inches not above 30 inches long	14 by 10 " 1 1/2 ft. sup. if the length does not exceed 20 inches, or if above 20 inches not above 30 inches long	0 5 1/2	0 7	0 8 1/2
1 1/2 ft. sup. " 3 ft. sup. or if above 20 inches not above 30 inches long	1 1/2 ft. sup. " 3 ft. sup. or if above 20 inches not above 30 inches long	0 6	0 7 1/2	0 9
3 " 4 " 5 " 6 " 8 " 10 " 12 " 15 " 20 " 25 " 30 "	4 " 5 " 6 " 8 " 10 " 12 " 15 " 20 " 25 " 30 "	0 6 1/2	0 8	0 9 1/2
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		1 3	1 4	1 5
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		1 4	1 5	1 6
		1 4 1/2	1 5 1/2	1 6 1/2
		1 5	1 6	1 7
		1 5 1/2	1 6 1/2	1 7 1/2
		1 6	1 7	1 8
		1 6 1/2	1 7 1/2	1 8 1/2
		1 7	1 8	1 9
		1 7 1/2	1 8 1/2	1 9 1/2
		1 8	1 9	2 0
		1 8 1/2	1 9 1/2	2 0 1/2
		1 9	2 0	2 1
		1 9 1/2	2 0 1/2	2 1 1/2
		2 0	2 1	2 2
		2 0 1/2	2 1 1/2	2 2 1/2
		2 1	2 2	2 3
		2 1 1/2	2 2 1/2	2 3 1/2
		2 2	2 3	2 4
		2 2 1/2	2 3 1/2	2 4 1/2
		2 3	2 4	2 5
		2 3 1/2	2 4 1/2	2 5 1/2
		2 4	2 5	2 6
		2 4 1/2	2 5 1/2	2 6 1/2
		2 5	2 6	2 7
		2 5 1/2	2 6 1/2	2 7 1/2
		2 6	2 7	2 8
		2 6 1/2	2 7 1/2	2 8 1/2
		2 7	2 8	2 9
		2 7 1/2	2 8 1/2	2 9 1/2
		2 8	2 9	3 0
		2 8 1/2	2 9 1/2	3 0 1/2
		2 9	3 0	3 1
		2 9 1/2	3 0 1/2	3 1 1/2
		3 0	3 1	3 2
		3 0 1/2	3 1 1/2	3 2 1/2
		3 1	3 2	3 3
		3 1 1/2	3 2 1/2	3 3 1/2
		3 2	3 3	3



## LANDSCAPE GARDENING REVIVED AS AN ART.

**MR. THOROLD**, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure-grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

**ROCKWORK, ORNAMENTAL WATER-FALLS, FOUNTAINS, RUSTIC WORK, AND LANDSCAPE GARDENING** undertaken on a large or small scale by **MR. GLENNY**, who will attend for consultation in any part of the kingdom.—420, Strand.

**SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION** (especially with regard to Agriculture), Wickham Market, Suffolk, conducted by **MR. DAVEN**. The course of instruction comprises all the requisites of a liberal education, and the terms are moderate and inclusive. Vacancies for two private pupils. Soils, Minerals, and Manures carefully analysed.

## FENDERS, STOVES, AND FIRE-IRONS.

Buyers of the above are requested, before finally deciding, to visit **WILLIAM S. BURTON'S SHOW ROOMS**, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and Perry's Place. They are the largest in the world, and contain such an assortment of **FENDERS, STOVES, RANGES, FIRE-IRONS, AND GENERAL IRONMONGERY** as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ornate ornaments and two sets of bars, 21. 14s. to 57. 10s.; ditto, with ornate ornaments and two sets of bars, 57. 10s. to 121. 12s.; Branded Fenders complete, with standards, from 7s. to 34s.; Steel Fenders from 21. 15s. to 61s.; ditto, with rich ornate ornaments, from 21. 15s. to 71. 7s.; Fire-irons from 1s. 9d. the set to 4s. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges, 1st.—From the frequency and extent of his purchases; and, 2dly.—From those purchases being made exclusively for cash.

## DISH COVERS AND HOT-WATER DISHES

In every material, in great variety, and of the newest and most *recherché* patterns. Tin Dish covers, 6s. the set of six; Block Tin, 12s. 3d. to 27s. 2d. the set of six; elegant modern patterns, 23s. 3d. to 57s. 6d. the set; Britannia Metal, with or without silver-plated handles, 73s. to 110s. 6d. the set; Sheffield Plated, 10l. to 16l. 10s. the set; Block Tin Hot-water Dishes, with wells for gravy, 13s. to 19s.; Britannia Metal, 20s. to 72s.; Sheffield plated, full size, 9l. 10s.

## GAS CHANDELIERS AND BRACKETS.

The increased and increasing use of gas in private houses has induced **WILLIAM S. BURTON** to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Ironmongery Establishment the largest and most remarkable in the kingdom, viz., from 12s. 6d. (two lights) to 16l. 6s.

## LAMP GLASS OF ALL SORTS AND PATTERNS.

The largest, as well as the choicest, assortment in existence of **PALMER'S MAGNUM** and other **LAMPS, CAMPINE, ARGAND, SOLAR, AND MODERATEUR LAMPS**, with all the latest improvements, and of the newest and most *recherché* patterns, in ornate, Bohemian, and plain glass, or papier-mâché, as at **WILLIAM S. BURTON'S**, and they are arranged in one large room, so that the patterns, sizes, and sorts can be instantly selected. **PALMER'S CANDLES**, 8d. per lb.—Palmer's Patent Candles, all marked "P. & M."

Single or double wicks	8d. per lb.
Mid. size, 3 wicks	9d. "
Magnums, 3 or 4 wicks	9d. "
English Patent Campine, in sealed cans	6s. 6d. per gallon.
Best Colza Oil	4s. 0d.

**WILLIAM S. BURTON** has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of **GENERAL FURNISHING IRONMONGERY** (including Cutlery, Nickel Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.  
No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

**METCALFE AND CO'S NEW PATTERNS TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.**—The Tooth Brush performs the highly important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at **METCALFE, BINGLEY, & Co.**'s only Establishment, 139 B and 131, Oxford Street, second and third floors, west from Colles Street.  
**CATIONS.**—Beware of the word "Metcalfe's," adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2s. per box.

## HOLLOWAY'S OINTMENT AND PILLS HAVE

EFFECTED A WONDERFUL CURE OF A BAD LEG OF TWENTY YEARS' STANDING.—Mrs. Leary residing next door to the Maypole Inn, Warley Town, near Halifax, suffered with a dreadfully Bad Leg for Twenty Years; there were six ulcers round the ankle, which became so painful that she was disabled from attending even to her household affairs, and though she consulted many eminent practitioners, she derived no benefit whatever. At last she commenced using Holloway's Ointment and Pills, which quickly caused the wounds to heal, and thoroughly re-established her health, although she is 65 years of age.—Sold by all Druggists; And at Professor HOLLOWAY'S Establishment, 241, Strand, London.

## THE SUCCESSFUL RESULTS OF THE LAST HALF CENTURY HAVE

PROVED BEYOND QUESTION THAT

**ROWLANDS' MACASSAR OIL** possesses singularly nourishing powers in the growth, restoration, and improvement of the Human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the Hair. It prevents it from falling off or turning grey, strengthens weak hair, produces a thick and luxuriant growth, cleanses it from sebum and dandruff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of WHISKERS, EYEBROWS, and MUSTACHES, it is unrivalled in its beneficial operation. For children it is especially recommended, as forming the basis of a beautiful head of hair, and rendering the use of the hair-oil unnecessary. In dressing the hair nothing can equal its effect, rendering the hair so admirably soft that it will be in any direction, and imparting a true wavy hair. Price, 6d. and 7s. 1 penny bottles equal to four small, 10s. 6d. and double that size, 21s. Caution.—On the wrapper of each bottle are the words, "ROWLANDS' MACASSAR OIL." In two lines. The name is engraved on the back of the wrapper nearly 1500 times, containing 2400 letters. Sold by A. ROWLANDS & SON, 20, Hatton Garden, London; and by Chemists and Perfumers.

## BIRD NETS, SHEEP NETS, RABBIT NETS,

BAT FOLDING NETS with Bamboo Poles, 14 feet long, 10c. each; Partridge Nets, 24. per square yard; Rabbit Nets, 4 feet wide, 14d. per yard; Cocoa Nut Fibre; Sheep Folding Nets, 4 feet high, 4d. and 6d. per yard. At W. Cullingford's Manufactory, 1, Edmund Terrace, Ball's Pond Road, Islington, London.

## RICHARD GUNTER'S BRIDE-CAKE ESTABLISHMENT,

Lowndes Street, Albert Gate. Wedding Breakfasts furnished, complete or in part, with silver, china, glass, and attendants.—Corner of Motcomb and Lowndes Streets, Albert Gate, London.

## TO BE LET, A STOCK AND CORN FARM.

Its extent is about 465 acres, in a chalk district, about 70 miles from London. The soil is favourable for grain, and the farm will carry from 350 to 400 ewes. The income is favourable. About 130 acres is down land broken up five years ago, and now in good condition. There are 16 acres of water meadows.—Apply to Messrs. VENNING, NAYLOR, & ROBINS, Solicitors, 9, Tokenhouse Yard.

## WANTED, A FEW BUSHELS OF ARBUTUS BERRIES,

and a few thousands of 1 or 2 years' RED CEDARS.—Apply, stating price, to R. S. Messrs. Hurst and McMillen, 6, Leadenhall Street, London.

## WANTED, A QUANTITY OF BEACH PLANK, OF 2,

2 1/2, and 3 inches, say five or six loads directly; must be very good and dry; a similar quantity taken every month, if the quality and price suit. State the price delivered in London.—Address R. K. Thomas Davies & Co., 1, Finch Lane, Cornhill, London.

## FOOD FOR PIGS, SHEEP, AND POULTRY.

DAMAGED WHEAT	30s. per qr.
RICE MEAL	8d. per ton.
LENTILS, best quality	40s. per qr.
INDIAN CORN	42s. "

**JAMES MAY & Co.** Fishery Wharf, Wharf Road, City Road, London. Samples sent on receipt of two postage stamps. Orders from the country must in all cases be accompanied with a reference in Town, or a Post Office Order. Delivered in London free; 1s. 3d. each charged for sacks.

## TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS ENGAGED IN PLANTING.

**A GENTLEMAN** making extensive alterations in his Plantation, has for disposal a large quantity of fine-grown TREES OF OAK, ASH, ELM, BEECH, LIME, SPRUCE FIRS, &c. The whole or any part of them to be disposed of at a reasonable price.—For further particulars, apply to A. HENDERSON & Co., Pine-apple Place, Edgware Road, London.

## INVESTMENT.—HOLLAND.

**FOR SALE**, with immediate possession, an ESTATE of 1162 ACRES, 1000 of which are covered with a valuable deposit of peat, which being the fuel in universal use in Holland, from the high price of coals, always commands a ready market. The Estate is intersected by canals for the conveyance of the peat, and these communicate with one of the chief canals in a northern province of Holland, and by these means there is direct and cheap water communication with the towns and cities in which the fuel is consumed; 150 acres are cleared and already in excellent cultivation, exposing a fertile soil, and 12 acres in wood. On the Estate is a comfortable Dwelling House, two Farmhouses, 14 Cottages, a large Barn, and Cattle Sheds. There are also for sale all the implements required in digging the peat and cultivating the land, together with 8 Horses, 20 head of Cattle, &c.; also a Threshing Machine, &c.—For further information, apply, by letter, to J. C. M., at the Office of this Paper.

## ARAUCARIA EXCELSA (NORFOLK ISLAND PINE).

**FOR SALE**, a bargain, a pair of very fine specimens of the above, 15 feet high, in perfect health, and well feathered to within 3 feet of the tops. Also one about 12 feet high.—Particulars of prices, &c., may be had on application to JOHN CATTELL, Nurseryman, Westerham, Kent.

## FOR SALE, A DECIDED BARGAIN, TWO ELEGANT

FOUNTAINS, five pairs of ORNAMENTAL VASES on pedestals, one pair of FIGURES on pedestals.—Apply at the Artificial Stone Works, Clayton Place, Clayton Street, Kensington Oval.

## TO PERSONS FORMING GARDENS AND OTHERS.

**FOR SALE**, a great BARGAIN, 50 per cent. under trade price, a large quantity of thriving FRUIT TREES, as well as young RASPBERRY and CURRANT BUSHES, the ground on which they are growing being required for other purposes.—Immediate application to be made to Mr. MEKINS, Dawley Court, West Drayton, Middlesex; or to Mr. STRANSON, Auctioneer, Uxbridge, and 57, Lincoln's Inn Fields.

## FOR SALE.—A QUANTITY OF SECOND-HAND DUTCH

MATS. Good quality. Terms, Cash.—Apply to W. D., Office of this Paper.

## PRIZE WHITE COCHINS.—An Amateur possess-

ing some first-class specimens of Mrs. Herbert's breed, and who has this year gained prizes wherever exhibited, has now for sale, with some splendid CHICKENS of great merit, a PRIZE PULLET, that has already taken the first prizes at Gloucester and Metropolitan, and second prize at Surrey Gardens; also a first-class COCK BIRD, from imported stock, being falcon-hocked, and possessing bright yellow legs, heavily booted down to the toes.—For price, &c., apply to T. B. F., Maldon, Essex.

## Sales by Auction.

## LARGE EVERGREENS, FLOWERING SHRUBS,

AND ORNAMENTAL TREES.

**MESSRS. WILLMOT & CHAUDRY** have an extensive Stock of well-grown Plants of all the best kinds of EVERGREENS, which have been several times transplanted, so as to insure as far as possible their being removed successfully. They have also a quantity of large ORNAMENTAL TREES that will come up with good roots, many of them suitable for Lawns and Parks; and also a good collection of Flowering Shrubs. Their stock of Fruit Trees is, as usual, healthy and well grown, and is not to be excelled in the United Kingdom. Prices moderate.—Lewisham, near London, October 22.

## TO MARKET GARDENERS, NURSERYMEN, &amp; SEEDSMEN.

LAMB FARM GARDEN, NEAR THE SWAN INN, KINGSBLAND ROAD, DARTFORD.

**MR. W. T. ATWOOD**, will Sell by Auction, on the Premises, TUESDAY, November 1st, at 11 o'clock precisely, the Stock, Crops, and Effects, of Mr. SAMUEL TORRE, who is leaving the premises in consequence of the Land being let for Building, comprising 24,000 ROOTS OF RHUBARB, of Royal Albert, Royal Victoria, Linnaea, Tuckers New Scarlet Admirable, Red and Grey Giant, and other Crops; together with the stock of excellent Market and Dining Carts, Implements, Boxes and Lights, Hand Glasses, Tools, Buckets, and Manure.—May be viewed the day before and morning of Sale; Catalogues to be had at Mr. WATTS'S, Covent Garden; on the Premises; and of Mr. Atwood, Mortlake, Surrey.

## COCHIN CHINA POULTRY.

PERIODICAL SALE BY AUCTION ON TUESDAY, NOVEMBER 1.

**MR. J. C. STEVENS'S** next Periodical Sale of **M. RANCY POULTRY** will take place at his Great Room, 38, King Street, Covent Garden, on TUESDAY, Nov. 1, at 12 o'clock precisely. The Birds are chiefly Buff and Silver Cinnamon, from the yards of John Fletcher, Esq., of Kensington, Rev. J. Nightingale, of Southampton, and several other First Class breeders. There are also some very pure Black Cochins, from a celebrated strain.—Catalogues by forwarding a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

## ORCHIDS.

IMPORTED AND ESTABLISHED PLANTS.

**MR. J. C. STEVENS** will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, November 4, an IMPORTATION OF ORCHIDS, in capital condition, including a Cattleya like superba, a new Cattleya, &c. Also an importation from Africa, just received from Mr. PLANT; and a few established specimens of Aerides Larpentiae, Saccolabium furcatum, Blumei, &c.—Catalogues are preparing, and will be forwarded in due course.

## FULHAM.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, &c.

**MESSRS. PROTHEROE AND MORRIS** are commissioned by Mr. T. LOCKHART, to Sell by Auction, on the Premises, Parson's Green Lane, Fulham, on MONDAY, October 24, at 11 o'clock, a costly and extensive collection of Bulbs and Flower Roots, Flower Seed, Fruit Trees, Box Evergreen, Standard and Moss Roses; about 10,000 Strawberry Plants, in 40 sorts; a collection of Dahlias, two 3-light Boxes, several Dutch Bulb Cases, and Sundries.—May be viewed three days prior to the Sale; and Catalogues may be had (6d. each, returnable to purchasers) of Mr. LOCKHART, on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## FULHAM ROAD.

**MESSRS. PROTHEROE AND MORRIS** will submit to Public Competition by Auction, on the Premises, Stewart's Grove Nursery, Fulham Road, Chelsea, on FRIDAY, Oct. 28th, and following day, at 11 o'clock each day, by order of Mr. WESTMACOTT, leaving the business, the whole of the choice GREENHOUSE PLANTS, consisting of Camellias and Azalea Indica, well set with bloom buds; 3000 Geraniums of the leading varieties; 1000 well grown Myrtles, Cactus, Acacias, Cytisus, Daphnes, Double Primulas, Egonias, Callas, Passifloras, Fuchsias, Half Standard China and Tea Scented Roses, in pots; Cyclamen; about 350 Gardenias; large specimen Stephanotis floribunda, Hoya carnosa, Schubertia graveolens; also a quantity of Dutch Bulbs; Vegetable and Flower Seeds; a capital Nest of 350 Seed Drawers; Frames; a large quantity of Rotten Dung, Compost, &c.—May be viewed two days prior to the Sale; Catalogues may be had, 6d. each, returnable to purchasers, on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO GENTLEMEN, NURSERYMEN, FLORISTS &amp; OTHERS.

BAYSWATER.

**MESSRS. PROTHEROE AND MORRIS** are directed to Sell by Auction, on the Premises, at Craven Hill Nursery, Bayswater, on MONDAY, October 31st, and following days, at 11 o'clock each day, by order of Mr. HOGGON, in consequence of the ground being wanted for building, the whole of the valuable NURSERY STOCK, consisting of Fruit and Forest Trees of the finest description, in great variety; Shrubs, Choice Ornamental and Specimen Trees; Deciduous and American Plants; a large assortment of Evergreens, including, D. Sprigging and Dwarf Roses, Hardy Climbers, &c.; together with the Stone and Greenhouse Plants, comprising Ixora, Burchellia, Francisca, Justicia, Pentas carnea, Hoya, Poinsettia, &c.; 50 Large Double White Camellias, Azalea indica alba, yellow Noisette and Devonensis Roses, Acacias, Epacris, Chorozema, Myrtles, Hardenbergia monophylla, Correas, &c., &c.—May be viewed prior to the Sale; Catalogues may be had, 6d. each, returnable to purchasers, on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO NOBLEMEN, GENTLEMEN, FLORISTS, &amp; OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will Sell by Auction, on the Premises, St. Stephen's Nursery, near St. Alban's, on WEDNESDAY, October 29th, and following day, at 11 o'clock each day, by order of Messrs. D. Sprigging & Co. (dissolving partnership), the whole of the valuable NURSERY STOCK, consisting of Standard and Dwarf Roses about 6000 of the choicest Perpetual kinds; about 2000 trained and untrained Fruit Trees of the most approved varieties; 30,000 fine Evergreens, of every variety, in considerable quantities; 30,000 fine Spruce, Scotch, and Larch Firs, &c., &c.—May be viewed any time prior to the Sale; Catalogues may be had (6d. each returnable to purchasers) of the principal Seedsmen in London; of Mr. W. FELT, Nurseryman, Hitchin; Mr. W. CORNWELL, Nurseryman, Barnet; at the Peacock Inn, St. Alban's; on the premises of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO TULIP FANCIERS, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. TYSO, of Wallingford, to sell by Auction, at the Mart, Bartholomew Lane, opposite the Bank of England, London, on TUESDAY, October 25, 1853, at Twelve o'clock, the whole of his costly and justly celebrated collection of TULIPS, comprising, among the Bizarres, Tyso's Seedlings, Polydora, Emulata, Amelia, and Orestes; Dickson's Duke of Devonshire, Fortunatus, Glory of Abingdon, &c. In Byblomene, Thalia, Pandora, Louis XVI, Queen of Beauties, Tyso's Eugenia, Evander, &c. Among the Roses, Tyso's Herculean, Dutch Ponceau, Louis XVIII, Marchioness, Lavinia, Lady Mayress, &c. Together with a select assortment of Ranunculuses, including many choice Seedlings.—May be viewed the morning of Sale. Catalogues may be had at the Mart; of Mr. Tyso, Wallingford; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

## BRIXTON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. E. DENYER to submit to public competition by Auction, on the Premises, the Loughborough Nursery, Loughborough Road, Brixton, near London, on MONDAY, Nov. 14th, and following days, at 11 o'clock, in consequence of the Lease having nearly expired, the whole of the valuable NURSERY STOCK, consisting of fine Evergreens, Deciduous Shrubs, Fruit, Forest, and Ornamental Trees, comprising green and variegated Hollies, do. Box, English and Irish Yews, China and Siberian Arbor Vitae, Aucuba, Arbutus, Alaternus, Portugal and Common Laurels, Larcodendrus, Sweet Bay, Rhododendron, Azalea, Kalmia, Cedrus Decidua, Plum of sorts, Juniper, Cypress, Magnolia grandiflora, Deutzia scabra, Goldress Rose, Lilac Standard Thorns, Laburnum, Lime, Plane, Acacia, Clematis flammula, Irish Ivies, &c. Standard and Dwarf Peach, Nectarine, Apricot, Plum, Cherry, Apple, Pear, Gooseberry, and Currant, Seakale, Asparagus, &c. Also about 2000 Standard Pillar and Dwarf Roses.—May be viewed one week prior to the Sale; Catalogues had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.



**W. IVERY** begs to offer the undernamed Plants, which he can, with confidence, recommend:—  
**SEEDLING CINERARIA RUCKER** (Ivery), deep blue, with a bright fiery red round the disc, fine shape, and very distinct, 7s. 6d.

#### CINERARIAS.

Star of Peckham (Ivery's) 3s. 6d.	Rosalind (Henderson's) 3s. 6d.
Alba purpurea do. 3 6	Charles Dickens, do. ... 3 6
Orlando do. 3 6	Kate Kearney, do. ... 3 6
Songstress do. 3 6	Prince Arthur, do. ... 3 6
Formosa (Frances) ... 3 6	Charlotte, do. ... 2 6
Charlotte Ann, do. ... 2 6	Marguerite d'Anjou, do. 2 6

If the above 12 are taken, 30s.

W. I. can supply good named varieties from 12s. to 18s. per dozen.  
**CHRYSANTHEMUMS**.—Strong flowering plants of all the newest Pompones and show varieties, 9s., 12s., to 18s. per dozen.  
**DEUTZIA GRACILIS**, for early forcing, 9s., 12s., to 16s. p. doz.  
**DIELYTRA SPECTABILIS**, strong, for forcing, 9s., 18s., to 24s. per dozen.

\*Selected Autumn Catalogues of Geraniums, Fuchsias, Verbenas, Cinerarias, Choice Plants, Winter-flowering Carnations, Chrysanthemums, Antirrhinums, and Phloxes to be had on application.

W. IVERY's General Nursery Stock of Ornamental Shrubs and Fruit Trees, is worthy the attention of gentlemen and the trade. Post Office Orders made payable at Camberwell.

Hanover Nursery, Peckham, near London.

**THE PERPETUAL TREE VIOLET** or **VIOLA ARBorea**: large plants, 6s. per doz.; smaller, 3s. per doz. **DOUBLE WHITE TREE VIOLET**: large plants, 6s. per doz. **THE RUSSIAN SUPERB VIOLET**: plants 3s. per dozen.

\*A Treatise on the Violet, post free for 12 stamps.  
**OTHELLO CLOVE CARNATION**, 2s. 6d. per pair. **PURE WHITE CLOVE CARNATION**, 1s. 6d. per pair. **NEW CLOVE "PRINCE OF WALES"**, 2s. 6d. per pair. **GIANT SCARLET BROMPTON STOCK**, 6d. per doz.; 4s. per 100. **SWEET-WILLIAMS**, 6d. per doz.; 4s. per 100. **SEEDLING ANTIRRHINUMS**, 1s. per doz.; 5s. per 100.

One dozen of each of the Violets, one pair of each of the Clove Carnations, and one dozen of each of the Brompton Stocks and Sweet Williams, with a Treatise on the Violet, will be sent, hamper and package free, for 12.

For descriptions and further particulars of the above, see *Gardeners' Chronicle* for Oct. 15.—The Violets and Cloves will be sent postage free; the other varieties hamper and package free. On receipt of a Post-office order or penny postage stamps, the whole or any part of the above will be sent.—**EDWARD TILLY**, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

**STEPHEN SHILLING** begs to return his best thanks to the Nobility and Gentry for the liberal encouragement they have been pleased to favour him with, and informs them that he has much improved his Nursery Stock in general, therefore those intending to plant may depend on having from his Nursery all descriptions of Trees, Evergreens, and Deciduous Shrubs, including a fine Collection of Standard and Dwarf Trained Fruit Trees. American Plants in great variety. Standard and Dwarf Roses of the newest and best sorts, all of first-rate quality, and on the most reasonable terms. Grounds laid out and contracts taken. Where the ground is prepared and the trees planted under his direction, he will re-supply those that may die, through being removed, free of additional charge. Coppice Plants of all sorts supplied and planted by contract or otherwise.

Garden and Flower Seeds of all the best kinds in cultivation; Dutch Bulbs, finest imported; with every other article required for the Kitchen Garden, Pleasure Grounds, and Plantations. Orders received for Trees, &c. Seeds supplied as usual at Winchester, Basingstoke, and Alton, at which places he attends on market days. All goods delivered Free of Carriage to the principal Market Towns.

Descriptive priced Catalogues forwarded on application, Post Free. Experienced Gardeners and Foremen supplied.

**STEPHEN SHILLING** respectfully suggests the importance of observing both his Christian Name and Address on all letters intended for him, as the omission is likely to cause mistakes.

North Wambro' and Hartley Row Nurseries, near Odiham, Hants, 24 miles from the Winchester Station, South Western Railway.—Oct. 22.

**BALSAM SEED IMPROVED**.—Nearly 400 testimonials prove **GLENNY'S Improved Balsam Seed** to be the best that has been obtained. The six classes in sealed packets, 37 stamps; a packet of mixed, 13 stamps.—420, Strand.

**TO THE TRADE**.—The Undersigned, having a large and fine stock of the following, begs to offer them cheap. Prices and samples on application.

#### ONE YEAR'S SEEDLINGS.

Chestnut, Spanish, fine	Laburnum
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**ABOLITION OF THE ADVERTISEMENT DUTY**.—STREET, BROTHERS, 11, Serle Street, Lincoln's Inn Fields, would be happy to advise with parties desirous of advertising. Their long experience in this department enables them to offer their services with confidence.

\*Advertisements inserted in the *London Gazette* and all the London and Country Papers.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitechapel, in the City of London; and published by them at the Office, No. 3, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—SATURDAY, OCTOBER 22, 1853.



# THE GARDENERS' CHRONICLE

AND

## AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 44.—1853.] SATURDAY, OCTOBER 29. [PRICE 6d.

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### PROGRAMME OF THE GREAT AND GENERAL EXHIBITION OF FLOWERS AND PLANTS, which is to take place in the Winter Garden of the SOVEREIGN DUKE OF NASSAU, at BIEBRICH, from APRIL 1 to APRIL 15, 1854.

The Exhibition begins on April 1, and closes on the 15th of the said month. It is to take place in a large Hall conveniently erected for the purpose, situated in the Duke's garden. According to the beneficence of the Duke, who allows or grants a considerable sum of money for the construction of the building and arrangement of it, as well as for the distribution of Prizes, it is expected that many partakers will find some encouragement. The greatest care will be taken of the Plants and Flowers during their stand in the said building; and will be advantageously placed, according to their different species and nature. Persons desirous of sending Plants are invited to forward them by the 25th of March at the latest, so as to give time to place them in a proper and convenient order. They are to be packed up and taken away on April 16, by a clever and intelligent man.

The Plants and Flowers specified as follows are to obtain prizes or premiums fixed by competent men:—

- 1st Prize.—400 florins for the finest collection of PLANTS of CULTURE, to the number of 30 at least, and 50 exemplars; 50 florins to the accessory.
- 2d Prize.—300 florins for the finest collection of ERICAS, to the number of 50 different species at least; 100 florins to the accessory.
- 3d Prize.—300 florins for the finest collection of ROSES, to the number of 100 different species, and 300 exemplars; 75 florins to the accessory.
- 4th Prize.—300 florins for the finest collection of AZALEAS INDICA, to the number of 50 at least, and 100 exemplars; 75 florins to the accessory.
- 5th Prize.—300 florins for the finest collection of CAMELLIAS, to the number of 80, and 160 exemplars; 75 florins to the accessory.
- 6th Prize.—300 florins for the finest collection of RHODODENDRONS ARBOREUM, and their HYBRIDS, to the number of 30 at least, and 60 exemplars; 75 florins to the accessory.
- 7th Prize.—150 florins for the finest collection of AZALEAS (pontica), in open ground, to the number of 50, and 150 exemplars.
- 8th Prize.—150 florins for the finest collection of bulbous plants, such as AMARYLLIS, TULIPS, HYACINTHS, and ANEMONES, to the number of 150 at least, and 300 exemplars.
- 9th Prize.—50 florins for the finest collection of CINERARIAS, to the number of 50 at least, and 150 exemplars.

N.B. The Gardeners of Biebrich have no intention to co-operate.

It is necessary to give notice to those gentlemen appointed to decide upon the prizes, that it is required the plants should have all the bloom or freshness of flower, and should be bloomy or flowery where the nature and species of the plant allows and requires it. Any new or unknown plants will obtain the preference they deserve, but in observing that besides their rarity or novelty, they should possess a flower's value or estimation.

The sending of plants to the exhibition is free from transport, by sending them by water (that is by the steamer) or by the train, and addressed EXHIBITION OF PLANTS, Biebrich.

Biebrich, Oct. 22. THELEMAN, Director of the Garden.

### NEW SEEDS FOR THE COMING SEASON.

**WILLIAM E. RENDLE AND CO., SEED MERCHANTS,** Plymouth, are now harvesting and receiving from the Growers a choice assortment of all kinds of Garden and Agricultural Seeds. Their New Seed Catalogue will be ready early in December.

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Also, Double Roman and Paper White Narcissi, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

**GEORGE JACKMAN, NURSEYMAN, Woking,** Surrey, 14 mile from Woking Station, South-Western Railway, begs to announce that he has just published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., &c., and may be had on application by enclosing two postage stamps.

### TO ADVERTISERS.

THE ADVERTISEMENT DUTY being repealed, the PROPRIETORS of the GARDENERS' CHRONICLE announce that they have reduced the customary charge for each Advertisement by 1s. 6d., the amount of duty taken off by the Government.

Advertisements of GARDENERS OUT OF PLACE, of not more than four lines in length, 1s. 6d. each.

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Clapton Nursery, London.

**HUGH LOW AND CO.** would invite inspection of their extensive and fine Nursery Stock, more particularly CAMELLIAS, INDIAN AZALEAS, ERICAS, EPACRIS, and other plants suitable for making a display during winter, all of which are well set with flower buds, and can be had of different sizes. H. L. & Co. are also Growers of Fruit Trees, and their stock this season of both Trained and Maidens is large and fine, including the leading varieties, which are grown in quantities for the trade.—Clapton Nursery, London, October 29.

**E. G. HENDERSON AND SON, Wellington Nursery,** St. John's Wood, can now supply fine strong plants of CINERARIAS, choice varieties, by name, at 6s., 9s., and 12s. per dozen.

CHOICE FANCY GERANIUMS, at 9s., 12s. and 18s. per doz.  
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**E. G. HENDERSON AND SON, Wellington Nursery,** St. John's Wood, London, beg to announce that their AUTUMN CATALOGUE of GERANIUMS, &c., is published, and will be forwarded post free on application. They also beg to say their NEW CINERARIAS and FANCY GERANIUMS are now being sent out with three varieties of Fancy Geraniums raised by Mr. Ayers, of Blackheath, the stock of which they purchased.

**WILLIAM NICHOLSON** still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, dessert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 12. per 100, or 25 each of any two sorts for 12s., box included. Post-offices orders payable at Yarm, Yorkshire. For a full description, see Advertisement *Gardeners' Chronicle*, October 15, 1853.—Egglecliffe, near Yarm, Oct. 29.

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Irises, Spanish	... 0 9	Single	... 6 0
		Early Dwarf Tulips	... 7 6

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Portugal Laurels	2 to 3 " and 3 to 4 "
Common Laurels	4 to 6 " and 6 to 8 "
Sweet Bays	4 to 6 " and 6 to 8 "
Spruce Fir	3 to 4 " and 4 to 6 "
Arbor-Vitæ, Chinese	4 to 6 " and 6 to 8 "
" American	4 to 6 " and 6 to 8 "
Evergreen Oaks (in pots)	3 to 4 " and 4 to 6 "

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— pyramidal trees, 10s.	— dwarf, 10s.
Cherries, standards, 15s.	— pyramidal trees on Quince stocks, 18s.
— pyramidal trees, 12s.	Plums, standards, 15s.
— fine dwarf bushes on the Mahaleb Stock, suitable for potting, 15s.	— pyramidal trees, 12s.
Medlars, standards, 15s.	— dwarf, 10s.
Mulberry, white, 4s.	Quinces, standards, 15s.

N.B.—Catalogue of Fruits may be had in exchange for two penny postage stamps.

### SUPERB DOUBLE HOLLYHOCKS.

**WILLIAM CHATER** has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c., &c., and may be had by inclosing a postage stamp.  
Saffron Walden Nursery, October 29.

### CHINESE AZALEAS.

**J. AND J. FRASER** having a very large and fine Stock of the above, beg to offer them at the undermentioned prices. The Plants are very healthy, and beautifully set with flower buds.  
12 distinct sorts ... 18s.  
12 do. (very fine plants) ... 24s.  
Lea Bridge Road, Leyton, Essex.—Oct. 29.

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Ditto (new) ... 18s. to 24s.  
Lea Bridge Road, Leyton, Essex, October 29, 1853.

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**J. AND J. FRASER** have to offer very fine Plants of the above, amongst which are the best varieties in cultivation. The plants are from 2 to 3 feet high, very bushy, and full of flower-buds. Large-flowering varieties, 9s. per dozen; Pompones, or Liliputian, 12s. per dozen.—A Catalogue of the sorts may be had, on application.—Lea Bridge Road, Leyton, Essex.

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**HENRY GROOM, Clapham Rise, near London,** by appointment Florist to her MAJESTY THE QUEEN, and to his MAJESTY THE KING OF SAXONY, begs to inform the AMATEURS OF TULIPS, that having been most successful in their cultivation this season, he can supply excellent Bulbs of the finest quality at very moderate prices. He wishes to call the attention of Amateurs to the GRAND EXHIBITION OF TULIPS, which is to take place in London next year, and would suggest the necessity of their being well prepared with fine flowers. He also begs to state that he continues to put up beds ready arranged for planting, which have been found so very desirable for gentlemen commencing their cultivation. His catalogue will be forwarded by post on application.

### JUDSON'S

#### RICHMOND VILLA BLACK HAMBURG VINE.

**ARTHUR HENDERSON AND CO.** have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.

N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

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**ROSES** on 4 to 6-inch stems, fine, 6s. per dozen; best FANCY GERANIUMS, 9s. per dozen; best PINKS, 6s. per dozen pairs; new VERBENAS, &c. For description see page 642.—S. WALTERS, Hilperton and Trowbridge, Wilts.

### AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

### NEW CATALOGUE.

**JOHN and CHARLES LEE'S CATALOGUE** of STOVE and GREENHOUSE PLANTS for this autumn is just published, and may be had POST FREE on application.—Nursery, Hammersmith.

**STANDISH and NOBLE'S CATALOGUE** for the present season is now ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Oct. 29.

### N. GAINES'S CATALOGUE for the present season

is now ready; it contains lists of Show and Fancy Pelargoniums, Azaleas, Fuchsias, Cinerarias, Chrysanthemums, Camellias, Calceolarias, Verbenas, Correas, Rhododendrons, &c., also a Miscellaneous Collection of Stove and Greenhouse Plants, and may be had post free on application.  
Nursery, Surrey Lane, Battersea.—October 29.

### GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLIES from 1 to 12 feet high. G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

The American Nursery, Windham, near Bagshot, Surrey, about six miles from Slimes Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.



## FRUIT TREES.

**ALEXANDER PONTEY**, Plymouth Nursery, begs to inform the public that he has a large stock of Fruit Trees, of all sizes, and the most approved kinds. He particularly recommends his Pears on Quince Stocks in a full bearing state. The Nursery abounds with Pears on the stocks, both standard and dwarf trained. His stock of Standard and Dwarf-trained Peaches and Nectarines growing against high walls are very fine this season.

He takes this opportunity of informing Fruit-growers that he has Fruit Trees in Pots, suitable for Orchard Houses, consisting of the most approved kinds for forcing.

Plymouth Nursery, Plymouth.—Oct. 29, 1853.

## FORRES NURSERIES.

**TRUE NATIVE SCOTCH PINE PLANTS, &c.**—The Subscribers have for Sale an extensive Stock of Forest, Fruit, and Ornamental Plants, &c. As great care has been bestowed in raising the different kinds from the most approved varieties of their species, the Plants are healthy and of fine quality. The Subscribers have had the honour to receive the numerous Premiums hitherto awarded by the Highland and Agricultural Society of Scotland, for the cultivation of the TRUE NATIVE HIGHLAND PINE; and their present stock of this tree and of Larch amounts to several millions of Plants, of every age and size, suitable for transplanting. The Seedlings are raised with roots extremely fibrous and bushy, which tend greatly to the safe removal of the Plants. For the cultivation of Foreign Pines from seed, the Highland Society's premium was also awarded; and the present stock of Deodars is extensive and cheap. The Flower department comprehends a fine stock of flowering *AQUILEGIA GLANDULOSA* Plants, such as that for which the Subscribers received the honorary award of the Royal Caledonian Horticultural Society, at the Exhibition at Edinburgh in May last. Priced Lists will be forwarded on application, and the Trade supplied at the wholesale rate.

GOODS are carefully packed; and, in forwarding Plants, &c., every information required will be readily afforded regarding their mode of treatment; and, to those who may desire it, advice will be furnished respecting the formation or management of Plantations by Mr. GRIGOR, author of the Highland and Agricultural Society's first Prize Essays "On Raising Forest Plants," "On Forest Planting, and on Trees adapted to various Soils and Situations," "On Raising and Managing Hedges," "On Forest Pruning," "On the Native Pine Forests of Scotland," "On Planting within the Influence of the Sea," and on various other subjects connected with arboriculture.

JOHN GRIGOR & Co., Nurseries, Forres, N.B.

**THE PERPETUAL TREE VIOLET, OR VIOLA ARBOREA**: large plants, 6s. per doz.; smaller, 3s. per doz. **DOUBLE WHITE TREE VIOLET**: large plants, 6s. per doz. **THE RUSSIAN SUPERB VIOLET**: plants 3s. per dozen.

\*A Treatise on the Violet, post free for 12-stamps. **OTHELLO CLOVE CARNATION**, 2s. 6d. per pair. **PURE WHITE CLOVE CARNATION**, 1s. 6d. per pair. **NEW CLOVE "PRINCE OF WALES"**, 2s. 6d. per pair. **GIANT SCARLET BROMPTON STOCK**, 6d. per doz.; 4s. per 100. **SWEET-WILLIAMS**, 6d. per doz., 4s. per 100. **SEEDLING ANTIKIRRHINUMS**, 1s. per doz.; 6s. per 100.

One dozen of each of the Violets, one pair of each of the Clove Carnations, and one dozen of each of the Brompton Stocks and Sweet Williams, with a Treatise on the Violet, will be sent, hamper and package free, for 1l.

For descriptions and further particulars of the above, see *Gardeners' Chronicle* for Oct. 15.—The Violets and Cloves will be sent postage free; the other varieties hamper and package free. On receipt of a Post-office order or penny postage stamps, the whole or any part of the above will be sent.—**EDWARD TILLY**, Nurseryman, Seedsmen, and Florist, 14, Abbey Church Yard, Bath.

## KNAP HILL NURSERY, WOKING, SURREY.

**WATERER AND GODFREY**, Nephews and Successors to the late HENRY WATERER, respectfully invite the attention of parties engaged in planting to the following list:

*Araucaria imbricata*, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

*Cryptomeria japonica*, 2, 3, 4, 5, 6, and 8 feet.

*Cedrus Deodara*, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

*Cedar of Lebanon*, 2, 3, 4, 5, 6, 7, and 10 feet. These large Cedars of Lebanon are also very handsome trees.

*Cupressus macrocarpa*, or *Lambertiana*, 2, 3, 4, 5, 6, and 8 feet, all from seed.

" *Goveniana*, 2 to 3 and 4 feet.

" *Funebris*, 2 and 3 feet.

" *thyoides variegata*, 2, 3, and 4 feet.

The *Variegated White Cedar*, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

*Juniperus Bedfordiana*, fine plants, 3, 4, and 5 feet.

" *Chinese*, 2, 3, 4, 5, 6, 8, and 10 feet.

" *repandus*, 3, 4, 5, to 8 feet.

" *Upright Irish*, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.

" *Virginiana*, the Red Cedar, 4, 5, 6, and 8 feet.

" *Taxodium sempervirens*, 2, 3, 4, 5, and 7 feet.

" *Yew*, common, 3, 4, 5, to 8 feet high.

" *Irish*, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.

" *Gold Striped*, 1, 2, and 3 feet.

" *do.* worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

" *elegantissima* (new striped), standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.

" *Dovaston*, or *Weeping Yew*, fine standards.

" *Pinus Douglasii*, 3, 4, 5, and 7 feet; a few magnificent plants, 10 to 12 feet high.

" *insignis*, 2, 3, 4, 5, 6, and 7 feet; all from seed.

" *Canadensis* (Hemlock Spruce), 3, 4, and 6 feet.

" *morinda*, 3, 4, and 6 feet.

" *Menziesii*, 3, 4, 6, and 8 feet.

" *cephalensis*, 3 to 4 feet.

" *Pinus*, large and handsome, 3 and 4 feet.

" *Nordmanniana*, fine seed, 11 foot; a few larger, 2 feet.

" *nobilis*, stout plants, with perfect heads, about 13 foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

" *Thuja* *Arborescens*, American, 3 to 6 feet. We recommend this plant for hedges.

" *Weareana*, 3 to 6 feet, one of the few really hardy and most useful evergreens.

" *aurea*. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

*Libocedrus chilensis*, 11, 2, and 3 feet. This is a very distinct and beautiful plant of recent introduction. Our stock is large and good. Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

## GERMAN SEEDS FOR 1854.

**MESSRS. PLATZ AND SON**, SEED GROWERS, Erfurt, Prussia, intimate that their Catalogue of Flower and Vegetable Seeds, may be had on application to their agent, Mr. ROBERT KENNEDY, Bedford Conservatory, Covent Garden.

**H. LANE AND SON**, The Nurseries, Great Berk-hampstead, Herts, having a very large Stock of EVER-GREEN TREES and SHRUBS suitable for immediate effect in making New Plantations, Avenues, &c., every plant forming a specimen, they have selected, as a more ready guide, the following, the different varieties of which will be found under their respective heads, in Catalogue of Trees and Shrubs, which may be had on application for the same, by enclosing two postage stamps; also the General Rose Catalogue for two ditto; Fruit, two ditto; *Azalea*, *Camellia*, and *Hollyhock* for one ditto.

*Arborescens*, *Arbutus*, *Araucaria imbricata*, *Cedrus Deodara* and *Lebanon*, *Cryptomeria japonica*, *Cypress*, *Holly* (green and variegated), *Juniper virginiana*, or *Red Cedar* (splendid plants); *Kalmia latifolia*, *Laurel*, common and *Portugali* (fine), *Phillyrea*, *ilicifolia*, *Pinus Cembra*, *excelsa*, *insignis* (fine), *Pinaster*, *Weymouth*; *Abies Douglasii*, *Hemlock Spruce*, *Khatrow*, *morinda* or *Smithii*, *Menziesii*, *Spruce*; *Rhododendron*, *Taxodium sempervirens*, *Yew*, common and *Irish*.

**WILLIAM FAIRBEARD**, Mount Pleasant Nursery, Green Street, Sittingbourne, Kent, begs to inform the Trade that he intends to send out this season his new Dwarf Early White Wrinkle Marrow Pea, called FAIRBEARD'S NON-PAREIL. This Pea is some days earlier than my Champion of England Pea, and very prolific; height 3 feet. It is not like the Wrinkle Pea generally, it carries but little foliage.

This Pea WILLIAM FAIRBEARD can confidently recommend as being a first-rate one, and can be supplied by the following Seedsmen: Mr. Epps, Maidstone; Mr. Thomas Bunyard, Maidstone; Mr. Duncas, Hairs, St. Martin's Lane, London; Mr. W. G. Waite, 181, High Holborn; Messrs. Hurst & Muller, Leadenhall Street; Messrs. Batt, Rutley, & Silverlock, Strand, London; Messrs. John Sutton & Sons, Reading, Berkshire; Mr. Skirving, Liverpool; Messrs. Veitch & Son, 54, High Street, Exeter; Messrs. William Rendle & Co., Seedsmen, Plymouth.

N.B. W. F. has a few bushels more to offer the Trade.

## SHEET GLASS AND ROUGH PLATE GLASS.

**THOMAS MILLINGTON** begs attention to his present prices of SHEET GLASS, per 100 feet:—

6 by 4, and not exceeding 84 by 63 ... 14s. 6d. Package 9 by 7, " 124 by 94 ... 17s. 3d. included.

12 by 10, " 24 by 14 ... 20s. 6d. included. **HARTLEY'S PATENT** and other ROUGH PLATE, from one-eighth to 1 inch in thickness; Striking and Bee Glasses, Fern Shades, Hyacinth and Root Glasses, Cucumber Tubes, Milk Pans, Preserve Jars; genuine White Lead, Linseed-oil, Colour, Putty, Brushes, and every article required in this branch for Horticultural purposes. For List of Prices, see first Saturday in the month.—Warehouse, 37, Bishopsgate Street Without, same side as Eastern Counties Railway.

## GLASS FOR CONSERVATORIES, ETC.

**HETLEY AND CO.** supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE THICK CROWN GLASS, GLASS TILES AND SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London. See *Gardeners' Chronicle* first Saturday in each month.

## GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

**JAMES PHILLIPS** and Co. have the pleasure to hand their present prices of Glass for Cash:—

**SHEET SQUARES.** In Boxes of 100 feet. **CROWN SQUARES.** In Boxes of 100 feet.

Under 6 by 4 ... £ s. d. 6 by 4, and 64 by 44 ... 0 13 0 7 " 5, " 74 " 54 ... 0 15 0 8 " 6, " 84 " 64 ... 1 0 0 9 " 7, " 10 " 8, 12 by 9, 12 by 10, 14 by 10 ... 1 0 0

Larger Sizes, not exceeding 40 inches long. 16 oz. from 3d. to 3d. per square foot, according to size.

21 oz. " 3d. to 5d. " " " 26 oz. " 3d. to 7d. " " " "

Squares for Orchard Houses, on Mr. Rivers' plan, 20 by 15, 20 by 14, 20 by 13, and 20 by 12 always on hand. Cases of Sheet-Glass about 40 by 30, 16 oz. to the foot, 2s. per Case of 200 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Cies and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

## TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, &amp; SANITARY WORKS.

**PATENT GLASS TUBES**, Iron Coated with Glass, Gutta Percha, Combined ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

**FREEMAN ROE**, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

## WATERPROOF PATHS.

**THOSE** who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade; and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

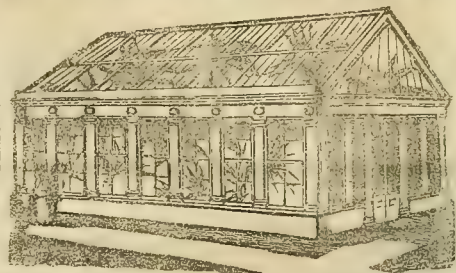
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

## HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON**, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

**GREEN AND HOT-HOUSES** made by machinery, at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. 14-inch Greenhouse Lights, at 3d. per foot; 2-inch, at 4d. per foot. The Trade and Merchants sending Sashes to Australia supplied at wholesale prices. List of Prices by enclosing two postage stamps.

## HORTICULTURE IN ALL ITS BRANCHES.



**J. WEEKS & Co.**, King's Road, Chelsea,



## HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.

**SIR WILLIAM BURNETT'S DISINFECTING FLUID**—THE BEST CONCENTRATED "CHLORIDE OF ZINC"—GREAT REDUCTION OF PRICE.—The merits of this Fluid, invented by Sir W. BURNETT, M.D., F.R.S., &c., &c., for the Disinfection of Sick Rooms, Clothing, Linen, &c.; for the Prevention of Contagion, the Preservation of Animal Matter from Putrescence, the Purification of Bilge-water, Cesspools, Drains, Water-closets, &c., are now so well known to the public as to render comment unnecessary.

Sold at the Office, 13, Cannon Street, City, London; and by Chemists, Shipping Agents, and others throughout the United Kingdom, in imperial quart bottles at 2s. 6d.; in pints at 1s. 3d.; in half-pints at 9d.; and in bulk at 6s. per gallon.

CAUTION.—Beware of Imitations.—The only genuine Disinfecting Fluid is sealed over the cork with the inscription, "Sir Wm. BURNETT'S Disinfecting Fluid," and accompanied with numerous testimonials of the highest order, and instructions for its use.

**CARSON'S ORIGINAL ANTI-CORROSION PAINT**, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.







by some chance, find their way to the spores of another—which seems to be all that is required to secure hybridisation.

This operation upon Ferns resolves itself, then, into a mere question of how the seeds can best be raised after they shall have been mixed by the gardener; and upon that point we cannot give better advice than the following, taken from the second edition of Mr. Moore's "Handbook of British Ferns," in which will also be found woodcuts representing the phenomena of their fertilisation, as it is now understood.

"The conditions chiefly necessary for the germination of Fern spores are, sufficient heat and abundant moisture; that is to say, a calm moist atmosphere, accompanied by the degree of heat proper to the species. Those which inhabit cold climes require only a close cold frame; the species of temperate regions are best reared beneath a hand-glass in a greenhouse; and the tropical species should be placed in a hothouse. A convenient way of managing them is the following:—Half-fill some shallow wide-mouthed pots with broken crocks, and on this put a layer of about 2 inches of turfy peat soil and mellow loam, mixed with soft sandstone, broken in small lumps of the size of Peas; this compost should not be much consolidated. Next, shake or brush very gently over a sheet of white paper a frond of the species to be propagated; the fine brown dust thus liberated consists of the spores, in greater or less quantity, intermixed more or less with the spore cases. This dust is to be regularly and thinly scattered over the rough surface of the soil, which is immediately to be covered with a bell-glass, large enough to fit down close within the pot. The pots are at once to be set in feeders, and these are to be filled up with water; they may either be placed under a hand-glass in a cold frame, or in a greenhouse or stove, as may be most proper. The first indications of germination will consist in the appearance of little semi-transparent green scales. The supply of water must be kept up, and the glasses kept over the young plants. When two or three fronds are developed, the glasses should be tilted on one side for a short time every day, and ultimately entirely removed, the pots still being retained under a hand-glass. After a week or two they may be taken up, carefully separated, and potted singly in small pots. The young plants should still be kept under a hand-glass until established, and then gradually inured to the degree of exposure proper for the mature plants. Fern spores spring up in myriads on the surface of the soil, or on any undisturbed continually moist surface, about the growing plants, from which they are dispersed as they ripen on the fronds. In hothouses this is so much the case that they sometimes become troublesome weeds."

If the explanations which have been given by TRÉCUL, HARTIG, and others, of the formation of the wood and young bark be correct, it follows that the notion so strongly maintained by GAUDICHAUD of the descent of woody fibres from the buds cannot be true. As, however, active vegetation certainly has a downward course, and there is some relation between the growth of the plant and the number of the leaves, it may be received as an apt illustration, though care must be taken not to push it beyond its proper limits as such.

M. HARTIG adopted the following mode of ascertaining what the relation between the produce of wood and the number of leaves really was. A vigorous Pine tree, 50 feet high, and 12 inches thick, was deprived of its branches to the very summit, so that it retained no more leaves than a plant of four or five years old. Four feet above the ground the following measurements were obtained. The year before the removal of the branches 85-90 cross sections of cells appeared in the radius, but in the year of the experiment only 47.

1 year after,	7
2	6
3	5
4	4.5
5	3.4
6	4.5
7	7.8
8	11.12

Since the cross sections of the individual woody fibres were equally broad during the whole course of the experiment, the figures give the proportion of the rings. The eight last rings measure together only the half of that which was formed immediately before the experiment.

The following conclusions arise from this experiment:—

1. The dependence of the mass produced on the number and activity of the leaves.
2. The increase, even in Conifers, where no notable quantity of starch is present, from matter already stored up in the plant. For though, from

the time of pruning, the number of leaves was constantly increasing, the growth was at its minimum in the fifth year; therefore, the comparatively larger growth of former years must have depended on the perpetual consumption of stores already deposited.

3. The insufficiency of the matters already stored up for the normal completion even of the first year's ring.

4. It is worthy of remark, then, in a ring only three cells broad, the individual cells were unaltered in form and size, and distinguished only by the smaller thickness of their walls; and that, moreover, the difference between cylindrical and compressed cells was strictly maintained, in consequence of which alone the rings could be accurately measured.

M. HARTIG closes his interesting paper with a few words on the materials out of which the increase takes place. The sap elaborated in the leaves in its course downwards undergoes various changes according to the particular plant, or part of it which it traverses; for the greater portion is stored up as fecula and proteine matters in the pith and medullary rays, in the parenchymatous woody cells and green bark, and in *Robinia pseudacacia* in the single-chambered woody fibre, but more especially in the roots. These magazines remain untouched till the following spring, when by a process analogous to germination their contents are changed to formative sap, including more or less sugar and mucilage. The dissolution of the fecula in the ascending sap is very slow. Besides, the sap does not ascend through the feculiferous organs, but along the woody fibres, and can therefore only acquire its sugar, mucilage, and gum in exchange as it passes by. And this will probably account for its not attaining the necessary strength for the promotion of vegetation till it reaches the summit. The new growth commences, therefore, at the buds and passes downwards; and the descending sap makes its way by the large canals of the wood and cribbled pores of the bast, and from these to the medullary rays, from whence it passes to the point of renovation of wood and liber.

The growth not only of the inmost tissues, but of the leaves and shoots, depends mainly on the stores laid up in the preceding year. M. J. B.

#### PRUNING NEWLY-PLANTED FRUIT TREES.

Of late years many amateurs and gardeners have adopted the method of not pruning fruit trees during the same year in which they are planted, thinking that by leaving them entire the trees will take better root, and produce more vigorous shoots. Some are in favour of this system, others are opposed to it, yet the comparative merit of the proceeding itself is little known, and in general the public is not informed of the good or bad consequences of its adoption, no one to my knowledge having published the results of experiments made with regard to this subject.

The *Revue Horticole* (16th April, 1851), has treated on this question at some length, in an article more theoretical than practical. The writer, relying on the principles of vegetable physiology, concludes that the young fruit tree should not be entirely cut back at the time it is planted, but that nevertheless all its branches should not be retained; that the removal of the young trees having shortened the roots, part of the branches should also be taken off, in order to re-establish an equilibrium.

I intend giving some details on this mode of planting, and on the effects of the first pruning, such as I observed at a nurseryman's at Montlignon.

Young Apple and Pear trees, especially the latter, when they come from the nurseries, are, for the most part, without branches lower than 20 inches from the ground; or, if they have any, they are weak or badly-formed twigs, and not bearing a proper relation to the vigour of the upper branches. They have been once pruned to the length of 4 inches; but, not having been well trained in their youth, they take their natural tendency, which is to grow almost vertically, forming an acute angle with the stem. Those who wish to form a well-shaped tree *en pyramide*, or *en palmette* (horizontally trained), with a stock prepared in this way, are obliged to cut off the lower branches, as these are no longer sufficiently flexible to take the desired direction; for, in a properly-formed pyramid, the branches forming the first tier should extend horizontally from the stem. This is doubtless the reason why we feel the necessity of pruning on another principle. As, in the ordinary mode, the trees remain about 15 months in the same state as they were planted, they require no particular attention, but a mulching of litter in spring is always beneficial. Towards the month of March twelve months, or about 15 months after planting the tree, the latter is not pruned in the usual way, but all its branches are cut off almost close to the trunk, which is itself cut down to the height of 12 or 14 inches from the ground. The tree in this state appears like a small stake fixed in the earth. Vegetation commences in May, and two, three, and sometimes four eyes break out round the sections where the branches were cut off. When the young shoots from these eyes are 3 or 4 inches long, five or six of those which are at the best distance are chosen to form the first tier of branches. The other young shoots are not pinched, but are completely taken

off, in order that all the sap may go to the benefit of those retained, as well as to increase the growth of the leading shoot of the stem. The young branches are kept tied all the summer in the direction they are intended to take. A rod a foot longer than the stem is fastened to it, and serves to keep it in a vertical direction while growing, which is essential to the proper formation of the tree. About the month of August it becomes necessary to pinch the branches that have a tendency to grow too strong, with the view of strengthening the weaker ones, or even the stem itself. This is the way in which I treated this year 500 Pear trees grafted on Quince stocks intended to be formed into pyramids, and the same number of Paradise stocks; both kinds were planted in November, 1850. At the time I write the result is very satisfactory. All the trees have not grown equally well; in whatever mode trees are grown there are always some which make less vigorous shoots than others, but in this case the majority have made fine healthy vigorous shoots, from 16 inches to 3 feet in length, and even more; they are regularly placed round the stem, following nearly a horizontal direction, and are without knots or wounds resulting from former prunings. I can now prune these branches as well as the upright leader, to 10 or 12 inches in length.

It is objected against this system that it involves the delay of a year. This is doubtless the case in the starting of the young tree; but if we calculate on the first four years, I am convinced that it is fully compensated. In the subsequent management of the trees we lose no time in trying to divert the sap from the upper branches into the lower, or in making annular incisions in order to cause dormant eyes to start. Attention is chiefly necessary to maintain a balance between the parts of the tree by means of pinching the shoots that are growing too vigorously, and by encouraging those that are weak. A tree thus managed may fruit in the fourth year. For instance, a Pear tree planted in the autumn of 1850, and pruned in March, 1852, would have formed its wood branches in the summer of that same year, 1852. Being cut back in March, 1853, to 10 or 12 inches in length, the tree would in the following summer form its fruit buds at the base of the branches, and might bear its first fruit in 1854.

In the ordinary method the fruit shows itself earlier, but of what importance can the fruit of the first four years be? Is four years too long a time to wait when we wish to establish a good tree capable of bearing for 20 or 30 years? One who is really an amateur will not regard this delay when he can obtain well formed and vigorous trees which will afford him satisfaction, and amply remunerate him for time supposed to have been lost.

The author of the article which I have previously quoted affirms that a tree should not be completely cut back at the time of planting. I can support his opinion by a fact. The trees of which I have just spoken were planted by my predecessor, one not very favourable to the new mode of operation. He pruned here and there 25 Pear trees; these attracted my attention when I arrived. I immediately thought that they might be made subjects of experiment. I cut off the branches of these trees close to the stem, and headed back the stem itself to 2 feet high. I obtained some shoots a foot long, but at the following pruning I could make no use of them, for the stems having been pruned too high, and shoots having only pushed immediately below the sections, the lower parts remained naked. But it is more especially on the roots of trees that the effects of this immediate pruning with reference to planting was remarkable. This I had the opportunity of observing. A change which I made last winter obliged me to lift a row of 22 trees, four of which had been pruned. I found that the unpruned trees had formed such a mass of fibrous roots that a tree with its ball was a sufficient load for a man. Two of the four trees pruned when planted had made branches; the two others had only made spurs, and the roots had not progressed at all, not a piece of earth was hanging to them. This fact was witnessed by the proprietor and two workmen, all of whom were greatly astonished. I will here point out another question which appears worthy of investigation. When a tree is planted without being pruned in any way for the first year, it makes but little wood; its eyes produce leaves only; nearly all the buds form for fruit. Nevertheless, when the August sap mounts towards the extremities of the branches the upper eyes become shoots from 4 to 6 inches long. If instead of leaving them entirely unpruned, when planted, a third or a half of each branch were cut off, the number of eyes being decreased, those nearest the extremities of the parts of the branches left would produce shoots capable of encouraging the growth of roots. This year I planted 360 Pear trees intended to be grown *en pyramide* and *en palmette*, that is, trained horizontally. I purpose pruning every other one on planting, and leaving the rest unpruned. The following year, that is to say, in March 1854, they will all undergo the complete cutting back of which I have spoken above. I earnestly advise amateurs given to the attractive culture of fruit trees, as well as my brother gardeners, to endeavour to settle this interesting question by direct experiment. Nothing would be easier; for there are few gardeners who have not to plant some fruit trees every year. The number of trees experimented on is of little consequence, provided that care were taken in experimenting. Forty persons making the experiment in different parts of the country, under various conditions of soil and climate, and communicating the results, would enable



us to make a conclusive summary of facts and opinions. Two or three years' perseverance in this way would make known the best mode of operating.

I will mention, in conclusion, that of late years many new forms of training fruit-trees, and especially the Pear, have been invented. All these forms, the merit of which often consists in their novelty, require much attention and loss of time. And yet, what can be more easily managed, what can be so agreeable to the view, and at the same time what so productive, as a well-managed Pear tree, *en palmette* or *en pyramide*? Let us endeavour to find a good method of planting; let us improve our practice in pruning, disbudding, and pinching, and under its old forms the Pear tree will yield fine fruit in abundance. *Jussieu*, in *Revue Horticole*.

#### MANAGEMENT OF CIDER APPLE TREES.

(Continued from page 661.)

**Choice, Removal, and Preparation of the Trees.**—Everything having been prepared, and the proper period having arrived, which is the fall of the leaves, or from about the middle of November to the middle of December, we select from the nursery the trees which have the strongest stems, and such are generally those planted near the outside, as they enjoy more air and light than the others. When trees grafted at standard height are selected, it is necessary that the grafts should have had at least two years' growth, because if only one year had been allowed to elapse since grafting, the cut on the stock would not be completely healed, and transplantation would retard its cicatrization.

We need not be particular as to whether the tree has been grafted low or high, each system has its merit. The tree grafted low has generally a straighter and finer stem, but there are some good varieties, such as the Bedane, and the Marin-onfroy, which are unfitted for forming fine stems, and then it is expedient to graft them at standard height. Some prefer planting stocks in the places where trees are intended to be, and grafting them afterwards. The only reason for this preference must be that they desire to possess certain varieties, in the identity of which they fear to be deceived if they bought them, and which could not be grafted for want of a rearing nursery. Planting stocks retards bearing for two or three years at least; and if some of the grafts do not take, a loss of regularity is the consequence.

The size of trees for planting varies with the locality and other circumstances, such as the space the trees should occupy, &c. But in general the stem of an Apple tree at a yard from the ground should not be less than  $4\frac{1}{2}$  inches nor more than 8 inches in circumference. Six feet and a half is a sufficient height in nearly level ground, but 8 to 16 inches more are requisite in sloping ground, in order that cattle standing on the higher side may not seize the branches.

It would prove advantageous to transplant in calm and cloudy weather, for under these circumstances the roots would not be so much dried up.

In taking up a tree, a deep trench must be dug on each side of it, in the same direction as the rows; the roots are then completely uncovered by removing the soil that still remains between them, care being taken in so doing not to wound them. After having a second time cleared the trenches on each side, the stem is moved, first to one side, then to the other, in order to find out the roots that occasion the greatest resistance. When we endeavour to raise the tree from the soil with our hands, we should not do so by sudden jerks, but by a fair pull, stopping whenever a root threatens to break. Each root must then be pulled out separately by hand, and those that we cannot entirely extricate must be cut with the pruning knife or spade at as great a length as possible.

The tree being taken up, the leaves, if any remain, must be immediately taken off; we next proceed to remove all useless or badly placed branches, and all mutilated roots by a clean sloping cut on the under side.

**Placing the Tree according to its former Aspect.**—It is in general advisable in planting to place the sides of the tree in the same position with respect to the four cardinal points as they were previous to removal, especially if the trees have a young and tender bark; for by so doing we avoid the injurious effects of sun-strokes. In planting Firs and other resinous trees we usually expose the same side to the sun as before; and there is no reason why we should not use the same precautions in planting fruit trees, the stems of which are not protected from the sun's rays by any branches. If this precaution is not absolutely indispensable, yet it is frequently useful, and cannot in any case be injurious. In order to know the side of a tree which faced the south, for example, and to be able to replace it in the same position, it is sufficient to mark it previous to removal by the knot of an Osier or by some small mark on the bark. The only circumstance which may prevent the trees being thus planted is when, in making a plantation in lines, we have to employ trees with stems not quite straight. It then becomes necessary for the linear view to place the bend of the stem in the direction of the principal line.

The tree ought to be planted immediately after it is taken up, in order that its roots, adapted to live constantly in the bosom of the earth, may be exposed as little as possible to the air, the direct and prolonged action of which must prove injurious to them.

The hole being sufficiently filled according to the nature of the substance, and with reference to the size of the roots of the tree, we place the latter upright in the place which it ought to occupy, and a man holding

it there with one hand, with the other he extends the roots in the proper direction, whilst one or two assistants throw over them a covering of the best and finest soil. If we suspect cavities among the different stages of roots, we may make the earth fall closer in by shaking the tree a little, without however displacing it.

All the roots being covered with soil to the depth of some inches, we may then put on a layer of Furze, Fern, or old thatch, which will tend to lighten and ameliorate the soil, and to prevent the effects of drought; then with the rest of the soil thrown out of the hole we form a mound round the bottom of the tree. Treading to firm the soil after planting ought only to be done when the soil is rather dry than moist.

**Mounding.**—The mound of earth which is raised about the stem of the recently planted tree is intended to protect it from various accidents, such as being uprooted by the wind, &c.

These mounds are nearly always the same size as that of the hole; they are either round or elliptical. In tilled ground they are in the form of an ellipsis, or long oval, running in the same direction as the furrows, in order that the plough may approach the tree as near as possible, so that there may be less ground to be dug; everywhere else they are round. Their surface should be concave in light and dry soils, in order that the roots of the tree may get as much rain as possible. In soils that are naturally wet they are made convex, with a circular gutter outside the edge of the hole, so that the water may be carried off beyond where the roots are.

In ordinary good soils, where we need not fear superabundance of water, the tops of the mounds are flat. Lastly, in rapid declivities, where there is danger of drought, a semi-circular mound, concave on the top, should be formed on the lower side; the rain-water is brought from the higher ground by two little gutters like a V, and uniting at the foot of each tree.

(To be continued.)

#### ENTOMOLOGY.

##### NEW AFRICAN SILK INSECT.

DURING the month of July last I was favoured with a communication (through the kind intervention of Sir William Hooker) from the Rev. Henry Venn, accompanying a series of specimens of a new kind of silk in various stages of production, which appears sufficiently interesting to merit the attention not only of the entomologists but of the silk manufacturers of this country. It has been received by Mr. Venn from tropical Western Africa, and is described as a kind of wild silk extensively used in the manufactures by the natives. It was communicated by a native negro who received a few months' instruction in this country, including medical teaching, and who is now practising with success in his native town (Abbeokuta), about 60 miles



north of Lagos, in the Bight of Benin. His father is an ordained missionary in the same place.

The specimens forwarded comprised a large mass of cocoons, evidently several hundred in number, closely packed together in an irregular manner, and covered over with a thick flossy envelope. The entire mass is at least as large as a man's double fist. This is represented in the accompanying woodcut as of a very reduced size, and partially cut open, to show the cocoons, and it will be seen that it is suspended from a thin twig. On opening some of the cocoons the chrysalids of the moths were found dead, together of course with the cast skin of the caterpillar; the latter had evidently been slightly clothed with short hairs, and the surface of the body seemed to be furnished with several whitish elongated fleshy appendages, but the desiccated state of the very slender skins of the caterpillars will not allow a more precise description of the insect in that state to be made. One of the cocoons is also represented in the woodcut cut open, with the chrysalis removed, both of the natural size. The chrysalis itself is short and thick, and is represented of the natural size in fig. x, and magnified and lying upon its back in fig. †. This figure represents the chrysalis of the male insect; that of the female is rather larger and thicker in the lower part of the body, which is represented in figure ‡, which shows the difference that exists between the male and female chrysalis in this respect. The male is also distinguished by having the antennae cases somewhat thicker, and with a slight appearance of serration on the inner side, but without any of the appearance of the broad

pectinations which exist in the pupæ of the male Saturniæ, with broadly-feathered antennæ. The chrysalids are of a rich chestnut-colour, and some which were evidently approaching the perfect state presented several dark streaks in the middle and at the end of the wing cases. Hence we learn that the perfect insect is a moth, smaller than that of the common silk-worm, that it has wings striped with a dark colour; and that there is but very little difference externally to be perceived between the males and females.

The close juxtaposition of the cocoons renders it evident that the silk cannot possibly be wound off like that of the common silk cocoon, but that it must be carded like wool. Of course, also, the caterpillars are social in their habits; but it seems inevitable, that as the mass of cocoons comprises the whole family, the destruction of the whole must take place (like the taking of a hive of bees by the old plan of sulphur), and the future supply must be looked to from one or more colonies left untouched. It is not easy to predict the family of moths to which this species belongs; but the size of the body removes it from that which contains the only known species (*Ilithya sociella*), which possesses a similar habit of spinning its cocoons in a closely packed mass. The latter insect is a native of this country, of by no means common occurrence, so that although it would afford a supply of silk, if treated in the same manner as the African insect, yet its comparative rarity and obscure habits would prevent its application to economic purposes. I see no reason, however, why the large rough cocoons of many other of our Lepidoptera might not be similarly treated.

The mass of cocoons was accompanied by specimens of the silk prepared, in its first and second stages, and by a piece of the article in its manufactured state, mixed with cotton. They have a much less silky feel to the touch than ordinary silk, and the article, as manufactured, is extremely strong, as may be judged by the circumstance that a sporting friend who has seen it has been very desirous to have a piece manufactured into a shooting jacket. With the specimen was also forwarded some "red cotton," as it is called by the native Africans, and which is brought in large quantities from the interior, and only in the dyed state. It has been pronounced by an eminent silk broker to be the production of the silk-worm, and to have been spun by worms fed on mulberry. This texture appears very similar to that of the finer specimens of raw silk described above. We need scarcely allude to the commercial interest of this fresh material for textile purposes, whilst, entomologically (if I am correct as to the mode in which the silk is obtained) the discovery is of interest, as being the only known instance of the use of carding applied to rough cocoons.

Further information on various points of the economy of the insect, &c., are required, with which we hope shortly to be furnished. J. O. W.

#### BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Continued from p. 677.)

**SECTION G: MECHANICAL SCIENCE.**—*Report of the Committee appointed in 1852 to prepare a memorial to the Hon. East India Company, on the Means of Cooling Air in Tropical Climates, by W. J. MACQUORN RANKINE.*—In the absence of Mr. Rankine, one of the secretaries read the report, which was founded on experiments with apparatus invented by Professor Smyth, described by him at a previous meeting of the Association. The principle of the invention consists in cooling the air by expansion. The air at the temperature of the atmosphere is first compressed in a bell receiver, and the heat generated by this compression is lowered by passing the air through a number of tubes immersed in water, by which means it acquires in its compressed state the normal temperature of the atmosphere—say 90° of Fahrenheit. The air then passes into another inverted bell receiver, where it is expanded to the ordinary pressure of the atmosphere, and during this expansion it absorbs so much heat that the temperature is reduced to 60°. It is then admitted into the room to be ventilated. The compression of the air during the experiments in the first cylinder was equal to  $3\frac{2}{3}$  inches of mercury per square inch above the pressure of the atmosphere, and the refrigerator exposed a cooling surface of 1100 square feet, which was considered sufficient to reduce the temperature of the air in passing through the tubes to that of the atmosphere, viz., 90°. The report stated that by means of this apparatus 66,000 cubic feet of air per hour might be cooled from 90° to 60°, by a steam-engine of one horse power, which is required to raise and depress the bell receiver. The advantage of cooling the air by mechanical means instead of by evaporation was stated to be, the avoidance of aqueous vapour, with which the air is injuriously charged by the evaporating process.

(To be continued.)

#### TESTIMONIAL TO MR. W. B. BOOTH.

We insert the following particulars, that have been sent us by a correspondent, relative to a testimonial which has recently been presented to Mr. Booth, the evening of whose life, we are happy to say, will now be passed in the ease and comfort which his long services in the cause of horticulture have so richly earned.

Mr. Booth's name is not unknown to the public, although it is more particularly associated with the west of England, where he has resided since 1830, and officiated as land-steward and general superintendent for Sir Charles Lemon, Bart., M.P., at Carlew,



Cornwall. Having lately resigned that appointment and retired to spend the evening of his life in the neighbourhood of London, a few of his Cornish friends availed themselves of the opportunity to testify their esteem for him by presenting him with a valuable silver salver, of beautiful workmanship, on which is engraved the following inscription:—Presented by the tenants and workmen of Sir Charles Lemon, Bart., residing in the parish of Mylor, Cornwall, to William Beattie Booth, Esq., on his leaving Carclew, as a small but sincere token of their regard and esteem. August, 1853."

Although the tenants and workmen happen to be the only parties named as the donors of the gift, we have reason to know that several influential gentlemen in the neighbourhood honoured Mr. Booth by becoming subscribers, as well as the principal tradesmen with whom he had intercourse. The following is the letter which was forwarded to Mr. Booth on the part of the subscribers:—

Dear Sir,—The subscribers sincerely regret that the testimonial could not have been presented in person, but unforeseen circumstances over which they had no control prevented them from having that satisfaction. They have great pleasure in deputed Mr. J. Rundle to present it, trusting that you will receive it as a free-will offering; and heartily pray that you, with your amiable partner, may live many years and enjoy that esteem and respect from those with whom you mingle, as you did during the 23 years' residence with them, where the remembrance of your kindness as a master and behaviour as a gentleman will not be easily erased.—Believe us, dear sir, your most hearty well-wishers, for the subscribers,

W. B. Booth, Esq., Ealing Park.

The following is Mr. Booth's reply:—

Ealing Park, Oct. 11, 1853.  
My dear Sir,—I had yesterday the pleasure of safely receiving the very handsome piece of plate that Mr. Rundle was deputed to present to me from my friends in Cornwall; and I have also to acknowledge your letter having reference to it, and on the part of the subscribers conveying to me their good wishes. I assure you I feel very much indebted to them for their kindness, and exceedingly gratified to think they should have considered me worthy of such a free-will offering. As you have taken a good deal of interest in the matter, I address this communication to you, in the hope that you will do me the favour to convey to those who have shown their regard for me, my sincere acknowledgments and most grateful thanks for the valuable gift with which they have been pleased to honour me. It is, indeed, a rare occurrence for an individual in my position to receive such a gratifying mark of respect. On this account I think I have the greater reason to be proud of it, and I beg you will assure my friends that I prize it most highly; while I look upon it with feelings of pleasure and a lively recollection of the past, I shall ever regard it as a substantial proof that my character and conduct during the 23 years I had the happiness to reside amongst them were such as gained their good opinion and met their approbation. To you and those who know me I need scarcely say that, during the long period I filled the situation I had the honour to hold, I conscientiously endeavoured to discharge my duty, not only with fidelity and zeal for the interests of my employer, but with an ardent desire to perform aright the various duties that devolved on me; and in my retirement I am soled by the pleasing reflection, that in all my transactions I never swerved from what I conceived to be the right line of conduct. With the tradesmen and tenantry I cultivated a good understanding, and I believe all will bear witness that in no instance did I ever demean myself to act an unworthy part to them, nor exact from them any portion of that to which they were justly entitled. While conducting the extensive alterations and improvements that were made at Carclew under my direction, I devoted my best attention so as to have them executed in a proper manner, and with due regard to strict economy. The tenants also well know that, in designing and superintending the erection of the various buildings that were deemed necessary for their accommodation, I studied their comfort and consulted their convenience; and on all occasions when it was in my power, I did my best to assist them. That they appreciated my exertions in their behalf is evident by the compliment now paid me. For the part they have taken in contributing towards it I heartily thank them, and accept it as an ample acknowledgment for any services I may have rendered them; but there are others to whom my sincere thanks are due, and if any one thing more than another could enhance the value of this token of regard in my estimation, it is the fact of the workmen who were so many years under my charge, having liberally contributed towards it, and shown their good feeling for me when I was no longer in a position to be of use to them. An act of this kind under such circumstances requires no comment. It speaks a language not to be mistaken or misunderstood, and tells me that, however others may have been influenced, they, at least, were not so devoid of principle, nor so blinded by prejudice as to be misled, and overlook the great interest I have always taken in their happiness and welfare. On this ground I feel the more deeply indebted to them, and I beg they will "one and all" accept my sincere thanks. Their uniform good conduct, and the respect and attention they invariably paid to my orders have left an impression on my mind that will never be effaced; and they may rest assured that, although far removed from them, I shall never cease to cherish the most ardent wishes for their health and prosperity. Again thanking you and my other kind friends for their good wishes to me and Mrs. Booth, and for their valuable present, which I shall treasure to the latest period of my existence, believe me to be, my dear sir, yours most truly,  
To Mr. John Mitchell, Mylor Bridge. W. B. BOOTH.

### Home Correspondence.

*Breslau Botanic Garden.*—The nature and objects of a botanic garden are but little known or appreciated by the general public; and up to a recent period the directors of such institutions can scarcely be said to have done much to alter this state of things. How unattractive and uninviting such gardens in England were a few years since, and still are on the continent. That this is not wholly an inevitable consequence of a scientific arrangement, is sufficiently shown in those establishments where the formal arrangement of straight beds, set out like the bars of a gridiron, has been replaced by a more tasteful, and as I conceive, a no less utilitarian plan. The arrangement of plants, according either to the Linnean or the natural method, is, it must be confessed, not entirely consistent with those gradations of colour, arrangements of form and other pictorial effects, the production of which constitute the art of the landscape gardener. But if this must to a certain extent be admitted, it is no less true, that until lately, few efforts have been made to render these establishments more ornamental. At Kew, and elsewhere in England, much taste has been shown in combining the elegances of landscape gardening with the requisites of science. It may be urged that the limited extent of some of these gardens will not allow any of the space to be occupied with what is not strictly scientific and useful. Nevertheless, I can but think that these gardens would become more appreciated by the public, their object be more fully attained, and

their sphere of utility enlarged, if they were rendered more attractive and pleasing to the eye; and if so, the space afforded to art to enable it to set off the beauties of Nature to better advantage, ought not to be grudged. On the Continent generally, a crippled state of the funds of the gardener but too frequently impedes the putting into execution any scheme of this kind; indeed, any room that can be spared is often devoted to the growth of nursery stock, by the sale of which the scanty finances of the establishment are increased. It is not from numbers of specimens alone that knowledge is derived; a few well chosen are of more value than a host ill assorted or injudiciously selected. A careful selection of the specimens would do much to give the student enlarged ideas of the value of the characters on which specific or generic distinctions are founded; the necessity for such enlargement of the ideas in botanical matters is sufficiently proved by the numbers of bad species and of synonyms that incumber our botanical works. Such effects are surely in some measure the consequence of a too exclusive attention on the part of the student to the forms which vegetation assumes in the particular locality in which he may happen to be. It would of course be extremely absurd, even were it possible, to discard the study of the botany of one's own country; but it should be studied more in reference to that of other lands, and not, as is too much the case, as if there were no other climes, or as if the same species could not exist in other countries, and under different circumstances from those under which it may happen to be in our own. I have been led to make these remarks by a visit, made in the course of this autumn, to several of the foreign botanic gardens, in company with and through the kindness of Professor Daubeny; and, amongst others, to that of Breslau, which, though unfortunately situate in low swampy ground, with little pretence to landscape gardening, and with meagre funds, presents some features different from any we observed elsewhere. The stoves and greenhouses form no exceptions to those generally met with abroad, being of antiquated build, and not faultless construction; their deficiency in number was partly compensated for by an ample quantity of pits and frames, in which the plants were thriving luxuriantly. Silesia, as is well known, abounds in fossil plants of the tertiary formation, some of which are very closely allied to the existing forms of vegetation, as is at once seen in the Breslau garden, where, intermingled with the living plants, are their representatives in bygone ages—at least, such of them as will bear exposure without injury. The Arboretum here is on a larger scale than usual, and the collection of Coniferae very good; among them are fine specimens of *Dammara australis*, *Taxodium distichum*, *Phyllocladus trichomanoides*, *Pinus uncinata*, *Morinda*, *pumilio*, and *orientalis*. Near them is placed a huge block of Silesian brown coal, determined by Professor Göppert to be of Coniferous origin. Here too are placed the larger specimens illustrative of the growth of wood and of the deviations from the ordinary structure, whilst trained around the trunks and branches of the trees are stems of the tropical climbers, as *Banisterias*, *Bauhinias*, and the like. Professor Göppert has too, under cultivation, what one rarely sees, a fine collection of the rarer Lichens, Mosses, and Jungermannia. Among the Ferns I remarked *Angiopteris erecta*, which is, I think, rare in cultivation. Among the more interesting plants of other families, I may mention *Antiaris toxicaria*, *Pogostemon Patchouli*, *Acacia nilotica* and vera, *Aristolochia serpentaria*, *Berberis tenuifolia*, *Cephalotus folioliculus*, *Dionaea muscipula*, *Garcinia Mangostana*, *Hymenaea Courbaril*, *Hamelia patens*, *Carludovicia latifolia*, *Bromelia sylvestris*, *Jatropha multifida*, *Carex nubigena*, &c., &c. It was a source of regret that time did not allow us to make a careful inspection of the professor's fine collections in fossil botany, and especially of plants imbedded in amber; by which he has rendered his name famous. *Maxwell T. Masters, Sub-Curator, Fiedling Herbarium, Oxford.*

*Temperature.*—Your remarks on mean temperature oblige me by publishing in your columns the mean temperature of this or any other country in ancient times or at various periods within the last thousand years? We know that our climate is of a lower mean temperature than it used to be, no longer permitting Vineyards to be successfully cultivated; nor can we wonder at it, if (as I think is clearly proved in Hopkins's Geology), all earth is moving northward at the rate of one-third of a mile per annum. Nor need we be surprised at the irruption southward of the northmen, if their territory becomes gradually absorbed and decomposed at the north pole, to reappear at the south. *J. Mechi, Tiptree Hall.*

*Garden Orache.*—I find this to be a useful and good vegetable, it is certainly superior in flavour to the common Spinach. Mine has red leaves: is it the red variety of *Atriplex hortensis*? [Yes.] *D. Amington Hall.*

*Stock for the Stanwick Nectarine.*—From what has been reported of this Nectarine, it would appear that it has two great faults, namely, that the fruit falls off during the time of stoning, and that it is also subject to crack or split at a more mature stage of growth, i.e., just previous to, or at the time of ripening. Now, we can hardly suppose these defects to be local, for the communications detailing the facts come from more than one or two places. Nor would it be fair to believe that this debility can be constitutional, when one looks at the high character given of the original fruit, and also the source from whence that reputation came. If your

readers will kindly turn to an article written by me, in the *Chronicle* of the 12th of March last (p. 165), it will be found that I have there stated the nature of the Stanwick Nectarine to be like that of "Duc de Tilly"; and what has been recently written about it seems to give confirmation to that opinion. My experience has long since taught me that Duc de Tilly, when put on the proper stock, is one of our best Nectarines, and the reverse when it is otherwise. I have said, and again beg to repeat the statement, that we do indeed fall short, very short, in our knowledge of these things—the primary and paramount principles necessary to be understood in the cultivation of Peaches, Nectarines, and Apricots. Presuming that what I have said in reference to the Stanwick Nectarine is true, I will make a statement, of which I must ask your readers to make a note or record, as I hereby stake my reputation as a gardener, as to the issue. Thus, let the White Magnum Bonum Plum be budded on the Brussels stock; and at about 3 feet from the ground, or what is called "half standard high," put on your Stanwick, and I have not the least doubt of this being found a cure for the ills complained of. Indeed, I will go so far as to say, that here you will find a stock with which no Peach or Nectarine will ever refuse to identify itself. I would advise, that the Brussels be budded with the Plum in a young state, that is, as soon as it is sufficiently strong for the purpose, and also down near the ground as may be convenient. *A Gardener, Warmminster.*

*Chamomile.*—The account which "W. M." gives, at p. 664, of his failure in getting Chamomile plants to flower, leads me to imagine that he has got a sort which I have never seen produce blossoms, even under the best garden cultivation. It is well known in this district (Morayshire) by the name of Ground Chamomile, its usual height being from 2 to 3 inches. It is much used here for fomentations, &c., and is generally preferred to flowers for that purpose. I have several beds of each sort growing side by side on a newly trenched wall border, and not a single stem of the ground sort has made the least effort to blossom. Perhaps your correspondent might not be aware of the existence of such a variety, a sample of which I send you. *J. Webster.*

*Watery Pine-apples.*—If the syringe is used too freely up to the time when the fruit is coloured, this evil will be produced, for unless free ventilation be given the crowns remain full of water, which the Pines absorb, especially during a dull wet season like the present; secondly, if the plants are kept watered after the fruit has changed colour, they will be certain to eat flat and watery. I have found, however, that by hanging them for a few days in a dry warm situation, crown downwards, they cut much firmer, and that it greatly improves their flavour. *E. Bennett, Perdiswell.*

*Cuttings and Layers of Conifers.*—"A Subscriber" would feel obliged by being told where to obtain information as to making cuttings and layers of Conifers. Barron's "Winter Garden" mentions its being done with success at Elvaston, but not the *modus operandi*. Perhaps Mr. Barron, whose book I have read with great pleasure, will supply that hiatus, which will be of incalculable benefit to all lovers of Conifers, particularly those whose means are limited. *Anon.*

*Cumming's Reliance Broccoli.*—This is one of the best varieties with which I am acquainted. It is very hardy, having stood the late winters without injury, while most of the other kinds were destroyed. It comes into use about the end of May. It is excellent in quality, and large in size. *J. Newman, Gardener to the Earl De La Warr, Bourn Hall.*

### Notices of Books, &c.

*BOOKS RECEIVED.*—*Sketches of the Hungarian Emigration in Turkey.* (Chapman and Hall's Reading for Travellers).—An interesting account of a difficult operation, by one of the parties concerned. It bears internal evidence of being a genuine statement of the events which occurred to the fugitives who dispersed after the Hungarian rising was finally crushed.

*Die Ostindische Rohwarensammlung, &c.*—A learned and full account of a valuable collection of raw materials presented at the close of the Great Exhibition by the Court of Directors to the University of Erlangen; by Professor Theodore v. Martius. It is most properly dedicated to Dr. Royle. The work forms an 8vo of 54 beautifully printed pages, published by Palm and Co., of Erlangen.

*Catalogue of the Hardy Herbaceous Plants in the Royal Gardens of Kew;* prepared by J. C. Niven, Foreman, &c. The mere list of this fine collection occupies 62 8vo pages in double columns. It shows, in a striking manner, the inexhaustible riches of our great national garden; for we believe we may say with perfect truth that all the species enumerated were actually alive at Kew when the list was issued. An asterisk is prefixed to the names of the species whose seeds are collected.

*Rivers' Catalogue of Fruit for 1853 and 1854* is just out. As was to be expected from the well-known zeal of the author, it is full of information concerning new varieties, and of hints to cultivators, of which the following are a sample. Concerning the biennial removal of trees, he says, "it is the most simple of all methods of root pruning; it consists in merely digging a trench round the tree early in November, and lifting it out of the ground carefully with all the earth possible attached to its roots, shortening with the knife any that are straggling. If the soil be rich, so that



trees unremoved are inclined to grow too vigorously, no fresh compost will be required, and it will merely be necessary to shovel into the hole some of the earth from the surface around it to 2 or 3 inches in depth; this will prevent the tree settling down too deeply. If the soil be poor, some rotten dung—at least six months old—and loam, or any light earth, equal parts, or more earth, may be placed at the bottom in the same manner, and some of the same compost, say half a wheelbarrowful to each tree, may be thrown over its roots when replanting it."

The following materials are reported to have been found of great service in the culture of Pears, whether on the Pear or Quince stock.

"In low situations near brooks and rivers, a black moor earth is generally found. This, unprepared, is unfit for horticultural purposes, but if dug out and laid in a ridge, and one eighth part of unslacked lime spread over it, turning it immediately and mixing the lime with it, it will become in the course of five or six weeks an excellent compost for Pear trees. I have in some instances added half a bushel of burnt earth to a barrowful of this moor earth with good effect; in planting, one wheelbarrowful to a tree will be enough. The only method to cultivate successfully pyramidal Pears on Pear stocks," says Mr. Rivers, "is by biennial removal; in this way they become nearly as prolific as those on Quince stocks, and what is of great importance, in light gravelly or chalky soils they will to a certainty succeed where Pears on Quince stocks will as certainly fail."

Among new Pears the following are thus described: "Alexandre Bivort. 1. qual., 2. size, a new hardy Pear, from the collection of the late M. Esperen: flavour sugary, perfumed and exquisite, it literally melts in the mouth. Forms a healthy pyramid on the Quince. January."

"Belle de Noël, or Belle Après Noël (Esperen.) 1. qual., 2. size, an excellent Christmas Pear, melting and rich. Handsome as a pyramid on the Quince, but grows slowly. January."

"Beurré Giffart. 1. qual., 2. size, melting and very juicy, with a delicious Noyeau flavour. New, hardy, and one of our best early Pears; succeeds as a bush or espalier on the Quince better than as a pyramid, on account of its crooked growth. August."

"Duchesse de Mars. 1. qual., 3. size. No pear can be more high-flavoured and delicious. Tree dwarf, and slender in growth. Succeeds on the Quince, double worked, and bears abundantly as a bush. December to January."

"Fondante de Malines (Esperen.) 1. qual., 2. size, a new, hardy and excellent melting Pear, which succeeds on the Quince, and forms a healthy pyramid. January to February."

"Laure de Glymes. 1. qual., 1. size, a new, hardy, melting Pear, from the collection of the late Van Mons; succeeds well on the Quince, and forms a very handsome pyramid. October."

"Maréchal de Cour (Van Mons). 1. qual., 1. size, a new and fine Pear. It was the expressed opinion of Van Mons that 'this was the best Pear he ever raised.' Forms a healthy pyramid on the Quince. November."

"Onondaga, or Swan's Orange. 1. qual., 1. size, a new, melting Pear from America, 'hardier than even the Williams's Bon Chrétien.' Succeeds on the Quince, and forms a healthy pyramid. October."

"Soldat d'Esperen (Esperen.) 1. qual., 1. size, a new and good, half melting, late Pear; succeeds admirably on the Quince, and forms a handsome pyramid. December."

"Susette de Bavay (Esperen.) 1. qual., 3. size, a new, hardy, excellent late Pear; in a warm season and situation, melting; otherwise, half melting, but always good; succeeds well on the Quince, and forms naturally a handsome and prolific pyramid; deserves a wall in cool climates. March to May."

"Zephrin Gregoire. 1. qual., 2. size, a new, hardy, late, excellent melting Pear. Forms a handsome pyramid, either on the Quince or Pear. Jan. to March."

In the list of Cherries we find "Bigarreau, white, large; very rich and excellent; this does not commence to bear so young as the Bigarreau: a very fine Cherry." And the following remark in a foot-note. "This is the Bigarreau sold in the streets, often very cheaply. An old tree of this variety exists here in the last stage of decay, but it still bears very fine fruit. The tradition is that the scion which produced it was given to my grandfather by Baron Dimsdale, who brought it from Russia on his return from inoculating the Empress Catherine."

The Florence and the Early Amber Heart Cherries are stated to succeed well on the Mahaleb, and to form nice bushes on it.

### New Plants.

19. *LIBOCEDRUS DECEPENS*. Torrey in *Pl. Fremont*, p. 7, t. 3 (*Smithsonian Contributions*); *altia* Thunja. Originals of the Report upon Jeffrey's Plants, with a figure.

We are uninformed whether any one has raised seeds of this, no doubt the finest of the few good plants which the collector to the Oregon Association has sent home. It is, however, as well to report what Dr. Torrey says of it. According to this learned botanist, it is not the *Thunja gigantea* of Nuttall, from which it can be distinguished by the long decurrent bases of its leaves, as well as by the fruit. It forms "a noble tree, sometimes attaining a height of 120 or even 140 feet, and a trunk of 7 feet in diameter is not uncommon. It rises from

80 to 100 feet without a limb." It occurs near the "upper waters of the Sacramento, particularly from lat. 38° 40' to about 41° N., where it was also found (without fruit) by the botanists of the United States exploring expedition, and by Dr. G. W. Hulse." If any nurseryman has chance to raise it, he has found a treasure, for the tree is beyond all question perfectly hardy. It is probable that the tree mentioned in the following extract from a Californian newspaper belonged to this species. At all events, although called a Fremont Pine, it can have nothing to do with *Pinus Fremontiana*:—"A monster tree is noticed in the Placerville *Herald*. It was called the Fremont Pine, and was situated about 14 miles east of Placerville, near the immigrant road. Its history and proportions are thus sketched by that paper:—"In circumference, 2 feet from the ground, it measured 25 feet, or 9 feet in diameter. At the commencement of the rainy season last autumn, Levin Payne and T. A. Demitt determined on cutting it down for the purpose of working it into shingles. It was chopped off only 2 feet from the ground, as there was no apparent diminution in size for 50 feet upwards. As many men as could work around it chopped it off in two days. Seven men now commenced operation upon it, and have continued, without interruption, the entire winter and spring. The first 8 feet, though perfectly sound, was not worked, in consequence of its being a little eaty or cross grained. Above this, eight cuts were taken, of 8 feet each; and at this distance, or 70 feet from the stump, it was 7 feet 8 inches in diameter. From these eight cuts, 500 shakes (4 feet long by 6 inches wide), and 225,000 16-inch shingles have been made by rising and shaving, and without the least loss of timber. Three more 8-foot cuts will easily make 40,000 shingles more, but with some little loss of timber, there being a few small dry limbs in the last cut. This will make in all, 265,000 shingles, at 20 dollars per thousand, the price they brought at the stump, and we have no less a sum than 3180 dollars for shingles alone, besides shakes, rails, and fence posts. The entire length of the tree was 230 feet. It may be asked by the 'old folks at home,' how we manage to saw into blocks a tree that, when lying upon the ground, is 2 feet higher than most men's heads. We answer that it is first chopped into on both sides about 20 inches, and then sawed off into cuts 8 feet long; these are then split with powder and quartered, then sawed into 16-inch blocks. It may seem to some like another California story, and so it is; but is nevertheless true. We have seen it, measured it, and can attest to the facts as regards its size."

### FLORICULTURE.

**AURICULAS.**—These are generally propagated by means of offsets; but when new varieties are wanted, then seeds is employed. It should be gathered in June or July, when the seed-vessels have become brown, and stored away in some dry place until March; it should then be sown in a warm sheltered spot, or in shallow pans or boxes filled with light, rich mould. Boxes or pans are to be preferred, for they can have the advantage of a gentle hotbed, or may be removed from one situation to another, as may be required. The surface of the soil should be made perfectly smooth and level, on which the seed should be sown tolerably thick, and covered about a quarter of an inch in depth with very light and finely-sifted mould. It is important that, previously to the boxes or pots being filled, they be well drained at the bottom, in order to allow all superfluous water to pass freely off; when sown, place them in a warm sheltered situation, perfectly screened from cold wind, and exposed only to the morning sun. As soon as any of the plants have got five or six leaves, such should be transplanted into the open borders, or into other boxes filled with compost, where they are to remain till they flower. When they bloom, all the best sorts should be marked and kept, and all the bad ones thrown away. Such plants as do not bloom the first or second year should nevertheless be preserved; for it not unfrequently happens that among these some of the most valuable sorts are to be found. The common sorts of Auriculas are grown in beds or borders, but all the fine flowers are usually kept in pots; shifting should take place immediately after the blooming season, or about the first week in August, and this operation should be repeated every season. Let your compost consist of rich turfy loam, rotten cow-dung, and decayed vegetable mould, in equal parts, with a small portion of sharp river sand; let it be well mixed and pulverised. The plants should be carefully turned out of their pots, removing all suckers and shaking the earth from among the fibres, shortening any that may be too long, as well as the lower end of the main root. What lower leaves have turned yellow should also be removed, and the stem minutely examined, to see that it is in a healthy state. Your plant being now ready for the pot, the latter must be partly filled with compost, putting (previously) a large piece of crock or oyster-shell over the hole in the bottom, with the convex side uppermost, and a quantity of smaller potsherds, about three-quarters of an inch thick, over that, in order to secure efficient drainage. The plant should then be put into the pot, carefully spreading out and covering its fibres with the compost, leaving the soil about half-an-inch below the rim of the pot at the sides, and level with it in the centre. They should then be placed at the bottom of a north or east wall, where they will be shaded from the mid-day sun, and a covering of oiled canvas should be at hand to screen them with during

very heavy showers. As soon as cold nights and the heavy rains of autumn set in, they should be removed to their winter quarters, which should be either an old cucumber frame, or some dry, airy, and warm place, where they can be protected from heavy rains and severe frost. Although the Auricula is found in some of the central parts of Europe at altitudes much affected by cold, yet by means of high cultivation some varieties are as much altered, as respects their natural hardiness, as they are improved in general appearance. Until the latter end of October or the beginning of November they need not be constantly covered, and at all times in favourable weather they should have the advantage of all the air that it is possible to give them. Early in spring, or as soon as the plants throw up their trusses of bloom, they will require particular attention, to see that they be not injured by cutting winds and severe frosts. The surface of the soil should be stirred, and a top dressing of fresh soil will be found beneficial. They will require to be watered at their roots with care. During the flowering season a dose of clear liquid manure water twice a week will be useful, but they should not be watered overhead, or the farina or dust upon the petals, which adds so much to the beauty of these flowers, will be washed off or greatly injured. *Quintin Road, Bridge Hill Gardens, Belper, Derbyshire.*

**CINERARIAS.** *E.S.* These are now in rapid growth, and consequently they should not receive any sudden check: we may soon expect occasional frosts, and it would be wise to be prepared with mats, and occasionally with litter, to protect those in pits or frames. Protect them also from cold blustering winds, which frequently occur next month. Bring a few that are throwing up flower-stems into the greenhouse for early flowering. Give plenty of air: a cold, damp, confined atmosphere will cause them to lose all their bottom leaves. Continue shifting into larger pots those which require it. Watch for green-fly and mildew, the two greatest enemies which the Cineraria has at this season of the year.

**PELARIONIS.** *J.H.* Little need be done with these plants during this or next month. Water but seldom, and never unless they absolutely require it, which is easily learnt by rapping the pot outside with the knuckle. Clean all the glass thoroughly; for the more light they get in the dull months the better. Place the plants in the situation they will occupy when in bloom; the space between may be filled up with flowering bulbs, Primulas, &c. Tie a piece of strong bast under the rim of the pot, and to this train down the shoots, taking care not to break them out of the stem. The best time to do this is when the plants are dry and the shoots pliable. No more shifting will be required till January. Seedlings not removed into their blooming pots had better be shifted at once, if well rooted round the ones they are in. A 5 or 6-inch size will be quite large enough for them to flower in.

### Miscellaneous.

**Remarks on the Potato Disease.**—During the course of the last few months, that dreadful scourge, the Potato blight, has again made its appearance amongst us, and has already committed great devastation in this and the sister island. My avocations having lately afforded me a few weeks' leisure, I determined to devote it to the re-investigation of the subject, in the hope of ascertaining, if possible, the cause or origin of the disease, as well as a means of curing it or preventing its occurrence. I will not now occupy your time and space with a long account of all the experiments and researches that I have made with this object, but will content myself with making you acquainted with the general conclusions at which I have arrived. They are as follow:—1. That the Potato blight is neither directly nor indirectly caused by the ravages of any parasitical insect. 2. That it is the effect of a species of putrefactive fermentation or incipient decomposition of the nitrogenous, *i.e.* albuminoid constituents of the sap or cell-contents. 3. That this decomposition is either directly produced by a peculiar fungus, the *Botrytis infestans*—to which public attention has been already directed by other writers—or, what is in my opinion a still more probable supposition, the fungus referred to only makes its appearance after the fermentative processes have been in action for some time, and consequently is an effect, and not the cause of the disease. 4. That the blight has been in some measure produced by the long-continued and indiscriminate use of animal nitrogenous manure, which has over-stimulated the Potato plant, and has thus rendered it more susceptible of disease, and has, in fact, produced the same effect upon it that alcoholic drinks, when taken in excess, do on the human system; that is to say, it has injured the stamina of the plant, and rendered the organism more readily affected by atmospheric and other influences. 5. That animal or highly-nitrogenous organic manures should be used with great caution in the cultivation of the Potato, and indeed in that of all root crops; the best manure for the Potato plant being the inorganic compounds, such, for instance, as those which are, or were at one time, used in some parts of the Continent. 6. That the disease having once established itself, has become epidemic. 7. That it is contagious, if not infectious. 8. That the only mode of eradicating it is to restore the original constitution of the plant. 9. That this desirable result can be only brought about by introducing a complete alteration in the mode of cultivation that is adopted. 10. That the changes in question should consist,—1st, in thoroughly drying the seed Potatoes, by the process now followed in some parts of Germany; 2dly, in steeping them for a short time in a dilute solution of the sulphate of copper (blue vitriol or blue stone), of about the same strength as that used for "pickling" Wheat; 3dly, in planting them in poor, well-drained land; 4thly, and lastly, in substituting for the farm-yard manure, &c., now employed, some mineral or inorganic compost. *Dedication of the Tubers.*—The apparatus employed to effect this object should consist



of a large heated chamber, similar in character to the so-called "stoving room" of a sugar refinery, or of a long room fitted up with shelves for the reception of the roots, and heated by means of steam pipes, or stoves placed at intervals, and so arranged that a current of air can be made to pass over the tubers, which can be thus rapidly and effectually dried. The same end may be attained on a small scale by exposing the Potatoes in layers on the floor of a warm room, or in a maltster's kiln; precautions being taken to turn them over occasionally, until they have become sufficiently desiccated, and thus promote a free circulation of the air; but in practice it will be doubtless found preferable for some enterprising parties to undertake the drying of the roots, which may be afterwards retailed to the agriculturists, &c. Great care, however, I find, must be taken in performing the operation, otherwise the vitality of the tubers is destroyed. A long continued exposure in a dry atmosphere, at a moderate temperature, appears to afford the best results. The latter, under any circumstances, should never much exceed  $110^{\circ}$  or  $112^{\circ}$ . If the process has been well carried out the dried roots, when rolled up in a damp cloth, or buried in the ground for a few days, will again become plump and fresh in appearance; whereas, on the other hand, if too high a temperature has been employed, they will, when thus steeped, still remain comparatively hard and dry.

**Steeping or Pickling Process.**—Into a gallon of boiling water put a quarter of a pound of blue vitriol or blue stone (sulphate of copper), and stir the solution well, from time to time, with a piece of stick, until the salt is completely dissolved. When the temperature of the mixture has been so lowered by evaporation and exposure that the hand of the operator can be immersed without any inconvenience, the dried tubers should be thrown into the vessel containing the pickle, in which they should be kept for one or two hours, care being taken to stir them well two or three times during that interval. After they have been removed from the cupreous solution and well drained, they should be dusted over with a little air-slaked or mild lime, and planted in the usual way. When, however, the drying process before described has not been resorted to, the tubers should be allowed to remain in the copper solution for 30 or 36 hours, and the pickle should be made of double strength.

**Preparation of the Mineral Manures.**—Mix intimately 30 lbs. of wood-ashes, 15 lbs. of calcined bones, in fine powder, 10 lbs. of gypsum, 20 lbs. of common salt, 30 lbs. of air-slaked lime, and 7 lbs. of nitrate of soda. Whilst planting the Potatoes, into every hole put about half an ounce of the above compost; cover the latter over with some earth, and then plant the tubers in the ordinary way. This manure may be easily prepared by any one at a very trifling cost, and may be measured out by means of a small tin cup, which, for convenience sake, should be suspended to the waist of the dibbler. On large farms, where the roots are set in drill furrows, the compost may be more readily distributed by the manure-drill, or by hand in the usual manner. On most soils, however, a simple top-dressing of lime and salt, in the proportion of two bushels of lime to one of salt, will be doubtless found sufficient; the manure being employed at the rate of 50 or 60 bushels per acre. Where the land is rich, the admixture of cinders, coal-ashes, or shell-sand with the soil will be found decidedly beneficial. In conclusion, I would suggest that the following simple experiment should be tried in storing the Potato crop during the present season:—Let the tubers be stored in the usual way, but in the centre of each heap or sackful let there be placed a quantity of unslaked lime, not in actual contact with the roots, but enclosed in some porous vessel—an old wicker basket, for instance—and covered over with, and surrounded by, a thick layer of straw or hay. By this means the tubers will be kept dry; and as the presence of humidity in the air is a great incentive to putrefactive decomposition, one of the main causes of decay will be removed. The lime, so soon as it has become slaked, may be taken away and employed as manure: and, if practicable, should be replaced with fresh lime. The experiment I have described, it must be remembered, can be easily tried, and would cost but little even if carried out on a large scale; it cannot be productive of any injurious consequences, and will be doubtless attended with beneficial results. *T. J. Hervey (of Bristol), in the Chemical Gazette and Bristol Mercury.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

**CONSERVATORY.**—As the beauty of out-door scenery gives way before the storms of autumn, the conservatory should be made as attractive as possible, as it will now become in some respects the only place where flowering plants can be inspected with comfort in unfavourable weather; to assist this, let the requisite arrangements, both as regards watering and changing the plants, take place early in the day, that the effects of the watering, syringing, &c., may be removed, and an agreeable dryness pervade the house before it is visited by the family. No pains must likewise be spared to keep the house gay, by introducing plants in succession as they come into bloom, including a portion of the stove plants which have been grown expressly for this purpose. A little gentle forcing will bring the different varieties of *pyrophyllum truncatum* in bloom, and with the addition of *Chrysanthemums*, late *Fuchsias* and *Pelargoniums*, *Pancreatiums*, *Amaryllis*, *Mignonette*, *Neapolitan*

*Violets*, &c., a tolerably gay appearance may be maintained until the time when forced plants will be more generally available. Keep the air nicely regulated, so as to obtain a gentle circulation through the house in mild weather, without incurring draughts. Fires will be necessary, not so much for keeping up the temperature (unless during frost), as for the purpose of promoting a medium state of dryness in the internal air, so as to make the house enjoyable in all weathers. Some of the most useful plants for house decoration during winter and spring, when subjected to gentle forcing, are the different kinds of *Rhododendrons*, *Azaleas*, *Kalmias*, &c., usually termed American plants. As these have now perfected their buds, plants can easily be selected for the purpose, well furnished with buds; without naming each particular kind suitable, we may remark that many of the hybrid scarlet *Rhododendrons*, which, owing to their earliness, rarely bloom in perfection out-of-doors, are the best for early forcing, coming into bloom with but little trouble. After selecting the plants from the nursery, have them potted in peat, in small pots as the roots can be got into; they may then be watered and placed in a pit, or empty Vinery, to be brought forward as required; beginning very gently with them at first in a moist heat, and increasing the heat as they progress towards blooming.

#### FLORISTS' FLOWERS.

Not a day should be lost, now the weather has become more settled, in making up Pink beds; so much improvement has taken place lately amongst these flowers that amateurs, unless they have added to their collections regularly, will find themselves apparently a century behind hand. There are fine flowers raised by Turner, Looker, Colcut, Maclean, and Bragg, which ought to be in every collection. Dahlias are still blooming in many places, but rather miserably; as soon as the tops are blackened with frost take them up, or they are apt to start at the crown; cut them off about a foot long, and place them in such a manner that the sap which exudes may not run into the hollow stem; should it do so, rot will be the probable consequence. Small pieces of zinc or lead attached to copper wire are best to mark them with, or the zinc may be stamped a number corresponding with the name in the book. Plant offset Tulips: arrange the best bed definitely, previous to planting, when the soil is sufficiently dry—the sooner the better.

#### HARDY FRUIT GARDEN.

In our last calendar we alluded to the present time, as being the most favourable for lifting and root-pruning such fruit trees as are growing too luxuriantly to produce fruit, and as the autumn is the season generally fixed upon for making new borders, or renovating old ones; we take the present opportunity of reminding those now about planting fruit trees of the danger everywhere apparent of making borders too deep, as well as too rich. When we see in practice how comparatively small a space of border is really requisite to support fruit trees in health and productiveness for a number of years, we might be anxious to know how it happens that such unnecessary expense is incurred, to do a positive evil, did we not know that in many instances it arises from a desire to do the thing over-well, and with a misconception of what is simply necessary to maintain that moderate amount of growth, by which only may we expect permanent results of any value; in a few words, the border should not be deep (18 inches are ample). The soil should be maiden loam of a moderate consistency; no dung whatever should be used, and the roots should be prevented from passing below the border by a considerable depth of rubble, or rough paving stones placed hollow; this border should dip from the wall, so as to throw off surface rains, and expose it better to the sun; and further, we would only make the border 4 feet in width at first and extend it after as required.

#### KITCHEN GARDEN.

Make it a rule never to allow the haulm, leaves, &c., of plants to remain on the ground when the crop is gathered; a convenient place outside the garden should be appropriated for the garden refuse; and ere the leaves, &c., are wheeled to the heap, let a sprinkling of ashes or charred refuse be placed over each layer, by which a heap of valuable manure will be formed; when the ground is dry proceed with digging up vacant spaces, throwing it into ridges, that the land may the more effectually be exposed to the influence of frosts; "it should be a rule to double spit or trench land each alternate year at least; but when two crops are taken off the same piece yearly, trenching should alternate with digging each time the ground is cropped. Potatoes, Carrots, and other roots stored away, should be examined, to see how they are likely to keep; turn over and trace up Onions on wet days; and when a fine day occurs, take advantage to finish earthing up Celery, tying up Endive and Lettuce for blanching, and stirring the soil between growing crops.

#### COTTAGERS' GARDENS.

Where the unfavourable weather has taken effect on *Lobelia*, *Salvia patens*, and such plants, they had better be got up, especially where the flower-stems are killed as well as the leaves. The *Salvias*, however, ought to be left in the ground until the stems do die down, as the tubers will be thereby much benefited. The best way of keeping these plants is to pot them in pots merely sufficient to hold the roots, using rather dry soil, and set them where they will be dry and cool. A few degrees of frost will be less hurtful than heat; they must get no water until they commence growing. Scarlet and other *Pelargoniums* for turning out in

spring ought to receive the same treatment; only they cannot be too soon taken up after their beauty is once destroyed. In cases where the scarlet or other *Pelargoniums* planted out in beds are yet fresh, and have formed flower-buds, the cottager might, by careful removal, obtain a few good plants for flowering in the window. Rather large pots should be used, and the plants got up with as little disturbance to the roots as possible; if they can be placed in a little close heat for a fortnight they will recover with the loss of only a few leaves. Asparagus beds, where the leaves and stems are brown, had better be cleared, and covered with an inch or two of dung. The refuse will be useful for putting round frames to keep out frost. If it can be applied dry so much the better, as it will be less liable to heat and rot. Next week we shall endeavour to name a few varieties of Apples, Pears, &c., suitable for a cottage garden.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON, For the week ending Oct. 27, 1853, as observed at the Horticultural Gardens:

October.	Moon's Age.	BAROMETER.		TEMPERATURE.				Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean.	1 foot 2 feet deep.		
Friday 21	18	29.854	29.753	60	50	55.0	49	S.W.	.08
Satur. 22	19	29.837	29.814	53	53	53.0	51	S.W.	.00
Sunday 23	20	30.080	29.970	65	42	53.5	53	S.W.	.00
Mon. 24	21	30.063	29.886	62	44	53.0	53	S.W.	.40
Tues. 25	22	29.925	29.722	63	40	51.5	53	S.W.	.00
Wed. 26	23	29.702	29.654	67	47	57.0	51	S.W.	.34
Thurs. 27	24	29.618	29.568	64	52	58.0	53	S.	.36
Average		29.873	29.767	63.5	46.8	55.2	52.0	53.6	.54

October 21—Rain, with strong S.W. wind; overcast.  
 22—Fine; cloudy; mild at night.  
 23—Densely overcast; cloudy and fine; overcast.  
 24—Fine; overcast end night; partially overcast at night.  
 25—Foggy; fine; clear at night.  
 26—Very fine till 4 p.m.; suddenly, heavy rain with strong wind.  
 27—Cloudy; overcast; heavy rain with thunder and lightning.  
 Mean temperature of the week 7 deg. above the average.

#### STATE OF THE WEATHER AT CHISWICK, For the last 27 years, for the ensuing week, ending Nov. 5, 1853.

October, and Nov.	Average Baromet. Temp.	Average Lowest Temp.	Average Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30	54.6	39.4	47.0	13	0.58 in.	3	4	1	2	3	11	1	1
Mon. 31	53.1	38.5	45.1	15	0.38	2	1	1	1	1	8	1	8
Tues. 1	54.7	39.1	46.8	12	0.49	2	5	5	5	9	2	2	2
Wed. 2	54.3	39.2	46.8	15	0.82	1	2	1	7	5	6	6	1
Thurs. 3	53.3	38.1	45.7	14	0.74	3	3	4	2	3	6	5	5
Friday 4	50.8	36.3	43.6	13	0.23	2	2	4	2	9	1	1	1
Satur. 5	53.8	39.0	45.5	14	0.46	1	2	1	2	6	10	4	1

The highest temperature during the above period occurred on the 30th, 1833—therm. 67 deg.; and the lowest on the 3d, 1845—therm. 20 deg.

#### Notices to Correspondents.

**Books:** *A. E.* The best work on Ferns will be, when it is completed, Sir William Hooker's *Species Filicum*, published by Pamplin. There is no general catalogue readily accessible, except such as you find in those of London, Sweet, and Donn.—*R. S. Y.* Either Harvey's British Algae or Gravelle's British Algae.

**FRUIT TREES:** *Cavanensis*. Your trees of the Beurre Rance will probably ripen fruit better if you root-prune them. In the mean time place the fruit in a dry frame, exposed to the sun. The Brown Beurre is not adapted for a north-west aspect; better graft the trees with such as you have found to succeed. Thin the blossoms in those years they are too numerous, and there will not likely be so great a deficiency in other years. An east or west aspect is better than a north for the Late Duke Cherry.  
**HOP POLES:** *W. Brown*, Both Larch and Sweet Chestnut are largely employed for this purpose.

**HORTICULTURAL SOCIETY'S SUPPLEMENT TO THEIR FRUIT CATALOGUE:** *Avena*. If you will look at our advertising columns you will find that this has been already announced for three successive weeks.

**NAMES OF FRUITS:** *W. A. 3*, Yorkshire Greening; 4, Kirke's Lord Nelson; 5, Mank's Codlin; 6, Alfriston; 7, King of the Pippins; 8, Flower of Kent; 9, Summer Thorne; 13, Carlisle Codlin; 15, French Crab; 16, Green Balmain;—*W. M. 1*, Haddon's Incomparable; 3, Suffolk Thorne; 4, Aston Town; 5, Uvedale's St. Germain; 6, Easter Beurre;—*W. 1*, Seckel; 2, 43, unknown, and bad; 3, Easter Beurre; 5, Moorflow Egg; 11 and 11½ appear to be Jean de Witte; 12, Winter Nellis; 14, like Herefordshire Pearmain; 18, Doyenné Rouge; 19, 46, Reinette du Canada; 21, Russet Nonpareil; 23, 61, Court of Wick; 24, Reinette Gris; 25, probably R. du Canada; 26, Beauty of Kent; 27, Pearson's Plate; 29, 47, Beurre d'Arenberg; 30, Keswick Codlin; 32, New Rock Pippin; 34, Urbanite, which is the same as Beurre Piqueur; 35, Chaumontel; 40, Beurre de Capiaumont; 41, Api gros; 44, Old Nonpareil; 53, Braddick's Nonpareil; 54, Hawthornden; 55, Ribston Pippin; 56, Down ton; 57, Koss Nonpareil; 58, Ribston Codlin; 60, 61, Nonpareil; 62, Blean Pippin;—*L. C.* The tree you describe is probably some species of *Bombax*.—*Blue-sucking*. Lichen is pronounced *Ly-xen*.—We are obliged to beg *An Admirer*, and one or two more correspondents, to have patience till we can get at our herbarium, which is in course of removal, and at present inaccessible.—*A. G. W.* *Bignonia venusta*.

**OAK LEAVES:** *Quercus*. They are covered with galls called Oak spangles, both described and figured in our vol. for 1843, p. 52.

**PEACH STONES:** *F. D. C.* Sow them thin now in pans in nice calcareous loam. Keep them pretty dry over the winter; in the spring start them in a little bottom-heat, and when 5 or 6 inches high pot them off. It is not necessary to crack them.

**PROPAGATION:** *Eboracensis*. Both the plants you mention should be struck in bottom-heat from just ripened cuttings.

**VINES:** *A. H.* Your cottager's plant is attacked by the Vine mildew, and must be now let alone till next year, when it must be smeared with lime and sulphur after the winter pruning, and the progress of the mildew afterwards arrested upon its very earliest appearance, by careful and, if necessary, repeated dressings with flowers of sulphur, in the usual way.

**MISC:** *Constant Sub. Croydon*. The degrees of heat to which you direct attention are a misprint; they should have been  $70^{\circ}$  instead of  $90^{\circ}$ .—*Rago*. Of the three plants you mention, the *Dielytra* is hardy, the *Plumbago* doubtful, and the *Nierembergia* tender.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

## MANURES.—The following Manures are manu-

factured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0  
Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## THE LONDON MANURE COMPANY'S WHEAT

MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.  
Bridge Street, Blackfriars.

## MANURES.—PERUVIAN GUANO.

WHEAT MANURE, made to meet the offer of a Prize by the Royal Agricultural Society of England, Superphosphate of Lime, Gypsum, Salt, Bone Dust, and all other Manures of known value on sale.

Also Foreign and English Linseed and Rape Cakes, Peat Moss Charcoal, &c.—Apply to MARK FOTHERGILL, 204, Upper Thames Street, London.

## LAND DRAINAGE.

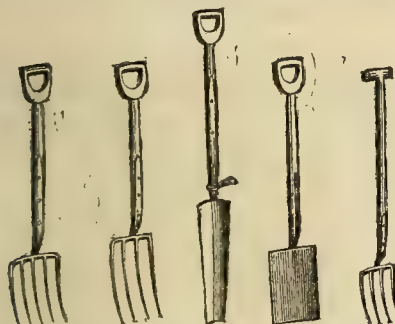
MR. BAILEY DENTON'S TABLES OF COST, &c., price 1s. 4d. Sold by METCHAM, Parliament Street.

MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1l. 10s. Sold by JONES & Co., High Holborn, London.

## PRIZE CHURN.

ANTHONY'S PATENT AMERICAN.—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BURGESS & KEY, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.

## WINTON'S PARKES' STEEL DIGGING FORKS.



I HEREBY GIVE NOTICE that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. BURGESS & KEY, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.  
29th Sept., 1853. Signed, FRANCIS PARKES.

## REDUCTION IN PRICE.

## WEIR'S IMPROVED GALVANISED WROUGHT-IRON LIQUID MANURE PUMP.



The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

## WARNER'S PATENT FARM AND COTTAGE PUMPS.



Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required. They are much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,  
8, CARRSLEY, JEWELL STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

## WHEAT DIBBLING.—THE PATENT ECONO-

MIC DIBBLE, with from six to nine depositors for inserting one grain (or more if required) in each hole. Price moderate.

Mr. C. H. GABRIEL, Surrey Chambers, Arundel Street, Strand, London.

## GUTTA PERCHA BOOTS FOR SHEEP, for the

Prevention and Cure of the FOOT-ROT.—Address JOHN JONES and Co., Patentees, Sheffield.

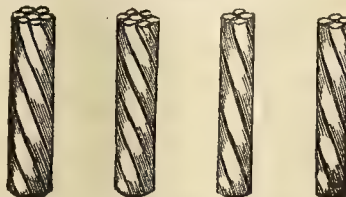
## BIRD NETS, SHEEP NETS, RABBIT NETS,

BAT FOLDING NETS with Bamboo Poles, 14 feet long, 10s. each; Partridge Nets, 2d. per square yard; Rabbit Nets, 4 feet wide, 14d. per yard; Cocoa Nut Fibre; Sheep Folding Nets, 4 feet high, 4d. and 6d. per yard. A. W. CULLINGFORD'S Manufactory, 1, Edmund Terrace, Ball's Pond Road, Islington, London.

## HENRY J. MORTON AND CO., PATENT GALVANISED

IRON ROOFING WORKS, 9½, Albion Street, Leeds, Agents for PHILLIPS' PATENT FIRE ANNIHILATOR MACHINES.

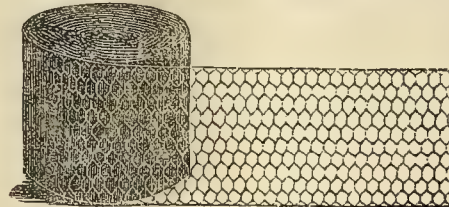
The PATENT WIRE STRAND FENCING forms the most neat, strong, and durable Fence for Parks and Agricultural purposes in use. It cannot be bent and put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply for prices, &c., as above.



IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

## HENRY J. MORTON AND CO., 9½, Albion Street,

Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING, and cannot rust or corrode, made any width and length.



24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.

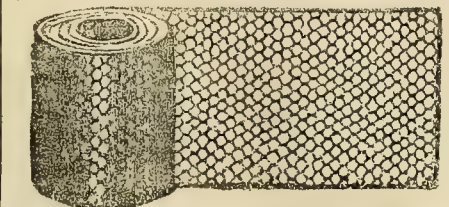
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. 0½d. per yard.

GALVANISED IRON SPOUTING, Plain and Ornamental, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphaltum Roofing Felt, &c. Apply at 9½, ALBION STREET, LEEDS.

## CHEAP WIRE GAME &amp; POULTRY NETTING,

5d. per running yard. GALVANISED DITTO, 7d. per running yard, 2 feet wide.



Galvanised. Not Galvanised.

24 in. wide, 2 in. mesh, 7d. per yard. ... .. 5d. per yard.

30 in. " 2 in. " 9d. " ... .. 6½d. "

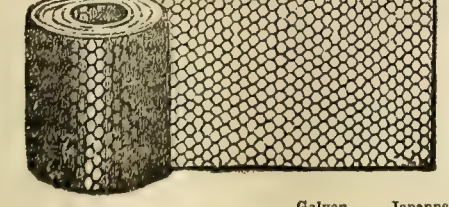
36 in. " 2 in. " 10½d. " ... .. 7½d. "

48 in. " 2 in. " 1s. 2d. " ... .. 10d. "

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Beds, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Wire, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. FOX, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

## GALVANISED WIRE GAME NETTING.—

7d. PER YARD, 2 FEET WIDE.



2-inch mesh, light, 24 inches wide ... .. 7d. per yd. 5d. per yd.

2-inch " strong " ... .. 8 " 6½ "

2-inch " extra strong " ... .. 12 " 9 "

1½-inch " light " ... .. 8 " 6 "

1½-inch " strong " ... .. 10 " 8 "

1½-inch " extra strong " ... .. 14 " 11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BIRNOR, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## LAND DRAINAGE.

MR. JOHNSON (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five Shillings per acre; or if under 30 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

## DRAINAGE AND IRRIGATION.

HENRY WEBBER begs to inform Landowners and the Public that, having had considerable practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by contract or on commission. Reference given.—Address, Halberton Court, near Tiverton, Devon.

## YORKSHIRE AGRICULTURAL SOCIETY.—

FAT STOCK and POULTRY SHOW at LEEDS, on DECEMBER 6, 7, 8, and 9, 1853 (Open to the United Kingdom), when Prizes will be offered for Stock, £184, and Two Gold Medals.

" " Poultry ... .. £121.

" " Roots, Seeds, &c. ... .. £20.

The Entry closes on November 15 next. Prize Sheets and Certificates are now ready, and may be had of M. M. MILBURN, Sec.

## BRISTOL AGRICULTURAL SOCIETY AND

POULTRY SHOW.—This SHOW of POULTRY will take place on the 6th, 7th, and 8th of December, at the GREAT ROOM at the BRISTOL TERMINUS of the GREAT WESTERN RAILWAY, which has been kindly lent for the purpose by the Directors.

N.B.—The time for return of Certificates has been extended from the 1st to the 10th day of November, after which none can be received. The CATTLE SHOW will take place on the 7th December, at the CATTLE MARKET. Full particulars of the Premiums and the Terms of Competition can be obtained by application to the Secretary. It is particularly requested that all communications be addressed "To the Secretary of the Bristol Agricultural Society and Poultry Show, 10, Corn Street, Bristol."

J. MARMON, Hon. Sec.

## THE BIRMINGHAM EXHIBITIONS OF STOCK

AND DOMESTIC POULTRY.—The Fifth GREAT ANNUAL SHOW will be held in Bingley Hall, Birmingham, on the 13th, 14th, 15th, and 16th of December next. Prize Lists, Certificates of Entry, and any further information, may be obtained from JOHN MORGAN, Jun., Secretary. The Entries close on Saturday the 12th of November. Offices, 39, Bennett's Hill, near the News Room, Birmingham.

## SMITHFIELD CLUB FAT CATTLE SHOW.—

All Entries for the Christmas Show of Fat Stock, &c., must be returned to the HONORARY SECRETARY on or before SATURDAY, the 5th of NOVEMBER, 1853.

Prize Sheets, specifying the Classes, Prizes, and Medals (which amount to nearly 800l.), and the necessary PRINTED FORMS of Certificates for Entry, to be had on application to

B. T. BRANDRETH GIBBS, Honorary Secretary, Corner of HALF-MOON STREET, Piccadilly, London.

N.B.—It is particularly requested that all letters connected with the Exhibition, or on the Club's Business, may have the words "SMITHFIELD CLUB" written on the outside, in addition to the Honorary Secretary's name and address.

## The Agricultural Gazette.

SATURDAY, OCTOBER 29, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, NOV. 2.—Agricultural Society of England.

THURSDAY, " 3.—Agricultural Imp. Society of Ireland.

The whole scheme of REWARDS AND PRIZES TO LABOURERS at our agricultural meetings needs revision. The formula which may, perhaps, have heretofore served a useful purpose, is unfitted to the circumstances which have grown up around it; and where it was indefensible before, it is now extravagantly absurd. Our local societies and labourers' friend societies will need to revise their prize lists; and instead of encouraging morality by prizes of two or three pounds "to the agricultural labourer who, during the last three years, shall have maintained the largest number of legitimate children, and shall at the same time have been a member of a regularly enrolled Benefit or Friendly Society under the Act of Parliament,"—instead of encouraging fortitude and economy by premiums of the like amount "to the agricultural labourers who have brought up the largest family by their own earnings without parochial relief (except in case of illness or under peculiar circumstances)"—instead of encouraging—we know not what—by the award of prizes to labourers who have remained longest in one situation at wages under a stated amount per week, as it is worded in a premium list we were examining the other day, the object must be to reward skill and intelligence, whether displayed in ploughing and draining matches, in economical and profitable allotment cultivation, or otherwise; leaving the virtues in charge of conscience; and of higher motives and considerations than are likely to be presented by any assembly of farmers at their annual dinner. Were there no other reason which should urge the secretaries of our local societies to move in this matter, they might, we think, find one in the very little competition which these prizes for good character excite. At the meeting of the Worcestershire Society the other day, we were surprised to find for how many of the prizes offered no candidates appeared.

But whether there be competition or not, the subject needs revision. Prizes for bringing up families are especially indefensible. The subject is altogether out of the scope of rewards; let a man's honest attempt to maintain his children find its reward in his own self-respect, and in that of his family and neighbours, and if relief be needed, let it be offered in a less ostentatious manner than this. We are sure that no man's conscience,



unwarped by interest or prejudice, will sanction either the giving or receiving of a sum of money for having maintained a large "family of legitimate children."

"Three prizes of 2*l.* each:—First, James —, recommended by Mr. —, 12 children; second, William —, recommended by Mr. —, 12 children; third, John —, recommended by Mr. —, 11 children."

The quotation must tend to a blush on the face of every ingenuous reader. No doubt to these men 2*l.* apiece was worth receiving; but as for honour connected with the sum as a prize, we hope and believe that the men would have been far better pleased, if they were at all in distress, to have received the relief from a friend in private. It may be said that the whole scheme of these rewards is adapted to the feelings and circumstances of agricultural labourers, and that it is their practical effect, and not their apparent tendency, that should guide our judgment of their merits. To that, we reply that very many of these prizes, supposing them to have a beneficial influence, argue a very low state of feeling among their recipients—one which it is by no means desirable to encourage. But we believe that agricultural labourers are in advance of the defenders of this prize system, and that, for instance, they would heartily cheer Mr. Levi's remarks at the late meeting at Oundle, on the policy of treating agricultural labourers, not as junior branches of the great agricultural family, whom it becomes their seniors to watch over, protect, and lead in the right way—but as men equally with themselves, with consciences as active, minds as capable, and bodies as vigorous as their own. We heartily agree with Mr. Levi when he says that the time has fully arrived for treating agricultural labourers in a more business-like manner. We believe that one attractive prize offered to the farmer who should spend the largest proportion of his annual labour account in the payment of work by the piece, would be more effectual for the benefit of the labourer than all the petty prizes for "Placing-out Children," for "Length of Service," for "Bringing-up Families," &c. &c.

No one need think that these remarks are actuated by any feeling of distaste for the benevolence which, mistaken as we believe it to be, must generally lie at the bottom of these local labourers' friend societies. We believe that were the subject fully discussed in these columns, as we should like to see it, few of our correspondents would go beyond us in reference to the duties of employers towards the employed. We believe, however, that those only of the former will succeed in the performance of this duty who shall succeed—without losing any of their own, it may be, superior intelligence—in placing themselves in the position of one of the latter, and noticing how things look thence. A speaker at the late meeting at Oundle, who seemed correctly enough to feel the need of maintaining justice as well as liberality in his dealings with his men, was most simply and amusingly wanting in this particular. He—as one of the mischievous results of payment, not of wages, but of weekly instalments of an annuity, for that is the present arrangement—contended that a year's service complete ought to be received by the master before the balance between him and his men was true; and "if, after staying with him in winter, labourers left him in summer, he held it a good reason why he should not employ them again." Now if any intelligent labourer should address his master to this effect—"I quite agree with the principle of that; I quite agree with you that under the circumstances of payment to which I have consented—which is in fact a weekly instalment of an annual sum, and not a weekly payment for six days' work—a complete year must elapse before the balance is strictly true between us. There is, however, one difference between us; you believe that our year ends in autumn, while I believe it ends in spring;"—we do not know what reply he could make: and an illustration of this kind shows how needful it is that men should place themselves in the position of the labourer before assuming either to award him justice or to show him real mercy. We hope that the subject may attract the attention of our correspondents, and that an ample discussion of it may ensue in our columns.

Our correspondent "C," who has excited some discussion in our columns lately on the subject of LAND DRAINAGE, will do well to take the advice of "J. C. C.," at page 683, and consult the paper by Mr. TRIMMER on "the Drainage of the Keythorpe Estate," if, indeed, he has not already made it the subject of his study. There can be no doubt that in the practice of land drainage it is well to be guided to some extent by the inner structure of the soil, and not act on the theory

of its being a perfectly homogeneous substance. And Mr. TRIMMER's investigations in this particular branch of geology and agriculture make his opinion and advice particularly valuable. In many of the divisions of the oolite formation, on one of which "C." appears to be located, the difficulty of draining is increased by the frequent alternation of rock and clay, and variations such as these must no doubt exercise a greater influence than those to which Mr. TRIMMER has called attention; but the latter, nevertheless, do to a very considerable degree guide the filtration and passage of water, and deserve the attention of the intelligent drainer.

It appears from Mr. TRIMMER's investigations, that almost all soils are to a certain extent transported, and thus that there is an old surface of the soil or subsoil beneath the new one; and that this old surface is furrowed and worn by the passage of material over it. Below it, therefore, the materials of the subsoil are naturally of a very much harder consistence than they are above it. Water in trickling downwards from the upper surface will thus be impeded on this older surface, and will tend to gather in its furrows and gutters, thus rendering the soil above it unevenly wet. These furrows at Keythorpe run down the line of greatest descent, and the object of the drainage there was to cut them across, thus to some extent making use of them as a natural means of drainage. There, therefore, "the parallel drains are not equi-distant," and "they cross the line of greatest descent." We do not, in recommending Mr. TRIMMER's paper for study by drainers, go the length of asserting that the "Keythorpe system of drainage" is one which will upset existing practice. That, too, is based on sound principles; but we believe that one additional principle of guidance has been brought to light by Mr. TRIMMER; and we believe that due attention to it, as well as others, will be needed to ensure true economy in practice, as the neglect of it hitherto may perhaps account for instances like that of "C." and others, where perfect success has not followed existing practice.

#### DOES LIVE STOCK PAY?

THE reply negative to this query given by Mr. Mechi, in your paper of 17th Sept., does, certainly, not coincide with the general feeling of agricultural men. He follows up this negative by a strong positive opinion "that all animals are necessary evils." This was so contrary to my preconceived ideas that I was, for a time, brought to believe that those "practical" men are right who affirm that the energetic improver of Tiptree Hall is neither a safe guide in, nor a competent judge of, matters relating to the practice of agriculture.

My usual tone of feeling regarding him (I am myself a tenant-farmer entirely dependent on a high-rented farm) has been that he has shrewdly discovered several weak points in the practice of the ordinary farming class; and no less shrewdly discerned the merits of new points of management adopted by other improving men. I say other, for Mr. Mechi is by no means the most improving, or even innovating man of the day, albeit he does assume, and has often accorded to him, a prominence that scarcely pertains to him by right. I entered, then, upon an examination of the question with a thorough preconception that Mr. Mechi had committed himself to a very erroneous decision when after saying, justly, "We must have the manure of live stock to keep our fields in fertility," he adds, "We have to pay smartly for that manure," for I had hitherto considered that "Profit from Stock" made a not despicable item in my annual returns. I was now led to examine the subject more closely, and I soon began to see that a rough-guess profit is apt to dwindle down, if not to vanish, when all the items properly belonging to the account are fairly stated on the debit and credit side thereof. While thus engaged the October number of the Highland Society's Journal came to hand, and observing in it a prize "Report on Experiments in fattening Cattle, made by Colonel McDouall, of Logan," reported by Mr. McCulloch, the tenant of the far-famed Auchness, I determined to take it as a text-book, whence I could derive materials for a correct judgment on the point, which I had now begun to consider as a moot one.

Nothing could be more counter to Mr. Mechi's enunciation than the statements in this report appeared, at first view, to be; indeed, I have seen the results of those tables quoted in agricultural periodicals as proofs of the skill and success of the great cattle feeders of Western Scotland. But a closer examination showed me that the tabulated returns of profit, varying from 16*l.* to 24*l.* 6*s.* 3*d.* per acre of Turnips, had their source not in the beef made, but in the adventitious rise of price in the beef market, &c. *g.*

On 20th Dec., 1852, weighed 36½ imp. stns., valued at 5*s.* 9 3 9  
On 29th March, 1853, " 43 " " " 6*s.* 6*d.* 13 19 6

That is an increase of 6½ stns. of beef valued at... £4 15 9  
With this munificent price of 13*d.* per lb. put on his manufacture of beef, it is no wonder that Mr. McCulloch is able to set aside quite a sufficient sum to meet the "Total cost of food, including the price of extra food, allowing 8*s.* per ton for Mangold, and 6*s.* for Swedes," and besides to show a profit of 1*l.* 16*s.* 10½*d.* on the 100 days' feeding of the above bullock, and still larger profits

on others in his list, besides having the manure free of cost. Even prize reports, it seems, may contain statements in which a certain amount of "cooking" may be traced!

Still this report has value. It gives a statement of the quantity of food consumed by 21 different lots, containing in all 60 fine head of cattle, evidently carefully selected of uniform weights and condition, fed with 19 different combinations of feeding substances, and informs us of the increased weight resulting therefrom. The very extensive experience of the experimenter as a feeder is well known, and I observe in his report no dissatisfaction expressed with the results stated; and though it does seem to me that the increase of weight is small, averaging little more than 6 imperial stones of dead weight per head for 100 days, during which the experiment lasted, I am compelled to accept of this as a fair view of boval increase.

Two valuable pieces of information are also deduced, viz., 1st, the superiority of cooked food over uncooked as an auxiliary to roots; and 2d, the high value of Oat-straw as fodder. It is to be regretted that Wheat and Barley straw were not experimented upon as compared with Oat straw and hay.

I come now to show what, really, were the results of this extensive experiment, throwing the adventitious rise in value out of account, and they were in the gross (hereafter I may take each lot in detail) as follows:

The total value of food consumed by Mr. McCulloch's 2*s.* d.  
own Tariff of Prices, which is noted below, in fact, the figures used by himself in his table ... 169 8 10  
The aggregate dead weight of 65 Cattle on 20th Dec., 1852, computed to be 2310 stns.  
Ditto on 29th March, 1853 2710½ "

Increase ... 400½ " at 6*s.* 6*d.* 130 3 3

Thus there appears a loss of ... £39 5 7

That the tariff of prices for the feeding substances, used by Mr. McCulloch, is far too low, I need not point out to agricultural men; but waiving this, I will assume the liberty to add two items of expenditure overlooked or omitted in the report, viz.:—

Interest on purchase money, and insurance on 65 head of cattle for 300 days, say 3 per cent. on 650*l.* ... 19 10 0  
Services, say of three men, in feeding and preparing cooked food 300 days at 1*s.* 4*d.* ... 20 0 0

The manure made cost ... £78 15 7

I shall in a subsequent paper inquire whether this manure—the remains (unconsumed for respiration or in the formation of fat and flesh) of the substances enumerated as expended—is an equivalent for this sum; whether it really has, to use Mr. Mechi's expression, been "too smartly" paid for. *S.*

#### LOIS-WEEDON WHEAT CULTIVATION.

If you will be so good as to admit the following statement of my experience of the Lois-Weedon system of growing Wheat, perhaps it may not be uninteresting or without its use to others who are circumstanced like myself, and farm on a very small scale.

I had carefully read and studied the principles of the system in Mr. Smith's pamphlet, "A Word in Season," and I had seen, as every one in this parish must have seen, that every fact recorded therein was scrupulously correct; I therefore fearlessly entered upon my undertaking to cultivate half an acre (superficial measure), in the same way, and I now proceed to show the results.

1851.	£ s. d.	1851.	£ s. d.
Paid for digging ...	1 0 0	18 bushels clean	
Dropping the seed ...	0 1 6	Wheat, at 4 <i>s.</i> 4½ <i>d.</i>	3 18 9
6½ pints of seed ...	0 0 6	2½ bushels second do.,	
Bird keeping ...	0 0 6	at 3 <i>s.</i> 4½ <i>d.</i> ...	0 8 5½
Threshing and win-		15 cwt. straw, at 1 <i>s.</i> 6 <i>d.</i>	1 2 6
nowing ...	0 12 0		
Total outlay ...	£2 0 0	Produce ...	£5 9 8½
		Deduct outlay ...	2 0 0
		Amount of profit	£3 9 8½
1852.	£ s. d.	1852.	£ s. d.
Paid for double digging ...	1 8 8	15 bushels clean	
Dropping seed ...	0 1 6	Wheat, at 4 <i>s.</i> 10½ <i>d.</i>	3 12 6
6½ pints of seed ...	0 0 6	1 bushel second do.,	0 4 0
Bird keeping ...	0 0 5	14 cwt. straw, at 1 <i>s.</i> 6 <i>d.</i>	1 1 0
Threshing and win-			
nowing ...	0 12 0	Produce ...	£4 17 6
Outlay ...	£2 7 8	Outlay ...	2 7 8
		Profit ...	£2 9 10
1853.	£ s. d.	1853.	£ s. d.
Double digging ...	1 13 0	15 bushels clean	
Dropping seed ...	0 1 6	Wheat, at 3 <i>s.</i> ...	6 0 0
6½ pints of seed ...	0 0 6	1 bushel second do.,	0 7 0
Bird keeping ...	0 0 5	13 cwt. straw, at 1 <i>s.</i> 6 <i>d.</i>	0 19 6
Threshing and win-			
nowing ...	0 12 0	Produce ...	£7 6 6
Outlay ...	£2 12 0	Outlay ...	2 12 0
		Profit ...	£4 14 6

This statement will be very incomplete without a few observations. It will here be seen that in the three years there has been a diminution of produce, from 20 bushels to 16. Now, had this diminution been confined to myself and to others who follow the same system, there might have been some force in the objection, that the growth of Wheat year after year on the same half acre was exhausting the land; but every farmer knows and has felt to his cost, that while the first year (1851) was a singularly good year for Wheat, 1852 was a singularly bad one, and the present year still worse. I will not presume to discuss here the deeper points of this question as to exhaustion of land,

\* Mr. McCulloch's tariff for feeding substances, per ton:—Swedish Turnips, 6*s.*; Mangold Wurzel, 8*s.*; Bean-meal, 7*l.*; oil-cake, 7*l.* 15*s.*; Rape-cake, 4*l.* 10*s.*; hay, 1*l.* 16*s.* 8*d.* Straw not valued.



for it is treated at length in the "Word in Season" (pp. 18, 19, and 20, 11th edition). With regard to this, there is no difficulty in getting the facts there stated proved in the case of any given soil; and if it turn out that they are correct, it is quite plain that on the great majority of clays and loams, that is, on what are considered Wheat soils, there is sufficient inorganic food for the Wheat plant to render them practically inexhaustible; and that therefore the Lois-Weedon system of tillage, by deepening the staple, so far from exhausting the land, leaves it in a better condition than it ever was before.

It will be seen also, from the foregoing figures, that the system has proved in my case very profitable, giving a net average profit of 3*l.* 11*s.* 4*d.* per half acre, or, supposing it to be a whole acre, superficial measure, of 7*l.* 2*s.* 8*d.*

My intention was to follow, with the greatest accuracy throughout, the directions laid down for my guidance, for I felt that if I did not do so, the system would no longer be Mr. Smith's, but my own, as far as I swerved from it, and that Mr. Smith would no longer be responsible for whatever result might follow, but only myself. I kept close, therefore, to rule, except in one instance, where I swerved non-intentionally; for I thought it was intended that the intervals should be trenched, at once on entering on the plan, two full spits deep, and up to this time I have acted upon that idea; but upon closer examination into the principles and directions and practice of Mr. Smith I found I was wrong; and I mention this because I hear that many others have made the same mistake. I now find that, for the first three or four years, two shallow spits are enough. For example: if the subsoil is clay only, a few inches are to be brought up to the top, the guide as to quantity and depth being only just so much of the subsoil as can be pulverised and mellowed by the winter and summer fallow, and not so much of any subsoil as would be left in a raw state at the next sowing. My land, like that of Mr. Smith's 4-acre piece, is old-going, exhausted land, and its character is a gravelly loam, and I trenched it nearly 20 inches deep at once, which was wrong in two ways; for I believe it was disadvantageous to the crop, and it was certainly detrimental to the pocket, for it added 1*s.* to the expense of the digging; so that if I had strictly followed the directions in this respect, my net annual profits from my half acre would have been 4*l.* 16*s.* 4*d.* instead of only 3*l.* 11*s.* 4*d.*

There are many other ways by which the conditions considered by Mr. Smith as indispensable to success may be evaded or neglected, such, for example, as the strict injunctions for early sowing—a solid bed for the Wheat, judicious stirrings of the surface, well pulverised and well cleaned intervals, the outer rows well earthed up. Reports have been published of want of success, nay, of utter failures on this plan. The object of all discussions and all statements of this nature being to elicit the truth, it does seem to me—if I may be allowed humbly to express my opinion—that the very first thing, before coming to any judgment on the matter, should be to ascertain in every such reported case, whether the conditions were strictly carried out, or, owing to any circumstances whatever, evaded or neglected. *H. Jones, Lois-Weedon, Oct. 18.*

#### ROYAL AGRICULTURAL COLLEGE.

SESSIONAL EXAMINATION.—INORGANIC CHEMISTRY.

ANSWERS BY MR. R. BELL.

[The questions to which the following are answers will be found at page 474.]

(1.) The composition of the atmosphere is about—

7-490 Nitrogen,
29-625 Oxygen,
.041 Carbonic Acid Gas,
.840 Watery Vapours.
100,000

Besides this, it contains ammonia in small quantities.

(2.) The presence of ammonia in the air can be proved by collecting three or four gallons of water just after a shower of rain (as the water, in passing through the air, takes in solution some of the ammonia), to it add some muriatic acid, in order to unite with the ammonia and form a salt, so as to prevent it from being given off while you are evaporating the water, which you will do next; then having evaporated it to dryness, a solid residue of muriate of ammonia is left. Heat this with slaked lime, and ammoniacal gas will be given off, which you cannot only smell, but which will give white fumes in contact with the vapours of muriatic acid.

(3.) Real diamond may be distinguished from the so-called Cornish diamond by its burning brilliantly in oxygen gas, forming carbonic acid gas.

(4.) English sulphuric acid is prepared in large quantities in England in the following manner:—Sulphur is first burned in a chamber forming sulphurous acid, from this it passes on to another chamber, where it meets with fumes of nitrous acid, from which it takes one equivalent of oxygen, forming sulphuric acid; the remaining nitric oxide thus left takes up oxygen again from the air and gives it again to another equivalent of sulphuric acid, forming sulphuric acid as before, so that only a small quantity of nitrous acid is necessary to make a large quantity of sulphuric acid; this is the cause of the cheapness of this acid. At the same time that this operation is going on, a quantity of steam is passed into the chamber (which is lined with lead), which is condensed along with the sulphuric acid, and falls to the bottom of the chamber, where it remains until in sufficient quantity to be removed; it is then taken out and evaporated in large basins until in a sufficiently concen-

trated state, when it forms the oil of vitriol of commerce. This is very impure.

(5.) Take a certain quantity of the sulphuric acid of commerce, and also take a solution of a known strength, say of soda, then see how much it will take of this acid to neutralise the basic reaction of the soda; this can be done by means of the alcalimeter. Then you can easily, from knowing the strength of the soda solution, calculate the strength of the sulphuric acid.

(6.) Coal gas is prepared by heating coal in large iron vessels; the products are coal, tar, ammoniacal liquor of gas works, and carburetted hydrogen, one of the chief constituents of coal gas, which is given off and passed into lime water, to take carbonic acid from it and purify it, when it is ready for use. Coal gas principally owes its powers of light to light and heavy carburetted hydrogen; when it burns in the air carbonic acid and water are formed. It has a disagreeable smell, &c.

(7.) The reason of the greater light of an oil lamp is that alcohol contains much less carbon and more hydrogen than oil.

(9.) 100 lbs. of nitrate of soda contain 16.8 lbs. of nitrogen. 100 lbs. of guano, containing 16 lbs. of ammonia, contain 8.8 lbs. of nitrogen. 100 lbs. of sulphate of ammonia contain 21.7 lbs. of nitrogen. 100 lbs. of nitrate of potash contain 13.8 lbs. nitrogen. [We do not give the figures of the calculations from which the above results are derived.]

(1a.) Limestone, which in its general composition contains chiefly carbonate of lime, with silica and magnesia, when burned loses the carbonic acid and any water which it may have contained, and becomes converted into quick-lime.

(2a.) Potash occurs in the soil in very small quantities as the sulphate and carbonate, but it occurs in immense quantities in warm climates as the nitrate, particularly in the East Indies, which place is the principal source of all the nitre imported into England.

(3a.) As East India is the chief source of nitre, I shall give a description of its preparation there. The soil is so full of it that it is got in great quantities from it. First, water is made to percolate through a quantity of the soil; the nitre and some other salts are taken into solution; the solution is then exposed to the sun, and gradually dries, leaving the crystallised salts. The nitre is purified by repeated solution and crystallisation. Nitre is very combustible—[or, rather, assists combustion]—as may be seen by its being one of the chief constituents of gunpowder, on account of the quantity of oxygen it contains.

(5a.) Sulphate of soda can easily be detected when mixed with sulphate of ammonia, by heating some of the salt in a platinum crucible. If the ammonia salt is not adulterated, there will be no residue, as the salts of ammonia are all volatile at a red heat; but if it is, there will be a residue left (the crucible should be kept covered, to prevent any of the contents from flying out).

(6a.) The coprolites on the farm, which are for most part pseudo-coprolites, contain principally phosphate of lime, with oxide of iron, as well as silica, alumina, &c.

(7a.) The way to proceed about testing for lime is as follows:—If to a clear solution there be added (1) muriatic acid, there will be no precipitate; (2) sulphuretted hydrogen—no precipitate; (3) hydrosulphate of ammonia—no precipitate; (4) carbonate of ammonia—white precipitate, indicating barytes, strontites, or lime; (5) then to fresh portion of solution add sulphate of lime, if there be then no precipitate, that will prove indirectly the presence of lime. Oxalate of ammonia gives a white precipitate (oxalate of lime) with lime and its salts.

(9a.) Metals are found in nature as oxides, sulphurets (e.g. sulphuret of mercury or cinnabar), as chlorides (common salt). Then their oxides occur in combination with acids; hence we have nitrates, sulphates, carbonates, &c.

(10a.) Sulphate of soda, Glauber's salt, = NaO SO<sub>3</sub>  
Sulphate of magnesia, Epsom salt, = MgO SO<sub>3</sub>  
Common salt ... .. = Na Cl  
Binoxalate of potash ... .. = K<sub>2</sub>O, O<sub>2</sub>  
Smelling salts ... .. = NH<sub>4</sub>O CO<sub>2</sub>  
Green vitriol ... .. = FeO SO<sub>3</sub>  
Blue vitriol ... .. = CuO SO<sub>3</sub>  
White ... .. = ZnO SO<sub>3</sub>

#### Home Correspondence.

**A Caution.**—Farming is never learnt; here am I, a grey-headed sexagenarian and rather an observant man, and was not aware that slugs were so mischievous after a crop of Vetches saved for seed: having sown four acres of the same land at a considerable expense, 3 bushels to the acre, at a cost of 9*s.* a bushel, I find they are carried off as soon as they appear above ground, and I am told had I sown Wheat the case would have been the same, and therefore I publish this "caution" in the *Gazette*. Cowper said he would despise the man who would not shorten his step to avoid treading on a worm, but the most merciful man cannot walk the fields now without crushing many of these nasty little slimy creatures, and I agree with your respected correspondent, Mr. Eames, that it will require two years to bring the land round to a healthy state. Very serious indeed has been the destruction of property this year: hay, Hops, Potatoes, corn, Pulse, Turnips, all have suffered more or less through the dispensation of Providence; and the weather now looks as unfavourable as it did last autumn for that important operation of Wheat sowing; let us hope for

better times—a farmer without hope is like the world without the sun. D.

**Sowing Wheat.**—Now this operation is in full force, we strongly advise those farmers who sow thick to try smaller quantities, even if only four or five ridges. We do not say sow 1 bushel to the acre, but go a little further and desire they will sow only 7 pecks instead of 2 bushels; but if the seed is inferior and light, as some will be this season, and the period retarded by reason of the late heavy rains, 2 bushels may most excusably be sown at this time. But for gentlemen possessing land of their own, and having sons too, who may enjoy the task of over-looking these operations on their "paternal acres," it is inexcusable to sow 2½ bushels of Wheat: a waste of corn, a stifling of plants, an abundance of inferior straw, and a bad sample of Wheat, as well as diminished yield, is the consequence of such obtuse proceedings. It is not plenty of dung and plenty of seed will produce Potatoes, Mangold, or Wheat; that is a vulgar error, and highly rural as to logic. A stout straw and fine heads attend the harvest of the thoughtful and intelligent; but thin and abundant straw, small ears, and abundance of tailing, lies on the barn-floor of those who, having good land and plenty of this world's goods, only abuse it, by want of a little travelling. Better than "Stephens on the Farm," the owner had better be off the farm, and open his eyes. Go and give worthy Mechi a call, visit the Banks of Tweed, or the lands of Northumberland; our Southerners know naught of the North, and only condemn because of their unbelief. Go and see! *X. Y. Z., Hants.*

**To Mr. Mechi:** Dear Sir—Very great credit is due to you for the many and very valuable communications you have made to the farmers of this country; and I have no doubt whatever that you consider your statements are correct, and can be borne out or sustained by science. I am induced to make this communication, because I am of opinion that a statement made by you (in the last Number of the *Agricultural Gazette*, under the head of Irrigation No. 5) cannot be sustained by Professors in chemistry. I am willing to admit that practical men are divided in opinion upon the point; but as it is a very vital part connected with the subjects of irrigation and liquid manure, it ought to be decided, and every one to become acquainted with the truth. The statement of yours which I have alluded to occurs near the conclusion of the article, viz., "Much importance is attached to the fermentation of liquefied manure." I was always of opinion that it should be used prior to fermentation, and as I have laid pipes, &c., for the purposes of irrigation, I was anxious to use the manure in its best state; I therefore wrote to Professor Frankland, of Owen's College, Manchester, for his opinion, which is as follows:—"I should not advise you to mix anything with the liquid manure, but to use it as fresh as possible; in fresh urine the ammonia is fixed in the form of urea, and it is only by subsequent fermentation that this urea is changed into volatile carbonate of ammonia." If this statement be true, then it cannot be good to allow fermentation, or to mix anything for the purpose of causing it. *B. C.*

**The Wheat Crop in Norfolk.**—Whatever may be the produce of Wheat in the district mentioned last week by your correspondent "A. B.," there can be no doubt that it is a very deficient crop in other parts of the county. The short quantities delivered to the miller immediately after harvest, by those who had sold their corn before they had sacked it, would be sufficient proof of this, unless we are to suppose (which would be very uncharitable) that the many instances of short delivery which came under my notice were the result entirely of rapidly rising prices. I have just threshed about 18 acres of Wheat, which yielded 10 quarters 3 bushels less than I got off 12 acres of the same land the last time it was in Wheat, and although a good sample the weight is inferior. The quality of the Wheat is not so good as was generally anticipated, and while heavy weights are rarely met with, it is certainly far from being the "best and heaviest sample that has been grown for years." I find that the millers consider 60½ to 61 lbs. per bushel a good average weight. *J. Culley, Guton Hall, Oct. 20.*

**Land Drainage.**—Without for an instant questioning the ability of your correspondent Mr. J. Bailey Denton, as "a competent practised drainage engineer," I must observe that he has strangely misunderstood the import of my communication; and if he will receive a little advice, I would recommend, before again committing himself to paper, to study his subject a little more carefully. If he will do this, it will possibly save him from so earnestly endeavouring to refute statements which were never made, and wasting so much fine caustic satire upon ideal error. It is difficult to understand why he has jumped to the conclusion that I "have been draining at a comparative loss to my employer." I endeavoured to state most clearly that having recently undertaken the management of an estate, I was annoyed to find the drainage previously done upon it defective, and certainly said nothing which could lead any one to imagine I had myself been draining, all my remarks having reference to the failures of others, which I attributed to the great width the drains had been laid at; and Mr. Denton will observe, if he peruse my letter again, that my opinions perfectly agree with his own, and therefore do not bear the evidence of being "another boasted instance of the failure of drainage," against which he imagines himself bound to protest. I believe no one can be more fully alive to the value of thorough drainage than myself, having been a witness for many years to its beneficial results, on a variety of soils. At



the same time, no one can be more thoroughly convinced of the utter absurdity of laying down fixed rules, depths, and distances for drains, irrespective of soil, inclination, &c. It is certainly rather a novel kind of logic to condemn a man as ignorant because in his humility he wishes to have the opinions of others to confirm his own views. C.

**Keythorpe Drainage.**—Mr. Joshua Trimmer has done much for agriculture in directing the attention of landowners to the importance of surface geology, and the prevalence of erratic soils in the place of those described by Morton as necessarily incidental to the stratum beneath. But in endeavouring to displace one theory by another, he has fallen into the error common to all who generalise with principles not matured. With respect to the Keythorpe drainage, I would venture to suggest inquiry and examination ere it be taken as a precedent. To do a thing successfully is creditable, but it should be remembered that success may be gained at too great a cost, and that such must be the case where drainage is effected in opposition to the laws of gravity. Upon investigating the Keythorpe drainage, the first question for consideration will be, whether in the succession of cross drains, one below another, the lower drains have not robbed the upper ones, and if so, whether such a system is consistent with economy. Now that the question of direction of drains is fairly afloat let it be fully discussed, that the reading of the *Gazette* may have a practical effect. J. Bailey Denton.

## Societies.

### ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

**AUTUMN CLEARING OF STUBBLE, Oct. 11.**—At the meeting of the Irish Farmers' Club, which has grown out of the Agricultural Society under the vigorous management of the secretary, Mr. Harkness, a discussion on the above subject was this day introduced by that gentleman, from whose opening address, as reported in the *Journal of the Society*, we call the following extracts. We select three of the replies to inquiries by Mr. Harkness addressed to English, Scottish, and Irish correspondents.

1. **John Grey, Esq., of Dilston.**—In answer to query 1st, I can tell you how I managed, many years ago, to rid a farm of Couch, and bring it into such condition that its rent was advanced from 400*l.*, during the years I had it in my own occupation, to 600*l.*, when I let it again. During my minority, the farm in question, which is my property, consisting of a strong loam, on the side of the Tweed near Berwick, had been let by my guardians, and ill-managed by the tenant. Although at a distance of 15 miles from my residence, I resolved to take it in hand, and to send a good man who lived with me to take charge of it. That worthy man was alarmed at the sight of the stubbles, so full of Couch, that he said hands would not be had to gather it. You must not trust to hands, I said, but bury it, and rot it underground. We set four ploughs to work in the autumn, two and two following each other. The first, with a broad-share, and set pretty wide in the mould-board, throwing a surface paring of 3 or 4 inches into the bottom of a deep furrow prepared for the purpose. The second, with a sharp and narrow share, and closer set in the mould-board, following the former in the same track, and without breaking any fresh surface, but throwing above the former furrow a fresh one of 6 to 8 inches, as could be had. The latter was hard work for the horses, which required to be changed alternately with those in the first ploughs. This covering so far excluded the air from the Couch, as to allow of very little of it growing. In this way the land lay till the following April, and, when in a dry state, it was ploughed across the ridges with three or four horses in a plough, to the depth of 12 or 13 inches, and proved to be in a loose and friable condition, with hardly any living Couch to pick off, and in a state to be very easily worked for Turnips. The benefit of this deep tillage, in bringing fresh soil into action, besides the destruction of Couch, was very remarkable, in the easy working and increased produce of the farm, which, to this day, in my son's occupation as tenant, continues to be in as high a state of cultivation as any farm on either side of the Tweed. Another plan which I have used with benefit is, in early autumn, to skim-plough the stubble, harrowing well the thin furrow, so as to rake off all stubbles, Couch, &c., and then to follow with a furrow of 10 to 12 inches deep (the latter, if soil admits), so to lie till broken up for Turnips in the spring. After that deep cultivation there is little need for more ploughing, as a two-horse grubber going over 3 acres a day, followed by light harrows, will do all that is needful, till it is time to set it up in drill furrows. If lime is to be applied, it saves time in spring, and also the treading over ploughed land, to spread it on the stubble, and then being subjected to a thin ploughing, followed by a deep one, is mixed with the soil, without being left too deep in it, to which it always has too deep a tendency. To make the work of grubbers economical and effectual, I much prefer to begin with a deep ploughing in autumn, thoroughly to loosen the soil, and leave it in a state for the freer operation of the other instruments. I have frequently, when the land was clean, and the season admitted, after the cultivation previously stated, set it up in drill rows in autumn, in which way stiff land is preserved in good and dry order through the winter, which otherwise might have been made very tough, and difficult to reduce in spring, when weeds appear; and to

keep the land loose, it only requires the drills to be ploughed, or *split* back, now and then, as occasion may require, till the time comes for applying the manure and sowing Turnips; or, instead of splitting the drills, if they be too damp at bottom, the drill or concave harrow, covering two drills, and drawn by one horse, may be run along, followed by a double plough, to raise up the mould again. I did, on one occasion, put in the manure and finish the drills off in the autumn; but where there is a tendency to Chickweed and other annuals, the necessity of using the drill harrow, scuffler, &c., to keep them down, up to the time of Turnip sowing, makes the land too solid, unless it be of a light and gravelly character; in which case I believe it may suit it better than to subject it to too much stirring in summer near the time of sowing. I believe, too, that the influence of the manures, having lain in contact with the soil through the winter, and impregnated the contiguous parts, has a good effect on the growth of the plants. In the case I refer to, they came beautifully, and grew large, but ripened too early.

2. **Mr. Henderson, of Edinburgh.**—I do not approve in most soils of ploughing or trenching down quickens, although I have frequently practised the latter mode; but it not proving satisfactory, I discontinued it, and pursued a system which I found to be much easier and more effectual. As to stubbles, I invariably removed as much of their straw as possible, by either close cutting with the sickle, or more generally by mowing with the scythe, as I hold it to be more profitable to remove such straw that is generally left as stubble into the stack-yard, afterwards to be converted into manure, than to plough it down with the view of enriching the soil. And, with regard to ploughing down quickens, &c., I always found it difficult to do, so as to exclude the air and to decompose them; and this I found to be more difficult in light porous soils than in deep loam or clay land. I found it more advisable to trench such deep soils by paring first a thin broad furrow, by two horses in a common plough, with slight feather upon the soak, such furrows to be deeply covered by another common plough following with two horses; and if the land was stiff I frequently used three horses, or two oxen and one horse. But the method of autumn culture which I latterly pursued, and which is found to be the best, after a series of years' practice of various modes, immediately after the ground was cleared of crop, to commence ploughing, upon the porous light soils, as deep as two horses with the common plough could do with ease, and as the land would admit of. But if the land was of a stiff nature, I generally break-furrowed it by laying one furrow above another; by which means not only a great part of the weeds were decomposed, but the land much ameliorated by exposure to air and frost during winter, thereby rendering the ground more free for the spring operations of cleaning, &c.; which, if the land was light and porous, I commenced crossing with a common grubber: but if of a stiff nature, I cross-ploughed with two horses in a common plough, and afterwards gave the land the usual preparation for a green crop. The kind of implements I preferred, and most generally used, were the modern two-horse plough, a subsoil plough suitable for four horses, or rather oxen, which are more suitable for deep ploughing, trenching, or subsoiling, as they are more steady, and do not commit so much damage when the plough comes in contact with sit-fast stones, &c. I also used a grubber of suitable weight to the kind of soil, and then reduced the land to a fine mould with a roller and iron diamond-shaped harrow. The single-wheeled plough I have tried, and seen it used with great advantage when the land was clear of stones, within the tillage depth, but otherwise it is slow, and makes very imperfect work. As to the four-horse grubber with scarifiers attached, and the double iron ploughs with wheels, I have never seen them in operation; have frequently admired them as implements likely to succeed if the land was suitable, as described, for the single-wheeled plough, but not otherwise. But as I am a strenuous advocate for the most simple construction of all kinds of farm implements—which I have found from experience to be most suitable for the generality of servants, and land occupied with various obstructions—I cannot recommend complicated implements for any purpose, the expense and unsatisfactory work of which are generally admitted and objected to. I invariably cleaned my land as early as possible, and, in order to facilitate such, I frequently commenced ploughing amongst the stooks in harvest, which were carried into regular rows, during the time of reaping for the free admissions of the plough. Where land can be well cleaned, and otherwise properly pulverised, for the reception of a green crop, it would certainly be a great saving of time and labour to apply the manure to the land at the most convenient suitable season prior to the arrival of spring, provided the manure, to be so applied, is in a proper decomposed state, as I always preferred the proper preparation of manure in the dung-hill to that of doing so in the land. And to counteract, in a great measure, that much hacknied theory of manure losing its fertilising qualities by exposure to air and rain, &c., I carted out the farm-yard manure in winter, and mixed it properly with sea ware, if near the sea, or any other compost suitable for decomposing and increasing the quantity of manure. Soiling of cattle is only profitable, in so doing, in situations where land is good; and in such a high state of cultivation as to produce a regular succession of cuttings of green crops, &c. I put the manure up into square dung-hills firmly packed at the sides, and ridged up at the top, sometimes thatched,

so as to counteract any bad effects by exposure to the weather, and in about two weeks previous to the application of the manure to the soil I turn and mix it well, and when properly fermented, I apply it to the land without delay. In conclusion, I made it an invariable rule in farming to leave nothing that could be done to-day undone for to-morrow, as well regulated farming, as well as all other business, should be entire strangers to procrastination.

3. **Mr. Todd, Land-agent to J. Croker, Esq., of Ardferret Abbey, county Kerry.**—I now send a statement of my views upon some queries as to the autumn culture and cleaning of land, not with the view of bringing forward any new plan, but simply to state, in as concise a manner as possible, what my own experience has been whilst farming extensively in the midland counties of England, where my object was to keep as much stock on the land as I could possibly feed, at the same time keeping all my land under a regular course of cropping. 1st. As soon as I had my Wheat cut and stooked in wide rows, to leave as much of the land clear as possible, I ploughed the space between the rows of stooks, in order to get a stolen crop of Turnips. When the Wheat was carted I ploughed up the remainder of the land, and after harrowing well, and picking off any weeds that came to the surface, I drilled in stubble Turnip on the flat with bone-dust, hoed and cleaned them in the same way as a regular crop of Turnips, and had a good return by so doing. These Turnips were all consumed on the land by sheep in the spring, and, I may add, that it was from them I always get the best food for my ewes and early lambs—giving the lambs an outlet through the hurdles, to go over as much of the field as they liked. There was not much autumn cleaning done in this land, as the cleanest land was used for this purpose. The ploughing down of the small weeds, and keeping the surface clean with the hoe, till the Turnip closed in the drills, left the land in the spring in a comparatively clean state, when it was prepared for a regular crop of Turnips, at which time any Couch-grass was easily taken out of the land. With other fields of stubble I employed men to breast-plough to a depth of 1½ to 2 inches, cutting the whole surface clean off, and turning it partly over to leave it in as rough a state as possible, to expose it to the sun and air. To get over a number of acres quickly, I fitted a wide-skim share on a common plough, and set two horses to plough it, first taking off the mould-board. In dry weather I kept a pair of harrows following the plough as close as possible, to get the weeds on the surface. These I dragged with the harrows in the first place into rows, which were forked together at once and burnt. The land well harrowed again till the remaining weeds were shaken out on the surface, which were then clean hand-picked and burnt. I then gave the land a fair coat of dung, ploughed it in, and immediately sowed winter Vetches. When covering them with the harrows, any Couch-grass that remained below the skim-ploughing, and turned up with the deeper ploughing, when covering in the dung, was shaken out and picked off the land. These Vetches were eaten on the land by the sheep as soon as the Turnips were consumed, and, in doing so, there was an excellent coat of manures left on the land, which was regularly ploughed in about 3 inches deep, as soon as the sheep had cleaned as much of the land as to give a day's work for a plough. This system left the land in excellent heart, and all that was required afterwards for getting in a regular crop of Turnips, was a cross-ploughing to the full depth; and if there should still be Couch left, I put Finlayson's harrow through it, and worked fine with a roller and common harrow, then picked off the weeds, and ridged up into drills for the seed. I have also cleaned stubble land for Beans in the same way, so far as skim-ploughing and removing the weeds, then ploughing the land to the full depth, and with Finlayson's and the common harrows worked out the Couch-grass. I left the land in this state till January, when I drilled it up, put the manure in the drills, sowed the Beans, and after covering them in, harrowed the ridges partly down again. They required no further labour, as I pulled them when green, and gave them to my pigs, which thrive well on them, and eat every bit except a small portion of the root-end of the stalk, if care is taken to have them cut before the pods are formed. This crop was succeeded by a Turnip crop, drilled in with bones, if the supply of farm-yard manure was done; and, as time was a great object, the great advantage of having the land cleaned in autumn was then found out, being a saving of a fortnight, at least, in getting the seed into the ground. As time would not permit for cleaning all the stubble land in autumn, the portion intended for spring Vetches, Potatoes, and Mangold Wurzel, was ploughed with a regular depth of furrow as soon as possible after harvest, cross-ploughed in spring, and cleaned in the regular way with Finlayson's two-horse harrow, rollers, and common-harrows. The manure spread on the surface and ploughed in for Vetches, and applied in the drills for Potatoes, Mangold Wurzel, &c. By following out the system I have attempted to describe, I think it is clearly shown that there is a great advantage in cleaning land as much as possible in autumn, if for no other than the saving of time in spring and summer; but this can only be done to advantage on light, dry land, which will carry sheep in all weathers. On heavy clay land I would not attempt it, nor would I on any land trench or plough down Couch-grass with the view of smothering it, as I am of opinion that the only effectual way of getting rid of it is to take it out of the land. I can see no practical difficulty in using four-horse



grubbers as scarifiers, having skim-counters fixed on them. Ducie's drag is fitted in this way, which I have seen working with four horses. It appeared to me very heavy work for them; so much so, that I should prefer an implement much lighter made, that could be worked with two horses, as I believe the men could manage it better, and the draught probably be lighter on the horses. I have not seen a double iron plough used as described in this question. If such a plough has been made, and intended to trench down Couch-grass so as not to interfere with the working of the land for Turnips, I fear it will fail, and, in all probability, add greatly to the expense afterwards of getting rid of the Couch, as it will give it so much the more loosened soil to grow in, besides throwing it low down in it, which must be turned up again to the surface to get the Couch out, as I cannot think that Couch-grass can be smothered by covering it deep in the soil by trench ploughing; if it is possible to do so, the whole of the top soil must be turned down with it, and to such a depth that it may be considered lost, and leave only the subsoil to work on for future cropping. This would ruin the land, in the first place, and, in my opinion, the farmer who would attempt such a plan would very soon find that the cost of it would be no trifling sum. On a free working soil, clear off large stones; I would skim-plough about three inches deep, harrow well, and use a light two-horse grubber to bring all weeds to the surface; and after clearing them off the land, by burning or otherwise, give the land a good deep ploughing, and lay it well together for the winter. The advantage would be in the great saving of labour in the spring, besides the benefit the land would derive by having got rid of so much dirt, which it would otherwise have to support till the spring. I would recommend its general adoption on all free soils, and more particularly on such as have been irregularly tilled, and have, in consequence, become very foul. Where land has been cleaned in autumn, and intended for green crops the following summer, I can see no objection to carting on the manure in the winter, and covering it at once; further than that, I think the green crops would get the benefit of the manure more if put into the drills in the usual way immediately before sowing the seed. If the land lay near the sea-shore, whence a supply of weed could be obtained, I would give as much of the land as I could a coat of it, plough it in quite fresh, and smooth the surface with a light roller; all other manure I would reserve till the land was prepared for sowing the seed. It can be carted out during the winter, and deposited in heaps either in the field it is intended for, or at some convenient spot near it, and prepared by turning and mixing for any particular crop or nature of the soil. On some soil the ridging of the land would be beneficial, but in general cases, where the object is to lay the land up dry for the winter, and to smother small weeds, I should prefer ribbing the land, which can be done at once; but for ridging it up, an extra ploughing should be given. Soiling of cattle in houses or yards is to be recommended everywhere, more particularly where there is an abundance of straw on the farm; and a farmer need never be at a loss to find room for, or a useful application of, all the manure he can make on his farm during the whole year. If the only objects of soiling cattle was to have a supply of manure ready to put on the land at the beginning of winter, I would not do so, unless in a very particular case, when there might be some difficulty in getting the manure applied at the time I wished; or, from the nature of the land, I might consider it advisable to put on it some fresh-made manure, to keep it as light and open as possible during the winter. If I did so, I would still give a little more at the time of putting in the seed, if I had it to spare. From the foregoing statements, you will observe that I am an advocate for the autumn culture of land; and, in conclusion, now beg to observe, that I consider it would be a most important point gained, if, by bringing this matter before the farmers in this country, they could be induced to give it a fair trial for a few years, and, combined with it, the proper cultivation of their farms in spring and summer; sowing good Grass seeds, instead of the wretched mixtures of every kind of weeds, they are so fond of using, and attending more to the cultivation of Turnips. When I see this done I have no hesitation in stating that the farmers would then not only be able to raise much better crops of corn, but, what would be of more importance still in this district—instead of the miserable stock we see on most farms, even on good land, bred and reared on it—we should have stock of the same breeds infinitely superior in every way, the value of which, whether sold as young stock, milch cows, or fat to the butcher, would be nearly doubled. And all this notwithstanding any improvement in the breed, but to the superior quality of the food, the change being from the present system of turning the cattle out to Grass on inferior Grass and foul stable land, through the whole winter, with a little inferior hay at night, to having good Grass and hay, and some Turnips, which would keep the stock in good, healthy, and improving condition through the winter and spring months, after which they would at once derive benefit when turned out to Grass, in place of having their growth checked, and requiring, at least, half of the summer's Grass to make up the condition lost by bad treatment during winter.

### Miscellaneous.

Method of preserving Corn-stacks from Rooks.—Hazel twigs, about 4 or 5 feet long, are stuck round the stack, pointing at an angle upwards, and at a distance of about

4 yards apart; one row a little below the eaves of the stack, and another about half-way up the thatch, the upper twigs being placed in an intermediate position between the lower; lines of worsted or strong cotton are then suspended from a small stick on the ends of these twigs, and cross-lines also between the two rows, as well as lines along each row: the whole thus forming a sort of loose net-work; and at the cost of only 1s. two or three stacks may be thus fully protected. The net-work will last a full year, if required so long, though parts of it may occasionally require repair, as after very high winds; and perhaps there can be no greater proof of the efficacy of the plan than the fact, that if any part of the worsted has been much broken away, an attack after a short time is sure to be commenced on that part of the stack. *Rev. T. Burroughes, English Agricultural Society's Journal, No. 31.*

### Calendar of Operations.

#### OCTOBER.

**SOUTH DEVON, Oct. 25.**—The continued rainy weather which we have had for some time past, has so retarded all field operations that it is difficult to find anything worthy of reporting just now. The Wheat crop is of course the main object, and preparations are being made for it, whenever the weather will permit. The Orchards now require particular attention, and women are actively engaged collecting the Apples from under the trees as they fall, and keeping the sorts separate—a proceeding which all adopt who are particular as to the quality of their cider. The Apples, after being collected in a heap, are left until they are fit for use, when they are broken down into a large vat and laid up in the press the day following; the juice or cider is then carried away into the cellars, and treated either for rough cider or for distant markets, as may be required. The Apple crop is a partial one, but altogether the yield is likely to be better than first anticipated. The root crops are generally good, but in many places very foul with weeds; this in a great measure arises from the heavy rains rendering it almost impossible to enter the land for the purpose of cleaning. Grain and stock still command high prices.

### Notices to Correspondents.

**FIGS AT GLOUCESTER: A Subscriber.** Next week. **RICE: Clericus** says "I fear a very trying winter for the poor is approaching; I am thinking of laying in a stock of Rice and selling it out to them under prime cost; will you or some of your correspondents send a few receipts to your Journal informing how it can be most advantageously consumed?" **SALT: J. P.** You had better sow broadcast by hand some 12 or 14 bushels of fresh slaked lime on a quiet dewy evening when the slugs are at work. This will be less likely to injure the young plants than salt.

### Markets.

#### COVENT GARDEN, October 29.

Most kinds of Vegetables and Fruit continue to be well supplied, but trade remains dull. English Grapes are abundant. Pears chiefly consist of Beurré d'Amaulins, Brown Beurré, Gansel's Bergamont, and Marie Louise. Imports of Potatoes from the Continent are still kept up. Carrots and Turnips fetch from 2d. to 4d. per bush. Potatoes are much diseased, but prices for them keep up. Mushrooms are more plentiful. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

#### FRUIT

Fine apples, per lb., 3s to 6s  
Grapes, hothouse, p. lb., 1s to 3s  
— Portugal, per lb., 6d to 1s  
Apples, per bush, 3s to 6s  
— dessert, p. hf sieve, 2s to 4s  
Pears, per doz., 1s to 3s  
Lemons, per doz., 1s to 2s

#### VEGETABLES.

Cabbages, per doz., 9d to 1s  
Cauliflowers, each, 2d to 4s  
Greens, per doz., 1s 6d to 3s  
Brussels Sprouts, do., 1s 6d to 2s  
Potatoes, per ton, 60s to 160s  
— per cwt., 5s to 7s  
— per bush, 2s 6d to 6s  
Turnips, per doz., 2s to 3s  
Cucumbers, each, 2d to 6d  
Celery, per bundle, 6d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 1s to 1s 6d  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
— per bush, 2s 6d to 3s  
Leeks, per bunch, 2d to 3d  
Shallots, per lb., 6d to 8d  
Garlic, per lb., 6d to 8d

#### HAY.—Per Load or 68 Trusses.

**SMITHFIELD, October 27.**  
Prime Meadow Hay 95s to 115s  
Inferior do. ... 50 60  
Rowen ... 45 60  
New Hay ... ..  
E. J. DAVIS.

#### CUMBERLAND MARKET, October 27.

Prime Meadow Hay 110s to 165s  
Inferior do. ... 40 85  
New Hay ... ..  
Old Clover ... ..  
JOSUA BAKER.

#### WHITECHAPEL, October 27.

Fine old Hay ... 100s to 105s  
Inferior do. ... 90 95  
Fine new Hay ... 80 88  
Inferior do. ... 38 60  
Old Clover ... 126 180  
Inferior do. ... 110 115

#### COAL MARKET.—FRIDAY, October 28.

West Hartley, 22s.; Wallsend Braddyl's Hutton, 26s.; Wallsend Hutton, 26s.; Wallsend South Hartlepool, 26s.—Ships at market, 30.

#### WOOL.—BRADFORD, THURSDAY, October 27.

Wool.—The business doing is exceedingly meagre, and sales in quantity cannot be effected. Noils and broken without change.

YARNS.—The spinners are doing a very limited business in the wool trade. The stoppage of 100s is so considerable that the idle spinning frames, and those which work short time, are now more than were ever remembered at any previous period; and as the Burnley turn-out begins to-morrow, it will add more to the number.

Prices.—Diminished production is certainly telling on the stocks in the market, for without this judicious course they would have been augmented to an undue extent; but with the present marked caution, it is not improbable their value will be maintained, and at the turn of the year activity may prevail.

#### HOPS.—BOROUGH MARKET, FRIDAY, October 28.

Messrs. Patten and Smith report that the demand for fine Weald of Kent and Sussex Hops continues active; of the latter the supply is nearly exhausted. The duty is still variously estimated, but the prevailing opinion is that it will rather exceed 140,000l.

#### SMITHFIELD.—MONDAY, October 24.

There is a shorter supply of Beasts, but we are still overdone with midding qualities, consequently a considerable number is left unsold. The choicest descriptions in a few instances are dearer. Although the number of Sheep is very much smaller than on Monday last, it is fully adequate to the demand, and prices on the average are very little better. Good Calves are rather more in request. From Germany and Holland there are 2694 Beasts, 6370 Sheep, and 94 Calves; from Spain, 290 Sheep; from France, 20 Beasts; and 2400 from the northern and midland counties.

Per st. of 8 lbs.—s d s d  
Best Scots, Herefords, &c., ... 4 2 to 4 4  
Best Short-horns 3 10 — 4 2  
2d quality Beasts 2 6 — 3 4  
Best Downs and Half-breeds ... 4 8 — 5 0  
Do. Shorn ... 0 0 — 0 0  
Beasts, 5527; Sheep and Lambs, 25,220; Calves, 154; Pigs, 340.

#### FRIDAY, October 28.

The number of Beasts is large to-day, but the quality of the supply is very inferior. We retain our top quotations of Monday last; there are, however, so few good Beasts on offer, that they must be considered as merely nominal. Although the supply of Sheep appears small, it is about as usual on Fridays at this time of year, and, owing to the mild weather, exceeds the present demand. A few of the best descriptions make about the same as on Monday, but it is exceedingly difficult to dispose of inferior qualities. The trade for Calves is also very dull, owing to the unfavourable weather. From Germany and Holland there are 426 Beasts, 1769 Sheep, and 197 Calves; from Spain, 90 Sheep; 400 Beasts from the northern and midland, and 90 Milch Cows from the home counties.

Best Scots, Herefords, &c., ... 4 0 to 4 4  
Best Short-horns 3 10 — 4 2  
2d quality Beasts 2 4 — 3 4  
Best Downs and Half-breeds ... 4 8 — 5 0  
Do. Shorn ... 0 0 — 0 0  
Beasts, 1252; Sheep and Lambs, 6800; Calves, 341; Pigs, 360.

#### MARK LANE.—MONDAY, October 24.

The weather since Friday has been finer with southerly winds. This morning's supply of Wheat from Essex and Kent was very small, and sold at an improvement of 2s. to 3s. per qr. on the prices of this day's night. Having a large attendance of country buyers, a good retail business was transacted in foreign at an enhancement of 3s. per qr. on our quotations of Monday last. Barley of all descriptions brings fully last week's prices. Beans are scarce, and dry parcels sell at an advance of 1s. to 2s. per qr. White Peas are unaltered in value; Grey, 1s. to 1s. 2s. per qr. Oats command an improvement of 1s. to 2s. per qr. The price of town-made Flour is raised 5s. per sack, and barrels are fully 1s. dearer.

Wheat, Essex, Kent, & Suffolk ... 4s. 8d. Red ... 4s. 8d.  
— fine selected runs ... ditto ... 4s. 8d.  
— Talavera ... 4s. 8d.  
— Norfolk ... 4s. 8d.  
— Foreign ... 4s. 8d.  
Barley, grind. & distil., 34s to 38s ... 4s. 8d.  
— Foreign, grinding and distilling ... 4s. 8d.  
Oats, Essex and Suffolk ... 4s. 8d.  
— Scotch and Lincolnshire ... 4s. 8d.  
— Irish ... 4s. 8d.  
— Foreign ... 4s. 8d.  
Rye ... 4s. 8d.  
Beans, Mazagan ... 4s. 8d.  
— Pigeon ... 4s. 8d.  
— Foreign ... 4s. 8d.  
Peas, white, Essex and Kent ... 4s. 8d.  
— Maple ... 4s. 8d.  
Maize ... 4s. 8d.  
Flour, best marks delivered ... 4s. 8d.  
— 2d ditto ... 4s. 8d.  
— Foreign ... 4s. 8d.

#### FRIDAY, October 25.

The supply of all sorts of grain this week has been moderate. Although there were several country Wheat buyers at market this morning nevertheless the attendance was smaller than we have been used to of late, and the business transacted was less; but the full prices of Monday were obtained. In floating cargoes from the South there did not appear to be any transactions. Barley, Beans, and Peas bring Monday's rates. Oats are held for rather more money, and in some instances 6d. per qr. advance has been paid. Flour meets a fair inquiry at Monday's prices.

#### ARRIVALS THIS WEEK.

English ... 2420 qrs.  
Irish ... 200  
Foreign ... 12710  
Wheat ... 3550 qrs.  
Barley ... 840  
Oats ... 13730  
Flour ... 1150 sacks  
6690 bbls.

**LIVERPOOL, TUESDAY, Oct. 25.**—The Exchange this morning was well attended by millers and dealers, and we had a healthy demand for Wheat and Flour for consumption at an advance of 1d. to 2d. per bushel, and 6d. to 1s. per barrel on Flour over Friday, making the improvement since this day's night 4d. to 6d. per bushel on Wheat, 2s. to 2s. 6d. per barrel and sack on Flour, and 2s. to 3s. per qr. on Indian Corn. Beans and Peas were each 1s. to 2s. per qr., Oats 1d. per bushel, and Oatmeal 1s. per load higher.—**FRIDAY, Oct. 21.**—At this morning's market there was a good attendance of the town and country trade, and again many buyers from a distance, and a large business was done in Wheat and Flour for consumption and on speculation, at a further advance since Tuesday of 2d. to 3d. per 70 lbs., and 1s. 6d. per barrel, and 1s. per sack. Oats and old Oatmeal met with a moderate demand, at the extreme rates of Tuesday; Barley and Beans were each held for full prices, but the demand, quite in retail. Indian Corn was more inquired for, and sound parcels of yellow, in store, were saleable at 1s. to 2s. per qr. more money. Our quotations for American white Wheat are, to-day, 10s. 6d. to 10s. 8d. per 70 lbs., and Flour from 36s. per barrel for Western Canal, up to 37s. to 37s. 6d. per barrel for Baltimore and Philadelphia.

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## LANDSCAPE GARDENING REVIVED AS AN ART.

**MR. THOROLD**, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure-grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

## TO THE NOBILITY, GENTRY, AND OTHERS.

**WILLIAM BAKER**, Watch and Clock-maker, Jeweller, and Dealer in Antique Gems, and articles of Vertu, established 1830, respectfully returns his sincere and grateful thanks to his patrons, particularly the inhabitants of St. Martin-in-the-Fields, for their kind support for so many years. As he cannot come to an arrangement with the landlord who has recently purchased the house, he is compelled to remove at Christmas next, and begs to offer his STOCK of WATCHES, Clocks, Gems, Plate, and Jewellery, &c., at extremely low prices. Repairs in every department by the best workmen, as usual, and due notice will be given when he removes.—35, Long Acre.

## FIVE POUNDS PER WEEK EARNED.

**EMPLOYMENT RESPECTABLE: EVERY MAN** HIS OWN MASTER.—This valuable packet will be found to give the greatest satisfaction. We possess hundreds of letters to prove that 4l. to 7l. per week are being realised by persons who began with 2s. 6d. only. It embraces India-rubber and Lephers proofing for coats, leggings, capes, life-belts, &c.; also how to make cheap the dissolved solution; to learn in a day the modern mode of French polishing, making for sale pickles, cheap and good perfumery, sealing-wax, inks, blacking, bakers' pastry, with muffins, crumpets, and the famous Isle of Wight dough nuts; millinery, with feathers and furs, dyer and scourer, and a dozen other real money-making businesses, sent post paid, price 1s. 4d., or in post stamps.—FISHER & SONS, Publishers, Kingsland, London.—Established 1847.

## NO CHARGE FOR STAMPING ARMS, CRESTS,

**INITIALS**, &c., on paper and envelopes, at LOCKWOOD'S well-known establishment, 75, New Bond Street. Good cream-lined Note-paper, five quires for 3s.; Thick ditto, five quires, 1s.; Albert and Queen's sizes, five quires for 6d., 9d., and 1s.; Envelopes, 3d. to 1s. 6d. per hundred; Foolscap paper, 7s. 6d. per ream; Copybooks, 2s. 6d. per dozen. Card Plate engraved, 2s. 6d.; 100 Cards printed, 2s. 6d. Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, LOCKWOOD'S, 75, New Bond Street. Country orders for 20s. sent carriage free.

**STAMMERING**.—A gentleman, educated in the Medical profession, cured himself by adopting a few simple rules; the organs of speech are brought under complete control, and the most confirmed cases permanently cured. Terms moderate. References to persons cured. Children received into the house.—Address X. Y. Z., 15, Melbourne-square, North Brixton. Established 20 years.

**PAUL GAGE'S ELIXIR**.—This tonic, anti-phlegmatic medicine has been established by 44 years' success as a most valuable remedy for phlegm, and all the disorders arising from it, viz., bilious complaints, catarrh, asthma, convulsive coughing, indigestion, colic, cholera morbus, ague fevers, gout, worms, whooping cough, females' complaints, &c. It is demonstrated in a pamphlet on Phlegm, delivered gratis at all the depots, why PAUL GAGE'S ELIXIR has not failed in desperate cases, where other means have been found of no avail. Sold in bottles at 2s. 9d. and 4s. 6d., by PAUL GAGE, 462, New Oxford Street; and by all respectable medicine vendors.

**HOLLOWAY'S PILLS, FOR THE CURE OF BILE & INDIGESTION, CANNOT BE SURPASSED.**—Capt. John Davies, a trader between Liverpool and the West Indies, for many years suffered dreadfully from indigestion; and although he was very cautious in eating his food, it always laid on his chest. Immediately after every meal, his face became fearfully flushed, the pains in his stomach were intense, and he had also frequent bilious attacks. He placed himself under the care of various medical men, who only afforded him temporary relief; but he lastly had recourse to HOLLOWAY'S PILLS, which alone restored him to perfect health, and his digestive organs have remained unimpaired ever since.—Sold by all Druggists; and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

**TO PIG AND SHEEP FEEDERS.**—**DAMAGED WHEAT** ... .. 30s. per qr.  
**LENTILS**, best quality ... .. 46s. per qr.  
**INDIAN CORN** ... .. 42s. per qr.  
**RICE MEAL** ... .. 8l. 10s. per ton.

**JAMES MAY & Co.**, Finsbury Wharf, 34, Wharf Road, City Road, London. Samples sent on receipt of two postage stamps. Terms: Cash on receipt of goods, with a reference in Town. Delivered in London free; 1s. 6d. each charged for sacks.

**BALSAM SEED IMPROVED**.—Nearly 400 testimonials prove GLENNY'S Improved Balsam Seed to be the best that has been obtained. The six classes in sealed packets, 37 stamps; a packet of mixed, 13 stamps.—420, Strand.

## TO GENTLEMEN, GARDENERS, AND GROWERS.

**WANTED**, a large quantity of QUEEN'S PINES, from 14 lbs. to 24 lbs., and a Hothouse of very good GRAPES, do be cut within a week; will meet with a ready sale at Mr. THOMAS SLAYMAKER'S, Centre Row, Covent Garden Market.

**SURPLUS STOCK**.—8000 Old English Grafted Elms, varying from 4 to 12 feet; 8000 to 4000 Chesnuts, 5 to 6 to 8 feet; 100,000 Ash, 3 to 4 to 6 feet; 2000 to 3000 Yews, 2 to 3 feet; 2000 to 3000 Siberian Arbor-vitae, 2 to 3 feet; 10,000 to 12,000 Berberis aquifolium, 2 feet; 8000 to 10,000 Common Laurels, 3 to 4 feet. The above have been frequently transplanted, are fine healthy plants, and all applications for terms will be duly attended to by Messrs. T. D. SHARP, Nurserymen, Sleaford, Lincolnshire.—N.B. Catalogues of General Nursery Stock may be had on application.

## BOX FOR SALE.

**TO BE DISPOSED OF**, a large quantity of GARDEN BOX, in fine condition.—For particulars, and to view the same, apply to Mr. SKINNER, Custom House, West India Docks.

**FOR SALE**, at half their value, a quantity of large China Arbor-vitae, Evergreen Oak, Sweet Bay, and Cedar of Lebanon, from 5 to 10 feet delivered free within 10 miles of London.—Apply to Mr. PORTER, Gardener, Southgate, Middlesex.

## ARAUCARIA EXCELSA (NORFOLK ISLAND PINE).

**FOR SALE**, a bargain, a pair of very fine specimens of the above, 15 feet high, in perfect health, and well feathered to within 3 feet of the tops. Also one about 12 feet high.—Particulars of prices, &c., may be had on application to JOHN CATTELL, Nurseryman, Westerham, Kent.

## TO GARDENERS AND AMATEURS.

**FOR SALE**.—A SPAN ROOFED GREENHOUSE, 27 feet by 10, nearly new. For particulars, enquire at Montague Cottage, King's Road, St. Pancras Road.

**FARM TO BE LET**.—Wanted, a respectable Tenant, for a Farm of 170 Acres. No intemperate farmer need apply, and a religious churchman much preferred.—Apply to the Vicar of Harbury, Southam, Warwickshire.

**TO BE LET, A STOCK AND CORN FARM**.—Its extent is about 465 acres, in a chalk district, about 70 miles from London. The soil is favourable for grain, and the farm will carry from 350 to 400 ewes. The incoming is favourable. About 130 acres is down land broken up five years ago, and now in good condition. There are 16 acres of water meadows.—Apply to Messrs. VENNING, NAYLOR, & ROBINS, Solicitors, 9, Tokenhouse Yard.

**WANTED**, a well situated RESIDENCE, in a good neighbourhood, with a few acres of Grazing Land, or with a Farm of from 100 to 200 acres of dry land. Warwick or adjoining Counties.—F. K. (under cover to the Bailiff), Mr. Crofts, Churchover, Rugby.

## INVESTMENT.—HOLLAND.

**FOR SALE**, with immediate possession, an ESTATE of 1162 ACRES, 1000 of which are covered with a valuable deposit of peat, which being the fuel in universal use in Holland, from the high price of coals, always commands a ready market. The Estate is intersected by canals for the conveyance of the peat, and these communicate with one of the chief canals in a northern province of Holland, and by these means there is direct and cheap water communication with the towns and cities in which the fuel is consumed; 150 acres are cleared and already in excellent cultivation, exposing a fertile soil, and 12 acres in wood. On the Estate is a comfortable Dwelling House, two Farmhouses, 14 Cottages, a Barn, and Cattle Sheds. There are also for sale all the implements required in digging the peat and cultivating the land, together with 8 Horses, 20 head of Cattle, &c.; also a Threshing Machine, &c.—For further information, apply, by letter, to J. C. M., at the Office of this Paper.

## "HIGH FARMING UNDER LIBERAL COVENANTS."

SOUTH COAST OF HAMPSHIRE: SMALL FARM AND DESIRABLE RESIDENCE; ABOUT 3 MILES FROM A STATION AND FROM THE SEA.

**TO BE DISPOSED OF**, under peculiarly advantageous circumstances, and with immediate possession, in consequence of the present occupier, a Civil Engineer, having accepted a professional appointment abroad, the remainder of the Lease, framed in a liberal spirit, with eight years unexpired at Michaelmas last. The Land, about 80 acres, is chiefly Arable. The House and most of the Buildings were new within a few years, and substantially built of brick and slate. The whole will be left in good repair, and form a very compact and convenient homestead, expressly arranged for the prosecution of an improved style of Husbandry. A great deal has been expended upon the Land and Premises generally during the last four years, mainly with the view to a future return, much of which must now necessarily be lost to the present occupier. Incoming favourable, Rent moderate, and Rates and Tithes very low. Forest Rights unlimited.—For further information and cards to view, apply to W. M. H., Esq., Post Office, Lynton.

## Sales by Auction.

## COCHIN CHINA FOWLS.

**MR. J. C. STEVENS** is instructed to Sell by Auction, at 83, King Street, Covent Garden, London, on Nov. 22, at 12 o'clock precisely, Thirty Lots of SILVER, CINNAMON, and BUFF BIRDS, selected from the stock of Mr. Beeby, of Chaldon, Surrey.

## FIRST CLASS COCHIN CHINA FOWLS.

FROM THE YARD OF H. M. SPARHAM, ESQ., OF BIGGARD HILL, ENFIELD, WHO HAS PROBABLY BEEN THE MOST SUCCESSFUL BREEDER OF THE YEAR, HIS BIRDS HAVING TAKEN PRIZES WHEREVER EXHIBITED WITHOUT ANY RESERVE.

**MR. J. C. STEVENS** begs to announce that on TUESDAY, Nov. 28th, he will Sell by Auction, at his Great Room, 83, King Street, Covent Garden, at 12 o'clock precisely, the whole of Mr. Sparham's Stock of heavily feathered Buff Cochins Chickens.—Catalogues by enclosing a stamped directed Envelope to Mr. J. C. STEVENS, 83, King Street, Covent Garden.

## NEW ORCHIDS.—FROM MR. WARSEWICZ.

**MR. J. C. STEVENS** begs to announce that, in his SALE on FRIDAY next will be included a small, but very CHOICE COLLECTION OF ORCHIDS, made by MR. WARSEWICZ, and just brought over by him from South America. There are several new species, including a Cattleya of surpassing beauty, drawings and dried specimens of which will be produced at the Sale. May be viewed the morning of Sale, and Catalogues had.

## ORCHIDS.

## IMPORTED AND ESTABLISHED PLANTS.

**MR. J. C. STEVENS** will sell by Auction at his Great Room, 83, King Street, Covent Garden, on FRIDAY, 4th November, at 12 for 1 o'clock, an IMPORTATION OF ORCHIDS in capital condition, including Cattleya like superba, a new Cattleya, &c. Also an importation from Africa, just received from Mr. Plant, and a few established specimens of Aerides maculatum, Saccolabium furcatum, and Blumei, Phalaenopsis amabilis and grandiflora, &c.—May be viewed the morning of Sale and Catalogues had.

## WATKINSON HALL, NEAR HALIFAX.

**MR. CARR** respectfully announces that he has received instructions from Henry Ambler, Esq., to Sell by Auction, without reserve, within the Piece Hall, Halifax, on SATURDAY, November 5, at 1 o'clock, being the great Winter Fair at Halifax for the Sale of Cattle and Horses, 130 Cochins China Fowls, 50 middle and small pure-bred Pigs, 20 Fat Sheep, and three Draught Horses. The Piece Hall is only about 150 yards from the Lancashire and Yorkshire Railway Station, where the Stock may be viewed, at 11 o'clock, on the day of sale.—Catalogues and Pedigrees may be had at the Offices of Mr. CARR, in Halifax and Bradford; and free by post, on application to Mr. THOMAS DODDS, the Bailiff, at the Watkinson Hall Farm.

## SURREY.

FARMING STOCK AND IMPLEMENTS, HOUSEHOLD FURNITURE, &c.

**MESSRS. DAVIS AND VIGERS** are directed to Sell by Auction, on the premises, Normandy and Claygate Farms, Ash, between Guildford and Farnham, and near to the Ash Stations on the South-Eastern and South-Western Railways, on WEDNESDAY, Nov. 9, and following day, at 11 for 12 o'clock, and without reserve, the LIVE AND DEAD FARMING STOCK, comprising 11 Horses, 5 Oxen, 8 Welsh Runts, 4 Milch Cows (1 with calf by side), 1 Weaning Cow Calf, 2 Sows, 10 Fattening Pigs, 12 Store, 105 Southdown Fatting Sheep, 80 Head of Poultry, 100 Loads of Hay, the valuable crop of Wheat, Oats, Barley, and Beans, with the Straw off 50 Acres, 20 Acres of Mangold Wurzel, 20 Acres of Turnips, &c. Valuable Implements, new within 12 months, including Iron Roller, Scarifier, Ploughs, Waggon, Carriage, Horsehoes, Landpresses, 2 Turnip Cutters, Cake Crusher, Winnowing Machine, Chaff-cutting Machines, &c.; 2 superior Dog Carts, Harness, &c.; and the HOUSEHOLD FURNITURE, well made, nearly new, and in good condition. The property may be viewed two days prior, and morning of Sale.—Catalogues may be had on the Premises; at the White Hart Hotel, Guildford; The Angel, Godalming; The Lion and Lamb, Farnham; and at the Auctioneers' Offices, 3, Frederick's Place, Old Jewry, London.

## TO GENTLEMEN, NURSERYMEN, AND OTHERS.

**CONSIGNMENT FROM GHENT, FOR ABSOLUTE SALE.**  
**MESSRS. PROTHEROE AND MORRIS** are instructed by Mons. A. Van Gaert, to Sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, Nov. 4th, at 12 o'clock, 600 Camellias, 2 to 4 feet; 200 Azalea indica, consisting of all the approved kinds, well set with bloom buds; 400 fine Bulbs Liliun lancifolium rubrum and album; 300 Gladiolus Gandavensis (strong bulbs), 100 Asclepias tuberosa, &c.—May be viewed the morning of Sale. Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO GENTLEMEN, NURSERYMEN, FLORISTS &amp; OTHERS.—BAYSWATER.

**MESSRS. PROTHEROE AND MORRIS** are directed to Sell by Auction, on the Premises, at Craven Hill Nursery, Bayswater, on MONDAY, October 31st, and following days, at 11 o'clock each day, by order of Mr. Horwood, in consequence of the ground being wanted for building, the whole of the valuable NURSERY STOCK, consisting of Fruit and Forest Trees of the finest description, in great variety; Shrubs, Choice Ornamental and Specimen Trees; Deciduous and American Plants; a large assortment of Evergreens; selected Standard and Dwarf Roses, Hardy Climbers, &c.; together with the Stove and Greenhouse Plants, comprising Ixora, Burchellia, Francisca, Justicia, Pentas carnea, Hoya, Poinsettia, &c.; 50 Large Double White Camellias, Azalea indica alba, yellow Noisette and Devonensis Roses, Acacias, Epacris, Chorozeana, Myrtles, Hardenbergia monophylla, Corraas, &c., &c.—May be viewed prior to the Sale; Catalogues may be had, 6d. each, returnable to purchasers, on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## CROYDON.

**MESSRS. PROTHEROE AND MORRIS** will Sell by Auction, on the premises, Croydon Nursery, Handcroft Road, Croydon, on MONDAY, the 7th of November, and following days, at 11 o'clock each day (by order of Mr. T. Preston), a portion of the valuable Nursery Stock, consisting of fine Evergreens, Ornamental Trees, and Deciduous Shrubs, comprising fine Oak and Irish Yews, Arbor-vitae, Oaks, Box, red Cedars, Common and Portugal Laurels, Laurestinus, Aucubas, Hollies, sweet Bays, Privet, Mahonias, Arbutus, Rhododendrons, Pinus (sorts), Cedar of Lebanon in pots, Spanish Broom, Junipers, &c.; also, Laburnums, Scarlet Thorns, Persian and other Lilacs, Syringas, Altheas, Daphnes, Ribes, Almonds, Ailanthus, Pyrus japonica, Acacia, Sweet Briar, Cypress, Honey suckles, Deutzia, Eonymus, Sycamore, Limes, Planes, Silver and Weeping Birch, Acacias, Moss and Cabbage Roses, Virginian Creepers, yellow Jasmines, &c., &c.; with a quantity of Box Edging, Privet Hedges, &c.—May be viewed one week prior to the sale; Catalogues may be obtained on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## BRIXTON.

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. E. DENTY to submit to public competition by Auction, on the Premises, the Loughborough Nursery, Loughborough Road, Brixton, near London, on MONDAY, Nov. 14th, and following days, at 11 o'clock, in consequence of the Lease having nearly expired, the whole of the valuable NURSERY STOCK, consisting of fine Evergreens, Deciduous Shrubs, Fruit, Forest, and Ornamental Trees, comprising green and variegated Hollies, do. Box, English and Irish Yews, China and Siberian Arbor Vitae, Aucuba, Arbutus, Alaternus, Portugal and Common Laurels, Laurestinus, Sweet Bay, Rhododendron, Azalea, Kalmia, Cedrus Deodara, Pinus of sorts, Juniper, Cypress, Magnolia grandiflora, Deutzia scabra, Gueldres Rose, Lilac, Standard Thorns, Laburnum, Lime, Plane, Acacia, Clematis flammula, Irish Ivies, &c., Standard and Dwarf Peach, Nectarine, Apricot, Plum, Cherry, Apple, Pear, Gooseberry, and Currant, Seakale, Asparagus, &c. Also about 3000 Standard Pillar and Dwarf Roses.—May be viewed one week prior to the Sale; Catalogues had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## PARADISE NURSERY.

**MESSRS. PROTHEROE AND MORRIS** are commissioned by Mr. PAMPLIN (in consequence of the lease being disposed of), to Sell by Auction, on the Premises, Paradise Nursery, Hornsey Road (without the slightest reservation), on THURSDAY, November 17, and following day, the whole of the choice GREENHOUSE PLANTS, consisting of Camellias of various sizes, in considerable quantities, well set with bloom buds; several thousand Ericas, of the best varieties, in fine condition; Azalea indica, Epacris, Boronia serrulata, &c.; also the Nursery Stock, consisting of fine Evergreens, Ornamental Trees and Shrubs, Box edging, and other effects.—May be viewed prior to the Sale; and Catalogues had (6d. each, returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## FORDHAM, CAMBRIDGE SHIRE.

**TO NOBLEMEN, GENTLEMEN, NURSERYMEN, ETC.**  
**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. W. H. Bland, in consequence of the ground being required for other purposes, to submit to Public Competition by Auction, on the Premises, Fordham, on MONDAY, Nov. 21, and following day, at 11 o'clock each day, the whole of the valuable NURSERY STOCK, riding over 6 Acres, consisting of the best description of Fruit and Forest Trees, Evergreen and Deciduous Shrubs, a large and fine assortment of Standard and Dwarf Roses, fine Mulberry Trees, Large Specimen Cedar of Lebanon, and other Ornamental Trees; 1000 yards of Box Edging, &c.—May be viewed prior to the Sale. Catalogues may be had, 6d. each (returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

## TO GENTLEMEN, NURSERYMEN, GARDENERS, INN-KEEPERS, ETC.

**MR. THOS. THOMAS** is instructed to sell by Auction, on THURSDAY and FRIDAY, Nov. 3 and 4, 1853, on the premises (White's Hotel and Gardens, Fynone, Swansea), the whole of the valuable NURSERY AND GARDEN STOCK, comprising a well-assorted Stock of Evergreen and Flowering Shrubs, Peach, Nectarine, Apple, Pear, Cherry, Currant, Gooseberry, and Raspberry Trees; a large Collection of Greenhouse Plants, consisting of choice Heaths, Epacris, Fuchsias, Geraniums, Verbenas, Petunias, and a large variety of other Plants; also a fine lot of Fruiting and Succession Pine Plants (warranted clean), a large selection of Chrysanthemums (in pots), a lot of strong Grape Vines (in pots), Creepers of various kinds, and a great variety of general Plants, all worthy the attention of the Trade and Gentlemen furnishing their Grounds and Gardens; in addition to which will be sold a complete Cast Iron Heating Apparatus (for Pine House), of the most approved construction, together with Hot and Cold Pits, with Lights, Apparatus, &c., complete; Garden Frames, Glasses, Tools, Pots, &c.; a large quantity of Kitchen-garden Seeds, Perennial Rye-grass, Turnip, and other Agricultural Seeds. After which will be sold the whole of the HOUSEHOLD FURNITURE, HOTEL STOCK-IN-TRADE, &c. The Furniture and Hotel Stock will be sold on the second day (Friday). Sale to commence each day at half-past 10 o'clock, the Lots being numerous. May be viewed any day prior to the Sale.—West of England Fire and Life Insurance Office, Neath, Oct. 29.



## BAKER'S FOUNTAINS.

THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.  
**M**ESSRS. BAKER can confidently recommend their  
 FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the  
 most simple, efficient, and economical; they are easily filled, no  
 screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts,  
 8s. And at 3, Half-moon Passage, Gracechurch Street.

**ROCKWORK, ORNAMENTAL WATER-FALLS,**  
 FOUNTAINS, RUSTIC WORK, AND LANDSCAPE  
 GARDENING undertaken on a large or small scale by Mr.  
 GLENNY, who will attend for consultation in any part of the  
 kingdom.—420, Strand.

**AUSTIN'S ARTIFICIAL STONE.**—Garden  
 Fountains and other ornamental works continue to be ex-  
 ecuted in this material by Mr. Austin's late partner, JOHN SEELEY,  
 at the original manufactory, Nos. 1 to 4, Keppel Row, New Road,  
 near the Regent's Park. N. B. This material is strictly an artificial  
 limestone, of an agreeably grey colour, and wholly free from the  
 glazed and reddish appearance of Terra Cotta and other  
 pottery. It is quite waterproof, and may be laid under water for  
 any time without injury. The following list will give some idea  
 of the variety of the stock:—

VASES, in all styles, from 10s. to 30l. each.

FOUNTAINS, more than One Hundred Designs.

STATUES copied from the Antique.

MODERN FIGURES, from 2 to 12 guineas.

BASKETS, with Suitable Pedestals, from 1 to 30 guineas.

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MEMORIAL URNS AND PEDESTALS.

SUN-DIAL PEDESTALS.

BALUSTADING in every Style.

BAPTISMAL FONTS.

**"FRIGI DOMO."**—Patronised by Professor Lindley  
 for the Royal Horticultural Society, the Royal Zoological  
 Society, by his Grace the Duke of Northumberland at Syon  
 House, and many cultivators of first class Horticultural and  
 Floricultural produce.

"FRIGI DOMO," a Canvas made of prepared Hair and  
 Wool, a perfect non-conductor of Heat and Cold, keeping, where-  
 ever it is applied, a fixed temperature. It is adapted for  
 all horticultural and floricultural purposes, for preserving Fruits  
 and Flowers from the scorching rays of the sun, from wind, and  
 from attacks of insects and morning frosts. To be had in any  
 required length, upwards of 2 yards wide, at 1s. 6d. per yard run,  
 of E. T. ASCHER, Carpet Manufacturer, 451, Oxford Street,  
 London.—Manufactory, Royal Mills, Wandsworth, Surrey.

**LIGHT, CHEAP, AND DURABLE ROOFING.**  
**CROGGON'S PATENT ASPHALTE ROOFING**  
 FELT is perfectly impervious to rain, snow, and frost, and  
 has been tested by a long and extensive experience in all climates.  
 Saves half the timber required for slates; can be laid on with  
 great facility by unpractised persons. Price ONE PENNY  
 PER SQUARE FOOT. Croggon's Patent NON-CONDUCTING  
 FELT for steam-boilers and Pipes, saves 25 per cent. of fuel.  
 Croggon and testimonials sent by post on application to  
 CROGGON & Co., 2, Dowgate Hill, London, who also supply  
 SHIP-SHEATHING FELT and INODOROUS FELT for damp  
 walls, and lining iron houses, to equalise the temperature.

**UPHOLSTERY AND CABINET FURNITURE.**  
 damask, chintzes, Tournay, Brussels, and cut pile carpets,  
 gilt cornices, pier and chimney glasses, chairs, in mahogany,  
 rosewood, and walnut-tree, tea tables, dining tables, cheffonières,  
 dining tables, bookcases, sideboards, Arabians, French,  
 four-post, and half tester, in mahogany and iron, well-seasoned  
 bedding. The enamelled japanned bed furniture, to imitate  
 maple, bamboo, and other woods.—At T. MADGWICK'S, 11, Pavement,  
 Finsbury.

**REMOVING AND WAREHOUSING FURNITURE.**—Contracts entered into for the removal of  
 Furniture to any distance. Every article requisite for the protection  
 of the furniture provided, so that only the hire is charged. The  
 Estimate if desired will include the entire responsibility and risk of  
 removal, also the taking down, unpacking, and re-arranging the  
 whole of the Furniture in the various rooms, altering and  
 laying down Carpets, also fixing Cornices and Curtains. At T.  
 MADGWICK'S, Upholsterer, Pavement, Finsbury.

**EUREKA.—PATTERNS** of the new coloured  
 shirtings in every variety of colour, upwards of 200 different  
 styles, for making FORD'S EUREKA SHIRTS, including aprigs,  
 spots, stripes, &c., sent, post free, on receipt of six stamps, price  
 2s. the half dozen. List of prices and mode of self-measurement  
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N. B.—Agents are now being appointed in all towns. Terms, &c.,  
 forwarded on application.

**METCALFE AND CO.'S PERFUMERY DEPARTMENT.**—PROPRIETARY ARTICLES.—METCALFE'S  
 celebrated ALKALINE TOOTH POWDER is acknowledged as the  
 safest and most efficient now in use. Dupuytren's Medicated  
 Pomade is the most certain remedy for preventing the hair pre-  
 maturely falling off, and for restoring it when baldness has  
 already commenced. Dupuytren's Medicated Balm strengthens,  
 cleanses, and improves the growth, and is generally acknowledged  
 as the best wash for the hair.—Manufacturers of British and  
 Imported Foreign Soaps, Perfumery, and J. M. Farin's  
 genuine Eau de Cologne, at METCALFE, BISHOP, & Co.'s only  
 Establishment, 126 and 131, Oxford Street, second and third  
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**THE TEETH AND BREATH.**—A GOOD SET OF  
 TEETH ever induces favourable impressions, while the pro-  
 jection is of the utmost importance to every individual, both as  
 regards the general health by the proper mastication of food, and  
 the consequent preservation of pure and sweet breath. Among the  
 various preparations offered for this purpose, DR. WILSON'S  
 ODONTO, or PEARL DENTIFRICE, stands unrivalled in its capa-  
 bility of embellishing, purifying, and preserving the teeth to  
 the latest period of life. Prepared from Oriental Herbs, with un-  
 usual care, transmitted to this country at great expense. This  
 unique compound will be found to eradicate all tartar and  
 decay, and impart a pearl-like whiteness to the enamelled sur-  
 face, remove spots of incipient decay, render the gums firm, and  
 induce sweet and healthy breath. Price 2s. 6d.  
 per box. CAUTION.—The words "DR. WILSON'S ODONTO"  
 are on the label, and "A. ROWLAND & SONS, 20, Hatton Garden,"  
 is engraved on the Government Stamp affixed on each.—Sold by the  
 Proprietors and by Chemists and Perfumers.

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**AT THE WHOLESALE PRICE FOR CASH,** at  
 the ALBANY LAMP AND CANDLE MANUFACTORY,  
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 Country orders amounting to £10 or upwards carriage free.  
 Price lists sent on application.

**TO LOVERS OF FISH.**—100 real YARMOUTH  
 BLOATERS for 6s., package included. The above forwarded  
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 Order preferred) for the amount.—Address, THOMAS LETTIS, Jun.,  
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 BLISHMENT,** Lowndes Street, Albert Gate. Wedding  
 Breakfasts furnished, complete or in part, with silver, china,  
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WEARING AIR-TIGHT GARMENTS TO EXCLUDE RAIN.

**BERDOE'S VENTILATING WATERPROOF**  
 OVER-COATS resist any amount of rain, without confining  
 perspiration, the fatal objection to all other waterproofs, and  
 being free from vulgar singularity, are adapted not merely for  
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 of every kind, CAPES, SHOOTING JACKETS, LADIES'  
 CLOAKS, MANTLES, HABITS, &c., all thoroughly Water-  
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**FENDERS, STOVES, AND FIRE-IRONS.**—  
 Buyers of the above are requested, before finally deciding, to  
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 (corner of Newman Street), Nos. 1 and 2, Newman Street, and  
 Ferry's Place. They are the largest in the world, and contain  
 such an assortment of FENDERS, STOVES, RANGES, FIRE-  
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 approached elsewhere, either for variety, novelty, beauty of  
 design, or exquisiteness of workmanship. Bright Stoves, with  
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 with ornate ornaments and two sets of bars, 51. 10s. to 121. 12s.;  
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 Fenders from 21. 15s. to 61.; ditto, with rich ornate ornaments,  
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 Sylvester and all other Patent Stoves, with radiating hearth plates.  
 All which he is enabled to sell at these very reduced charges,  
 1st.—From the frequency and extent of his purchases; and  
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**DISH COVERS AND HOT-WATER DISHES**  
 in every material, in great variety, and of the newest and  
 most recherche patterns. Tin Dish Covers, 6s. the set of six;  
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 patterns, 23s. 3d. to 57s. 6d. the set; Britannia Metal, with or  
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 wells for gravy, 13s. to 19s.; Britannia Metal, 20s. to 72s.; Sheffield  
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**GAS CHANDELIERS AND BRACKETS.**—The  
 increased and increasing use of gas in private houses has  
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 ON SHOW in one of his TEN LARGE ROOMS, and present,  
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**LAMPS OF ALL SORTS AND PATTERNS.**—  
 The largest, as well as the choicest, assortment in existence  
 of PALMER'S MAGNUM and other LAMPS, CAMPBINE,  
 ARGAND, SOLAR, and MODERATEUR LAMPS, with all the  
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 at WILLIAM S. BURTON'S, and they are arranged in one large  
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 PALMER'S CANDLES, 81d. per lb.—Palmer's Patent Candles,  
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Single or double wicks ... .. 81d. per lb.  
 Mid. size, 3 wicks ... .. 81d. "  
 Magnums, 3 or 4 wicks ... .. 91d. "  
 English Patent Campbine, in sealed cans 6s. per gallon.  
 Best Colza Oil ... .. 4s. 0d. "

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all  
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Catalogues, with engravings, sent (per post) free. The money  
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 2s. 6d. each.

Also his PHILIZÆ ANTISCROPHULÆ, confirmed by more  
 than 40 years' experience to be, without exception, one of the  
 best alternative medicines ever compounded for purifying the  
 blood, and assisting nature in all her operations. Hence they are  
 used in Scorbatic, Scorbatic Complaints, Glandular Swellings,  
 particularly those of the Neck, &c. They form a mild and  
 superior Family Aperient, that may be taken at all times with-  
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 2s. 6d., 4s. 6d., 11s., and 22s.

Sold Wholesale by the Proprietors, BEACH and BARNICOTT, at  
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 respectable Medicine Vendors in the United Kingdom.  
 OBSERVE.—No Medicine sold under the above name can possibly  
 be genuine, unless "BEACH and BARNICOTT, late Dr. Roberts,  
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**QUANTITY AND QUALITY OF THE HAIR.**  
**NO TOILET** can be considered complete without a  
 careful attention to that department which so materially  
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 and quality, is susceptible of the most material alteration. That  
 which is weak can be strengthened, and be made to receive a most  
 beautiful gloss by artificial applications. It is to its extraordinary  
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 of C. AND A. OLDRIE'S BALM OF COLUMBIA, for its  
 invigorating, nutritious, and regenerative qualities. OLDRIE'S  
 BALM causes Eyebrows to grow, prevents the Hair from turning  
 grey, and the first application causes it to curl beautifully, frees  
 it from scurf, and stops it from falling off. Price 3s. 6d., 6s., and  
 11s. per bottle. No other prices are genuine. N. B. Ask for  
 OLDRIE'S BALM, 13, Wellington Street North, Strand, London.

**NO MORE GREY HAIR.**  
**UNWIN AND ALBERT'S COLUMBIAN INSTAN-  
 TANEOUS HAIR DYE** is acknowledged throughout the  
 World to be the best in use, and easiest of application, to grey  
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**PAINS IN THE BACK, GRAVEL, LUMBAGO, RHEUMATISM, GOUT**  
 INDIGESTION, FLATULENCY, NERVOUSNESS, DEBILITY, &c.  
**DR. DE ROOS'S COMPOUND RENAL PILLS,**  
 as their name Renal (or the Kidneys) indicates, are a most  
 safe and efficacious remedy for the above dangerous complaints.  
 For depression of spirits, incapacity for society, study, or busi-  
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**THE FIELD (ILLUSTRATED)**, of Saturday, October 29, 1853, published in time for the Early Morning Trains, contains:—Backed for the First Time, drawn by Harry Hall; Launch of the "Great Republic," 4000 Tons; Murder of a French General by his Aide-de-camp; the Turf, by the Flying Dutchman; Full Report of the Houghton Meeting, and other Races; Latest state of the Odds; The Life of a Race-Horse, Chap. XIX.; Trial for Murder at the Central Criminal Court; Scotch Ordinances for Australia; the Russian Fleet at Revel; Contrast, drawn by H. K. Brown; Shipwreck of the Dalhousie—Reply to Reed's Statement; New Railway Break at Manchester; Coursing—the Great Wiltshire Champion Meeting; Meetings at Market Weighton; Limerick Coursing Club; Southern Coursing Club; Hunting—Lures—The "Galaxy" Blazers"; Brighton Harriers; Mr. Whibley's Hounds; Palmerston Harriers, &c.; Yachting—the Prince of Wales Yacht Club; the Swansea Regatta Protest; Aquatics in the United States; the Search for Mr. Boyd, R. Y. S.; Grand Field Day at Leamington Hastings; Royal Golf Club of St. Andrew's; Attempt to Murder a Wife at Kennington; Artificial Propagation of Fish; Attack on a Gold Escort by Bushrangers; Angling in Jersey; Chess; Poultry; Cricket; Markets; Correspondence; All the news of the week; &c.—Office, 4, Brydges Street, Covent Garden. Price Sixpence.

This day is published,  
**PALM TREES OF THE AMAZON**, and their Uses. By ALFRED R. WALLACE. Post 8vo, with 48 Plates, 10s. 6d. London: JOHN VAN VOORST, Paternoster Row.

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Being Tables on a very much improved plan for Calculating the Value of Estates. By R. HUPSON, Civil Engineer. This new edition includes Tables for reducing Irish, Scotch, and provincial customary acres to statute measure; Table for ascertaining the value of leases for any term of years; a Table showing how to lay out plots of ground of certain acres in forms—square, round, &c.; with valuable rules for ascertaining the probable worth of standing timber to any amount. All so arranged as to be intelligible to the most unpractised person, and of inestimable value to the country gentleman. Will be useful not only to the valuers of the rents of land, but in estimating the amount to be paid for work done at any rate per acre.  
"This is an invaluable work for professional men."  
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This day is published, in 1 vol. 12mo, price 12s. cloth,  
**SHELFORD'S LAW OF COPYHOLDS—the Law of Copyholds in Reference to the Enfranchisement and Commutation of Manorial Rights and the Copyhold Acts, with Notes and the Forms and Directions of the Copyhold Commissioners.** By LEONARD SHELFORD, Esq., of the Inner Temple, Barrister-at-Law. London: W. MAXWELL, 32, Bell Yard; and S. SWEET, 1, Chancery Lane.

Now ready, Second Edition, carefully revised, 6s.,  
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By SIR JAMES EYRE, M.D., Edinburgh, Member of the Royal College of Physicians of London, Consulting Physician to the St. George's and St. James's Dispensary.  
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Now ready, with six beautifully coloured plates, price 3s. 6d.,  
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On November 1, Nos. 51 and 52, price only 1s. 6d. each, of  
**THE ORNAMENTAL FLOWER GARDEN AND SHRUBBERY**; or, Coloured Figures and Descriptions of the most beautiful Flowering Plants and Shrubs cultivated in British gardens, with the most recent practical Hints on Culture, Propagation, &c. Publishing monthly, each number containing four highly-coloured plates. Also, now ready, Vols. I. and II., each containing 72 coloured plates, bound in cloth, price 1l. 8s. each.  
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On November 1, No. 13, price 3s. 6d., of  
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On November 1, Nos. 29 and 30, price 2s. each, of  
**MEYER'S BRITISH BIRDS AND THEIR EGGS.**  
This is the most complete and beautiful work of the kind ever published. Each number contains four valuable coloured plates, with descriptions. Also, now ready, Vol. I., with 45 coloured plates, price 1l. 11s. 6d. in cloth.  
London: G. WILLIS, Great Piazza, Covent Garden.

Printed and Published by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FRANCIS MULLETT EVANS, of No. 7, Church Lane, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 3, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—SATURDAY, OCTOBER 29, 1853.



THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.
No. 45.—1853.] SATURDAY, NOVEMBER 5. [PRICE 6d.

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GRAND CHRYSANTHEMUM EXHIBITION OF THE SOUTH-LONDON SOCIETY OF AMATEUR FLORISTS, will be held at the HORNS TAVERN, Kennington, on WEDNESDAY, November 23, when Prizes will be offered for CHRYSANTHEMUMS in pots and cut blooms, also extra prizes will be given for the best and second best collection of WAX FLOWERS. In addition to the prizes offered by the Society, J. W. Jewitt, Esq., offers the GOLD ALBERT MEDAL for the best 12 pots of CHRYSANTHEMUMS. An efficient Band will be in attendance. Admission to non-members, 1s. each, from 2 to 7 o'clock. List of Prizes and the Rules for the Exhibition may be obtained from JOHN BUSHELL, Esq., Lower Kennington Lane; and W. TRAHER, Esq., 5, Kensington Gore, Honorary Secretary; also at the Horns Tavern, Kennington.

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.—The Seventh Annual Exhibition of this Society will be held at the Manor Rooms, Church Street, Stoke Newington, on Thursday, November 17, when Prizes (including two 6d. Silver Cups) will be awarded to two-thirds of the Exhibitors in each class. Open to all Exhibitors. Doors open at 12 o'clock. Admission, one shilling—after 4 o'clock, sixpence. Further particulars may be had on application to the Secretary, A. LAIDLAW, High Street, Stoke Newington. Omnibuses run from the Flower-pot, Bishopsgate Street, every 10 minutes.

SCOTTISH GARDENERS' AND LAND-STEWARD'S ASSOCIATION.—Patron, His Royal Highness, The Prince Albert, K.G.; President, His Grace the Duke of Buccleuch and Queensberry, K.G. ELECTION OF PENSIONERS.—Notice is hereby given, that the Annual General Meeting of the Members of the Association will take place on Wednesday evening, the 9th Nov. ensuing, at the Committee Room, 6, York Place, Edinburgh, for the Election of Three Pensioners on the Funds of the Association. The Chair will be taken at 7 o'clock, and the Ballot will close at 8 o'clock precisely. By order of the Board.—New Subscribers paying on or before the day of Election will be entitled to vote, and will receive Polling Papers on application to the Secretary. Committee Room, 6, York Place Edinburgh, Nov. 5.

WAITE'S NEW EARLY PEA. DANIEL O'ROURKE.—The earliest and best Pea in cultivation; a week earlier than the Emperor, longer pods, and a much better cropper; height 2½ to 3 feet. If this Pea does not give general satisfaction the money charged will be returned. Trade price to be had on application to J. G. WAITE, Seed Merchant, 181, High Holborn, London.

GERMAN SEEDS FOR 1854. MESSRS. PLATZ AND SON, SEED GROWERS, Erfurt, Prussia, intimate that their Catalogue of Flower and Vegetable Seeds, may be had on application to their agent, Mr. ROBERT KENNEDY, Bedford Conservatory, Covent Garden.

DUTCH HYACINTHS, for Forcing, single and double, at 4s. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR COBBETT'S Italian and Foreign Warehouse, 18, Pall Mall. Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, dessert Fruit; KUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 1s. per 100, or 25 each of any two sorts for 12s. box included. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement Gardeners' Chronicle, October 15, 1853;—Egglecliffe, near Yarm, Nov. 5.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 12 mile from Woking Station, South-Western Railway, begs to announce that he has just published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., &c., and may be had on application by enclosing two postage stamps.

CHOICE GERANIUMS. JAMES HOLDER begs to offer the following choice SHOW GERANIUMS, at 21s. per dozen, hamper, &c., included. Optimum, Eleazar, National, Magnet, Hero, Supreme, Lord Gough, Flying Dutchman, Field Marshal, Village Maid, Virgin Queen, Magnificent, and Voltigeur.

GERANIUMS FOR THE MILLION. JAMES HOLDER can supply twelve of the following for 12s., hamper, &c., included.—Ajax, May Queen, Oedipus, Correggio, Sept. Helena, Consuelum, Fane, Duke of York, Star, Delancey (Fancy), Constantine, Colibri, and Victory. Older varieties at 6s. per dozen. Post Office orders payable at Camden Town.—Amphill Nursery, Hampstead Road.

TO ADVERTISERS.

THE ADVERTISEMENT DUTY being repealed, the PROPRIETORS of the GARDENERS' CHRONICLE announce that they have reduced the customary charge for each Advertisement by 1s. 6d., the amount of duty taken off by the Government.

Advertisements of GARDENERS OUT OF PLACE, of not more than four lines in length, 1s. 6d. each.

PLANTING SEASON.

WILLIAM URQUHART AND SONS' Priced List of Nursery Plants is now ready, and may be had on application.—Dundee, Nov. 5.

EVERGREEN SHRUBS, ETC.

JAMES GRIFFIN, NURSERYMAN, Bath, having a great Stock of the unmentioned EVERGREENS, in fine condition, offers them (in quantity) at very low prices, which will be given on application.

THE TRUE LANCASHIRE SHOW

Table with 4 columns: RED, GREEN, WHITE, and Mixed sorts. Rows include London, Wonderful, Conquering Hero, Roaring Lion, Slaughterman, Companion, Lion's Provider, Guido, Napoleon le Grand, Catherine, Leader, Pilot, Peru, Railway, Drill, Goldfinder, Broomgirl, Gunner, Freedom, Snowdrop, Eagle, Lady Leicester, Tally-ho, Queen of Trumps, Cossack, White Hair, and Snowball.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, is now sending out strong plants of the above-named Gooseberries, which are the heaviest winners of the season, weights taken from the "Gooseberry Grower's Register," of 1853; 12 strong plants, 7s. 2d. or upwards, 6s. per dozen, package included. Priced and Descriptive Lists of Gooseberries, Carnations, Picotees, Pinks, Pansies, Auriculas, Alpines, Polyanthus, Primroses, &c., &c., are now ready, and may be had for one postage stamp. Post Office Orders to be made payable at Middleton, Lancashire.

FLOWERING BULBS.

J. CARTER, SEEDSMAN & FLORIST, 238, High Holborn, London, respectfully informs his customers that the Gladioli and other late ripening Bulbs are now all arrived. He avails himself of the opportunity to furnish an extract of the leading articles from his Catalogue. The present is the best time for general planting. Of the bulbs marked per 1000, 200 can be had, at the same rate as per 1000; 50, 25, or 12, may also be had, at the same rate as per 100.

Table with 4 columns: IN SEPARATE SORTS, Mixed sorts per 100, and Mixed sorts per 1000. Rows include Anemones, Crocus, Gladioli, Hyacinths, Ranunculuses, Tulips, and Sundry other bulbs.

Table with 4 columns: Sundry other bulbs, Mixed sorts per 100, and Mixed sorts per 1000. Rows include Crocus, Crown Imperials, Iris, Jonquils, Lilacs, Martagon, Narcissus, Oxalis, Sparaxis, Tigridia, and Tulips.

A comprehensive Catalogue of Kitchen Garden, Flower, and Agricultural Seeds, may be had, pre-paid, on application. New Early Peas, Beans, &c., for present sowing, can be had with the Bulbs.

CHRYSANTHEMUMS.

J. AND J. FRASER have to offer very fine Plants of the above, amongst which are the best varieties in cultivation. The plants are from 2 to 3 feet high, very bushy, and full of flower-buds. Large-flowering varieties, 9s. per dozen; Pompones, or Liliputian, 12s. per dozen.—A Catalogue of the sorts may be had, on application.—Lea Bridge Road, Leyton, Essex.

CHINESE AZALEAS.

J. AND J. FRASER having a very large and fine Stock of the above, beg to offer them at the undiminished prices. The Plants are very healthy, and beautifully set with flower buds. 12 distinct sorts ... 18s. 12 do. (very fine plants) ... 24s. Lea Bridge Road, Leyton, Essex.—Nov. 5.

FANCY GERANIUMS.

J. AND J. FRASER beg to call attention to their fine STOCK of the above. The Collection comprises about 100 varieties, amongst which are strong plants of the following fine sorts:—Majum Bonum, Resplendens, Darling, Princess Alice Maude, Berryer, Erubescens, Richard Cobden, Triumphans, Cleopatra, Hero of Surrey, Lady Downes, and Formosissima. Collection of 12 varieties ... 12s. Ditto (new) ... 18s. to 24s. Lea Bridge Road, Leyton, Essex, Nov. 5, 1853.

EXHIBITION OF NEW CHRYSANTHEMUMS OF 1853.

E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, begs to inform the admirers of the above flower that they are now in bloom, and will continue for the next month in perfection at their Nursery. An inspection will amply repay those honouring them with a visit.—Nov. 5.

E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, can now supply fine strong plants of CINERARIAS, choice varieties, by name, at 6s., 9s., and 12s. per dozen. CHOICE FANCY GERANIUMS, at 9s., 12s., and 18s. per doz. HORSE-SHOE LEAF, 6s. and 9s. per dozen.

GLADIOLI "UNCLE TOM."

MESSRS. HURST AND McMULLEN beg to state that they have purchased the stock of the above Gladioli, a free blooming variety, and adapted for the open border and flower bed. Colour, rosy crimson, white mark. Strong blooming Bulbs, 1s. 6d. each.—No. 6, Leadenhall Street, London.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c., &c., and may be had by inclosing a postage stamp. Saffron Walden Nursery, November 5.

MITCHELL'S NEW HYBRID PERPETUAL ROSE, "LADY SHELLEY."

JAMES MITCHELL begs to offer for Sale the above magnificent New Perpetual Rose, which has been the admiration of every one at the principal Shows during the season, and has been justly pronounced by the metropolitan judges first-class; it has also been submitted to Dr. Lindley for his opinion, who says, for perfume alone, it is worth one-half our autumn Roses. Form exquisite, colour rosy lilac, shaded with carmine, and very distinct; fragrance the very acme of perfection, surpassing all others in this class. Price 10s. 6d. per plant. No discount unless three are ordered. Cash or reference from unknown correspondents.—Pitdown Nurseries, Maresfield, Sussex.

JUDSON'S RICHMOND VILLA BLACK HAMBURG VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.

N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the Gardeners' Chronicle of October 25th, 1851.

Their Autumn Catalogue of Pelargoniums, Cinerarias, Hollyhocks, and new plants of recent introduction and merit is now published, and can be had on application. A few good plants of the beautiful Yellow Begonia can still be supplied at 21s. each. Pine Apple Place, Edgeware Road, London.

HARDY FUCHSIAS, CHEAP.

40,000 of the above at 30s. per 1000, or 5s. per 100, package included, delivered on the Aberdeen Railway. They are strong plants, cuttings of last year, of two varieties, selected by the grower from a large number of hybrids on account of their profuse habits of flowering, and seedling, and strong growth. Address to Mr. WILLIAM STEWART, care of Messrs. LOUSON, MACDONALD, and BLACK, Writers, Arbroath.

RENDEL'S NEW AUTUMN CATALOGUE OF FOREST TREES, SHRUBS, AND FRUIT TREES, is just issued from the press, and can be had in exchange for one penny stamp.

The Catalogue should be obtained by all who intend Planting this Autumn, as the prices of many of the articles are very low, in consequence of the large Stock we have of many of the sorts.

We have to offer the following:—300,000 Seedling and Transplanted SCOTCH FIR. 600,000 do. LARCH FIR. 200,000 do. PINUS AUSTRIACA. 150,000 do. THORNS or QUICKS. As well as all other Forest Trees in proportion. All orders above 10l. will be delivered carriage free to all the Railway Stations in Scotland, West of England, and to Cork, Dublin, and Liverpool by Steamers. For Catalogues and further particulars apply to WILLIAM E. RENDEL AND CO. NURSERYMEN AND SEED MERCHANTS, Edgelyth 1789, Plymouth.



## BASS AND BROWN'S NEW AUTUMN CATALOGUES, sent free for 3 penny stamps.

NEW GERANIUMS of last season, Hoyle's, Foster's, Dobson's, &c. The following 18, all new of last season, for 63s., or our selection of 12 for 44s., or separately as priced: Astrea, 5s.; Albina, 3s. 6d.; Butterfly, 3s. 6d.; Kulla, 3s. 6d.; Lagoma, 5s.; Leonora, 5s.; Novelty, 3s. 6d.; Portia, 5s.; Zaria, 5s.; Eleanor, 3s. 6d.; National, 3s. 6d.; Optimum, 10s. 6d.; Rachel, 5s.; Queen of May, 5s.; Harriet, 3s. 6d.; Jupiter, 3s. 6d.; Spot, 5s.; Vulcan, 5s. 6d.; 3s. 6d.; Macrum, 5s.; Princess Alice Maude, 3s. 6d.; Criterion, 3s. 6d.; Fanny, 3s. 6d.; Flora M'vor 3s. 6d.; Lady Downs, 3s. 6d.; Margatina, 3s. 6d.; Wilmore's Surprise, 2s. 6d.; Triumphant, 3s. 6d.; 25 superb show Geraniums, 40s. 25 choice Geraniums, 22s. Fine varieties 6s. to 9s. per dozen. 12 choice fancy varieties, 12s. 12 fine varieties, 9s.

NEW CHRYSANTHEMUMS.—Large Flowering. The following 12 superb, well set with flower buds, new varieties of last season, for 12s., or 1s. 6d. each, except priced:—Amazon, Alcibiade, Astrolabe, Christopher Columbe, Conspectus, 2s. 6d.; Delicata, Fortune, Leon Faucher, Lingot d'Or, Nell Gwynne, Poudre d'Or, and Rantonelle.

NEW LILLIPUTIAN CHRYSANTHEMUMS. The following 12 superb new varieties of last season for 12s., or 1s. 6d. each:—Ariadne, Beauty of Toulouse, Roquet parfaite, Cybele, Dame Blanch, Graziella, Grand Sultan, Lais, President Decaisne, Toison d'Or, Uraine, Golden Drop. 60 splendid varieties Chrysanthemums, including the above, for 40s. 40 varieties, ditto, 30s. 25 varieties, ditto, 17s. 6d. The best older varieties, 5s. 7s. 6d., and 9s. per dozen.

Cinerarias, 12 choice varieties ... 9s. and 15s.  
Azalea indica, 12 ditto strong bushy plants ... 18s.  
Ericas, 12 choice vars. for winter and spring flowering ... 15s.  
Camellias, 12 choice varieties ... 30s. to 42s.  
50 vars. fine and select greenhouse plants ... 45s.  
25 ditto, stove plants ... 35s.  
24 vars. fine winter and early flowering greenhouse plants ... 15s. to 20s.  
12 vars. do. do. stove plants ... 25s.  
25 vars. fine standard Roses, 28s.; 12 vars. ... 15s.  
25 vars. dwarf do. do. ... 10s. 6d., or 12 for 6s.  
12 vars. fine Climbing Roses ... 6s. to 9s.  
Mixed dwarf Roses 3s. per dozen, or per 100 ... 20s.

FRUITS, &c.—25 finest prize GOOSEBERRIES, strong 2 and 3-year plants ... 10s. 6d.

Good named varieties, per doz., &s.; mixed, per doz. ... 2 6  
STRAWBERRIES.—Goliath, Keens' Seedling, Black Prince, Eleanor, British Queen, Alice Maude, Fertilised Hautbois, and Eliza, each per 100 ... 3 0  
Myatt's Surprise and Rivers' Eliza, per 100 ... 5 0

RHUBARB.—Royal Albert and Linneus, each 1s. 6d. per dozen ... 9 0  
Victoria Giant, each 9d.; or per dozen ... 7 6  
Prince of Wales, each ... 3 6

Trained Peaches, Nectarines, Apricots, Standard and Dwarf Apples, Pears, Plums, Currants, Raspberries, Grapes, Cherries, &c., of the finest sorts.

HARDY HERBACEOUS PLANTS.

100 distinct and showy varieties, 30s.; 60 varieties ... 17s. 6d.  
100 superior and new ditto, 50s.; 50 varieties ... 30 0  
25 fine Rock plants, 12s.; 12 varieties ... 7 6  
12 varieties fine Antirrhinums, 6s.; 12 superior and new 10 0  
25 varieties fine Phlox, 10s. 6d.; 12 varieties ... 6 0  
25 varieties superior and new ditto, 15s.; 12 varieties ... 9 0  
12 varieties choice Pentstemons ... 7 6  
HOLLYHOCKS, splendid collection, p. doz., 9s., 18s., and 25 0  
ROCK CISTUS, 24 fine and distinct varieties ... 15 0  
GLADIOLI.—Our superb collection consists of upwards of 100 varieties. The following showy varieties are offered by the dozen for clumping.

EARLY VARIETIES, flowering June and July.

Colvill, shaded crimson ... per doz. 2s. 0d.  
" superba, shaded rose, crimson and yellow ... 2 0  
" rubrum, dark crimson ... 3 0  
Dobri, rich crimson scarlet ... 10 0  
Pulcherrima, fine orange pink ... 9 0  
Rex Rubrum, rich dark velvet crimson, finest form ... 10 6  
Spectabile, shaded rose, very fine and showy ... 6 0  
Punctata, shaded pink, lilac and yellow ... 5 0

RAMOSUS VARIETIES, flowering August to November.

Alfred, fine crimson ... per doz. 12s. 0d.  
Cornelius, rich rose, white marked ... 12 0  
Formosissimum, rich crimson, white striped ... 7 6  
Insignis, large rosy crimson ... 7 6  
Michael, rich crimson, marked with white ... 7 6  
Prince of Wales, superb scarlet crimson ... 15 0  
Queen Victoria, fine rosy sc. pink and white feather ... 9 0  
Ramosus, rose, crimson flamed ... 7 6

TALL VARIETIES, flowering August to October.

Autumnalis, fine orange ... per doz. 5s. 0d.  
Floribundus, white rose striped ... 2 6  
Gandavensis, clear orange ... 3 6  
Psittacinus, orange and yellow ... 1 6  
" sanguineus, rich dark scarlet and yellow ... 5 0  
50 splendid early and late varieties Gladioli for ... 50 0  
25 do. do. do. 30s., or 6s. to 20s. p. doz.  
Splendid mixed early varieties ... 8s. per dozen or 20s. per 100  
RANUNCULI, 100 varieties, very fine named ... 35s. 0d.  
Mixed, 5s., 10s., and 18s. per 100  
Turban vars., per 100—Scarlet, 3s. 6d.; Golden, 4s. 6d.; Seraphique, 8s.; Brown, 4s. 6d. Hercules, white, 5s. per doz.; Oeil Noir, best black, 18s. per dozen.

ANEMONES, 50 vars., beautiful, distinct, named, double 12s. 6d.

14 vars. fine for clumping, 12 roots of each for ... 32 0  
6 of each do., 17s. 6d.; 3 of each ... 9 0  
Hortensis, fine red, per dozen ... 2 6  
Very fine mixed seedlings, per dozen ... 2 6

La Brillante Eclatante, single bright scarlet extra, 10s. 6d. per 100; 1s. 6d. per dozen.

Choice mixed double, per 100 ... 6s. and 10s. 6d.  
Double scarlet vars., mixed, per 100 ... 12 0  
Mixed semi-double Russian, fine, per lb. ... 6 0  
Fine new single mixed, per lb. ... 4 0

TULIPS, 30 choice early vars., named, for ... 7 6

Finest mixed do., 7s. 6d. per doz.; Duc Van Thol, p. 100 ... 7 6

10 best double named, 3 of each for ... 10 0

Finest mixed late, per 100, 18s.; fine border mixed, p. 100 ... 6 0

Roi Min d'Or, fine bright yellow, per doz. ... 2 0

NARCISSUS, 20 choice vars., 8s.; 7 vars., 3 of each ... 8 0

Double White, 10s. per 100; Pheasant-eyed, 10s. per 100.

IRIS, 35 vars., English, very select and choice, for ... 25 0

Very fine mixed, 15s. per 100, or 2s. per dozen.

30 vars., fine named Spanish, 5s.; mixed, per 100 ... 5 0

30 vars., very superb named German ... 22 6

Ditto per doz., 7s. 6d. and 10s. 6d.; mixed, 18s. p. 100 or 3s. p. doz.

IMPORTED DUTCH HYACINTHS, 50 best vars. in choice assortment, 35s., or per doz. ... 8s. to 9s. 0d.

Separate or mixed, colours not named, per doz. ... 3 0

CROCUS, 100 roots of each, 8 beautiful new varieties ... 21 0

12 roots of each of 20, splendid and very distinct, new, named, do. ... 12 0

Finest in colours, 2s. per 100, mixed 1s. 6d. per 100.

IXIS, 20 splendid vars., 7s. 6d.; mixed vars. 12s. p. 100 or 2s. p. doz.

JONQUILS, LILIUM LANCIFOLIUM, and other Lilies, Oxalis, Cyclamen, Scilla, Tropicolum, and large collection of bulbs and dry roots, for which see Catalogue.

Remittances required from unknown correspondents.

GOODS CARRIAGE FREE, with orders not under 20s., to all Stations on the Colchester Line between London and Norwich, or to all the London termini.—BASS AND BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

BENJAMIN R. CANT begs to offer the following, in extra strong plants:—

NEW SHOW GERANIUMS.

Hoyle's Astrea, 5s.; Basilisk, 3s. 6d.; Butterfly, 3s. 6d.; Leonora, 5s.; Oscar, 5s.; Zaria, 5s.; Foster's Eleanor, 3s. 6d.; National, 3s. 6d.; Optimum, 7s. 6d.; Rachael, 5s. Dobson's Gertrude, 5s.; Harriet, 3s. 6d.; Jupiter, 3s. 6d.; Pasha, 5s.; Spot, 5s.; Vulcan, 5s. The above 16 for 55s.; any 12 for 48s., or 12 of my own selection for 36s.

Any 12 of the following first-rate varieties may be selected for 20s., or 12 of my own selection for 16s.:—

Arethusa	Exhibitor	Ocellum
Ajax	Incomparable	Purple Standard
Alibi	Lavinia	Plantagenet
Butterfly	Magnet	Silk Mercer
Commissioner	Mohanna	Tyrian Queen
Diana	Major Domo	Village Maid
Enchantress	Nepheuse Prince	

Good older sorts 6s., 9s., and 12s. per dozen.

FANCY GERANIUMS.

Purchasers may select any 12 of the following for 12s., or my own selection 9s. per dozen:—

Annis	Fleur d' Marie	Miss Sheppard
Albion	Hero of Surrey	Pelopides
Beauté	Jehu Improved	Purity
Belle Marie	Little Wonder	Prince Albert
Diana Vernon	Mulberry	Prima Donna
Delicata	Marion	Queen Victoria
Exquisite	Madame Mieliez	Statuiski
Fairy Queen		

NEW CINERARIAS.—The set of 8 for 18s.

Charlotte, 2s. 6d.; Charles Dickens, 2s. 6d.; Conspectus, 2s. 6d.; Kate Kearney, 3s. 6d.; Loveliness, 3s. 6d.; Marguerite d'Anjou, 3s. 6d.; Prince Arthur, 3s. 6d.; Rosalind, 3s. 6d.

Purchaser's selection from the following, 9s. per dozen; my own, 6s. per dozen:—

Annie	Effie Deans	Mr. Sidney Herbert
Adela Villiers	Experimental Blue	Nymph
Angelique	Flora M'vor	Nonsuch
Agnes Wakefield	Formosa	Othello
Bessy	Lady Hume Campbell	Prima Donna
Catherine Hayes	Lady Gertrude	Rosy Morn
Catherine Seaton	Madame Cerito	Resplendens
Carminata	Madame Sontag	St. Clair of the Isles
David Copperfield	Mazzini	Susie
Eleanor	Marianne	

Carriage paid to London and Norwich, and all intermediate Stations. A liberal discount for cash, and the usual allowance to the trade.—St. John's Nursery, Colchester.

PEARL CONIUMS.

JOHN WESTWOOD is now prepared to send out fine healthy plants, in 4-inch pots, of the following choice GERANIUMS and FANCY GERANIUMS, at the prices undernamed, hamper and package, with carriage to London included, viz.:—

GERANIUMS.—2l. 2s. per dozen:

Spot (Beck)	Optimum (Foster)	Zaria (do.)
Vulcan (do.)	Queen of May (do.)	Astrea (do.)
Pasha (do.)	Rachael (do.)	Kulla (do.)
Medora (Turner)	Leonora (Hoyle)	Galatea (do.)
Novelty (do.)		&c., &c.

1l. per dozen:

Rosa (Beck)	Chloe (Turner)	Rubens
Pride of the Isles	Flying Dutchman	Old Story
First of May	Mohanna	Exactum
Ganyemede	Purple Standard	Ariadne
Lavinia	Plantagenet	Lord Mayor
Little Nell	Enchantress	Generalissimo

9s. per dozen:

Forget-Me-Not	Field-Marshal	Tyrian Queen
Pearl	Constance	Mont Blanc
Salandier	Nonsuch	Prince of Orange
Rising Sun	Crusader	May Queen
Dowager	Emily	Major Domo
Guelma	Cuyp	Duchess
Lalla-Rookh	Conspicuum	Chastity
Exquisite	Alax	Claudiviana
Blanch	Magnificent	Constancy
Star	Alonzo	Commissioner
Rosamond	Alderman	Capella
Centurion	Ondine	Mulready
Splendid mixed early	Lady Somerville	Diana
Norah	Medea	Dulcinea
Virgin Queen	Governor	Pulchella
Rovena	Sarah	Celia
Aspasia	Beauty of Montpellier	Pretty Polly
Painter	Rosalind	&c., &c.
	Delicatissimo	

SCARLET GERANIUMS, &c.

Flower of the Day, each 1s. 0d.; Cambrin-in-Chief, each 1s.

Mountain of Light " 1s. 6d.; Cerise Unique " 1s.

FANCY GERANIUMS.—1l. 10s. per dozen:

Advancer	Queen of Fancies	Perpetua
Princess Alice Maude	Celestial	Minutaire
Resplendens	Lady Downes	Gipsy Queen
Magnum Bonum	Caliban	Formosissimum
Fanny	Duchess of Orleans	Lady Cooper
Criterion	Goliath	&c., &c.

18s. per dozen:

Richard Cobden	Modesta	Madame Ugaldie
Erebuscus	Madame Malet	Miss Wright
Picturata	Superba	Ne Plus Ultra
Roi Min d'Or	Bride	Odette
Captivation	Electra	Orestes
Triumphant	Lady Emma	Lady of the Lake
Fascination	Miranda	Miss Shepherd
Burette		&c., &c.

12s. per dozen:

Marion	Reine des Fleurs	Hero of Surrey
Gaiety	Princess Marie Galit	Jenny Lind
Wintonia	Prima Donna	Fairy Queen
Exquisite	Prince Albert	Cabrera
Belle Marie	Minerva	Floribunda
Lord Stanley	Normahal	Queen Superb
Pilot	Virgil	Reine des Francais
Cleopatra	Perfection (Ambrose)	Decora
Flying Maid	Elegans	Magnifica
Formosa	Funch	Empress
Pretender	Purity	Annie
Albion	Comtesse de Salis	Queen Victoria
Delight	Mrs. Shaw Lefevre	Statuiski

The above forms only a portion of J. W.'s stock, which he believes to be the largest and best selected in the kingdom. The usual allowance to the Trade.

The Floral Nursery, Acton Road, Turnham Green.

## THE CHAMPION PEACH.

THOMAS HUTCHINGS, NURSERYMAN, &c., Axminster, will be ready to send out this beautiful Seedling Peach, which far surpasses everything of the kind ever offered to the public, measuring the extraordinary size of from 11 to 13, and sometimes 14 inches—flesh free, rich, and juicy; flavour unequalled, somewhat resembling the Green-gage Plum; an excellent bearer; and in every respect of First Class Quality.

Strong Trees in November, or as soon as orders for 200 have been received. Trained Trees, 21s.; Maiden ditto, 10s. 6d.

Fully requested that all Orders from unknown correspondents be accompanied by a Post-office order, payable at Axminster, Devon.—Orders received at the Nursery; or by Messrs. HURST & M'ULLEN, 6, Leadenhall Street, London; and by Messrs. GARAWAY, MAYES, & Co., Durham Down Nurseries, Bristol.—N.B. A good General Nursery Stock.

## THE PERPETUAL TREE VIOLET, or VIOLA

ARBOREA: large plants, 6s. per doz.; smaller, 3s. per doz. DOUBLE WHITE TREE VIOLET: large plants, 6s. per doz. THE RUSSIAN SUPERB VIOLET: plants 3s. per dozen.

\*A Treatise on the Violet, post free for 12 stamps.

OTHELLO CLOVE CARNATION, 2s. 6d. per pair. PURE WHITE CLOVE CARNATION, 1s. 6d. per pair. NEW CLOVE "PRINCE OF WALES," 2s. 6d. per pair. GIANT SCARLET BROMPTON STOCK, 6d. per doz.; 4s. per 100. SWEET-WILLIAMS, 6d. per doz., 4s. per 100. SEEDLING ANTIRRHINUMS, 1s. per doz.; 8s. per 100.

One dozen of each of the Violets, one pair of each of the Clove Carnations, and one dozen of each of the Brompton Stocks and Sweet Williams, with a Treatise on the Violet, will be sent, hamper and package free, for 1l.

For descriptions and further particulars of the above, see *Gardeners' Chronicle* for Oct. 15.—The Violets and Cloves will be sent postage free; the other varieties hamper and package free. On receipt of a Post-office order or penny postage stamps, the whole or any part of the above will be sent.—EDWARD TILLY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath.

## STEPHEN SHILLING begs to return his best

thanks to the Nobility and Gentry for the liberal encouragement they have been pleased to favour him with, and informs them that he has much improved his Nursery Stock in general, therefore those intending to plant may depend on having from his Nursery all descriptions of Trees, Evergreens, and Deciduous Shrubs, including a fine Collection of Standard and Dwarf Trained Fruit Trees. American Plants in great variety. Standard and Dwarf Roses of the newest and best sorts, all of first-rate quality, and on the most reasonable terms. Grounds laid out and contracts taken. Where the ground is prepared and the trees planted under his direction, he will re-supply those that may die, through being removed, free of additional charge. Coppice Plants of all sorts supplied and planted by contract or otherwise.

Garden and Flower Seeds of all the best kinds in cultivation; Dutch Bulbs, finest imported; with every other article required for the Kitchen Garden, Pleasure Grounds, and Plantations. Orders received for Trees, &c. Seeds supplied as usual at Winchester, Basingstoke, and Alton, at which places he attends on market days. All goods delivered Free of Carriage to the principal Market Towns.

Descriptive priced Catalogues forwarded on application, Post Free. Experienced Gardeners and Foremen supplied.

STEPHEN SHILLING respectfully suggests the importance of observing both his Christian Name and Address on all letters intended for him, as the omission is likely to cause mistakes.

North Wimbore' and Hartley Row Nurseries, near Odiham, Hants, 24 miles from the Winchester Station, South Western Railway.—Nov. 5.

## KNAP HILL NURSERY, WOKING, SURREY.

WATERER and GODFREY, Nephews and Successors to the late HOSIA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6, and 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.

" Goveniana, 2 to 3 and 4 feet.

" Funeris, 2 and 3 feet.

" thuyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.

" Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.

" repandus, 3, 4, 5, and 8 feet.

" Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and except at Elvaston, unequalled.

" Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.

" Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.

" Gold Striped, 1, 2, and 3 feet.

" do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

" elegantissima (new striped), standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.

Dovaston, or Weeping Yew, fine standards.

Pinus Douglas, 3, 4, 5, and 7 feet; a few magnificent plants, 10 to 12 feet high.

" insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.

" cembra, 3, 4, to 6 feet.

" Canadensis (Hemlock Spruce), 3, 4, and 6 feet.

" morinda, 3, 4, and 6 feet.

" Menziesii, 3, 4, 6, and 8 feet.

" cephalonica, 3 to 4 feet.



## NEW PLUMS.

**MR. HENRY DOWLING**, Woolston Lawn, Southampton, most respectfully invites the attention of the Nobility and Gentry generally, to his three new Plums—**ANGELINA BURDETT**, **BLACK GAGE**, and **STANDARD OF ENGLAND**, at the following reduced prices:—Fine strong 3-year old trained trees, at 6s. each; or 2-years do., at 3s. 6d. each. H. D. having the opportunity of fruiting this season, can with the greatest confidence recommend them to far exceed all other Plums ever yet produced; they having also been laid before a committee of gentlemen, and the most competent judges in the world, and considered by them to throw all other Plums in the shade, their possessing a more sugary sweetness, the flavour almost equal to the Pine. The above can be supplied by Mr. CHARLES TURNER, Royal Nursery, Slough, Bucks, the only agent, who can give satisfactory testimonials of their quality, having this season tasted the fruit. H. D. begs also to inform the Public generally, that no trees can be supplied from any other Nursery true, except those grafted in March last. Gentlemen favouring H. D. with early orders, will be strictly attended to.

## CHALLENGE TO ALL ENGLAND!

**MR. D. KING, GARDENER AND FLORIST**, Southampton, having had the pleasure of fruiting the **ANGELINA BURDETT** and the **BLACK GAGE** this season, can with confidence show the above two Plums against the **Reine Claude Violette** and the **Purple Gage** for 50l., or any other two Plums England can produce, between the 20th of August and the 6th of September, 1854, and to be decided by three competent judges, and met half way to any part of England. Southampton, Nov. 5.

## ROSE CATALOGUE.

**WOODLANDS NURSERY, MAREFIELD, NEAR UCKFIELD, SUSSEX.**  
**WILLIAM WOOD AND SON** beg to announce that the new Edition of their Rose Catalogue, for 1853-54, is now ready for distribution, and will be sent gratis on receipt of Two Penny Postage Stamps.

Their Catalogue of General Nursery Stock may also be had on the same terms.

Collections of **ROSES** will be supplied on the following terms, when the selection of sorts is left entirely to **Wm. Wood & Son**:—Extra tall Standards, 4 to 8 feet, with 3 to 6 best varieties of Climbing and Perpetual Roses, in each stem, suitable for training, &c., 3s. 6d. to 5s. each.

Tall Standards, fine picked stocks, from 4 to 6 feet, with large heads, of the most showy kinds, for planting in conspicuous situations on lawns, &c., 36s. per dozen.

Extra superior selected Standards, 18s. to 24s. per dozen, or 17s. to 10l. per 100.

Fine Dwarf and Dwarf Standards, 10s. to 16s. per dozen, or 4l. to 6l. per 100.

Superb do. do., the best sorts for exhibition, 18s. per dozen, or 7l. 10s. per 100.

Fine Dwarf, on own roots, in 50 varieties, 2l. 10s. per 100.

Fine Climbing and Noisettes, 9s. to 12s. per dozen.

Hybrid Perpetuals, budded on 6-inch stems, or on own roots in pots, 12s. to 18s. per dozen, or 5l. per 100.

He de Bourbon, in pots, or budded on 6-inch stems, 12s. to 18s. per dozen, or 5l. per 100.

China, in pots, 9s. to 12s. per dozen.

Tea-scented, in pots, 12s. to 18s. per dozen.

Climbing Roses, mixed, without names, for covering banks, 4l. 10s. per 100.

Good Dwarf, on own roots, without names, 1l. 10s. per 100.

**TO NOBLEMEN AND GENTLEMEN ABOUT TO PLANT THIS SEASON.**

**WM. SKIRVING**, Walton Nursery, Liverpool, begs to offer his extensive Stock of Fruit, Forest, and Ornamental Trees and Shrubs, priced Catalogues of which may be had on application.

The Forest Trees consist of several millions, including Oak, Ash, Elm, Larch, Scotch Fir, Spruce, and all the common Forest Trees generally planted in this country; and of the following for underwood—Hazel, Holly, Privet, Rhododendron, Laurel, Berberis aquifolium, &c.

In addition to his general collection of Hardy Ornamental Trees, W. S. particularly recommends the **ARAUCARIA IMBRICATA** and **CEDRUS DEODARA**, of which he holds many thousands of well-grown Plants, of sizes from 1 to 4 feet high, grown in the open ground, and warranted to remove with safety to any distance.

The Fruit Tree collection contains all the new and most approved sorts of Peaches, Nectarines, Apricots, Apples, Pears, &c., and a large assortment of the most choice varieties of Vines, grown from eyes, and well established in pots.

Ornamental Trees, Evergreen and Flowering Shrubs, of large size, suitable for giving immediate effect.

Railway Contractors and others enclosing waste lands, or improving estates with new fences, can be supplied to any extent with fine transplanted Thorn Quicks, of various ages, at very moderate prices.

**WILLIAM FAIRBEARD**, Mount Pleasant Nursery, Green Street, Sittingbourne, Kent, begs to inform the Trade that he intends to send out this season his new Dwarf Early White Wrinkle Marrow Pea, called **FAIRBEARD'S NON-PAREIL**. This Pea is some days earlier than his Champion of England Pea, and very prolific; height 3 feet. It is not like the Wrinkle Pea generally, it carries but little foliage.

This Pea **WILLIAM FAIRBEARD** can confidently recommend as being a first-rate one, and can be supplied by the following Seedsmen:—Mr. Epps, Maidstone; Mr. Thomas Bunyard, Maidstone; Mr. Duncan Hairs, St. Martin's Lane, London; Mr. W. G. Waite, 181, High Holborn; Messrs. Hurst & M'Niven, Leadenhall Street; Messrs. Batt, Rattle, & Silverlock, Strand, London; Messrs. John Sutton & Sons, Reading, Berkshire; Mr. Skirving, Liverpool; Messrs. Veitch & Co., 54, High Street, Exeter; Messrs. William Hendle & Co., Seedsmen, Plymouth; Messrs. Nutting & Son, Cheapside; Messrs. Noble, Cooper, & Bolton, Fleet Street; Messrs. J. C. Wheeler & Son, Gloucester.

N.B. W. F. has a few bushels more to offer the Trade.

**KILMARNOCK WEeping WILLOW; OR SALIX CAMPAHA PENDULA**—The Trustee on the sequestered estate of Thomas Lang, Nurseryman, Kilmarnock, Scotland, intimates that he is now ready to supply plants of this beautiful new Willow. Mr. Lang has received numerous testimonials as to its being a new, distinct, and interesting addition to our Ornamental Trees, from Professor Lindley, of London, Mr. MacNab, Royal Botanic Gardens, Edinburgh, and others; but the following letter from Sir William Jackson Hooker, Director of the Royal Gardens, Kew, is, of itself, sufficient, both as a description and a recommendation of the plant.

"Sir.—The *Salix caprea pendula* is doing well with us, and is much admired for its decidedly weeping character. It bears the name relation to the ordinary *Salix caprea* than the Weeping Ash does to the Common Ash, and I need say nothing more in its favour. Every branch is gracefully curved downwards, and the great breadth of the foliage and its dark colour give it a totally different character from the common Weeping Willow, *Salix babingtoniana*. I think very highly of it as an ornamental small tree."

"I am, &c., (signed, W. J. Hooker.)"

Furnished plants, on own roots, trained to one stem, 2s. 6d. each. Do do. extra fine, 3s. 6d. each. A few plants, grafted on tall stems, but not well furnished heads, 6s. each.

Orders to be addressed to Mr. JOHN DICKIE, Seedman, Kilmarnock, the Trustee, who will also forward, on application, a printed list of the General Nursery Stock, which is now being sold off at extremely low prices.—Kilmarnock, Nov. 5, 1853.

## THE PLANTING SEASON.

CLEARANCE OF LARGE ORNAMENTAL TREES, SILVER AND SPRUCE FIRS, &c. &c.

**WILLIAM WOOD AND SON** have the pleasure of inviting attention to their extensive Nursery, consisting of an area of 50 acres of ground, which contain (independent of a most extensive stock of Roses) a very large quantity of Standard Ornamental and Fruit Trees, American Evergreens, and Flowering Shrubs, but more especially the following, which they propose clearing off at once, viz:—

Per 100.—Spruce Firs, 4 to 6 feet, 30s., 3 to 4 feet, 20s.; Silver Firs, 2 to 4 feet, 20s., 1 to 2 feet, 10s.

Per 1000.—Scotch Firs, 2 to 3 feet, 25s.; two-year seedlings one-year bedded, fine, 6s.; Larch Fir, 3 to 4 feet, 30s., 2 to 3 feet, 20s., 1 to 2 feet, 15s.; one-year seedlings, one-year transplanted, fine, 6s. to 7s. 6d.

Maple, Norway, 8 to 10 feet, per dozen 6s., per 100, 30s.; Maple dasycarpon, red wooded, very ornamental, per dozen 6s., per 100, 30s.; White Mulberry, leaves are used for silk-worms, 25s. per 100; Gleditsias, 4 to 6 feet, very fine, 25s. per 100. And every other kind of Ornamental Trees.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

## PYRAMIDAL AND STANDARD FRUIT TREES.

**WOODLANDS NURSERY, MAREFIELD, NEAR UCKFIELD, SUSSEX.**  
**WILLIAM WOOD AND SON** beg to offer fine healthy clean grown trees as under. Per dozen:—

Apples, standards, 10s. Pears, standards, 12s.

— pyramidal trees, 10s. — pyramidal trees, 12s.

— pyramidal trees, 12s. — dwarf, 10s.

— fine dwarf bushes, of the Mahaleb Stock, suitable for potting, 15s. — pyramidal trees on Quince stocks, 18s.

Medlars, standards, 15s. — pyramidal trees, 12s.

Mulberry, white, 4s. — dwarf, 10s.

N.B.—Catalogue of Fruits may be had in exchange for two penny postage stamps. Quinces, standards, 15s.

## TREES FOR AVENUES.

**WOOD AND INGRAM**, Huntingdon, beg to offer the following, which have been frequently transplanted, and are admirably adapted for the above purpose, or for Parks, Hedgerows, &c. Elms, the true English, from layers or grafted,

10 to 12 feet ... 80s. per 100

12 to 14 " ... 90s. "

14 to 18 " ... 100s. "

Also, the true Huntingdon or Chichester Elm, at the same prices. Limes, the best red twigged variety,

10 to 12 feet ... 100s. per 100

12 to 14 " ... 110s. "

14 to 16 " ... 120s. "

The above are all feathered to the ground. Also a large collection of Standard Pears and other Fruit Trees, of all the leading kinds; and an extensive general Nursery Stock, priced Catalogues of which may be had on application.

Huntingdon Nursery, Nov. 5.

## FRUIT TREES.

**ALEXANDER PONTEY**, Plymouth Nursery, begs to inform the public that he has a large stock of Fruit Trees, of all sizes, and the most approved kinds. He particularly recommends his Pears on Quince Stocks in a full bearing state. The Nursery abounds with Pears on free stocks, both standard and dwarf trained. His stock of Standard and Dwarf-trained Peaches and Nectarines growing against high walls are very fine this season. He takes this opportunity of informing Fruit-growers that he has Fruit Trees in Pots, suitable for Orchard Houses, consisting of the most approved kinds for forcing.

Plymouth Nursery, Plymouth.—Nov. 5, 1853.

**HYACINTHS, TULIPS, RANUNCULUSES, ANEMONES, AURICULAS, LILIES, AND GLADIOLUS.**

**HENRY GROOM**, Clapham Rise, near London, by appointment Florist to her Majesty the Queen, and to his Majesty the King of Saxony, begs to recommend to the attention of the nobility, gentry, and amateurs, his extensive assortment of the above FLOWERS, which he can supply of the best quality. He begs to state that this is a good season of the year to make a selection of the various kinds.

25 HYACINTHS, in 25 fine sorts, named ... £ s. d.

100 TULIPS, in 100 fine sorts, named ... 7 7 0

100 do. in 50 do. ... 5 5 0

Superfine mixtures, per 100 ... from 7s. 6d. to 1 1 0

100 RANUNCULUSES, in 100 superfine sorts, named 2 10 0

Superfine mixtures, per 100 ... from 6s. to 0 15 0

100 ANEMONES, in 50 superfine sorts, named 1 10 0

Superfine mixtures, per 100 ... from 6s. to 0 10 6

20 AURICULAS, in 20 superfine sorts, named 2 10 0

LILIAM LANCIFOLIUM ALBUM, each, from 9d. to 1 6 0

Do. do. PUNCTATUM ... 3s. to 0 7 6

Do. do. ROSEUM ... 3s. to 0 10 6

Do. do. CRUENTUM ... 5s. to 0 10 6

Do. do. SEEDLINGS from RUBRUM ... 2s. 6d. to 0 10 6

Do. do. EXCELSUM ... 5s. to 0 10 6

Do. do. JAPONICUM, true, or BROWN ... 5s. to 0 10 6

Do. do. THOMPSONIANUM, new ... 5s. to 0 10 6

6 HYBRID SEEDLING LILIES, by name ... 0 15 0

H. Groom begs to say that his Catalogue of BULBS, &c., is ready, and will be forwarded by post on application.

Foreign Orders executed.

**MESSRS. J. AND H. BROWN** offer the following selected PLANTS, FRUIT TREES, &c., which they will forward to any part of the Kingdom.

25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name for ... 20 0

25 American Azaleas do. do. ... 15 0

25 Hardy American Plants, one of a sort, by name ... 10 6

12 Hardy Heaths and Kalmias, one of a sort ... 6 0

12 Rhododendrons, including Scarlet, White, and Rose, hardy varieties ... 12 0

New hardy Yellow Rhododendrons, each ... 5s. 6d. to 7 6

Fine hardy Scarlet Rhododendrons, 2 feet, per dozen ... 10 0

Fine hardy Magnolias, one of a sort ... 10 6

Cedar of Lebanon, 3 feet, well grown in pots, per dozen 0 10 6

(Araucaria, Cryptomeria, and Coniferae of all kinds, see List.)

Climbing Roses, of choice sorts, in pots, per dozen ... 6 0

Roses, standards and half standards, per dozen, 12s. and 15 0

Yellow Roses, Persian and others, per dozen ... 12 0

12 Tea-scented Roses, one of a sort, by name, in pots ... 9 0

Wistaria amensis, extra fine, in pots, 15 to 30 feet, each 3 6

12 Hardy Passifloras, Jasmines, and Clematis of sorts ... 10 0

12 Greenhouse Azaleas, one of a sort, blooming plants ... 25 0

12 Choice Camellias by name ditto ... 30 0

50 Choice Greenhouse Plants, one of a sort, by name ... 45 0

12 Choice Ericas, one of a sort, by name ... 16 0

12 Choice Chus, choice species, and good plants ... 40 0

12 Cinerarias and Calceolarias, new sorts, per dozen ... 12 0

Chrysanthemums, Show and Pompadour Varieties, do. ... 10 0

## SUPERIOR FRUIT TREES.

Fine dwarf and standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries; the best and most approved sorts of their respective kinds, to name, each 2s. 6d., or, per dozen ... 24 0

Untrained or Maiden ditto, 1l. 6d. each, or per dozen ... 16 0

Apples, dwarfs and standards, of best sorts, per dozen ... 15 0

## RHUBARB.

**RANDALL'S PROFILIC RHUBARB**.—The good qualities of this Rhubarb are so well known that it requires no better recommendation than that it has been purchased by the principal market gardeners round London, 18s. per dozen, strong roots. To be had of E. RANDALL, Loughborough Gardens, Brixton, Surrey, and principal Seedsmen. A liberal allowance to the trade. Post Office Orders payable at Brixton.

## SUPERB HOLLYHOCKS AND PERPETUAL ROSES.

**R. B. BIRCHAM**, Hadenham Rosary, Bungay, Suffolk, begs to state that he has strong, healthy plants of most of the leading kinds of Hollyhock; see Catalogue published in the *Gardeners' Chronicle* Oct. 22. If the selection be left to R. B. B.:—12 first-rate sorts, 30s. to 40s. per dozen; 12 good show flowers, 15s. per dozen; 12 good double flowers for borders, without names, 6s. per dozen. Hollyhock Seed, saved exclusively from the best kinds, at 1s. 6d. per packet, containing upwards of 200 seeds.

**PERPETUAL ROSES**.—Strong dwarf plants, suitable for beds or borders (or for pot culture), including the best kinds in cultivation, 9s. to 12s. per dozen. Strong dwarf plants of Show Roses, 6s. to 9s. per dozen.

Carriage paid to London, and plants added to compensate for long carriage.

**H. LANE AND SON**, The Nurseries, Great Berkhamstead, Herts, having a very large Stock of EVERGREEN TREES and SHRUBS suitable for immediate effect in making New Plantations, Avenues, &c., every plant forming a specimen, they have selected, as a more ready guide, the following, the different varieties of which will be found under their respective heads, in Catalogue of Trees and Shrubs, which may be had on application for the same, by enclosing two postage stamps; also the General Rose Catalogue for two ditto; Fruit, two ditto; Azalea, Camellia, and Hollyhock for one ditto.

Arbutus-vitæ, Arbutus, Araucaria imbricata, Cedrus Deodara and Lebanon, Cryptomeria japonica, Cypress, Holly (green and variegated), Juniperus virginiana, or Red Cedar (splendid plants); Kalmia latifolia, Laurel, common and Portugal (fine), Phillyrea ilicifolia, Pinus Cembra, exelsa, insignis (fine), Pinaster, Weymouth; Abies Douglasi, Hemlock Spruce, Kluhow, morinda, or Smithi, Menziesi, Spruce; Rhododendron, Taxodium sempervirens, Yew, common and Irish.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his new CATALOGUE OF RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

**STANDISH AND NOBLE'S CATALOGUE** for the present season is now ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Nov. 5.

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## The Gardeners' Chronicle.

**SATURDAY, NOVEMBER 5, 1853.**

AGRICULTURAL statistics do not belong to this division of our journal, and we gladly leave them to the care of our colleagues. But it strikes us that another branch of statistics, quite overlooked, is intimately connected with them, and of very considerable importance. Of course we mean the STATISTICS OF HORTICULTURE. If it is a great national object to know how much Wheat, Barley, and other kinds of corn, how many tons of root crops, or how many head of cattle are annually yielded in this country, it is also necessary to ascertain how far our means of subsistence, derived from such materials, are affected by the garden crops, which form so large a part of the area under cultivation in this country.

Lord ASHBURTON, in an admirable letter to the Statistical Committee of a Union in Hampshire, puts the value—we ought to say the indispensable necessity—of such information in so clear a point of view that his sentiments cannot be too generally made known.

"It appears to me," says his lordship, "that the wonder is, not that the Government should now endeavour to collect agricultural statistics, but that it should never have sought to do so before. It has now for many consecutive years spent large sums in order to collect, digest, and publish the statistics of trade, shipping, and manufactures, for the good of the merchants, shipowners, and manufacturers.

Why should not some little money have been spared to do as much for us? Is it consistent with common sense that every month the public should have paraded before their eyes, and canvassed in the newspapers, the tons of shipping and the pounds of cotton which have entered or quitted our ports, and that no intimation should be given from year's end to year's end of the food prepared and preparing for a people's subsistence? Is our industry so unimportant, our capital so minute, that no note should be taken of its condition?

"This is not the case in other countries. The United States of America make an annual return of the number of bushels of corn drawn, the quantity they require for their own consumption, and the quantity they can spare for export, The great corn-dealers have long felt the necessity of collecting some such information for their own guidance. Mr. SAUNDERS, of Liverpool, told the



House of Commons' committee in 1833 that he employed agents to travel over the corn districts and report to him both the cultivation and the yield.

"Now, what is the consequence of this partial knowledge? Mr. SAUNDERS can operate on the market for many days before we, the bulk of the sellers, become aware of the true circumstances which regulate the price of what we have to sell.

"Some 10 years ago the same advantage was enjoyed by the great money jobbers on the London Stock Exchange. They kept their couriers travelling from city to city, and obtained information five or six days in advance of the ordinary post. They made rapid fortunes at the expense of the public; but now the electric telegraph has placed all upon a level. The publication of these statistics will produce the same good on the Corn Exchange.

"There is a further consideration which should operate on our judgments, and I therefore mention it, though it may trench upon politics. Not only does the farmer suffer for want of statistics in his contest for price with the great dealer on the Corn Exchange, but he suffers also from the same want in his contest for consideration and political power with other classes on the great stage of life. I have no doubt in my own mind but that the capital we employ and the produce we raise exceed in value all the capitals and all the products besides raised in this great manufacturing country; but I have no figures to appeal to—I can speak only from conjecture. When, therefore, next year, or when at any future time it is proposed to make a new apportionment of power, according to the importance and magnitude of the several industries, our claims will be most assuredly underrated.

"These statistics would obtain for us justice in this respect. They would show that the contribution of the foreigner to the subsistence of this country is as nothing when compared to that furnished by us. They would prove that, instead of being a backward unenterprising race, bigoted to ancient practices and incapable of improvement, we were bringing every year more and more acres into cultivation, and that we were every year investing more capital, however small might be the profit we derived from it. They would place the small farmer more upon an equality with the great dealer upon the Corn Exchange. They would further give to the trade such accurate information as would diminish the danger of those fatal speculations which ransack the world for corn under mistaken apprehensions of scarcity, and bring ruin on all engaged."

No person of common understanding can fail to perceive the force of these irresistible arguments. But in order to give statistical returns the value which they should possess, it seems to us that garden and orchard produce require to be included. Of course we do not mean the produce of ornamental gardens, nor any of the small details of horticulture. What we allude to are crops of orchard fruit, of market gardens, and the larger articles found in all kitchen gardens exceeding in extent. Even in years of abundance the demand upon the corn market must be affected by such supplies, and in years of deficiency they have very considerable influence.

The Potato crop, a main support of the poor, is lost or greatly diminished; it then becomes necessary, in order to judge how far the corn-market may be affected, to know what supplies remain of Cabbages, Turnips, Parsnips, and the like, to which we would add such orchard crops as Apples, Pears, and Plums, which with the poor are as much food as Wheat and Potatoes, though not to the same extent. We happen to know that the total absence of all information upon this subject increased that alarm of scarcity which was felt in 1845, and which eventually led to the repeal of the Corn-laws. Had any one been able at that time to show by unquestionable figures that, although three-fourths of the Potatoes were destroyed, a much larger quantity of other root-crops than was supposed really existed in the country, the panic would undoubtedly have been mitigated, and possibly the consequences of that panic might have assumed some other form, which would have caused less temporary distress than it was the fate of the agricultural interest to undergo. But nobody knew anything whatever about the extent of land under cultivation with anything; nobody could tell what the quantity of corn or root-crops or other crops the season of 1845 had yielded; and if that information, or an approach to it, had been collected, nobody could have stated with the least confidence how much the supplies of 1845 were greater or less than in average years.

The opposition which Government has encountered, and continues to encounter, in its attempts to obtain throughout Eng<sup>d</sup> and some accurate information upon so vital a subject as this, is one of the most remarkable incidents in the modern history of rural affairs. That it has arisen out of an entire

misapprehension of the nature of the returns asked for, and of the motives which lead Government to seek them, we entertain no doubt. This misapprehension is met with so much truth and skill by Lord ASHBURTON, that we must again borrow his lordship's words:—"With regard to the first point, the Government does not seek to know the amount of each man's stock, or the extent of each man's cultivation. Such a return would be too cumbersome for use, too expensive for publication. The Government wants the sum-totals, not the items of which those sum-totals are composed. It seeks no more to mark and distinguish the return of each occupier than we seek to mark and distinguish each brick of which our house is composed. The house must be put together brick by brick, and the return for the three kingdoms must be gathered item by item; but the items which compose the sum-total will be as much lost in the mass and aggregate of the whole as the bricks which compose the house are lost in the mass and magnitude of the building.

"The next question is, why does the Government desire these statistics? What is its motive? It certainly is not with the view of turning corn-dealer itself, as some have supposed, for that would be not only absurd, but illegal. It assuredly has no notion of taxing our produce, for no Government, under a representative system, would dare to propose a tax upon the first necessities of life. It evidently does not wish to pry into our secret concerns, for it provides that we may make our returns at our option, either jointly or severally."

It is the more necessary that this explanation should go forth in the columns of the *Gardeners' Chronicle* because our friends the market gardeners, whose returns we earnestly hope will be included in the Government inquiry, are very likely to entertain the same misapprehension as has prevailed among the farmers.

We lately adverted to a patent process for converting skins into leather without the assistance of bark or any other tanning substance; and we pointed out the serious effect which this invention must necessarily have on the price of bark if the skins prepared by it should be found to possess the excellence ascribed to them by very good authority. The remarks we then made have elicited from the patentee, Mr. PRELLER, the following letter to the Secretary of the Society of Arts:—

"A Leading Article, referring to my patent process of converting skins into leather, appeared in the *Gardeners' Chronicle*, which you and the editors of several newspapers have copied, and which I cannot permit to pass unnoticed, in particular as I have the honour to be on our society's standing committee for leather, and as my silence might be considered an approval of all that is therein stated; and especially of the opinion that Oak bark will be very much depreciated, and in future not be worth stripping off the trees, which appeared to me like irony when I first read it, as the quantity of leather which I manufacture is so small in proportion to the general produce of this country, that even supposing that the pressing demands of my customers for larger supplies should gradually be the cause of an extension of twenty times the present produce of my small factory (which is more than I expect), the quantity made would hardly be one-sixtieth portion of the total requirements, and an immense supply of tanning materials would still be wanted, for which tanners have not to look only to the owners of Oak trees in England, as the article in the *Gardeners' Chronicle* appears to state, but are now, and will continue to be, dependent upon an annual importation of about 250,000 cwt. of Oak-bark from Belgium and Holland, 120,000 cwt. of different descriptions of bark, and 750,000 cwt. of substitutes containing tannic acid; such as terra japonica, cutch, gambier, sumach, and valonia, from other countries.

"All these articles have very much increased in value during the last few years; and leather tanned in foreign countries has also been imported in large quantities, as there is not sufficient made here for the demand. Of all the manufactures of this country that of leather is considered the fourth in importance; and the annual value of the leather manufactures was estimated some years ago at 14,000,000*l*. sterling. No doubt it is more at present, and is going on increasing; it is therefore my opinion that owners of Oak trees in this country, and the importers of tanning materials from foreign countries, have no reason to apprehend any reduction in the demand; and that an enlarged manufacture of leather, even if carried on without the use of bark, or the substitutes hitherto known, will not injure any classes of producers or manufacturers, and will prove a public benefit.

"I abstain from any remarks regarding the qualities of my new leather; it has worked, and will continue

its own way in the estimation of those who use it for different purposes. "C. A. PRELLER."

"Lant Street, Borough, Oct. 5, 1853."

From this it would appear that we were entirely mistaken in our apprehension that bark would become of little value, and we sincerely desire to believe that there is no cause for alarm. But what does Mr. PRELLER mean? He takes out a patent for making leather without bark; his leather is reported, upon competent authority, to be better in every respect than that prepared with tan, in addition to its being the result of a much more expeditious process, and yet he says that the consumption of bark will not diminish. Does he mean that his leather has not the value assigned to it, and therefore will not come into competition with tanned leather? or that it is too expensive for general use, and therefore will only be made on a small scale? or that he intends to be so patriotic as to render his patent valueless, by refusing licenses to other persons to work under it, confining the preparation of untanned leather to his own "small factory" in Lant Street? We cannot seriously believe that any of these suggestions is a true interpretation of Mr. PRELLER's meaning, and therefore we must trust to himself for an explanation of his singular statement, that although leather shall be hereafter made without the use of bark or its substitutes, yet there will be no reduction in the demand for bark or its substitutes, and consequently no one will suffer. Bark has been valuable hitherto because it, or its substitutes, have been indispensable to the preparation of leather; according to Mr. PRELLER it is to retain its value, although its use shall have ceased. We are sure the public would be glad of a solution of this enigma.

#### GOMPHOLOBIUMS.

THESE beautiful plants are generally looked upon by beginners as being very difficult to cultivate successfully, and therefore they are comparatively rare in collections. If the following mode of treatment is pursued, however, there need be little fear of failure.

In selecting young plants from the nursery choose those that are strong and healthy, and in proper condition as to pot room. If received at the present season they should be wintered in the warmest part of the greenhouse, keeping them as near the glass as convenient, and let them be carefully supplied with water at the root. When the object is to obtain the largest possible amount of growth in the course of one season, they may with propriety be placed in a moist growing temperature of from 45° to 50° at night, allowing it to rise 10° by day with air and sunshine, early in March, or as early after that season as circumstances may permit. Any straggling shoot should be cut back, so as to secure a compact close habit of growth, and the supply of water will probably need to be increased after placing the plant in a warmer situation, but give no more than may be absolutely required to keep the soil in a healthy state; and if the syringe is used morning and evening during bright weather, and a moist atmosphere maintained, very little water at the root will suffice. Healthy young plants will soon start into active growth when placed in a moist growing temperature, and when this is observed to be the case examine the state of the roots, and give a moderate shift if the roots are abundant and active, but never shift a plant unless the ball is well filled with healthy active roots. Be careful to have the soil to be used in repotting in a nice moist healthy state, and in proper condition as regards age, taking care that the ball is also neither too wet nor too dry; keep rather close and moist, and sprinkle the plants over-head morning and evening, and apply water to the soil with the greatest care for a time after repotting, until the roots have struck into the fresh soil. Although most of the varieties will bear a moderate degree of warmth if accompanied with a corresponding amount of moisture in the atmosphere, the temperature should not be kept much higher by artificial means at any period of the season than that recommended as proper for starting the plants into growth, and air should be freely admitted on every favourable occasion, taking care to avoid cold drying currents.

About the end of May or beginning of June the young specimens may be removed to a close pit or frame, which will form a very suitable situation for their summer's growth, and where their little wants may be conveniently supplied. If inconvenient, however, to afford them a situation in a close pit, the warm end of the greenhouse will answer with attention to maintain a moist atmosphere, and to keep the plants near the glass. Healthy thriving specimens will probably require a second shift early in June, and this should be given immediately it is required, in order to get the pots well filled with roots previous to winter. The same care must be observed as to soil, &c., in potting, as recommended for the last shift, and the size of the shift should be regulated by the vigour of the specimen, observing that it is much safer to allow the plants to get slightly pot-bound previous to winter than to have them over-potted at that season. During the summer months they will make rapid progress if in good health and properly attended to. Maintain a moist atmosphere, and sprinkle them over-head on the mornings and evenings of bright



days, giving a free circulation of air, except during drying winds, when the lights should be raised on the sheltered side only, and a thin shade thrown over the glass to keep the temperature down; and unless the pit or house in which the plants are occupies a position slightly sheltered from the forenoon's sun, a thin shade for a few hours on the forenoons of bright days will be beneficial. As to stopping beyond what may be necessary early in the season to secure a close, bushy foundation, nothing further in this way will be required, but constant attention during the growing season will be needed, to keep the shoots properly tied in. Towards the middle of September gradually decrease the amount of moisture in the atmosphere, and give air more freely, in order to check the growth and ripen the wood preparatory to winter; and as soon as damp, cloudy weather occurs, remove the specimens to the warm end of the greenhouse, and treat them during winter as recommended above. Plants intended for blooming may be allowed to remain in the greenhouse to expand their blossoms; but where large specimens are desired, it will be necessary to grow them another season without allowing them to blossom; and in this case the second season's treatment may be in every respect similar to the first. While in blossom the specimens may be removed to the flower-house, or elsewhere, provided they are not subjected to sudden changes of temperature, or exposed to cold, drying currents. Blooming specimens, when their beauty is over for the season, should have their branches slightly cut back, thinning out weakly pieces, and be placed in a moist, growing temperature, to induce them to start into growth, and should then have their roots examined, giving a small shift, taking care to clear away all sour and bad soil. When the plants have made a moderate growth, sufficient to afford a good display of blossom, they may be removed to a cooler and drier situation, but it is unsafe to trust Gompholobiums out of doors; and they are so prolific of blossom when kept in growing conditions, that they well repay the protection of glass.

For soil take good turfy peat broken up into pieces about the size of garden Beans, rejecting all but the prime fibry portions, and add about one-fourth of sharp silver-sand and a liberal allowance of potsherds broken small; well mix these together, and be careful to have it in a nice moist healthy state when wanted for use. No care in providing for the escape of water through the soil will be sufficient to effect the purpose, unless the same object is kept in view in crocking the pots, and also in the operations of shifting; and unless thoroughly efficient drainage is secured, success need hardly be expected. Beginners will also do well not to apply water carelessly whenever the surface of the soil may appear dry, without ascertaining whether the mass is in that condition, and also to avoid giving small drops frequently. Give a thorough watering when necessary, and no more until it is really wanted again. *Alpha.*

#### BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Concluded from page 693.)

**SECTION G.—On Reaping Machinery,** by A. Crosskill.—Mr. Crosskill gave an historical account of reaping machines, from their use by the Romans and Gauls to the present time; with a view to show that though reaping machines had not been brought prominently to notice before the Great Exhibition, such implements had long since been invented, and that the reaping machines of Messrs. McCormick and Hussey were constructed on the same principles as those which had been previously made in this country. Among other English inventions of reaping machines, he mentioned one by Mr. Smith of Deanston, in 1812, which from time to time underwent improvements, and in 1835 it worked very successfully at the meeting of the Highland Agricultural Society. After that trial it was laid aside, as British farmers did not encourage it, and, during the redundancy of labour, did not want such machines. In 1822, Mr. Ogle, of Remington, near Alnwick, invented a reaping machine, which appears to have served as a model for Mr. McCormick, as his machine is, in almost every particular, the same as Mr. Ogle's—a description of which was published in 1826. The same circumstances which prevented the adoption of Mr. Smith's reaping machine also caused Mr. Ogle's to be laid aside; though in America, where labour is scarce and the stalk of the corn more slender and dry, and therefore better adapted for the action of mechanical cutters, McCormick's reaper was soon in extensive demand. It was stated by Mr. Crosskill that about 2000 of McCormick's machines are annually sold in the United States, and that Hussey's is in nearly equal request in that country. The celebrity acquired by those machines in the Great Exhibition induced Mr. Bell, of Scotland, who had gained a prize in 1829 from the Highland Agricultural Society for a reaping machine, to bring his invention again into the field. In 1852 he contested with Mr. Hussey at the meeting of the Highland Society at Perth, and carried away the prize; and his reaping machine had proved victorious on several subsequent trials. It was to this invention that Mr. Crosskill particularly directed the attention of the Section. It differs in several essential points from those of McCormick and Hussey. In the first place, the machine is propelled before the horses, which are harnessed to a pole in the centre of the machine, and not on one side; in the next place, the cutters act like large double-edged scissors, which clip the corn as the machine is propelled into it; and a further advantage is, that it gathers the corn after it is cut

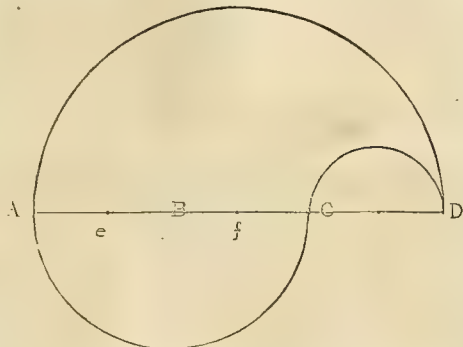
without requiring a man to rake it off,—which is necessary in the two other machines. The arrangement of the self-acting gatherer consists of an endless band of canvas, on to which the corn falls as it is cut, and it is then thrown on one side by a continuous motion of the canvas as the machine advances. With this machine, Mr. Crosskill stated, one acre and a half of corn per hour may be cut with two horses and one man to drive them. In the discussion which ensued, Mr. Samuelson, the maker of McCormick's machines, admitted that Bell's reapers cut the corn better than McCormick's, and that the saving of the hard work required from a man in gathering the corn was an important advantage; but the draught of McCormick's machines, he said, is lighter, and they are less costly. It was stated, that the cost of Mr. Bell's reaper is double that of Mr. McCormick's or Mr. Hussey's, the one being 40*l.* the other 20*l.* Mr. Crosskill stated, in reply to questions respecting the difficulties encountered in the use of reaping machines when the corn is laid, that there is no difficulty in cutting and gathering laid corn, if the machines meet it inclined towards them, so that it may fall on the gathering board as it is cut. Models of the three machines were exhibited.

*On a new Wheelbarrow,* by Capt. F. Wilson.—In this barrow the wheel is placed under, and is sunk into the bottom; so that the weight rests on the wheel and not on the hand, and there is less oscillation. By means of this barrow it was stated that twice the usual weight can be wheeled.

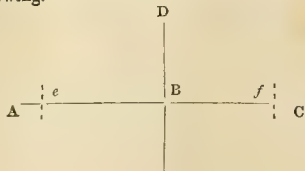
#### Home Correspondence.

*Substitute for Coffee.*—Asparagus, according to Liebig, contains, in common with tea and coffee, a principle which he calls "Taurine," and which, by the way, he considers essential to the health of all who do not take strong exercise. Reading this led me to think that Asparagus might be made a good substitute for coffee. The young shoots which I first prepared were not agreeable, having an alkaline flavour. I then tried the ripe seeds; these roasted and ground make a full flavoured coffee, not easily distinguishable from fine Mocha. The seeds are easily freed from the berries by drying them in a cool oven, and then rubbing them on a sieve. *Amateur.*

*How to Draw a Geometrical Pear on a Given Line.*—



Divide A D into three equal parts; bisect A B in *e*, and B C in *f*; with the centres *e*, *f*, and C, describe the three semicircles, which give the figure required. As it was not mentioned at page 534 how to find the foci in an ellipse of a given length and breadth, it is shown by the following.



With centre D and radius A B, cut A C in *e* and *f*, which are the foci required. *W. Fitzsimon, gr. to W. Phillips, Esq., Reigate Lodge.*

*Supporting Fruit a Means of Increasing its Size.*—For the last few years I have taken considerable interest in horticultural pursuits, and during that time I have, from observation and a series of trials, ascertained that all sorts of fruits can be raised about one-third larger than they usually are, and their qualities much improved, simply by supporting the fruit in the following manner:—As soon as it is fully developed, it should not be allowed to hang its weight upon its stalk, as the increasing weight strains the stalk, and in that way lessens the quantity of nutritious fluid flowing to the fruit. This may be obviated in some cases by laying the Pear, Apple, or whatever it may be, upon a branch and fixing it with a piece of matting, to prevent its being moved by the wind; or by putting it into a small net, made for the purpose, at the same time keeping the stalk in a horizontal position when it can be done without twisting or bending it—as the bending, either accidentally or by the weight of the fruit, is, in my opinion, most injurious to its growth; for the pores of the woody stalk are strained on the one side of the bend and compressed on the other, hence the vessels through which the requisite nourishment flows being thus partially shut up, the growth of the fruit is retarded in proportion to the straining and compressing of the stalk. The fixing of the fruit also prevents the risk of

its falling off and getting damaged before it reaches maturity. I have grown Dahlias upon the same principle, and with similar success, and I have no doubt that the most of flower blooms, especially those which are weighty and inclining, can be grown much larger by the system referred to, and, in short, all sorts of vegetables, trees, &c. Should you deem this worthy of insertion, it may be the means of attracting the attention of parties more able than myself to carry out the principle of support, which I conceive to be invaluable to everything in the vegetable and animal kingdom. *James Dobbie, Dunee.*

*Hartley's Rough Plate Glass.*—The description of this material, which was supplied for the roof of a greenhouse at this place, is fully up to my wish in every respect. Its utility, generally, for all horticultural purposes, I consider surpasses all other descriptions of glass. In the first place, by its use, no troublesome, costly shading is required. Again, light is beautifully diffused by it in the interior of the house, imparting to all descriptions of plants (growing under it) a healthy, green, and dwarf appearance and habit. I am so perfectly satisfied with its action and good appearance, that I hope not to use any other description of glass in future. *Geo. Brown, Gardens, Powis Castle.* [We should add, with reference to a complaint concerning the bad quality of glass purporting to be of this description, which was supplied to one of our correspondents by some dealers, that we have lately seen samples made under the patentee's license by Mr. Chance of Birmingham, and Mr. Pilkington of St. Helen's, which is in all respects equal to that from Sunderland, except that the grooving, by which such glass is characterised, is finer, which is not an improvement.]

*Russian Gardens.*—Can any one do a greater act of kindness to his gardening friends than by giving them a minute account of the mode adopted in Russia to have Orange trees in blossom and with ripening fruit in their winter gardens, and a profusion of other shrubs and flowers? And from their hothouses the finest fruits and vegetables during the whole of their winter months, notwithstanding the intense cold, the little sun, and the mere peep of day-light for nearly three months, the range of the thermometer from October to April, must be worth knowing. Can it be furnished? *Horticulturalus.* [You will find this stated along with an immense quantity of similar matter in the "Journal of the Horticultural Society," vol. iv., to which we must refer you.]

*Grape Mildew.*—Perhaps some of your readers may like to have another proof that sulphur will destroy mildew on Vines. The Vinery here is 80 feet in length, and 18 feet wide. Last year I lost the greater part of the Grapes on it from mildew; I washed the pipes with sulphur, and put fires on, but that did not stop it; this year the mildew made its appearance before the Vines were in bloom. As soon as I saw it, I dusted them all over with sulphur, throwing it by handfuls in about the foliage. The mildew disappeared, and I have had an excellent crop of well-coloured Grapes. Great care must be taken in stopping thinning, and not to shake the sulphur on the Grapes. I did not syringe the Vines, but kept the house very damp until the Grapes began to ripen. I used 7 lbs. of sulphur. *H. Morgan, Gardener, Raynham Hall, Norfolk.*

*Large Deciduous Cypress.*—There is in the garden of the vicarage here a deciduous Cypress measuring in girth 9 feet 4 in. at 2 feet from the ground, and 7 feet 3 in. at 6 feet. Its height about 60 feet, its shape symmetrical, the spread of the lower branches, which feather down to the ground—say 45 feet. It stands on the edge of a small pond, in which its roots luxuriate exceedingly. The soil seems a strong loam on a hard chalky bottom. Am I right in supposing that this is an unusually large specimen of the tree? *S. R. F., Boxley, Kent.* [A fine specimen: but you will find larger, as for example at Syon, if we remember rightly. It is naturally a swamp plant.]

*Diseased Araucaria.*—The statement made by "Jack" (see p. 678), corresponds exactly with a case known to me in the west of England. There no reason existed for considering the situation damp, yet a discerning friend recommended the taking up of the Araucaria, draining the site, and replanting it thereon. This was done, and the previously sickly plant assumed the character of robust health, and has ever since flourished. Although, therefore, "Jack's" Araucaria appears to be in a "situation not suspected of being damp," I advise him to adopt the very simple remedy suggested, and I have no doubt it will prove successful. I understand that one of the eminent nurserymen at Exeter recently lost a fine specimen of Araucaria, which is supposed to arise from this cause. *J. G.*

*Tree of Ten Thousand Images.*—I have lately become acquainted with a young man, by birth a Buddhist, and a native of Mongol Tartary, now converted to Christianity. He told me that he had been a pilgrim with his father when a boy, to the tree of 10,000 images, an account of which is given in Hue's Travels in Tartary. I remember seeing an article relating to it in your columns, in which the truth of the story was doubted. I have, therefore, thought it might be interesting to you, to hear from an eye-witness, and one whose word I have no reason to doubt, his account of this marvellous production. His description, which I wrote down from his own dictation, is as follows, viz. "The tree is near the wall of China, in the city of Cayho (?); the height of it is 8 (qu. 80) feet, and the trunk five men could not embrace. The leaves are of different colours, which no doubt has been done by the Llamas; every leaf has a character and the same in each, which would



signify in all Arabic writings T—. In August the tree begins to produce leaves and they spread the same as feathers, which are also of different colours; and this tree exists now, as the principal object of worship in Tartary, and which people visit on pilgrimage. From his description of the leaf I thought it resembled the Magnolia, and in showing him one, he immediately identified it. He said that the character was caused by some kind of grafting when the tree was young, and that the leaf has it from its earliest appearance. He also assured me that he could colour leaves in the same manner as those on the tree. Though this account differs in some points from Hue's, it certainly confirms it to a great extent. *Samuel Gurney, jun., Carlsholton.*

### Societies.

**HORTICULTURAL, Nov. 1.**—J. R. GOWEN, Esq., Treasurer, in the Chair. J. D. Rigby, Esq., W. Phelps, Esq., W. C. Hemming, Esq., H. Vaughan, Esq., Mr. M. H. Sutton, and M. André Le Roy, Angers, were elected Fellows. Although this was not a day on which Pears were specially invited, yet one or two collections were produced. Of these, by far the most important was an exhibition of about 160 sorts from M. P. A. Bréfort, Nurseryman, Rue de Maquette, Boulogne-sur-mer. This collection contained many fine looking specimens both of new and old sorts; but as many of the latter bore names by which they are unknown in this country, it may be useful to give their synonyms as far as they could be made out, in order to prevent English buyers from importing, under new names, kinds they may already have plenty of. Belle Parfumée appeared to be same as Vicar of Winkfield; Belle and Beurré de Bruxelles were identical with Belle et Bonne; Beurré d'Espagne resembled Passe Colmar; Belle Angevine was Uvedale's St. Germain—the specimen of this weighed 2 lbs. 7 oz.; Voix à Prêtre also appeared to be Uvedale's St. Germain; St. George and Charles Dix were like Napoleon; Grosse Romaine was Catillac; General Oudinot appeared to be the same as Winter Nelis, as did likewise Dumilly, Poire de Bavay, and Colmar Nelis; Flemish Beauty was produced under the name of Beurré Spence; St. Quentin resembled a Glout Morceau; De Wael had much the appearance of the Burgermeester; Beurré Aurore was Beurré de Capiaumont; Beurré Royal and Bon Chretien de Vernois were Beurré Diel; St. Michel was Doyenné Blanc; and Marie Louise Delcourt was nothing but Marie Louise. Among novelties the best appeared to be Doyenné Crotté, a fine looking Pear, said to be good, and Beurré Clergeau, a large sized fine fruit, in this instance rotten, but stated to be excellent and fit for eating in November and December. Along with the above came some Apples, among which were also many synonyms; for instance, Reine des Reinettes was King of the Pippins, Pomme d'Eve was probably the Alfriston, Court Pendu resembled a large Golden Reinette, Reinette Rosa was Court Pendu Plat, Calville rouge d'Hiver looked like a large Beauty of Kent, and Rambourg Blanc appeared to be Alexander. Notwithstanding these synonyms, however, the exhibition was extremely interesting, as furnishing the Fellows and their friends present with a sight of some new varieties that are continually finding their way into English nurseries, and also as showing to what degree of perfection such fruits attain on the Continent; it therefore well deserved the Banksian Medal which was awarded it. Other Pears consisted of examples of St. Germain, Autumn Colmar, Beurré Diel, Brown Beurré, well grown Marie Louise, and Seckel, from Mr. Chapman, gr. at Exton Park, Oakham. Mr. Ingram sent from the Royal Gardens, Frogmore, very fine specimens of some of our best dessert and kitchen Apples, and examples of three promising kinds of seedling Apples. These fruits were all remarkably well coloured, considering the unfavourable season we have had. They were stated to have been ripened on the semi-circular wire trellises with which the borders along the sides of the walks at Frogmore are furnished. The same establishment also sent some Raspberries and Plums. The latter consisted of Coe's Golden Drop and Coe's Fine Late Red, from east and west walls. The last-named variety deserves much more extensive cultivation than it has hitherto received, for it is certainly a valuable late Plum. A Knightian Medal was awarded for the Plums and Apples. Mr. Whiting, gr. to H. T. Hope, Esq., of the Deepdene, near Dorking, also furnished two dishes of very fine fruit of Coe's Fine Late Red Plum, which were even better than those from Frogmore, and along with them three beautiful bunches of Black St. Peter's and two of the Calabrian Raisin Grapes. The latter is a late keeping variety, not so good possibly as the Black St. Peter's; but nevertheless a very excellent white Grape. The bunches exhibited were however not near ripe. A Certificate of Merit was awarded for the Black St. Peter's. Messrs. Veitch sent two sorts of Syrian Quinces that had been introduced into this country among other fruits from Syria by the late Mr. Barker. One named Monster Quince resembled the Portugal a good deal, and the other, which was named "Aukshé Ker," looked something like the large Pear-shaped Quince. They were both fine looking fruit, and were reported to be excellent and very highly perfumed. Of Alpine Strawberries, the dish produced came from Mr. Dods, gr. to Sir J. Cathcart, Bart., of Cooper's Hill, Englefield Green. They consisted of fair-sized fruit of the white Alpine. *W. A. Banksian*

Medal was awarded them. The same grower also sent an Enville Pine-apple weighing 5 lbs. 10 oz. Mr. Power, gr. to Sir C. Morgan, Bart., furnished a Queen Pine weighing 5 lbs. 5 oz., for which a certificate was awarded and another fruit of the same kind, weighing 4 lbs. 12 oz., came from Mr. Chureher, gr. to J. Guilt, Esq., of Little Park, Wickham, Hants. The last named fruit was stated to have been ripened without the aid of fire-heat. By far the best Pine-apples, however, in the room consisted of two Queens, weighing respectively 5 lbs. 2 oz. and 5 lbs., from Mr. Blackler, gr. to W. Gore Langton, Esq., of Newton Park, near Bath. These received, as they well deserved, a Banksian Medal. From Messrs. Chandler, of Vauxhall, came the following sorts of Chrysanthemums, viz.:—Argentine, Atala, Piquillo, Solfaterre, Modele, Ranunculé, Sacramento, Hendersoni, Surprise, and Le Nain Bébé. These, as many will doubtless perceive by their names, were all small-flowered sorts, called Pompones.—Of Orchids, Messrs. Maule & Sons, of Bristol, sent a charming plant of a very deep coloured variety of the Blue Vanda (*V. cærulea*), but unfortunately it arrived too late, according to the Society's regulations, to receive any award. Two flowering spikes of *Gynierum argenteum* were furnished by R. Hutton, Esq., of Putney Park, where a noble plant of this scarce Grass is stated to be now flowering magnificently. As some further account of this *Gynierum* will be found in another column, we need only mention here that Mr. Hutton's experience of it quite confirms all that is there stated respecting it.—From the Garden of the Society came the Cape Strelitzia Regina, Begonia fuchsoides, Gesnera Herberti, which did not appear to be different from *G. zebrina*; two Cape Heaths, *Maxillaria picta*, *Cuphea platycentra*, the scarlet *Achimenes*, the yellow early flowering *Chrysanthemum Hendersoni*, and another very dwarf Pompones, received without a name, from M. Van Houtte, Ghent. Among these came examples of Beurré Diel, Figue de Naples, Brown Beurré, and Pomme Poire Pears; and the following vegetables, viz., Chou de Milan des Vertus, and Chou de Milan très hâut frisé de Würsing, both excellent Savoyes, the latter very large, the other medium sized. The following kinds of Celery, the only sorts exhibited, also came from the garden, viz., Cole's superb Crystal White, a good variety; and Celery Gros Violet de Tours, and Sutton's superb Pink, both apparently the same thing; at least, no person could tell the difference between Sutton's and the other, which is an excellent red Celery the Society has been in the habit of distributing among its Fellows for many years.

### Notices of Books, &c.

*Christianity in China* (12mo, Orr & Co., pp. 160) professes to be an account of the steps by which what is called Christianity in China has been gradually established and brought to its present power. The volume is well written, but it has the great fault of being anonymous; so that the unlearned reader has no means of judging how far the statements made by the author are trustworthy, or at least may be so regarded, considering the means of acquiring information known to be at his disposal. We must remark, too, that the Travels of Huc and Gabet, which are now admitted to be the work of some ingenious *littérateur*, are treated as if altogether authentic. As a frontispiece, we have what professes to be portraits of the present Emperor of China and of the insurgent chief, the latter with so thoroughly European a face that we should have been glad to know, at least, upon what evidence so strange an ethnological puzzle is produced.

*History of the Guillotine* (Murray's Railway Reading) is a reprint of Mr. Wilson Croker's account in the Quarterly of this terrible machine; but its interest is much enhanced by the addition of woodcuts, illustrating the history of the invention, which most readers will be surprised to find does not date from the days of the revolution, or even of the Scottish "Maiden," but may have been in use among the Jews and Romans, and at all events, must have been well known in the year 1539, if indeed it was not employed in Ireland as early as 1307. This little volume is among the best of the capital series to which it belongs.

*The Romance of Military Life* (Cox, 12mo, pp. 394) is a volume containing five stories founded upon incidents known to the author, Lieut. Col. Cameron; they are well told, and will interest those who love to read of the perils and adventures inseparable from the life of a soldier on active service.

*A Lecture on the Origin, Manufacture, &c., of Paper*, by R. Herring (Jackson, a pamphlet).—The reader will find here some curious revelations respecting the paper trade. "Perhaps," says Mr. Herring, himself a wholesale stationer, "I must not say altogether as much with reference to paper-making; but certainly so far as the public, and even half the stationers, are concerned, I believe no branch of trade offers such undeniable opportunities of deception, as that in connection with the material of paper, arising necessarily, to a great extent, from the ignorance which an excessive variety always creates. But paper is also made a very ready acquisition for misleading people with reference to numerous other commodities. Some coarse kinds being cheaper than leather, are not unfrequently made use of to gratify the public, even by reducing the price of boots and shoes. Not, however, to enter unnecessarily into such matters, I will just give an instance which occurred to me the other day, in the case of a grocer, situate in

a very populous district. Royal-hand, you must know, is the name of a certain size of paper, used chiefly for packing up moist sugar. One ream will do up a hog-head of 14 or 15 cwt. There are two colours, blue and white, the latter being more frequently made use of, because a little cheaper. We were quite out of the blue, excepting a quality at 42s. per cwt. or 4½d. per lb., which, as a reason that it would not exactly suit, was openly acknowledged to be the price the sugar was to be retailed at when packed, as being superior in quality to precisely the same article done up in white paper. What the sugar itself cost is not a matter of question with which we are at present concerned, but that deception was aimed at, through the medium of paper, there can be no doubt whatever; and I have since been informed that the practice, even through necessity, has become quite common.

"White papers are often considerably adulterated with plaster of Paris, sometimes to the amount of 30 per cent., for the sole purpose of gaining weight, which can easily be detected by burning a sheet, when the plaster will remain, after combustion, in a whitish-coloured ash. The manufacture of brown paper is as frequently assisted by the addition of clay for the like purposes, which, by giving a more preferable colour, though at the same time reducing the strength, yet necessarily the value is, as things go, an unquestionable recommendation to the artfulness of the maker. I say as things go, for it is truly surprising the avidity with which people seek cheap brown paper by weight; whereas, in the majority of cases, what they really want is strength, free from unnecessary substance. Compare, for instance, specimens numbered 56 and 57, the one appearing so much better in colour is two or three shillings per cwt. less than that marked 56, which with many persons would at once be deemed an inducement to give it the preference, for the two plain reasons of more 'stuff' for money, and a better appearance into the bargain, but surely a thick cumbersome article is not to be thought so advisable for wrapping purposes as one which, though thinner, is as strong and much more pliable. And to prove that it is a false economy alone which justifies such a choice, I assure you that no less than 1½ cwt. was placed in my presence in the centre of a sheet of that marked 56, when held out at the corners, before it gave way, while, were you similarly to test a sheet of the same weight of quality 57, which from colour alone is ordinarily termed the best make, it would require scarcely more than one-third of that amount to break it down. So far, then, from two to three shillings per hundred saved being any decided advantage, I should rather be disposed to conceive it a sounder economical project to make use of the other kind, even at an advance of cent. per cent."

### New Plants.

20. *FICUS MACROPHYLLA*. *Roxburgh Flora Indica III.* 556; *alias* *Artocarpus imperialis* of *Gardeners*.

This singular plant has produced its fruit with R. T. Clarke, Esq., of Welton Place, near Daventry, who has been growing it in a mild bottom heat from pipes, in a saw-dust bed, in his stove. It appears to form a stout bush, with noble, orbicular, long-stalked leaves, from 12 to 18 inches across. Roxburgh says that in the Botanic Garden, Calcutta, it soon divides into a few stout branches, which subdivide irregularly by threees. The singularity of the plant consists in the manner in which it bears its fruit. These appear on naked suckers from the collar of the root, in clusters, having the appearance of brownish-green Agarics. They are in reality hairy Figs, about as large as a common Fig, with the form of a whipping-top. When ripe, they are said to have from 8 to 12 ribs. The interior of these fruits is exquisitely beautiful, resembling a grotto lined with ruby-coloured crystals, and domed over by circle within circle of delicate green, rounded, shell-like scales. The ruby-coloured parts are the styles, covered with long transparent hairs. According to Roxburgh, the natives of Sylhet and Chittagong, where this is wild, eat the fruit in their curries.

The same author says that he could not observe any perianth in the female flowers, and this has probably led Professor Miquel to refer the plant to his genus *Covellia*. But we can positively state, that in reality three delicate, transparent, concave sepals are present, pressed close to the ovary.

21. *PHACELIA RAMOSISSIMA*. *Benth* in *Linn.* *Trans.* XVII., p. 210.

The Californian seeds purchased of Mr. Carter produced this annual, a rough hardy plant, covered with coarse hairs, and producing unattractive spikes of dirty white and violet rather ugly flowers. The statement in De Candolle's "Prodromus" that the ovary is smooth is a mistake. It is quite as hispid in this as in other species. *Hort. Soc. Journal*.

### Garden Memoranda.

**HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN.**—The alterations in the arboretum, mentioned in our last report, continue to progress. The belt round the Rhododendron "basin" is now nearly all broken up into separate clumps, which only require to be filled a little fuller of soil to be completed. The Rhododendrons on the straight border, that was wont to run along the side of the narrow walk between the Council room and the great conservatory, have also been removed, and the place where they grew is about to be laid down in Grass. The broad walk leading from the "school gate" to the bottom of the kitchen garden has



likewise been altered by breaking off its direct communication with the last named portion of the grounds, and leading it off by means of a short curve into the walk which conducts to the American garden. The dense mass of shrubs here, which formerly shut out the arboretum, have also been thoroughly opened up, and the ground turfed, the effect of which has been to bring a large portion of the arboretum into view, and to more obviously connect the ornamental portions of the garden.

Of plants in the open ground, that which strikes every one at the present time with admiration is the magnificent *Gynierum argenteum*, a noble specimen of which is now in blossom in the American garden. It forms a large tussock of long, glaucous, hard-skinned, drooping, serrated leaves, from among which spring some 18 or 19 tall flower-spikes, surmounted by great loose silvery panicles of inflorescence, which are exceedingly ornamental. The only thing to be regretted in connection with this fine plant is the difficulty of increasing it; for what offsets can be got from it are so hard that they refuse to strike root in the ordinary way; and, on the other hand, our summers are too short and sunless for it to ripen seeds with us. Such being the case, nothing can be done in the way of distributing it till ripe seeds shall have been obtained from the country where it grows wild, and we understand that the Society is about to take steps to import a quantity. It may be mentioned, however, that persons in correspondence with Buenos Ayres may easily secure seeds for themselves from there, where it is well known under the name of the Pampas Grass. It is perfectly hardy, and will grow almost anywhere; the plant in the Society's garden having been flooded with water nearly the whole of last winter, without apparently sustaining the slightest injury.

As regards alterations, it may perhaps be interesting to some to know that the thermometers by which the state of the weather is ascertained here have been moved from the arboretum, where they formerly stood, to the kitchen garden, where a green plot has been made for their reception. This was necessary, not only because of their being in the way of the new works going on in the arboretum, but because of the trees around them having become so tall as to affect them. The place where they now stand is removed from all trees, and it is on the same level as the place they occupied in the arboretum.

The collection of *Chrysanthemums* in pots, which has hitherto been standing out of doors, is now placed in the large conservatory, where they are intended to flower; but as yet only the little yellow *C. Hendersoni*, and one or two other small-flowering kinds, are in blossom. The plants are dwarf and leafy, and promise a good display; they were struck as late as the middle of July, and after they had become established in 3-inch pots they were transferred to their flowering pots at once, a plan which has proved perfectly satisfactory. Among other plants in the bed, the orange-flowered *Cestrum* is coming finely into bloom for the third time this year; and among plants on the shelves we remarked some charming *Mignonette* in flower, which had been sown in August in the open border, taken up and potted, and brought forward in a cold frame. It should be stated, however, that some well rotted dung was placed in the bottom of the pots, and rammed hard down, so that the roots will be long and well supplied with good food.

In the orchard department, all fruit is now gathered into the fruit room. Of Pears were some good *Duchesse d'Angoulême*; fruit of this kind from pyramids is not so large as from walls, but it is generally better flavoured than that from the latter. Pyramids also suit the *Châumontel* well, owing to its peculiar mode of growth. *Beurré Diels* are now getting ripe, as are also examples of *Figue de Naples*, a variety having a flavour somewhat resembling that of the Bishop's Thumb. The *Suffolk Thorn* is a small Pear, shaped after the manner of *Gansel's Bergamot*, from which it was raised; it is generally good, but this year it is very watery—a quality, indeed, which unfortunately belongs to most Pears this season. *Pomme Poire*, a good Pear, is now ripe; it is a russet, fruit sunken at the eye and stalk, and altogether having a great deal of the appearance of an Apple. *Napoleon* is also fit for table now. Of *Bergamot Cadat* some are ripe now and some are green; this sort has the desirable quality of ripening in succession, beginning in November, and often keeping on ripening till February. Of *Beurré Rance* and *Glout Morceau*, there were some good fruit. *Beurré de Capiaumont* usually bears well, even in bad seasons, but this year it has not been so productive as usual. Of new Pears *Beurré Gris d'Hiver* *Neuveau* is a handsome kind; but it was not ripe, and therefore nothing can be said respecting its quality. *St. Michael Archange*, another new Pear, is not good this year, and it looks as if it would soon become mealy; it is sweet, and may however be better in a good season. *Grai Michna*, a small new variety, is not badly flavoured, but it soon decays. There were some other new kinds, but they were not in a condition to admit of their merits being ascertained.

Among Apples, a kind called *Green Balsam*, a kitchen sort, is worth notice, as being a very great bearer and a good keeper. Another good kitchen kind is *Large Hunt House*, a very hardy Yorkshire Apple and a good bearer, even in unfavourable seasons; it may therefore be recommended for places where the climate or situation is bad. There were also some good specimens of *Waltham Abbey Seedling*, a sort which is much prized by some, because it requires little sugar in cooking. Among dessert kinds were some large fruit of the *Blenheim Pippin*, well known to be a handsome and

good Apple. It is one of those that have produced a crop this season, while in the Society's collection of Apples not one tree in ten has borne. It is believed that Apples will not keep long this season; some of those in the Society's fruit-room are already covered with a kind of mildew, even although the room is kept dry, and has lately been well whitewashed with lime.

## FLORICULTURE.

**SHELTER FOR CHRYSANTHEMUMS.**—I have found the following plan of sheltering *Chrysanthemums* when in flower preferable to putting them in a greenhouse. The plants do not draw, and the flowers do not lose their character or become pale, which often happens when they are confined in the close and to them uncongenial atmosphere of a greenhouse. If treated as I shall presently recommend, they retain their foliage and prolong the usual period of their blooming at least a month; in short, it combines the protection of a greenhouse with the desirableness of having them in the open air, and obviates the disadvantages of either condition; the plan consists in constructing a skeleton pit, by means of cross spars and uprights, the height of which must be regulated according to the height of the plants which it is intended to shelter; the ends and sides should be left open, but in the case of severe frosts, Russia mats secured to the cross-spars and fastened to the uprights down at the surface of the ground, would be ample protection; at other times the mats might be dispensed with; the lights should be kept on only at nights and in wet weather; but, in very rough weather, they must be fastened to the cross-pieces with a bolt or hasp; the plants, if well grown, show themselves much better when on the ground; and, if leggy or otherwise ill-shaped, defects of this kind are in a great measure concealed, in addition to which a dry cool bottom is peculiarly well suited to their requirements; in summer an erection of this kind would be invaluable for blooming *Calceolarias* and *Roses* in pots, and later still for specimen *Fuchsias* and scarlet *Geraniums*; it would both protect these plants when in bloom from rain, and by painting the lights with whiting keep them from getting too much sun. Such a contrivance would be of service for wintering *Japan Lilies*, *Dielytras*, and other hardy plants in pots, by plunging the pots in ashes or enveloping them in straw or dried Fern; the latter, when it can be procured, is very superior to ashes, as it not only resists frosts but keeps the pots dry and the roots warm. By such treatment the plants grow stronger and flower finer the succeeding summer. *R. M., Kingsdown.*

**CULTURE OF THE HOLLYHOCK.**—The soil most suitable for the growth of this noble early autumn flower is a very rich sandy loam; but it thrives well in any good rich garden soil. Previous to planting, the earth should be trenched at least 2 feet deep, and liberally mixed with well decomposed manure. If autumn planting is preferred, it should be done early, in order to allow the roots to get established before severe frosts set in; but plants turned out in March bloom quite as early and equally well as those planted in autumn, the plants having been kept growing throughout the winter. Care should be taken that they receive frequent waterings during dry weather, and a plentiful supply of liquid manure during the growing season; the earth should also be frequently loosened round the roots. When the plants have thrown up spikes about 6 inches high, the latter should be thinned out, leaving not more than three spikes on a strong plant, and on weak plants not above one, staking each spike separately when about 15 or 18 inches high. To obtain fine blooms, all laterals should be cut away, and the flower-buds thinned out if too much crowded. The *Hollyhock* is in its beauty in the month of August; but a succession of bloom may be obtained until about the end of October by later planting. Immediately after the blooming season, it is advisable to cut the old flowering stems from the plants about 6 inches from the ground; and in October or early in November to earth up the crown with silver or road sand, which prevents too much moisture getting to the roots during the winter months. An occasional sprinkling of soot and quick-lime should be given to destroy slugs, which are the greatest enemy of this flower, and all decayed leaves should be picked off to prevent rot. Early seed will produce young plants the same autumn in which it is gathered; it should be sown in pans in light sandy soil, and plunged in a frame with gentle bottom heat. The mould should be moist at the time of sowing, and not watered until after the second leaves are formed; when strong enough, the plants should be transplanted into small pots, put into a close frame for a few days, and when established hardened off. They should then be transferred to a cold frame, giving plenty of air in favourable weather through the winter, and in the month of March or April turned into the open ground for blooming. Late gathered seed may be sown in the open ground in May or June, in rows or drills; it will only require hoeing and thinning, and may remain for blooming. This plant may also be propagated by dividing the old roots, which is best done in autumn, taking care to leave plenty of root with each division. The best blooming plants are raised from cuttings, which may be taken from the crown of the old root, when the shoot is about an inch long, in the month of April or May, or by single eyes from wood shoots in July and August, taking care that the bark is sufficiently hard, but not pithy. The cutting should be potted singly

in small pots; the eyes placed five or six round a 3-inch pot, in a light and very sandy loam, plunged in a close frame, with a little bottom-heat, very sparingly watered, giving air every day for a short time, to exclude damp, and carefully picking off all decayed leaves. In about three weeks they will mostly be rooted, and should be immediately potted; when well established, they should be hardened off, and kept in a cool airy frame until they are transferred to the open ground for blooming. *W.*

**DAHLIAS:** *Anon.* The only open prize, we believe, at Manchester, was for 12 blooms, not 24. The 1st prize was awarded to Mr. W. Lodge, and the 2d to Messrs. Thornhill and Co., both of Manchester.

### SEEDLING FLOWERS.

**ESCHYNANTHUS:** *J. W. A.* Your hybrid raised between *speciosus* and *grandiflorus* is very handsome, and well worth taking care of.

### Miscellaneous.

**The Use of Fruit.**—Because bowel complaints usually prevail most during the hot season of the year—the latter end of summer and autumn, when fruit is most abundant, and in tropical climates where fruits are met with in greatest variety—it is inferred, according to the *post hoc propter hoc* mode of reasoning, that the one is the consequence of the other. It were about as reasonable to attribute the occasional occurrences of sea-scurvy in the navy to the use of Lemon juice, Lime juice, or Potatoes. These articles of diet are powerfully antiscorbutic, and so are ripe fruits anti-bilious; and diarrhoea, dysentery, and cholera are complaints in which acid and alkaline biliary secretions are prominent conditions. I have seen many cases of dysentery, obstinate diarrhoea, and liver disease in people who have been long resident in tropical climates, and, from the history which I have been able to obtain respecting their habits of diet, I have come to the conclusion that these diseases were induced and aggravated, not by the light vegetable and fruit diet most in use among the natives, but because Englishmen usually carry out with them their European modes of living. They take large quantities of nitrogenous and carbonaceous food, in the shape of meat and wines or spirits, rather than the light native food, as Rice and juicy fruits, and the vegetable stimulants and condiments, the native peppers and spices so abundantly provided by Nature. It is well known that, though large quantities of animal oils and fats, wines, spirits, and malt liquor, which contain a large amount of carbon, may be consumed with comparative impunity in cold climates and in winter, when the carbonaceous matter gets burnt off by the more active exercise and respiration; in hot climates and in summer this element gets retained in the liver, and ultimately gives rise to congestion of that organ and its consequences—diarrhoea, dysentery, and bilious disorders. Though in extensive practice for 15 years, in a district abounding with orchards and gardens, I cannot remember an instance in which I could distinctly trace any very serious disorder to fruit as a cause; though one might reasonably expect some mischief from the amount of unripe and acid trash often consumed by the children of the poor. I would not be supposed to advocate either immoderate quantities of the most wholesome fruit, or the indiscriminate use of unripe or ill preserved fruit. But I do contend, as the result of my own experience, that not only is a moderate quantity of well ripened or well preserved fruit harmless, but that it is highly conducive to the health of people, and especially of children, and that it tends to prevent bilious diarrhoea and cholera. I am inclined to view the abundant supply of fruit in hot climates, and during the summer and autumn, and the great longing of people, especially of children, (in whom the biliary functions are very active), for fruit, to a wise provision of an overruling and ever-watchful Providence, which generally plants the remedy side by side with the disease, at a time when the biliary system is in most danger of becoming disordered. I have generally observed that children who are strictly, and I think injudiciously, debarred the use of fruit, have tender bowels, and I have noticed that they are almost universally pallid; while, on the other hand, children who are allowed a moderate daily proportion of sound fruit are usually florid, especially among the poor. I therefore imagine that the use of fruit facilitates the introduction of iron, the colouring principle of the blood, into the circulating system. When living in the country, with the advantages of a large garden and plenty of fruit, I always allowed my children a liberal proportion, and I never had occasion to treat them either for diarrhoea or skin eruptions, though it is a very common opinion that cutaneous diseases are often brought on by the too free use of fruit. On first removing my family to town, the usual supply being cut off, two or three of the younger ones became affected with obstinate diarrhoea and dysentery, which resisted all the ordinary modes of medicinal treatment. My opinion on the subject afterwards induced me to give them a good proportion of fruit every day, as Grapes, Oranges, ripe Apples, &c.; when all the symptoms presently subsided, and they have never since been troubled either with bowel complaints or skin eruptions to any noticeable extent. The editor of the *Lancet*, in an advertisement on the "health of London during the week ending August 20," makes the following remarks:—"The deaths ascribed to diarrhoea are 126, of which 115 occurred among children. The tender age of nearly all the sufferers, 97 of them not having completed their first year, is sufficient to dispel the popular error that the use of fruit is the exciting cause." Several years ago a serious and very fatal epidemic, then called "English cholera," prevailed



in the neighbourhood where I was living. It chiefly attacked very young children and old people, and was almost as rapid in its progress as the Asiatic form. This epidemic occurred in the autumn, and many people, influenced by the common prejudice, dug holes in their gardens and buried all their fruit, and some even went so far as to destroy the trees. I made many inquiries as to the previous habits of the victims of this epidemic, and in almost every case I learnt that fruit had not for some time previously formed any part of their diet. One writer in the *Lancet* has strongly recommended the use of baked fruit as a preventive of cholera, and another has strenuously advocated the administration of diluted sulphuric acid during the actual attack, and the proofs brought forward of their good effects correspond with my own experience. It is asserted that the cholera has never yet prevailed in the cider counties, nor in Birmingham, where acidulated treacle beer and sulphuric acid lemonade are freely used to obviate the poisonous effects of white-lead in the manufactories. *M. D., in the Times.*

## Calendar of Operations.

(For the ensuing week.)

### PLANT DEPARTMENT.

**STOVE.**—Light and solar influence are fast declining, and require the general stock to be kept quietly progressing to a state of rest, with the exception of such plants as are intended to bloom through the winter; excitement should, by all means, be avoided; a growth at this time would in all probability injure the chances of a fine bloom in the ensuing season. As we presume the glass roofs of plant houses were put in a state of repair some time since, nothing in this respect will require attention, except a thorough washing before winter, where dirt of any kind is observed on the glass. As all the light we can command will be necessary to do justice through the winter to tropical plants, for the above reasons, any climbers running over the roof may now be cut back pretty close, excepting *Bignonia venusta* and a few other similar plants which may be showing for bloom, and which will prove highly attractive through the dull months of winter. *Hedychium*, and similar herbaceous plants that have done blooming, and have ripened their leaves, may be removed to a dry shed, or spare house, where a moderate temperature is preserved. Air in small portions should be given early in the forenoon of mild days, closing the house early. Be moderate with fires; for plants going to rest 60° by night are ample, but to plants from the hottest parts of the tropics, 5° or even 8° warmer will not be too much, if growth has not ceased. Plants in pits and frames must have abundance of air during mild weather, to keep them from making further growth; protect them by coverings or slight fires when the nights are frosty.

### FORCING DEPARTMENT.

The out-door borders of Vineries should from this time be protected from further wet, either by tarpauling or being covered by leaves or Fern, and thatched; this latter plan will not only keep the borders dry, but will keep what heat remains in the border from escaping, and, consequently, will be so much heat gained when forcing commences. The only objection to a thatched border is its appearance, which in some situations might be objectionable; in this case other means should be taken to exclude the rains and snows of winter from penetrating to the roots of the Vines. **MELONS and CUCUMBERS.**—If the principal part of the Melons is ripe they may now be cut and suspended in a dry room, where some kinds will keep for a considerable time, particularly that excellent late variety "Fleming's Hybrid Dampsha." The house may then be devoted to growing French Beans, Asparagus, &c., through the winter. Cucumbers require at this season careful watching. Keep a steady bottom-heat of 85°, and the internal air of the house may be permitted during sunshine to reach 80°, while 70° may be considered the most suitable night temperature. Admit air cautiously, closing early in the afternoon. Plants in full bearing should be assisted with liquid manure freely, and a surfacing of fresh rich compost when the roots reach the surface of the border or pots. Let the Vines be kept thin to admit light freely into the house; this will help to keep the mildew in check, with occasional dustings of sulphur.

### FLOWER GARDEN AND SHRUBBERY.

The present will be the best time to collect the leaves from the lawns and drives, and to stack them in some out-of-the-way place for use; Oak and Beech are the best for affording a durable bottom-heat; tread them firmly in the stack, and afterwards thatch them to keep them dry; the remainder may be thrown together for rotting, when they form a valuable auxiliary for potting and composts. The principal lawns should be swept daily when leaves are numerous, as well as to remove worm-casts, &c.; an occasional rolling will keep the surface in good order. The stock of cuttings should be looked over, and additional heat applied. When the roots are not fully formed, late *Geranium* cuttings may be removed to the kirbs of the Pine pits, which will assist them to make roots. In storing the stock away for the winter endeavour to keep those plants together which require similar treatment; some kinds will stand more damp than others, and may be wintered in common frames, but the better kinds of bedding out *Geraniums*, and some other tender things, will require a moderately dry house or pit. To preserve them properly through the winter, *Verbenas*, *Petunias*, &c.,

should be kept dry, to prevent mildew, to which in frames they are very liable in wet weather; as it is desirable to exclude the recently struck plants from rains, and yet to give them a large portion of air, let the sashes be daily tilted up, back and front, to admit a complete circulation. Where room can be found for the bedding stuff in empty Vineries, it will be better to allow them to remain as long as possible in such quarters, as in dull weather like the present they will become better established than when kept in frames, more especially those only recently rooted. The herbaceous ground will now need a thorough cleaning, cutting down the stalks of plants done blooming, and seeing to the support of the few things, as the *Michaelmas Daisies*, &c., now in flower; afterwards hoe and rake the borders neatly. The spaces left vacant by removing annuals should be filled up with *Wallflowers*, *Sweetwilliams*, and *Pansies*, as well as with spring flower-bulbs, marking each kind as it is planted, to prevent injury to the bulbs, when the borders in the spring are forked over.

### HARDY FRUIT GARDEN.

The principal kinds of Pears and Apples being now in perfection, the fruit-room should be made as attractive as is consistent with the preservation of the fruit; if possible, each kind should be arranged in the order in which it ripens, with the general name, and its synonyms and the date on which it was gathered, neatly written on an attached label. Let the larger bulk of kitchen and dessert Apples be often looked over, to remove decaying fruit; in doing this, however, avoid bruising them, which would induce early decay. Clear off the remaining leaves from wall trees, and now that the greater part of the fruit tree leaves has fallen, the whole should be cleared off the ground preparatory to pruning, and turning up the borders rough for the winter. Apples, Pears, &c., as well as the smaller kinds of fruit bushes, may now be planted. Stake standards immediately, and mulch over the roots with half-rotten dung. Figs against wall should have any odd remaining fruit taken off; thin out superfluous shoots, and pinch out the points of the wood selected for bearing, when the branches should be tied together and matted, or protected by hay-bands, Fern, &c., for the winter.

### KITCHEN GARDEN.

When the ground and the weather are dry, pass the hoe once more through the newly planted and raised crops of Cabbage, Spinach, Lettuce, &c., and if afterwards a dressing of soot was given, it would be serviceable.

### COTTAGERS' GARDENS.

The leaves being now for the most part off fruit trees, and the ground sufficiently moistened by the late rains, the cottager, with every prospect of success, may transplant any trees he may wish to have removed. In rather light, dry soils, this is the best season for planting all kinds of fruit trees, if the weather is open and tolerably dry; and moreover, if any new kinds are wanted from the nurseries, there is now a better chance of having them good than in spring, when the nurseries have been picked many times over. The following list may be useful to those who are about to plant a new garden, or add to their present collection. Of Apples we would recommend as dessert varieties, suitable for a cottage garden, the following, viz., *Early Harvest*, ripe in August; *Kerry Pippin* and *Wormsley Pippin*, September; *Court of Wick*, from October to March; *Old Nonpareil*, from January to May; *Ribston Pippin*, November to March; and *Dutch Mignonne*, from December to April. Sorts for kitchen use may consist of *Dumelow's Seedling*, *Bedfordshire Foundling*, from November to March; *Royal Russet*, from November to May; *Tower of Glammis*, from November to February; and *Waltham Abbey Seedling*, from September to January. Of Pears for table, the following are good: *Aston Town*, from October to November; *Marie Louise*, October; *Buerre Diel*, November; *Hacon's Incomparable*, November; *Glout Moreau*, from November to January; *Buerre Rance*, from March to May. For baking the *Catillac* is most suitable. Those who are desirous of having a few Plums, may plant the following for dessert, viz.:—*Greengage*, *Coe's Golden Drop*, *Washington*, and *Royal Hative*; and for kitchen use, the *Orleans*, *Coe's Fine Late Red*, *Vine Sour*, and *Shropshire Damsun*—the last two are excellent for preserving. The ground intended to be planted with fruit trees should be well trenched and manured, taking care the latter is thoroughly mixed with the soil. Look over Cauliflowers and Lettuce plants for slugs. If they are troublesome, sprinkle some hot lime among the plants, it will benefit the ground and destroy the slugs. Tie up Endive to blanch when dry, as if done when wet it is apt to rot. Attend to plants in pots; they should be kept rather on the dry side during winter; never water them except when they absolutely require it, and then give them a good soaking.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON, For the week ending Nov. 3, 1853, as observed at the Horticultural Gardens.

Oct. and Nov.	Moon's Age.	BAROMETER.		TEMPERATURE.				Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean.	Of the Earth 1 foot 2 feet deep.		
Friday 23	25	29.571	29.493	61	47	54.0	54	S.	.20
Satur. 24	26	29.947	29.822	56	37	46.5	63.4	S.W.	.00
Sunday 30	27	30.066	29.992	54	32	43.0	52	N.E.	.00
Mon. 31	28	29.957	29.759	57	45	51.0	50	S.	.00
Tues. 1	29	29.915	29.783	60	41	50.0	50	S.E.	.00
Wed. 2	30	30.007	29.816	60	36	48.0	50	S.W.	.02
Thurs. 3	1	30.076	29.973	56	30	46.0	50	E.	.00
Average		29.935	29.827	57.7	39.1	48.4	51.3		.02

October 23—Overcast; cloudy; fine; rain.  
29—Overcast; cloudy and fair; clear at night.  
30—Foggy; clear, very clear at night.  
31—Fine; clear and very fine; overcast.  
Nov. 1—Very fine; cloudy; clear.  
2—Very fine; cloudy; clear at night.  
3—Foggy; very clear at night.  
Mean temperature of the week 23 deg. above the average.

STATE OF THE WEATHER AT CHISWICK, During the last 27 years, for the ensuing week, ending Nov. 13, 1853.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6	53.1	39.0	46.0	16	0.76 in.	1	1	1	1	1	1	1	1
Mon. 7	52.3	38.4	45.3	16	1.02	1	1	1	1	1	1	1	1
Tues. 8	51.0	36.3	43.7	16	0.58	1	1	1	1	1	1	1	1
Wed. 9	51.0	36.8	43.9	11	0.28	1	1	1	1	1	1	1	1
Thurs. 10	51.2	36.7	43.9	13	0.67	1	1	1	1	1	1	1	1
Friday 11	51.4	37.9	44.1	14	1.02	1	1	1	1	1	1	1	1
Satur. 12	51.6	35.7	43.6	13	0.90	1	1	1	1	1	1	1	1

The highest temperature during the above period occurred on the 12th 1851—therm. 63 deg.; and the lowest on the 12th, 1853—therm. 51 deg.

## Notices to Correspondents.

**BOOKS: W. L. "The Theory of Horticulture"** is out of print. A new edition is in preparation, with very extensive additions, which are intended to connect theoretical and practical gardening more evidently than in the first edition.—*Jac. Hooker's "Muscologia Britannica,"* the fifth volume of Smith's "British Flora," *Greville or Harvey on Algae*, and *Ralf's "Desmidiæ,"* are all standard works in Cryptogamic botany.

**BOX-EDGING: A Sub.** This dies from various causes; it was originally ill planted; it is over-clipped; it is crushed by the roller; or similar accidents befall it.

**CARBONARI: St Just.** It is true that this word sounds as if of vegetable origin. But it is not horticultural. The persons so named did not smear their faces with charcoal as a disguise, nor put their enemies to death with the fumes of burning charcoal, as you conjecture. *Lorenzo Benoni*, himself a carbonaro, informs us in his memoirs that the system bearing the name of Carbonarism arose in the kingdom of Naples during the last years of the French occupation, when the patriots, flying from the persecution of the government, took refuge in the mountains of the Abruzzo, where they contrived to maintain an existence by making charcoal (carbone).

**MAIZE: M. E. B.** If you will refer to our volume for 1846, p. 103, you will find numerous receipts for turning the flour of Maize to the best advantage as food.

**NAMES OF FRUITS: W. Cruden.** 1, *Buerre Bosc*; 2, *Easton*; 3, *Buerre*; 4, *Winter Nelis*; 6, *Flemish Beauty*; 7, *Buerre d'Arenberg*; 8, *Moortown Egg*; 9, 23, *Gansel's Bergamot*; 10, *Napoleon*; 11, *Comte de Lamy*; 13, *Duchesse d'Angoulême*; 14, 16, *Glout Moreau*; 15, *Ne Plus Meuris*; 18, *Passe Colmar*; 21, *Antoin Bergamot*; 22, *Père d'Arenberg*; 26, *Grey*; *Achen*; 27, *Marie Louise*.—*W. G. R.* Your Apple is not the Summer Red-streak; it is the *Margil*.—*Inquirer.* 1, *Buerre de Capiaumont*; 2, *Napoleon*; 4, *Kerry Pippin*; 5, *Court of Wick*; 7, *Wormsley Pippin*; 8, *Carlisle Codlin*; 9, *King of the Pippins*. The flavour of the *Buerre de Capiaumont* was very good; it appears to suit your northern climate better than *Napoleon* does. Judging from the specimen sent, the *Court of Wick* Apple likewise succeeds well with you.—*R. Smith.* 1, *Flemish Beauty*; 2, *Urbaniste*; 3, appears to be *Knights' Monarch*; 4, *Passe Colmar*; 6, *Easton*; *Buerre*.—*J. Oakham.* 1, *Marie Louise*; 2, *Doyenné Blanc*; 3, *Seckel*; 4, *Passe Colmar*; 6, *St. Germain*; 7, *Aston Town*; 8, *Buerre Diel*; 9, *Napoleon*; 10, *Easton*; *Buerre*; 11, *Glout Moreau*; 12, 13, *Catillac*; 14, *Buerre*; 15, *Easton*; 16, *Buerre*; 17, *Napoleon*; 18, *Napoleon*; 19, *Alexander*; 20, 21, appears to be the *Nonsuch*.—*L. L.* 1, *Doyenné Blanc*; it is more melting in good seasons; 2, *Buerre Rance*; 3, *Blenheim Pippin*; 4, *Nonsuch*; 5, *Scarlet Nonpareil*.—*J. M. B.* Probably the *Reinette du Canada*, but the specimen is imperfect.—*Stella.* That which you had for the *Buerre Spence* is nothing but the *Brown Buerre*. The *Capit de St. Hélène* is *Napoleon*, but the very small round Pear you sent is not that sort. It is something unknown in its present state. It may be the *Jeau de Witte*.—*E. Bennett.* Your Grape is the *Black Morocco*. The *Josling's St. Alban's*, or *Chasselas Musque*, is well deserving of cultivation, if you can only prevent its cracking. It requires a pretty good heat and at all times plenty of air.—*J. L. Blenheim Pippin*.

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**PUTRIFICATION OF WATER: R. R.** Charcoal will effect this, but chalk will not. The last part of your inquiry we do not comprehend.

**THRIPS: J. W.** It has been stated that thrips may be killed by the use of tobacco-water to which a little sulphur has been added; or by a decoction of Elder leaves; or the infected plants, when wet, may be dusted over with the flowers of sulphur, which should be allowed to remain on for three or four days, when it may be washed off. The following is also said to be a certain remedy for this as well as other insects:—to 1½ gallon of soft water add ¼ lb. of black soft soap, and ¼ pint of turpentine.

**VALUATION: A Subscriber.** We are not valuers of fruit trees. **WALNUT TREES: A Sub.** All broad leaves injure Grass if allowed to remain upon it after having fallen. This they do by keeping it in the dark, and excluding air, rather than from any other cause. As to Walnut leaves, they are so rich in potash as to form one of the very best kinds of leaf-mould. By no means burn the leaves, but rot them down.

**MISC: F. B.** The best place for your Strawberries is a cold airy frame where the pots can be plunged in ashes, and heavy rains kept from the plants. If you have no convenience of this kind then you may stack them in the way you mention. The tops of Brussels Sprouts may be pinched off about the time when the young side sprouts begin to make their appearance.



## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO, the guaranteed import of** Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—WM. INGLIS CARNE, 10, Mark Lane, London.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—

Turnip Manure	per ton	£7 0 0
Superphosphate of Lime	"	7 0 0
Sulphuric Acid and Coprolites	"	5 0 0

Office, 63, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**SEWAGE CHARCOAL MANURE.**—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the **SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 60s. per ton**, and in quantities less than half a ton, at 4s. per cwt., for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

**THE LONDON MANURE COMPANY'S WHEAT MANURE**, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. **EDWARD PURSER, Sec.** Bridge Street, Blackfriars.

## MANURES.—PERUVIAN GUANO.

**WHEAT MANURE**, made to meet the offer of a Prize by the Royal Agricultural Society of England, Superphosphate of Lime, Gypsum, Salt, Bone Dust, and all other Manures of known value on sale.

Also Foreign and English Linseed and Rape Cakes, Peat Moss Charcoal, &c.—Apply to MARK FOTHERGILL, 204, Upper Thames Street, London.

## DRAINAGE AND IRRIGATION.

**HENRY WEBBER** begs to inform Landowners and the Public that, having had considerable practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by contract or on commission. Reference given.—Address, Halberton Court, near Tiverton, Devon.

## LAND DRAINAGE.

**MR. JOHNSON** (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five Shillings per acre; or if under 20 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

**GUTTA PERCHA BOOTS FOR SHEEP**, for the Prevention and Cure of the FOOT-ROT.—Address JOHN JONES and Co., Patentees, Sheffield.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

**SAMUELSON'S PATENT DIGGING OR FORKING MACHINE**, which obtained the SILVER MEDAL of the Royal Agricultural Society at GLOUCESTER, 1853; 5l. 5s. Prize of the YORKSHIRE SOCIETY; and 6l. Prize of the CLEVELAND SOCIETY; capable of cultivating 5 acres per day with four or six horses, may be seen at work at Banbury, and in Kent, Middlesex, Surrey, Cheshire, Yorkshire, North Wales, Berwick, Gloucestershire, Worcestershire, Leicestershire, Herts, &c.

To meet the demand of SMALLER OCCUPIERS where horse power is limited, Mr. SAMUELSON has constructed an implement equal to 3 or 4 acres per day, with a draught of three or four horses only. Price 27l. 10s. and 24l. 10s. respectively, at Banbury.

PRIZE at Gloucester (the eighth time) to SAMUELSON'S Improved GARDNER'S TURNIP CUTTERS.

Manufacturers of McCormick's Reaper (highly commended at Pusey), Anthony's Churns (3l. prize at Gloucester), Liquid Manure Pumps, Chaff Cutters, Crushing Mills, Lawn Mowers, &c. B. SAMUELSON, Britannia Works, Banbury.

## CARSON'S ORIGINAL ANTI-CORROSION

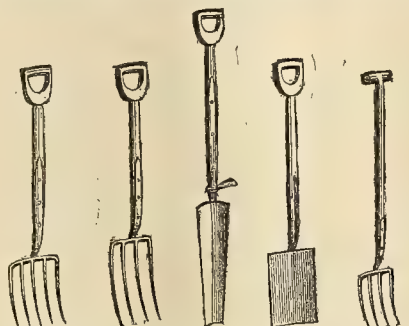
PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at the country seats. The Anti-Corrosion is particularly recommended as the most durable out-door paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & Son, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

## PRIZE CHURN.

**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BURGOSS & KEY, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.

## WINTON'S PARKES' STEEL DIGGING FORKS.



**I HEREBY GIVE NOTICE** that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. BURGOSS & KEY, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.

29th Sept., 1853.

Signed, FRANCIS PARKES.

## WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... 3 0 0

Larger sizes if required. They are much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.

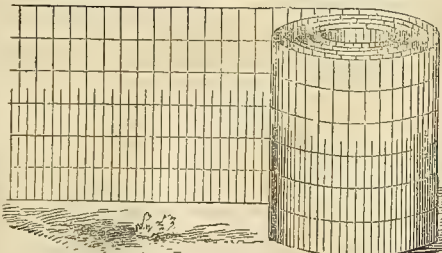
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

**JOHN WARNER & SONS,**

8, CRESCENT, JERVIS STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

## BY HER MAJESTY'S ROYAL LETTERS PATENT.



**BENJAMIN GREENING AND Co's. PORTABLE WIRE FENCES**, Manufactured by Patent Machinery.

The new method of manufacturing Wire Fencing (which B. G. & Co. have invented and patented) makes it at once the cheapest, strongest, and most durable fence ever offered to the public. It is elegant in pattern and light in appearance, being also an entire fence in itself; it is much superior to the common Wire Netting Fence now in use. It can be fixed or removed by any labourer. It requires fewer supports than any other, and is infinitely cheaper than hand-made Fences.

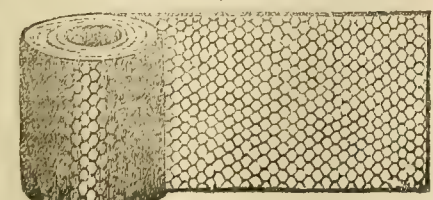
**PORTABLE HORSE AND CATTLE FENCE.—PORTABLE SHEEP AND LAMB FENCE.—POULTRY-PROOF FENCING.—PORTABLE HARE and RABBIT-PROOF FENCING.**

Trainers for Peas, Garden Bordering, Aviaries for Poultry, Pheasant Breeding Cages, Ornamental Varieties, Light and Cheap Kinds, Twisted Wire Strand Fence for the Colonies, &c.

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## GALVANISED WIRE GAME NETTING.—

7d. PER YARD, 2 FEET WIDE.



	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 "	6½ "
2-inch " extra strong "	12 "	9 "
1½-inch " light "	8 "	6 "
1½-inch " strong "	10 "	8 "
1½-inch " extra strong "	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

## CONSERVATIVE LAND SOCIETY.—Fifteenth

Purchase of Land and Twelfth Drawing.—On THURSDAY, November 17th, at FREEMASONS' HALL, Viscount RANELAGH in the Chair, the Twelfth Public Drawing will take place, previous to which explanations of the plan and objects of the Society will be given. The last purchase, just effected, consists of the well-known Mansion and Park, containing upwards of 74 acres of land, St. Margaret's, near Richmond, with a magnificent river frontage, facing Richmond Gardens. Persons desirous of obtaining Rights of Choice on the Society's Estates can do so by paying up at once Shares in full, or by purchasing Shares of other Members, already on the order of rights. The Round Hill Park Estate, one of the finest situations in Brighton, and giving votes for East Sussex, will be allotted at the Offices on Thursday, November 24th, 1853. Open from 10 to 5 daily, and on Mondays and Fridays from 10 to 5 o'clock.

Every information will be given on application to CHARLES LEWIS GRUNSEISEN, Secretary. Offices, 33, Norfolk Street, Strand.

## YORKSHIRE AGRICULTURAL SOCIETY.—

FAT STOCK AND POULTRY SHOW AT LEEDS, December 6th, 7th, 8th, and 9th. (Open to the United Kingdom.) When Prizes will be offered for Stock, 1844, and two Gold Medals; ditto for Poultry, 1211; ditto for Roots, Seeds, &c., 201. The entry closes on the 15th November next. Prize Sheets and Certificates are now ready, and may be had of M. M. MILBURN, Secretary, Sowerby, Thirsk, Yorkshire.

## THE BIRMINGHAM EXHIBITIONS OF STOCK

AND DOMESTIC POULTRY.—The Fifth GREAT ANNUAL SHOW will be held in Bingley Hall, Birmingham, on the 13th, 14th, 15th, and 16th of December next. Prize Lists, Certificates of Entry, and any further information, may be obtained from JOHN MORGAN, Jun., Secretary. The Entries close on Saturday the 12th of November. Offices, 39, Bennett's Hill, near the News Room, Birmingham.

## The Agricultural Gazette.

SATURDAY, NOVEMBER 5, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY, Nov. 7.—London Farmers' Club.  
THURSDAY, — 10.—Agricultural Imp. Society of Ireland.

It may be well to announce here, that this day is the last on which certificates of stock intended to be shown at the Smithfield Club Exhibition can be received by the secretary.

No one can say that the lack of subjects of political interest for discussion at the autumn meetings of our Agricultural Societies has rendered these meetings less interesting than they generally are. The reports of some of them which we have published must satisfy our readers that there is in the practical details of our profession, and in the principles on which they are based, ample scope for comment and remark of a kind far more useful than that which is suggested by the varying phases of party politics, which have often heretofore engrossed the attention of speakers at such meetings. The autumn cleaning of stubbles—the principles and the practice of sheep breeding—the relations of master and servant—the tillage of the Wheat plant during its growth—the differences of allotment culture and of ordinary field cultivation, both in methods and results—these, to the great advantage of all classes, are now made to take the place of arguments on the national advantages of interference with the natural prices of agricultural produce—or on the policy of employing the powers of an Act of Parliament for the maintenance of our character as a Wheat-growing country. CARLISLE and OUNDLE—EVESHAM and WITHAM—have told us during the past few weeks how that is best maintained; that it is, in fact, on the energy and intelligence of agriculturists that the true interests of agriculture are most securely built. Of the two last meetings, especially, we cannot speak too highly. The Witham Labourers' Friend Society pursues the end for which it has been constituted, even more efficiently by promulgating such views as those of Messrs. MECH, HUTLEY, and DIXON among masters, than when engaged in awarding premiums to deserving servants; and the Vale of Evesham Agricultural Association offers a useful example to other agricultural societies when, not satisfied with awarding prizes for the results of successful stock breeding, it discusses at the meetings of the members the principles on which successful practice must be founded.

It is, however, to the discussion before the Irish Agricultural Society on the AUTUMN CLEANING OF STUBBLES that we would more especially direct attention. We last week published the opinions of three of our most distinguished practical men, though this, we believe, was altogether unnecessary for the purpose of convincing any of our readers on the subject to which they referred; it is, however, sometimes useful to enforce an admitted truth—and that is true of the case before us—in order to the removal of an opposition to the practice taught, which, in the cases to which we refer, is presented, not, as might be thought, by the sluggishness or carelessness of the tenant, so much as by the will of the landlord. Game preservers frequently object not only to the early cultivation of stubbles, but even to the mowing or "bagging" of Wheat, on the ground of the loss of cover and shelter for birds, whose interests in such instances certainly are preferred to those of the more rightful occupants of the land. And the unanimous opinion of all agriculturists—from the



literary and scientific to the practical cultivator of the soil, a thing for which we have to thank Mr. HARKNESS—is worth publishing for the sake of those farmers who are, in this manner, hindered from acting as their own intelligence and common sense would direct them. In the full report of the paper by Mr. HARKNESS, published in the "Journal of the Agricultural Improvement Society of Ireland," very many other gentlemen, as well as those whose communications we quoted last week, give their opinions and describe their practice. Mr. HANNAM, of St. Marks, near Wetherby, is particularly explicit on the subject; and we make a further quotation from his communication, because, late as the season is for fallow operations, the last few days have so far improved the condition of the land that in many districts Wheat sowing is pretty far advanced, and other operations may proceed—and the principles influencing the practice, which are in fact those of early activity, whether in the work of combating foes or availing oneself of friends, are efficient at all seasons and under all circumstances. Mr. HANNAM very justly says:—

"It is not less strange than true that for many years it has been the rule to leave the soil in the possession of the weeds and rubbish during the whole of the autumn and winter without any attempt to eradicate them. After a four or five years' course of cropping, during which time the weeds struggled for mastery with the legitimate crops, and when they had attained their fullest maturity and strength, they were usually left in undisturbed possession of the field for five or six months before any attempt was made to dispossess them. To say that in this time they extended their fibres, increased in number, or became more thoroughly at home in the 'lazy bed,' requires scarcely to be mentioned to the practical farmer. Why were they left, then? Simply, because necessity did not urge their removal! A summer fallow left ample time to remedy the omission, and autumn Turnips were also grown on favoured spots—as many as the farmer could conveniently 'get in.' No one thought of converting his whole breadth of fallow into green crop. The few weeks of Turnip season, drought, rain, scarcity of hands, and absence of horse-power, one or all were invoked as obstacles to, and admitted as an excuse for not getting more green crop! But it is not the case now. The practice, then, of getting quit of the bad tenants of the soil as soon as possible, by autumn cleaning, is not an innovation opposed to the tendency of good modern practice."

He then goes on to explain the advantages of the practice recommended. The aim is to get "a full green crop on the whole breadth of suitable land;" and autumn culture assists this, (1), by diminishing the cost of preparing the soil, for horse labour is cheaper in autumn than in spring, and by spreading our work over a greater number of months, we diminish both the hurry and cost of it; (2), by attacking root weeds when they are more easily removed than they are in early spring; (3), by permitting the earlier completion of the following process in spring, and thus securing the choice of a seed time, instead of throwing everything over till late in June, and being then forced to sow whether the soil be in right condition or not; (4), by being able to have a greater breadth of the Turnip break sown to Swedes, instead of common Turnips, as we are forced to do if the seed time be late. "By spring cultivation the bulk of the crop must be white Turnip; by autumn culture it may be whichever you consider most useful."

The details of practice which Mr. HANNAM describes, we do not quote; the following process must be pretty much the same whatever the time of its performance, and it is to this that these remarks are now especially directed. That delays are dangerous is nowhere more true than in agriculture. The present state of the corn markets shows how sensitively alive to this truth both corn-merchants and farmers are.

The delay of seed time, which has been caused by a wet October, has raised the price of Wheat many shillings per quarter; so certainly has all experience, and especially that of last harvest, proved that mischievous causes acting during one autumn are felt during the next. Let it be our policy then to act on the converse truth, that beneficial causes acting during one autumn are also influential during the following one; and by energy in the acts of cultivation, at the earliest possible period, secure all the advantages which are unquestionably consequent upon it.

#### BREAD PROSPECTS FOR THE COMING YEAR.

This is a question of far greater moment to us just now than at any period since 1816, when the bad harvest raised the price of Wheat the following year to 96s. 11d. per quarter; for we must go back to that year to find a season so generally unfavourable as the past: and before any attempt be made to answer it, we should endeavour to ascertain—1st, What is the probable quantity we shall require in addition to our own growth? next, What resources are open to us;

and, lastly, To what extent they are likely to be intercepted by the wants of other countries similarly situated with ourselves?

Although it is desirable to avoid any statements likely to lead to unnecessary fears, still we must not overlook the serious consequences which would ensue from not calculating in time the extent of our future wants, and early adopting every means open to us for supplying them. It is true we may for a time unduly raise prices by creating unnecessary alarm, but as this would immediately lessen consumption, and hold out additional inducement to bring in foreign supplies, the evil would be only temporary, and the public would afterwards be amply compensated by the comparative abundance and low prices which would inevitably follow. But if, on the other side, we fail at this season to secure what we may require, we shall hereafter have to seek it in competition with other countries, and when the markets will have become enhanced by the accumulated demands on them and the supplies already taken from them; and we may possibly not only have to pay very much dearer for what we may want, but find a difficulty in getting supplied at all; and, to prevent this, the following data for calculating our probable wants and supplies are given:—

During the five years following the year 1847 (when the scarcity, arising more particularly from the failure of the Potatoes than from any deficiency in the Wheat crop, doubled the importations of Wheat and raised the price to 102s. 5d. per quarter, and the average of the year to 69s.) there has, under the action of free trade, been imported into Great Britain supplies of Wheat and flour giving an average of 4,428,597 quarters per annum (in round numbers 4½ millions). During these years our harvests were good; and if we admit our yearly consumption to have been 20 million quarters, which is what it is generally estimated at, we shall have yearly grown 1½ million quarters. But last year the crop was notoriously deficient, and the deficiency is generally estimated at a third; and seeing how much less land was sown with Wheat, and how very poor is the return, it is probable that this estimate may not be found to be too much. But, for the purpose of this paper, it will be sufficient if we admit the deficiency to be a fourth of what has been grown the last five years, and it will then amount to 3,875,000 quarters—in round numbers, 4 millions. If we add to this the 4½ millions we have been consuming in addition to what we grew, the total supply we may require will amount to 8½ million quarters; and seeing how much the consumption of bread must this year be increased by the unparalleled scarcity and high price of Potatoes, and the want which will be particularly felt this winter of any substitute for bread, much (if any) diminution in this consumption cannot be calculated on.

We have now to consider what probability there is of getting a supply. The corn-exporting countries and the quantities they have had to spare, judging from the imports into this country for the preceding five years, may be classed and taken as follows:—

From Russia and Turkey ... ..	1,000,000 quarters.
" America ... ..	1,300,000 "
" Germany and the Northern States ... ..	1,000,000 "
" Italy, Egypt, and Syria ... ..	500,000 "
" France, Holland, and Belgium ... ..	700,000 "
Total ... ..	4,500,000 "

But, of these exporting countries, we must this year strike out at least a fourth, in consequence of their deficient harvests; and they are not only without any surplus to send us, but they are similarly situated with ourselves, and will have to import largely—so that, instead of taking from past experience a supply of 4½ million quarters, as being open to us, and that Britain alone will want a supply, we can only reckon on markets which have given but 3½ millions: and, what is still more serious, we have further to take into account that the countries which have given Great Britain this supply are already exhausting their stores in supplying countries whose population is three times as large as our own. And the surplus of the world which, during the last five years, has all come to Britain and aided in feeding a population of only 28 millions, has this coming year to be shared with Italy, France, Belgium, Holland, and parts of Germany—having a population which may be represented at 100 millions. *H. D., London.*

#### THE AMERICAN THRESHING MACHINE AT MR. MECHI'S.

Oct. 29.—Yesterday, Tiptree Hall was the scene of an interesting experiment, the trial of the American Threshing Machine, or Moffitt's Patent Grain Separator, which excited so much interest in the New York Exhibition. The machine is the invention of Mr. J. R. Moffitt, of Piqua, Ohio, and has been in operation for more than two years in the United States, where it is superseding most others. The whole weight of it is only 12½ cwt., or not more than two-thirds the weight of a common road wagon; and one-third that of an ordinary machine calculated for the same amount of power. As to price, the cost, we understand, is not likely to be more than half that of the machines now in use; and at the moderate speed at which it was working yesterday, it threshed a bushel of Wheat per minute—or even more than that, for gentlemen who tried it found that it threshed the bushel in one case in 45 and in another in 48 seconds. The work was only limited by the difficulty of feeding it fast enough. Much of the lightness and effectiveness of the machine is attained by a beautiful adaptation of the principle of the Archimedian screw to the carrying of the grain through

different parts. The band of the sheaf is cut, there being no necessity for untying the knot, and the corn is shaken loose at the mouth of the machine, which is at the top of one end; it is then taken in, and threshed with a spiked cylinder, which it is thought gives more space for the corn to pass through than any other plan; and this cylinder being made of wrought iron, these spikes or teeth are easily replaced in case of being broken by accident. When threshed the corn does not pass with the straw, but there is an open concave and grate, which allows the grain to pass through by itself, so that there is no chance of breaking it, thus removing one of the great objections to many of the machines in use. The straw is then thrown on to an endless belt formed of cast-iron and light rods, which receives a shaking or vibratory motion as it passes on—carrying up the straw which is thrown out at the top of the opposite end of the machine, so that any kernel disposed to remain is dislodged, and no grain can pass out with the straw. One great advantage of this open belt is found in the driving apparatus, so that the looser it is the better it works, and the easier it runs. The dressing part is at the tail end, and all the grain dropping through the concave before mentioned, and the belt, falls into a trough beneath, in which two Archimedian screw conveyors are placed, which convey all the corn threshed directly to the dressing machine, allowing no chance for the grain to waste under the machine after being threshed. Machines of two sizes are built, one smaller than that in use yesterday, by which two horses will thresh 150 or 200 bushels a day. The only objections we heard made to the machine by practical farmers—and these were pointed out by almost every one who saw it—were that the straw was broken more than by the common machine, so much as to render it unfit for thatching, and that the cavings and chaff were thrown off together.

As to the cost of threshing by the machine, there were 11 men and five boys employed, and Mr. Mechi estimated the expense, with his four-horse steam-engine, which was not going at its full power, at 6d. per quarter; but (and here is a striking proof of the economy of steam-power where it can be applied) last week, when worked by eight horses, and with the relay requiring 16 a day, the threshing cost 1s. 6d. a quarter. In fact, we may close our account of the trial by stating that, with the exception of the points alluded to, the jury of practical farmers returned a unanimous verdict of "perfectly successful." *Abridged from the Essex Herald.*

#### WORKING OXEN.

I HAVE long found that in all heavy farming operations oxen are most useful, and I am convinced every farmer, with 100 acres of arable land, could work one or two pair to great advantage; for deep-ploughing, drawing Samuelson's digger, Ducie's cultivator, and numerous other heavy implements, oxen will draw greater weights and as quick as horses. In lighter operations the horses surpass them in speed, but every improvement in agriculture now tends to deep, consequently slow work; and until steam is adapted to drawing our implements, oxen will be most useful. They cost much less in keep, and improve daily in value; they are easily broken in, may be worked for a few months during a busy season of the year and then fed off. The application of steam to our threshing machines, Turnip and chaff cutters, and the railways lessening the distances at which many deliver their corn, has diminished the winter work of many farmers' horses. Oxen would, in these cases, prove very beneficial in the summer. I know one large occupier who commonly brings every spring four or six pairs of working oxen, uses them until all the Turnips are sown and cleaned, and then feeds them off in his stalls; and by this course has his work done at two-thirds less cost than by keeping a larger number of horses. In September last I purchased two bulls at 10l. each, from two dairy farmers, they are now daily ploughing and dragging, and keep pace with the other teams; as a practical farmer I should be very sorry to be without some oxen as auxiliaries to my horse teams. *E. W. Wilmot, Congleton.*

I had supposed the comparative advantages of employing horses or oxen for the general purposes of the farmer had been settled long since; but having seen the question revived by the pamphlet noticed in the *Gazette* of the 22d ult., I read it, to ascertain whether Mr. Stokes had made some discoveries which had escaped the observations of the agriculturist. I confess that I was woefully disappointed in finding nothing new in Mr. Stokes's communication beyond the arithmetical result, viz., that at the end of 8 years the ox farmer would have benefited to the extent of 2s. per acre per annum beyond the horse farmer. Is this correct? It seems to me that the difference in the speed of the respective animals is a most important element in the calculation, which Mr. Stokes has altogether omitted. Is there any doubt that, if a team of good active horses were set to work in the same field with a team of Mr. Stokes's oxen, the former would plough at least one-fourth more in a day of 8 or 10 hours, as the case may be? If that be so, Mr. Stokes should estimate the cost of ploughing an acre, and multiply that by the number of acres ploughed on a farm of a given number of acres, during the period embraced by his calculation, and divide the result by four, and add the dividend to his cost of the oxen; I apprehend he will then have to show a considerable per centage in favour of the employment of horses. I entirely concur in the other view of the



matter adopted in the article in the last *Gazette*. Nothing is more contagious, amongst the class of persons engaged in agriculture, than slow movements constantly before them, whether of the cattle, the master, or the bailiff. As a matter of observation, I will venture to say, that where oxen are used on a farm, you will generally find all the movements on the farm as slow as those of the oxen. I observe that Mr. Stokes calculates on "the ox feeding himself at leisure in the Grass fields or in the yards, without the help of man;" but having used oxen as extra working stock, at particular periods of the year, I have found it impossible to get continuous work out of them, without keeping them, as well as the horses, in all respects. *C. L.*

Not having seen the pamphlet referred to in your article of Saturday, Oct. 22d, on "The Ox as a Beast of Burden," I would like to know whether the author, in his calculations of the cost of draught labour by four horses and eight oxen, on a farm of 100 acres, during a period of eight years, has taken into consideration the additional cost of manual labour occasioned by the use of eight oxen instead of four horses. Youatt makes the comparison thus—

Cost of keep of two horses per annum ...	£ 44	s. 6	d. 0
Stable expenses, farrier, &c. ...	6	0	0
Decrease in value ...	6	0	0
	£ 56	s. 6	d. 0
Cost of keep of four oxen per annum ...	£ 51	s. 5	d. 0
Farrier, &c. ...	6	0	0
	£ 57	s. 5	d. 0
Deduct for increase of value 3s. each per year ...	12	0	0
	£ 45	s. 5	d. 0

Showing a balance of 11s. per annum in favour of oxen. If, however, the two horses could be worked by one man, and the four oxen would require a man and a boy, the cost of the latter is clearly chargeable to the oxen, which, at 5s. per week (13s. per annum), would give a balance of 2s. in favour of horses, besides the great convenience of being able to cultivate the same breadth of land with half the number that would be required of oxen. *J. P. T.*

### Home Correspondence.

*Guano.*—This last year none of this manure was to be got as usual for our spring crops. We consider it not only as a good manure, but it answers a double purpose—it destroys all kinds of worms, acting on their backs as a caustic, and the damaged plants recover rapidly by its fertilising properties. Some say guano produces disease, exhausts a soil, &c.; but 2 cwt. an acre for Wheat and Barley, and 1 cwt. with bones for Turnip crop, is ample, especially if mixed with urine and absorbed in the ashes and bones; a finer and better manure for Swedes we never found offered us. Major Stephenson (unhappily quitted this earth) was one with us, in these trials, and Christchurch, Hants, misses this intelligent soldier-farmer; such men are a great loss, he had his men well drilled as well as his corn, and he did good amongst the labourers by these and such like agricultural instructions. To return to the above manure, not sense or reason even has guided some men opposed to many new and advantageous systems; but a single trial of this manure, of 2 cwt. an acre to a Barley crop, produced an increase, upon the field sown, of four sacks of good corn; the usual yield was six or seven sacks, but generally the former. The old yeoman now likes guano, and he knows too what a cut he gets in addition of "dry ground hay," i.e. here "Artificial Grass." *X. Y. Z., Hants.*

*Pigs at Gloucester.*—In the essay of "Falcon," in your *Gazette* of the 15th inst., respecting the pigs at the Royal Society's meeting at Gloucester, some severe remarks are made, on the over-fattening of the swinish multitude; and a recommendation given, that in the year 1854 it will be necessary to classify exhibitors, those who exhibit for the butcher, and those who exhibit for the chandler. Claiming to be a practical man, and giving advice to the breeders of England, I think "Falcon" might have remembered that the Royal Society's meeting is not intended directly either for the butcher or the chandler; but in his horror of lard and dripping he seems to have forgotten to suggest anything like a practical remedy, as he also seems to have overlooked the effect that would be produced by stuffing animals to repletion. He says, "It was interesting to touch some of the pigs—the finger was buried in a soft, patty-like substance resembling dough, and the countenance so buried in blubber that it was difficult to distinguish the head from the tail." Now, to my mind, the effect that would be produced by over-feeding swine would be quite the reverse of this; the back of a highly fattened pig would be as solid as the finger of "Falcon." The remedy which has been attempted to be carried out by the Society, did, at the Gloucester meeting, utterly fail. I find that in pigs of the small breed the overfat rarely excluded two, i.e., one boar and one sow, belonging to a gentleman in Devonshire, Mr. William Northey, of Lake Litten, who won a best prize in the same class. Upon reading the remarks of "Falcon" I visited this gentleman's farm, where I found the overfat boar had been in constant use from the time of the Gloucester meeting to the present, and the disqualified sow suckling as fine a litter of farrows as was ever exhibited at any of the Society's meetings. From the success of this exhibitor at Exeter, Taunton, Plymouth, and other places, and from the great demand he has experienced for his stock, there can be no moral doubt that a great injustice was done him, by excluding two of his best animals, possessing considerably more than an

average size, with all the other requirements demanded by "Falcon," i.e., quality and symmetry, and, as can now be proved, with all the powers of procreation. The Royal Society might adopt precisely the same rule with pigs as they do with cows, and withhold the payment of premiums until the sow shall have proved to produce young, if she had been certified to be in farrow; and if not in farrow a certificate might be required that she had produced young at some given time before. The great utility of this society being the transfer of breeding stock from one part of the country to the other, the intelligence of the purchasers would be a sufficient guarantee for all the young stock bought; and the exhibitors, finding it would not answer their purpose to pamper animals for which they could not find a market, would soon relinquish a practice now so much complained of. *Clod-crusher.*

*The Purifying effect of Steam on Mouldy or decayed substances* may not be generally known; and as there are at the present time so many haystacks that seem more fit for litter than fodder, it may be of service to some of your readers if I state from my own experience how this property of steam may be applied so as to render such apparently worthless stuff palatable, and I believe nutritious to stock. I had last year a stack of Oats, which were carried in wet weather. They became mouldy, and were found, on opening the stack, to be so white and matted together with the mould that it would be useless to attempt to thresh them out, and the very pigs turned up their noses at them. I therefore determined to try the effect of steam; so cutting up grain and straw together, I put the chaff into a pan (belonging to a Stanley's steaming apparatus), and passed the steam through it. The steam that issued was at first very fusty and unpleasant, but in five minutes this became very sweet and fragrant, and on the pan being emptied the chaff had lost all traces of the mould, and had a delicious scent, equal to that of the sweetest hay. I followed up this experiment by cutting up the whole of the Oat stack into chaff and steaming it. The horses were remarkably fond of it, and threw well upon it. I tried a similar process this year with equal success upon flooded hay. The Grass was cut after the flood (which had lain upon it for 10 days, and had swept away that portion of the crop which had been cut previously) had subsided, and was dried, more for the purpose of putting on the top of a stack than for being used as hay. A few days ago this stack was cut into, and I had some of the muddy hay, which smelt more like river weed than anything else, cut into chaff and steamed, having previously had the silt knocked out of it. In this case, also, I found that the muddy smell entirely disappeared, and the chaff was rendered as sweet and palatable as the best gotten hay could be, the smell emitted during the steaming being very similar to that produced by brewing. When the chaff is cool and dry, it retains for some days this peculiar fragrance. How far such food is nutritious I have not yet fully ascertained; hitherto I have found horses and stock do very well upon it, and prefer it to either good hay or Clover unsteamed. It would almost seem as if that good old proverb, "Make hay while the sun shines," must, like many other good old-fashioned things, yield to the encroaching power of steam, or else must consent to appear in this homely guise, "Make hay while the pot boils." At the risk of my credit, I must further confess to having a stack of Clover which the heavy rain in July got to before it was thatched; it is in consequence mouldy from top to bottom; but instead of turning this directly into manure, for which it seems only fit, I am, with the aid of steam, looking forward to making Christmas beef of it, by the way. How far does mould, if not in too advanced a stage of growth, destroy the nutritious qualities of Clover? Fermentation, which presents to us the food in which it occurs, in a state better adapted for digestion, is supposed by some chemists to be attributable to the growth of fungi or infusoria; may not mould, by a similarly dialytical process, leave the Clover in a more digestible state, and therefore in a more nutritious condition, if not suffered to extract from it too much of its goodness? *G. P. S.*

*Land Drainage.*—Your correspondent "C." has got into a difficulty by draining the estate of his employer on the fashionable up-and-down system, the results of which do not give satisfaction to the tenants. Another correspondent, whose initials are "J. C. C.," refers him to a paper by me, in the last number of the "Journal of the Royal Agricultural Society," on the cheap and efficient system of draining so successfully practised for 15 years, by Lord Berners, at Keythorpe, and on the geological conditions on which its success depends. If "C." will communicate with me as under, in his proper Christian and surname, I shall be happy to enter into a correspondence with him; and if I find the Keythorpe system applicable to the estate under his care, I have no doubt I can put him in the way of carrying it into effect, so as to save from 30s. to 50s. an acre for his employer, and to give satisfaction to the tenants. *J. Trimmer, Wilmington, near Dartford, Kent.*

*Sheep Manure.*—I have just read in your journal of October 22 Mr. Hutley's remark on the application of sheep dung to fresh-sown Barley, which he says produced no beneficial effect whatever. My experience is the reverse of this. I farmed land adjoining the Curragh of Kildare, in Ireland, which is an extensive sheep walk, and is well known as the celebrated racing ground. On this land very large flocks of sheep are kept at certain seasons, and when we ran short of manure, it was our practice to employ children to gather up these "nubbles" in baskets, and for which we paid at the rate of about

2s. 6d. per ton. They were laid in heaps to ferment, and were afterwards applied as a dressing to Potatoes, Carrots, and Turnips with manifest success; I therefore cannot concur in the opinion of Mr. Hutley that the urine of sheep is the only portion of their dung which is of value. I have seen these "nubbles" produce finer crops than the best farm-yard manure. *Rob. B. Smith, Rooley Farm, Ewell, Oct. 27.*

*Draining Companies.*—The concluding paragraph of your correspondent "P. M.'s" communication, in last week's *Gazette*, might lead some of your readers to infer that there are but those two draining companies in London of which he names the engineers. There is, however, another company, which occasionally advertises in your columns (viz., "the Landowners'"), and which was established several years before either of those "P. M." refers to—having two practical engineers whose names must be familiar to several of your readers. *A Subscriber.*

*When is a Wheel a Lever?*—It is rather hard on your general readers to allow so much space to be occupied by the discussion of such questions as when is a "wheel a lever?" No one can doubt but that the arms of a windlass are levers; and what is a wheel but a moving windlass? the moving power of which is the friction of the tire. Destroy this by locking the wheel, and your correspondent "C. W. H." will at once see the value of the leverage thereby lost. A wheel, in fact, is an aggregation of levers. *A Cambridge Wrangler.*

*Agricultural Retrogression, Manufacturing Progression; Limerick County.*—It is now over seven years since a society for the encouragement of agricultural industry and domestic economy was formed in the city and for the entire county of Limerick. The county of Limerick, in an agricultural point of view, is decidedly amongst the finest in Ireland. The city of Limerick is or ought to be certainly amongst the foremost not only in Ireland but in Great Britain, in a trading and commercial, if not in a manufacturing point of view. The county of Limerick had always to trust to corn-growing, beef, mutton, pork, and butter producing, to meet her various demands. Yet, singular to state, that this, the finest county in Ireland, has made less progress towards agricultural improvement in the stocking or the cropping of her land than any one other of the 32 counties; and, stranger still, that in the cropping of lands round the city of Limerick, there is far less judgment displayed than you could see near some of the most miserable villages in Ireland, not excepting Skull, Skibbereen, Seariff, or Clifden. Some of your various readers may be now anxious to know why things appear here so paradoxical. The answer is easy of solution; and I here, as an Irishman, not only "to the backbone," but "to the heart's core," must blush at the solution. Ignorance—yes, downright ignorance—not so much the ignorance of the labourers or the rent-paying farmers, for they were ignorant because education was denied them, but the ignorance of the owners of the soil. I commenced by stating that more than seven years ago an agricultural society was formed in Limerick. Chance brought me present on one of these first occasions, and I clearly foresaw the failure in the distance; yet I by no means anticipated so utter a failure as I saw in the city of Limerick, where chance again brought me on the 20th ult., till which time I had heard little, if anything, of the society in question. Some three months ago the local papers teemed with advertisements, and the dead walls round the city were covered with placards, announcing "the great Munster fair," to be held in Limerick about the 27th of September last, and of the great Limerick agricultural exhibition to take place on the 20th of October. With due notice a warning was given to the "managing committee," as it is called, of the utter failure of the exhibition, if postponed to so late a period, and the advantages certain to accrue by having the exhibition held the day before the fair commenced. The show did come off as I told you, on the 20th ult., and such a shameful show I have never seen at a mere village exhibition in any part of Ireland, even when such things were in their infancy, within the last 30 years, as that I saw on that day in the great city of Limerick, embracing what an ordinary visitor would be told everything of the sort worth seeing in the county. But to say this would be a libel on such a county, for in the entire yard there were not as many good animals of any kind as should be found in the ordinary farm-yard of an ordinary Irish farmer, and I know some hundreds of Irish farmers who could turn out Irish bred stock, the most inferior of which would be superior to the very best there. Amongst the short-horns there was but one bull worth breeding from, and he was even too small in size to produce stock fit for such a county as Limerick. Amongst the short-horned cows and heifers there was but one worthy of notice, and she got such a distinction as made her case "an Irish bull." Here it is: "For the best short-horned cow of any age, in calf or giving milk; second prize, Lord Clarina, Elm Park, short-horned red and white cow Anulet." This was in section 3; and again we find, "for the best fat heifer or cow a medal or one pound, Lord Clarina, short-horned dark red and white cow Anulet," in section 8. Now, English judges of stock, what have you to say to that, "the second best cow giving milk or in calf," in section 3, pronounced the best fat cow or heifer in section 8. I do not know what you will say, but I will say this, she certainly was the best fat cow in the yard, but the very last I would choose out of the many bad ones I saw there, either to give milk or breed from in her then condition; and but for that condition, if in calf, she was the only cow in the yard worthy the name



of short-horn to breed from. The other prizes were awarded to hollow-backed and pot-bellied things, that no good judge could do more than glance at when compelled to pronounce them unfit for breeding stock. The sheep were something better, but in miserable condition; the pigs better still in as far as a few Berkshires went. The horses of all sections hideous—I mean when we consider them as prize-taking stock in the great horse-breeding county of Limerick. In the class poultry there were some specimens of improved breeds, but poor specimens of their kinds, with the exception of one Toulouse goose and a few Aylesbury ducks. The butter very limited as to specimens, one or two of which were exceedingly fine. In agricultural crops the specimens were provided shamefully, so there were two good specimens of Wheat, and some people thought, I amongst the number, that the best specimen got no prize; it was "Morton's improved." Oats very poor, samples very middling. Barleys poorer still; and here occurred another "bull." On the apparently best sample was the printed label "prize," and under it in pencilling "no merit." This inconsistency I pointed out to a gentleman I supposed to be one of the officers of the society, when he tore off the printed word "prize," and left on the pencilled words "no merit." I then suggested the word "ditto" for all the rest; yet, strange to say, I see in the *Limerick Reporter* now lying before me, "For the best sample of Barley from a sowing of not less than 10 acres, a certificate." The *Reporter* does not say "a certificate" of what? but as this, if printed in your Paper, will surely catch the eye of my friend the editor, he may, if he thinks fit, add "of no merit." But one of the most ludicrous of all the proceedings of this society was their giving "for the best sample of black Barley a certificate." For what? For mischief; it being now well known in Ireland that the said black Barley culture is mischievous indirectly, if not directly. There was one sample of Beans very fair in appearance, but exceedingly soft to the touch, owing, of course, to the wet and backward state of the harvest; yet it is pleasing to see such Beans at all in such a backward locality, and much credit is due to the party who introduced them, and also some Peas, though the latter were not very middling in quality. I have but one thing more to notice here—it is Flax, one specimen only of which was exhibited in the various stages of dressing till converted into thread. It was very good, and of which I will speak more fully in my next, when I will notice the manufacturing, commercial, and trading improvements contemplated, and in progress in the "city of the violated treaty," contrasting so strongly with the foregoing, the dark side of whose picture I have but sketched without touching on the bright side, which, in justice to all but influenced by none, I will also cursorily notice. *Edward Carroll, Triton Villa, Phibsboro', Dublin, Nov. 2.*

### Societies.

#### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

The first monthly Council after the autumn recess was held at the Society's house, in Hanover Square, on Wednesday, the 2d of November. The following Members of Council and Governors were present:—Colonel Challoner, Trustee, in the Chair; Sir John Williers Shelley, Bart., M.P.; Sir Matthew White Ridley, Bart.; Mr. Raymond Barker, Mr. Barnett, Mr. Barthropp, Mr. Blanshard, Mr. Brandreth, Mr. Burke, Mr. Garrett, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hornsby, Mr. Kinder, Mr. Milward, Mr. Simpson, Professor Simonds, and Professor Way. The names of 25 candidates for election at the next meeting were received and read.

**FINANCES AND HOUSE.**—Mr. Raymond Barker, as Chairman of the Finance and House Committees, laid before the Council the reports of those departments, which were received and adopted. He also laid on the table, for the information of the members, the quarterly statements of actual receipts and payments, estimated income and probable expenditure, invested capital and liabilities; explaining in detail the bearing of those respective branches of account upon each other. He reported the current cash balance in the hands of the Society's bankers to be 795*l*.

**GLOUCESTER MEETING.**—Mr. Milward, as senior Steward of the Cattle Yard at the Gloucester Meeting, reported the unanimous decisions made by himself and his colleagues in that department, on the various points referred to them by the Council. He also stated that their report on the show of cattle at the Gloucester Meeting was in preparation for the Journal; and their suggestions in reference to the exhibition of live stock generally at the Lincoln Meeting ready for being laid before the Special Council in December, when the prizes and their conditions of competition would be arranged for next year.

**LINCOLN MEETING.**—The report of the General Lincoln Committee was received, and its recommendation adopted, that the Lincoln meeting should be held next year in the week commencing Monday, the 17th of July.

**JOURNAL.**—The President transmitted information to the Council that the new journal was in an advanced state, and that there appeared no reason to doubt its punctual appearance at Christmas next.

**MEMBER OF COUNCIL.**—On the motion of Mr. Brandreth, seconded by Mr. Raymond Barker, Lord Bridport was elected a member of the Council, in the place of the late Mr. Bennett, of Bickerings Park.

**MISCELLANEOUS COMMUNICATIONS.**—From Viscount Palmerston; foreign communications on the destruc-

tion of insects and the cure of the Potato disease. From the Smithsonian Institution of Washington; a collection of valuable and interesting works published under their authority. From M. van Alstein; a statement of his mode of growing Potatoes alternately with Hemp, and its beneficial effects on the Potato. A great number of letters from France and Belgium; on the nature and treatment of lameness in sheep. A communication from Professor Solly to the President, on co-operation in the collection of samples of English wools, for the intended National Trade Museum, [the aid which he is desirous of obtaining from the Society "being confined to the preparations of the necessary circulars and lists of breeders, the classification of breeds, crosses, and varieties, and such general advice and co-operation as it may be in the power of the Council to render."] From Mr. Henry Wood, of Holden House, Southborough, two Lupin plants grown by him, from seed received from Egypt (with a supply of seed and a statement of cultivation, referred to a weekly meeting of the Council). From Mr. Fisher Hobbs, a supply of French steep for Wheat, placed at the Society's rooms at the disposal of such members as wish to obtain a portion for trial and report.

The Council having ordered their thanks for the various communications submitted to them, adjourned to their monthly meeting on the 7th of December.

### Farm Memoranda.

**A SILESIAN FARM.**—We were startled a few months ago by the appearance of a letter by M. Rotschke, addressed to M. Von Thaër, showing that a farm in Silesia had been cultivated for 14 years by the application of light artificial manures alone. The soil was of good quality; the subsoil generally rich in mineral resources, especially potash. The feldspars often contained in clays, Professor Way thinks, may be by decomposition the origin of the double silicate, to which he says the retentive power of clays for manure is mainly attributable. And before him, Professor Hodges, of Belfast, alluded to the silicate of potash and silicate of alumina as being the result of the decay of the feldspar of granitic rocks; he showed also, by his analysis of the granite from Annalong, that it is a rock abundant in mineral elements suitable as food for plants, and gives it as follows:—

Silica	...	74.30
Peroxide of iron	...	5.00
Alumina	...	12.20
Lime	...	0.22
Magnesia	...	0.45
Potash and soda	...	9.33
Fluoric acid and water	...	0.50

100.00

Hence, the decay of the granitic subsoil of M. Rotschke was likely to supply very considerable quantities of the elements of the crops. Mr. Way shows that 20 crops of Wheat, of the not unusual quantity of 35 bushels of grain and 2 tons of straw and chaff, will remove only 5540 lbs., or less than 2½ tons per acre; and that if the soil be calculated at 10 inches in depth, and weighing 1000 tons per acre, it will only be 0.248 per cent. of the soil that would thus disappear. The soil was carried on after a two-crop-and-fallow principle—a very exhausting one, and, as we might expect, was by no means profitable. M. Rotschke commenced, therefore, to sell off. Year after year he carried away the whole of the produce in grain and straw, and determined to replace these bulky materials by small applications of concentrated manure. He began with Wheat, and sowed it with 12 cwt. of Rapecake per acre; then followed Potatoes, selling all off as usual; then Barley, then Clover, which he removed and sold off as before; then Rye, to which he however applied farm-yard dung; then Oats, then Clover, ploughed up, sown with Peas and Flax. And by thus acting he made money—sometimes as much as 6*l*. per acre English being realised by this sale of his produce. He did not, however, confine himself to Rapecake as a manure: he applied bones at the rate of about 9½ cwt. per acre, and ultimately used Peruvian guano, which he found reason to prefer to either of the above applications. The only manure he had seems to have been that of a couple of cows; for he appears to have sold off his horses annually in winter, and then says by these means he made farming a profitable concern. But after all, did he not apply every element of these plants?—carbonaceous and ammoniacal matter in the Rapecake, phosphoric and ammoniacal in the bones, and both in the guano? And keeping clean, and being a granitic subsoil, continually dissolving out its elements, with a soil mechanically favourable to the growth of crops, and indisposed to the rapid propagation of weeds, M. Rotschke was enabled to make profit of what would easily have ruined others. *Journal of the Chemico-Agricultural Society.*

### POULTRY.

**DORCHESTER SOCIETY FOR THE IMPROVEMENT OF DOMESTIC POULTRY.**—The trepidation of the originators and responsible agents of a first exhibition, intended to become an annual one, is fully compensated when the second by its numbers and quality gives most irrefragable proof of the success of the first, and the confidence reposed in its managers. The task of the reporter is also easier and more grateful when he has only to chronicle success, and to be in some measure the mouth-piece of many in expressing the thanks of those who have been indebted to the exhibition for pleasure or profit. Let us, then, begin by expressing our thanks to Mr. Andrews for his indefatigable endeavours, and let us also congratulate him on his

uniform success. The small show of last year has grown into one of 457 pens, comprising first-rate birds in every class, save the Spanish and Sebright bantams. The liberality of the nobility and gentry in giving eight pieces of plate for competition, greatly increased the interest of the show. The following were successful in gaining these prizes:—Messrs. Crane, Genge, Cockrane, Goodenough, Longman, William Hemming, and Pope. It will easily be understood that many of these prizes being given for not less than five or six specimens, some of the classes were thereby deprived of their best pens. The Dorkings were numerous and most excellent; the Messrs. Pope were, as usual, successful. Some very beautiful birds also took prizes belonging to Mr. Devenish, of Weymouth, Messrs. Fisher, Burnell, and Sayers. Mesdames Mills and Patterson were successful in White Dorkings, with others duly chronicled in the prize lists. The choice birds in these classes were immediately sold at high prices. The Cochin Chinas were very numerous and very good, as may be supposed, many of them being of Mr. Andrew's celebrated strain. In the cinnamon pens there were also real cinnamon cocks, such as we have not seen for a long time. But here, as elsewhere, in many otherwise excellent pens, disqualification followed trifles. Incongruity of colour, manifest defects in the combs even of the cocks, showed want of care in selection, which cannot be too strongly reprobated. If parties were indifferent to success, they would not compete, and it is not too much to ask them to be more careful in matching and selecting their birds. Judges often, while exercising their unthankful office, wish for the power to select four birds from three pens, and thus save themselves from difficulty; but how great is their surprise when they have done, and have possession of a catalogue, to find the three pens belonging to the same exhibitor. These remarks may belong more particularly to the grouse, partridge, and dark classes. Messrs. Steggall, Cyrus Clarke (two), Mrs. Fookes, Messrs. Goodenough, Sanders, C. Rawson (two), and Austin Sayers, took principal prizes. The blacks were weak in numbers, and again there was no really black cock. The whites were for the most part good, but every show only confirms the admitted fact, that it is most difficult to breed these birds with really yellow and well-feathered legs. Malays and game were both good classes, as they always are in Dorsetshire. The pencilled and spangled Hambros, especially the latter, were admirable. Mrs. Ker Seymour took both first prizes for pencilled, and Mr. Fisher, of Blandford, exhibited silver spangled that have seldom been surpassed. The Polands, numbering 39 pens, were very good, and the bantams of every description, save the silver Sebright, were far above the average. The ducks and geese were very numerous, and although good specimens were not wanting, still they were not so good, as a class, as we have seen lately. The turkeys were excellent, and the class of eccentricities showed the usual variety of silks, Frieslands, Ptarmigans, and others. The principal prize takers were Messrs. C. Rawson and Cyrus Clarke. All the arrangements were excellent, and the distant birds despatched immediately on the close of the exhibition, at 5 o'clock. The judges were H. Hinxman, Esq., of Durnford House, Salisbury, and Mr. J. Baily, Mount Street, London.

### Miscellaneous.

**Experiments in the Growth of Wheat.**—Having, as usual at this season of the year, just completed my experiments on the comparative value of several varieties of Wheat, a statement thereof I send for insertion in the next *Messenger*, if you think it will be interesting to your readers. I regret to say that my report is very discouraging as to the productiveness of the present crop of Wheat, arising from the very wet and unpropitious season for sowing Wheat, and also from a great deficiency in the ear. I find that the produce on my farm will be about 25 per cent. below the usual average, although the greatest part of my Wheat was well put in. The knowledge of my own crop, and having travelled a good deal through several counties during the last few weeks, when I observed many very bad crops in proportion to a good one, enables me to say that I believe we have not of this year's growth more than about half an average crop of Wheat in this country. My first experiment was made on the 18th of October, 1852, when the land was in a dry state, by drilling, at intervals of 8 inches, the following sorts of Wheat, at the rate of about 7 pecks of seed per acre. The soil was good, and had previously borne a crop of white Clover. I found the result to be as follows:—

	Quantity per Acre.	Value per Qr.	Value per Acre.
Spalding Red ... ..	Bush, pk. gal. 32 2 1	s. 64	£ s. d. 13 1 0
Improved Browick Red ...	34 0 0	66	14 0 6
Albert Red ... ..	31 2 1	66	13 0 11
Banham's New Red ... ..	34 2 1	63	13 12 8
Improved Browick Red ...	34 2 0	66	14 4 9
Lammas Red ... ..	32 0 1	66	13 5 0

On the same day, under the same circumstances, and on the same furlong of land, the following sorts of white Wheat were drilled, a row being missed, as usual, between either sort of Wheat, which produced as under.

	Quantity per Acre.	Value per Qr.	Value per Acre.
Imperial White ... ..	Bush, pk. gal. 31 0 1	s. 72	£ s. d. 14 0 0
Grace's White ... ..	31 3 0	70	13 17 9
Imperial White ... ..	31 1 0	72	14 1 0
Brown Straw White ... ..	27 0 1	72	12 4 0



Having for the last few years chiefly grown the imperial white and Brownish red Wheats, I was nevertheless anxious to be well assured that they were the most profitable sorts to grow. I therefore procured the best recommended varieties of Wheat that I could meet with to try against them, and also put them on a different kind of soil to the two first experiments. The land I selected was of a light moory nature, and not very productive. On October 28 a piece of land, after a white Clover ley, was drilled with the following sorts of Wheat, at the rate of about 8 pecks of seed per acre, on plots of land contiguous to each other. The result was as below:—

	Quantity per Acre.	Value per Qr.	Value per Acre.
	Bush. pk. gal.	s.	£ s. d.
Imperial White	26 3 0	72	12 0 9
Improved Brownish Red	27 2 0	68	11 6 10
Odessa Red	26 0 0	68	10 14 6
Ugly Buck Red	24 1 0	66	10 0 1

On the same day, and under the same circumstances, and close to the above experiment, the following varieties of Wheat were drilled, the land at the time being in a wet state.

	Quantity per Acre.	Value per Qr.	Value per Acre.
	Bush. pk. gal.	s.	£ s. d.
Improved Brownish Red	25 0 1	66	10 7 3
Scotch Red	23 0 1	64	9 5 0
Spalding Red	23 0 1	64	9 5 0

October 19.—I began another experiment on a different part of the farm—the soil also was of a moory nature, and had previously borne a crop of red Clover—by drilling at intervals of 8 inches the following varieties of Wheat at about eight pecks of seed per acre. The land, through the incessant rains, was very wet about the time of sowing, which, and subsequent causes, produced a very middling crop of Wheat, as will appear below.

	Quantity per Acre.	Value per Qr.	Value per Acre.
	Bush. pk. gal.	s.	£ s. d.
Improved Brownish Red	25 2 1	66	11 16 0
Donna Maria Red	24 3 1	66	9 0 6
Prima Donna Red	22 1 1	66	9 4 7
American White	23 0 1	62	10 8 8

It appears from the preceding experiments that the Brownish red and imperial white Wheats are the more profitable kinds to grow, having this year beaten 12 other varieties, and several others in former years. I believe, from repeated experiments which I have made, that great attention should be given in selecting the most productive sorts, a knowledge of which can only be arrived at from repeated trials, as single experiments are of little value. Seed corn ought to be dressed remarkably well, so as to separate all lean grains; it is, however, a common practice to sow thin seed, which sometimes produces a good sample of corn, although it must be wrong in principle to do so; and I know that as a general rule, from the sure testimony of experience, it is wrong in practice. *T. E. Pawlett, Beeton, Sept. 28; in Bell's Weekly Messenger.*

**Certain Improvements in Manures.**—George Elliott, of St. Helen's, Lancashire, manufacturing chemist. Patent dated March 4, 1852 (No. 546). The object of these improvements is the production of materials applicable to manuring purposes, by converting certain fatty and animal matters into a species of alkaline or earthy soap, which may be treated as convenient. When potash or soda is used as the alkaline part of the combination, it should be previously rendered caustic by lime, as in the ordinary process of soap-making. In order to effect the required combination, the fish, or other animal matter, is placed in iron pans, to which heat is applied, and the caustic leys of soda or potash, or the lime, as the case may be, are added. The mixture is then boiled down until it becomes so thick that it is difficult to stir. When potash is used, the process is carried no farther than this, as it then forms a soft soap which cannot be easily reduced to powder by drying, but may be diluted with water, and used as a liquid manure. When, however, soda or lime is the material employed, when the mixture is reduced to the state above described, it is to be transferred to iron plates heated by steam, on which it is spread to a thickness of about half an inch. It is there dried, and subsequently crushed, after which it is fit for use as a manure. In the process of boiling down, a vessel containing chloride of calcium is placed between the fire and the vessel containing the mixture, to prevent its burning. Claim: The manufacture or production of a material or materials, applicable to the purposes of manures, by the saponification of oily, fish, and refuse animal matters, as described. *From the Mechanics' Magazine, Sept. 10, 1853.*

### Calendar of Operations.

OCTOBER AND NOVEMBER.

**FARMER'S GLEANINGS, Oct. 31.**—Now that the harvest is over, and the disposable stock sold, we can take a deliberate view of the past season alike in its prosperous and adverse features, both of which have been rather prominent. Harvest commenced about the 1st September, and although changeable, the weather was on the whole favourable up to the 25th, when a heavy fall of rain came, followed by a hurricane blast from the north, which shed a good deal of the uncut corn, besides breaking down and rendering it difficult to cut and gather. After the storm the weather cleared up and continued fine until the 7th current, when rain again commenced falling, and has continued with but a few short intervals of dry weather up till this date. Previous to the 7th a considerable part of the crop, at least three-fourths, was secured in the condition; what remained has been much injured. The most valuable of the grain was shed out by the winds, the

next best part was malted in the stook, and another portion fell a prey to vermin, so that by the time it reached the stack-yard it was reduced to somewhere about half its original value. On some of the higher lying farms the whole of the crop was exposed to these deteriorating influences, and a part still remains in the fields. The grain crop, at its best, was deficient in bulk, and is also proving so in yield, and will now, as a whole, be greatly below an average. Turnips have improved greatly of late, and are still growing, but they are on the whole rather deficient; besides a want of plants caused by insects in the earlier stage of growth, they have had in some cases to fight a hard battle with the disease called fingers-and-toes, in which the fibres of the roots became knotted, the ascending sap being accumulated in the knots and free circulation prevented. In dry sunny weather the leaves fall down and decay, and the plant becomes dwarfish and often dies. The cause of the disease is generally believed to be too frequent repetition of the crop, but it may be at least as much due to too frequent ploughings and too short intervals of rest. The disease has not yet appeared where the rotation comprehends three or four years of Grass in succession, which is pretty generally the case in this and other high-lying districts. Potatoes have proved a most abundant crop. The disease appeared in the stems shortly before ripening, and although pretty general, was by no means fatal; a far larger crop of sound tubers has been secured than for several years past. The price is very high, and where raised for sale Potatoes will this year be a profitable crop. Glen pastures have been much less luxuriant than last year, probably owing to the long continued drought in the early part of the season; stocks have, notwithstanding, come to market in fair condition. Prices of sheep have declined considerably of late, and although still considered high, are in many cases barely remunerative. The young stock in spring and summer was purchased at the highest rates, and owing to the deficiency of the Turnip crop the demand for aged wethers has been limited, and the price reduced 3s. or 4s. a head of what was at one time anticipated. In few cases has more money been realised for the disposable stock than last year. A very small proportion of the stock is bred in the district, but is purchased in lambs from the southern breeders, and has this season been all paid for at the highest rates; while, on the other hand, the disposable stock has been reduced in value from the cause referred to, thus leaving the grazier for the present minus his profit, but hopeful of better things to come. Cattle command a ready market at high prices. Fed beasts are paying well, but where young and lean stock has to be disposed of, there is but little for the summer's grazier. Marketable grain is at present very high in price, and should it continue moderately so throughout the season, we expect that the two ends will meet and perhaps overlap a little. But even amid general prosperity, grievances are never altogether wanting, the most prominent of these at present is vermin. Although not easily moved, farmers are beginning to ask each other what can be done. Grouse, hares, pigeons, rabbits, and rooks have increased to such an extent as, in many cases, to dispute successfully with the tenant for the best half of the produce, and the question may be fairly asked, "Which of the two, game or tenants, enjoys most of the landlord's favour?" Among the glens the cultivated land bears but a very small proportion to the uncultivated, and is thus exposed on all sides; and from the moment when the seed is deposited until the crop is carried off, it is hourly preyed upon by innumerable assailants. In the great state hares and rabbits luxuriate among it, and have frequently a large margin all round the field, where the plant never gets above the cloods, besides many spots of a similar description throughout. So soon as the grain begins to ripen, grouse and pigeons in myriads come to the onslaught, the straw is trodden down and the grain is eaten up. How long are men, calling themselves free and independent, to endure such a state of things? There seems but small chance of the present generation of tenants doing anything; they feel the incubus, but cannot shake it off. A hereditary dread of displacing the laird is still too strong for the majority of them, and others know very well that if they were to make themselves conspicuous in such a case, they might so soon as their leases run out, be "digging" for the landlord. The tenant has a right to their sport no one will deny, but let it be at their own expense. Leases, they say, are entered upon with the distinct understanding that the game is to be preserved and fed; true; but it is also understood that other herbivorous birds and beasts are to be allowed to increase without limit under shelter of the game. Birds and beasts of prey that were intended to hold the more prolific herbivora in check, and keep the balance true, are all but exterminated. Every carnivorous head, wild or domestic, being a prize to the keeper. Surely landed proprietors are not aware of the extent of the evil, else many of them would not continue to prosecute a system which causes them to be unjust to their tenants.

**RHINDS OF GALLOWAY, Oct. 24.**—Since the date of last report we have had a succession of very wet unfavourable weather for gathering in the grain then outstanding, and it was scarcely possible to get it secured in anything of good order during the last month; little, if any, in this district now stands out, though the late gathered crops must be much damaged both in straw and grain. Where threshing has taken place, which is scarcely yet general, we hear complaints of deficiency in the yield, and especially of the light weight of Oats, which we fear is too true, from our own experience, and which is different from what we expected during harvest. Potato raising is in most instances completed, and the returns have been various, according to the nature of the land and variety of the Potato. We hear of few cases where the disease was less than one-half—in some cases not a fourth of the crop is sound. There is plenty of demand at mills in the neighbourhood for the diseased at 20s. per ton, and the sound ones are at present realising fully 4s. per ton. Turnips have improved much of late, and with favourable weather, will continue to do so for some time. Turnips which have been already lifted have not given such a large return as in ordinary years, their growth being retarded for nearly a month with the excessive dry weather after sowing. Large lots of cattle have been put into the feeding byres some weeks ago, and are beginning to make progress, while some farmers have those intended for stall feeding still depending on what they can gather on the pasture field, a practice which cannot be too much avoided. Not only is Grass at this season unfit to improve their condition, but exposed to the very changeable weather, with cold nights and a wet bed, they must necessarily deteriorate, and more than can be outwardly observed. We have always followed the practice of putting cattle early up to feed, as a great point is to keep cattle going forward, so that if thought advisable they might be fit for the market at an early period; or if disposed to keep longer, we have always found it of great advantage to have them well forward before the spring months, as Turnips begin to deteriorate in their feeding qualities, and it requires a larger amount of extra food to prepare cattle for the butcher. Sheep have also in some instances been fatted on Turnips, but the weather has as yet been very unfavourable, almost every day being wet. Mangold Wurzel has improved of late, and will be a fair crop, though the weight per acre will be much short of the Swede Turnip. Carrots in general will be much under the average of last year; in many cases they have been an entire failure. They are about double the price of the same time last year. Little Wheat has as yet been sown; there is not much land cleared for it, and the weather has been very unfavourable. There has been a slight reaction in the price of late sown Wheat, but it is not much higher; the price of both is still high enough to give a reasonable hope of fair keep to the feeder, and ample remuneration to the breeder and reaper. At the recent horse fair, good draft horses were in brisk demand, and high prices given. Farm work progresses slowly, being retarded by the very early rains. The ploughing of fallow land is in many cases now a tedious process, as most of our enterprising farmers subsoil all their fallow land, especially on recently drained soils. Grain markets have commenced at a much higher rate than for some years past. Wheat is now worth about 7s. 6d. per 60 lbs., and Oats about 3s. per 40 lbs.

**SOUTH HANTS, Nov. 1.**—Many of the farmers have since my last got in half their Wheat breadth. Some before this is read will have finished. The early part of the week the land turned up kind, and "kerned" rapidly, three times of the harrows "healed" the seed well. The present week since the heavy rains from Wednesday till Sunday morning, during which time the weather was thundery, and one night the lightning was very vivid and continuous, and heavy rain followed, the land has ploughed heavy, but every day improves its condition, fine drying winds and warm sun; indeed, for Wheat the land is in fine condition, and works well. Farmers are getting every spare horse and team to finish up whilst fine weather lasts. Theirrick-yards tell a tale which spurs them on to a brighter future, we all trust. They are not sowing very many acres over their usual quantity; they are properly applying all their dung, and even extra dressings, to the fields they sow, a better and more profitable plan than grasping at a larger acreage, and no dressing of manure to give it. Clover seeds look strong and well, though we hear there is a failure of Grass seeds; this in part may be attributed to inferior seed, and also to too early sowing during the spring frosts, which were sharp and trying. Turnips improve on good land and well manured, but on poorer soils they are but indifferent. Of this root and Mangold Wurzel there is but an inferior growth. Wheat and Barley threshing has been resumed during wet weather; the yield of both is very inferior, but the quality better than last year's. The pastures for cattle have become very swampy; the animals need more substantial diet in the yards. *R. S.*

**WEST SUSSEX, Nov. 1.**—After a very long wet time we have at last got fine weather, at least we have had two fine days together, so that we have hope that something will be done in the way of Wheat sowing, for we cannot say that much is yet done, and what has been got in has been on the dry land, otherwise it has been put in in a rather indifferent state. All Clover leys may be said to be ready for sowing, but where Peas and Beans were the preceding crop there is still a good deal to do, as it has been impossible to get upon any kind of fallow. Turnips are still growing; the weather, though wet, being so mild, and sheep are not, in many instances, yet put upon them. Wages have in most cases advanced 1s. or 2s. a week, but this is not by any means the effect of supply and demand, for there are abundance of hands to be had; and no doubt it is hard work with many to get a living with all provisions so high; and though we find the so-called mainstay of winter work, the flail, at work pretty generally, yet we must say that there has not to us appeared to be such redundancy of hands where less of it was used; and perhaps we shall all learn some day that the more improvement in implements and machinery takes place, the more hands are likely to be wanted. *G.*

### Notices to Correspondents.

**BOXES: A Sub.** You must shut the windows during wintry winds. If one could preserve the average of the month of May throughout the year, of course it would be to the advantage of the fattening animal; but in practice we must be satisfied with providing warmth by extra shelter during extra severity.

**FENCES: Chigwell.** If the land is drained, the "Quicks" need not be planted on a mound. Plant them in a single line; you thus save expense, ground, and labour of clearing. Plant young Quicks about 4 to 6 inches apart in the row. You will find a capital article by Mr. Grignon in the Journal of the English Agricultural Society; and another, by Mr. Bravender, in "Blackie's Cyclopaedia of Agriculture."

**IRISH MOSS: T.P.** asks if any of our readers have used it for feeding cattle; if so, they will confer a favour upon our correspondent by stating their experience.

**LIME: Cymro.** Lime is still caustic after it has been slaked, and indeed after it has been reduced to a mortar or to a cream. But when in the state of mortar, it is in practice comparatively inefficient, because you cannot mix it thoroughly with the soil.

**LOIS-WESDON CULTURE: Hazel.** Possibly we may hereafter be able to furnish in detail the information you ask for, meanwhile we must refer you to Mr. Smith's pamphlet.

### Markets.

COVENT GARDEN, November 5.

Vegetables and Fruit continue to be well supplied. English Grapes are sufficient for the demand. Peas chiefly consist of Marie Louise, Brown Beurre, Glout Moreau, Crassane, Chaudmont, Duchess d'Angoulême, and Passe Colmar. Filberts and Cobs are scarce, and somewhat dear. Some new Chestnuts have just made their appearance. Importations of Potatoes from the Continent are still kept up. Carrots and Turnips fetch from 2d. to 4d. per bunch. Potatoes are much diseased, but prices for them keep up. Mushrooms are more plentiful. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

#### FRUIT.

Pine-apples, per lb., 3s to 6s  
Grapes, hothouse, per lb., 1s to 3s  
Portugal, per lb., 6d to 1s  
Apples, per bush, 4s to 5s  
dessert-p, hf sieve, 2s to 4s  
Pears, per doz., 1s to 3s  
Lemons, per doz., 1s to 2s  
Oranges, per 100, 3s 6d to 5s

Almonds, per peck, 5s 6d  
sweet, per lb., 2s to 3s  
Chestnuts, per 100, 1s to 2s  
Filberts, p. 100 lbs., 95s to 110s  
Walnuts, per 100, 1s to 1s 6d  
Nuts, Barcelona, per bush, 22s  
Cobs, p. 100 lbs., 120s to 140s.

#### VEGETABLES.

Cabbages, per doz., 9d to 1s  
Cauliflowers, each, 4d to 1s  
Greens, per doz., 1s 6d to 1s  
Brussels Sprouts, doz., 1s 6d to 2s  
Potatoes, per ton, 60s to 160s  
per wt., 5s to 7s  
per bush, 2s 6d to 5s 6d  
Turnips, per doz., 2s to 3s  
Cucumbers, each, 6d to 1s  
Celery, per bundle, 6d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 1s to 1s 6d  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
per bush, 2s 6d to 3s  
Leeks, per bunch, 2d to 3d  
Shallots, per lb., 6d to 8d  
Garlic, per lb., 6d to 8d

Lettuce, Cab., p. score, 6d to 8d  
Coss, per score, 9d to 1s  
Corn Salad, p. hf sieve, 9d to 1s  
Small Salads, p. pun., 2d to 3d  
Horae Radish, p. bundle, 2s to 3d  
Mushrooms, p. pott., 1s to 2s 6d  
per bushel, 6s to 8s  
Sorrel, per hf sieve, 6d to 1s  
Artichokes, per doz., 3s to 5s  
Jerus., p. hf sieve, 1s to 1s 6d  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. 12 bunches, 1s 6d to 3s  
Mint, green, per bunch, 2d  
Basil, doz., per bunch, 4d  
Marjoram, p. doz., 2d to 3d  
Watercresses, p. 12 bun., 4d to 6d

HAY.—Per Load of 36 TRUSSES.

SMITHFIELD, THURSDAY, November 3.			
Prime Meadow Hay	80s to 110s	Clover	... 90s to 120s
Inferior do.	... 50 75	Second cut	... 70 110
Rowen	... 45 60	Straw...	... 36 40
New Hay	... — —		E. J. DAVIS.
CUMBERLAND MARKET, THURSDAY, November 3.			
Prime Meadow Hay	110s to 115s	Inferior Clover	... 50 110
Inferior do.	... 40 90	New do.	... — —
New Hay	... — —	Straw...	... 42 46
Old Clover	... 126 132		JOSHUA BAKER.
WHITECHAPEL, THURSDAY, November 3.			
Fine old Hay	... 100s to 108s	Fine old 2d cut Clover	110s to 115s
Inferior do.	... 90 95	Fine new do.	... 100 105
Fine new Hay	... 80 84	Inferior do.	... 90 95
Inferior do.	... 36 55	Fine new 2d do.	... 80 90
Fine old Clover	... 120 130	Inferior do.	... 50 60
Inferior do.	... 95 110	Straw	... — —

COAL MARKET.—FRIDAY, November 4.

Wylam, 24s. 6d.; Wallend South Hartlepool, 23s. 6d.; Wallend Hutton, 24s.; Wallend Stewarts, 24s.; Wallend Tees, 24s. — Ships at market 52.



## WOOL.—BRADFORD, THURSDAY, November 3.

There is no move in combing Wools, and the supplies in the hands of the staplers, and coming to the commission houses, augurs strongly that the country dealers have not had so many buyers visiting them as in years past. Its real value is only ascertained at the seat of consumption, but at present it is with the greatest difficulty sales of trifling importance can be effected. Noils and brokes continue to be made in limited quantity, and prices unaltered.

## HOPS.—BOROUGH MARKET, FRIDAY, November 4.

Messrs. Patten and Smith report that the Hop market has been in a quiet state since this day week. The declaration of the duty is daily expected, and until this is known little business will be done. Duty is estimated at 145,000.

## SMITHFIELD.—MONDAY, October 31.

We have nearly as many Beasts as on Monday last, but the dead markets are much clearer, and the quality of the supply is by no means improved, consequently prices on the average are better. The number of Sheep is about the same as last week; the demand is larger, and in the best descriptions there is an advance of about 2d. per 8 lbs.; inferior descriptions are still with difficulty disposed of. The supply of Calves is much larger, and prices generally are lower. From Germany and Holland there are 2062 Beasts, 5680 Sheep, and 282 Calves; and 2600 Beasts from the northern and midland counties.

Per st. of 8 lbs.—s d s	Per st. of 8 lbs.—s d s
Best Scots, Herefords, &c. ... 4 2 4 4	Best Long-wools... 4 8 to 5 0
Best Short-horns 4 0 4 2	Do. Shorn ... 0 0 0 0
2d quality Beasts 2 8 3 6	Ewes & 2d quality 3 10 4 4
Best Downs and Half-breds ... 4 10 5 2	Do. Shorn ... 0 0 0 0
Do. Shorn ... 0 0 0 0	Lambs ... 0 0 0 0
Beasts, 5597; Sheep and Lambs, 25,710; Calves, 326; Pigs, 290.	Calves ... 3 0 4 2

## FRIDAY, November 4.

The supply of Beasts is small, and the weather favourable, consequently trade is better. The best qualities being scarce, are readily sent in advance of 2d. per 8 lbs., and there is a more cheerful demand for all kinds. There are very few fresh Sheep, but quite sufficient for the demand. Prices are about the same as on Monday, but a clearance cannot be effected. Good Calves are scarce and dearer. Our foreign supply consists of 271 Beasts, 1040 Sheep, and 203 Calves. The number of Milch Cows is 85.

Best Scots, Herefords, &c. ...	Best Long-wools... 4 8 to 5 0
Best Short-horns 4 2 4 4	Do. Shorn ... 0 0 0 0
2d quality Beasts 2 10 3 8	Ewes & 2d quality 3 10 4 4
Best Downs and Half-breds ... 4 10 5 2	Do. Shorn ... 0 0 0 0
Do. Shorn ... 0 0 0 0	Lambs ... 0 0 0 0
Beasts, 906; Sheep and Lambs, 3930; Calves, 346; Pigs, 310.	Calves ... 3 4 4 8

## MARK LANE.—MONDAY, October 31.

The weather since Saturday morning has been fine, with south-easterly winds. The supply of Wheat from Essex and Kent to this morning's market was small, and realised at the prices of this day's night. There was a good attendance of buyers, particularly from the country, and a healthy retail business resulted in foreign at our last week's quotations. The finest qualities of Barley bring full late rates, inferior are difficult of disposal. Beans and Grey Peas are 1s. per qr. dearer, white unaltered in value. Oats bring an advance of 6d. per qr. upon the rates of this day's night. In the value of Flour there is no alteration.

PER IMPERIAL QUARTER.	s. 9.	s. 8.
Wheat, Essex, Kent, & Suffolk... White fine selected runs... ditto	68-76	68-76
— Talavera	70-82	Red 68-76
— Norfolk	Red 68-76	
— Foreign	60-84	
Barley, grind, & distil, 34s to 38s... Chev.	40-44	Malting 36-40
— Foreign... grinding and distilling	26-40	Malting
Oats, Essex and Suffolk	17-21	
— Scotch and Lincolnshire... Potato	22-24	Feed 17-21
— Irish	21-23	Feed 19-20
— Foreign... Poland and Brew	17-30	Feed 20-27
Rye	29-44	Harrow
Rye-meal, foreign	41-45	Farrow 41-45
Beans, Mazaga... 37 to 43s... Tick	40-48	Longpod 43-45
— Pigeon... 45s... 51s... Winds.	40-48	Egyptian 43-45
— Foreign	40-48	Suffolk 64-68
Peas, white, Essex and Kent... Boilers	62-66	Foreign 40-66
— Maple... 45s to 49s... Grey	44-47	Yellow...
Maize... White	70-75	
Flour, best marks delivered... per sack	55-65	Country 55-65
— 2d ditto... ditto	55-65	Per sack 58-65
— Foreign... per barrel	35-41	

## FRIDAY, November 4.

During the week a fair demand for Wheat from consumers appears to have been generally, and as it was unattended by speculation, they have been enabled to supply themselves more easily on the terms of last week, in which the continued dry weather and more peaceable appearance of politics have assisted them. The value of spring corn has been well supported.—The arrival of foreign Wheat this week has been large, but of other articles moderate. This morning's market was very thinly attended, and buyers showing a general disposition to defer their purchases, very little business resulted, and Mondays prices are consequently nominal for all articles.

## ARRIVALS FROM OCTOBER 31ST TO NOVEMBER 4TH.

	Wheat.	Barley.	Oats.	Flour.
English ...	1690 qrs.	2610 qrs.	190 qrs.	1530 sacks
Irish ...	200	1250		
Foreign ...	26260	8570	10910	6320 brls.

LIVERPOOL, TUESDAY, Nov. 1.—At this morning's market there was a fair attendance of the town and country trade, who, however, showed less eagerness to buy than of late, and although holders began by asking a further advance on Friday's prices, before the end of the market they lowered their pretensions, and only a small business resulted in Wheat and Flour, at barely the rates current on Friday, although still 1d. to 2d. per 10 lbs. and 6d. per barrel above those of this day week. Oats met with a fair demand, at 3d. per 45 lbs. advance for fine new mealings; and Oatmeal was saleable at 1s. to 2s. per load more money, for both old and new. Barley was in moderate demand, at extreme rates; and Egyptian Beans sold in retail, at 48s. to 49s., being an improvement of 4s. per qr. Indian Corn attracted rather less attention, still sales were made at 2s. to 3s. per qr. above the rates of this day week, 42s. to 43s. being obtainable for inferior, 44s. to 45s. per qr. for best yellow, and as much as 46s. for fine white.

AVERAGES	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Sept. 24 ...	56 7d	35 9d	21s 4d	35s 9d	43s 0d	41s 6d
Oct. 1 ...	59 5	37 0	22 2	36 11	42 10	42 11
— 8 ...	64 0	38 7	22 9	36 1	44 3	44 4
— 15 ...	63 4	40 10	23 10	39 11	45 8	37 4
— 22 ...	68 11	40 7	24 2	38 4	45 7	30 7
— 29 ...	69 1	40 9	24 8	40 10	48 4	51 10
Agg. Aver.	64 5	38 9	23 2	38 8	45 0	46 1

## FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

Prices	Sept. 24	Oct. 1	Oct. 8	Oct. 15	Oct. 22	Oct. 29
99s 12	...	...	...	...	...	...
GS 11	...	...	...	...	...	...
GS 4	...	...	...	...	...	...
61 0	...	...	...	...	...	...
59 5	...	...	...	...	...	...
56 7	...	...	...	...	...	...

## TO THE LOVERS OF FISH, AND SHOPKEEPERS.

—25 real YARMOUTH BLOATERS delivered in London for 2s. and 100 sent to any part of the kingdom on the receipt of a Post Office Order for 6s., by WILLIAM DEEKS, 7, Bow Street, Covent Garden, London, who has a direct supply from Yarmouth daily. All orders immediately attended to.—Post Office Orders made payable as above, on the Strand Office.

TO LOVERS OF FISH.—100 real YARMOUTH BLOATERS for 6s., package included. The above forwarded to all parts on receipt of penny postage stamps (or Post Office Order preferred) for the amount.—Address, THOMAS LETTIS, Jun., Fish Curer, Great Yarmouth.

RICHARD GUNTER'S BRIDE-CAKE ESTABLISHMENT, Lowndes Street, Albert Gate. Wedding Breakfasts furnished, complete or in part, with silver, china, glass, and attendants.—Corner of Motcomb and Lowndes Streets, Albert Gate, London.

## LAMPS, OIL, CANDLES, SOAP, ETC.

AT THE WHOLESALE PRICE FOR CASH, at the ALBANY LAMP AND CANDLE MANUFACTORY, 55, ALBANY STREET, REGENT'S PARK. Country orders amounting to £10 or upwards carriage free. Price lists sent on application.

DAVIES'S COMPOSITE CANDLES, 8½d., 9d., 10d., and 10½d. per lb.; Botanic Wax, 1s.; Patent Sperm, 1s.; German Wax, 1s. 2d.; British, 1s. 5d.; Sperm, 1s. 7d. and 1s. 8d.; Transparent Wax, 1s. 10d.; best Wax, 2s. 3d.; Moulds, 8d.; Store Candles, 7½d.; yellow Soap, 38s., 44s., 48s., and 52s. per 112 lbs. French Oil, 4s. per gallon. For Cash at M. P. DAVIES and Son's, 68, St. Martin's Lane.

FORD'S EUREKA SHIRTS.—Best quality, six for 40s.; second quality, six for 30s. Gentlemen desirous of obtaining shirts in the very best manner in which they can be made, are solicited to try Ford's Eureka's.—"The most unique, and the only perfect fitting shirt made." Observer.

Country residents purchasing in any provincial town are requested to observe on the interior of the collar-band the stamp—"Ford's Eureka Shirts, 38, Poultry" (without which none are genuine). Illustrated price lists, containing directions for self-measurement, and every particular, are forwarded post free; and the pattern books to select from of the new Registered Coloured Shirting, on receipt of six stamps. Agents are now being appointed in all towns. Terms, &c., forwarded on application. RICHARD FORD, 38, Poultry, London. Manufactory, Hay's Lane, Tooty Street.

METCALFE AND CO'S NEW PATTERNT TOOTH BRUSH, PENETRATING HAIR BRUSHES, and SMYRNA SPONGES.—The Tooth Brush performs the highly important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2s. per box.

## FENDERS, STOVES, AND FIRE-IRONS.

Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 21, 14s. to 5s. 10s.; ditto, with ornate ornaments and two sets of bars, 5s. 10s. to 12s. 12s.; Ironed Fenders complete, with standards, from 7s. to 3s.; Steel Fenders from 1s. 10s. to 6s.; ditto with rich ornate ornaments, from 2s. 15s. to 7s. 7s.; Fire-irons from 1s. 9d. the set to 4s. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges, 1st.—From the frequency and extent of his purchases; and, 2dly.—From those purchases being made exclusively for cash.

DISH COVERS AND HOT-WATER DISHES in every material, in great variety, and of the newest and most recherche patterns. Tin Dish Covers, 6s. the set of six; Block Tin, 12s. 3d. to 27s. 2d. the set of six; elegant modern patterns, 23s. 3d. to 57s. 6d. the set; Britannia Metal, with or without silver-plated handles, 73s. to 110s. 6d. the set; Sheffield Plated, 10s. to 16s. 10s. the set; Block Tin Hot-water Dish, with wells for gravy, 13s. to 19s.; Britannia Metal, 20s. to 72s.; Sheffield plated, full size, 9s. 10s.

GS CHANDELIERS AND BRACKETS.—The increased and increasing use of gas in private houses has induced WILLIAM S. BURTON to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE SHOW ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Ironmongery Establishment the largest and most remarkable in the kingdom, viz., from 12s. 6d. (two lights) to 16l. 6s.

## LAMPS OF ALL SORTS AND PATTERNS.

The largest, as well as the choicest, assortment in existence of PALMER'S MAGNUM and other LAMPS, CAMPBINE, ARGAND, SOLAR, and MODERATEUR LAMPS, with all the latest improvements, and of the newest and most recherche patterns, in ornate, Bohemian, and plain glass, or papier-mâché, is at WILLIAM S. BURTON'S, and they are arranged in one large room, so that the patterns, sizes, and sorts can be instantly selected. PALMER'S CANDLES, 8½d. per lb.—Palmer's Patent Candles, all marked "Palmer".

Single or double wicks	...	...	8½d. per lb.
Mid. size, 3 wicks	...	...	9d. "
Magnum, 3 or 4 wicks	...	...	9½d. "
English Patent Campbine, in sealed cans	...	...	6s. per gallon.
Best Colza Oil	...	...	4s. 0d. "

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all commodious), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of. No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street and 4 and 5, Perry's Place.

## NO CHARGE FOR STAMPING ARMS, CRESTS,

INITIALS, &c., on paper and envelopes, at LOCKWOOD'S well-known establishment, 75, New Bond Street. Good cream-lined Note-paper, five quires for 9d.; Thick ditto, five quires, 1s.; Albert and Queen's sizes, five quires for 6d., 6d., and 1s.; Envelopes, 3d. to 1s. 6d. per hundred; Foolscap paper, 7s. 6d. per ream; Copybooks, 2s. 6d. per dozen. Card Plate engraved, 2s. 6d. of 100 Cards printed, 2s. 6d. Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, Lockwood's, 75, New Bond Street. Country orders for 20s. sent carriage free.

## LANDSCAPE GARDENING REVIVED AS AN ART.

MR. THOROLD, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure-grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

## SCHOOL FOR GENERAL AND SCIENTIFIC

EDUCATION (especially with regard to Agriculture), Wickham Market, Suffolk, conducted by Mr. DOWNS. The course of instruction comprises all the requisites of a sound and liberal education, and the terms are moderate and inclusive. Vacancies for two private pupils. Soils, Minerals, and Manures carefully analysed.

## EDUCATION FOR YOUNG LADIES,

AT CHESBURY, HERTS, ADJOINING THE NURSERY. MISS PAUL, who has had several years' experience in Tuition, begs to announce that she has vacancies for a few Pupils as Boarders. Terms moderate. Prospectuses will be forwarded by post on application.

## STAMMERING.—A gentleman, educated in the

Medical profession, cured himself by adopting a few simple rules; the organs of speech are brought under complete control, and the most confirmed cases permanently cured. Terms moderate. References to persons cured. Children received into the house.—Address X. Y. Z., 15, Melbourne-square, North Brixton, Established 20 years.

## KNOW THYSELF!—Professor BLENKINSOP continues to receive from individuals of every rank the

most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. BLENKINSOP, 344, Strand, London.

## PAUL GAGE'S ELIXIR.—This tonic, anti-phleg-

matic medicine has been established by 44 years' success as a most valuable remedy for phlegm, and all the disorders arising from it, viz., bilious complaints, catarrh, asthma, convulsive coughing, indigestion, colic, cholera morbus, ague fevers, gout, worms, hooping cough, females' complaints, &c. It is demonstrated in a pamphlet on Phlegm, delivered gratis at all the depots, why PAUL GAGE'S ELIXIR has not failed in desperate cases, where other means have been found of no avail. Sold in bottles at 2s. 9d. and 4s. 6d., by PAUL GAGE, 462, New Oxford Street; and by all respectable medicine vendors.

## SPENCER'S PULMONIC ELIXIR.—The two

great characteristics of Spencer's Elixir are, the allaying of all irritation in the delicate and susceptible coating of the throat and chest; and the imparting of tone and vigour to the respiratory organs, whereby they are enabled to discharge their functions freely, and thus overcome any difficulty in breathing, arising from cold, foggy, or impure atmosphere, and to throw off those insidious attacks which too often lay the groundwork of Consumption. For all temporary and local affections, as Wheezing, Irritation of the Throat, Huskiness of Voice, and Influenza, Spencer's Pulmonic Elixir gives instant relief, while in more Chronic Disorders (as periodical Coughs or inveterate Asthma), it is equally efficient, though, of course, requiring a little more perseverance in the use of the medicine.—Sole Proprietors and Preparers, T. ROBERTS & Co., 8, Crane Court, Fleet Street, London.—Ask for "Spencer's Pulmonic Elixir" the Best Cough Medicine in the World. To be had through all chemists.

## PAINS IN THE BACK, GRAVEL, LUMBAGO, RHEUMATISM, GOUT,

## INDIGESTION, FLATULENCE, NERVOUSNESS, DEBILITY, &amp;c.

## DR. DE ROOS' COMPOUND RENAL PILLS.

As their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 38s. per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. De Roos, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1s.

## HOLLOWAY'S OINTMENT AND PILLS IN-

HOLLOWAY'S REMEDIES FOR BAD LEGS.—Mr. Charles Cook, Grocer and Tea Dealer, of Chipping Norton, Oxfordshire, suffered for many years with a Bad Leg, on which there were many frightful running wounds, pronounced by the faculty incurable; his strength was reduced so much by the continued discharge, that he appeared beyond human aid, and even his friends relinquished all hopes of his recovery; at this crisis he was recommended to try Holloway's Ointment and Pills, which in a very short time produced a change for the better; in three months his leg was completely cured and his health has remained unimpaired ever since.—Sold by all Druggists; and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

## VALUABLE REMEDIES FOR THE AFFLICTED.

## DR. ROBERTS'S CELEBRATED OINTMENT,

called the POOR MAN'S FRIEND, is confidently recommended to the Public as an unfailing remedy for Wounds of every description, certain cure for Ulcerated Sore Legs, if 20 years' standing; Cuts, Burns, Scalds, Bruises, Chilblains, Scorbatic Eruptions and Pimples on the Face, Sore and Inflamed Eyes, Sore Heads, Sore Breasts, Piles, Fistula, and Cancerous Humours, and is a specific for those afflicting Eruptions that sometimes follow vaccination. Sold in pots at 1s. 1½d. and 2s. 9d. each.

Also his PILULE ANTISCROPHULE, confirmed by more than 40 years' experience to be, without exception, one of the best alternative medicines ever compounded for purifying the Blood, and assisting nature in all her operations. Hence they are used in Scrophulous, Scorbatic Complaints, Glandular Swellings, particularly those of the Neck, &c. They form a mild and superior Family Aperient, that may be taken at all times without inconvenience or change of diet. Sold in Boxes, at 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 38s.

Sold Wholesale by the Proprietors, BEACH and BARNICOTT, at their Dispensary, Bridport; by the London houses. Retail by all respectable Medicine Vendors in the United Kingdom.

OBSERVE.—No Medicine sold under the above name can possibly be genuine, unless "BEACH and BARNICOTT, late Dr. Roberts, Bridport," is engraved on the Government Stamp affixed to each package.

## ASHLEY'S ANTI-DEPILATORY EXTRACT, for

strengthening and preventing the Hair falling off; prepared and sold wholesale and retail by ASHLEY, Perfumer, Brixton, in bottles; half pints, 2s. 6d.; pints, 4s. 6d.; quarts, 7s. 6d. Also, ASHLEY'S CLEANSING POMADE, for freeing the head from scurf, and keeping it clean, in pots, 1s. and 2s. each. Also, ASHLEY'S MEDICATED POMADE, warranted to cure the ringworm, scald heads, and all kinds of scorbatic eruptions; in pots, stamp included 1s. 6d. and 2s. 6d. each. Reference of the highest respectability can be given. Wholesale Agents—Barclay & Son, Farringdon Street; Sutton & Co., Bow Churchyard; Edmonds, 67, St. Paul's Churchyard; Keating, 79, St. Paul's Churchyard; Butler & Harding, 4, Cheapside; Sanger, 150, Oxford Street; and may be had retail from all respectable Chemists in town or country.



## GLASS.

THOMAS MILLINGTON, 'Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—  
PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.
6 by 4	12	12 by 10	14	14 by 11	16	16 by 12	18	18 by 13	20	20 by 14	22
6 1/2 by 4 1/2	12 1/2	12 1/2 by 10 1/2	14 1/2	14 1/2 by 11 1/2	16 1/2	16 1/2 by 12 1/2	18 1/2	18 1/2 by 13 1/2	20 1/2	20 1/2 by 14 1/2	22 1/2
7 by 5	14s. 6d.	13 by 10	15	15 by 11	17	17 by 12	19	19 by 13	21	21 by 14	23
7 1/2 by 5 1/2		13 1/2 by 10 1/2	15 1/2	15 1/2 by 11 1/2	17 1/2	17 1/2 by 12 1/2	19 1/2	19 1/2 by 13 1/2	21 1/2	21 1/2 by 14 1/2	23 1/2
8 by 6		14 by 10	16	16 by 11	18	18 by 12	20	20 by 13	22	22 by 14	24
8 1/2 by 6 1/2		14 1/2 by 10 1/2	16 1/2	16 1/2 by 11 1/2	18 1/2	18 1/2 by 12 1/2	20 1/2	20 1/2 by 13 1/2	22 1/2	22 1/2 by 14 1/2	24 1/2
9 by 7		15 by 10	17	17 by 11	19	19 by 12	21	21 by 13	23	23 by 14	25
9 1/2 by 7 1/2		15 1/2 by 10 1/2	17 1/2	17 1/2 by 11 1/2	19 1/2	19 1/2 by 12 1/2	21 1/2	21 1/2 by 13 1/2	23 1/2	23 1/2 by 14 1/2	25 1/2
10 by 8		16 by 10	18	18 by 11	20	20 by 12	22	22 by 13	24	24 by 14	26
10 1/2 by 8 1/2	17s. 8d.	16 1/2 by 10 1/2	18 1/2	18 1/2 by 11 1/2	20 1/2	20 1/2 by 12 1/2	22 1/2	22 1/2 by 13 1/2	24 1/2	24 1/2 by 14 1/2	26 1/2
11 by 9		17 by 10	19	19 by 11	21	21 by 12	23	23 by 13	25	25 by 14	27
11 1/2 by 9 1/2		17 1/2 by 10 1/2	19 1/2	19 1/2 by 11 1/2	21 1/2	21 1/2 by 12 1/2	23 1/2	23 1/2 by 13 1/2	25 1/2	25 1/2 by 14 1/2	27 1/2
12 by 9		18 by 10	20	20 by 11	22	22 by 12	24	24 by 13	26	26 by 14	28
12 1/2 by 9 1/2		18 1/2 by 10 1/2	20 1/2	20 1/2 by 11 1/2	22 1/2	22 1/2 by 12 1/2	24 1/2	24 1/2 by 13 1/2	26 1/2	26 1/2 by 14 1/2	28 1/2

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

British Plate, Patent Plate, Sheet, Crown, and Coloured Window Glass. Pure White Shades for Ornaments. Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c. Tariffs of the above on application to

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## GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardener's Chronicle* first Saturday in each month.

## ESTABLISHED ABOVE SIXTY YEARS.

ROBERT METTAM, BRITISH and FOREIGN WHOLESALE WINDOW GLASS WAREHOUSE, 30, Princess-street, Leicester-square.

16 oz. Sheet Glass in Boxes of 100 feet.

Under 6 ins. by 4 ... 1 1/2 p. foot.  
6 by 4, under 8 by 6, 2d. " 16 oz. ... 3d. to 8 1/2 p. foot.  
8 by 6 " 12 by 10, 2 1/2 d. " 21 oz. ... 3d. to 5d. " 26 oz. ... 5d. to 7d. "

Foreign Sheet Glass, packed in boxes of 200 feet each, large sizes—4ths, 2 1/2 d.; 3rds, 2 1/2 d. per foot net.  
Hartley's Patent Rough Plate Glass, Glass Tiles and Slates, and every description of Glass now manufactured. Estimates and Price Lists forwarded post free.

JAMES PHILLIPS & Co., 116, BISHOPSGATE STREET WITHOUT.

HARTLEY'S PATENT ROUGH PLATE GLASS, for CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTORIES, SKYLIGHTS, &c.

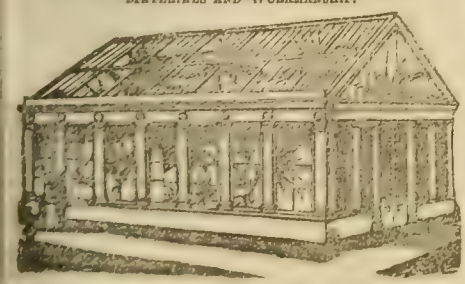
Packed in Crates, for Cutting-up of the sizes manufactured.	3/4th inch thick.	3/8th inch thick.	1/2 inch thick.
80 inches wide and from 40 to 50 long } Or 20 " " 50 " 70 " } " " " above 70 " }	s. d. s. d. s. d.	0 5 0 7 0 9	0 6 0 7 0 9 1/2
In Squares cut to the sizes ordered.			
Under 8 by 6	0 4	0 5	0 6
8 by 6 and under 10 by 8	0 4 1/2	0 6	0 7
10 by 8 " 14 by 10	0 5	0 6 1/2	0 8
14 by 10 " 1 1/2 ft. sup., if the length does not exceed 20 inches.	0 5 1/2	0 7	0 8 1/2
1 1/2 ft. sup. " 3 ft. sup., or if above 20 inches long	0 6	0 7 1/2	0 9
8 " " 4 " 20 " 30 "	0 6 1/2	0 8	0 9 1/2
4 " " 5 " 30 " 35 "	0 7	0 8 1/2	0 10
5 " " 6 " 35 " 40 "	0 7 1/2	0 9	0 10 1/2
6 " " 8 " 40 " 45 "	0 8	0 9 1/2	0 10 1/2
8 " " 10 " 45 " 55 "	0 8 1/2	0 9 1/2	0 10 1/2
10 " " 12 " 55 " 65 "	0 9	0 10	0 11
12 " " 14 " 65 " 75 "	0 9 1/2	0 10 1/2	0 11 1/2
15 " " 20 " 75 " 90 "	0 10	0 11	0 12
20 " " 25 " 90 " 100 "	1 0	1 1	1 2
25 " " 30 " 100 " 120 "	1 0 1/2	1 1 1/2	1 3

There can be no question now that Rough Plate Glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of sheet or transparent glass, and it has many advantages peculiar to itself, without a single disadvantage as a set-off.—*Gardener's Chronicle*.

JAMES PHILLIPS & Co., Horticultural Glass Merchants, 116, Bishopsgate Street Without, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY and OLMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurseriesmen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

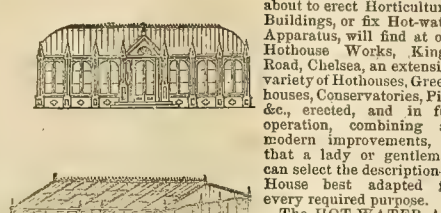
Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

## HORTICULTURE IN ALL ITS BRANCHES.



J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.



The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

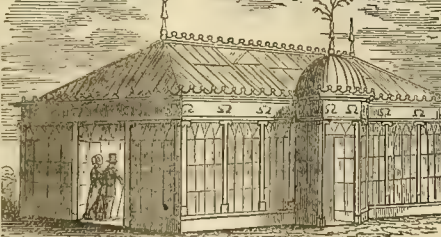
The HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.



EDWARD and A. WEEKS (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work, in the very best manner, and at a reduced price. Materials and Workmanship warranted Best Quality. Plans and estimates for all kinds of Horticultural Buildings forwarded on application.

Their Hot Water Apparatus is particularly worthy of attention, it being constructed on the most approved principles, with every modern improvement for effectively heating every variety of Horticultural Buildings, Churches, Offices, Halls, &c.

E. & A. WEEKS can confidently refer to any of those by whom they have been employed.

GREEN and HOT-HOUSES made by machinery, at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. 14-inch Greenhouse Lights, at 3d. per foot; 2-inch, at 4d. per foot. The Trade and Merchants sending Orders to Australia supplied at wholesale prices. List of Prices by enclosing two postage stamps.

ROCKWORK, ORNAMENTAL WATER-FALLS, FOUNTAINS, RUSTIC WORK, and LANDSCAPE GARDENING undertaken on a large or small scale by Mr. GREENE, who will attend for consultation in any part of the kingdom.—429, Strand.

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THE PATENT PORTABLE SUSPENSION STOVE will warm and ventilate at the same time, and is recommended by eminent medical men as the only stove suitable for the chamber of the invalid. It is made in sizes suited for the largest building or the smallest office. To those who study health, comfort, and economy, it offers advantages which no other possession. No 3, price 20s., will burn 10 hours without attention, at a cost of three farthings. Prospectuses, with prices and instructions, post free. In operation daily at DEANE, DRAY, & Co.'s show-rooms, &c., London Bridge.

CUNDY'S PATENT PURE WARM AIR VENTILATING STOVE.—The only Pedestal Stove which gained a Prize Medal (Class 476) at the Great Exhibition of 1851. Especially adapted for warming Churches, Chapels, Schools, and Mansions.—Can be purchased of CUTLER & SONS, 16, Great Queen Street, Long Acre. (Sole Manufacturers.)

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AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Libraries, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

## LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by unpractised persons. Price ONE PENNY PER SQUARE FOOT. Croggon's Patent NON-CONDUCTING FELT for steam-boilers and Pipes, saves 25 per cent. of fuel.—Samples and testimonials sent by post on application to CROGGON & Co., 2, Dowgate Hill, London, who also supply SHIP-SHEATHING FELT and INODOUR FELT for damp walls, and lining iron houses, to equalise the temperature.

"FRIGI DOMO."—Patronised by Professor Lindley for the Royal Horticultural Society, the Royal Zoological Society, by his Grace the Duke of Northumberland at Syon House, and many cultivators of first class Horticultural and Floricultural produce.

"FRIGI DOMO," a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.



## IMPROVED GRASS-CUTTING &amp; ROLLING MACHINE.

ALEXANDER SHANKS & SON, MACHINE MAKERS, Arbroath, Forfarshire, respectfully solicit notice to their IMPROVED GRASS-CUTTING and ROLLING MACHINE for Lawns, the complete success of which, and its acknowledged excellence and superiority over all other machines of the kind, have now been fully established.

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## Sales by Auction.

**COCHIN CHINA FOWLS.**

PERIODICAL SALE ON TUESDAY, 15TH NOVEMBER.

**MR. J. C. STEVENS'S** next Sale will take place at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 15th Nov., at 12 o'clock precisely; and the attention of Poultry Fanciers is especially directed to it. It will include a selection from Mrs. Fooks, of Whitechurch, Blandford, who has recently taken the first Prize for Chickens at Dorchester, and many very choice Buff and white Birds from the Rev. J. Hutchinson, Mrs. Newton, Forster Reynolds, Esq., John Fletcher, Esq., &c.—Catalogues by forwarding a stamped directed Envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

**COCHIN CHINA FOWLS.**

**MR. J. C. STEVENS** is instructed to Sell by Auction, at 38, King Street, Covent Garden, on 22d November, at 12 o'clock precisely, 70 lots of Silver-cinnamon, Buff, and White Birds, selected from the yard of C. W. Harvey, Esq., of Walton, Liverpool, bred from the stock of Mr. Beeby, Mrs. George, Mr. Herbert, &c.

**CHOICE DUTCH BULBS, LATE NAMED TULIPS, ETC.**

**MR. ALEXANDER** will sell by Auction, at the Mart, near the Bank of England, on THURSDAY, Nov. 10, at 1 o'clock precisely, a CASE of DUTCH ROOTS, comprising choice named Hyacinths, Crocus, Gladioli, Ranunculus, Anemones, Jonquils, Narcissus, Crown Imperials, &c.; also choice late Tulips, comprising Rose Lark, Camus de Craie, Sans Egalé, Godet Parfait, Louis XVI., David, Pompe Funebre, &c.—May be viewed on the morning of Sale; Catalogues had at the Mart, and of Mr. ALEXANDER, Shacklewell, London.

**TO GENTLEMEN, FLORISTS, AND OTHERS.**

**MESSRS. PROTHEROE AND MORRIS** will sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, Nov. 11, at 12 o'clock, a First Class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Snowdrops, Tulips, &c.; also a selected assortment of Standard and Dwarf Roses, Ornamental Trees, and American Plants, well set with bloom buds, &c.—May be viewed the morning of Sale. Catalogues had at the Mart and of the Auctioneers, American Nursery, Leytonstone, Essex.

**FORDHAM, CAMBRIDGESHIRE.**

**TO NOBLEMEN, GENTLEMEN, NURSERYMEN, &c.**

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. W. H. Bland, in consequence of the ground being required for other purposes, to submit to Public Competition by Auction, on the Premises, Fordham, on MONDAY, Nov. 21, and following day, at 11 o'clock each day, the whole of the valuable NURSERY STOCK, riding over 6 Acres, consisting of the best description of Fruit and Forest Trees, Evergreen and Deciduous Shrubs, a large and fine assortment of Standard and Dwarf Roses, fine Mulberry Trees, Large Specimen Cedar of Lebanon, and other Ornamental Trees; 1000 yards of Box Edging, &c.—May be viewed prior to the Sale. Catalogues may be had, 6d. each (returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

**PARADISE NURSERY.**

**MESSRS. PROTHEROE AND MORRIS** are commissioned by Mr. FANLIN (in consequence of the lease being disposed of), to Sell by Auction, on the Premises, Paradise Nursery, Hornsey Road (without the slightest reservation), on THURSDAY, November 17, and following day, the whole of the choice GREENHOUSE PLANTS, consisting of Camellias of various sizes, in considerable quantities, well set with bloom buds; several thousand Ericas, of the best varieties, in fine condition; Azalea indica, Epacris, Boronia serrulata, &c.; also the Nursery Stock, consisting of fine Evergreens, Ornamental Trees and Shrubs, Box edging, and other effects.—May be viewed prior to the Sale; and Catalogues had, (6d. each, returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

**CROYDON.**

**MESSRS. PROTHEROE AND MORRIS** will Sell by Auction, on the premises, Croydon Nursery, Handcroft Road, Croydon, on MONDAY, Nov. 7th, and following day, at 11 o'clock each day (by order of Mr. T. Preston), a portion of the valuable NURSERY STOCK, consisting of fine Evergreens, Ornamental Trees, and Deciduous Shrubs, comprising fine fan and Irish Yews, Arbor-vites, Oaks, Box, red Cedars, Common and Portugal Laurels, Laurestinus, Aucubas, Hollies, sweet Bays, Privet, Mahonias, Arbutus, Rhododendrons, Pinus (sorts), Cedar of Lebanon in pots, Spanish Brooms, Junipers, &c.; also, Laburnum, Scarlet Thorns, Persian and other Lilacs, Syringas, Altheas, Daphnes, Ribes, Almonds, Ailanthus, Pyrus japonica, Acazia, Sweet Briar, Cypress, Honeysuckles, Deutzia, Eucalyptus, Sycamore, Limes, Planes, Silver and Weeping Birch, Acacias, Moss and Cabbage Roses, Virginian Creepers, yellow Jasmines, &c., &c.; with a quantity of Box Edging, Privet Hedges, &c.—May be viewed one week prior to the sale; Catalogues may be obtained on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

**BRIXTON.**

**TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.**

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. E. DENYER to submit to public competition by Auction, on the Premises, the Loughborough Nursery, Loughborough Road, Brixton, near London, on MONDAY, Nov. 14th, and following days, at 11 o'clock, in consequence of the Lease having nearly expired, the whole of the valuable NURSERY STOCK, consisting of fine Evergreens, Deciduous Shrubs, Fruit, Forest, and Ornamental Trees, comprising, green and variegated Hollies, do. Box, English and Irish Yews, China and Siberian Arbor Vite, Aucuba, Arbutus, Alaternus, Portugal and Common Laurels, Laurestinus, Sweet Bay, Rhododendron, Azalea, Kalmia, Cedrus Deodara, Pinus of sorts, Juniper, Cypress, Magnolia grandiflora, Deutzia scabra, Guedres Rose, Lilac, Standard Thorns, Labrum, Lime, Plane, Acazia, Clematis flammula, Irish Ivies, &c. Standard and Dwarf Peach, Nectarine, Apricot, Plum, Cherry, Apple, Pear, Gooseberry, and Currant, Seakale, Asparagus, &c. Also about 3000 Standard Pillar and Dwarf Roses.—May be viewed one week prior to the Sale; Catalogues had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

**TO GENTLEMEN, BUILDERS, CONTRACTORS, AND OTHERS.**

**MR. JOHN WILLMER** will Sell by Auction, on the Premises, Sunbury Nursery, on TUESDAY, Nov. 22, and two following days, at 12 o'clock each day, without reserve, the whole of the NURSERY STOCK, the ground being required for other purposes. The stock comprises striped and green Hollies, Yews, Spruce Fir, striped Box, Laurestinus, Arbutus, common and Portugal Laurels, Rhododendrons, Aucubas, Sweet Bays, Arbor-vite, Yucca gloriosa, Red Cedar, Standard, Dwarf, and Trained Fruit Trees, Gooseberries, and Currants; Elm, Lime, Oak, Horse Chestnut, Beech, and other Forest Trees of large size. May be viewed one week prior to the sale; and Catalogues had (6d. each, returnable to purchasers), at the Red Lion, Hampton; Griffin, Kingston; Greyhound, Richmond; Coach and Horses, Brentford; Grapes, Uxbridge; Swan, Windsor Railway Tavern, Staines; North Star, Slough; Crown, Chertsey; King's Arms, Weybridge; Mr. WAY, Covent Garden, London; on the Premises; and of the Auctioneer, Sunbury, Middlesex.

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**FARMING STOCK AND IMPLEMENTS, HOUSEHOLD FURNITURE, &c.**

**MESSRS. DAVIS AND VIGERS** are directed to Sell by Auction, on the premises, Normandy and Claygate Farms, Ash, between Guildford and Farnham, and near to the Ash Stations on the South-Eastern and South-Western Railways, on WEDNESDAY, Nov. 9, and following day, at 11 for 12 o'clock, and without reserve, the LIVE and DEAD FARMING STOCK, comprising 11 Horses, 5 Oxen, 8 Welsh Runts, 4 Milch Cows (1 with calf by side), 1 Weaning Cow Calf, 2 Sows, 10 Fatting Pigs, 17 Stores, 105 Southdown Fatting Sheep, 80 Head of Poultry, 100 Loads of Hay, the valuable crop of Wheat, Oats, Barley, and Beans, with the Straw of 80 Acres, 20 Acres of Mangold Wurzel, Swedes, and Turnips; Valuable Implements, new within 12 months, including Iron Roller, Scarifier, Ploughs, Waggon, Carls, Horsehoes, Landpressers, 2 Turnip Cutters, Cake Crusher, Winnowing Machine, Chaff-cutting Machines, &c.; 2 superior Dog Carts, Harness, &c.; and the HOUSEHOLD FURNITURE, well made, nearly new, and in good condition. The property may be viewed two days prior, and morning of Sale.—Catalogues may be had on the Premises; at the White Hart, Farnham; Guildford; The Angel, Godalming; The Lion and Lamb, Farnham; and at the Auctioneers' Offices, 3, Frederick's Place, Old Jewry, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLERT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and Published by them at the Office, No. 3, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—SATURDAY, NOVEMBER 5, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 46.—1853.]

SATURDAY, NOVEMBER 12.

[PRICE 6d.

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## PROGRAMME OF THE GREAT AND GENERAL EXHIBITION OF FLOWERS AND PLANTS, which is to take place in the Winter Garden of the Sovereign Duke of Nassau, at BIEBRICH, from APRIL 1 to APRIL 15, 1854.

The Exhibition begins on April 1, and closes on the 15th of the said month. It is to take place in a large Hall conveniently erected for the purpose, situated in the Duke's garden. According to the beneficence of the Duke, who allows or grants a considerable sum of money for the construction of the building and arrangement of it, as well as for the distribution of Prizes, it is expected that many partakers will find some encouragement. The greatest care will be taken of the Plants and Flowers during their stand in the said building; and will be advantageously placed, according to their different species and nature. Persons desirous of sending Plants are invited to forward them by the 25th of March at the latest, so as to give time to place them in a proper and convenient order. They are to be packed up and taken away on April 16, by a clever and intelligent man. The Plants and Flowers specified as follows are to obtain prizes or premiums fixed by competent men:—

- 1st Prize.—400 florins for the finest collection of PLANTS of CULTURE, to the number of 30 at least, and 50 exemplars; 50 florins to the accessory.
- 2d Prize.—300 florins for the finest collection of ERICAS, to the number of 50 different species at least; 100 florins to the accessory.
- 3d Prize.—300 florins for the finest collection of ROSES, to the number of 100 different species, and 500 exemplars; 75 florins to the accessory.
- 4th Prize.—300 florins for the finest collection of AZALEAS INDICA, to the number of 50 at least, and 100 exemplars; 75 florins to the accessory.
- 5th Prize.—300 florins for the finest collection of CAMELIAS, to the number of 80, and 160 exemplars; 75 florins to the accessory.
- 6th Prize.—300 florins for the finest collection of RHODODENDRONS ARBOREUM, and their HYBRIDS, to the number of 50 at least, and 60 exemplars; 75 florins to the accessory.
- 7th Prize.—150 florins for the finest collection of AZALEAS (pontica), in open ground, to the number of 50, and 150 exemplars.
- 8th Prize.—150 florins for the finest collection of bulbous plants, such as AMARYLLIS, TULIPS, HYACINTHS, and ANEMONES, to the number of 150 at least, and 300 exemplars.
- 9th Prize.—50 florins for the finest collection of CINERARIAS, to the number of 50 at least, and 150 exemplars.

N.B. The Gardeners of Biebrich have no intention to co-operate. It is necessary to give notice to those gentlemen appointed to decide upon the prizes, that it is required the plants should have all the bloom or freshness of flower, and should be bloomy or flowery where the nature and species of the plant allows and requires it. Any new or unknown plants will obtain the preference they deserve, but in observing that besides their rarity or novelty, they should possess a flower's value or estimation. The sending of plants to the exhibition is free from transport, by sending them by water (that is by the steamer) or by the train, and addressed EXHIBITION OF PLANTS, Biebrich.

Biebrich, Oct. 22. THELEMAN, Director of the Garden.

## SCOTTISH GARDENERS' & LAND-STEWARDS' ASSOCIATION.—At the Annual General Meeting of the Association, held at Edinburgh, on the 9th November inst., for the Election of Three Pensioners on the Funds, Professor BALFOUR in the chair, the following was the state of the Poll at the close of the Ballot:—

1. BENJAMIN MITCHELL, aged 74	475	Votes.
2. CATHERINE McLEAN, aged 73	302	"
3. JAMES WALKER, aged 69	148	"
Isabella Hunter, aged 61	143	"

The three first named Candidates, having the greatest number of Votes, were therefore declared duly elected.—JAMES DODDS and JAMES McNAIR, Secretaries; J. H. BALFOUR, Chairman. 6, York Place, Edinburgh, Nov. 10.

## SEEDS DIRECT FROM THE CROWERS. GARDENERS and others requiring REALLY GENUINE NEW SEEDS, true to their kinds, are respectfully recommended to apply early to the undersigned.

The New Early Peas, Radish, French Horn Carrot, and other Seeds for early sowing are now ready. BUTTS & SONS, Seed Growers, Reading, Berks.

## PENTSTEMEN SPECIOSUM.

JOHN CATTELL, having executed all his orders for the above, has now a small surplus stock of fine healthy plants in pots, in good order for travelling, price 30s. per dozen, package included, carriage free to London. A remittance to accompany orders from unknown correspondents.

J. C. Catalogue of Hardy, Forest, and Ornamental Trees and Shrubs, Conifers, American Plants, &c., is now ready, and may be had by enclosing two penny stamps for postage. Westerham, Kent.

## TO ADVERTISERS.

THE ADVERTISEMENT DUTY being repealed, the PROPRIETORS of the GARDENERS' CHRONICLE announce that they have reduced the customary charge for each Advertisement by 1s. 6d., the amount of duty taken off by the Government.

Advertisements of GARDENERS OUT OF PLACE, of not more than four lines in length, 1s. 6d. each.

## GERMAN SEEDS FOR 1854.

MESSRS. PLATZ and SON, SEED GROWERS, Erfurt, Prussia, intimate that their Catalogue of Flower and Vegetable Seeds may be had on application to their agent, Mr. ROBERT KENNEDY, Bedford Conservatory, Covent Garden.

EXHIBITION OF CHRYSANTHEMUMS.—A large collection of the above beautiful autumnal flower is now in bloom at CHANDLER and SON'S Nursery, Wandsworth Road, Vauxhall.—Good flowering plants, 6s., 12s., and 18s. per doz.

## EXHIBITION OF NEW CHRYSANTHEMUMS OF 1853.

E. G. HENDERSON and SON, Wellington Nursery, St. John's Wood, London, begs to inform the admirers of the above flower that they are now in bloom, and will continue for the next month in perfection at their Nursery. An inspection will amply repay those honouring them with a visit.—Nov. 12.

E. G. HENDERSON and SON, Wellington Nursery, St. John's Wood, can now supply fine strong plants of CINERARIAS, choice varieties, by name, at 6s., 9s., and 12s. per dozen.

CHOICE FANCY GERANIUMS, at 9s., 12s. and 18s. per doz. HORSE-SHOE LEAF, 6s. and 9s. per dozen.

## CHRYSANTHEMUMS.

J. AND J. FRASER have to offer very fine Plants of the above, amongst which are the best varieties in cultivation. The plants are from 2 to 3 feet high, very bushy, and full of flower-buds. Large flowering varieties, 9s. per dozen; Pompones, or Liliputian, 12s. per dozen.—A Catalogue of the sorts may be had, on application.—Lea Bridge Road, Leyton, Essex.

## CHINESE AZALEAS.

J. AND J. FRASER having a very large and fine stock of the above, beg to offer them at the undermentioned prices. The Plants are very healthy, and beautifully set with flower buds.

12 distinct sorts	18s.
12 do. (very fine plants)	24s.

Lea Bridge Road, Leyton, Essex.—Nov. 12.

## FANCY GERANIUMS.

J. AND J. FRASER beg to call attention to their fine STOCK of the above. The Collection comprises about 100 varieties, amongst which are strong plants of the following fine sorts:—Magnum Bonum, Resplendens, Darling, Princess Alice Maude, Berryer, Erbescones, Richard Cobden, Triumphans, Cleopatra, Hero of Surrey, Lady Downes, and Formosissima. Collection of 12 varieties ... 12s. Ditto, ditto (new) ... 18s. to 24s. Lea Bridge Road, Leyton, Essex, Nov. 12, 1853.

## FLOWERING BULBS.

J. CARTER, SEEDSMAN & FLORIST, 238, High Holborn, London, respectfully informs his customers that the Gladioli and other late ripening Bulbs are now all arrived. He avails himself of the opportunity to furnish an extract of the leading articles from his Catalogue. The present is the best time for general planting. Of the bulbs marked per 1000, 200 can be had, at the same rate as per 1000; 50, 25, or 12, may also be had, at the same rate as per 100.

IN SEPARATE SORTS.		s. d.	s. d.
Anemones, double, 100 finest sorts	...	20	0
Anemone hortensis, 25 do.	...	5	0
Crocus, 1000 new Seedlings in 20 do.	...	25	0
" 1000 do. in 10 do.	...	25	0
" 1000 common do. in 10 do.	...	15	0
Gladioli, 12 Seedlings from ramosus	...	18	0
" 36, in six fine sorts for clumping	...	22	0
" 12 new Seedlings from gandavensis	...	10	0
" 12 do. do. Guernsey	...	12	0

Hyacinths, 24 fine sorts for water, pots, baskets, or open borders	...	15	0
Narcissus, 16 in eight sorts, for pots, &c.	...	7	0
Ranunculus, double, 100 fine sorts	...	20	0
" new Scotch, 100 do.	...	40	0
" Turban, 100 in five sorts	...	6	0
Tulips, 100 splendid double	...	28	0
" 100 do. early	...	28	0
" 100 late, in 3 varieties	...	14	0

SUNDREY OTHER BULBS.		s. d.	s. d.
Crocus, largest new yellow	...	3	0
" large yellow	...	2	0
Crown Imperial, extra fine, mixed	...	4	0
Iris, 12 English, named	...	4	0
" do. do. mixed	...	2	0
" 12 finest Spanish, named	...	2	0
" do. do. mixed	...	4	0

Ixia, very fine new Seedlings, &c., mixed	...	12	0
Jonquil, large double, p. doz. 2c. Camperdown	...	1	0
Lilies, good common sorts, mixed	...	18	0
" Martagon, scarlet Turk's Cap	...	4	0
Narcissus, good border sorts, mixed	...	6	0
Oxalis, fine mixed, in great variety	...	2	0
Snowdrops, double or single, each	...	2	0
Sparaxia tricolor, or grandiflora	...	14	0
" extra fine new Seedlings, &c., mixed	...	16	0
Tigridia pavonia, 2s. 6d. per doz.; 3 var. mixed	...	3	0
Tulips, Van Thol, double or single	...	7	0

A comprehensive Catalogue of Kitchen Garden, Flower, and Agricultural Seeds, may be had, pre-paid on application. New Early Peas, Beans, &c., for present sowing, can be had with the Bulbs.

## CHOICE GERANIUMS.

JAMES HOLDER begs to offer the following choice SHOW GERANIUMS, at 21s. per dozen, hamper, &c., included.—Optimum, Eleanor, National, Magnet, Hero, Supreme, Lord Gough, Flying Dutchman, Field Marshal, Village Maid, Virgin Queen, Magnificent, and Voltiguer.

## GERANIUMS FOR THE MILLION.

JAMES HOLDER can supply twelve of the following for 12s., hamper, &c., included.—Ajax, May Queen, Ocellatum, Correggio, Spot, Rowena, Conspicuum, Fane, Duke of York, Star, Defiance (Fancy), Constance, Collegian, and Victory. Older varieties at 6s. per dozen. Post Office orders payable at Camden Town.—Amphill Nursery, Hampstead Road.

## PLANTING SEASON.

WILLIAM URQUHART and SONS' Priced. List of Nursery Plants is now ready, and may be had on application.—Dundee, Nov. 12.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, desert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 1s. per 100, or 25 each of any two sorts for 12s., box included. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement *Gardeners' Chronicle*, October 15, 1853.—Egglecliffe, near Yarm, Nov. 12.

## HYACINTHS.

J. FORBES, SEEDSMAN, &c., Short Street, Newington Butts, six doors from the Elephant and Castle, begs to call attention to his Stock of DUTCH BULBOUS ROOTS, which are very fine this season. Hyacinths, fine named, from 7s. per doz.; Crocus, from 1s. 6d. per 100.—Priced Catalogues may be had on application. A remittance from unknown correspondents.

HUNTER'S PROLIFIC CUCUMBER, AND CONSTANTINE'S INCOMPARABLE; the best two Cucumbers in Cultivation for Early Forcing. Three good Seeds, 1s., or nine for 2s. 6d. (Post-free).—May be had genuine of JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

BASS and BROWN beg to refer to their Advertisement in the *Gardeners' Chronicle* of Oct. 22 and Nov. 5, for their fine selected assortment of GERANIUMS, which are unusually strong, CHRYSANTHEMUMS, and various GREEN-HOUSE and HARDY PLANTS, GLADIOLI, and a great variety of BULBS and ROOTS, of all which they possess a large and fine stock.

GLADIOLI, 50 splendid vars. for early and late flowering	...	50s.
" 25 do, 30s.; or, per dozen	...	6s. to 20s.
" splendid mixed early varieties, per 100	...	20s.
" do. do. per dozen	...	3s.

The Autumn Catalogue supplied free for three penny stamps. Seed and Horticultural Establishment, Sudbury, Suffolk.

DUTCH HYACINTHS, for Forcing, single and double, at 4s. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR CORNETT'S Italian and Foreign Warehouse, 15, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

## WAITE'S NEW EARLY PEA.

DANIEL O'ROURKE.—The earliest and best Pea in cultivation; a week earlier than the Emperor, longer pods, and a much better cropper; height 2 to 3 feet. If this Pea does not give general satisfaction the money charged will be returned. Trade price to be had on application to J. G. WAITE, Seed Merchant, 181, High Holborn, London.

## HUNTER'S LONG PROLIFIC CUCUMBER.—

From the numerous unsolicited communications the Advertiser has received, all testifying to the superior merits of the above Cucumber, he with increased confidence recommends it to those who may be desirous of competing at the Exhibitions of 1854. The Stock is, "if any thing," improved, and the Seeds he is now sending out are selected from fruit of superb excellence, and measuring from 30 to 37 inches in length. Packets at 1s. and 2s. each, to be had of Mr. KENWICK, Seedsmen, 107, St. John Street; and of JOHN HUNTER, 5, King Street, Islington, London.

STANDISH and NOBLE'S CATALOGUE for the present season is now ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Nov. 12.

## GAINE'S CATALOGUE for the present season

is now ready; it contains lists of Show and Fancy Pelargoniums, Azaleas, Fuchsias, Cinerarias, Chrysanthemums, Camellias, Calceolarias, Verbenas, Corraes, Rhododendrons, &c., also a Miscellaneous Collection of Stove and Greenhouse Plants, and may be had post free on application. Nursery, Surrey Lane, Battersea.—Nov. 12.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 12 mile from Woking Station, South-Western Railway, begs to announce that he has just published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., &c., and may be had on application by enclosing two postage stamps.

GEORGE BAKER begs to say that his DESCRIPTION CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING BOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement. American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.







## THE CHAMPION PEACH.

**THOMAS HUTCHINGS, NURSERYMAN, &c.,** Axminster, will be ready to send out this beautiful Seedling Peach, which far surpasses everything of the kind ever offered to the public, measuring the extraordinary size of from 11 to 13, and sometimes 14 inches—flesh free, rich, and juicy; flavour unequalled, somewhat resembling the Green-gage Plum; an excellent bearer; and in every respect of First Class Quality.

Strong Trees in November, or as soon as orders for 200 have been received. Trained Trees, 21s.; Maiden ditto, 10s. 6d.

It is respectfully requested that all Orders from unknown correspondents be accompanied by a Post-office order, payable at Axminster, Devon.—Orders received at the Nursery; or by Messrs. HURST & M'ULLEN, 6, Leadenhall Street, London; and by Messrs. GARAWAY, MATES, & Co., Durham Down Nurseries, Bristol.—N.B. A good General Nursery Stock.

## TO NOBLEMEN AND GENTLEMEN ABOUT TO PLANT THIS SEASON.

**WM. SKIRVING, Walton Nursery, Liverpool,** begs to offer his extensive Stock of Fruit, Forest, and Ornamental Trees and Shrubs, priced Catalogues of which may be had on application.

The Forest Trees consist of several millions, including Oak, Ash, Elm, Larch, Scotch Fir, Spruce, and all the common Forest Trees generally planted in this country; and of the following for underwood—Hazel, Holly, Privet, Rhododendron, Laurel, Berberis aquifolium, &c.

In addition to his general collection of Hardy Ornamental Trees, W. S. particularly recommends the *ARAUCARIA IMBRI-CATA* and *CEDRUS DEODARA*, of which he holds many thousands of well-grown Plants, of sizes from 1 to 4 feet high, growing in the open ground, and warranted to remove with safety to any distance.

The Fruit Tree collection contains all the new and most approved sorts of Peaches, Nectarines, Apricots, Apples, Pears, &c., and a large assortment of the most choice varieties of Vines, grown from eyes, and well established in pots.

Ornamental Trees, Evergreen and Flowering Shrubs, of large size, suitable for giving immediate effect.

Railway Contractors and others enclosing waste lands, or improving estates with new fences, can be supplied to any extent with fine transplanted Thorn Quicks, of various ages, at very moderate prices.

## CHOICE ERICAS, EPACRIS, ETC.

**YOEUELL AND CO.** beg to offer the following:—**ERICAS**.—Fine bushy blooming plants, in large 48s, of the following sorts, at 12s. per dozen varieties, viz.:—*\*Aggregata*, *\*Bowie*, *\*Convallaria*, *\*Cavendishii*, *\*colorata*, *\*densa*, *\*daphnoides*, *\*echinifera*, *\*exurgens coccinea*, *\*Eweriana*, *\*gracilis*, *\*hyacinthoides*, *\*intermedia*, *\*Linnaeoides nova*, *\*lavis alba*, *\*mirabilis*, *\*mammosa*, *\*metalefolia bicolor*, *\*nigrita*, *\*ovata*, *\*pyramidalis*, *\*propendens*, *\*perspectiva nana*, *\*rubens*, *\*ruber calyx*, *\*trossula*, *\*transparens nova*, *\*Westcottii*, *\*Wilmorea superba*, *\*Walkerii*, *\*viridiflora*, *\*ventricosa breviflora*, *\*v. Bothwellii*, *\*v. coruscans*, *\*v. carnea*, *\*v. dependens coccinea*, *\*v. fasciculata rosea*, *\*v. f. longiflora*, *\*v. f. superba*, *\*v. hirsuta*, *\*v. perspicuoides*, *\*v. superba*, *\*v. tenuiflora*, *\*v. tumida*.

**ERICAS**, in small and large 60s, nice bushy plants, many of them set for flower. All the above named marked with an asterisk, as well as the following, at 9s. per dozen varieties, viz.:—*\*Denticulata moschata*, *\*elata*, *\*himalais*, *\*hybrida*, *\*scabiuscula*, *\*Sindryana*, *\*trossula rubra*, *\*umbellata*, *\*verticillata*, *\*ventricosa*, *\*cincta rubra*, *\*v. densa carnea*.

**EPACRIS**.—The following choice varieties, in 48s, well set for bloom, at 12s. per dozen varieties, viz.:—*\*Ardentissima*, *\*Atheana*, *\*campanulata alba*, *\*c. grandiflora*, *\*c. maxima*, *\*Copelandica*, *\*carnea*, *\*coruscans*, *\*densiflora incarnata*, *\*elegantissima*, *\*formosa*, *\*grandiflora*, *\*hyacinthiflora*, *\*hyac. candidissima*, *\*impressa*, *\*imp. alba*, *\*imp. magna*, *\*limata magnifica*, *\*miniata*, *\*nivalis*, *\*onomosiflora*, *\*pinnellata major*, *\*purpureocens*, *\*sanguinea*, *\*Tautoniensis*, the *\*Bride*, *\*variabilis*.

Geranium Flower of the Day, strong, 6s. and 9s. per dozen; new crimson, Ivy leaf, 7s. 6d. each.

*Escallonia macrantha*.—Strong plants of this most charming evergreen flowering shrub, 12s. per dozen; monte-videnis, strong, 12s. per dozen; *organensis*, strong, 2s. 6d. each.

**ROSES**.—"Queen Victoria" (Paul's), standard and half standard, 2s. 6d. each; "Prince Albert", strong, 5s. each; standards and half standards, of best kinds, 15s. to 18s. per dozen; dwarfs on own roots, 6s. and 9s. per dozen.

**CHOICE HOLLYHOCKS**, in 24 of the finest show varieties, by name, 12s. per dozen. See Advertisement October 15.

Daisies, new Belgian, in 50 fine varieties, 4s. per dozen.

Rockets, old double white (true), 3s. per dozen; purple, 4s.; crimson, 1s. 6d. each.

*Oxalis*, rosea, one of our prettiest hardy herbaceous plants, and nearly always in flower, 6s. per dozen; *floribunda*, 6s. per dozen.

*Paeonies*, herbaceous, in 25 fine varieties, 12s. per dozen.

*Phloxes*, in numerous fine varieties, 9s. to 12s. per dozen.

*Primroses*, double white, 4s. per dozen; double yellow, 4s. per dozen; double purple, 4s. per dozen; double lilac, 3s. per dozen; double crimson, 12s. per dozen.

*Tigridia conchiflora*, the yellow spotted tiger flower, a very desirable summer and autumn blooming bulb—it makes beautiful beds, 3s. per dozen.

*Gladioli insignis*, one of the handsomest of the genus; the flowers, which are produced freely, are of a glowing scarlet, suffused with purple, 6s. per dozen.

*Lilium colchicum*, a magnificent new species, with lemon-colored flowers, 7s. 6d. each; *landifolium album*, flowering bulbs, 9s. per dozen; *l. rubrum*, flowering bulbs, 13s. per dozen.

*Lily of the Valley*, strong roots, for forcing, 5s. per 100.

## FRUITS.

**APPLES**, standard, in choice variety, good heads 9s. per dozen.

" dwarf " " " 6s. "

" trained " " 30s. "

**PEARS**, standard " " 12s. "

" dwarf " " 8s. "

" trained " " 30s. "

**PLUMS**, dwarf " " 9s. "

" trained " " 36s. "

**PEACHES**, dwarf trained, in fine strong plants, 36s. to 60s. "

**NECTARINES**, dwarf trained, " 36s. to 60s. "

**APRICOTS**, " " 36s. to 60s. "

**CHERRIES**, standard, in fine variety " 12s. "

" dwarf " " 9s. "

" trained " " 36s. to 42s. "

**GOOSEBERRIES**, 25 of the finest varieties (good bushes), selected for size and flavour, 30s. per 100; 4s. per dozen.

**CURRANTS**, improved large white Dutch, Black Naples, Ruby Casle (red), and Large Red Grape, 4s. per dozen; Knight's Sweet Red, 6s. per dozen.

**RASPBERRIES**, Fastolf, 15s. per 100; Large White, 25s. per 100; Large monthly fruiting, 25s. per 100.

**RHUBARB**, Myra's Victoria, 9s. per dozen; Royal Albert, 9s. per dozen; Lionness, 9s. per dozen; Tobolsk, 6s. per dozen (strong).

**SEA KALE**, extra strong, 2 years, 6s. per 100; 3 years, 8s. per 100.

**ASPARGUS**, extra strong, for forcing, 5s. per 100; 3 years old, 6s. 6d.; 2 years old, 5s. 6d.

\* Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery.

**YOEUELL AND CO.** beg to refer to their Advertisement of a choice and extensive Collection of Plants which appeared in this Paper of October 15, and for Conifers, October 22. Catalogues will be forwarded free on application. Anemone Seed, saved from selected roots, 10s. per lb. The usual discount to the Trade.

**YOEUELL AND CO.**, Royal Nursery, Great Yarmouth.

## RHUBARB.

**RANDALL'S PROLIFIC RHUBARB**.—The good qualities of this Rhubarb are so well known that it requires no better recommendation than that it has been purchased by the principal market gardeners round London. 18s. per dozen, strong roots. To be had of E. RANDALL, Loughborough Gardens, Brixton, Surrey, and principal Seedsmen. A liberal allowance to the trade. Post Office Orders payable at Brixton.

## SUPERB DOUBLE HOLLYHOCKS.

**WILLIAM CHATER** has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c., and may be had by inclosing a postage stamp. Saffron Walden Nursery, November 12.

**ROBERT M. STARK** begs to intimate that his prices, wholesale and retail, of TREES, SHRUBS, NEW PLANTS, and FLOWERS for the season are now ready, and may be had on application. **CHOICE DUTCH BULBS, EARLY SEEDS**, &c., at 145, Princes Street. Edgell Hill Nursery, Edinburgh.—Nov. 12.

## SEED WHEAT.

**THOMAS PRENTICE AND Co.**, Maldon, have a quantity of the following kinds on hand, of pure stock, all Essex grown:—**TAUNTON DEAN**, **ROUGH CHAFF** (White), **GOLDEN DROP** (Red).

Of which samples can be forwarded on application. Also a small lot of **WOODFORD MARROW PEAS**.—Address **THOMAS PRENTICE & Co.**, Corn Merchants, Maldon, Essex.

## PYRAMIDAL AND STANDARD FRUIT TREES.

**WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.**

**WILLIAM WOOD AND SON** beg to offer fine healthy clean grown trees as under. Per dozen:—

Apples, standards, 10s.	Pears, standards, 12s.
pyramidal trees, 10s.	pyramidal trees, 12s.
Cherries, standards, 12s.	dwarfs, 10s.
pyramidal trees, 12s.	pyramidal trees Quince
fine dwarf bushes on the	stocks, 15s.
Mahaleb Stock, suitable	Plums, standards, 15s.
for potting, 15s.	pyramidal trees, 12s.
Medlars, standards, 15s.	dwarfs, 10s.
Mulberry, white, 4s.	Quinces, standards, 15s.

N.B.—Catalogue of Fruits may be had in exchange for two penny postage stamps.

**RENDLE'S NEW AUTUMN CATALOGUE OF FOREST TREES, SHRUBS, AND FRUIT TREES**, is just issued from the press, and can be had in exchange for one penny stamp.

The Catalogue should be obtained by all who intend Planting this Autumn, as the prices of many of the articles are very low, in consequence of the large Stock we have of many of the sorts.

We have to offer the following:—**300,000 Seedling and Transplanted SCOTCH FIR**, **600,000 do.** **LARCH FIR**, **200,000 do.** **PINUS AUSTRIACA**, **150,000 do.** **THORNS or QUICKS**.

As well as all other Forest Trees in proportion.

All orders above 10l. will be delivered carriage free to all the Railway Stations in Scotland, West of England, and to Cork, Dublin, and Liverpool by Steamers.

For Catalogues and further particulars apply to **WILLIAM E. RENDLE AND CO.**

**NURSERYMEN AND SEED MERCHANTS, ESTABLISHED 1786. Plymouth.**

**BALSAM SEED IMPROVED**.—Nearly 400 testimonials prove **GLENNY'S Improved Balsam Seed** to be the best that has been obtained. The six classes in sealed packets, 37 stamps; a packet of mixed, 13 stamps.—420. Strand.

## EVERGREEN SHRUBS, ETC.

**JAMES GRIFFIN, NURSERYMAN, Bath**, having a great Stock of the unmentioned **EVERGREENS**, in fine condition, offers them (in quantity) at very low prices, which will be given on application.

<i>Aucuba japonica</i> ...	2 to 3 feet, and 3 to 4 feet.
Portugal Laurels	2 to 3 " and 3 to 4 "
Common Laurels	4 to 6 " and 6 to 8 "
Sweet Bays	4 to 6 " and 6 to 8 "
Spruce Firs	3 to 4 " and 4 to 6 "
Arbutus, Chinese	4 to 6 " and 6 to 8 "
" American	4 to 6 " and 6 to 8 "
Evergreen Oaks (in pots)	3 to 4 " and 4 to 6 "

## THE TRUE LANCASHIRE SHOW

GOOSEBERRIES.					
	RED.	dwt. grs.	GREEN.	dwt. grs.	
London	...	31 4	Thumper	...	25 1
Wonderful	...	28 19	Tom Joiner	...	24 7
Conquering Hero	...	26 13	General	...	22 23
Roaring Lion	...	25 6	Turnout	...	20 19
Stamant	...	25 0	Queen Victoria	...	22 8
Companion	...	24 0	Gretna Green	...	21 22
Lion's Provider	...	22 9	Overall	...	20 20
Guido	...	22 14	Weathercock	...	20 2
Napoleon le Grand	...	19 19	Keepsake	...	18 20

	YELLOW.	WHITE.	dwt. grs.
Catherine	26 0	Freedom	22 22
Leader	26 0	Snowdrop	22 10
Pilot	25 9	Eagle	22 6
Peru	25 5	Lady Leicester	22 6
Railway	24 19	Tally-ho	22 18
Drill	24 6	Queen of Trumps	21 14
Goldfinder	21 1	Cossack	20 5
Broomgirl	21 3	White Hair	20 12
Gunner	20 16	Snowball	21 0

**JOHN HOLLAND, Bradshaw Gardens, Middleton**, near Manchester, is now sending out strong plants of the above-named Gooseberries, which are the heaviest winners of the season, weights taken from the "Gooseberry Grower's Register" of 1853; 12 strong plants, 7s. 2d. or upwards, 6s. per dozen, package included. Priced and Descriptive Lists of Gooseberries, Carnations, Ficoetes, Pinks, Fancies, Auriculas, Alpines, Polyanthus, Primroses, &c., &c. are now ready, and may be had for one postage stamp. Post Office Orders to be made payable at Middleton, Lancashire.

## TREES FOR AVENUES.

**WOOD AND INGRAM, Huntingdon**, beg to offer the following, which have been frequently transplanted, and are admirably adapted for the above purpose, or for Parks, Hedgerows, &c. Elms, the true English, from layers or grafted, 10 to 12 feet ... 80s. per 100

12 to 14 " ... 90s. "

14 to 18 " ... 100s. "

Also, the true Huntingdon or Chichester Elm, at the same prices. Limes, the best red twigged variety,

12 to 14 feet ... 100s. per 100

14 to 16 " ... 120s. "

The above are all feathered to the ground. Also a large collection of Standard Pears and other Fruit Trees, of all the leading kinds; and an extensive general Nursery Stock, priced Catalogue of which may be had on application.

Huntingdon Nursery, Nov. 12.

## JUDSON'S

## RICHMOND VILLA BLACK HAMBURG VINE.

**ARTHUR HENDERSON AND CO.** have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.

N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardener's Chronicle* of October 25th, 1851.

Their Autumn Catalogue of Pelargoniums, Cinerarias, Hollyhocks, and new plants of recent introduction and merit is now published, and can be had on application. A few good plants of the beautiful Yellow Begonia can still be supplied at 21s. each. Pine Apple Place, Edgeware Road, London.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his new CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment. The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

## SUPERB HOLLYHOCKS AND PERPETUAL ROSES.

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**FAIRBEARD'S NONPAREIL PEA, WAITE'S DANIEL O'Rourke, the NOVEMBER PROLIFIC**, and all other new sorts of Seeds, may be obtained genuine, at the grower's prices, from **SUTTON & SONS, Seed Growers, Reading, Berks.**

## The Gardeners' Chronicle.

**SATURDAY, NOVEMBER 12, 1853.**

**MEETINGS FOR THE ENSUING WEEK.**

**THURSDAY, Nov. 17**—National Horticultural, 3 P.M.

"Will a given quantity of MANURE go the furthest if applied in a solid or in a liquid state?"

The above question appears at present to excite the attention of both gardeners and agriculturists, and it seems capable of solution by actual and easy experiment on what may be termed a small scale; so also the expense would be trivial compared to the importance of the object in view, as the crops would pay all other outgoings than that of the salaries of competent superintendents.

A few acres of ground being devoted to the experiment, that ground should be divided into as many portions as there would be different subjects of experiment. A quantity of manure should be provided, all of the same quality, and sufficient in quantity for the whole of the different experiments throughout the whole course of them. Guano would seem the most appropriate kind of manure, as it can be applied either dry in the usual mode of its application, or it can be easily diffused in water; it is of uniform quality, is neither deteriorated nor improved by keeping it preserved under cover, and could be from the first measured off and kept separate in equal quantities for the several different portions of land subjected to experiment.

It would be desirable that the crops experimented on should consist of several different kinds. The ground for all the experiments should be prepared in some one of the approved modes, but in every respect in the same manner for all the experiments. The rotation of crops should be the same for all the different experiments, so that they might be strictly confined to the question of whether it be better to apply manure in a liquid or in a dry state.

As to the crops for which the manure would be applied in a dry state, the usual approved mode of covering it over and mixing it with the soil as perfectly as possible is all that would be necessary; but as some years would elapse ere the whole benefit would be derived of manure thus given, the experiments in question should continue for that number of years, both as to those on dry and on liquid manure; the dry being applied at once, that for application in a liquid state being divided into as many portions as the experiment would continue years.

The application of manure in a liquid state could hardly be expected to be so favourable in this mode as further experience of it might indicate, for in a climate so variable as is that of Great Britain, much



kill and previous observation would be requisite as to the most suitable times for irrigation; nay, the experiments themselves might prove fallacious to certain extent, seeing that in some years water added to already sodden ground might injure its produce, whereas in dry seasons water alone being applied to the crops would cause them to be abundant.

"There appear to be two different modes of applying liquid manure, one of them being by the aspersion of it over the whole surface of the ground and crops; the other mode being that of running the liquid into channels between the ridges on which the plants are grown: these two modes might be experimented on at the same time with those on dry manure.

"The culture of the several crops as to hoeing, weeding, &c., would, of course, be the same for both the experiments on dry and on liquid manure; but for the latter, skilful persons would be required to direct the times at which it should be administered; experience is almost wholly wanting in this country as to the periods at which the application of manure is most beneficial, and thus first experiments could not but be less favourable to the liquid than to the dry system.

"A frequent source of fallacy in experiments is that of attempting too much at once—by complicating them it cannot be known to which particular either good or bad effects are to be ascribed. Thus in the experiments proposed, it might seem desirable to try at the same time the comparative effects of fermented and unfermented manure, a subject also well worth accurate investigation, but which could not accord with the experiments on liquid compared to dry manure, as they require perfect uniformity of the manure employed."

Such are the questions which a very intelligent correspondent proposes for elucidation by cultivators. It may be thought that such experiments as are suggested are unnecessary, enough having been already ascertained upon the subject to satisfy the requirements of practice, if not the precision of science. In that view we do not at all concur. That the country is very greatly in need of some clear comprehension of the difference between the action of solid and liquid manure, our own daily experience tells us. Were it otherwise we should not so often have inquiries put to us on the subject, nor should we see results in every particular inconclusive pointed to as rendering further discussion superfluous. We need only point to the reports of certain sewage associations to show what we mean.

Sound theory tells us that since all substances must become either fluid or gaseous before they can possibly be absorbed by plants, therefore that manure should be the best in which the fluid or gaseous form has been already assumed by the material to be employed. Such is liquid manure. But the question cannot be limited so narrowly. What the cultivator requires to know is—not what the application of a certain substance may effect during the trial of a brief experiment, but—the permanent effect. And here there is a wide field for difference of opinion.

There is no doubt that whatever tends to the consolidation of soil is, as a general rule, detrimental to vegetation. The application of liquid manure for a long time would certainly in some soils, and probably in most, have that effect. Therefore the use of liquid manure would be detrimental, because of its mechanical effect, although advantageous as regards its chemical action. Which then preponderates? benefit or injury?

The sudden application of liquid manure, especially if highly azotised (*anglicè* rank, or over strong), causes exuberant development, attended by a great temporary exhaustion of the soil; to what extent does the latter go, and what proportion does the one effect bear to the other? To that we have as yet no sufficient answer.

Liquid manure may be more costly than solid—it is very often necessarily so—unless powerful mechanical agency is introduced. Is the increased advantage connected with its use really commensurate with the additional cost? We have never yet seen a good reply to that most important question.

On the other hand, we all know that solid manure acts not merely in its capacity of nutriment, but as an effectual means of counteracting the natural tendency of soil to consolidation, a tendency which liquids, repeatedly applied, powerfully augment. It "keeps the land open." Moreover, it parts with its nutrient qualities slowly, giving plants time to absorb them, and not overfeeding them at one time, while at another it starves them.

Such being the present state of our knowledge, we willingly endorse the suggestions of our correspondent, in the hope that some gentleman possessing the means and requisite leisure will take the

question in hand without prejudice. In the meanwhile we venture to suggest that a mere compilation of what is supposed to be *known*, not *conjectured*, up to the present time, if well arranged by a competent person, acquainted practically with horticulture or agriculture, would be of great public benefit.

WE have to announce the very unexpected discovery of *DIERVILLA CANADENSIS*, in what appears to be a wild state in the Highlands of Scotland. The circumstance is recorded in the following memorandum from Mr. ALEXANDER OSMOND BLACK, an active and very intelligent young botanist.

"On the 15th of last September, in company with my friend Mr. CROALL, of Montrose, I started from the little village at the foot of Mount Cattershun, and proceeded up the banks of the North Esk river, which is in that glen called 'The Burn.' About half a mile above Gannachy Bridge, on the Forfarshire side of the Esk, I observed *Pyrola secunda* and *Hieracium prenanthoides*, and noticed that the beautiful *Orthotrichum Drummondii* was very abundant upon the trees. Here my attention was first attracted to *Diervilla*, which I found to extend for about half a mile, growing in large, scattered clumps, often for as much as 40 feet, preventing, by the denseness of its foliage, the growth of all other plants except the *Pyrola secunda*, which luxuriated beneath it.

"There are no houses near, and the plant, if not truly wild, which its abundance would induce a person to consider it, is at least perfectly naturalised, although it has never before, that I am aware of, attracted the notice of British botanists."

Although this *Diervilla*, perhaps better known to the public under the name of *Lonicera Diervilla*, has never before been found wild in Europe, we see no reason why so common a Canadian plant should not have a really native habitation in a remote Scotch glen. At all events it is a very remarkable circumstance that no earlier record should exist, that we are aware of, of the occurrence of the plant in Great Britain. We may add, that Mr. BLACK's specimens show the Scotch plant to be in every respect identical with that of North America.

#### GEISSOMERIA LONGIFLORA.

THE spikes of bright scarlet flowers which terminate every shoot of a well-managed specimen of this *Acanthad*, and which have the advantage of being produced during the dull months of winter, make it a plant of no ordinary value. Its only fault is its straggling habit, but by placing several small plants in a large pot, and keeping the shoots regularly stopped and tied out, this difficulty is easily overcome.

Cuttings made of moderately firm portions of the current season's wood root freely if planted in well-drained pots filled with light sandy soil covered with a glass and placed in a gentle bottom-heat. They should be got in sufficiently early in the season to allow of their getting well-established in 7-inch pots in the course of the summer, which with ordinary accommodation may be effected after April. When sufficiently rooted pot them two in 5-inch pots, and afford them a close rather warm moist situation until they get well established, when they may be stopped, and allowed a freer circulation of air; shift into 7-inch pots as soon as the roots require more space, and keep the plants growing slowly during the summer months, keeping them close to the glass, and regularly stopped, so as to induce a bushy habit; they should be sparingly supplied with water during winter, and they may be placed in the warm end of a greenhouse, where, if not overwatered, they will be quite safe. When the wood appears well ripened cut back the shoots, leaving about two pair of eyes on each, and keep the soil very dry until the time for starting the plants into growth. In order to obtain very large specimens, the plants should be placed in growing circumstances not later than the beginning of March; and as soon as growth commences shake the soil from the roots, and shift into pots just sufficiently large to admit the roots; a temperature of about 60° at night, allowing it to rise some 10° with sunshine and air, will be suitable; and they should be kept near the glass, and air admitted on favourable occasions, in order to induce stocky growth. Water the soil cautiously until the roots become active, but moisten the plants overhead morning and evening with the syringe, to keep the foliage clean, &c.

This plant is very subject to the attacks of aphides, and therefore these pests should never be allowed to establish themselves; they should be destroyed at once either by means of tobacco smoke or by syringing with tobacco water, and this should be repeated as often as may be necessary during the growing season, taking care to have the foliage clean when the plants commence flowering, as tobacco smoke applied then would be apt to cause the blossoms to fall prematurely.

As soon as the pots get moderately well filled with roots shift into others, and now is the proper time to place several plants in a large pot to form the foundation of large handsome bushes. About five plants placed in a 10-inch pot will be found to make large specimens with comparatively little trouble, whereas to form a good sized specimen out of a single plant requires a long season's growth and very frequent stopping. During the warm summer months they may be placed

in a close pit or frame, where they will succeed very well without artificial heat. Keep them near the glass, and stop the shoots frequently, keeping them well tied out to secure strong dwarf growth, and shift into pots a size larger than before, as the roots may require space. Towards the middle of September they should be returned to a house or pit where they can receive a little artificial heat to ripen their wood, and induce a plentiful display of bloom, and this will be promoted by keeping them rather short of water for a fortnight or so. It is also necessary to have respect to the season at which the plants are wished to bloom and to stop accordingly, and it is hardly safe to practise stopping later in the season than the beginning or middle of August. When in flower the temperature should range at 45° at night, but it may be allowed to rise a few degrees with sun heat, and the atmosphere should be kept dry, otherwise the flowers are apt to decay sooner than they should do. After the beauty of the plants is over they may be kept rather dry at the root, and placed in a cool situation, in order to afford them a season of rest, after which they should be cut back, shaken out of the soil, repotted, and treated as recommended for last season. Fresh plants, however, will be found to make handsomer specimens than those that have been frequently cut back, therefore all who have young stock may throw away the old plants as soon as they have done blooming.

The most suitable soil for this plant is good strong rich turfy loam, to which may be added a portion of well decayed cow-dung, say one-sixth of the whole, about a like quantity of fibry peat or leaf-soil, and a sufficient admixture of sharp clean sand to ensure a free percolation of water through the mass. In the case of large plants, which may be rather stinted for pot room, manure-water may be given two or three times a week with advantage. *Alpha*.

#### MANAGEMENT OF CIDER APPLE TREES.

(Continued from page 693.)

*Tree Guards*.—It is not sufficient carefully to select and plant the trees to insure their success. They must be attended to in several ways for the first few years after having been planted. They must be protected, 1st, against sun-strokes; 2d, from the teeth of animals; 3d, against bruises, &c.; 4th, from wind.

*Protection against Sun-strokes*.—If the *onguent de St. Fiacre* (cow-dung and clay), would stay on, a coating of this would be the best protection against sun-strokes, but a heavy rain will frequently wash it off. The simplest and most lasting means is to cover the side of the stem next to the sun with a thin layer of straight-drawn straw, placed longitudinally and fastened with osiers.

*Protection against the Teeth of Animals*.—Those who have planted trees in the neighbourhood of woods know by experience that during long and severe winters, when the ground is covered with snow, deer, hares, and especially rabbits, gnaw the bark off trees as far as they can reach. When the bark has been gnawed through all round, the tree almost invariably dies. The dung of cows or of swine may prevent those animals from making the attack, but it is easily washed off by rain. Tar is preferable [not coal-tar, for this would kill the trees]. The whole of the lower part of the stem is done over with a brush; one application will last the winter. Furze is also a good preservative; a quantity of this sufficient to protect the tree is tied round it by the thick ends, the tops downwards and resting on the ground. By this the foot of the tree is kept cool, the earth is prevented from getting hard and cracking, and weeds from growing.

*Protection against Bruises, &c.*—Spikes and laths stuck with nails are frequently employed, but they do not fully answer the purpose; they often make wounds in the trees, and they do not prevent them from being uprooted by the wind, or by implements coming against them. Posts are the only efficient protection in this case; they may also be made a means of enabling the trees to withstand the action of wind. Guards composed of one post with spikes on it, or of two [with cross pieces, or of three meeting so as to form a triangle, united by a single peg, are all defective, because the trees, when shaken by the wind, bruise and wound themselves against them. Four posts in a square round a tree are rather expensive, and the fourth is useless. Besides, it has been remarked that when the wood begins to decay, the four twist more readily than a triangle formed of three only. Three posts 4½ to 5 feet high, placed in a triangle at 14 to 16 inches from the foot of the tree, and united with cross pieces at the middle and top, appear to us to be the best means of protecting the trees from beasts rubbing against them, and from the shocks of axes, horses, collars, &c. By this means also we can keep the trees perfectly upright, in spite of the most violent winds. In order to do so, it is only requisite to fasten the stem with bands and cross pieces to the two posts opposite to the prevailing wind. The bands are prevented from pressing too hard on the stem by the interposition of moss, hay or straw, &c. We may also keep the trees upright, if posts are too expensive, by placing turf against the stem in the opposite direction to that of the strongest wind, and treading the turf so that it may afford a greater resistance.

*Culture and Management of the Trees during two or three years after being planted*.—Weeds should be destroyed by frequent hoeings, which also serve to loosen the surface of the ground when hard. Root suckers and shoots which push from the stems of the trees should be removed, not by tearing them away, but by cutting them



off with the pruning knife. It is sometimes advantageous to protect new plantations from dryness, especially in light, sandy, or calcareous soils. Furze, old thatch, &c., laid on the ground effect this purpose perfectly well. In calcareous or very stony soils flints and chalk lumps may also be used with the same intention, but care must be taken to prevent them from coming in contact with the stem. With the view of preventing the bruises and cankers which often result from this practice a turf is rolled round the stems of the trees. The mound raised at the foot of the tree is usually levelled in two or three years, when the tree appears to have well taken root. The levelling of the mound is done with the intention of destroying the larvae of insects, and to enable us to cultivate the surface, and thus benefit the roots. If there is danger of the tree being blown to one side, or uprooted, turf should be placed against the stem, as previously directed.

(To be continued.)

#### THE EGG PLANT.

The fruits of the Egg Plant cultivated in the market gardens at Paris are round, oval, or oblong, according to the variety, and of a dull violet colour.

In the climate of Paris the seeds must be sown about the end of December, or beginning of January. A hot-bed is prepared, the heat of which should be from 68° to 77°; it is surrounded with a good lining, and covered with a layer of vegetable mould about 5 inches in thickness, and when the requisite degree of heat is attained the seeds are sown. The sashes are covered at night with a good straw mat. A fortnight or three weeks after sowing, a second bed, not so hot as the first, is prepared. This is covered with vegetable mould, and when their cotyledons are well developed, the young plants are pricked out into this second bed, and after some time they are again taken up and replanted in the same bed, but at the distance of 8 or 9 inches from each other. The covering up of the sashes at night is still continued, and as soon as the young plants begin to grow a little air is given if the state of the temperature will permit.

In the course of the month of March, another hot-bed is prepared. The frames are placed and the bed covered with vegetable mould. When the bed is of the proper heat, from 60° to 68°, four Egg Plants are planted under each 4½ feet sash. They do not get air for several days, in order that the plants may more readily take fresh root, after which a little air is given, by pushing the sashes either up or down, and these are opened wider as the season advances, so that they may be taken off in the month of May. The further attention they require consists in watering when necessary, and in cleaning the leaves, which are often attacked by the kermes or by the red spider; next, all the young shoots which spring from the base of the stem are taken off, in order to obtain one main stem, which is pinched when it is sufficiently strong, with the view of forming two main branches, which are themselves pinched at a later period, in order to induce the development of laterals on them; and when the fruit is set, all the young shoots are taken off, in order to increase the size of the fruit.\* By these means fruit fit for gathering may be obtained about the end of June or beginning of July, and the plants bear in succession till October. *Courtois-Gérard.*

#### Home Correspondence.

*Aralia.*—I have *Aralia japonica* now loaded with blossom, resembling that of Chinese Privet, but in more flat-shaped masses instead of spikes. The lateness of the season prevents its expanding, but the albid colour of the buds is tolerably conspicuous above the dark green leaves. *A. H.*

*Large Weymouth Pine at Tortworth.*—So seldom does it happen that we are able to estimate correctly the age of any tree of extraordinary size, that to be able to assert confidently the number of years during which a remarkable tree has flourished is, of itself, no ordinary feat, and in proving my assertion, I can communicate facts which will place its age beyond a doubt, and which may be interesting to some of your readers. The tree to which I allude is a Weymouth Pine (*Pinus Strobus*) growing on the estate of Lord Ducie, at Tortworth, in Gloucestershire. According to Loudon, the ordinary height of the Weymouth Pine is from 50 to 80 feet, and rarely as much as 150 feet. The tree at Tortworth is at present 114 feet high, and I find that a few years ago a considerable portion of the head was blown off. The first branch is 45 feet from the ground, and the girth of the trunk at 6 feet from the ground is 9 feet 10 inches. In all probability there exist in England other specimens of this Pine of an equal size, but there are few, if any, the date of whose original planting can be so clearly proved. Mr. J. Morton, formerly agent of the late Lord Ducie, heard from the mouth of the person who planted it, the year in which it was placed in its present position, and that year was 1772, making the tree to be 81 years of age. The great size and rapid growth of this tree is mainly to be attributed to the soil and position on which it grows. It is placed at the base of a steep hill composed of trap, piercing the neighbouring Silurian rocks, and the detritus caused by the weather has produced a soil highly congenial to the Pine tribe; the hill itself has

also acted as a shelter from the prevailing westerly winds. The tree is perfectly healthy, and appears by the leading shoot of the past summer to be still increasing in height. This communication may, perhaps, call forth some remarks on the *Pinus Strobus* from other correspondents. *M.*

*Frauds on Seedsmen.*—Will you put the various members of the seed trade on their guard against a tall gentlemanly looking Frenchman who, nearly a year ago, called at our counting-house, and with all the address and easy manner for which that nation is so distinguished, he represented himself to be a younger brother of M. Vilmoren aîné, of Paris; that he had been in prison for his political creed; and having engaged your sympathy by sundry bursts of grief, backed by strong action, all performed with the greatest tact, he concluded by saying that he was on the eve of starting for Liverpool, to embark on board a ship to take him to Valparaiso, where he had formerly lived, and where, with his family, he trusted to remain unmolested; but, alas! he had not quite money enough for the railway, and the ship was to sail that night or to-morrow morning, &c. Upon being questioned he gave answers respecting different members of the Vilmoren family, which, of course, upon inquiry, turned out to be all false, and in fact his whole tale, throughout a lie. We happily did not give him anything, but as I hear that he has been within these few months to a seedsman and nearly extracted a sovereign or two out of his pocket with the same tale, I trust that you will put the public on its guard. He is tall, rather dark, and of rather military carriage, and in his appearance and address like a poor gentleman. *R. Wrench.*

*The Potato Disease.*—The following short account of an experiment upon the growth of Potatoes from South America may perhaps prove interesting to some of your readers. It was undertaken with the view of determining the correctness of at least one of the surmises as to the origin of the Potato disease, namely, that our seed was worn out, and that if fresh stock was obtained from the country to which it properly belongs, the disease would not be found to attack it. The tubers that I planted came from Peru in a guano ship, and were forwarded to the Royal Agricultural Society in March 1851. I was fortunate enough to obtain one or two, which were planted at once in good garden-ground; they came up healthy looking plants, and seemed to prosper until the time at which they were raised, in October; and were found to yield very well, without any appearance of disease having manifested itself, whilst other Potatoes in their neighbourhood had suffered considerably. The following year they were again planted under quite as favourable circumstances, but with a very different result; the quantity taken up was small, and fully one-third were badly diseased, indeed, from about the middle of August it was evident that they had begun to be attacked. However, the sound sets having been carefully preserved, were again sown this year with a similarly unfavourable result; the produce has diminished in size, and more than one-third are destroyed. From this we may conclude, I think, that the disease is due to soil or climate, or to local influences rather than to a degeneration of the plant itself, or at any rate than to its being "worn out" by cultivation in this country. *G. H. O., Fulham.*

*Vine Mildew.*—Having been much troubled with mildew on my Grapes, at my private residence, at Highgate, two years since, I tried sulphur with good effect, but found that my Grapes (Black Hamburg) did not ripen of a good colour, nor did they attain their full size; thinking that the fungus would be distributed and adhere to the branches, and probably vegetate the following year, I determined, directly after the winter pruning, to thoroughly cover the Vines with the following composition, viz., sulphur, 1 part; soft soap, ½ part; well mixed with water to the consistence of thin paint, which I applied with a brush to every part of the Vine. I likewise took the precaution of having the house thoroughly cleansed. Last year and this year I have entirely escaped the disease. Last year I applied the same composition to an out-door Vine with decidedly good effects, but as the Vine is in an east by south aspect, and there having been a lack of sun this year, the Grapes have not ripened kindly. *W. H. Fisher, 18, Conduit Street, London.*

*Uses of Leaves.*—In the present state of agricultural economics, when our leading farmers are debating the value of long straw or chopped straw, or no straw at all for bedding their cattle, it is remarkable that leaves which are every where at the present time, and voted a nuisance, should not be used for littering farming stock. For some weeks past my cows and horses have been bedded with leaves, and nothing can answer better, being cheap and plentiful, and moreover forming an excellent bed. Of the quality of the manure from such a combination of nutritious substances, it is scarcely necessary to speak, but it may not be out of place to remark that a combination of horse and cow manure, with leaves properly fermented and reduced, would perhaps, for horticultural purposes, especially for pot plants, form one of the finest manures that could be used. The bailiff of a gentleman in Sussex, on a heavy land farm, used leaves for litter some years back, and, by using them plentifully in the fold-yard, produced such quantities of manure as quite to eclipse his neighbours in the quantity and quality of the corn crops he produced. Here then is a source of manure which even Mr. Mechi, with his prejudices against timber trees, cannot object to; indeed it is questionable if the leaves of the "brave old Oak" were they collected and made the absorbent of animal

excrement, would not contribute as much to the land, and rather more than, they had taken away. However, the experiment is worth trying, and at the present time leaves in most country places may be collected in abundance. I would strongly recommend gardeners to try the experiment of manure for potting purposes, prepared as intimated above. For soft-wooded plants I think they will find it perfection, especially if fermented at a temperature sufficiently high to destroy all insects and their eggs; for I find cow-dung which has been subjected to sufficient heat to char it, is just as good as when kept until it is three or four years old. It is an excellent plan to subject all composts intended for potting plants to a temperature sufficient to destroy both seeds and insects before using it, and if it is a little warm at the time of using it, tender plants will be much benefited thereby, and at this cold season men will do much more work in a warm shed with warm soil, than if their hands are in a cold soil from morning till night. In fact, a heating apparatus, such as a stove for the purpose, or arrangements for using the waste heat of a hot-water boiler, is a very necessary and profitable appendage of an establishment where much potting is to be done. *W. P. Ayres, Blackheath.*

*Smoking Cucumber Plants.*—I had some thriving young Cucumber plants in the Pine stove here, and they were smoked for thrips with tobacco-paper; there was very little tobacco juice in the paper, as it had been previously used to make tobacco water; the day after the smoking every leaf on the Cucumber plants died. What could be the reason? *T. W.* [You probably burnt the air of your stove. We regard tobacco paper as a very clumsy, dangerous, and expensive material.]

*Norfolk Rushes.*—The consumption of Rushes (*Juncus effusus*, &c.), in the county of Norfolk, for the wicks of candles, is still so considerable as to deserve a record in your columns. An annual fair is held for their sale. It used to be called the Magdalen fair, and was held in the village of Sprowston, near Norwich, on the 2d of August; but this fair was discontinued in 1826, in consequence of its disorderly character. The Rush fair has since been held in the yard of the Artichoke Inn, out of Magdalen Gates. The quantity of Rushes brought for sale is estimated at about 800 gross. A gross contains 12 bundles; each bundle 12 whips; and each whip about 50 Rushes. The average price per gross in the fair is about 6s. The Rushes come chiefly from the Happing and Flegg hundreds, and are mostly gathered by women, who I am told wade up to their arm-pits after them. After some preparatory soaking and drying, they are peeled and prepared for sale by women and children. Price's night-lights do not much compete with the farthing rushlights or "dips," as these latter are still largely consumed by our poor in Norwich, as well as the cottagers in the country; not, of course, as night-lights, but before they go to bed. In the severe economy of the poor I suppose they are still the cheapest light, as they burn much longer than cotton dips; otherwise they are of the same price. I am told that considerable quantities of these rushes are also taken to Yarmouth, and sold. *B., Norwich.*

*Ringed Apple Trees.*—In a small enclosure at this place, which had formerly been an orchard, there are some 20 or 30 Apple trees, apparently 30 years of age. The place having three years ago been laid down in Grass to rest and to improve the soil, which had been previously much exhausted by over-cropping, a number of sheep had been put on it to pasture. Before it was observed, the sheep had removed the bark round the whole of the stems of a number of the trees, not to say partially but thoroughly, so as to expose some 2 or 3 feet of their trunks to the action of the atmosphere without the slightest particle of skin. Being old trees about to be removed they had no attention paid to their wounds. They were barked during August and September, 1851. In 1852 they blossomed, and otherwise showed little signs of diminution in their wonted vigour. This season, however, they have made but little wood, but they have produced a fair crop of fruit, which is however small in size. Indeed, the Apples on some of the trees are only "miniatures" beautifully coloured and well formed; the foliage is also rather sickly looking. The bark and wood under it, above the naked part of the stem, have swelled considerably, but none under it; indeed, the sap below the wound seems to barely maintain vitality. What with drying winds, frosts, and summer suns, the trunks where bare are not only dry but cracked and split very much, and thoroughly seasoned, as it were, for the turner or carpenter! How long such trees may maintain vitality remains to be seen. *Alex. Walker, Newe, Aberdeenshire.*

*English Oranges.*—I have just gathered a portion of the Oranges from two trees in my greenhouse (not hot-house), and I shall be glad of your opinion whether they are not a fair sample of English-grown fruit. For form and colour I think I have never seen them exceeded even by foreign fruit. From tree No. 1, I gathered 29 Oranges, leaving still 16 ripe ones, and a large number in a green or half-ripe state. From tree No. 2 were gathered 14, leaving 21 ripe, and a still larger number of green ones than on No. 1. The following is the measurement of four specimens of the fruit, full measure:—No. 1, 12½ inches in circumference in middle, by 12 inches round stem and top; 2, 11½ inches by 12½ inches; 3, 12 inches by 11 inches; 4, 10½ inches by 10½ inches. Nos. 1, 2, and 4 grew together near the top of tree No. 1 (with two others nearly as large). No. 4 was a fair average of several of the other specimens, whilst there were not six specimens which

\* The fruit, when well grown, sometimes attains an extraordinary size. Thus, at M. Flantin's, 102, Rue de la Harquette, there were some of the round sort of fruit which were 6½ inches long and 13 inches in circumference; and some of the oblong fruit were not less than 7½ inches long and 12½ inches round.



were not fair sizeable fruit. The trees, which were planted about eight years since, are 10 feet 11 inches in height, and one 7 and the other 8½ feet in breadth, being trained as espaliers they would have been higher and wider if the height of the house and the neighbourhood of other trees allowed. I gathered, a short time since, two Shadocks from the same house, which weighed 3 lbs., one, however, being considerably larger than the other. The house has only glass heat. *Cornubiensis, Cornwall.* [So far as size goes, your fruit appears to be very fine. But what of its quality when eaten!]

*Late Strawberries.*—Permit me to say a few words in favour of Cuthill's Black Prince. After gathering an excellent crop of fine fruit from the early-forced plants, I plunged them in their pots in a shaded situation in the garden, and gave them plenty of water when they required it; they did well, and sent up strong flower stems. I then took them up, and placed them in the Vinery, giving them plenty of air and water; on the 20th September I gathered a dish of fine Strawberries, and I have been able to do so every week since; and I can now (November 1), gather a large dish of fine fruit. The plants are still in bloom, and many fruit swelling too; I expect to have Strawberries to the end of the month. *H. Morgan, Gardener, Raynham Hall, Norfolk.*

*Plum.*—I have a Plum tree which has not yet borne fruit, labelled Reine Claude de Bay; pray does that mean a Green-gage—[Yes]—and if so, of what quality? *A. H.*—[You will find some account of it in our vol. for 1851, p. 213, where it is said to be nearly, if not quite, equal to the Green-gage in flavour.]

*Testimonial to Mr. Myatt.*—It is, perhaps, not generally known that a piece of plate has been presented to Mr. Joseph Myatt, of Manor Farm, Deptford, by the members of the London Market Gardeners' Society, as a testimonial of their esteem and respect for him. The committee invited Mr. Myatt to dine with them at the Freemasons' Tavern, Lincoln's Inn Fields, when, after the cloth was removed, the chairman, in a short speech, alluded to the benefits which not only the market gardeners but the public in general had derived from the many new varieties of Strawberries, Rhubarb, and other productions, which by perseverance and skill he had produced and distributed, and then presented the testimonial to Mr. Myatt, who acknowledged the gift by saying, among other things, how gratifying it was to have the united approbation of so large a number of those most capable of judging of any merit that might be due to him. "Ours (he said) is the most ancient of all professions; we are still improving (alluding to market gardeners), but much yet remains to be done. Our brethren, the agriculturists, take lessons from us, seeing the advantages derived from high cultivation and cleanliness. It is by our skill, industry, and capital we have arrived at this eminence, and are at this time employing more labour on 50 acres than the farmer does on 500; and here I must remark (he continued) that I think we are overlooked, or I may say somewhat imposed on by our Legislature in paying more than our fair proportion of taxes and tithes, while the agriculturists (since the general introduction of railways) are filling our markets with fruit and vegetables, from the Land's-end to John-o'-Groats." The testimonial, a silver tea-kettle and stand, was inscribed as follows:—

PRESENTED TO MR. JOSEPH MYATT, BY THE MEMBERS OF THE MARKET GARDENERS' SOCIETY, AS A MARK OF THEIR HIGH ESTEEM AND RESPECT.—OCT. 20, 1853.

*A Subscriber.*

*Gathering Fruit.*—I see that the writer of the Hardy Fruit Department of your Calendar still adheres to the old system of choosing a fine day for the gathering of his fruit, i.e., Apples and Pears; now I have had upwards of 20 years' experience, and I can safely say that I would sooner gather them wet than dry, if it was not for the inconvenience of getting one's coat wet; for when gathered wet I have always found that they have been greatly assisted in the perspiration which we are all aware Apples and Pears go through soon after being gathered. And moreover, I have found that after the perspiration of those gathered wet, when sorted the loss has not been so great by at least 5 per cent. I have induced many to make "just one trial" of this plan; but in no single case have they been content with the singular number, and I would say to all your readers "go you and do likewise." *Humeo.* [It is quite true that both Apples and Pears throw off a portion of their water, combined with essential oil, after being gathered, and this process is continued until the oil forms a kind of varnish over the skin, and stopping further perspiration helps to preserve the fruit; but, while a moderate amount of sweating may be beneficial by inducing the above conditions, still it is well known that when carried to excess the fruit becomes shrivelled much sooner in consequence, and lacks that briskness and flavour on which so much of the quality of orchard fruit depends. It is this essential oil, secreted in the cells of the Apple and Pear, which gives the fruit its peculiar aroma, conjointly with malic acid. Thus fruits gathered too soon are never so highly flavoured, from the oily secretions not being fully matured, and hence they shrivel more after being gathered. Notwithstanding what your correspondent states in recommending fruit to be gathered wet, my own opinion is still in favour of plucking orchard fruits while dry, but, not having practically tested the plan of storing them wet, I should like to hear the opinions of others who have tried it, before condemning a practice which may have merits; though without wishing to prejudice the case, I think the balance of evidence will

be in favour of the "old plan," putting the wet jacket out of the question. *The Writer of the Calendar.*]

*The Weather: North-side of the Hill.*—Here is the 8th of November, and we are nearly 350 feet above the sea, and yet no single thing has been injured by frost. I have just been looking at *Ageratum mexicanum*, *Dahlia*, flesh-coloured *Fuchsias*, *Geraniums*, *Lobelia*—even *L. Erinus*, and none are in the least injured. *Somerset, Nov. 9.*

## Societies.

ENTOMOLOGICAL, Oct. 3.—The President in the chair. After the ordinary routine business of the meeting, and announcement of the donations made to the Society since the last meeting, Dr. Lankester exhibited some specimens of a species of *Aphis* which had been observed flying in great swarms about Newcastle-upon-Tyne before the cholera broke out with such fearful violence in that town. It was observed with reference to such sudden appearance of the insects, that at the beginning of autumn migrations of vast numbers of the winged female aphides often occur, and that there was thence no reason to consider them as local in Newcastle, or that they had any connection with the cholera, beyond the circumstance that the hot, damp, "muggy" weather which had been noticed as favourable to the spread of that disease would probably induce the more rapid development of the insects, and certainly would lead to their being observed in greater numbers than in windy weather.—Mr. Iuggen sent for exhibition leaves of the *Chrysanthemum* infested with the mining larvæ of a Dipterous species, and requested information concerning them. They appear to be the early states of *Tephritis Artemisiae*, and had been described by Mr. Westwood in London's "Gardeners' Magazine" 14 years ago.—Mr. Foxcroft exhibited a variety of insects of different orders captured in Perthshire; Mr. Edwin Shepherd, a hermaphrodite moth, *Alcis consortaria*, the right side being, contrary to the general rule in such cases, female and the left side male; Mr. Smith exhibited specimens of various rare British Hymenoptera, including a male *Anthophorabia nitida*, which he had kept alive for 11 days; Mr. W. W. Saunders, the nest of a species of wild bee (*Xylocopa* sp.), from Port Natal, built within a reed; also the mud nest of a *Pelopæus* which had produced several parasites of the genus *Cryptus*. Mr. S. Stevens exhibited a number of interesting insects of various orders recently received from Mr. Bates at Santarem; Mr. Hemmings specimens of *Asopia nemoralis* and *Simaethis vibrans*, both new to this country; and Mr. Douglas, *Gelechia instabilella*, reared from *Chenopodium maritimum*. A note by J. W. Lee, Esq., of Ramsgate, was read on the rearing of a parasitic moth within the cocoon of *Lasiocampa Trifolii*. A paper was also read by the President from Mr. Lucas, on bees destroyed by toads, which had stationed themselves near the mouth of the hives; on opening one of the toads, seven or eight bees still alive were found in its stomach; also on *Oniscus armadillo* and *Typhlocyba filicum*, a new species, both injurious to Ferns cultivated under glass. A description of *Lithocolletes irradaula*, a new species, by John Scott, Esq., was also read; as well as a note by the Rev. J. Greene, on the liability of the moths of the genus *Notodonta* to the attacks of *Ichneumonidae*; and to the general prevalence during the present year of Muscardine among caterpillars, owing to the great prevalence of damp through the season.

## Notices of Books, &c.

*The Microscope in its special application to Vegetable Anatomy and Physiology.* By Dr. Hermann Schacht, translated by Frederick Currey, Esq., M.A. (Highley. 12mo.)—We congratulate Mr. Currey upon his first appearance as a translator, and hope to welcome him again in the same character; for his version renders the author faithfully, and his diction is a happy substitution of good English for the gothic language of Germany. The use of the achromatic microscope is by no means what uninformed persons imagine it to be. The acquisition of the instrument is nothing in the absence of a knowledge of the mode of using it. The common notion is that placing an object at one end of a brass tube, and the eye at the other, constitutes microscopical observation. No mistake can be greater. The thing looked at must be prepared for examination; the preparation is often very difficult; various reagents are indispensable; the manner of employing them must be learned; and we have nothing in English which conveys this information in sufficient detail, if at all. When to use water, when oil or resin; under what circumstances iodine or caustic potash are necessary; with what precautions to employ the strongest acids; by what mechanical means to prepare the delicate sections, with which a microscopical adept is familiar, but which many a verdant student believes to be impossible; and, finally, how to avoid the many errors that beset the inexperienced observer, are all matters of elaborate explanation in this volume, which we wish all the success it deserves to gain, and heartily recommend to students. We only regret that the publisher should not have thought it worth his while to take care that the woodcuts were more worthy of the text.

*Pereira's Elements of Materia Medica*, Vol 2, Pl. 2; 8vo. (Longmans).—There has perhaps been no book lately published of more general utility than these care-

fully compiled volumes, in which each subject is treated with the minuteness of a monographer and the tact of an experienced practitioner. For a long while it must be the work of reference by those who seek to know the uses of official plants and their preparations. It is, however, a serious blemish that the places or persons from whom the numerous woodcuts are derived should not be distinctly stated. As far as we can see, nothing is said by the author in explanation of this matter, so that the reader is uncertain whether the woodcuts are original or copied from other books. Look, for instance, at *Cinchona*, and compare the cuts with the plates of M. Weddell, the great modern investigator of this genus.

*Hooker's Icones Plantarum* (Reeve & Co.).—Part 27 completes the last volume but one. It includes capital figures of many of Mr. Low's curious discoveries in Borneo upon the mountain Kini Balu. It is reported, upon what we believe to be good authority, that the next volume will complete this work.

*Glenny's Almanac* for 1854 contains the following statement concerning the National Floricultural Society. "Nineteen people who acted as Censors awarded themselves above 90 certificates." Is this the fact? We trust to receive a clear and explicit denial of the charge.

## New Plants.

### 22. ONCIDIUM IONOSMUM.

*O. ionosmum* (Tetrapetalum, Micropetalum); pseudobulbis ovatis acutiusculis leviter costatis triphyllis, foliis pergameneis angustis undulatis recurvis, racemo elongato nutante, sepalis acutis undulatis lateralibus semi-connatis, petalis conformibus, labello transverso rotundato basi auriculis planis rotundatis aucto ultra aurículas unguiculato, cristâ rostratâ obsolete 5-lobâ, columnæ anticæ sulcatæ alis rotundatis, rostellis natis.

This very fine species has been communicated by Mr. John White, gardener to A. Kenrick, Esq., of West Bromwich. It had been purchased under the name of *Odontoglossum citrosimum*, which it resembles in pseudobulbs and leaves. The flowering stem is above 2 feet long, bearing a raceme of some 30 very large flowers, emitting the most delicious odour of Violets. Although new to ourselves, we have an idea that it has been named *ionosmum* by some continental writer, in allusion to that circumstance. At all events no name can be more suitable. In general appearance the flowers greatly resemble those of *Oncidium unguiculatum*; but they are tetrapetalous. The lip is pure yellow, paler below than above. The sepals and petals are spotted with brown. The column has the unusual peculiarity, for an *Oncid*, of being deeply channelled from the stigma to the foot of the lip.

23. *BERBERIS CINCINNA*. *Hook. fil. in Bot. Mag. t. 4744.*  
An exceedingly pretty shrub, of the dwarfiest habit, found by Dr. Hooker in the Lachen valley of the Sikkim Himalaya, at an elevation of from 12,000 to 13,000 feet; "it there formed a small, low bush, 1 to 3 feet high, with spreading almost prostrate branches, thickly covered with small leaves of a deep-green hue, polished above, snowy white and glaucous below; these colours, the large, oblong, scarlet berries, and red branchlets, giving the shrub a singularly neat and pretty appearance when in fruit." The leaves are simple, oval, acute, with deep aristate toothings. The flowers are pale-yellow, and solitary in the axis of the leaves, hanging down like those of *B. dulcis*. It is reported to be hardy, and is certainly very distinct from all the species previously covered. It would form a charming contrast to *Cotoneaster microphylla*.

## Garden Memoranda.

### FRUIT STORES AT THE ROYAL GARDENS.

—Those only who are acquainted with the very extensive scale on which all kinds of fruit are cultivated here, can form any idea of the space that is required for storing away the produce. On visiting these gardens the other day we found three store-houses filled. The first contained autumn Pears, i.e., such sorts as will be in use from this time up to the middle of December. This room, which is 60 feet in length, 15 feet in breadth, and 9 feet in height, is fitted up with three tiers of shelves made of inch square staves, on which thin white paper is laid for placing the fruit on. Paper is preferred here to any other material for this purpose, more especially for Pears, the tender clear-skinned varieties of which are apt to be bruised and blackened when laid on anything else; paper is found also to possess the advantage of having little tendency to induce mould. Means have been provided for warming this room in the shape of hot-water pipes, which are carried round the floor under an ornamental cast-iron grating; but their use has hitherto been dispensed with, as the room being placed as it is immediately behind the early Vinery has always kept sufficiently dry and warm without them. In the middle of the floor of this store-house is a table (18 feet in length by 4 feet in breadth) furnished with drawers which are filled with fruit, and on the top of this table were nearly 40 kinds of Pears neatly placed in rows and correctly labelled. These were all unusually handsome specimens. On the side benches were Apples also arranged on this plan, which is excellent, inasmuch as examples of the leading varieties which the store contains may be viewed, and their merits compared, without the inconvenience of searching in the shelves at any time for a particular sort that may be required for inspection. The following kinds may be worthy of naming as being in use now; viz., Beurré Bosc, Van Mons Léon le Clerc, Brown Beurré, Marie Louise, Gansel's Bergamot, Beurré Dri, Seckel, Moor-fowl Egg, Althorp Crassane, Belmont, Colmar d'Aremberg, Brougham, and Hacon's Incomparable.



Of these, some of the specimens of Van Mons Leon le Clerc measured 7 inches in length and about 3½ inches in diameter at the thickest part. This fine sort is better flavoured from standards than from a wall; it is a good bearer, but in pruning care must be taken to only thin out the young wood, not to spur it in, as the fruit is borne on the short shoots of the previous year's growth. Concerning the Marie Louise (which is considered here the best Pear of the season), it may not be generally known that it may be had in use some two months together by gathering it at different times; for even fruit of it stored green is reported to become quite as well flavoured as that which has been permitted to ripen on the tree. In this way it may be had fit for table from October till December. We observed some fine fruit of it netted on a wall here, where it is the only Pear still out of doors. Beurré Bosc is well known to be a handsome sort; it is a free bearer, but the shoots require to be trained a good distance apart, otherwise its ample foliage hides the fruit from the sun. Beurré Diel and Glout Morceau have not done well here this year, owing to their having been attacked at an early stage of their growth by a sort of smut which has had the effect of stopping their swelling wherever it occurred, and causing them to crack. Those from standards are altogether useless; but those from walls are not quite so much injured. Hacon's Incomparable is a fine Pear, shaped something like a Gansel's Bergamot; it is a variety which never fails to produce a crop. The Seckel, a warm coloured sort, must be set down as rather below the middle size, but as regards flavour it is certainly one of the best; it is a favourite at the Royal table. Colmar d'Arenberg is a little known kind, reddish brown in colour, and with a flavour something like that of the Winter Nelis. It is quite hardy, and succeeds well as a standard. The Moorfowl Egg requires to be gathered before it is ripe; otherwise it turns mealy and dry. The Brown Beurré, we need scarcely say, is an excellent sort and very productive, from about 250 square feet of wall 1200 fruit have been gathered here this year.

The following new Pears have fruited in these gardens, and have been proved to be good, viz.:—Reine d'Hiver, Epine Dumas, Colmar Van Mons, and Baron de Mello. The first of these is ripe in January, melting, and about the size of a Passe Colmar. Among Apples, Cox's Pomona is not so well known as it should be; it is a large showy fruit, three parts covered with bright red, and suitable either for dessert or kitchen use. Cox's Orange Pippin is also a fine kind not quite new, but little known. It has something of the flavour of the Ribston Pippin, which it resembles in colour, but it is different in shape. The tree is a good bearer, and healthy. Of the King of the Pippins and Blenheim Pippin, or Orange, there were some beautiful specimens, and, for the dull season we have had, extremely bright skinned. They were ripened on semicircular trellises which are found to answer capitally for Apples; but scarcely so well for Pears, the blossoms of which being earlier than those of Apples, are greatly exposed under this kind of culture, and are apt to be cut off by spring frosts. Of other Apples, Small's Admirable is well worthy of notice, as being one of the best Apples for culinary use at this season; it is a regular and heavy bearer, smooth and pale yellow in colour, with a tinge of red on the sunny side. The size is about that of Dumelow's Seedling, or Wellington; it is in use from September till Christmas; the Wellington is largely employed in the Royal kitchen for jelly.

Some seedling Apples have fruited here; one resembling the Downton Nonpareil was very sweet, juicy, and good.

Fruit-room No. 2 is filled with kitchen and table Apples, to which are added a few Pears to succeed those in No. 1, which is a warmer house than this. This store is 36 feet long, and 12 feet broad, with three tiers of shelves, as in the first-mentioned house. It is chambered underneath for seed Potatoes, &c. The following sorts of Apples in this house are now in use, viz., Cox's Pomona, King of the Pippins, Blenheim Pippin, Cox's Orange Pippin, Fearn's Pippin, Cluster Golden Pippin, Small's Golden Pippin, and Small's Admirable. This room has 594 square feet of shelves.

Loft House.—The storing place for the later kinds of Pears and Apples is situated in one of the shady slips outside the garden walls; it is a low, span-roofed shed, built of wood, with thatched roof and sides, and stuffed with Fern 3 inches thick in the inside, for the purpose of excluding frost. This house is 13 feet long, and 11 feet broad, with shelves on both sides, and passage in the centre; it contains 600 square feet of shelving. The sorts of Apples in it are, Rosemary Russet, Russet Table Pearmain, Dutch Mignonne, Wellington, Pit-maston Nonpareil, Syke House Russet, Newtown Pippin, Golden Harvey, Braddick's Nonpareil, Cockle Pippin, and Ribston; on the ground floor is Barcelona Pearmain, a sort much given to shrivel, and which requires a cool, somewhat damp place, to have it in perfection. Of Pears, it contains Chaumontelle, Moeres, Easter Beurré, Ne Plus Mouris, Winter Crassane, Shobden Court, Holland Bergamot, Beurré Rance, and Knight's Monarch; these are all late-keeping sorts, among which, the two latter are perhaps the best.

## FLORICULTURE.

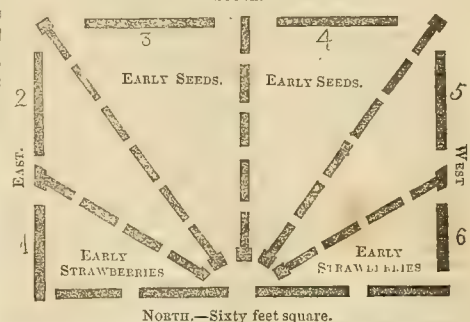
POT-CULTURE OF JAPAN LILIES.—It is a matter of surprise and regret with me that I do not more frequently meet with these noble autumnal flowers in the

collections of amateurs, for they are, in my estimation, the most beautiful of all our autumn flowering plants; and then they are so easily managed, and occupy so little house-room, that they are just suited for persons who can afford only a limited space for one kind of plant. I sometimes meet with people who entertain the idea, that, because they are so truly beautiful, they must be difficult to manage, and, in consequence, they neglect their culture altogether. Now I find them the least troublesome of all my favourites, and the most certain to reward me for the little attention they receive. My method of cultivating them is simple and soon told; and I have no doubt that any amateur commencing their cultivation, by attending to the following directions, will be equally successful with myself. Let us begin with the bulbs in the condition in which they are usually found in the beginning of November, when they have done flowering. Some of mine have just gone out of flower; others are well ripened, and ready for repotting. But as their treatment after flowering is of great importance, we will suppose they have just dropt their blossoms. Remove them to a rather warm situation, and as dry as you can command, and give them little or no more water. I generally water lightly two or three times after my plants are placed in circumstances to ripen. A warm greenhouse or pit, kept rather close, if not moist, will effect this important desideratum perfectly. As soon as the bulbs are sufficiently matured, which will be known by the decay of the leaves and stems, they had better be repotted; not that this is of importance at present but it will economise space, and prevent the operation being neglected until after they have made fresh roots. The soil in which they have been growing ought to be entirely removed from the bulbs, and the latter divided as may be thought proper, for there will always be found about the crown of the parent some small bulbs, which may be placed in 4-inch pots. If the ripening process has been complete, the roots will not be troublesome, but if not there will be found a quantity of fresh roots remaining. When such is the case I leave them to themselves for some time longer, for I never pot while I require to cut or break the stronger roots, but merely strip my fingers through them in order to remove those that are decayed. The pots should be just sufficiently large to receive the bulb and strong roots adhering to it; give a moderate watering to settle the soil, and place them in the greenhouse or cool pit. They will require no further attention until the season begins to excite vegetation, when they must be regularly attended to. Water as soon as you see signs of growth, but sparingly until they have made leaves, &c., to draw up and give off moisture. March will generally be found to be the time when they will commence growth. As soon as they are above the soil, remove them to a situation where they will be near the glass and have plenty of air, for after success depends upon getting them strong at this stage. Do not allow them to remain in the small pots in which they were wintered until their roots become matted; the best way of managing this is occasionally to examine them. I always shift into the flowering-pots just as the plants have protruded an abundance of fresh roots against the sides of the pots. For strong bulbs with one stem use 12-inch pots, and for such as produce two stems a size larger. Weaker bulbs, such as produce about seven flowers, will not require pots above 8 inches, and offsets of the first year will not require above 5-inch pots. In shifting into the flowering-pots, be careful to place the crown of the bulbs about 3 inches below the surface of the soil, as they produce a quantity of strong roots from the base of the stem. They ought after potting to occupy a place near the glass; and avoid a warm house if you wish a strong bloom. As regards watering, they must have a careful supply, neither too much nor too little; but if they can be sprinkled overhead with the syringe before shutting up the house, they will not require much water at the roots for some time. Towards the end of May, if the weather is favourable, they may be placed in a warm sheltered spot out of doors, and ought to have their stems tied to a stake, in order to prevent their being injured by wind. A few plants may be retained in the greenhouse, with a view to have them in flower earlier; indeed, I place some of my bulbs in a moderately close, warm house early in March, and I manage to have them in flower early in August; others I retard, to prolong their flowering until October; but a season's practice will be the best guide in this matter. These Lilies are not liable to suffer from the attacks of insects, but the green-fly will occasionally make its appearance upon such of the plants as may have been kept over warm. If so, fumigate at once with tobacco-smoke, or wash the leaves with weak tobacco-water. I have said nothing about soil, for they are not very particular in this respect. I use fresh fibrous loam and peat in equal portions, with a sufficient quantity of sand to render it porous—if peat cannot be had, use leaf-soil. Some say, however, that the flowers are much higher coloured in peat. The only thing requiring further notice is, to be careful of the flowers when you have got them—syringing overhead, or a damp stagnant atmosphere, will spoil them, just as it would a light-coloured Camellia flower. I once lost a fine head of bloom in this way. If you are anxious to propagate them, it may be effected by means of the scales of the bulbs. Fill a pan with soil similar to that recommended for growing them in; lay the scales upon the surface, and sprinkle a little fine soil over them; give a little water, and place the pan in a close warm atmosphere. This is, however, a part of the business which had

better be left to professional hands, and, except the amateur be proficient in such work, he will not be very successful. If properly managed, they will soon increase by natural means to more than can be accommodated. I may just state, by way of conclusion, that, in my opinion, these fine Lilies have one fault—they produce their flowers too far from the surface of the soil. I have tried to remedy this by placing three smaller bulbs in a pot with the principal one at the first potting, and I think this improves their appearance when in flower. With this exception, they are splendid productions, and deserve the most extensive cultivation; grown in masses in large pots, or in conservatory borders, they are surpassingly grand, and they are quite within the means of the amateur. Don't be satisfied with your treatment unless your full-grown bulbs produce from twenty-five to thirty flowers upon a single stem. *Autumnalis.*

## Miscellaneous.

Niven's Radiating Walls for Dwarf Root-pruned Trees.—An exact model of these was exhibited at the Royal Irish Horticultural Society's show, held at Salt Hill on the 8th ult., the principle of which the following diagram will assist in explaining to such as may not have seen the original at the "Garden Farm," or the model at the show. The inventor, considering that



many of the finer recently-introduced varieties of root-pruned dwarf new Pears required the aid of some additional climate beyond the ordinary exposure of mere standards to bring them to proper maturity in England or Ireland, conceived that some arrangement of low walls might be introduced, so as not only to provide suitable aspect and climate for such fruits, but that also suitable aspect and accommodation might, within a comparatively small space of ground, be obtained for every possible variety of the more choice wall fruits cultivated on the same dwarfing or root-pruned method; and accordingly he adopted the plan alluded to. The present erection is simply a series of thin wooden walls, constructed firmly and securely on slightly raised ridgy banks. The uprights are of Larch, well pitched at bottom, one at every 4 feet; to the faces of which are nailed thin quarter-inch white Pine sheeting; this being covered on both sides with dark-brown mineral paint, and proper stay-posts fixed, to secure the whole. The small dwarf trees are planted alternately on either side of the said low walls, and attached thereto by small nails and shreds in the usual way. From what has been stated, it will be at once seen that the suitably-prepared s-aping banks on which the walls are fixed, and the trees are planted, afford the greatest facility for the important processes of either root pruning or root feeding. In this way walls may be constructed for such trees—either, more temporarily, in wood, as now described, and so put within the reach of the more humble lover of his garden, and even a mere yearly tenant; or the erection may be made otherwise, more permanently, in 4-inch brick-work, and 9-inch piers at proper intervals. Thus, in either case, according to the height of walls adopted, the spaces between must be so regulated that no one wall can interfere with or shade another, and each to act as a shelter to the one immediately adjoining it. Further, it will be seen that the outside walls (Nos. 1, 2, 3, 4, 5, and 6, denominated the shield walls) afford shelter almost from every point of the compass, without shading those within. On some of the dwarf Pears, planted so late as March last, there are at present fruit coming to full maturity, and a most fruitful promise of buds on the whole of the trees for next year; within one square plot, of little more than 60 feet on the side, there is accommodation for 150 small dwarf trees, consisting of Pears, Plums, Apricots, Peaches, Nectarines, Cherries, &c., each on their own appropriate aspect. With the greatest facility the whole can be easily covered over by woollen matting, and walking-room afforded beneath, as well as additional protection to the early seeds and Strawberries in the spaces between. The total expense of the erection, thus briefly described, amounted only to about six guineas. The height of the walls is from 4 to 6 feet only. *Dublin Farmers' Gazette.*

Artificial Flower-making.—Artificial flower-making is not an insignificant trade. An inquiry was made into the industrial statistics of Paris in 1847, which lets us into a little secret in this matter. The total manufacture of cambric flowers in that year was prodigious, amounting in value to more than 400,000l. sterling. We, in England, only took 12,000l. worth of this value; for we pride ourselves on being able to make our own artificial flowers. The cambric, mul-lin, gauze, velvet, silk, and other materials were procured from St. Etienne, St.



Quentin, and Lyons; the dyes and colours were prepared expressly for the purpose, by manufacturing chemists; the buds, leaves, petals, stamens, pistils, and other component parts, were made in small workshops by persons who each attended to only one part of a flower; while the whole were fitted together in other workshops. Even these workshops are frequently limited to one single kind of flower each; so completely is the division of labour carried out. There were about 50 small manufacturers of petals and stamens, and other component parts, employing about 500 persons; while there were nearly 600 dealers or vendors, who employed nearly 6000 persons in building up the various integers into whole groups of flowers. Of this immense number of persons, about 5000 were women, whose average earnings were estimated at 1s. 8d. per day. Several of the manufacturers effect sales to the amount of 10,000l. a year each. We must, therefore, regard French flower manufacturers as commercial men of notable import.—*Dickens's "Household Words."*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

**GENERAL PLANT-HOUSES.**—Advantages should be taken of the present fine clear weather to ventilate plant-houses freely, during at least the early part of the day; as it will be of great use at this season in preventing the attacks of mildew, and increasing evaporation from the soil of the pots, will promote more healthy root action. Plants intended for specimens must be frequently turned round, to prevent their becoming one-sided; train carefully *Tropæolums*, *Chorozemas*, &c., growing on trellises, and be very careful in supplying water to this class of plants. Give less water to *Brugmansias* and *Erythras* going out of bloom, to assist them to ripen their wood; if they are in pots they may be removed to a spare Vinery, and their room may be occupied with other things. A few *Hyacinths*, *Narcissus*, and *Tulips* which have filled their pots with roots, may be plunged in a very mild bottom-heat to help them to throw up their flower stalks. Pot Lily of the Valley, selecting the strongest crowns for the purpose, of which 8 or 10 may be placed in each pot; a similar situation to the above will suit them. **ORCHID HOUSE.**—Here most of the inmates will be at rest, and consequently a lower temperature will suffice; in fact, many species from the cooler parts of the tropics require only a very moderate amount of heat when at rest, but this must be accompanied by dryness. Those kinds which grow more or less throughout the year must have a higher degree of heat, still this should not exceed 60° by night, at this season 65° by day will be sufficient, unless, during sunshine, when an extra 5 or 7 degrees may be allowed to the above, and plants on blocks, and syringing must be kept up; occasionally increasing it, however, to those still growing. If any which were put early to rest show indications of breaking, they should be potted; for if suffered to grow on, the young roots often get damaged by the operation.

#### FORCING DEPARTMENT.

**PINERY.**—Pines still swelling their fruit will require occasional waterings, but except on very fine days the syringe should be dropped. Admit air freely each fine day, and allow a slight admission at all other times, keeping up the temperature in dull weather by a little extra fire heat. At this season the bottom heat generally falls below what is required to carry on the remaining fruit. If the Pines are expected to ripen their fruit by the end of January, it will suffice to remove a portion of the fermenting material from between the pots, and to fill up the space with fresh warm tan. As but little water will be required for Pines at this stage, the pots may be covered 2 or 3 inches as well, which will assist to create a slight additional warmth round the roots for the remainder of their growth. Where, however, the Pines have only recently shown fruit, means should be taken to renovate the bottom heat sufficiently to last till the fruit gets ripe, as nothing is more detrimental to swelling fruit than disturbing Pines after they are started. If leaves are employed, let them have a good sweating in a heap before putting them in the pit. We have never found leaves heat sufficiently to burn the roots of Pines at this season; but if any danger from this is apprehended, place two bricks flat, with a space between, under each plant in plunging; to give a tidy appearance to the house, as well as for preventing the top leaves from getting so dry, a few inches of tan should be spread over the surface, and beaten firm. If tan only is used, the pots should not be plunged entirely at first, but placed in hollows, with a ridge of tan between, to be levelled down as the heat declines. Pines intended to show fruit during next spring should not be disturbed at present, as it would start them into a fresh growth, a point at this time to be carefully guarded against; these and the younger successions should have a dry atmosphere, excluding both the steam from linings and evaporation from the heating apparatus. The night temperature may remain at 55° to 60°, with an advance by day; the supply of air must in some measure be guided by the weather, but a little at all times should be allowed. **EARLY VINERY.**—Syringe twice or thrice each day with tepid water; as the nights are warm, no fires need yet be made, unless frost intervenes, but a little each dull day to raise the temperature a few degrees will be necessary. Proceed with setting the next house in order, as well as with forwarding the early Peach house for forcing when the time arrives.

#### FORCING GROUND.

The different crops of vegetables forced for the winter supply must be brought forward, as they are wanted to come in, remembering it is always safest to begin early, and work slowly, if quantity and quality are the objects. We have in former Calendars alluded to spring Asparagus and Rhubarb, we now take Seakale, which may be forced in various ways. When appearances are not studied, and tree leaves plentiful, an old but cheap and simple plan is to insert earthenware pots over the crowns, making them air-tight at bottom, by drawing a little earth around the bottoms, and covering the whole 2 feet deep with fresh leaves, the mild heat of which will bring the shoots forward very gently, and the quality is generally excellent; but this cannot be done in many places, from its untidy appearance; and then the roots should be dug up and selected; after which, pack them closely on a very slight bottom heat, and cover with some light leaf-mould, or sandy earth, to blanch the shoots, or dry straw will answer; bearing in mind that light must be entirely excluded, and the blanching material kept dry. In addition, very good Kale may be obtained by filling large pots and boxes with roots, inserting another over it, and placing them in a Mushroom house, warm cellar, or anywhere where the temperature is in advance of the external air. Look well to Lettuce in frames; protect them by night from frost, but allow air liberally by day to prevent damping.

#### FLORISTS' FLOWERS.

By this time all Tulips, blooming bulbs as well as offsets, ought to be planted; for our own part, for at least two months, we would keep rains from the bed; we have a great idea, that before the roots are well emitted an excess of moisture is highly injurious to the future development. Carnations and Picotees which are already potted off must be kept carefully from a close atmosphere after the first few days. Of Pinks we need say little, simply because if all is done which we have advised they are safe. We have heard of a Lancashire Pink called Buckley's Glory which is to beat the improved race of metropolitans, and we shall be glad to see it, but are rather sceptical at this moment. Carefully examine Dahlias preparatory to their final stowing away. They are extremely apt to rot at the crown, and more especially after a season like the present. Commence the turning of Ranunculus beds; an early attention will be found highly advantageous.

#### HARDY FRUIT GARDEN.

In recommending the present as a favourable time for planting fruit trees generally, we will advert to the practice of planting full standards in gardens and even orchards, which, in our opinion, should never be the case, unless when the latter are intended to be laid down and fed with cattle; and even then we question, when the expense of protecting each tree for a number of years from the depredations of cattle is taken into account, whether it is not better economy to plant the trees proportionably thicker, and crop the ground, than to devote a larger space for orchard trees with Grass between; low standards and dwarf Apples and Pears are pruned and managed much more easily—they come into bearing more quickly, and the fruit is not so liable to be blown down by high winds—advantages we think worth considering in planting orchard trees for profit; of course, by the above we intend the trees to be planted much thicker on the ground, and to be yearly pruned, by which we feel sure a much larger quantity of fruit (of better quality) can be obtained from a given space, than when mere orchard planting is resorted to. But in respect to cider, and even other kinds of Apples, we should like to see standards of those kinds liberally distributed through the hedge-rows of country districts; there are but few soils but what will grow Apples, and if planted in the lines of hedges they would require but little culture; and, besides their ornamental appearance in spring and autumn, would furnish a supply of wholesome fruit and a refreshing beverage at a trifling cost—the trial is worthy consideration.

#### KITCHEN GARDEN.

Attention should now be directed to the preservation of such vegetables as are too tender to withstand hard weather, by providing a quantity of protecting materials to be ready for use on the approach of frost. The branches and spray of evergreen trees (particularly the Fir tribe) are useful to place over Cauliflowers, Lettuce, and various other vegetables which are growing in the open quarters; a stack of dry Fern or straw should be in readiness for the like purposes; at the same time fill all the spare frames with Lettuce, Cauliflowers, and Endive for use during mid-winter, when those temporarily protected are over. On the approach of winter a good stock of Endive may be taken up and stowed thickly on the Peach-house, or Vinery floors, or even under a dry shed; take advantage of dry weather, to give a final earthing up to Celery. Look over the root stores, and see that Potatoes, Carrots, Beets, &c., are in a dry state for the winter. The earliest crop of Peas may now be sown on a warm sheltered quarter; at this season sown rather thicker than usual, and protect them from the ravages of mice; a few Mazagan Beans may likewise be planted.

#### COTTAGERS' GARDENS.

Those who have a favourable situation against the wall of the cottage, or elsewhere—a south aspect, or one inclining to south, being preferable—and are desirous of having a Peach or Apricot tree, may plant of Peaches the Royal George or the Bellegarde; of Nectarines, the Elurge, or the Violette Hative; and of Apricots, the Moorpark for dessert, and the Breda for preserving. Apricots bear well in some situations planted against

cottage walls; and in favourable seasons some cottagers make a handsome trifle of Peaches and Nectarines, where the trees have a good border, and are well attended to. In forming a border, clear out the soil to the depth of about 18 inches at the wall, giving the bottom a gentle slope towards the front, where, should be a drain, for the purpose of speedily carrying off superfluous water. Cover the bottom of the border with concrete, or anything that will prevent the roots from getting down into bad soil, and then fill up with fresh, turfy loam, from the surface of an old pasture, if that can be procured. Where it cannot be avoided, as is frequently the case, the border may be all paved over, with the exception of a small space round the neck of the tree, and used as a walk. In some of the best gardens, Apricots may be seen growing in borders made in this manner; and we have seen them on cottage walls, with their roots circumstanced as above, bearing abundance of good fruit, even in spite of bad management as regards pruning, &c. Let all vegetable refuse be cleared away to the manure heap, which should be occasionally turned, and covered in with soil. Everything that can be made available for manure should be added to it; for as we have before stated, upon its accumulation the crops for next year greatly depend. Rough dig any vacant ground, exposing as large a surface to the action of the weather as possible. Clear up around the cottage, and put everything in order for winter.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.  
For the week ending Nov. 10, 1853, as observed at the Horticultural Gardens:

Nov.	Moon's Age.	BAROMETER.		TEMPERATURE.			Of the Earth.		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.		
Friday 4	3	29.944	28.854	53	45	49.0	50	52	E.	.00
Satur. 5	4	29.835	28.770	50	44	47.0	50	52	E.	.10
Sunday 6	5	30.080	29.551	58	45	51.5	49	51	S.E.	.00
Mon. 7	6	30.250	30.166	58	46	52.0	50	52	N.	.00
Tues. 8	7	30.322	30.252	55	25	40.0	51	52	W.	.00
Wed. 9	8	30.517	30.459	51	24	37.5	49	51	N.W.	.00
Thurs. 10	9	30.429	30.346	51	27	39.0	46	50	N.W.	.00
Average.		30.192	30.096	53.7	36.5	45.1	49.5	51.7		.10

Nov. 4—Foggy; very fine; overcast.  
5—Uniform dense haze; very clear at night; rain.  
6—Foggy; uniform haze; overcast.  
7—Foggy; partially overcast; fine; overcast.  
8—Foggy; fine; clear and frosty at night.  
9—Clear; very fine; clear and frosty.  
10—Foggy; fine; foggy at night; frost.  
Mean temperature of the week 2 deg. above the average.

STATE OF THE WEATHER AT CHISWICK,  
During the last 27 years, for the ensuing week, ending Nov. 19, 1853.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13	59.8	36.5	48.7	16	1.02 in.	1	1	3	4	5	9	3	4
Mon. 14	49.2	35.3	42.3	14	1.24	4	3	3	3	3	3	3	3
Tues. 15	49.0	36.2	42.6	13	0.24	4	3	2	4	3	3	3	3
Wed. 16	49.2	34.1	41.8	11	0.41	1	5	3	1	2	5	3	3
Thurs. 17	49.5	35.8	42.1	14	0.40	4	4	1	1	6	7	3	3
Friday 18	48.7	34.7	41.7	17	0.34	1	2	4	1	2	4	3	3
Satur. 19	49.2	35.2	42.2	15	0.57	1	4	1	2	4	3	3	3

The highest temperature during the above period occurred on the 16th, 1840—therm. 62 deg.; and the lowest on the 16th, 1841—therm. 15 deg.

#### Notices to Correspondents.

**BOOKS:** *F. D. R.* William's "Orchid Growers' Manual" will possibly suit you.—*F. A. S.* McIntosh's "Practical Gardener." Achimenes should be pronounced *Achimenes*.—The price of Westwood and Humphrey's "British Mosses," 2 vols. 4to, 124 coloured plates, is 4l. 4s. *W. A. Z.* The new edition of Moore's "British Ferns," is the best authority you can have. Much difference of opinion exists as to nomenclature; and we advise you to follow Moore's. Hooker's "Species Filicum," still incomplete, is the only English guide to Ferns in general; and its value is much enhanced by excellent plates.

**CHAMBER GARDENING:** *Alpha.* Beyond Saxifraga sarmentosa and Disandra prostrata we recollect nothing handsome that can be permanently grown in baskets suspended from a drawing-room ceiling. You will find it much more advantageous to grow plants well in your greenhouse or stove, and when in beauty to place them in your baskets, from which they can be removed when their beauty is over, to be in their turn replaced by others. The necessarily dry air of a sitting room is what very few plants, except succulents, will long endure.

**DEODAR TREES:** *J. P. T.* There are none for sale anywhere about London that we know of.

**HUG AND GABET:** *A. H.* There are such persons, and they now reside in Paris, or did so lately. We understand them to be respectable missionaries, but it is now generally known that they returned to Europe without maps, journal, or papers of any kind, and that the book which bears their name is a mere tissue of *souvenirs* woven by some ingenious member of the Paris press.

**JUGLANS NIGRA:** *R. A. H.* The fruiting of this is not a common occurrence, merely because trees are not old enough in this country. We saw this morning the ground beneath such another tree as yours strewed with the fallen fruit.

**LABELS:** *Anon.* It is not necessary to trouble Mr. Brown upon the subject of your inquiry. Every ironmonger can supply the letters used in punching names; and every plumber keeps such lead. The thinnest sheet lead used by plumbers is what you require. It may be cut into slips with strong shears or with a chisel.

**NAMES OF FRUITS:** *M. J. B.* 1, *Passe Colmar*; 2, *Glout Moreau*. **NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*W. G.* *Polystichum aculeatum* and *Hypnum trisetum*. *S. A. B.* 1, *Leptogramma totta*; 2, *Polystichum falcinellum*; 3, *Asplenium adnigrum*; 4, *Elaphoglossum squameum*. *S. A. B.* *Adiantum*. In the absence of all information respecting the foliage and habit of your *Onocids* we incline to refer No. 1 to *nebulosum*, and No. 2 to *pelicanum*. But the materials before us are not sufficient to enable us to speak positively.—*Shem.* No doubt fragments of *Agaricus coccineus*.

**PERUS JAPONICA:** *Diss.* Bits of roots for propagation should be separated from the plant in spring, say February, and struck in bottom-heat.

**TRANSPLANTING:** *W.* We will endeavour to attend to the matter next week. Mr. McGlashan's experiment was quite successful.

**MISC.** *M. E. B.* If you will furnish us with your name and address the Number shall be forwarded to you.



**PERUVIAN GUANO.**  
**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,  
**ANTHONY GIBBS AND SONS,**  
AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTHONY GIBBS AND SONS think it well to remind buyers that—  
The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.  
Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO,** the guaranteed import of Messrs. ANTHONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—Wm. INGLIS CARNE, 10, Mark Lane, London.


**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites... .. " 5 0 0  
Office, 69, King William Street, City, London.  
N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**THE LONDON MANURE COMPANY'S WHEAT MANURE,** made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec. Bridge Street, Blackfriars.

**GUTTA PERCHA BOOTS FOR SHEEP,** for the Cure and Prevention of FOOT-ROT (price 4s., 5s., and 6s. each). Price of the Powder, in tin cases, sufficient for 100 sheep, 2s. 6d.—Address JOHN JONES and Co., Patent Works, Sheffield.

**STEPHENSON AND PEILL, 61, Gracechurch Street,** London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.  
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

**WEIR'S DRAINING LEVEL,**  
PRICE 30s.  
These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.  
EDWARD WEIR, Agricultural Engineer, 18, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

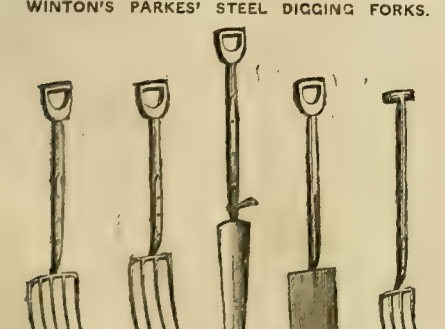


**WARNER'S PATENT FARM AND COTTAGE PUMPS.**  
Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0  
Larger sizes if required.  
They are much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.  
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,  
**JOHN WARNER & SONS,**  
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Every description of Machinery for Raising Water; Fire Engines, &c.



**PRIZE CHURN.**  
**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—Burgess & Key, Agricultural Implement Warehouses, 103, Newgate Street, and 62, Little Britain, London.

**WINTON'S PARKES' STEEL DIGGING FORKS.**



**I HEREBY GIVE NOTICE** that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. BURGESS & KEY, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.  
29th Sept., 1853. Signed, FRANCIS PARKES.

**BAKER'S FOUNTAINS.**  
THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.  
**MESSRS. BAKER** can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

**WATERPROOF PATHS.**  
**THOSE** who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.  
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

**"FRIGI DOMO."**—Patronised by Professor Lindley for the Royal Horticultural Society, the Royal Zoological Society, by His Grace the Duke of Northumberland at Syon House, and many cultivators of first class Horticultural and Floricultural produce.  
"FRIGI DOMO," a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

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Arthur Goodrich, Esq., Lincoln's Inn Fields.  
John Horatio Lloyd, Esq., 1, King's Bench Walk, Temple.  
The Honourable William Napier (Manager), 5, St. James's Place.  
Colonel North, M.P., 16, Arlington Street.  
J. F. Powell, Esq., Welwyn, Herts, and Albion Place, Hyde Park.  
Frederick Twynan, Esq., Bishopstoke, Hants.  
With power to add to their number.

**Bankers.**  
The Union Bank of London—West Branch, 4, Pall Mall East.  
**Standing Counsel.**  
Richard Griffiths Welford, Esq., 2, New Square, Lincoln's Inn.  
**Solicitors.**  
Frederick West, Esq., 3, Charlotte Row, London.  
Messrs. Vizard & Shute, Dursley, Gloucester.  
**Surveyors.**  
Messrs. Hewitt Davis and Francis Vigers, 3, Frederick's Place, Old Jewry, and 2, Old Palace Yard, Westminster.  
**Offices of the Company.**—2, Old Palace Yard, Westminster.  
**Agents in Scotland.**—Messrs. Hunter, Blair, & Cowan, W.S., 11, York Place, Edinburgh.

The Company is incorporated by "THE LANDS IMPROVEMENT COMPANY'S ACT, 1853," the powers and provisions of which apply to England, Wales, and Scotland, and have been framed with special reference to the exigencies of modern agriculture.  
By means of this Act the landed proprietor is enabled effectually to overcome those various obstacles arising from peculiarities in the ownership of real property, and from accidental circumstances, which have hitherto so injuriously impaired the application of capital to agricultural improvements. To whatever extent his estate may be encumbered, or his interest in it restricted by settlement or otherwise, if its value can be adequately increased by the judicious outlay of capital, the owner is empowered to effect, through the medium of the Company, the requisite works of improvement, without costly investigation of title, and at a very moderate preliminary expense.

The improvements will be executed under the sanction of the Inclosure Commissioners, and the authorised outlay, in which the preliminary expense is included, is constituted by the Act a first charge on the inheritance of the land in the shape of a terminable annuity or rent-charge.  
The Company possess also an important advantage in the mode of obtaining money to be advanced or expended for improvements. In the case of existing Drainage Companies, the only mode of reproducing the capital is by sale of the rent-charges. The demand, however, for these securities being necessarily limited, the Company devised a scheme for rendering available for Land Improvement the floating capital of the country. With this view, they applied for and obtained the additional and very valuable power of issuing, under the authority of the Inclosure Commissioners, debentures founded on the rent-charges, and transferable, free of duty, by endorsement under hand only; thereby securing, under ordinarily favourable circumstances, a cheap and unlimited supply of capital.

By this Debenture scheme, commercial principles are for the first time, perhaps, applied to Land Improvements. The Company is made, in fact, an agency between the Landowner requiring money for improvements, and the public seeking a safe and convenient investment. A small amount of paid-up capital will enable the Company to outlay, or to advance a very large amount of money, and the profit being made on extensive transactions, and divisible on a limited amount of Share Capital, it is evident that it may and will afford a most ample return to the Shareholders with very moderate charges to the Landowner.

The Company's profit will be derived—  
1stly.—From works undertaken and executed by them.  
2ndly.—From Commissions on advances to Landowners executing their own works.  
3rdly.—From fees charged for the use of the Company's powers, where Landowners execute their own works and employ their own capital.  
In Scotland, where restrictions on Ownership extensively prevail and where Farm Improvements are thoroughly appreciated, the Company's Act is the only measure for Land Improvement hitherto granted to a public Company; and from the applications already received, the Directors anticipate from that country, a most extensive demand for assistance.

Applications for shares in the annexed form may be addressed to the Managing Director, at the Company's Offices, 2, Old Palace Yard, Westminster, where all further information may be obtained.

**FORM OF APPLICATION FOR SHARES.**  
To the Directors of the Lands Improvement Company.  
I request you will allot me \_\_\_\_\_ shares in this Company, and I agree to accept the same, on any low number that may be allotted to me, and to pay the deposit thereon of £2 per share, when required.  
Dated this \_\_\_\_\_ day of \_\_\_\_\_ 185\_\_\_\_\_  
Signature.....  
Name in full.....  
Address.....  
Occupation.....  
Reference .....

**LAND DRAINAGE.**  
**MR. JOHNSON** (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five Shillings per acre; or if under 80 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

**LAND DRAINAGE.**  
**MR. BAILEY DENTON'S TABLES OF COST,** &c., price 1s. 4d. Sold by MITCHELL, Parliament Street.  
**MR. BAILEY DENTON'S WORKMAN'S A LEVEL,** price 1l. 10s. Sold by JONES & Co., High Holborn, London.

**DRAINAGE AND IRRIGATION.**  
**HENRY WEBBER** begs to inform Landowners and the Public that, having had considerable practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by contract or on commission. Reference given.—Address, Hailberton Court, near Tiverton, Devon.  
H. W. wishes particularly to call attention to his improved and inexpensive method of Irrigation, whereby, at an outlay of a few pounds an acre, he can convert land having a sufficient quantity of water at command, into water meadow, which may be mown every year, without the application of manure.  
Any further information will be given on application.

**ROYAL SOCIETY FOR THE PROMOTION OF LAND IMPROVEMENT OF THE GROWTH OF FLAX IN IRELAND.**—The Annual General Meeting will be held at the Society's Rooms, Commercial Buildings, Belfast, on FRIDAY, November 25, at 12 o'clock, to receive the Committee's Annual Report, and its Annual Statement of Accounts; to Elect Office Bearers, and to transact such other business as may be brought before the meeting. By Order.  
Belfast, Nov. 12. JAMES MACADAM, JUN., Sec.

**THE BIRMINGHAM CATTLE AND POULTRY SHOW.**—The Entries Close this Day (Saturday), November 12th.—JOHN MORGAN, Jun., Secretary.  
Offices, 39, Bennett's Hill, near the News Room, Birmingham.

## The Agricultural Gazette.

**SATURDAY, NOVEMBER 12, 1853.**  
MEETINGS FOR THE TWO FOLLOWING WEEKS.  
THURSDAY, Nov. 17—Agricultural Imp. Society of Ireland.  
THURSDAY, — 24—Agricultural Imp. Society of Ireland.

It was pointed out some years ago by Professor HENSLow, in his report on the diseases of Wheat, that Ergot is of much more frequent occurrence than is generally supposed, though for the most part it is present in such small quantities as not to attract notice. We have just received from a correspondent a sample which has been picked out from Wheat in which it is so abundant as to make it a question how far it may be prudent to separate the diseased grains. We have no information as to the weight of the corn amongst which it grew, but assuming it at 18 stone, the weight of a sample of this year's growth now before us, but which, perhaps, may be too large for that in which the Ergot occurred, we find that the Ergot formed  $\frac{1}{10}$  in measure, and  $\frac{1}{15}$  in weight of the whole mass. Now, supposing a quarter of such Wheat to make 28 stone of flour, and 33½ of household bread, it appears that about two-thirds of a grain of ergot will be consumed in every pound of bread, and taking the consumption of a labouring man at 1½ lb. of bread daily, he will take one grain of ergot, a quantity which there is not the least reason to believe capable of producing the dreadful gangrene which arises from the constant use of bread into the composition of which a large proportion of the diseased grains enters. If it is borne in mind that 60 grains is something near the dose which is requisite to act upon the uterus, no fears need be entertained of any evil consequences arising from its specific action on that organ. Considerable quantities of ergot are sometimes eaten by children in the north of Europe, under the name of St. John's bread, without any evil effects. M. J. B.

A TOLERABLY full abstract is given, in another page, of the discussion on the BENEFITS OF SCIENCE TO AGRICULTURE, which was conducted last Monday before the London Farmers' Club. We wish that room could have been found for a fuller report of Mr. BAKER's opening paper, and of the speeches which were afterwards delivered in review of it; but, condensed as our statement is, it will, we are sure, be studied with interest by our readers. They will be gratified to find how generally and cordially a body of practical men unite in acknowledging the advantages which have been derived from the suggestions of those who, though uneducated in the details of their art, have made themselves acquainted with the great natural laws and truths by which all details are regulated. The resolution at which the Society arrived affirms with sufficient distinctness the fact that much of our recent agricultural progress is due to the light thrown on farm practice by scientific men. Practically, there can be no doubt of the advantage of enumerating and publishing the benefits which agriculture has thus received; and every one must admit that the influence of such a publication is much increased when it is undertaken by a gentleman of Mr. BAKER's standing and experience, and when it is sanctioned by a body of professional men such as are united in the London



Farmers' Club. And yet there are dangers and liabilities to mischief even here to which we would call attention.

We are very apt, when discussing the relations between what are called Science and Practice, to use those words as if they represented two entirely separate and distinct ideas—if, indeed, in some minds they do not assume the form of even antagonistic ideas. And, however clearly the farmers' club or any other agricultural society may affirm the benefits of science, they will do injury and not good if they shall at all sanction what, we suppose, may even yet be called the popular idea of science in relation to agriculture. Mr. BAKER's address was especially irreproachable on this ground: it was full of detailed experience, so that one knew not whether it was more useful as an epitome of farm practice or as a scientific discourse. But subsequent speakers, we think, did not sufficiently act upon his example. Science was held up as an altogether separate and distinct idea—it was even personified and called "the inquiring mind" in contradistinction to the merely imitative or practical mind. It would seem, accordingly, as if "Practice" received its benefits from "Science" as from without—as from an altogether separate and distinct source—as from a system complete in itself as it were, having its own rules, its own matter and substance. How untrue all this is to Nature any one may easily perceive; for the fact is, that Practice and Science are inseparable—the former furnishing the very substance of the latter. It might have done, two centuries ago, to speak of science, or of that which then bore that name, as apart from experience or practice, for then it was mere speculation, and practice or experience alone was real; but now there is one word which includes them both, and that word is Truth. Science has in fact arisen out of the testimony of practice or experience, and it is itself as trustworthy and as true as are the separate pieces of which it is built. The grand and simple truth on which Lord Bacon insisted, that knowledge was to be increased only by observation, was not likely to result in mere theories and fancies; what it has resulted in is existing science and existing practice—both involving bodies of truth equally trustworthy and valuable—each becoming more certain, improving, growing under the light shed upon it by the other; or rather, both involving the same body of facts—the one concerning itself with the classification of which those facts admit—concerning itself in fact more especially with that aspect of them which they present to the intellect—the other concerning itself with their immediate and individual uses and values; in short, with that aspect of them more especially which they present to the senses. Practice and Science, then, ought not to be separated even in idea: they have been inseparably wedded ever since Bacon's time, so that they are now "one flesh;" and the offspring of their union we need not say has exerted the happiest influence ever since.

If, then, any one should gather from any of the speakers at the meeting last Monday that Science is a mere body of ideas, speculations, and theories, which has indeed in so many enumerated instances happened to tally with existing practice—to furnish useful suggestions, or to indicate profitable methods—but which, as it has on the whole left things pretty much as it found them, may be disregarded as not of essential importance in agricultural education, great mischief will be done.

And we venture to submit that by resting our belief of the advantage of Science simply on an enumeration of so many particular instances of the benefits which scientific men have conferred, we do in some measure sanction the idea that the uses and the value of science in agriculture are to a certain extent casual, not to say accidental—that in itself it is, after all, a mere airy unsubstantiality, with an existence, such as belongs to it, quite apart from agriculture or any other art, dwelling, in fact, only in the land of thought, and therefore not likely to give us a very hard knock if we do happen to come into collision with it, nor, excepting always the specified instances to the contrary, so very likely to help us along, even when we happen to agree with it.

Two hundred years ago when, spider-fashion, Science spun its fancies and its sophistries out of its own body, instead of building, as it might, a substantial structure of the material which Nature presented and which observation could appropriate, it might have done very well to insist in this manner upon the value of the resulting web by counting, as it were, the flies which it had thus accidentally caught, but in the present day Science is no mere web of speculations and fancies. It is systematised truth. Its dicta are neither questions nor suggestions; they are trustworthy assertions; corroborated not only by here and there a happy exceptional instance; corroborated by every fact which every sense com-

municates to every mind, whatever its position, and whatever the subject on which it may be bent. Of course we do not wish to imply that Science, so called, is perfect, but merely that all facts are the subject matter of science, that every fact is a "scientific" fact, as the thing is sometimes absurdly enough put; that the facts of agricultural experience, as well as of all other experience whatever, are acknowledged, accepted, and arranged in science.

It is, therefore, simply an impertinence in the eyes of every intelligent man to attempt a laboured proof of the usefulness of science, and it is simply a mistake to speak of it as if it had a being apart from the practice, experience, and observation on which it is founded, and of which it consists. Mr. BAKER did neither the one nor the other; his paper was a history of agricultural progress; a recital of the successive steps in advance which the art has made of late years; and a reference to the circumstances of each, showing how much credit was due to men who had studied other facts besides those of farming, who had, in fact, made themselves acquainted with the great bodies of truth bound up in the words geology, chemistry, &c. &c., as well as with those other truths which are presented to their minds in the experience of the farmer. And it appeared most clearly from his statement not only that the sciences did in fact, as any one might know they must, throw a light of their own on agricultural practice, but that it was agricultural experience itself which, read in this light, indicated the policy of the steps which had proved so beneficial.

Mr. BENNETT, whose opinion justly carries great weight in all agricultural meetings, insisted most properly on experience as, after all, the only conclusive test; but when from subsequent remarks we gathered him to mean, "conclusive, whatever science might pronounce," then, although there too we entirely agreed with him, yet we venture to submit that a deliverance in such terms, from such a man, tends most mischievously to spread the popular delusion that science has any existence whatever apart from experience—or that men of science assume any other authority than that which experience gives them.

Let the agriculturist hold most tenaciously to what his experience tells him; no one will commend him for this more highly than the man of science. And do not let him imagine that in concluding to give his son a scientific as well as a practical education to fit him for a farmer, he is likely to fill him with fancies and theories and speculations which may or may not tally with his own practical experience—he is but adding to that amount of knowledge which his own experience has taught him, that to which the experience of other men has testified; for "science is the knowledge of many, orderly and methodically digested and arranged, so as to become attainable by one"—he is but adding to the mere finger-post, to which a limited experience may be compared, the trustworthy map of the whole territory which others have surveyed—he is but adding to the certain knowledge his own personal observation has acquired the equally certain knowledge which that of others has gathered—and, knowing that all the facts thus collected have originated in One Will, he cannot fear that they will contradict one another, or puzzle and mystify their student—he need not hesitate to believe that they will perfectly harmonise, and that those of the farmer's experience in the field will be illustrated and explained, and probably rendered suggestive and instructive, by those of the chemist in his laboratory, and of the geologist, botanist, and entomologist in their several departments of labour and observation.

We call the attention of our readers to the prospectus advertised in another column of the "LANDS' IMPROVEMENT COMPANY." For all those in the occupation and ownership of lands requiring improvement, whether by way of drainage, building, or embanking, and other such so-called permanent improvements, or by way of enclosing, road-making, and even irrigation, planting for shelter, and fencing; for all such who may desire to effect all or any of those improvements at the expense of an annual rent-charge, for a limited number of years, on the estate, and by means of an efficient machinery—an intelligent staff of officers, among whom the name of Mr. HEVITT DAVIS appears—long practised in the several departments of agricultural engineering—for all such we say it will be well worth while to procure a copy of the Act of last session, incorporating the Lands' Improvement Company, and to study the somewhat extraordinary powers therein conferred upon it.

It is with the company, only as a useful agent in the work of agricultural improvement, that we have to do; nevertheless, as the shareholders by whose capital its efficiency will be maintained are or will be to a great extent a body of agriculturists, we may

refer to its constitution and powers in this aspect of the matter, too. It appears, then, that it has power to raise 300,000*l.*, and employ it either in purchasing and improving land, provided that not more than 500 acres be in its possession at any one time—or in improving, in the ways already enumerated, the lands of others, securing the return of all expenses incurred in these several ways, by an annual rent-charge for a limited number of years, on the estate so improved. And not only so—but by having liberty to issue debentures to the extent of four-fifths of the principal money so secured, it can, with the limited capital already named, extend its operations to an almost unlimited extent. Supposing it to have invested its 300,000*l.*, it can, by the power to issue debentures, command and employ a capital of four-fifths of that sum for action elsewhere. With, in fact, a limited capital, its powers do, in possibility, extend to the employment of an almost unlimited amount. They extend, in fact, to the command of a sum consisting of an unlimited number of items, the first of which is 300,000*l.*, the second four-fifths of the first, the third four-fifths of the second, and so on *ad infinitum*.

This, of course, merely represents the far distant limit by which the ultimate powers of the company are bounded—it will doubtless never be anything like approximated—but we mention it to show the nature of the company, not only objectively but subjectively; that it is, in fact, an instrument of extraordinary power, which landowners may employ to an almost unlimited extent—and that in itself it may become not only a great "land improving" but a great banking company, involving, of course, additional responsibility on those in the management. We do not wish, in the above remarks, to be understood as making any invidious distinction between this company and others already existing of similar aim, though we believe of less power; these we have already referred to as they severally came into useful operation; and, of course, no exception can be made in the case of this additional association, possessing, as it does, such enormous powers, and such an experienced and well-qualified agency.

#### DOES LIVE STOCK PAY?—No. II.

In continuing the discussion of this question (adopting as a text the prize report made by Mr. McCulloch to the Highland and Agricultural Society), I now give—

A TABLE showing the quantities of food consumed by 21 lots of cattle—containing in all 65 heads—for 100 days; with the increase in dead weight resulting from this consumption.

Lots and Nos.	Swedish Turnips.	Mangold.	Carrots.	Oat-straw.	Hay.	Bean-meal.	Oilcake.	Rape-cake.	Beef made.
Cattle.	cwt.	cwt.	cwt.	lbs.	lbs.	lbs.	lbs.	lbs.	Imp. stones.
Lot 1—3	...	254½	...	2100	...	1200	...	...	183
" 2—3	348	...	2100	...	1200	...	...	...	183
" 3—8	348	...	2100	...	1100	...	...	...	183
" 4—3	...	321	...	2100	...	...	...	...	183
" 5—3	400½	...	2100	...	...	...	...	...	17½
" 6—3	267½	...	3000	...	1200	...	...	...	21
" 7—3	...	214½	...	3000	...	1200	...	...	183
" 8—3	267½	...	2800	...	21½	36	1455	142	...
" 9—3	...	201	...	3000	...	900	...	700	194
" 10—3	267½	...	3000	...	...	900	...	700	17½
" 11—3	267½	...	3000	...	...	900	...	700	16½
" 12—3	267½	...	3000	...	...	900	...	700	14½
" 13—3	267½	...	900	2100	900	...	...	700	21
" 14—3	267½	...	900	2100	900	...	...	700	19½
" 15—3	267½	...	900	2100	900	...	...	700	17½
" 16—3	267½	...	3000	...	900	...	...	700	20½
" 17—3	...	187½	...	3000	...	900	...	700	15½
" 18—3	...	187½	...	3000	...	900	...	700	17½
" 19—3	...	...	225	3000	...	900	...	700	18
" 20—4	534	...	...	2800	...	...	...	...	30
" 21—4	534	...	...	2800	...	...	...	...	26
65	4306½	1566½	225	51,600	6300	1491½	1136	9155	400½

It may be well to give some explanations bearing on the above table for the benefit of those who have not the original details of the experiment to refer to. In all the combinations of food, save that of the first five lots, the extra food—Bean-meal, oilcake, and Rape-cake—were given cooked, that is, mixed with 3 lbs. cut straw, and boiling water poured over the mixture. A comparison of No. 1 with No. 7, and of No. 2 with No. 6, will show the benefit derived from this cooking process, amounting in the first case to a saving of 40 cwt. Mangold, with the same fattening result; in the second case to a saving of 80 cwt. Swedes, with an extra increase of 2½ stones in beef weight; from this has to be deducted in each case, the value of 900 lbs. cut straw and the labour of preparing the mess.

In Lots 13, 14, and 15, a comparison is made of the results from hay, cut green, before flowering (13), hay cut when in flower (14), hay cut when ripe (15); the difference between the first and last being 3½ stones beef more produced by the green than the ripe hay. No. 16 contrasts with these the result of a similar weight of Oat-straw, which is but little short of the green-cut hay. Again, No. 12, compared with No. 16, shows that Turnips from poor land (No. 12) are much inferior to those from good land (No. 16). Lots 20 and 21 afford a comparison between box (No. 20) and stall-feeding (No. 21), favourable to the former, by showing 4 stones extra of beef from like quantities of food.

The total quantities of food consumed are stated



w, and valued by the tariff adopted by Mr. Culloch.		£ s. d.
106½ cwt. Swedes ...	per ton, 6s., 64 11 11	
106½ " Mangold ...	" 8s., 81 6 8	
225 " Carrots (No price stated) say " 8s., 4 10 0		
100 lbs. Oat-straw } by Mr. M'C. " 25s., 25 16 0		
300 " Hay ...	" 36s. 8d., 5 3 2	
11½ " Bean-meal ...	" 140s., 46 12 0	
136 " Oilecake ...	" 155s., 3 18 7	
155 " Rapecake ...	" 90s., 16 7 10	

In my paper of last week I adopted Mr. M'Culloch's figures, given in his tables, as the value of the food consumed. I shall not endeavour to explain how it happens that his figures do not accord with the above; but I will assume my own statement as correct in calculation, and very low in estimated price. We arrive, therefore, at this result:

Value of food consumed as above ...	£203 6 2
Interest and insurance on 65 head of cattle for 100 days, say 3 per cent. on 6507 ...	19 10 0
Attendance—services of three men per 100 days, at 1s. 4d. 20 0 0	

If produced, 400½ imperial stones, at 6s. 6d. ... 242 16 2

Cost of excurie of cattle ...	112 12 11
These excurie were mixed with the litter used as stated by the porter, say:—	
1 ton straw for each stall-fed beast, 61—30½ tons	
1 " " box do. 4—6	
36½, at 25s.,	45 12 6

Total sum which manure cost ... £158 5 5

I now come to inquire what quantity of manure was produced to cover the above cost. I shall follow that of authority, Morton's "Cyclopedia of Agriculture," estimating the manure produced at three-fourths of the weight of the food consumed—of which, in the case of box-fed beasts, the whole will appear in the shape of solid manure, while from stall-fed beasts one-half will be in solid manure, the other half in urine. I derive from this that there was produced of

	Solid Manure. cwt.	Liquid Manure. cwt.
From the box-fed beasts ...	430	2355½
From the stall-fed do. ...	2355½	2355½
Litter as above ...	730	

Value of solid manure, 175½ tons. Of this the value is generally estimated at 5s. per ton—and if we were to adopt a higher value we could not have Swedes at 6s. per ton ... £43 16 4

Upon liquid manure I should be disposed to place a value according to the ammonia contained in it; considering the other substances held in suspension as barely equal to the expense of distribution. Of the urine of fattening oxen, there is no analysis that I can find recorded; but assuming the ammonia contained in it at 1 per cent. (which is nearly double of Boussingault's analysis as to cow urine) we have—23½ cwt. (2632) lbs. ammonia, at 6d. per lb. ... 65 16 0

Total value of manure ... £109 12 4 being 48½, 13s. 1d. less than the cost of the same, assuming that lean stock cost no more per stone than they fetch when fattened; and I believe the experience of feeders—Mr. Meech included—is that they cost a large percentage more. No wonder, then, that he exclaims, "and with some reason, 'We have to pay smartly for our manure;' no wonder that visions of great arterial channels carrying sewage manures from the populous cities to the half-manured fields of merry England, should appear to him as a portion of the *meliora*—better things to come. S.

#### THE KEYTHORPE SYSTEM OF DRAINAGE.

I ought to be proud of the space which my name occupies in the columns of your Number for the 29th of October. A letter by Mr. Bailey Denton and a leader by you, all about Mr. Trimmer; my friend, Mr. Denton, has attacked me, and you have so ably defended me that I should have been well content to leave the matter as you have left it, if I did not fear that the motives of my silence might be liable to misconstruction. Mr. Denton commences by complimenting me on having done good service to agriculture, by having drawn the attention of landowners to the importance of surface geology. He then declares publicly, what he has told me privately, that I have made a mistake in advocating the Keythorpe system of draining, and in citing it as a confirmation of principles which I had deduced from observation before I knew that they had previously been acted on by Lord Berners. On that point he says I have generalised on principles not duly matured. Will Mr. Denton allow me to ask how long he thinks it requires to mature a principle? I have studied the superficial deposits on which the distribution of soils and subsoils depends for 25 years, and that is a large portion of "man's brief span." Wherever I have studied them—in England, Wales, or Ireland—I have found a class of deposits which I have called warp-drift, and which had hitherto escaped observation; distinct from the different varieties of erratic tertiary or northern drift, of subsequent origin, and filling furrows in the surface of whatever had they rest on. The principles of draining which I have deduced from these observations have been tested by 15 years' experience at Keythorpe. What more would Mr. Denton have? How much longer must I serve an apprenticeship before I set up for myself? How much longer must I be content to confine myself to the alphabet of surface geology before I combine its letters into words, because these words may tell on great practical and scientific authorities in draining that their knowledge of soils and subsoils, and of the principles on which cheap and efficient draining

must be conducted, is not quite so perfect as they imagine.

Whoever attempts a forward movement in practice or science must expect opposition from those who have acquired vested interests in things as they are. For seven years I have fought the battle of warp-drift and the furrowed surface on which it rests, as a question in pure geology, with those geologists who have vested interests in geology as it is. I have come off victorious in that contest, and shall not shrink from another with those draining engineers who have vested rights in draining as it is. I expected to be attacked by them, and have wondered that the attack did not come sooner. I expected they would cease firing on one another, to blaze off a little powder at the Keythorpe system and me. I say cease firing on one another; for never was there so divided a house as the fraternity of drainers. I could enumerate five or six different varieties of the up-and-down and gridiron systems (I have to thank Mr. Denton for the latter name), each calling itself practical and scientific, and talking about gravity, capillary attraction, and so forth. These are all opposed to the purely practical men; who prefer drains across the line of greatest descent, and who are sometimes right and sometimes wrong. The result of my researches is to show where they are right and where they are wrong, and to substitute the true principles on which their success depends, when they are successful, for the variety of absurd theories which they assign in justification of their preference. I expected an attack, but not from Mr. Denton, because, of all the practical and scientific systems, his approaches the nearest to the Keythorpe system. It approaches so nearly, that it would have been easy for him to have slipped quietly into it. If he had even gone further, and claimed to have always practised it, I might have found some difficulty in disproving his claims. I live in expectation that he will adopt it yet. This expectation is founded on the belief that he has misunderstood my paper. His time is much occupied, and he has read it so hastily, that if I did not know the contrary, I should think he had not read it at all. He appears to suppose that the parallel drains at Keythorpe cross the fall of the surface at right angles. If he will read the paper again, he will find that they cross it obliquely, so that they have sufficient fall for water to run along a free channel, without any violation of the laws of gravity, and without deserting that channel, in order to filter through the soil lying lower down the hill. Again, he will find that they only cross the line of greatest descent, when the subterranean furrows which they cross run with that line; and that, on those parts of the surface where the inclination is trifling, and where there are no furrows, the parallel drains follow the line of the fall.

Again, Mr. Denton says, to do a thing successfully is creditable, but that success may be gained at too great a cost, and that such must be the case where drainage is effected in opposition to the laws of gravity. Now, the merits of the Keythorpe system are its cheapness as well as its efficiency. I have given the accounts of the total cost of draining a farm of 398½ acres, and the whole expense for labour and materials is less than 2½. 12s. the acre. Can Mr. Denton drain clay soils for less? Can he drain for so little? He says, again, that success must be too costly if gained by draining in opposition to the laws of gravity. I will say, for I have as great faith as Mr. Denton in the laws of gravity, that successful draining cannot be effected in opposition to them. You, who have not misunderstood me, have shown that the Keythorpe system is in accordance with those laws, under the conditions of soil and subsoil which I have described. The question then comes to this: Are all soils homogeneous? Are not such soils the exception rather than the rule? Do they generally rest on a furrowed subsoil or substratum? What are the circumstances under which they do not? These are questions which I put to Mr. Denton, on his reputation as a practical and scientific man, and as one who has many opportunities of observing soils and subsoils, if he thinks such observations worth making, and if he has learned how to observe. J. Trimmer, *Wilmington, Dartford.*

#### Home Correspondence.

*Slugs.*—How is it that "D" allows slugs to destroy his crops? Let him get up about six o'clock on a moist morning and give it a good dressing with fresh lime dust, about 20 bushels to the acre, at a cost of 3d. per bushel, and we shall not hear any more of the slugs destroying his crops. C. B.

*Cleaning Land in the Autumn.*—The concluding paragraph in your Leading Article of last week on this important subject has reminded me to express the firm belief which I entertain in its efficacy, especially when it is performed on light soils; for not only does it afford the advantage of an early seed time, but it does rid the land of a tribe of very noxious tenants before winter; also the great good that must be derived in a chemical point of view, by frequent and deep stirrings of the soil, exposing it to the free agency of the atmosphere. I may be permitted here to state my reasons for being so sanguine in the good effects produced by cleaning stubble land before winter. A field which for many years prior to 1819 was sadly out of condition, and the causes alleged by persons residing in the neighbourhood were that it was drained so dry as to produce bareness; but notwithstanding this and other views of the case, after harvesting a very bad crop of Oats off in the above year, we set to and had it well fallowed in the autumn, exterminating all the bad tenants, then gave it a good deep ploughing, in which

state it remained during winter; but in spring we only had recourse to such operations as were necessary to keep the weeds in subjection. Towards the end of June it received its final preparation, and was sown with white Turnips about the 4th of July. It is not necessary for the object in view that I should enter further into details. Suffice it to say, that the aim was attained—"a full green crop on the whole breadth of suitable land;" indeed, a better crop of white Turnips I have not seen since nor before in this district. I may observe that they were all eaten off by sheep, and in January, 1851, it was sown with white Wheat, which yielded, as nearly as possible, at the rate of five quarters per acre, and brought the highest market price of the time, as the greater part of it was sold for seed. The year after it was under seeds, which were pretty good; again followed another Wheat crop (the one of this year), which, when considering the season, was equal to, if not the best field of Wheat we had. I mention these circumstances with the view of being understood that it is my belief that it was owing to the good effects produced by thorough cleaning and working the land in autumn that enabled us to raise so good a crop of Turnips, and consequently other good crops succeeded them; and now, while I pen these remarks, we are again engaged in cleaning this same field, and which I hope to have done in good time, and when we shall spread on it at the rate of seven or eight loads of fresh fold-yard manure per acre, then give a pretty deep ploughing, and leave it to unite with the different particles of the soil during winter. In conclusion, I may add that it is intended to be cropped with Mangold Wurzel and Potatoes next season, when we purpose at the time of sowing to apply a second dressing of fold-yard manure, guano, and salt; after this preparation, should the season set in favourable, I shall have no fear of raising twice the quantity of Mangold Wurzel which I could obtain by having recourse to the ordinary mode of culture; viz., by ploughing the land once over and allowing it to remain till spring. R. Deane, Nov. 8.

*The Lands' Improvement Company.*—Of the various companies brought out of late years to effect public objects by means of private capital, there is none likely to be more useful to this country than "The Lands' Improvement Company." By the use of its powers, the owners of entailed or heavily encumbered estates may readily obtain capital, at a moderate rate, to improve their estates, and in this way the national wealth may be increased, at the same time that individuals are being largely benefited by the expenditure. The money may be borrowed either from the public market, or of private individuals. The life owners of the estates may themselves advance the money, and in this way find investments, or provide for the payment of sums to younger children, availing themselves of the security of the property in their own tenure, for the employment of their capital whilst giving to their property the advantage of the outlay. It can hardly be necessary to say a word upon the advantages that this company offers to landed proprietors to get their estates benefited by drainage, irrigation, embanking, enclosing, reclamation, clearing, road-making, planting, and building. A reference to the Act of Parliament, 16 and 17 Vict., Sess. 1852-3, will show how much is now in the power of landowners to have effected by its means, but, as the transferable mortgage debentures are a novelty, and for a time will be little understood, some information to show their utility may be desirable. They will not only enable the landowner to borrow the money on easier terms than by an ordinary mortgage, but they will present to the public a new and most desirable security; they will be like bills of exchange, payable to order at certain dates, and transferable by simple endorsement from hand to hand. They will bear interest, which will be paid half-yearly; and as they will be first charges on the estates after they have been enhanced by the outlay, and will be issued under the seal of the Inclosure Commissioners, and as the company guarantees and undertakes the payment of the interest 14 days prior to its falling due from the landowners, they will afford a security far superior to any ordinary mortgage, and be particularly useful in bringing capital to be employed in the improvement of land that is now locked up in foreign adventures from the want of such transferable securities as these debentures now first offer to the public. Hewitt Davis, 3, *Frederick's Place, Old Jewry.*

*Drainage.*—In expressing my regret to your correspondent "C." for having misinterpreted his words, I must apologise for prolonging personalities; but in taking the view I did, I cannot admit my deductions were baseless. I am not misquoting "C." when I say he expressed himself "surprised and annoyed" that drains laid 8 feet deep a chain apart in stiff clay left the land still very wet. Now, I must ask those who take any interest in the subject whether the reasonable deduction to be drawn from these words was not that the acts which caused these emotions were "C.'s," and not his predecessors. If it were not so, why should he feel surprise and annoyance? Any person having practical experience would expect such a result, and would feel neither surprise nor annoyance. It has fallen to my lot to inspect many works of drainage triumphantly declared by interested parties to be "failures of deep drainage," some ascribing existing defects to too great a depth, some to the misdirection of the drains, some to the use of pipes instead of tiles, some to one thing and some to another, just as prejudice has influenced their judgment; and I have little doubt, although "C." may not know it, that some of his neighbours (who still drain 18 inches deep in the



furrow with bushes) have boasted of the failure of deep drainage in this case, although but 3 feet deep. In every instance of actual failure which has come under my notice, it has arisen either from the misapplication of prescribed theories and rules, or the want of all system, or from defective workmanship, or from inappropriate treatment of the land after draining. In one case I was requested to investigate; the complainant did not know where to look for the outlets, and at last found them buried a foot below the bottom of the outfall ditches which he had allowed to curve in and silt up. Still that man had boasted at the market table that he had told his landlord, "he knew deep draining would not do on his land." Again, it was only on Saturday last, after a succession of rains amounting to 5 inches' fall in five days, that a tenant farmer of high character, living on the Oxford clay, sought permission of his landlord to put bush drains 18 inches deep in the furrows of land drained last year, 4 feet deep, 9 yards apart, because he saw water standing in those furrows at the lowest parts of the field; and when I pointed out to him his own ploughing with four horses on end, treading and polishing the same furrows which have existed from time immemorial, as the cause of the water resting there for a time, and suggested to him that he should gradually endeavour to get rid of his high back lands, and by subsoiling and deep cultivation open up the soil, he exclaimed, "You want me then to buy the land; it would take all my capital, and would enrich my landlord only. I did not bargain for that when I desired to have my land drained." Thus is drainage esteemed, and thus is drained land treated by many who are to develop its results. In the discussion which "C.s" note has produced, the subject of the Keythorpe drainage has been referred to; and, as I hold a strong opinion that the main feature in Lord Berners' system is opposed to the first principles of economy and success, I cannot allow the matter to drop without warning all who have drainage works still to perform, against the fallacy of conducting the main drains with the fall and the parallel drains across it. The importance of Mr. Trimmer's investigations of surface soils and subsoils cannot be over-estimated, and as the observations of practical men partially if not wholly confirm his views, we shall find that not only will the opinion become obsolete that the stratification or lamination of the soil lies at an uniform angle with the surface, but the prevailing gridiron system of equi-distant drains will go out of fashion also. Under no circumstances nevertheless can it become economical to disregard the laws of gravity by the adoption of cross drains, even though the fifth point insisted upon by Mr. Trimmer in his essay on the Keythorpe drainage were proved to prevail, which, with great respect to him, I venture to doubt. *J. Bailey Denton.*

### Farmers' Club.

LONDON, Nov. 7.—At the monthly meeting of this club this day, Mr. Baker, of Writtle, gave a very admirable lecture on the *Benefits which Science has conferred on Agriculture*. We wish we had room for a full report both of it and of the interesting discussion which ensued upon it; failing this, we must be content with a mere abstract of both. The lecturer gave a rapid sketch of the relation in which the different sciences stand to the practice of the farmer, and recited the many instances in geology, chemistry, botany, entomology, mechanics, architecture, &c., where farm management had been improved by the suggestions and discoveries of scientific men. In geology, which, as it concerns itself with the formation of soils, naturally comes first under consideration, the invariable order of the strata was referred to as furnishing a safe and trustworthy groundwork on which to proceed in seeking for materials with which to improve soils. The means of altering and improving the texture and character of the soils along the edge of the chalk and the London clay by materials from either side of the line separating these formations respectively was alluded to. The actual improvements in Essex, Lincolnshire, Norfolk, and other places which had thus been effected were recited. The inner structure of soil and subsoil, as affecting the art of drainage, was alluded to, and the importance of geological knowledge as a guide to this art was thus contended for. The great variety of opinions among drainers was alleged to be a proof that some fundamental principles, such as geology would furnish, were yet to be obtained for their guidance. The science of chemistry was alluded to as illustrating the manufacture of food and the growth of crops. The writings of Sir H. Davy, and latterly of Liebig, were named as having amazingly contributed to the furtherance of agricultural improvement. The application of manure to land was now no hap-hazard practice; the composition of the soil and of the plant to be grown was now ascertained, and manuring became the art of supplying the deficiencies of the former in relation to the necessities of the latter. The practice of bone manuring was referred to, and Liebig's successful suggestion for their solution, or for their being rendered soluble, previously to their application, was named as a special instance of the happy application of scientific knowledge. Now coprolites, thanks to the analyses and instructions of scientific men, have been applied, and tend to keep down the price of bones by their use in the manufacture of artificial manures. The first importation of guano, the subsequent attempts at its imitation, as assisted by chemical knowledge, and of its adulteration, as exposed and hindered by that same knowledge, were named. The

subject of waste in the management of manure was named as preventable by following the instructions of the chemist. Economy in the preparation and use of food, as well as in the preparation and use of manure, was also in this way facilitated. Food, as we now know its composition, and as we now know its results in the act of growth, may be prepared with an intelligent view to the ends it is to serve, and may be adapted to the requirements of the animal, whether it be young and growing, or mature and fattening, with a greater exactness and economy of means than it could be under the rough and uneven guidance of mere practical experience. Mr. Baker concluded this part of the subject by recommending the perusal of a lecture by Mr. Nesbitt, lately delivered to the Driffield Farmers' Club.—On mechanics much was said. The great improvements in the art of cultivation by the use of more efficient means were pointed out; and while simplicity and a well-guided selection from among the multitude of implements now in vogue was recommended, the position of the farmer now, with that of Tussar's agricultural cotemporaries, was contrasted. The drills and scarifiers, implements for preparing the land and seeding it, for cultivating it during the growth of the crop, for gathering the crop in after maturity, for preparing it whether for market or for food, which now-a-days, thanks for an improved application of mechanical science, we enjoy, were contrasted with the rough plough, harrow, roller, which formed the almost entire list of agricultural implements two centuries ago.—The science of botany was named, too, as furnishing the means of both intelligently selecting and successfully improving our cultivated plants. It was alluded to as giving instructions on the nature of soils by the indications afforded by their natural produce. The character of soils being indicated by their weeds furnished the practical suggestion, that weeds could be got rid of by altering the soil, and the application of clay to chalky and sandy soils for the purpose, which it most efficiently served, of destroying Poppies, Charlock, &c., was one which the botanist might take to the credit of the science. The means of improving plants by artificial hybridising, and the injury done in the nurseries of our seedmen to the purity of seed by a natural hybridising were alluded to. Brassicas, especially, turned out neither one thing nor the other, when seed was used from a nursery where all sorts were sown near one another. The subject of parasites, mildews, fungi, was alluded to, as being greatly elucidated by the botanist. Thanks to information thus derived, we have now got rid of the smut-bill in Wheat—the spores of the mischievous fungus, which are there operative, are destroyed by the process of cleansing to which our seed is subjected; and Mr. Baker believed that the fungus which he considers the cause of the Potato disease, may hereafter be controlled in a similar manner. He alluded at some length to experiments which tallied with this view. Mr. Bollman's practice of drying the Potato sets seemed to indicate the possibility of success in this way. The subject of rotation of crops, in its connection with the science of botany, was also alluded to.—Entomology, again, has thrown great light upon subjects of the highest interest to agriculture; the natural history of the wireworm, the aphid, the slug, &c., was alluded to, as showing how the destruction of these pests, was capable of artificial accomplishment. And this mode of contending with our enemies was preferred to allowing the natural means for that purpose to have full scope. The sparrow and the crow were, when allowed that full scope which is sometimes accorded to them by the whims and fancies of individuals, agricultural plagues of as high an order as those which they are commissioned to keep in check. The sciences of meteorology and architecture, and the practices affected by both, were next alluded to, and Mr. Baker concluded a very interesting lecture, amid the cheers of the very numerous assembly who had listened to it, by general remarks on the usefulness of literature in connection with agricultural improvement—speaking of Tussar, as the type of literary agriculturists—being as the stone to the scythe, though blunt himself he helped to sharpen others. He believed that while agriculture needed for its success the entire devotion of a man's whole time and energies, and that thus agricultural writers and literary men generally, rarely made successful farmers, instancing Arthur Young, and Tull, and Tussar; yet that their efforts were useful in the cause of agricultural improvement, and he lamented the loss to the agricultural public of the unsuccessful essays sent in to the Royal Agricultural Society, in competition for their prizes, and which he believed might be usefully published, if not in the *Journal of the Society*, in some other way.—Mr. Nesbitt followed Mr. Baker with a definition of practice and science. Practice was just the routine of processes conducted by the farmer year after year, as he had been taught by his own experience and that of his predecessors. Science teaches the reasons of all the results we obtain. The practical mind aims at the exact performance of details—the scientific mind desires the explanation and inquires into the reason of the efficacy or otherwise of the details. The application of science to practice since the days of Sir H. Davy, and more especially since Liebig's first publications, has resulted in an immense step in advance. Previously improvements were confined either to the spread of existing practice of the best kind, or to the perfection of processes; but now a clear advance to knowledge has been obtained, and new facts, altering the whole character of our practice, have been discovered; this was

illustrated by reference to the present state of the art of feeding and of the art of manuring, as compared with their condition but a few years ago. The value of food is estimated now not by appearance, but by actual ascertained composition, and so with manures; the external appearances were not absolutely safe guides. He knew of samples of oilcake differing 30s. a ton market value, on account of their outward appearance which were intrinsically of equal value. He knew shell lacs which were unsaleable because of their ternal appearance which intrinsically were as valuable shell lacs could be, and they had to be melted over again and presented in the orthodox form before they could obtain a market value. Such were the follies and blunders of mere practice unassisted by science. One would benefit more than the farmer by a knowledge of science, for it was not only the properties of food and manure, but those of soil and air, plant and animal that affected him. Agricultural education ought, therefore, certainly to include a knowledge of science as well as of practice.—Mr. Thomas, of Bedfordshire, then reviewed Mr. Baker's opening address. He pointed out that among the names of scientific men whom he had quoted, there ought to have appeared those of Tull, Sinclair, and others. He contended that although practical skill and scientific knowledge were both needed for the progress of agricultural improvement it was not necessary that they should reside in the same individual—they should go hand-in-hand, not the farmer being himself both one and the other, but by the farmer and the chemist being good friends to one another. He believed the aid of science was necessary to agricultural improvement, and that being the case, he also believed that the small farmer, who could not incur the outlay necessary to the application of it, would disappear and the small farm system would have to be abandoned.—Mr. Bennett referred to some observations of previous speakers. He corroborated what Mr. Baker had said of a dressing of clay to chalk, as being the best way of weeding the latter. He questioned the possibility of 30s. worth of artificial manure being, as had been asserted, a complete substitute for a dressing of ordinary farm manure; he doubted whether Wheat after Rye-grass, although they belonged to the same natural order might not be in some cases, as it certainly was in his own experience, not only an allowable but an advisable succession of crops; he believed, on the general subject of the relations of science and practice, that the good and observant practical farmer had in his own experience and that of his neighbours a sufficient and a more trustworthy guide, whether in the practice of cultivation or of feeding. The success of the farmer was obtained by his adherence to what his experience had told him was trustworthy and right, and then if afterward the chemist could tell him why it was so, good as well; but still it is best to stick to one's own personal experience of things as the guide to future conduct. He hoped to see agricultural improvement as the result of a union of practice with science; but he should very much lament the disappearance of so worthy a class of men as the small farmers, whom Mr. Thomas believed must go to the wall in the course of it.—Mr. Sidney followed Mr. Bennett; he did not believe that practice and science should be in separate individuals, in order to the attainment of the best result; he believed that every farmer ought himself to have a sufficient knowledge of science. He contended for the policy of urging scientific education, even in the cheapest elementary and village schools.—Mr. Bradshaw, referring to the point of Wheat succeeding after Rye-grass, stated the experience of his friends, who grew both successfully, the one after the other. He believed that the great point was to hinder the Rye-grass from going to seed, and then it became a good preparation for the Wheat crop.—Mr. Baker replied. He admitted that Rye-grass when hindered from going to seed was in effect a green crop, but that it could not, however closely cropped, be wholly hindered from seeding; and as a general rule, he would not give up his opinion that Wheat after Rye-grass on clay soil was not a good succession. He did not believe in the disappearance of the small farmer; he did not fear that the advance of scientific education would so result. He found in his experience that the small farmer was the first to lay hold upon the improvements practised in his neighbourhood. He contended that in wet seasons like the past, 3 cwt. of guano was a full equivalent for an ordinary dressing of farm manure for the growth of a crop of Turnips. While he contended for the usefulness of scientific knowledge, he believed that, after all, success must be the result of practical skill, and continued attention to the exact timing of operations to the circumstances of season and soil—inattention to which could not be remedied by any amount of scientific knowledge. The resolution at which the club arrived after the discussion was moved by Mr. Fisher Hobbs: it was to the following effect:—

"That the influence of science on agriculture has been to increase the produce of the soil, and that, as during the present century, great strides in agricultural improvement have taken place by the aid of chemistry, geology, and other departments of science, so, by the happy union of practice with science, it is believed that still greater advances will be effected."

### Notices of Books.

*The Farmer's Ready Reckoner, being Tables intended chiefly for the use of Occupiers of Land.* By John Harkins. Grigson, 25, High Street, Bloomsbury. A tract of 12 pages, containing in columns the calculated cost of work for one or more perches, for any



per acre, from 4s. up to 29s.; containing also for giving the cost of any number of articles up from 1d. to 11d. each—for calculating the wages due for days, weeks, months, or years, amount per annum between 26s. and 22l.; and for counting on weights and measures used in the sale of articles. We have not undertaken to verify the accuracy, but we believe that its contents, if accurate, will be useful to the farmer most weeks out of the 52.

**Farmer's Almanac and Calendar for 1854.** By W. Johnson, Esq., F.R.S., and W. Shaw, Esq. In addition to the usual calendar contents of an almanac, and the necessarily stereotyped contents of the operations to be performed in succession during the year, this little work continues to reflect credit on its successive appearances such additional light on these subjects as agricultural literature and experience does year by year continue to throw upon them. We cordially repeat our former recommendation of the best of the farmers' almanacs.

POULTRY.

**THE SHOWS:** YEOVIL.—Now is the dawn of the shows, and they follow in quick succession. This week, for the first time, entered the task of the chronicler of these events is to record the success or otherwise of the show, but also to offer such suggestions as may be of use to a still higher degree of success another year. We would draw the attention of the committee to great want of light. The building is otherwise adapted for an exhibition, and might easily be made to accommodate 400 pens, all that is needed is to a few slates, and to substitute glass, a good light hereby be thrown on every pen; at present it is a lighted exhibition. The unthankful part of our past, and now we have only to congratulate the owners and managers on their deserved success. There were 319 competing pens, and although all were well represented, we would specify some unusual merit was shown. The Dorkings, Malays, bantams, Polands, and Aylesbury were of the highest character. The Spanish above the average; a pen of other black Polands with white tops was displayed by being trimmed. There was one class which, in the opinion of the judges, should never appear in the show.—Hybrids or cross-breds. They confessed inability to adjudicate, and if such a class is to be, the committees must be prepared to give instructions stating the object sought for in offering prize. The names of the principal prize-takers, I shall give a better idea of the quality of the exhibited than anything else we can say. Mr. J. of Great Toller, five prizes, including both the Dorkings; Mrs. Frederic Neville, of Glastonbury; Mr. of Wrington; Messrs. Steggall & Symonds, of South; Mr. Goodenough, of Godmanstone; Mr. Clark, Messrs. W. Pope & Mansfield, Mr. of Blandford; and Miss Wilcox, of Naissea, successful. There was a very crowded attendance including all the nobility and gentry of the vicinity. In every respect a successful show, and we doubt efforts of the managers will next year find their reward in a large addition to the number of pens. The Rev. G. F. Hodson, Barnwell, near G. J. Andrews, Esq., of Dorchester; and Mr. J. J. Mount Street, London.

**Drake.** Weight is only of importance in ducks or any poultry when added to perfection in other points. In two competing pens were equal in every other respect, would turn the scale. In awarding prizes judges must be guided by the admitted characteristics of the breed before and the preponderance of one point will not justify the award of other essential qualities, as condition, plumage, quality of feather, and purity of breed.—A D. I. would not give your turkey a large table-spoonful of cod-liver oil then feed and cram him, if necessary, with oatmeal milk, and having Onion tops, or even Onions, chopped I would also give him a table-spoonful of strong ale a day. If you consider him worth the trouble, I believe I might, added to a dessert spoonful of cod-liver oil per cure him.—O.P. A large pond is not necessary for the duck at the larger it is the better. For a drake and four feet square will be enough, about 2 feet deep. I believe bottom to be large square tiles, well laid in cement. A running stream through is very desirable, and there is a landing place for the ducks, i.e., an opening in the usually shoving into the water.—Rooster. Hens will lay natural number of eggs, whether the cock be taken at certain time or not, and with or without a nest egg. China pullets generally begin to lay at from 16 to 20 days. I have never kept account of their eggs, but they lay many.—A Subscriber. The disease would appear to be a run of roup.—An Old Subscriber. It is unquestionable that the white Spanish. I have known them 25 years, and are exceedingly scarce. In these, as in their black, the face should be white all round the eye. J. Bailey, Mount Street.

Miscellaneous.

**Patent in Deodorizing Sewage-water and Cess-pits in Manufacturing Manures.**—Patent dated 1853, (No. 511.) Jacques Francisque Pinel, of Middlessex, agricultural chemist. This consists in applying to sewage water sulphate of ammonia, a muriatic acid, and sand, so as to precipitate the solid matter contained in it, and then separating the solid deposit into manure by combining such substances as pulverised chloride of lime, of potash, of soda, of lime, of lime, of ammonia, that will concentrate the gases to vegetation. From the *Mechanic's Magazine*, 1853.

**On the Preservation of Grain.**—The only mode of storing and preserving corn, compatible with true economy, is in its clean state on a granary floor so constructed with proper traps and hoppers, that the grain may be quickly and easily swept down into winnowing machines below, and thence hoisted up to another floor previously cleaned and whitewashed. For new grain, it would be requisite to perform this operation about once in every three weeks for the first two or three months, but afterwards twice or thrice a year would be quite sufficient. The expense of the granary and manual labour would be amply compensated in three or four years, by getting rid of the enormous loss necessarily attendant on the rick system. We constantly hear of thousands of rats, dead and alive, being found by farmers on opening their ricks, which are not unfrequently in such a pestilential state that the owners would willingly set fire to them if it were not for fear of the surrounding property; and it has happened that a man, in attempting to remove the thatch of an old rick, has fallen through to the floor, nothing being left of the rick but an empty shell. Unfortunately, actual loss of corn is not the only mischievous result of the rick system. We are always complaining of the rascally bakers for supplying us with bad bread; but what can they do while the farmers and millers together supply them with flour made from overheated Wheat, browned with age, rottenness, and rats—and seasoned with the putrid carcasses of themselves and their enemies? To convert such stuff into white, I cannot say wholesome bread, the bakers must use large quantities of alum, and throw in plenty of ammoniacal and alkaline mixtures to make it rise; but let any one procure some newly-reaped Wheat, and have it ground pure by itself, if he can, and he will find that the flour of such Wheat will produce bread as white as snow, and as light as puff-paste, without any chemicals whatsoever. It is true that bakers use flour made from the oldest Wheat in preference to that made from new, because flour made from old Wheat requires more water to make up the dough; and it is to the interest of the baker to sell as much water in proportion to the flour as he possibly can. No great harm would result from this practice if the Wheat had grown old on the granary floor, but not in the Wheat-rick. I have eaten good bread made from Wheat 50 years old, preserved in the magazine granary of a fortress. As it would be preposterous to suppose that barns could be built of sufficient capacity to receive the whole produce of a farm in the straw, the rick system must be continued; only the farmers must be prepared with powerful steam threshing machines (now, happily, quite common), and thresh out the whole of their crops as soon as possible after reaping, and store their corn in granaries, one of which might serve several neighbouring farms. It is melancholy to think that the price of bread, the staff of life to the poor, should be enhanced by such slovenly management; but the farmers are not alone to blame, seeing that hundreds, nay, sometimes thousands of quarters of corn are annually shot into the Thames from the numerous granaries up and down the river banks; partly from mismanagement and improper corn stores, as well as from an idea that the increased price of the better sorts may more than compensate for the loss upon inferior. Henry W. Reveley, in the *Journal of the Society of Arts*; Poole, Oct. 20.

Mr. Druce's Estimate of the relative value of Breeds of Sheep.

Description of Sheep.	Comparative numbers that may be kept.	Average Weight of Ewe Fleeces.	Average Weight of Ram Fleeces.	Present Market Value of Ewe Fleeces.	Present Market Value of Ram Fleeces.	Carcase Weight of Rams when fat at from 13 to 15 months old.	Present Value in Smithfield market.
		lbs.	lbs.	p. lb.	p. lb.	st. lb.	p. 8 lb.
Cotswold	100	5 to 7	7 to 10	15s 6d	16s 6d	10 or 80	3s. 10d.
Leicesters	105	4 to 6	6 to 8	15s 6d	16s 6d	8 or 68	3s. 10d.
Hampshire Down	115	3 to 5	5 to 7	15s 6d	16s 6d	8 or 68	4s. 4d.
Pure South Downs	120	2 to 4	4 to 6	16s 6d	18s 6d	7 or 60	4s. 6d.
Cross-bred	115	4 to 6	5 to 8	16s 6d	18s 6d	9 or 76	4s. 4d.

—Agricultural Society's Journal.

Calendar of Operations.

NOVEMBER.

**WESTER Ross, Nov. 1.**—There is sometimes much between the cup and the lip. When I last wrote, the whole crop had been secured on the earlier and better managed farms only, there being a good deal to cut, and a still larger quantity to gather in. The rain, which had then begun to fall at lengthened intervals, poured almost incessantly for a whole fortnight. The temperature being high, the corn in outstanding stock and uncovered stack began to germinate. Nothing, however, could be done. The unlucky farmer endeavoured to hold patience in exercise, and was busily engaged in forming resolutions of greater activity in coming harvests; at length, however, fair weather once more set in, and every suitable hour, night or day, was taken advantage of for loading home the already too much damaged crop; nor was the loss by sprouting the only one, for every time the sheaves were handled the loosened grain fell from the leached straw, and now, in passing over a field lately cleared, the place occupied by each stack is easily observed by the abundant blaird of the lost grain. With a few exceptions the fields are now cleared, although much must have been stacked in a damp state. Wheat and Barley are threshing out well, and what was stacked early and in good condition weighs heavy. Some of the new Wheat weighs 60 lbs. per bushel, and Barley 56 lbs. Oats are light, and complain of as to yield. Farmers are all busy preparing for and sowing Wheat. From the large quantity of rain that has fallen, the soil is in a very unsuitable state for the reception of the seed. Wheat is here sown after Potatoes and Ica in autumn, and after Turnips in spring. Owing to the cold and damp of this climate, we are to give a large quantity of seed—about 4 bushels per acre. The soil, however, being well adapted for growing Wheat, 6 bushels

an acre is not an uncommon return. The farmers in this quarter with an average crop and high prices, are looking forward to clearing off old scores, and laying past a little for coming adversity. Potato lifting is nearly completed, and a better crop either for quantity or quality could scarcely be desired. The dryness and freeness of the Potatoes of 20 years ago are this year restored to them, and right glad are we to have not a few to send to the south, to give our friends there some idea of the precious value we have here. Well it is for the lower classes in the Highlands that the Potatoes have stood out so well; as it is, the high price of every thing eatable will be abundantly felt. A good many Potatoes have been already shipped at 4s. per ton for Regents, and 3l. for Cups, and higher prices still might be realised, were it not for the scarcity of ships and the high freights that are charged. It is well that a day of prosperity has visited the shipping as well as the agricultural interest—brethren in sad affliction only a short time ago. As the Turnips are not a very heavy crop generally, and as the weather is still mild, sheep and cattle are kept out as long as possible in the fields, but as the pickings there are well nigh finished, let the supply in the end of the season be what it may, on the Turnips they must speedily be.

Notices to Correspondents.

**AMERICAN THRESHING MACHINE: H.** There is little in the principle of the machine to interfere with the usual bulk of such machines. We have drawings before us, but they are without a scale; they do, however, judging from average dimensions, in the beating cylinder for instance, appear to represent a machine of rather more than average length.  
**BRASS: R.L.** The thin sheet brass plates used by implement makers and others for fixing on the implements, containing name and address, are manufactured at Birmingham.  
**MUSTARD SEED: Constant Reader.** Black or brown mustard requires a very rich soil. Sow quarter of a peck of seed in April. It is threshed in the field. The produce is 20 to 30 bushels per acre. See article "Mustard" in "Blackie's Cyclopaedia of Agriculture." In Lincolnshire it is generally sown broadcast, and after Grass.  
**WHAT ARE RAG FALLOWS? Answer.** Land broken up after a hay crop is so called in Roxburgh and Berwickshire, "being torn to rags by the plough and the drags." It applies also to all fallows, not "bare or naked." In the south such fallows are termed "Bastard fallows."

Markets.

COVENT GARDEN, November 12.

Vegetables and Fruit continue to be pretty well supplied. Late Grapes are good and sufficient for the demand. Pears chiefly consist of Marie Louise, Glout Moreau, Crassane, Chaudmont, Duchesse d'Angoulême, Passe Colmar, and Winter Nelis. The supply of Cobs is still deficient, and the price high. Chestnuts have just made their appearance. Importations of Potatoes from the Continent are still kept up; they are also arriving in large quantities from Scotland, and prices for them are falling. Asparagus is beginning to come in at from 4s. to 10s. per 100. Carrots and Turnips fetch from 2d. to 4d. per bushel. Mushrooms are more plentiful. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

FRUIT.

Pine-apples, per lb, 3s to 6s  
Grapes, hothouse, p. lb, 2s to 5s  
— Portugal, per lb, 6d to 1s  
Apples, per bush, 4s to 8s  
— dessert, p. hf sieve, 2s to 4s  
Pears, per doz., 1s to 3s  
Lemons, per doz., 1s to 2s  
Oranges, per 100, 3s 6d to 8s

VEGETABLES.

Cabbages, per doz, 9d to 1s  
Cauliflowers, each, 4d to 6d  
Greens, per doz., 1s 6d to 3s  
Brussels Sprouts, do., 1s 6d to 2s  
Potatoes, per ton, 60s to 160s  
— per cwt., 5s to 7s  
— per bush., 2s 6d to 5s 6d  
Turnips, per doz., 2s to 3s  
Cucumbers, each, 6d to 1s  
Celery, per bundle, 6d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 1s to 1s 6d  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
— per bushel, 2s 6d to 3s  
Leeks, per bunch, 2d to 3d  
Shallots, per lb, 6d to 8d  
Garlic, per lb, 6d to 8d

Lettuce, Cab., p. score, 6d to 8d  
— Cos, per score, 9d to 1s  
Corn Salad, p. hf sieve, 9d to 1s  
Small Salads, p. pun, 2d to 3d  
Horse Radish, p. bundle, 2s to 4s  
Mushrooms, p. pot., 6d to 1s 9d  
— per bushel, 6s to 8s  
Sorrel, per hf. sieve, 6d to 1s  
Artichokes, per doz., 3s to 5s  
— Jerusalem, p. hf. sieve, 1s to 1s 6d  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. 12 bunches, 1s 6d to 3s  
Mint, green, per bunch, 2d  
Basil, do., per bunch, 4d  
Marjoram, do., do., 2d to 3d  
Watercresses, p. 12 bun, 4d to 6d

HAY.—Per Load of 36 Trusses.

SMITHFIELD, THURSDAY, November 10.					
Prime Meadow Hay	90s to 108s	Clover	...	...	90s to 126s
Inferior do. ...	50 75	Second cut	...	...	70 110
Rowen	45 60	Straw...	...	...	35 40
New Hay	—				E. J. DAVIS.

CUMBERLAND MARKET, THURSDAY, November 10.

Prime Meadow Hay	108s to 115s	Inferior Clover	50 110
Inferior do.	40 90	New do.	—
New Hay	—	Straw	40 46
Old Clover	—		JOSIAH BAKER.

WHITECHAPEL, THURSDAY, November 10.

Fine old Hay	... 90	95	Fine new 2d do.	... 75	80
Inferior do. ...	... 80	86	Inferior do. ...	... 36	60
Fine new Hay	... 36	60	Fine new do...	... 100	108
Inferior do. ...	... 120	126	Inferior do.	... 75	80
Fine old Clover	... 110	115	Straw...	...	—
Inferior do. ...					

HOPS.—BOROUGH MARKET, FRIDAY, November 11.

Messrs. Pattenden and Smith report that the old duty on Hops was officially declared on the 7th inst., at 152,677l., being 61,084l. for Rochester, 33,627l. for Canterbury, 38,668l. for Sussex, 11,231l. for Worcester, 6,900l. for Farnham, and 11,251l. for Kingdom. Since then there has not been quite so much doing in inferior Hops, but good ones fully maintain their price, and are likely to go higher, as the demand must be greater than the supply before another crop comes to maturity.

COAL MARKET.—FRIDAY, November 11.

Wallaseid R d lcl, 22d. 6d.; Wallaseid Haswell, 24s.; Wallaseid Hetton, 24s.; Wallaseid Stewarts, 24s.; Wallaseid Tees, 24s.—Ships at market 147.

WOOL.—BRADFORD, THURSDAY, November 10.

Wools.—There is no change during the week, and the buying is on the narrowest scale possible. The supplies coming to market are not increased, nor is there any noticeable turn in prices.

**YARNS.**—The supplies are most materially diminished, the continued short-time working, stoppage of machinery, and ruinous price for yarns, compared with the cost of the raw material, compel the spinners to cease working, as near as they possibly can, till a turn for the better presents itself.

**FINES.**—The reasonable and cheerful weather during the present and previous weeks has given a tone of confidence; this, with the short supply now making, is telling favourably, and an opinion is gaining ground that goods have seen their lowest price.

LIVERPOOL, WOOL MARKET, NOVEMBER 5.

SCOTCH.—There is more inquiry for laid Highland wool, but the manufacturers have been expecting that they would be able to buy at a considerable reduction on former rates; while the



holders here, having light stocks, will not give way much. In crossed and Cheviots there is nothing doing.

Imports for the week, 123 bags; previously this year, 5933 bags. FOREIGN.—Since the public sales here, there have been a good many of the wools sold that were withdrawn then, and altogether there is a better feeling since the money market has become easier.

Imports for the week, 497 bales; previously this year, 88,942 bales.

#### SMITHFIELD.—MONDAY, November 7.

There are nearly as many Beasts as on Monday last. The trade is brisk for choice qualities, and prices are fully as good for them. Inferior descriptions still meet with a dull sale, and do not make more money. The supply of Sheep is larger; however, we are not overdone with best qualities, and consequently they maintain late rates, but several lots of middling ones remain unsold. The mild weather is very much against the trade for all kinds of stock. Calves are selling about the same as on Friday.

From Germany and Holland there are 1756 Beasts, 6180 Sheep, and 229 Calves; from Scotland, 20 Beasts; and 2300 from the northern and midland counties.

Per st. of 8 lbs.—s d s	Per st. of 8 lbs.—s d s
Best Scots, Herefords, &c. ... 4 4 to 4 6	Best Long-wools... 4 8 to 4 10
Best Short-horns 4 2—4 4	Do. Shorn ... 0 0—0 0
2d quality Beasts 2 8—3 8	Ewes & 2d quality 3 10—4 4
Best Downs and Half-breds ... 4 8—5 2	Do. Shorn ... 0 0—0 0
Do. Shorn ... 0 0—0 0	Lambs ... 0 0—0 0
Beasts, 5277; Sheep and Lambs, 27,240; Calves, 262; Pigs, 310.	Calves ... 3 8—4 8
	Pigs ... 3 8—4 8

#### FRIDAY, November 11.

We are only moderately supplied with Beasts, and the demand is tolerably good. The weather being more favourable than on Monday, the prices of that day are more freely given, and a fair clearance is effected. The number of Sheep, although small, is about as usual at this time of year. Trade is by no means brisk, yet prices are quite as good as, and in some instances rather better than on Monday. Calves meet with a ready sale, but there is no quotable advance. From Germany and Holland there are 275 Beasts, 1390 Sheep, and 290 Calves; from Spain, 80 Sheep; 350 Beasts from the northern and midland, and 90 Milch Cows from the home counties.

Per st. of 8 lbs.—s d s	Per st. of 8 lbs.—s d s
Best Scots, Herefords, &c. ... 4 4 to 4 6	Best Long-wools... 4 8 to 4 10
Best Short-horns 4 2—4 4	Do. Shorn ... 0 0—0 0
2d quality Beasts 3 0—3 8	Ewes & 2d quality 3 8—4 4
Best Downs and Half-breds ... 4 10—5 2	Do. Shorn ... 0 0—0 0
Do. Shorn ... 0 0—0 0	Lambs ... 0 0—0 0
Beasts, 955; Sheep and Lambs, 4290; Calves, 392; Pigs, 250.	Calves ... 3 8—4 8
	Pigs ... 3 8—4 8

#### MARK LANE.—MONDAY, November 7.

The supply of Wheat from Essex and Kent to this morning's market was very small, and met a slow sale at about the prices of this day's night. The show of foreign was considerable, and sales were effected at a reduction of 2s. per qr. on our last week's quotations. Some business has been done in floating cargoes from the South for the Continent. Barley is unaltered in value, with the exception of the finest malting, for which 1s. per qr. less is accepted. Beans bring fully last week's prices. White Peas meet with very little inquiry, and to effect sales it was necessary to submit to a reduction of 3s. to 5s. per qr.; Grey is a slow sale at previous rates. The Oat trade is quiet, and new and inferior parcels are 6d. per qr. cheaper. In Flour there is but little doing, and barrels are 1s. lower.

PER IMPERIAL QUARTER.	s. d.	s. d.
Wheat, Essex, Kent, & Suffolk ... White	68—76	Red ... 60—70
— fine selected runs ... ditto	70—80	Red ... 68—76
— Talavera ...	70—82	
— Norfolk ...	—	Red ... —
— Foreign ...	58—82	
Barley, grind. & distil., 34s to 38s... Chev.	40—44	Malting ... 36—40
— Foreign...grinding and distilling	26—40	Malting ... 40—44
Oats, Essex and Suffolk ...	17—21	
— Scotch and Lincolnshire...Potato	22—24	Feed ... 17—21
— Irish ...	21—23	Feed ... 19—20
— Foreign ... Poland and Brew	17—30	Feed ... 20—27
Rye ...	29—44	Foreign ... —
Rye-meal, foreign ...	—	
Beans, Mazagan...37s to 43s...Tick	41—45	Harrow ... 41—45
— Pigeon...45s—51s...Winds	—	Longpod ... 43—45
— Foreign ...	Small 40—48	Egyptian 43—45
Peas, white, Essex and Kent...Boilers	60—63	Suffolk ... 61—65
— Maple...45s to 49s...Grey	44—47	Foreign 40—62
Maize ...	White ...	Yellow ... —
Flour, best marks delivered...per sack	70—75	
— 2d ditto ...	ditto 55—65	Country ... 55—65
— Foreign ...	per barrel 55—65	

#### FRIDAY, November 11.

The arrivals of foreign Wheat continue large, and of all other articles moderate. There was an improved attendance at this morning's market, and a more general disposition to buy foreign Wheat was evident; some purchases were made for France, and in the sales effected the extreme prices of Monday were obtained. At a slight decline, or at such rates which probably on Wednesday might have been accepted, the sales would have been very extensive. With the exception of three cargoes of Egyptian Wheat sold at 49s. per qr., there has been but little done abroad. Barley is a dull sale and rather cheaper. Beans and Peas are unaltered in value. The Oat trade is firm at Monday's prices. American Flour meets a fair inquiry at late rates.

#### ARRIVALS FROM NOVEMBER 7TH TO NOVEMBER 11TH.

	Wheat.	Barley.	Oats.	Flour.
English ...	1040 qrs.	1730 qrs.	501 qrs.	1350 sacks
Irish ...	500 "	1220 "		
Foreign ...	22150 "	850 "	14040 "	— brls

LIVERPOOL, TUESDAY, NOV. 8.—At this morning's market there was the usual attendance of the town and country trade, and several buyers from a distance. Wheat met with a fair consumptive demand, at a decline of 3d. to 4d. per 70 lbs. on the week, or rather under the rates current on Friday. Flour, however, was in brisk request, and good sweet qualities being scarce, holders were enabled to realise 6d. per barrel more money than was obtainable on Friday, making a decline of only 1s. per barrel since Tuesday last. Oats sold in retail to a fair extent, at 3d. per 45 lbs. reduction, and Oatmeal must be quoted 1s. per load lower, with a limited sale. Barley, Beans, and Indian Corn were in moderate request for feeding purposes, at about late rates. Our quotations to-day for white American Wheats range from 10s. 4d. to 10s. 8d. per 70 lbs. Western Canal Flour 36s. 6d. to 37s., and Baltimore and Philadelphia 37s. to 37s. 6d. per barrel, the market closing with buyers at these prices.

AVERAGES	Wheat.	Barley.	Oats.	Rye.	Peas.	Beans.
Oct. 1 ...	59. 5d	37. 0d	22s 2d	36. 11d	42. 10d	42. 11d
— 8 ...	64. 0	33. 7	23. 10	36. 1	44. 3	44. 4
— 15 ...	68. 4	40. 10	23. 10	38. 11	45. 8	47. 4
— 22 ...	68. 11	40. 7	24. 2	38. 4	45. 7	50. 7
— 29 ...	69. 1	40. 9	24. 8	40. 10	48. 7	51. 10
Nov. 5 ...	71. 9	41. 3	25. 5	43. 0	48. 10	53. 8
Agg. Aver.	66. 11	39. 8	23. 10	39. 8	45. 11	48. 0

#### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Oct. 1.	Oct. 8.	Oct. 15.	Oct. 22.	Oct. 29.	Nov. 5.
71s 9d ...	...	...	...	...	...	...
69 1 ...	...	...	...	...	...	...
68 11 ...	...	...	...	...	...	...
68 4 ...	...	...	...	...	...	...
64 0 ...	...	...	...	...	...	...

#### LANDSCAPE GARDENING REVIVED AS AN ART.

M. R. THOROLD, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure-grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

#### EDUCATION FOR YOUNG LADIES,

AT CHESHUNT, HERTS., ADJOINING THE NURSERY.

MISS PAUL, who has had several years' experience in Tuition, begs to announce that she has vacancies for a few Pupils as Boarders. Terms moderate. Prospectuses will be forwarded by post on application.

#### SCHOLASTIC.

A CLERGYMAN, M.A., Oxford, long accustomed to Tuition, RECEIVES into his house a FEW PUPILS, to educate with his own sons. The highest testimonials from their parents would be furnished as to his successful method of instruction, and the care and comfort they experience in his family. As the Glebe Land is farmed under his superintendence by an efficient Bailiff, an admirable opportunity is afforded to any young Man desirous of combining a first-rate Education with Instruction in the Management and Cultivation of Land. The situation is salubrious, and delightfully situated. Terms moderate.—Address Rev. S. E. M., Post Office, Gloucester.

#### NO CHARGE FOR STAMPING ARMS, CRESTS,

INITIALS, &c., on paper and envelopes, at LOCKWOOD'S well-known establishment, 75, New Bond Street. Good cream-laid Note-paper, five quires for 9d.; Thick ditto, five quires, 1s.; Albert and Queen's sizes, five quires for 6d., 9d., and 1s.; Envelopes, 3d. to 1s. 6d. per hundred; Foolscap paper, 7s. 6d. per ream; Copybooks, 2s. 6d. per dozen. Card Plate engraved, 5d.; 100 Cards printed, 2s. 6d. Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, Lockwood's, 75, New Bond Street. Country orders for 20s. sent carriage free.

#### EUREKA.—PATTERNS of the new coloured

shirtings in every variety of colour, upwards of 200 different styles for making FORD'S EUREKA SHIRTS, including stripes, spots, stripes, &c., sent, post free, on receipt of six stamps, price 7s. the half dozen. List of prices and mode of self measurement sent post free.—RICHARD FORD, 38, Poultry, London.

N. B.—Agents are now being appointed in all towns. Terms, &c., forwarded on application.

#### METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.

ES.—METCALFE'S celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s only Establishment, 130s and 131, Oxford Street, second and third doors west from Holles Street.

#### LAMPS, OIL, CANDLES, SOAP, ETC.

AT THE WHOLESALE PRICE FOR CASH, at the ALBANY LAMP AND CANDLE MANUFACTORY, 55, ALBANY STREET, REGENT'S PARK.

Country orders amounting to £10 or upwards carriage free. Price lists sent on application.

#### DAVIES'S COMPOSITE CANDLES, 8½d., 9d.,

10d., and 10½d. per lb.; Botanic Wax, 1s.; Patent Sperm, 1s.; German Wax, 1s. 2d.; British, 1s. 5d.; Sperm, 1s. 7d. and 1s. 8d.; Transparent Wax, 1s. 10d.; best Wax, 2s. 3d.; Moulds, 8½d.; Store Candles, 7½d.; yellow Soap, 38s., 44s., 48s., and 52s. per 112lbs. French Oil, 4s. per gallon. For Cash at M. P. DAVIES and Son's, 63, St. Martin's Lane.

#### TO LOVERS OF FISH.—100 real YARMOUTH

BLOATERS for 6s., package included. The above forwarded to all ports on receipt of penny postage stamps (or Post Office Order preferred) for the amount.—Address, THOMAS LETTIS, Jun., Fish Curer, Great Yarmouth.

#### FARMS TO LET, IN THE WEST OF ENGLAND.

FARM containing 475 acres, of which 405 are Arable, and 70 Meadow and Pasture; Turnip and Sheep Land. Immediate possession can be given. Rent and rates low.

FARM containing 423 acres, of which 374 are Arable, and 49 Meadow and Pasture; Turnip and Sheep Land. Possession at Michaelmas, 1854. Rent and rates low. Farm-house a good residence.

FARM of 376 acres, of which 294 are Arable, and 82 Meadow and Pasture. Tithe free, rates low. The Farm-house a good residence. Possession at Lady-day, 1854. Good stock and sheep Farm, as shown by the ram sales and other stock.

FARM containing 176 acres, of which 144 are Arable, and 32 Meadow and Pasture. Immediate possession can be given. This Farm is situate at Beaupre, about 4 miles from Basingstoke, Hants; and Mr. John Mathews, the Bailiff, will show the Land.—For further particulars apply to Messrs. BEAUVENDER and THUNDER, Land Agents, Cirencester.

#### TO BE LET.—A large FARM, in the Northern

Division of Northumberland, from the 12th of May next. The Farm being out of condition a long Lease and liberal Covenants will be granted to an enterprising tenant with adequate capital.—Information may be had by application to Mr. GREY, of Milfield Hill, Wooler.

#### TO BE LET, for such term as may be agreed on, an

old-established NURSERY. Payments for incoming may be made by instalments if good security be given.—Apply for particulars to MESSRS. BATT, RUTLEY, & SILVERLOCK, 412, Strand.

#### FOR SALE, FOUR CYGNETS.—Price 4 guineas.

Apply to JOHN COOK, Gardener, Upminster, Essex.

#### TO SEEDSMEN, &c.

TO BE DISPOSED OF, with immediate possession, a first-rate SEED BUSINESS long established in one of the best Agricultural districts in Lancashire. For particulars apply to Messrs. BICKENHART & MYERS, Solicitors, Preston, Lancashire.

P. S. There is an opening for a Nursery in connection with the above which seldom offers.

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well set with flower buds, and seven ORANGE TREES, in a healthy condition; also, about 800 yards of splendid BOX EDGING.—May be viewed any day at the Castle Garden, near Dorking, Surrey.

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# THE GARDENERS' CHRONICLE

AND

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A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 47.—1853.]

SATURDAY, NOVEMBER 19.

[PRICE 6d.]

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### EXHIBITION OF NEW CHRYSANTHEMUMS OF 1853.

E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood London, begs to inform the admirers of the above flower that they are now in bloom, and will continue for the next month in perfection at their Nursery. An inspection will amply repay those honouring them with a visit.—Nov. 19.

E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, can now supply fine strong plants of CINERARIAS, choice varieties, by name, at 6s., 9s., and 12s. per dozen.

CHOICE FANCY GERANIUMS, at 9s., 12s. and 18s. per doz.  
" HORSE-SHOE LEAF, 6s. and 9s. per dozen.

### NEW HOLLYHOCKS OF 1853.

JOHN CHATER AND SON beg to announce that they can now supply good plants of the following NEW HOLLYHOCKS, and which will be found first-rate, having obtained Prizes wherever exhibited.—Glory of Haverhill, 10s. 6d.; Admirable, 7s. 6d.; Duke of Rutland, 7s. 6d.; or the three for 21s.

For description of the above see Catalogue, which may be had on application to CHATER & SON, Haverhill.

Choice Hollyhock Seed, 1s. 6d. per packet, containing 200 seeds.

### GERMAN SEEDS FOR 1854.

MESSRS. PLATZ AND SON, SEED GROWERS, Erfurt, Prussia, intimate that their Catalogue of Flower and Vegetable Seeds may be had on application to their agent, Mr. ROBERT KENNEDY, Bedford Conservatory, Covent Garden.

### SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c., &c., and may be had by inclosing a postage stamp.

Saffron Walden Nursery, November 19.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, desert Fruit; EURY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 1l. per 100, or 25 each of any two sorts for 12s. box included. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement *Gardeners' Chronicle*, October 15, 1853.—Egglecliffe, near Yarm, Nov. 19.

### CHOICE GERANIUMS.

JAMES HOLDEN begs to offer the following choice SHOW GERANIUMS, at 21s. per dozen, hamper, &c., included.—Optimum, Eleanora, National, Magnet, Hero, Supreme, Lord Gough, Flying Dutchman, Field Marshal, Village Maid, Virgin Queen, Magnificent, and Voltigeur.

### GERANIUMS FOR THE MILLION.

JAMES HOLDEN can supply twelve of the following for 12s., hamper, &c., included.—Ajax, May Queen, Occident, Cottage, Spot, Bowcan, Conspicuous, Fane, Duke of York, Star, Delancey (Tenny), Constantine, Collection, and Victory. Older varieties at 6s. per dozen. Post Office orders payable at Camden Town.—Amphill Nursery, Hampstead Road.



MESSRS. DILLISTONE AND CO. beg to offer the following in really good Plants, and warranted true to name:—

Standard and Half-Standard Roses, per doz.	12s. 0d. to 15s. 0d.
Dwarf Tea-scented Roses, fine kinds, do.	6 0 — 12 0
Climbing fine do.	9 0 — 12 0
Climbing Plants, including Wistaria, Passion Flower, Jasmines, &c. per doz.	10 0
Honeysuckles, including Yellow Trumpet, Scarlet Trumpet, &c. per doz.	6 0
The Major White Rocket do.	3 0
Hollyhocks, fine, named do.	6 0 — 12 0
from seed kept distinct do. 3s., or 20s. per 100.	

Fine trained Peaches, &c., 3s. 6d. to 5s. each. These are fine, and true to name.

Untrained or Maiden Apricots, Peaches, Plums, Cherries, Apples, &c., 1s. 6d. each, or 15s. per dozen.

Gooseberries, Currants, and Raspberries, finest kinds, 2s. 6d. per dozen.

Strong Vines from Eves, 8 to 10 feet, 1s. 6d. to 3s. 6d. each. Evergreen and Deciduous Shrubs, in variety, Conifers, &c., reasonable. Asparagus and Seakale Plants.

Strawberries: Black Prince, Alice Maule, Old Pine, Goliat, Stirling Castle Pine, Rivers's Seedling Eliza, and Eleanor, each kept and warranted true, 2s. 6d. per 100.

Catalogues upon application, enclosing a stamp.

Sturmer Nursery, Halsted, Essex.

**BALSAM SEED IMPROVED**—Nearly 400 testimonials prove GLENNY'S Improved Balsam Seed to be the best that has been obtained. The six classes in sealed packets, 37 stamps; a packet of mixed, 13 stamps.—420, Strand.

**LIME TREES**, 10 feet, 30s. per 100; 12 to 14 feet, 42s. per 100.—**SPRUCE FIRS**, transplanted every second season, well formed and bushy to the ground, 2 to 3 feet, 6s. per 100; 3 to 4 feet, 10s. per 100; and 5 to 6 feet, splendid plants, 20s. per 100.—**LAURESTINUS**, bushy, 2 feet, 25s. per 100; 3 feet, extra fine, 30s. per 100.—Apply to **BENJAMIN R. CANT**, St. John's Street Nursery, Colchester.

#### KNAP HILL NURSERY, WOKING, SURREY.

**WATERER AND GODFREY**, Nephews and Successors to the late HOSIA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—*Araucaria imbricata*, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

*Cryptomeria japonica*, 2, 3, 4, 5, 6, and 8 feet.  
*Cedrus Deodara*, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

*Cedar of Lebanon*, 2, 3, 4, 5, 6, 7, and 10 feet. These large Cedars of Lebanon are also very handsome trees.

*Cupressus macrocarpa*, or *Lambertiana*, 2, 3, 4, 5, 6, and 8 feet, all from seed.

*Gonolona*, 2 to 3 and 4 feet.

*Fimbristylis*, 2 and 3 feet.

*thyoides variegata*, 2, 3, and 4 feet.

The *Variegated White Cedar*, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

*Juniperus Bedfordiana*, fine plants, 3, 4, and 5 feet.

*Chinese*, 2, 3, 4, 5, 6, 8, and 10 feet.

*repandus*, 3, 4, 5, to 8 feet.

*Upright Irish*, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.

*Virginiana*, the Red Cedar, 4, 5, 6, and 8 feet.

*Taxodium sempervirens*, 2, 3, 4, 5, and 7 feet.

*Yew*, common, 3, 4, 5, to 8 feet high.

*Irish*, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.

*Gold Striped*, 1, 2, and 3 feet.

*do.* worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

*elegantissima* (new striped), standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.

*Dovaston*, or *Weeping Yew*, fine standards.

*Pinus Douglasii*, 3, 4, 5, and 7 feet; a few magnificent plants, 10 to 12 feet high.

*insignis*, 2, 3, 4, 5, 6, and 7 feet; all from seed.

*cembra*, 3, 4, to 6 feet.

*Canadensis* (Hemlock Spruce), 3, 4, and 6 feet.

*monita*, 3, 4, and 6 feet.

*Menziesii*, 3, 4, 5, and 8 feet.

*cephalonica*, 3 to 4 feet.

*Pinsapo*, large and handsome, 3 and 4 feet.

*Nordmanniana*, from seed, 14 feet; a few larger, 2 feet.

*nobilis*, stout plants, with perfect heads, about 14 feet; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

*Thuja Arbor-vitae*, American, 3 to 6 feet. We recommend this plant for hedges.

*Weariana*, 3 to 6 feet, one of the few really hardy and most useful evergreens.

*aurea*. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

*Lobocedrus chilensis*, 14, 2, and 3 feet. This is a very distinct and beautiful plant of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

#### SLATE WORKS, ISLEWORTH, MIDDLESEX.

**EDWARD BECK** manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

#### ROCK WORK, ORNAMENTAL WATER-FALLS, FOUNTAINS, RUSTIC WORK, AND LANDSCAPE GARDENING undertaken on a large or small scale by Mr. GLENNY, who will attend for consultation in any part of the kingdom.—420 Strand.

#### WATERPROOF PATHS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

#### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

**EDWARD AND A. WEEKS** (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.

One, two, and three-light Boxes always on hand.

#### HORTICULTURE IN ALL ITS BRANCHES.



**J. WEEKS & Co., King's Road, Chelsea,**



#### HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

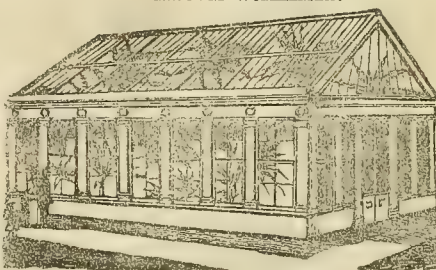
The HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. **J. WEEKS & Co., King's Road, Chelsea, London.**

#### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON, Danvers Street, Chelsea,**

London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.



#### E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

The present price for these PATENT HOTHOUSES is 1s. 3d. per foot super, and the Houses are perfectly framed and fitted up on the Premises, and then taken down again and every portion marked. E. D. having fixed these Houses in all parts of the United Kingdom, and finding, by the great demand for them, that they need no praise from him, will leave the Houses to speak for themselves.

GLAZING WITHOUT PUTTY, being only Glass and Iron used, has been considered of sufficient value to be used in Roofing in the Public Baths and Washhouses, Endell Street, Bloomsbury; and E. D. is now engaged roofing some buildings at Bermondsey. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used.—Printed Price List sent on application.

#### LIGHT, CHEAP, AND DURABLE ROOFING.

#### CROGGON'S PATENT ASPHALTE ROOFING

FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates, can be laid on with great facility by unpractised persons. Price ONE PENNY PER SQUARE FOOT. Croggon's Patent Non-Conducting FELT for steam-boilers and Pipes, saves 25 per cent. of fuel.—Samples and testimonials sent by post on application to **CROGGON & Co.**, 2, Dowgate Hill, London, who also supply SHIP-SHEATHING FELT and INODOROUS FELT for damp walls, and lining iron houses, to equalise the temperature.

#### PRIZE MEDAL—1851.

#### AT A VERY ECONOMICAL RATE.

**SAMUEL CUNDY, MASON AND BUILDER, PIMLICO** MARBLE AND STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Libraries, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

**AUSTIN'S ARTIFICIAL STONE.**—Garden Fountains and other ornamental works continue to be executed in this material by Mr. Austin's late partner, JOHN SEELEY, at the original manufactory, Nos. 1 to 4, Keppel Row, New Road, near the Regent's Park. N.B. This material is strictly an artificial limestone, of an agreeable grey colour, and wholly free from the glazed and reddish appearance of Terra Cotta and other pottery. It is quite waterproof, and may be laid under water for any time without injury. The following list will give some idea of the variety of the stock:—

VASES, in all styles, from 10s. to 30l. each.

FOUNTAINS, more than One Hundred Designs.

STATUES copied from the Antique.

MODERN FIGURES, from 2 to 12 guineas.

BASKETS, with Suitable Pedestals, from 1 to 30 guineas.

SHELLS, from 12s. to 15l.

FIGURES OF ANIMALS AND BIRDS.

CRESTS FOR GATE PIERS.

TAZZAS, OR FLOWER BASINS, from 30s. to 24l.

MEMORIAL URNS AND PEDESTALS.

SUN-DIAL PEDESTALS.

BALUSTADING in every Style.

BAPTISMAL FONTS.

#### MAW'S ENCAUSTIC TILE PAVEMENTS.

**MAW AND CO.** send free per post their NEW BOOK OF DESIGNS (with prices), adapting this most durable, economical, and decorative production of Mediæval Art to Entrance Halls, Passages, Conservatories, Verandahs, and every description of modern and ancient Building.

Bentham Works, near Broseley, Shropshire.

#### WARMTH AND VENTILATION.

**THE PATENT PORTABLE SUSPENSION** STOVE will warm and ventilate at the same time, and is recommended by eminent medical men as the only stove suitable for the chamber of the invalid. It is made in sizes suited for the largest building or the smallest office. To those who study health, comfort, and economy, it offers advantages which no other possesses. No 3, price 20s., will burn 10 hours without attention, at a cost of three farthings. Prospectuses, with prices and instructions, post free. In operation daily at DEANE, DRAY, & CO.'S show-rooms, &c., London Bridge.

**CUNDY'S PATENT PURE WARM AIR VENTILATING STOVE.**—The only Pedestal Stove which gained a Prize Medal (Class 476) at the Great Exhibition of 1851. Especially adapted for warming Churches, Chapels, Schools, and Mansions.—Can be purchased of CUTLER & SONS, 61, Great Queen Street, Long Acre. (Sole Manufacturers.)

#### B. EDGINGTON'S TENTS.

**BENJAMIN EDGINGTON**, Removed from Piccadilly to 32, Charing Cross. Tents erected on the Premises. Manufactory for Tents, Marquee, and Rick Cloths, as usual, at 2, Duke Street, Tooley Street, London Bridge, where every description of Tent can be seen.

**"FRIGI DOMO."**—Patronised by Professor Lindley for the Royal Horticultural Society, the Royal Zoological Society, by His Grace the Duke of Northumberland at Syon House, and many cultivators of first class Horticultural and Floricultural produce.

"FRIGI DOMO," a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHEL, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

**PROTOXIDE ANTI-CORROSION PAINT**, at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it.—Manufactured by CHARLES FRANCOIS and SONS, Cement Works, Nine Elms, London.

#### CARSON'S ORIGINAL ANTI-CORROSION

PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to **WALTER CARSON & SONS**, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

#### BERDOE'S WINTER OVER-COATS AND CAPES.

One of the largest stocks in London of superior garments, at reduced charges, all possessing the distinguishing important advantage of resisting any amount of rain without causing perspiration (the fatal objection to all other waterproofs); also of Shooting Jackets, Ladies' Capes, Mantles, &c. The well-known Ventilating Waterproof Light Over-Coat. The PALLIUM has long been reputed one of the most economical and valuable garments ever invented, price 46s.—W. BERDOE, 96, New Bond Street, and 69, Cornhill (and no where else).



**NEW PLUMS.**  
**R. HENRY DOWLING**, Woolston Lawn, Southampton, most respectfully invites the attention of the public and gentry generally to his three new Plums—**ANGELINA BURDETT**, **BLACK GAGE**, and **STANDARD ENGLAND**, at the following reduced prices:—Fine strong early-old trained trees, at 5s. each; or 2 years do., at 3s. 6d. each.  
1. D. having the opportunity of fruiting this season, can, with the greatest confidence, recommend them to far exceed all other Plums ever yet produced; they having also been laid before the committee of gentlemen, and the most competent judges in the field, and considered by them to throw all other Plums in the shade, their possessing a more sugary sweetness, the flavour most equal to the Pine. The above can be supplied by Mr. **ABLES TURNER**, Royal Nursery, Slough, Bucks, the only agent, who can give satisfactory testimonials of their quality, having a season tasted the fruit. The fruit will be figured in the number of the "Florist." H. D. begs also to inform the public generally, that no trees can be supplied from any other nursery tree, except those grafted in March last. Gentlemen ordering H. D. with early orders will be strictly attended to.

**CHALLENGE TO ALL ENGLAND.**  
**R. D. KING, GARDENER AND FLORIST**, Southampton, having had the pleasure of fruiting the **ANGELINA BURDETT** and the **BLACK GAGE** this season, can with confidence show the above two Plums against the **Reine Claude** and the **Purple Gage** for 50s., or any other two Plums which can produce, between August 20 and September 6, 1854, to be decided by three competent judges, and met half way any part of England.—Southampton, Nov. 13.

**WILLIAM FAIRBEARD**, Mount Pleasant Nursery, Green Street, Sittingbourne, Kent, begs to inform the Trade that he intends to send out this season his new Dwarf Early Wrinkle Marrow Pea, called **FAIRBEARD'S NON-REL**. This Pea is some days earlier than his Champion of Garden Pea, and very prolific; height 3 feet. It is not like the Wrinkle Pea generally, it carries but little foliage. This Pea **WILLIAM FAIRBEARD** can confidently recommend being a first-rate one, and can be supplied by the following gentlemen:—Mr. Epps, Maidstone; Mr. Thomas Bunyard, Woking; Mr. Duncanson, St. Martin's Lane, London; W. G. Waite, 151, High Holborn; Messrs. Hurst & Mullen, Adelphi Street; Messrs. Batt, Burley, & Silverlock, Strand, London; Messrs. John Sutton & Sons, Reading, Berkshire; Mr. Harrington, Liverpool; Messrs. Veitch & Son, 54, High Street, London; Messrs. William Rendle & Co., Seedsmen, Plymouth; Messrs. Nutting & Son, Chesham; Messrs. Noble, Cooper, & Son, Fleet Street; Messrs. J. C. Wheeler & Son, Gloucester. N.B. W. F. has a few bushels more to offer the Trade.

**ROSE CATALOGUE.**  
**WOODLANDS NURSERY, MAREFIELD, NEAR UCKFIELD, SUSSEX.**  
**WILLIAM WOOD AND SON** beg to announce that the new Edition of their Rose Catalogue, for 1853-54, is now ready for distribution, and will be sent gratis on receipt of Two penny Postage Stamps.  
Their Catalogue of General Nursery Stock may also be had on same terms.

Collections of **ROSES** will be supplied on the following terms, on the selection of sorts is left entirely to Wm. Wood & Son:—Extra tall Standards, 4 to 8 feet, with 3 to 6 best varieties of Climbing and Perpetual Roses, in each stem, suitable for training, &c., 3s. 6d. to 5s. each.  
1st Standards, fine picked stocks, from 4 to 6 feet, with large heads, of the most showy kinds, for planting in conspicuous positions on lawns, &c., 3s. per dozen.  
2nd Standards, superior selected Standards, 12s. to 24s. per dozen, or 1s. to 10s. per 100.  
3rd Dwarf and Dwarf Standards, 10s. to 16s. per dozen, or 1s. to 6s. per 100.  
4th Dwarf do., the best sorts for exhibition, 12s. per dozen, or 1s. to 10s. per 100.  
5th Dwarf, on own roots, in 50 varieties, 2s. 10s. per 100.  
6th Climbing and Noisettes, 9s. to 12s. per dozen.  
7th Hybrid Perpetuals, budded on 6-inch stems, or on own roots in pots, 12s. to 18s. per dozen, or 5s. per 100.  
8th de Bourbons, in pots, or budded on 6-inch stems, 12s. to 18s. per dozen, or 6s. per 100.  
9th Tea, in pots, 9s. to 12s. per dozen.  
10th Tea-scented, in pots, 12s. to 18s. per dozen.  
11th Climbing Roses, mixed, without names, for covering banks, &c., 1s. to 10s. per 100.  
12th Dwarf, on own roots, without names, 1s. 10s. per 100.

**CHOICE AND CHEAP.**  
**ELECT HARDY HERBACEOUS PLANTS AND ALPINES**, 100 in 50 choice sorts, our selection, 25s. per 100; or 100 choice sorts, our or purchaser's selection, 30s.  
1st Evergreen Shrubs, Trees, &c., purchaser's or our choice, per 100, in 100 sorts, 2s.; our choice, in 50 sorts, 1s.  
2nd Common Laurels, 1 1/2 to 2 feet, per 1000, 3s.; per 100, 8s.  
3rd Evergreen Privet, 3 to 4 feet, fine, per 1000, 35s.; 2 to 3 ft., 30s. p. 1000.  
4th de Cestinus, 5 to 6 feet, 15s. per 100.  
5th Fish Chestnuts, 4 to 6 feet, 20s. per 100.  
6th de Cestinus, 10 to 12 feet, 10s. per 100.  
7th Hollyhocks, fine double coloured, 20s. per 100.  
8th de Cestinus, in choice varieties ... per dozen ... 8s.  
9th Dwarf do. ... " ... 4s.  
10th Trained do. ... " ... 24s.  
11th Dwarf do. ... " ... 9s.  
12th Trained do. ... " ... 36s.  
13th de Cestinus, May's Victoria, 4s. per dozen, or 20s. per 100.  
14th B. A fine stock of Larch, Spruce, Oak, &c. Sizes and prices on application. MAY'S Descriptive Catalogue, in Three Parts, contains Plants, Hardy Herbaceous Plants and Shrubs, and is to be had on application.  
Address all orders and communications to **HENRY MAY**, Nurseryman, Leeming Lane, near Bedale, Yorkshire.

**KILMARNOCK WEeping WILLOW; or SALIX CAPREA PENDULA.**—The Trustees on the sequestered estate of Thomas Lang, Nurseryman, Kilmarnock, Scotland, state that he is ready to supply plants of this beautiful Willow. Mr. Lang has received numerous testimonials as being a new, distinct, and interesting addition to our ornamental Trees, from Professor Lindley, of London, Mr. S. B. Royal Botanic Gardens, Edinburgh, and others; but allowing letter from Sir William Jackson Hooker, Director of the Royal Gardens, Kew, by of itself, sufficient, both as a recommendation and a recommendation of the plant.  
"Royal Gardens, Kew, 20th Sept., 1853.  
"The Salix caprea pendula is doing well with us, and is admired for its decidedly weeping character. It bears the relation to the ordinary Salix caprea that the Weeping Ash to the Common Ash, and I need say nothing more to its character. Every branch is gracefully curved downwards, and the breadth of the foliage and its dark colour give it a totally different character from the common Weeping Willow, Salix caprea. I think very highly of it as an ornamental small tree."  
"I am, &c., (signed, W. J. Hooker.)"  
Plants, on own roots, trained to one stem, 2s. 6d. each, or 1s. extra fine, 3s. 6d. each. A few plants, grafted on tall stems, but not well furnished heads, 5s. each.  
Orders to be addressed to Mr. JOHN DICKIE, Seedman, Kilmarnock, the Trustees, who will also forward, on application, a list of the General Nursery Stock, which is now being sold at extremely low prices.—Kilmarnock, Nov. 10, 1853.

**TREES FOR AVENUES.**  
**WOOD AND INGRAM**, Huntingdon, beg to offer the following, which have been frequently transplanted, and are admirably adapted for the above purpose, or for Parks, Hedges, &c. Elms, the true English, from layers or grafted, 10 to 12 feet ... 80s. per 100  
12 to 14 " ... 90s. " "  
14 to 18 " ... 100s. " "  
Also, the true Huntingdon or Chichester Elm, at the same prices. Limes, the best red twigged variety, 10 to 12 feet ... 100s. per 100  
12 to 14 " ... 110s. " "  
14 to 16 " ... 120s. " "  
The above are all feathered to the ground. Also a large collection of Standard Pears and other Fruit Trees, of all the leading kinds; and an extensive general Nursery Stock, priced Catalogues of which may be had on application.  
Huntingdon Nursery, Nov. 19.

**CHEAP AND SELECT NURSERY STOCK.**  
**THE SUBSCRIBERS** beg to offer the following choice Stock, at the annexed very low prices. Goods from these extensive Nurseries have given great satisfaction throughout the kingdom for many years.  
12 very best Ghent and other hardy Azaleas, 2 feet, bushy, covered with flower-buds ... s. d.  
12 Standard Berberis dulcis, with fine heads ... 40 0  
12 Abies Morinda, 3 to 4 feet, true, and fine plants ... 20 0  
12 Pinus Cembra, 3 to 4 feet, fine specimens ... 30 0  
12 Pinus excelsa, 3 feet, fine specimens ... 20 0  
12 Scarlet Arbutus, 2 to 3 feet, in pots ... 18 0  
12 Standard Cereus, or Fancy Thorns, 4 feet ... 9 0  
12 Handsome Rhododendrons, 2 to 3 feet, scarlet, crimson, purple, white, and all shades of colour, selected from above 100 kinds ... 20 0  
100 Rhododendron campanulatum, from seed, eight years old, very bushy ... 60 0  
100 Ditto ditto, 1 foot high ... 80 0  
100 Flowering and Evergreen Shrubs, two of a sort ... 30 0  
100 Splendid and very showy Hollyhocks ... 30 0  
50 Standard Roses, splendid prize varieties, with large fine heads, and 34 feet stems ... 60 0  
1000 Evergreen Privets, strong plants, 2 to 3 feet, for game coverts ... 30 0  
1000 Laurels, 3 feet, fine plants ... 100 0  
1000 Mahonias, for hedges or coverts ... 50 0  
1000 English Oaks, extra transplanted, 4 to 6 feet ... 40 0

**FRUIT TREES.**—Per dozen.  
Apples and Pears of the most approved kinds, good strong standards ... 9 0  
Ditto ditto, dwarf, 8s. trained ... 30 0  
Cherries and Plums, good strong standards ... 12 0  
Ditto ditto, dwarf, 9s.; trained ... 36 0  
Apricots, Peaches, and Nectarines, trained, of the most approved kinds ... 48 0  
Linnaeus, Royal Albert, Bucks Scarlet, and Victoria Giant Rhubarb ... 7 6

**WILLIAM JACKSON & Co.**, Bedale, Yorkshire.  
This Advertisement will not be repeated.  
**THE TRUE LANCASHIRE SHOW GOOSEBERRIES.**  
RED. dwts. grs. GREEN. dwts. grs.  
London ... 31 4 Thumper ... 25 1  
Wonderful ... 28 19 Tom Joiner ... 24 7  
Conquering Hero ... 26 13 General ... 22 23  
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Companion ... 24 0 Gretna Green ... 21 22  
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Guido ... 22 14 Weathercock ... 20 2  
Napoleon le Grand ... 19 19 Keepsake ... 18 20

**YELLOW. WHITE.**  
Catherine ... 26 0 Freedom ... 22 22  
Leader ... 26 0 Snowdrop ... 22 10  
Pilot ... 25 9 Eagle ... 22 6  
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Railway ... 24 19 Tally-ho ... 22 18  
Drill ... 24 6 Queen of Trumps ... 21 14  
Goldfinder ... 21 1 Cassack ... 20 5  
Broomgirl ... 21 3 White Hair ... 20 12  
Gunner ... 20 16 Snowball ... 21 0  
**JOHN HOLLAND**, Bradshaw Gardens, Middleton, near Manchester, is now sending out strong plants of the above-named Gooseberries, which are the best of the season, and weights taken from the "Gooseberry Grower's Register" of 1853; 12 strong plants, 7s. 2d. or upwards, 6s. per dozen, package included. Priced and Descriptive Lists of Gooseberries, Carnations, Picotees, Pinks, Pansies, Auriculas, Alpines, Polyanthus, Primroses, &c. &c., are now ready, and may be had for one postage stamp. Post Office Orders to be made payable at Middleton, Lancashire.

**BENJAMIN R. CANT** begs to offer the following, in extra strong plants:  
**NEW SHOWY GERANIUMS.**  
Hoyle's Astrea, 5s.; Basilisk, 3s. 6d.; Butterfly, 3s. 6d.; Leonora, 5s.; Oscar, 5s.; Zaria, 5s. Foster's Eleanor, 3s. 6d.; National, 3s. 6d.; Optimism, 7s. 6d.; Rachael, 5s. Dobson's Gertrude, 5s.; Harriet, 3s. 6d.; Jupiter, 3s. 6d.; Pasha, 5s.; Spot, 5s.; Vulcan, 5s. The above 16 for 56s.; any 12 for 48s., or 12 of my own selection for 36s.  
Any 12 of the following first-rate varieties may be selected for 20s., or 12 of my own selection for 16s.:—  
Arethusa Exhibitor Ocellatum  
Ajax Incomparable Plantagenet  
Alibi Lavinia Purple Standard  
Butterfly Magnet Silk Mercer  
Commissioner Mochanna Tyrian Queen  
Diana Major Domo Village Maid  
Euchantress Nepaulese Prince  
Good older sorts 6s., 9s., and 12s. per dozen.  
**FANCY GERANIUMS.**  
Purchasers may select any 12 of the following for 12s., or my own selection 9s. per dozen:—  
Anals Fleur d'Marie Miss Sheppard  
Albion Hero of Surrey Pelopides  
Beauté Jehu Improved Purity  
Belle Marie Little Wonder Prince Albert  
Diana Vernon Mulberry Prima Donna  
Delicate Marion Queen Victoria  
Exquisite Madame Mieliez Statuini  
Fairy Queen  
Good older sorts 6s., 9s., and 12s. per dozen.  
**NEW CINERARIAS.**—The set of 8 for 18s.  
Charlotte, 2s. 6d.; Charles Dickens, 2s. 6d.; Conspicua, 2s. 6d.; Kate Kearney, 3s. 6d.; Lovellness, 3s. 6d.; Marguerite d'Anjou, 3s. 6d.; Prince Arthur, 3s. 6d.; Rosalind, 3s. 6d.  
Purchaser's selection from the following, 9s. per dozen; my own, 6s. per dozen:—  
Annie Elsie Jones Mr. Sidney Herbert  
Adela Villiers Experimental Blue Nymph  
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Agnes Wakefield Fornosa Othello  
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Catherine Hayes Lady Gertrude Rosy Morn  
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David Copperfield Mazzlino Susie  
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Carriage paid to London and Norwich, and all intermediate Stations. A liberal discount for cash, and the usual allowance to the trade.—St. John's Nursery, Colchester.

**SUPERB HOLLYHOCKS AND PERPETUAL ROSES.**  
**R. B. BIRCHAM**, Hedenham Rosary, Bungay, Suffolk, begs to state that he has strong, healthy plants of most of the leading kinds of Hollyhock; see Catalogue published in the *Gardeners' Chronicle* Oct. 22. If the selection be left to R. B. B.:—12 first-rate sorts, 30s. to 40s. per dozen; 12 good show flowers, 15s. per dozen; 12 good double flowers for borders, without names, 6s. per dozen. Hollyhock Seed, saved exclusively from the best kinds, at 1s. 6d. per packet, containing upwards of 200 seeds.  
**PERPETUAL ROSES.**—Strong dwarf plants, suitable for beds or borders (or for pot culture), including the best kinds in cultivation, 9s. to 12s. per dozen. Strong dwarf plants of Show Roses, 6s. to 9s. per dozen.  
Carriage paid to London, and plants added to compensate for long carriage.

**SURPLUS STOCK.**—8000 Old English Grafted Elms, varying from 4 to 12 feet; 3000 to 4000 Chesnuts, 5 to 6 to 8 feet; 100,000 Ash, 3 to 4 to 6 feet; 2000 to 3000 Yews, 2 to 3 feet; 2000 to 3000 Siberian Arbor-vite, 2 to 3 feet; 10,000 to 12,000 Berberis aquifolium, 2 feet; 8000 to 10,000 Common Laurels, 3 to 4 feet. The above have been frequently transplanted, are fine healthy plants, and all applications for terms will be duly attended to by Messrs. L. D. SHARP, Nurserymen, Sleaford, Lincolnshire.—N.B. Catalogues of General Nursery Stock may be had on application.

**RENDLE'S NEW AUTUMN CATALOGUE OF FOREST TREES, SHRUBS, AND FRUIT TREES**, is just issued from the press, and can be had in exchange for one penny stamp.  
The Catalogue should be obtained by all who intend Planting this Autumn, as the prices of many of the articles are very low, in consequence of the large Stock we have of many of the sorts.

We have to offer the following:—  
300,000 Seedling and Transplanted SCOTCH FIR.  
600,000 do. do. LARCH FIR.  
200,000 do. do. PINUS AUSTRIACA.  
150,000 do. do. THORNS OR QUICKS.  
As well as all other Forest Trees in proportion.  
All orders above 10l. will be delivered carriage free to all the Railway Stations in Scotland, West of England, and to Cork, Dublin, and Liverpool by Steamers.  
For Catalogues and further particulars apply to  
**WILLIAM E. RENDLE AND CO.**  
NURSERYMEN AND SEED MERCHANTS,  
ESTABLISHED 1786. Plymouth.

## The Gardeners' Chronicle.

SATURDAY, NOVEMBER 19, 1853.

MEETINGS FOR THE ENSUING WEEK.		
MONDAY, November 21	Chemical	8 P.M.
	Statistical	8 P.M.
	Meteorological	7 P.M.
TUESDAY, — 22	Civil Engineers	8 P.M.
	Medical and Chirurgical	8 P.M.
	Zoological	8 P.M.
	Microscopical	8 P.M.
WEDNESDAY, — 23	Society of Arts	8 P.M.
	Royal Soc. of Literature	8 P.M.
	Naturalists	7 P.M.
THURSDAY, — 24	Antiquarian	8 P.M.
	Royal	8 P.M.
FRIDAY, — 25	Palaeological	8 P.M.
SATURDAY, — 26	Royal Botanic	8 P.M.
	Medical	8 P.M.

The garden in course of formation at Sydenham, in connection with the **CRYSTAL PALACE**, has hitherto received only slight and occasional notice in these columns. Sir **JOSEPH PAXTON**'s plans have however become so far matured, and his intentions may now be so easily traced by the visitors to the spot, that it seems desirable to attempt a more full description of what this surprising work of art is about to become, beyond the walls—in these days we have glass and iron walls—of the Palace itself. Minute details are however at present impossible, and we are necessarily limited to a very general, though we hope exact, description of what the design at present is. What it must become will be most readily understood by those who have gazed upon such pictures as **MARTIN'S Destruction of Babylon**; the principal difference consisting in the architect having realised more than the painter ventured to imagine.

Let the reader imagine an enormous irregular pentagon, on the slope of a hill, with one of its sides forming the crest of the hill and occupied by a vast palace of glass and iron. Let him conceive that this area measures about 4000 feet from the base of the pentagon on the summit of the hill to its apex in the valley; while the extreme breadth between the angles within the apex is about 5500 feet. Let him further suppose that the crest of the hill is about 200 feet above the valley, and that over the whole there are scattered groups of trees left after clearing away what was once a wood. He will then be able to follow us in what we are now about to endeavour to describe.

The side of the palace itself, where it bounds the garden, is 1700 feet long, and has two projecting wings each 400 feet deep. Within this area, 1700 x 400, are the terrace and the terrace garden, overlooking the beautiful valley. The terrace itself, 1700 feet long and 50 wide, is reached by three flights of granite steps, passing over a narrow slope of closely shaven turf, which forms the apparent foundation of the palace itself. On the side next the garden, the terrace is supported by a wall crowned by a noble balustrade, having numerous recesses carried by bastions, projecting into the terrace garden, and breaking the bad effect of so long a line of wall. From the terrace access is had to the terrace garden by three double flights of granite steps, one opposite each transept.

The terrace garden itself is to be richly orna-



mented with parterres of flowers, basins, fountains, and statuary. Of the second, those on either side the main steps are oval, 175 feet long by 75 feet wide, while those next the side steps are circular, and about 100 feet in diameter.

This department is divided into two equal parts by a walk 100 feet wide, at right angles to the building, and running onwards down the slope, in a straight line, till it loses itself on the borders of a magnificent basin, 400 feet in diameter. The total length of this walk is 3000 feet.

From the terrace garden three other flights of granite steps conduct the visitor to a lower level, on the outskirts of which what may be termed the picturesque part of the garden commences. This second level is in the form of a half ellipse, richly decorated with flower-beds, on the borders of graceful walks which wind through it in various directions, but converge at three basins 300 feet apart, the central one, which intercepts the long main walk already described, being 200 feet in diameter, and the laterals, which are nearer the palace, 100 feet each. This centre basin is surrounded by a walk 50 feet wide, enclosed by a low parapet wall and balustrades, with numerous recesses occupied by groups of statuary. Like all the other basins, it is to be alive with fountains and jets. Round the central basin, on the grass, below the wall which bounds it, are to be again dispersed beds of flowers, forming a brilliant frame to the turf slope on which the main walk and its adjuncts are elevated. The length of this half ellipse is about 2000 feet, and its depth rather more than 600 feet. It is shut in on its curved side by a low broken ridge covered by ornamental trees.

It is at this part of the ground that Sir JOSEPH PAXTON's design breaks upon the view in all its grandeur, and that we first begin to appreciate the consummate skill with which he has succeeded in solving the most difficult problem in landscape gardening—how to combine insensibly the most artificial and elaborately ornamented ground which it is possible to conceive with the picturesque irregularities of a park, and the rough inequalities of mere woodland scenery. Among dells and hollows, gradual elevations sprinkled with trees, and thickets in which deer might hide, fragments of forest ground, and irregular sheets of water, we find united in the most felicitous manner, hard geometrical outlines, ornamental basins, gushing fountains, sparkling jets, sculpture, statuary, and all that belongs to the most formal architectural design. We venture to believe that if Sir UVEDALE PRICE were still alive he must have given up his horror of curves and clumps and shaven slopes, and his exclusive love of the picturesque, which some might possibly call the grotesque, and he must have admitted that in skilful hands the former might result in features of beauty that even he would have been compelled to admire.

We have already said that the great basin just described intercepts the main walk down the centre of the garden, and terminates what may be called the kept ground. Passing onward some 100 feet the visitor is suddenly to find himself in presence of a pair of iron and glass water-temple, each 70 feet high, and of most beautiful proportions. These temples stand right and left of the main walk, and cover each a group of statuary. They are to be planted with creeping plants, which, hereafter, when water shall be laid on, will be placed between two thin sheets of water descending from the dome of the temple and covering the statuary as with a transparent veil. From these two temples water is to rush over as many cascades, each 75 feet wide and 550 feet long, till they arrive at dams 125 feet broad, over which they tumble, forming waterfalls which each fill a reservoir 800 feet long and 400 feet broad in the centre.

While observing the effect of these large volumes of water in violent motion, and of the innumerable fountains and jets accompanying them, the eye will be attracted towards two hills, 600 feet off the main walk, from which they are equidistant, one of which is to be surmounted by arches and festoons of Roses, and flowing climbers, forming a circle of 600 feet, and enclosing richly decorated flower beds. The destiny of the other hill is not decided upon, so far as we have heard.

Reaching the foot of the reservoirs the visitor will find himself within a few hundred feet of the greatest and lowest basin, from which he will, on the one hand, discover Sydenham church, forming at a distance of more than 1000 yards the termination of a drive through a large irregular tract of park and woodland, intersected by other drives and walks in various directions, with ornamental buildings profusely intermingled. On his right he will, at the same time, look upon a lake 1000 feet long and 400 wide, dotted with islands, and screened to the north

by a steep rough closely wooded bank, which forms its northern shore.

On the shores and islands of the lake are to be dispersed models of the extinct and singular monsters of the wealden and neighbouring periods. Huge Chelonians are to bask upon the banks; the Plesiosaur, with its reptile form and bird-like neck, is to repose in the mud; the Megalosaur, the most gigantic of lizards, is to rear its portentous form among the rushes, and the enormous Ignarodon, half elephant half crocodile, measuring 100 feet from his snout to his tail, is to exhibit himself as the true prototype of the dragons of antiquity. We have seen these models, and we are glad to bear witness to the admirable skill with which Mr. HAWKINS is investing Portland cement with the similitude of these hideous giants of a former world.

We have no space for further description, and can only now add that the quasi-fabulous scene which is to be thus created will be accessible by a drive round its boundary some two miles long, and be visible from the galleries of the Palace, or from a vast verandah, decorated with the choicest climbing plants, which will extend for a thousand feet along the south face of the building. So that be the weather what it may the beauties of the garden can be always witnessed in comfort.

It is said, moreover, that the waterworks are to be three times more extensive than those of Versailles; but of these and of the interior garden we must speak on some future occasion. We may, however, be permitted, even now, to draw attention to the magnitude of the apparatus either executed or contemplated. What has been said of the water-temple, the cascades, and the reservoirs, all alive with jets and similar devices; to say nothing of the waterfalls themselves, will convey some idea of what is to be looked for in this branch of ornamental gardening. It is to be confidently expected that as soon as the public shall come to understand what the effect of water artificially disposed may become in the hands of a man of real taste, we shall see no more of the contemptible jets which disfigure our public places, and which lead strangers to believe that London is a limbo in which hydraulic genius lies in an everlasting trance; an impression not removed when they look to the works of our landscape gardeners who, almost without exception, dread to approach a subject of which they know little, and in which they find at home no good examples to guide them.

It has been more than once asserted that when the branches of VINES rest upon the ground, both they and their produce escape the mildew. This statement has been lately repeated by M. ROBOAM, who, in a communication to the Institute, reports moreover that whenever the branches lie upon dug ground, free from weeds, they are less green and fine than when the Vine lies prostrate upon turf; but in either case they escape disease. He caused Vines to trail over heaps of stones; they remained green and sound, both branches and leaves.

But it would appear, upon the same authority, that it is not being in contact with the earth that guards them, but being placed in a horizontal position exposed fully to the sky; for M. ROBOAM states that Vines near Vincennes trained upon a wall having a horizontal stone coping were healthy when the branches followed the coping, resting upon it, but were diseased wherever they went beyond it, either on the one side or the other. No explanation has hitherto been offered of this singular fact, if it be universal; nor can we pretend to express an opinion upon the subject. But it happens that we have some knowledge of a case resembling those referred to by M. ROBOAM, and which it seems desirable to put upon record.

A Vine belonging to Mr. J. STAUFFER, of the Wandsworth Road, was reported to be affected by the mildew, except where it was trained over the roof of an out-house. Mr. THOMPSON, when sent to examine it in the beginning of September, found that the Vine in question was trained on the south aspect wall of a coach-house, against which it was planted; also over the east aspect; while part of it covered a slated roof which sloped to the east. The portions trained on the walls of the building were much diseased; and, on close inspection, that trained over the slates was found by no means free from disease, but it was less apparent than on the portions trained against the walls. One bunch not covered by leaves, and lying on the slates, was scarcely affected. This bunch must have been exposed to rain, and washed by the water running down the slates.

In this instance the disease was certainly not absent from the branches trained horizontally, and exposed to the full influence of the sky; but they were very much less affected than those upon the perpendicular surface of the wall. If our corre-

spondents have any similar experience, it would be desirable to publish it; for the importance of the fact, supposing it to be confirmed, is in no degree diminished by science being incapable of explaining it.

#### COLEONEMA PULCHRUM.

The fine, graceful habit of growth, and profusion of bright-coloured, star-shaped blossoms, for which this plant is remarkable, render it well worth a place, even in limited collections; and as it is also of easier cultivation than most of our first-class greenhouse plants, it is therefore very suitable for growers who have had no great amount of experience in plant culture.

The ordinary method of increasing hard-wooded greenhouse plants, will succeed perfectly in the case of this one, but, as I have frequently observed, there is nothing gained by private growers propagating such plants for themselves. Indeed, the successful propagation of most greenhouse hard-wooded plants requires an amount of skill and experience such as beginners seldom possess; and so much time and careful attention are required to produce proper "young stuff," that where only a plant occasionally is wanted, it is cheaper to buy it than to grow it.

Persons intending to commence the culture of this Coleonema should be in possession of good, healthy, robust, bushy plants previous to March, which is the proper season for starting into growth such as are intended to form large specimens. As early in the month as is convenient examine the state of the roots; if they are active and require more space, give a moderate shift, using good fibry peat, broken carefully up into small pieces about the size of Peas, divesting it of all inert soil and fine particles, and mixing with it about one-third its bulk of good sharp silver sand, small clean potsherds or charcoal, incorporating the whole well together. The soil should have been stored in a warm dry place ready for use, and should be in a proper state as regards moisture, and care should be taken to have the ball of the plant in a kindly moist state when the operation of potting is performed. A situation near the glass, a temperature of about 45° at night, allowing it to rise some 10° with sun-heat and air, and a nice moist atmosphere, will be suitable after potting. All newly potted plants are liable to suffer more from the careless application of water than than at any other stage of their growth, therefore beginners cannot be too careful to avoid over-watering on the one hand, and giving too little on the other. The safest way of avoiding these evils is to sprinkle the plants over-head and keep the atmosphere rather close and moist until the roots lay hold of the fresh soil. When the plants start into vigorous growth, air must be admitted freely on every favourable occasion, in order to induce compact firm wood, and the shoots should be pinched back as may be necessary with a view to obtain compact specimens. With the increase of light and sunshine which the lengthening days of April will afford, the temperature may be allowed to range a few degrees higher, but the night heat should not be kept at more than 45° without a circulation of air, and too much air can hardly be given during mild days, and the atmosphere should be kept moist by syringing the plants over-head morning and evening, and sprinkling the floors, &c., of the house or pit. As soon as all danger from spring frosts and cold cutting winds is over, remove the specimens to a cold frame, and guard them against the ill effects of sudden changes of temperature, which may occur at this season. If in good health the plants will make rapid progress, and will require a second shift early in the summer; and such as are growing rapidly, if shifted early in June, may be allowed a liberal shift, say into pots two sizes larger than those they are in; but unless they are ready for repotting in June it will not be advisable to give more than a small shift, so as to have the pots well filled with roots previous to winter. The same soil as recommended for the last shift will be suitable for this, except that the peat should not be broken up so small, and similar care in watering will be necessary until the plants get established in their new pots. A slight shade for a few hours on the forenoons of bright days will be beneficial, but this must not be overdone, and a free circulation of air should be maintained night and day, except when cold drying currents of wind may prevail, and then the lights should be raised on the sheltered side only, and the temperature kept down by means of shading. The plants will be greatly benefited by full exposure to the night dews when the weather is fine, but the light should be so placed as to ward off a heavy storm-rain, should such occur; the lights should, however, be put on every morning, for the purpose of securing moist atmosphere, and the plants should be moistened over-head, as well as the floor on which they stand. Inure the specimens to full exposure to air and sun by the beginning of September, in order to get the wood well ripened before the damp foggy days of November; and when cold damp weather occurs remove them to light airy part of the greenhouse, which will be a proper place for them in winter, when water must be carefully administered.

The same treatment continued during another season will furnish large handsome specimens, and as soon the plants are large enough to be considered useful they may be allowed to remain in a cool airy part of the greenhouse to expand their blossoms, after which they may be taken to the show-house, or any cool place where their beauty will be most enjoyable. When the beauty of the flower is over the shoots should be cut back



much as may be necessary to keep the specimens close and bushy; and when growth recommences give a moderate shift, and allow the plants a fortnight under glass, until the roots can lay hold of the fresh soil, then remove them to a warm sheltered part of the plant ground, where they will make sufficient young wood for bloom in the course of the summer. *Alpha.*

## MANAGEMENT OF CIDER APPLE TREES.

(Continued from page 725.)

**TREATMENT OF ESTABLISHED TREES: Cultivation and Manure.**—There are still leases of farms, which are doubtless copies of those made 200 years ago, which say, without any further explanation, that the farmer shall stir the ground at the foot of the trees every three years (*serfouir le pied des arbres tous les trois ans.*) To fulfil this condition the farmer takes off round the foot of every tree a circle of turf as small as possible, in order to economise his pasture. That is to say, round a tree upwards of 3 feet in circumference, he unturfs a circle not more than 4½ feet in diameter, and at the end of the winter, when the Grass begins to grow, a little dung or pomace is spread round, or perhaps nothing at all. The turf is then relaid, and the proprietor is very well satisfied, because he thinks that his tree will owe the continuance of its life and vigour to this useless operation. The most that can result from the removal of the turf is the destruction of the eggs or larvæ of some insects which have their winter quarters at the bottom of the tree. Stirring and manuring the ground immediately at the foot of a tree that has been long planted and is of a large size, cannot prove beneficial to it, as the absorbent roots are no longer there. It is beneath the extremities of the branches that manure should be applied, because, as the roots extend about the same distance as the branches, it is there that the absorbent roots are, and by them only can the nourishment be introduced into the tree. It would not be reasonable to require a farmer to stir and manure a large zone beneath the branches of each tree, because that would occasion considerable labour, and would destroy a part of the pasture; but between an absurd clause on the one hand, and an almost impossible operation on the other, something useful may be done. Let it be stipulated in the lease, for instance, that the farmer shall only lay manure at the foot of trees under nine years old; and when he manures the pasture, if he has not sufficient to cover the whole of it, that he should lay the manure in preference on those parts that are under the extremities of the branches of large trees; this would be more reasonable.

**Lopping.**—Nothing shortens the life of Apple trees so much as the removal of large branches, because the wounds from such amputations do not heal, or at least not readily. The surface of the cut blackens, the wood decays and dies, water gets in and increases the disease. This is the origin of those hollow trees which fall gradually to pieces, if they are not at once broken or uprooted by the wind. It should never be necessary to use the bill-hook in a properly managed tree; for after having been well trained in the nursery, it should be visited when the sap is down, if not every year, at least once in two or three years, in order to take off with the pruning-knife the shoots or branches that are too close together, or that cross each other; and in general everything that will eventually prove injurious, either by preventing the free access of air and light between the branches, or by destroying the shape of the head, or that hangs over so as to prove hurtful to the undercrop, should be cut off. To do this properly requires intelligent foresight, united to a sufficient acquaintance with the phenomena of vegetation, and with the habit of the species or varieties which we have to manage. Where the pruning-knife cannot reach, the averuncator is a good substitute. It is a very convenient instrument, which can be used in most cases without getting up into the tree, and thus saves the latter many little bruises. After an abundant crop, it almost invariably happens that the lateral branches, having been bent down with the weight of the fruit, cannot come back to their former position. If they were allowed to remain thus they would be within reach of cattle, and they would also shade the soil too much. To remedy this, the hanging branches should be cut back to one of those shoots which, owing to the bending, usually push on the upper side, and take an upward direction. This pruning should be made in the winter following the heavy crop. It gives the head a more graceful form, recruits the vigour of the tree, by confining the sap to a smaller number of branches, and allows the ground beneath to produce better crops. If any accident, such as breakage by wind or by the weight of fruit, renders a large amputation necessary, grafting wax, or Forsyth's composition should be immediately applied, in order to heal the wound as speedily as possible.

**Diseases to which Apple Trees are liable.**—Of the various diseases which attack the Apple tree, canker is the most common and most destructive. There are two sorts of it—the dry canker, or canker properly so called; and the ulcer, or running canker, from which a corrupt, brownish, and fetid sap issues forth. The dry canker is caused, 1st, by sap vitiated by the soil or manure; 2d, by a stagnation of the sap from a sudden change of temperature, or by the former being present in superabundance, the result of excess of manure, or of the tree being pruned too close; 3d, by bruises; 4th, by sun strokes; 5th, by pruning badly performed. To cure canker, the parts affected should first be cut off; then the wound should be rubbed vigorously with fresh Sorrel, and some pomace applied and fixed over it, or

Forsyth's composition may be employed. The patient de St. Fiacre, (grafting clay), would also be a very good plaster, but it has the defect of encouraging the woolly insect *Aphis lanigera*, or American blight. Sometimes, also, with a view to effect the cure of canker, long slits or scarifications are made in the bark with the pruning-knife on the side opposite to the canker. The ulcer arises from the same causes as the dry canker, and is cured by the same means, but with much greater difficulty. (To be continued.)

## Home Correspondence.

**Ancient Temperature.**—In your impression of the 29th October, p. 694, Mr. Mechi asks if any of your correspondents could oblige him by publishing in your columns the mean temperature of this, or any other country in ancient times, or at various periods within the last thousand years. Mr. Mechi, then, wants to know what was the temperature of the air in those ages of antiquity, when no means of ascertaining it existed, thermometers being unknown till the beginning of the 17th century of the Christian era. Surely such information should be sought of the spirits that rap our mahogany tables, rather than of the correspondents of the *Gardeners' Chronicle*? Indeed, Mr. Mechi himself seems to think it just possible that human ignorance might not be able to tell of the heat of ancient days, for his demand for mean temperature, extending at first through an indefinite antiquity, is ultimately confined to various periods during the last thousand years. Had the demand suffered a still further limitation by the cutting off of a cipher from the 1000 it would have been all the more easily satisfied. I have said that thermometers were invented about the beginning of the 17th century, but it was no doubt a long time after this before any series of thermometrical observations were instituted in this or in any other country. A paper published by Mr. Glaisher, in the "Philosophical Transactions," part 2, 1850, shows the mean annual temperature of the air from the beginning of 1771 to the end of 1849, or during a period of 79 years. No doubt Mr. Mechi will consider that this information extends over a very small as well as a very recent period of time; but I imagine that if he seeks for correct information he must not extend his researches much farther back. The authority of Mr. Glaisher's tables, as far as they go, is of course, unimpeachable, but they certainly do not prove, or rather they entirely disprove the truth of Mr. Mechi's assertion, that "our climate is of lower mean temperature than it used to be." Taking the above 79 years and dividing them into two parts, we find that the mean temperature of the first 40 years is 47°·93, while the mean temperature of the last 39 years is 48°·66, being an increase of 0°·73 over the former period. Now, as Mr. Mechi is able by a most beautiful theory to account for a decrease of temperature, which exists only in his own imagination, he will of course, with still greater facility, be able to tell us the cause of an increase which exists in reality. Mr. Mechi considers that a decrease of temperature ought to ensue from the fact, that "all earth (as proved in Hopkins's Geology) is moving northward at the rate of one-third of a mile per annum." Now I have not read Hopkins's Geology, and I am no astronomer, so that I am sadly puzzled to know what this means. Does Mr. Mechi mean to say that we are running away from the sun at the rate of one-third of a mile per annum? And that, if this be the case, the increased distance from that body which we shall have attained to, say at the end of a thousand years, will make any appreciable difference to our temperature? But if we are travelling northward, without setting the laws of gravitation at defiance by running away from our sun, our sun must be going with us, and if our sun be going with us I do not see why we should grow colder and colder, even though we be approaching the north-star at the rate, not of one-third of a mile, but of 1,000,000 of miles per annum. Mr. Mechi goes on to say that "we need not be surprised at the irruption southward of the northmen, if their territory becomes gradually absorbed and decomposed at the north pole, to reappear at the south." Pray what irruption does Mr. Mechi speak of? The irruption of the barbarians that overthrew Rome?—or the irruption of the Russians into Wallachia and Moldavia?—or does he consider that all northmen exhibit a general tendency to change their climate for one more genial? In no one case, I think, has the absorption of land at the north pole anything to do with the irruption of the northmen to the south. In the first place, we have yet to learn that any inhabited land at the north pole has sunk to such a degree as to cause the expulsion of the inhabitants; and, in the next place, the inhabitants of these sinking lands are not wild and fierce savages (who, by the bye, would want no such excuse as loss of territory for an irruption into more fertile countries), but mild and gentle Esquimaux, who if dispossessed by the sea of one ice-bound coast would quietly settle on another. In conclusion, I beg to state that for Mr. Mechi, as an agriculturist, I entertain the highest respect; but for Mr. Mechi as a meteorologist, geologist, and astronomer, I cannot say the same. W.

**Ageratum and Heliotropes for Winter Blooming.**—The suitability of these plants for greenhouse decoration during the flowerless and dreary months of winter, does not appear to be so generally known as it should be. To grow them for this purpose, the cuttings should be rooted the same time as Chrysanthemums, viz., the middle of July, and potted into 3-inch pots; and, about three weeks later, shifted into the pots in which they are

intended to bloom. Loam of ordinary quality, with a little rotten dung and coarse sand, will be found quite good enough to grow them in. About a fortnight after their final shift, plunge the pots in a warm border, where they can remain till the middle of October. By this time they will have become fine bushy plants, well furnished with flowering shoots, and should be taken up, the pots washed, and the plants tied into shape, and removed to the conservatory or greenhouse, where they will continue in flower the whole of the winter. As the pots will be full of roots when in their winter quarters, they must have a plentiful supply of water; for if neglected in this respect they lose their leaves, and though they still retain their flowers, yet when denuded of their foliage they become unsightly. *R. Miles, Kingsdown.*

**New Edging Plant.**—I send you a spike or two of one of the prettiest of autumnal shrubs, *Polygonum vaccinifolium*; its vivid pink is destroyed by the frost. Ever since August it has been beautiful. For an edging shrub it is excellent. *T. Rivers.*

**Merula Iliaea, or Redwing.**—Whilst enjoying a walk through the garden the other day, my attention was attracted by the song of a bird, which I knew to be a stranger. I immediately hastened to the place from whence the music proceeded; when, to my astonishment and delight, I beheld perched high up on a tree, a beautiful redwing chanting its harmonious little song; this lasted only for a minute or two, for upon my too near and incautious approach, the music was silenced and jealousy seemed to take its place. It regarded my approach with an eye of distrust, which left me little room to doubt that I was an intruder, and at last complimented me with a shrill whistle and darted over the wall. I mention this because I think it is very uncommon for these periodical visitors to cheer us with any of their melody, except a shrill whistle or call-note. "I do not look upon what I have heard as their usual mode of melody, but from the clearness of the notes and sweetness of the song, I think (in their native haunts) it will be equal, if not superior, to that of the common song thrush. *T. C., Botanic Garden, Edinburgh.*

**Trout Spawn.**—The fishing books say that trout spawn in October and November; and I have been trying to get some for the last three weeks in order to fill my spawning boxes. I have not succeeded in taking any above half a pound, and they appear to be in excellent season, but have no appearance of breeding. Am I too early or too late? The brook is late in spring. *Fond-dodger.*

**Preserving Fruits by Mr. Lovejoy's Receipt.**—I preserved several bottles of Rhubarb and Plums in this way, and am sure that it was correctly done. There is now a quantity of mould on the surface of the water in each bottle. Should that be, and if not, what is to be done? In all other respects the fruit is excellent. *J. W.* [We learn from Mr. Lovejoy that the mould ought not to be on the surface of the water, but as it is there so it must remain till the fruit is used, when it may be removed like a piece of white leather without injuring the fruit. He adds that the wet season is the cause of the mould this year, as his own fruit is in the same condition more or less, which it never was before in all the nine years of his experience of the plan.]

## Foreign Correspondence.

LEAVES FROM MY CHINESE NOTE BOOK.—No. II.

The wealthy amongst the Chinese generally select very beautiful spots on the hill sides for their tombs. Near Tse-kee, a walled town of considerable size, some 15 miles to the northward of Ningpo, there are some pretty spots of this description. These tombs, apparently, are very ancient, for the trees which had been planted when they were first formed are now fully grown, and the tombs themselves, in many instances, are overgrown with weeds and going fast to decay. Happening one day in June last to be wandering on one of these hill sides, a tree in the distance caught my eye, which appeared very curious and striking. It was one of those Junipers (*J. sphaerica*) which grow to a considerable size in the north of China, and which the Chinese are fond of planting round their graves. But although a Juniper at the top and bottom, an evergreen tree with large glossy leaves (*Photinia serrulata*), formed the centre. On reaching the spot where it grew, the appearance presented was, if possible, more curious and interesting. The *Photinia* came out from the trunk of the Juniper about 12 feet from the ground, and appeared as if it had been grafted upon it; indeed, some Chinese in a neighbouring village, to whom the tree was well known, did not hesitate to express their belief that such had been the case, but I need scarcely say this was out of the question. Upon a close examination of the point of apparent union, I found that although the part between stock and graft, if I may use the expression, was completely filled up, yet there was no union such as we see in grafted trees. There could then be only one way of accounting for the appearance which these two trees presented, and which is pretty well shown in a drawing which I send, taken by a Chinese artist. The *Photinia* was no doubt rooted in the ground, and had 12 feet of its stem cased in the trunk of the Juniper. The apparent union of the trees was so complete, that nothing could be seen of this arrangement; but upon tapping the lower part of the trunk it sounded hollow, and was no doubt decayed in the centre, although healthy enough outside.

Upon showing the sketch alluded to above to a learned Chinese at Ningpo, he, like the villagers, fully believed



the Photinia had been grafted upon the Juniper; and further, he informed me it was a common thing in the country to graft the Yang-mae (*Myrica* sp.), a fine Chinese fruit tree upon *Pinus sinensis*, and that by so doing the fruit of the Yang-mae became much larger and finer in flavour. Having been engaged in procuring some Yang-mae trees, which the Government of India is anxious to introduce to the Himalaya, I was somewhat better informed upon this subject than the learned Chinaman. I told him the fine variety of Yang-mae was grafted upon the wild kind, which the Chinese call the *San* or hill variety (*Myrica sapida*); and further, I showed him some plants which I had just purchased, but all was of no use, he was "convinced against his will," and still firmly believes the Yang-mae is usually grafted on the Pine. R. F.

*Italian Aquatics: Como, Aug. 25.*—After a very cold, for Italy, and disagreeable summer and spring, the hot weather set in with July, and still continues. We have had no rain for nearly two months, which has sadly burnt up my garden. My water plants have been my great amusement, so you must excuse me if I continue to preach about Nelumbiums; they are with me most beautiful. One of the large circular basins with fountains in the centre is entirely covered with these plants, with flowers red, yellow, and a new variety, which as it changes so much, I have called Nelumbium mutabile; of this I send two sketches, the one as it is the first day, the other as it becomes the second. Of this, and of any of the other kinds, I can, in the autumn, furnish seeds if required. I have another circular basin which corresponds with the first, in this I grow various other aquatics, for the Nelumbiums grow so strongly that no other plants can live in the same basins with them. Of the Water Lilies I have many, and some furnish seeds abundantly, especially *Nymphaea cærulea*, and *N. scutifolia*. Xd.

## Notices of Books.

*The Palm Trees of the Amazon and their Uses.* By A. R. Wallace, with 48 plates. 12mo. Van Voorst.—Mr. Wallace has here supplied a most useful practical commentary upon Von Martius' great work on Palms. All appearance of scientific display he has carefully avoided; but has produced instead a series of capital figures of Palms in their natural aspect, after the manner of Blume's clever sketches of Malay Palms, but on a smaller scale. Each plate is accompanied by an account of the habit of the species, of the districts in which it occurs, of its economical uses, and of the marks by which, in cases of doubt, it may be distinguished in the forest from its allies. Upon this point the information collected by the author is particularly useful; as also are the accounts given by him of the purposes to which Brazilian Palms are applicable. In this part of his work he has found errors to correct, one of the more interesting of which is that which relates to the fibre now so largely employed in London in the construction of coarse brooms. We quote Mr. Wallace's account of this valuable species, the *Leopoldinia Piassaba*.

"The fibrous or hairy covering of the stem is an extensive article of commerce in the countries in which it grows. It seems to have been used by the Brazilians from a very early period, to form cables for the canoes navigating the Amazon. It is well adapted for this purpose, as it is light (the cables made of it not sinking in water) and very durable. It twists readily and firmly into cordage, from the fibres being rough edged, and as it is very abundant, and is procured and manufactured by the Indians, piassaba ropes are much cheaper than any other kind of cordage. The price in the city of Barra in June 1852, was 400 reis or 1s. for 32 lbs. of the fibre, and 800 reis or 2s. for every inch in circumference of a cable 60 fathoms long, which is the standard length they are all made to. Before the independence of Brazil, the Portuguese government had a factory at the mouth of the Paduari, one of the tributaries of the Rio Negro, for the purpose of making these cables for the use of the Pará arsenal, and as a government monopoly. Till within these few years the fibre was all manufactured into cordage on the spot, but it is now taken down in long conical bundles for exportation from Pará to England, where it is generally used for street sweeping and house brooms, and will probably soon be applied to many other purposes. It is cut with knives by men, women and children, from the upper part of the younger trees, so as to secure the freshest fibres, the taller trees which have only the old and half-rotten portion within reach, being left untouched. It is said to grow again in five or six years, the fibres being produced at the bases of the new leaves. The trees are much infested by venomous snakes, a species of *Craspedocephalus*, and the Indians are not unfrequently bitten by them when at work, and sometimes with fatal consequences. The distribution of this tree is very peculiar. It grows in swampy or partially flooded lands on the banks of black-water rivers. It is first found on the river Paduari, a tributary of the Rio Negro on its northern side, about 400 miles above Barra, but whose waters are not so black as those of the Rio Negro. The Piassaba is found from near the mouth to more than a hundred miles up, where it ceases. On the banks of the Rio Negro itself not a tree is to be seen. The next river, the Darahá, also contains some. The next two, the Maravihá and Cababuris, are white-water rivers, and have no Piassaba. On the south bank, though all the rivers are black water, there is no Piassaba till we reach the Marié, not far below St. Gabriel. Here it is extensively cut for about a hundred miles up, but there

is still none immediately at the mouth or on the banks of the Rio Negro. The next rivers, the Curicuriari, the great river Uaupés, and the Isánná, though all black-water, have none; while further on, in the Xié, it again appears. On entering Venezuela it is found near the banks of the Rio Negro, and is abundant all up to its sources, and in the Témí and Atabápo, black-water tributaries of the Orinoco. This seems to be its northern limit, and I cannot hear of its again appearing in any part of the Amazon or Orinoco or their tributaries. It is thus entirely restricted to a district about 300 miles from N. to S. and an equal distance from E. to W. I am enabled so exactly to mark out its range, from having resided more than two years in various parts of the Rio Negro, among people whose principal occupation consisted in obtaining the fibrous covering of this tree, and from whom no locality for it can have remained undiscovered, assisted as they are by the Indians, whose home is the forest, and who are almost as well acquainted with its trackless depths as we are with the well-beaten roads of our own island. The fibre imported into this country has been supposed to be produced only by the *Attalea funifera*, a species not found in the Amazon district. In the London Journal of Botany for 1849, Sir W. Hooker gave some account of the material, and of the tree producing it; stating that he had received the fruit of the tree with the fibre from a mercantile house connected with Brazil, and that the fruit was that of the *Attalea funifera*. This species is mentioned by Martius as furnishing a fibre used for cordage and other purposes in Southern Brazil, and he states that it is called 'piçaba'; so that the Indian name is applied to two distinct trees producing a similar material in different localities; and the two having been brought to England under the same name and from not very distant parts of the same country, were naturally supposed to be produced by the same tree. The greater part, if not all of the Piassaba now imported, comes, however, from the Rio Negro, where several hundred tons are cut annually and sent to Pará, from which place scarcely a vessel sails for England without its forming a part of her cargo."

*The Globe Prepared for Man* (12mo, Adams), is a useful little unpretending guide to geology, apparently intended for schools, for which it is well suited.

## New Plants.

24. *CYCLAMEN MACROPHYLLUM*. *Planchon in Flore des Serres*, t. 841; *altiss C. africanum of Gardens*.

Of this remarkable species we find the following account in the *Revue Horticole* :—

"This is a native of Algiers, and allied to *C. hederacifolium*, differing from it however in the unusual size of its leaves, which have often a radius of 4½ inches. The leaves are supported by stiff, erect petioles, as in the *C. persicum* of the gardens. The leaves are generally green on both sides, cordate, roundish, slightly crenated, the outline being occasionally somewhat angular or simply sinuous; they are developed from the end of September to the end of October, about the same time that the flowers come out, or a little after. They remain green during the whole of the winter and part of the spring. The flowers, about ten in number, supported on erect peduncles, are of a fine rose colour, changing to carmine towards the internal base of the divisions, which form thick, whitish, semicircular plaits at the mouth of the tube, as is the case in the whole group of species allied to *C. hederacifolium*. *C. macrophyllum* differs from others in its time of flowering and the size of its corolla.

"If collected in our conservatories and gardens, the Cyclamens would afford an uninterrupted succession of flowers, at once agreeable in form and delicious in the perfume with which they fill the air. Like many other plants, Cyclamens have gone out of fashion. To prove this, it is sufficient to open the *Florilegium*, where upwards of ten species or varieties may be found :—*C. Antiochum*, with a pure white corolla, and a throat of carmine violet; *C. Attepicum*, with snow-white flowers, the variety from which the ancient gardeners obtained the double-flowered one; *C. Coum*, a charming dwarf, whose stems seldom exceed 2½ inches in height; *C. europæum*, which grows naturally on the mountains of Switzerland; *C. vernum*, to which that singular anomaly known by the name of *C. linearifolium* is referred; and lastly *C. hederacifolium*, which has given rise to a series of varieties with white, purple, or streaked flowers, &c.

"Cyclamens (justly compared by M. Van Houtte to the *Gloxinias* of America) are propagated by seed like the latter, and are also very analogous in their mode of vegetation; the division of bulbs, recommended for propagation, scarcely succeeds in either genus. The capsules of Cyclamen are supported by an erect flower-stalk, which, by a singular phenomenon of torsion, scatters the seeds on the ground, where they readily germinate. After the plants have flowered, the leaves die down; the bulbs are then to be taken up, and not replanted till the leaves begin to reappear. This takes place at various periods, according as the plants flower in autumn or in spring. Damp is fatal to Cyclamens; and, when cultivated in pots, they require to be well drained. *C. hederacifolium* can be grown in the open ground, in shaded situations in light soil, where it produces in autumn delightful masses of rose-coloured or white flowers. The size of the bulbs, and the quantity of sap which they contain, allow of our retarding or forwarding vegetation; they may be potted every

fortnight, or placed under frames with a greater or less degree of heat, and in this way a succession of flowers may be obtained from the month of November until April in the following year."

25. *PODOLEPIS CHRYSANTHA*. *Endlicher in Botan.*

*Zeitung*, I. 458.

A half-hardy Australasian annual, very like *Podolepis rugata*, but with brighter yellow flowers, smaller and more panicked flower-heads, and a stem nearly free from the cobweb coating so conspicuous in that species. Its seeds were bought from Mr. Carter, of Holborn. It is said to be wild on the South West Coast of New Holland. *Hort. Soc. Journal*.

## Garden Memoranda.

ROYAL GARDENS, FROGMORE.—We regret to find that in the progress of our paper through the press last Saturday, the word Frogmore was accidentally broken off the heading of our article on these gardens; we therefore return to the subject, not only in order to correct this misprint, but also with the view of making a few further remarks on subjects not treated of by us in our last report. First, then, in passing through the glasshouses, we found in a greenhouse a noble specimen of the fragrant and beautiful *Luculia gratissima*, literally covered with large bunches of *Hydrangea*-like flowers just bursting into beauty. Of the value of this plant too much can hardly be said, as we know of nothing more useful either for the purposes of decoration or for supplying cut flowers. The specimen here was planted out in a prepared border in the centre of the house, where, without further attention than shading it from bright sunshine in summer, supplying water at the root and over the foliage to keep it free from insects, and merely excluding frost from it in winter, it was growing most luxuriantly. Many cultivators consider this fine plant difficult to manage, and to require the temperature of a stove, but it is evidently a greenhouse plant, thriving with no greater amount of artificial heat than may be needed to exclude frost and keep the atmosphere at about 45°, and rather dry while it is in bloom. In a stove, plants of *Ipomœa Leari* led on strings over the front passage towards the top of the house were still producing a profusion of showy flowers, which displayed in this manner were very effective. On the back wall of this house was *Allamanda cathartica*, covering a large space, and blooming remarkably well for this late season of the year. The beautiful *Bignonia venusta* was also nicely in bloom here, and clusters of unexpanded buds promised a long succession of its gay orange blossoms. This plant had apparently been pruned pretty closely last winter, and was producing blossom on every twig of the young wood, a condition in which it is seldom met with. In a low span-roofed pit was a large and remarkably well grown collection of *Cinerarias*, the foliage of which was short-stalked and robust, and the plants were showing finely for bloom. These were in comparatively small pots for the size of the plants, but they had been liberally fed with manure water. Of Grapes, we observed a large house of West St. Peter's just colouring. The crop in this house was heavy, the bunches and berries full sized, and they promised to colour perfectly, the foliage being green and healthy. The way in which Mr. Ingram manages to have Grapes in this stage at this season is by taking the Vines out of the house after the crop is cut, keeping them outside until they break into leaf, when they are introduced into the house and trained in their places, but still kept as cool as possible. A little fire-heat is, however, employed late in the autumn, but only just sufficient to exclude damp. In this way the Grapes are preserved in excellent condition till the latter end of March. In one of the Strawberry houses were plants of Ingram's Prince of Wales producing an excellent second crop of large, fine-looking, well coloured fruit. These were stated to have been obtained by giving the plants a shift immediately after removing them from the forcing-house in spring, keeping them well supplied with water and removing the flowers as they appeared during the summer, until the plants had become sufficiently strong to produce fruit. When damp weather occurred they were removed to the protection of the house, where we saw them, and where they looked as if they would continue in bearing until Christmas. While speaking of Strawberries, it may perhaps be worthy of mention that the immense stock grown here in pots for forcing is wintered in a sheltered situation surrounded by a low Privet hedge, the spaces between the pots being filled with dry Fern, a sprinkling of which is also laid on the surface of the pots under the leaves. This plan is said to answer better than the more common mode of stacking the pots on their sides, and it certainly has the advantage of being neater in appearance. Of the two houses used for forcing Cherries, which are grown here in pots and removed to the open air during the summer and autumn months, one was filled with scented-leaved *Geraniums*, planted out in the borders of the house along each side of the walk, where they were growing most luxuriantly, and are found useful for supplying sprigs of green for bouquets, of which a limitless supply is wanted here; the other contained *Chrysanthemums*, of which there was a good collection, well grown and finely bloomed; and managed in this manner they made an excellent display.

## FLORICULTURE.

THE HYACINTH.—There are few plants in cultivation which so generously repay the attention given them as the Hyacinth, or which are so accommodating in their



habits. Hyacinths thrive in almost any soil; and planted in moist sand, or placed on the surface of water, bloom almost as finely as when planted in the richest compost. And there is not a habitation fit for being the abode of man where they will not deign to grow and bloom; it is therefore no matter for surprise that the Hyacinth has, from time immemorial, been a favourite with lovers of flowers in all grades of society. Its accommodating habit and easy culture bring its beautiful spikes of sweet-scented blossoms within the reach of the inhabitant of a cottage, or the possessor of the smallest garden-plot, and in beauty and fragrance it is not surpassed by the most expensive plants with which the opulent can decorate their flower-houses at Christmas. Much has been written respecting the culture of this lovely plant, the greater portion of which has, unfortunately, been calculated to deter persons dependent upon such sources of information from attempting its growth. It is usual with writers on the culture of the Hyacinth to state that, to grow it successfully, a very rich soil is absolutely necessary. The following are the directions for the selection of a proper soil, from a treatise recently published—viz., “ $\frac{1}{2}$  turfy loam,  $\frac{1}{2}$  decayed cow dung,  $\frac{1}{2}$  sharp or clean river sand, and  $\frac{1}{2}$  leaf soil, with which a bed of the necessary size and 2 feet deep must be formed, by those who would grow Hyacinths properly.” The removal of the natural soil, and procuring and replacing it with the above materials, in any case, would be a work of considerable expense, and altogether beyond the means of many lovers of early flowers. But we know, from experience, that any well-drained garden soil is easily rendered suitable for the growth of the Hyacinth. If the soil is of a strong adhesive nature, add 2 inches of sharp sand, and as much good well-decayed manure; then dig the soil 2 feet deep, taking care to nicely mix the sand and manure with the soil as the work proceeds. Friable loamy soils will require merely a liberal dressing of manure, and deep digging. And it will be found that the Hyacinth will produce equally fine spikes of blossom grown in soil prepared thus, as when planted in more expensive compost. The fact is, that the secret of having first-rate spikes of flower consists more in the selection of properly ripened bulbs than in the soil in which they may be grown. For, as in the case of other bulbous plants, there is stored in the Hyacinth the embryo of the blossom and a large amount of accumulated matter; and the production of splendid spikes of flowers is vastly more dependent upon the presence of these in perfection in the bulbs, than upon their being planted in expensive composts. The best criterion which can be offered for the assistance of purchasers in the selection of proper bulbs is, that they should be proportionably heavy for their size, firm, and plump, particularly about the crown. Size is of hardly any importance, as some varieties produce small bulbs, and others larger, and the varieties with the small bulbs produce equally fine spikes of flower as those with the largest bulbs. The proper season for planting Hyacinths in beds in the open air is the last fortnight of October, and the first of November. Select a dry day for putting in the bulbs, and if the same can be chosen for the preparation of the soil, it will be in much better condition for the growth of the plant than if worked when wet. Plant in lines, 9 inches by 12 inches apart, which will afford space between the plants when up, to work a hoe, for the destruction of weeds and keeping the surface friable, to prevent the escape of moisture in dry weather. The crowns of the bulbs should be 3 inches under the surface of the soil, and lest a severe winter should occur it is well to cover the bed with a few inches of old tan, or any light substance, to exclude frost. This should be removed, however, when the plants begin to grow through it. The Hyacinth is also remarkably well adapted for pot culture, and with the assistance of a garden frame, with some stable manure or tan, to furnish a gentle heat, it may be had in flower at Christmas, and, with a good stock of bulbs, the display may be kept up till April or May. For early flowering, the bulbs should be planted early in September, those to flower in spring need not be planted earlier than recommended for beds. The best pots are those known as “6-inch Hyacinth pots,” which, being deeper than common, afford more space for the roots. But where these cannot be conveniently procured, use 6 or 7-inch pots, such as may be at hand, and these will answer perfectly. The soil used for potting should be as rich as possible; such as one-half fresh loam, cut from a pasture, with the turf decayed in it, and well decomposed cow or horse manure with a small portion of clean sand. Fill the pots lightly with the prepared soil, and place the bulb upon the surface, slightly pressing it into the soil. Set the pots on a dry surface, and cover with about 3 inches of old tan. After remaining here for a month or five weeks, the bulbs will be sufficiently rooted to render it safe to remove them to a gentle bottom heat of about 55°, and introducing a few pots at intervals of about a fortnight, a succession of flower will be secured until those in the open air come into bloom. Persons possessing no better accommodation for growing plants than a room window will, with careful management, be able to grow and flower the Hyacinth well, if not to have it in bloom as early as those who can command a gentle heat. We need hardly observe that plants grown during the dark days of winter should be placed near the glass, and be freely supplied with air, when this can be given with safety, and those grown in windows will draw to the light unless the pots are frequently turned. Most persons know that a sitting-room window forms a suitable situation for Hyacinths while in bloom, and that their beauty

will be longer in fading here than in most situations; but many remove them from a close atmosphere, and suddenly expose them to cold drying currents in the sitting-room window, by which they are greatly injured. We warn the inexperienced to guard against this common error, and to avoid subjecting the plants to sudden changes at any period of their growth. *Alpha.*

*Censors at the National Floricultural Society.*—In reference to the assertion quoted in last week's Number affecting the National Floricultural Society, I am able to state, after having assisted as a censor at the majority of the meetings of the present year, that on the occasions when I have been present, no instance has occurred of an exhibitor having judged his own productions. In the few cases of which I have any knowledge, in which a censor has been at the same time an exhibitor, his exhibitions have been invariably judged by others. These instances have been, as might be explained, very few indeed, the previous personal and official summons to act as censor being virtually a notice not to compete. I can only suppose the statement to have originated in one of those fallacious generalisations in which hasty persons are sometimes apt to indulge; the fact being, probably, that out of the standing list of some two dozen censors, a certain number have, within a certain period, won so many awards. Without asserting that any undue value attaches to the decisions of this society, I think a reference to the subjects which have obtained awards will suffice, at least, to bear evidence of the honesty and integrity of purpose evinced by those who have made them. *T. Moore, Chelsea.*—As Secretary of the Society alluded to above, I am in a position to render that “explicit denial of the charge” contained in and extracted from “Glenny's Almanack” for 1854, and referred to by you in your last week's Number. Since the formation of the National Floricultural Society, up to its last meeting, no flower has ever been adjudicated upon by its owner or raiser—*ergo*, no censor could have awarded a certificate to himself or to his own flower, both 90 and 19 being purely fabulous and false. *John Edwards.* [We have other communications, but we cannot admit discussion upon this subject. There is now denial opposed to assertion, and the public will estimate the value of each by what they know of the persons from whom they proceed.]

#### SEEDLING FLOWERS.

*EPHEDRUM:* *A. R. S.* Both extremely handsome, and well worth taking care of.

*PELAGONUM:* *J. H.* Very much shrivelled up before it reached us, but apparently no improvement on Lady Holmesdale.—*G. W.* Not different from kinds already in cultivation. Copenhagen is not identical with Wilmore's Surprise.

#### Miscellaneous.

*A Gardener's Account of Australia.*—Mr. Edward Vane, gardener to the Rev. C. A. Belli, rector of South Weald, Brentwood, has just received a letter, from which the following are extracts, from Edward Neville, a young man, formerly under-gardener at the above place, who emigrated to Australia a short time since:—  
“Richmond, Port Phillip, Victoria,  
Australia, May 8, 1853.

“Dear Friend—I arrived safe in Australia on the 11th December, 1852, after a beautiful voyage. When I first landed at Hobson's Bay, I thought the appearance of the country most unpromising, but on reaching the town I found it an immense place of business. The streets, which are conveniently wide, are laid out at right angles, and there are some good buildings for a young colony. Everything was very dear, in consequence of having to be imported, and, like other fresh comers, I thought it seriously affected my pecuniary resources. It is a first-rate place for builders and mechanics, who are in great demand—masons and carpenters especially, who get from 1*l.* to 1*l.* 10*s.* per day, and ought to make their fortunes in a few years. I have obtained a situation of 100*l.* per year with first-rate board and lodging. Lodging is not easy to get, and house-rent is very dear here. Many of the old settlers who bought ground and built on it before the gold discovery are now making rapid fortunes, for town and suburban lots are selling at very high rates—in some instances as much as 150*l.* a foot, so that a man needs a large capital to commence business with; but if he can only make a start there is no fear of success, as anything will sell here. My employer's garden is well stocked with young fruit-trees, which promise heavy crops this season—the Peaches run very fine on standards, and the Grapes and Melons flourish without artificial heat. The trees were brought from Van Diemen's Land, and judging from the immense quantities of fruit they export to our shores, I might well term it the garden of the southern world. The soil here varies very considerably, but is generally of a light sandy loam, with clay bottom—in some places it is of rich black soil, rocky subsoil, with large stones on the surface, while in others it is very swampy and almost useless. The Gum trees, of which there are several varieties around Melbourne, are very ugly; they are evergreen, with leaf resembling the Willow, and the timber is so exceedingly hard that it can only be used as firewood. We chiefly depend upon Van Diemen's Land for timber, although there is plenty in the interior of the country, but the expense of carriage over bad roads would be far greater than if exported from the former place. The Grass is now getting green, but during the summer months it is quite scorched by the burning sun and sand, and it is wonderful how the cattle live; we have, however, some very fine beasts and sheep from the country.”

have been to Mount Alexander diggings, a journey of 100 miles from Melbourne, which occupied three days. In the winter season the roads are almost impassable, and the journey sometimes occupies a month; the cost of conveying goods has been as high as 100*l.* per ton. On my arrival at the diggings I found the neighbourhood studded with innumerable tents, and hundreds of acres of ground burrowed all over by the diggers, who looked like so many bees at work at a honeycomb; but I returned without trying my fortune in the golden lottery. I hope, however, to venture in earnest a second time, as it is the opinion of some that there is plenty of gold yet, while the others think it is nearly worked out. Many diggers, who have been compelled to work all day in a wet hole, to subsist on bad provisions and water, and put up with indifferent tent accommodation, have obtained their hard-earned treasure at the expense of a ruined constitution. I wish you and many more of my old companions were here, although I can tell you it is a serious matter for a married man with a family to cope with the expenses. You would be charged 2*l.* per week for a couple of small rooms; 4 *lb.* loaf, 1*s.* 6*d.*; beef and mutton, 4*d.* to 6*d.* per *lb.*, offal given away; tea and coffee, 1*s.* 2*d.* per *lb.*; pork and bacon, 1*s.* 6*d.* per *lb.*. The publicans, who are the worst rogues in the colony, charge 1*s.* per pint for beer. But rent will soon be cheaper, as houses are springing up like Mushrooms; thousands are building, and thousands of people are daily flocking to our shores. I regret to say I cannot recommend this as a very pleasant country to live in, as the dust is very troublesome, and water scarce and sometimes impregnated with minerals, which makes it very unpalatable. We have between 2 and 3 acres of garden ground, two-thirds of which is well stocked with fruit trees. We have had an abundant crop of Black Hamburgh and Sweetwater Grapes, but I have not seen any Muscats in the colony, although there are plenty of very fine at Adelaide, South Australia, which is much hotter, and consequently more suitable for their growth than Melbourne. Our Apple, Plum, Apricot, and Quince trees have been planted about 10 years, and are as large as 28 years' growth in England. On the 24th of April I gathered about 2 bushels of the finest Quinces I ever saw off one tree; indeed this is a fine fruit country. I have nothing to do but gardening, in which I am assisted by the groom, so I get on very well. I am rather puzzled to know the seasons, as it seems you may reap and mow all the year except the middle of summer, when there is a drought. Master and mistress are quite old folks, who have made their fortunes in the auctioneering business; they like to see us comfortable, and allow us to smoke, eat, drink, and work when we think proper. The autumn is fast setting in upon us, and with it a great many evils indigenous to England. The slugs are worse than in the vicarage garden where I have spent many happy hours. We have very few birds, and consequently a great many insects of all descriptions. The weeds seem to be of the same sort as in England. The autumn is much pleasanter than the summer, there being no fogs, and the days are not so short as in England.” *Daily News.*

#### Calendar of Operations.

(For the ensuing week.)

##### PLANT DEPARTMENT.

In addition to the ordinary routine of plant culture, the forcing of such greenhouse and hardy plants as require artificial assistance to get them into bloom in the winter, will demand attention; among the former, Chinese Azaleas and common and Otahaitian Oranges must be brought forward very gradually, or the more forward buds only will open, and partly frustrate the hopes of a regular show of bloom—a little bottom-heat to keep the roots gently moving, with a moderate temperature, will suit them best. When their buds begin opening, let them have all the light possible; and if the pots are very full of roots, weak manure water may be given once or twice weekly. *Daphnē odorata* and *o. indica*, with *Luculia gratissima*, will bloom freely with less forcing; both are valuable at this season for their fragrance. Another plant, *Jasminum grandiflorum*, should be grown extensively, for the above property; if grown freely the early part of the season, it may be rested in a greenhouse or common pit, keeping it rather dry during the time of rest; and if now introduced into heat, it will soon bloom freely, continuing for a month or two to produce a succession of its delightfully scented flowers. This *Jasminum* is very liable to the white scale, and will require frequent washing with soap and water to keep it clean. *Rhododendrons*, hardy Azaleas, Tea and Perpetual Roses, *Deutzias*, *Lilacs*, &c., for early flowering, should be gradually excited, syringing them each morning, and closing the house or pit early, to prevent much fire heat being necessary at this early stage of forcing. *Dielytra spectabilis* roots should now be taken up and potted, for bringing forward as wanted—there is scarcely a more beautiful forced plant than this. While the weather keeps dry and sunny, let every advantage be taken of it; for which see our last Calendar. *Chrysanthemums* are now in full beauty, and a visit to some of the metropolitan collections should be made by our country readers, both to select new kinds for their stock as well as to see their mode of managing this valuable autumn flowering plant: mark inferior kinds to be thrown away when out of bloom, which the introduction of new and better varieties yearly renders necessary. The *Pomponé* varieties will,







## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on, **ANTONY GIBBS AND SONS,** AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, **ANTONY GIBBS AND SONS** think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2s. per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO**, the guaranteed import of Messrs. **ANTONY GIBBS AND SONS**, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—**WM. INGLIS CAENE**, 10, Mark Lane, London.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton 7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0  
Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**THE LONDON MANURE COMPANY'S WHEAT MANURE**, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. **EDWARD PURSER, Sec.** Bridge Street, Blackfriars.

**SEWAGE CHARCOAL MANURE.**—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the **SEWAGE MANURE WORKS**, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt. for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.

It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

**GUTTA PERCHA BOOTS FOR SHEEP**, for the Cure and Prevention of FOOT-ROT (price 4d., 5d., and 6d. each). Price of the Powder, in tin cases, sufficient for 100 sheep, 2s. 6d.—Address **JOHN JONES and Co.**, Patent Works, Sheffield.

**STEPHENSON AND PEILL, 61, Gracechurch Street**, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

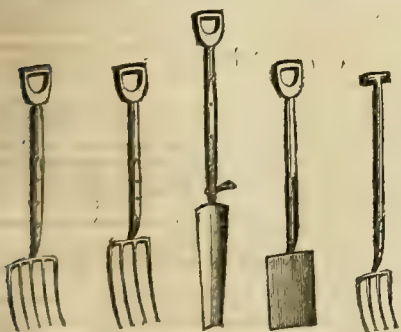
**SAMUELSON'S PATENT DIGGING OR FORKING MACHINE**, which obtained the **SILVER MEDAL** of the Royal Agricultural Society at GLOUCESTER, 1853; 5l. 5s. Prize of the YORKSHIRE SOCIETY; and 5l. Prize of the CLEVELAND SOCIETY; capable of cultivating 5 acres per day with four or six horses, may be seen at work at Banbury, and in Kent, Middlesex, Surrey, Cheshire, Yorkshire, North Wales, Berwick, Gloucestershire, Worcestershire, Leicestershire, Herts, &c.

To meet the demand of SMALLER OCCUPIERS where horse power is limited, Mr. SAMUELSON has constructed an implement equal to 3 or 34 acres per day, with a draught of three or four horses only. Price 27l. 10s. and 24l. 10s. respectively, at Banbury.

**PRIZE** at Gloucester (the eighth time) to SAMUELSON'S improved GARDNER'S TURNIP CUTTERS.

Manufacturer of M'Cormick's Reaper (highly commended at Pusey), Anthony's Churns (3l. prize at Gloucester), Liquid Manure Pumps, Chaff Cutters, Crushing Mills, Lawn Mowers, &c. **B. SAMUELSON**, Britannia Works, Banbury.

## WINTON'S PARKES' STEEL DIGGING FORKS.



**I HEREBY GIVE NOTICE** that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by the name "Winton's Parkes' Forks," were manufactured by me, or by my Writings, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. **HUTCHES & KERR**, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.

25th Sept. 1853. Signed, **FRANCIS PARKER.**

## PRIZE CHURN.

**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 34 lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—**BROWN & KERR**, Agricultural Implement Warehouse, 103, Newgate Street, and 52, Little Britain, London.

**SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION** (especially with regard to Agriculture), Wickham Market, Suffolk, conducted by Mr. DOWSES. The course of instruction comprises all the requisites of a sound and liberal education, and the terms are moderate and inclusive. Vacancies for two private pupils. Soils, Minerals, and Manures carefully analysed.

**THE GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY.**—Incorporated by special Act of Parliament.—Offices, 52, Parliament Street, London.

## Directors.

HENEY KER SEYMER, Esq., M.P., Ilanford, Dorset, Chairman.  
Sir JOHN VILLIERS SHELLEY, Bart., M.P., Maresfield Park, Sussex, Deputy Chairman.

John Chevalier Cobbold, Esq., M.P., Ipswich.  
Sir William Cubitt, F.R.S., Great George Street, Westminster.  
Henry Currie, Esq., Cornhill, London.  
Thomas Edward Dicey, Esq., Claybrook Hall, Lutterworth.  
William Fisher Hobbs, Esq., Boxted Lodge, Colchester.  
Edward John Hutchins, Esq., M.P., Eaton Square, London.  
Samuel Morton Peto, Esq., M.P., Somerleyton Hall, Suffolk.  
William Tite, Esq., F.R.S., Lowndes Square, London.  
William Wilsheer, Esq., the Frythe, Welwyn, Herts.

This Company executes Works of Land Improvement, viz., Draining, Irrigation, Roadmaking, Enclosing, Reclaiming, and the Erection of Farm Buildings, on advantageous terms; the amount of the outlay being repaid by annual instalments, varying according to the number of years over which Landowners may determine the repayment shall extend.

WILLIAM CLIFFORD, Secretary.

## PROSPECTUS OF THE

**LANDS IMPROVEMENT COMPANY.**—Incorporated by special Act of Parliament. Liability limited to amount of share. Capital 100,000l. in shares of 10l. each (2l. to be paid on allotment). With power to increase to 300,000l. With power also to reproduce the Capital, by the issue of Transferable Debentures founded on the Rent-charges.

## Directors.

Thomas Brassey, Esq., 56, Lowndes Square.  
Thomas R. Brook Cartwright, Esq., Aynhoe, Northamptonshire.  
Robert Westley Hall Dore, Esq., Wenington House, Essex.  
Frederick Loftus Dushwood, Esq., Kirtlington Park, Oxon.  
Arthur Goodrich, Esq., Lincoln's Inn Fields.  
John Horatio Lloyd, Esq., 1, King's Bench Walk, Temple.  
The Honourable William Napier (Magier), 5, St. James's Place.  
Colonel North, M.P., 16, Arlington Street.  
J. F. Powell, Esq., Welwyn, Herts, and Albion Place, Hyde Park.  
Frederick Twynam, Esq., Bishopstoke, Hants.

With power to add to their number.

## Bankers.

The Union Bank of London—West Branch, 4, Pall Mall, East.

## Standing Counsel.

Richard Griffiths Welford, Esq., 2, New Square, Lincoln's Inn.

## Solicitors.

Frederick West, Esq., 3, Charlotte Row, London.

Messrs. Vizard and Shute, Dursley, Gloucester.

## Surveyors.

Messrs. Hewitt Davis and Francis Vigers, 3, Frederick's Place, Old Jewry, and 2, Old Palace Yard, Westminster.

Offices of the Company.—2, Old Palace Yard, Westminster.  
Agents in Scotland.—Messrs. Hunter, Blair, and Cowan, W.S., 11, York Place, Edinburgh.

The Company is incorporated by "THE LANDS IMPROVEMENT COMPANY'S ACT, 1853," the powers and provisions of which apply to England, Wales, and Scotland, and have been framed with especial reference to the exigencies of modern agriculture.

By means of this Act the landed proprietor is enabled effectually to overcome those various obstacles arising from peculiarities in the ownership of real property, and from accidental circumstances, which have hitherto so injuriously impeded the application of capital to agricultural improvements. To whatever extent his estate may be encumbered, or his interest in it restricted by settlement or otherwise, if its value can be adequately increased by the judicious outlay of capital, the owner is empowered to effect, through the medium of the Company, the requisite works of improvement, without costly investigation of title, and at a very moderate preliminary expense.

The improvements will be executed under the sanction of the Inclosure Commissioners, and the authorised outlay, in which the preliminary expense is included, is constituted by the Act a first charge on the inheritance of the land in the shape of a terminable annuity or rent-charge.

The Company possess also an important advantage in the mode of obtaining money to be advanced or expended for improvements. In the case of existing Drainage Companies, the only mode of reproducing the capital is by sale of the rent-charges. The demand, however, for these securities being necessarily limited, the Company devised a scheme for rendering available for Land Improvement the floating capital of the country. With this view, they applied for and obtained the additional and very valuable power of issuing, under the authority of the Inclosure Commissioners, debentures founded on the rent-charges, and transferable, free of duty, by endorsement under hand only; thereby securing, under ordinarily favourable circumstances, a cheap and unlimited supply of capital.

By this Debenture scheme, commercial principles are for the first time, perhaps, applied to Land Improvements. The Company is made, in fact, an agency between the Landowner requiring money for improvements, and the public seeking a safe and convenient investment. A small amount of paid-up capital will enable the Company to outlay, or to advance a very large amount of money, and the profit being made on extensive transactions, and divisible on a limited amount of Share Capital, it is evident that it may and will afford a most ample return to the Shareholders with very moderate charges to the Landowner.

The Company's profits will be derived—

- 1stly.—From works undertaken and executed by them.
- 2ndly.—From Commissions on advances to Landowners executing their own works.
- 3rdly.—From fees charged for the use of the Company's powers, where Landowners execute their own works and employ their own capital.

In Scotland, where restrictions on Ownership extensively prevail and where Farm Improvements are thoroughly appreciated, the Company's Act is the only measure for Land Improvement hitherto granted to a public Company; and from the applications already received, the Directors anticipate from that country a most extensive demand for assistance.

Applications for shares in the annexed form may be addressed to the Managing Director, at the Company's Offices, 2, Old Palace Yard, Westminster, where all further information may be obtained.

## FORM OF APPLICATION FOR SHARES.

To the Directors of the Lands Improvement Company.  
I request you will allot me shares in this Company, and I agree to accept the same, or any less number than may be allotted to me, and to pay the deposit thereon of £2 per share, when required.  
Dated this day of 185

185

Signature.....

Name in full .....

Address .....

Occupation.....

Reference .....

## LAND DRAINAGE.

**MR. JOHNSON** (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five shillings per acre; or if under 30 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

## DRAINAGE AND IRRIGATION.

**HENRY WEBBER** begs to inform Landowners and the Public that, having had considerable practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by contract or on commission. Reference given.—Address, Halberton Court, near Tiverton, Devon.

H. W. wishes particularly to call attention to his improved and inexpensive method of Irrigation, whereby, at an outlay of a few pounds an acre, he can convert land having a sufficient quantity of water to command, into water meadow, which may be mown every year, without the application of manure.

Any further information will be given on application.

**AN AGRICULTURAL DRAINING MATCH** will be held on the BURTONWOOD ESTATE, near NEWTON-IN-THE-WILLOWS, on WEDNESDAY, Nov. 23, 1853, when the following Prizes will be given, viz.:

To the Three Labourers who shall dig drains of 4 feet deep, in the most workmanlike and expeditious manner, and with the least unnecessary excavation of earth; the length of cut to be 64 yards.—First prize, 5l.; for the second best, 3l.; for the third best, 2l. The entry must be made in sets of three, for which 1s. will be charged. The drains will be numbered, and lots drawn for them by the candidates on the field, a quarter of an hour before commencing the work.

To the Foreman of Drainers, or other Pipe-layers, who shall lay, in the most workmanlike and expeditious manner, not less than 300 cylindrical draining-pipes, of 2-inch bore:—First prize, 2l.; to the second best, 1l. Entrance fee, 1s. each. Foremen of drainers will be allowed to lay the pipes after their own men, but others must draw lots. The necessary bottoming tools, scoops, pipes, and pipe hooks, will be provided upon the ground.

The work will be previously set out, and the draining may be commenced at 9 o'clock in the morning, and the pipe-laying at 1 o'clock in the afternoon. A strict account will be kept of the time in which the work is done, but the prizes will not necessarily be awarded to those who do it quickest. A suitable field for the purpose will be selected on the Burtonwood Estate, near the Warrington Junction Station of the Liverpool and Manchester Railway. Those competitors who do not gain a prize will receive a fair rate of payment for their work, which will be awarded by the judges.—Judges: G. Thompson, Esq., Exeter; Wm. Mercer, Esq., Newton; Henry White, Esq., Warrington.

Those who intend to compete must give notice two days before Wednesday, November 23, to Mr. THOMAS SUTTLE, Agent to Samuel Brooks, Esq., Whalley House, Manchester.

**ROYAL SOCIETY FOR THE PROMOTION AND IMPROVEMENT OF THE GROWTH OF FLAX IN IRELAND.**—The Annual General Meeting will be held at the Society's Rooms, Commercial Buildings, Belfast, on FRIDAY, November 25, at 12 o'clock, to receive the Committee's Annual Report, and to transact such other business as may be brought before the meeting. By Order. **JAMES MACADAM, JUN., Sec.** Belfast, Nov. 19.

## The Agricultural Gazette.

SATURDAY, NOVEMBER 19, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Nov. 24—Agricultural Imp. Society of Ireland.

THURSDAY, Dec. 1—Agricultural Imp. Society of Ireland.

ANOTHER valuable letter, on the subject of AGRICULTURAL STATISTICS, addressed to Lord ASHBURTON by the President of the Royal Agricultural Society of England, has recently been published. Mr. PUSEY, who has, in the Journal of the Society, more than once drawn such accurate and instructive pictures of the progress of farming in this country, naturally looks upon the information which would thus be elicited as likely to be useful ultimately, and rather as a record of progress, than year by year and for current commercial purposes. We all know how the threshing machine often upsets the anticipations of the farmer, and how the Wheat account in the ledger may tell a tale 20 per cent. on either side of one's expectation at harvest time, without the reporter of that date being thereby set down either as incompetent or dishonest. There is many a hidden influence and many a sudden influence whose operations can neither be seen nor foreseen by the farmer who is about to cut down his grain—and thus he finds himself disappointed, agreeably or otherwise, more often than merely satisfied with the result of his harvest. This circumstance, well known to Mr. PUSEY, leads him to write as follows: "Our object, then, being to record the increasing production of corn and of meat, the accurate estimate of our corn will, I fear, be difficult, as well from the uncertainty of seasons, as also from the uncertainty which must affect the farmer's own judgment, not only while his crops stand in the field, but even while, though safe in the rick, they have not been yet subjected to the test of the threshing machine."

And doubtless such a difficulty would, if insuperable, be fatal to the main usefulness, as we believe it to be, of a perfect system of agricultural statistics. The principle on which, notwithstanding this difficulty, we should be inclined to insist on the trustworthiness of information, collected as it is proposed to be, regarding the productiveness of the crops, is one which has stood the test of trial in other directions. Averages of a large body of data which individually would be unsafe guides, have proved trustworthy elsewhere. And a multitude of honest opinions unconsciously biased, each of them by the circumstances under which it has been formed, will, when each is applied to its



own little circle of observation, give conclusions which, on being added up, will result in a sufficiently accurate total. The bias telling in every possible direction is lost in the process of addition—a series of excesses *plus* and *minus* in the several cases neutralise one another in calculation, if those cases possess sufficient number and variety. The commercial value of the Government scheme is therefore, we think, not to be lost sight of—though that on which Mr. PUSEY more especially counts is undoubtedly sufficient to justify all the labour and cost which will be incurred. “Such a survey,” he says, “should not, I think, solely aim at the calculation of our yearly yield of corn, with a view to estimate our immediate dependence on foreign supply; but should also record and measure that improvement of agriculture which began with the present century and is strengthening with its advance. It is, indeed, this statistical object for which I am myself chiefly anxious.”

“If a census of our husbandry had been commenced with the century, as well as of our population, this rural picture of the last 50 years would have been invaluable. But, though the blank must stand for the past, one is glad that it will, at least, be filled up for the future, and happily the rate of improvement is more rapid than ever.”

The consideration of the many other important points to which Mr. PUSEY's letter refers must, in the present state of our columns, be postponed for a week.

The last number of the “Monthly Journal of the Royal Agricultural Improvement Society of Ireland,” is again a very interesting one. A discussion on the recently-published experiments on **STALL FEEDING CATTLE** took place before the evening meeting of the Council of the Society on the 1st of this month, and is reported in detail. We have extracted in another page an interesting contribution to the general mass of valuable information then elicited, by Mr. LITTLEBOY, the intelligent steward of Counsellor FITZGERBON, of Larkfield, Lucan. And we shall proceed here to give a general idea of the other data and material on which Mr. HARKNESS's conclusions were founded. Mr. LITTLEBOY's experience was a successful example of the old-fashioned system conducted in the ordinary manner. His plan is described as follows:—

“We commenced to tie up our stall cattle on the 21st November, and for the first two weeks gave them a moderate quantity of white globe Turnips, and what Oat straw they could consume; the third week we gave them Aberdeen Turnips, and fourth week Swedes, and continued to give Swedes and an abundant supply of Oat straw, until, up to April 2d; we then gave two feeds Swedes, and one feed Mangold, with 14 lbs. Italian Ryegrass hay each daily, and continued that mode of feeding up to the date of sales, which will be shown by the balance-sheet. The entire feeding consisted of Turnips, Mangolds, straw, and hay, all uncut; I neither gave corn nor cake, although I am of opinion that a little of either, or part of both, to finish the cattle with, will amply repay the feeder; but my sole reason for not giving any, was that we had an over-abundance of Turnips, which were as sound up to the finish as they were in December last.”

The other instances quoted were those of Col. M'DONALL, of Logan, Mr. ETCHE, of Harley Thorn, and of feeders in Yorkshire, in all of which cooked food, cut food, and grain &c. as food, are given with liberality. And it may be thought that here was an opportunity of contrasting the two systems, which accordingly was eagerly done by some of those who engaged in the discussion. The same season and therefore, putting aside the influence of mere locality, the same prices would affect both Mr. LITTLEBOY and Col. M'DONALL alike; and it appears that while according to the former 75 cattle made 219% in six months, after deducting value of food and attendance (Turnips at 8s., and Mangolds at 10s. a ton); the 65 cattle in the instance of the latter, made 130% in 100 days = 244% in six months, after deducting Turnips at 6s., Mangolds at 8s. a ton, and other food in proportion; the former, too, being the increase upon a lot of very uneven animals, weighing between 3 cwt. and 6 cwt. apiece when first tied up, and the latter upon evidently a very even lot of beasts averaging about 8 cwt. live weight.

We do not now enter upon any of the points which our valued correspondent “S.” has, at pages 698 and 730, so ably discussed in reference to Colonel M'DONALL's experiment; the same criticism doubtless applies to that of Mr. LITTLEBOY, though he does not give the reader the same facilities for making it. These experiments, therefore, stand upon the same basis and so far admit of comparison, and the comparison, it is urged, is not unfavourable to the old, as contrasted with the new methods of feeding. And if any exception be taken to a comparison of results recorded under different circumstances, it is asserted that the same truth comes out in the case of Colonel M'DONALL's own cattle when the different lots into which they were divided are compared with one another. Thus lots 4 and 5 on Mangold Wurzel and Turnips alone, and lots 20 and 21 on Turnips and straw stand highest of the whole

series for individual profit during the continuance of the experiment. These facts tell with great apparent force on all who are disinclined to admit the policy of what is called high feeding—and so they ought were there not another aspect of the subject also demanding attention, which is put by Mr. HARKNESS in the following convincing manner. The truth is, it is not the profit per head but the profit per acre, that is the true test of any farm practice involving the consumption of the food grown upon the farm. Mr. HARKNESS says:—

“Taking a superficial glance at the Tables, we would be led to think that No. 5 experiment of Table 1 shows that the greatest net gain is obtained from the animals fed upon Turnips and straw alone—namely, 22.11s. 11d. per head; but the true question of profit to the farmer is, ‘which method of feeding will yield me most money for my 30 tons of Swedes?’ Now, if the Logan Tables and experiments be correct—and we have no reason to doubt them—the second table shows clearly that the 30 tons given raw, without either raw or cooked meal, did not pay so much per acre as the experiment No. 6, in which the cattle were fed on two moderate feeds of Turnip, and one feed of ‘cooked chop.’ Looking at the column of Table 2 entitled, ‘Money value per acre, at 20 tons for Mangold and 30 tons for Swede,’ it will be found that the raw-food system in experiment No. 5, as instanced by Mr. Ball, yielded 20l. 14s. 0d. per acre; whereas, the feeding by No. 6, with part cooked food, yielded, for the Turnip alone (exclusive of paying for all artificial food), the sum of 24l. 6s. 3d. per acre. Any one turning to the column of Table 2, entitled ‘Number of cattle for which each kind of feeding will yield six months' green food per acre,’ will get a key to solve the apparent difficulty. He will then see that if he fed his cattle upon Swedes alone, and straw uncooked, he can but keep 2½ of cattle, whereas, with the cooked food in experiment No. 6, he is enabled to keep 3½, or about one beast more per acre besides paying for the Bean-meal. Thus, Mr. M'DONALL is perfectly correct in stating, as he does, in the extract which we submitted in our introductory remarks, that ‘each acre of Mangold or Swedes will fatten an additional animal if the auxiliary food, 4 lbs. of Bean-meal per day, is given in a cooked state, mingled with 3 lbs. of Oat straw, instead of being presented raw.’”

There is one additional aspect of all such experiments, and that arises out of the fitness of any particular kind of feeding, that may be adopted, to the constitution of the animal so treated. It might very well appear from experiments on a lot of wild mongrels that feeding on raw food, growing naturally on the hill side, was more profitable than box-feeding on Bean-meal, Linseed, and Mangold Wurzel, but no one would apply such a result to the case of a lot of well-bred, Short-horn, Hereford, or Devon oxen. The practical skill of the farmer is nowhere shown more strikingly than in adapting his management to the character of the stock he is feeding. And even the case of Col. M'DONALL's Galloway oxen, accurately as the results are doubtless recorded, must not be read by the farmer of Berwickshire or Lincolnshire, as likely to be exactly paralleled in his own feeding stalls, where well-bred animals are consuming the produce of his farm. A more generous diet will pay in such a case, where it would result in a loss elsewhere.

#### “SYSTEMS” IN DRAINAGE.

THE article in your last Number headed “The Keythorpe System of Drainage,” and the arguments used for and against it, prompt me to communicate my humble opinion upon the subject of land drainage as now being discussed in the *Gazette*. Having had sufficient opportunities to observe in the course of very wide practice, I may be permitted to express my views with some degree of confidence that they are entitled to fair consideration.

It appears to me, then, that there is too much of “system” in draining, as in many other things. We all know that the shortest way to extensive reputation, in several professions, is to adopt some peculiar “system” or mode of practice; and if this is occasionally successful, and such success is duly published, there will not be wanting a heavy crop of patrons. But I question whether the landowning public are not often great losers by these professors of “systems” in draining, as their fellow-public are by other professors of “systems.” In this there may not necessarily be a purely selfish motive; but it may arise from the circumstance that a practitioner has accidentally discovered a “system” which is perfectly successful on his particular field of practice, and that he erroneously concludes it will be universally applicable with like success.

Mr. Trimmer may well state that “never was there so divided a house as the fraternity of drainers;” and I believe this has mainly resulted from the circumstances I have endeavoured to explain above. But it obviously should not be so; and it is high time that draining engineers, especially those who may have to conduct such operations under an immense variety of circumstances, should forego the advocacy of any particular system for the practice of any, or all (by whomsoever discovered or proposed), that may be the most suitable to the peculiar circumstances with which they have to deal. In fact, it is most important that draining engineers should be neither quacks nor prejudiced. One unfortunate result of publicly advocating a system for what requires such various treatment as land drainage, is that the practitioner becomes compelled to persist in it, or to acknowledge himself in error. Now it seems to me that it would be better for proprietors and engineers both, that the latter should give up professing to practise on this or that “system” particularly, and to study the merits of each impartially, so as to be

able to bring them to bear where they may severally be most applicable.

I hope I do not misunderstand their communications, but Mr. Bailey Denton would appear to insist upon running the minor drains with the greatest fall under all circumstances; whilst Mr. Trimmer would treat all soils requiring drainage as if distributed or deposited after the same manner with those of the Keythorpe Estate. Doubtless, there are numerous cases in which either would be correct, but it is equally certain that there are many in which a different practice would be necessary. The results of Mr. Trimmer's investigations of soils are highly valuable, and must be generally appreciated, but with all due deference to him, the principles they confirm are not new to all drainers, and the system of draining obliquely to the line of fall, which it has been found necessary to adopt at Keythorpe, has been practised by others for some time, not only to meet the difficulty of two layers of soil, but to drain effectually those having underlying strata of laminal character, with the plates lying in the direction of the line of fall.

It is, however, very natural and excusable that an amateur drainer, operating upon a limited field of practice, should fall into the error of supposing his system generally, or universally, applicable; but the draining engineer, who in the practice of his profession may have to treat many of the numerous and constantly varying peculiarities of soils and situations, ought to be cautious not to commit himself to any prescribed rule or system; and, above all, he should not condemn one which it may, at some time, be important to a client's interests that he should adopt.

Depend on it the landowners of this country will pursue the most certain and advantageous course in the drainage and improvement of their lands, if they consult those engineers who are not prejudiced against, or committed to, any peculiar system, and who yet have a field of practice sufficiently extensive to make them well acquainted with nearly all descriptions of soils and situations—a circumstance that very rarely happens to any but those who are constantly engaged in conducting such works for large concerns, having a great amount of capital employed in these operations; and, of course, those having the most extensive practice, with the best reputation for efficiency of works of long standing (a point easily ascertained in high and impartial quarters), will furnish the best guarantees for economy and efficiency that a proprietor can have. *A Draining Engineer.*

#### CHEESE MAKING AT BALDOON.

MR. CAIRB's account of the method of making cheese at Baldoon, given in the following letter to an Ayrshire farmer, is extracted from the *North British Agriculturist*:

“Baldoon, Wigtown, Sept. 16, 1853.

“Dear Sir,—I have much pleasure in answering your inquiries regarding the Cheshire system of cheese-making. There is very little difficulty in effecting the change from the Dunlop system, and in an average of years it is decidedly profitable. The Cheshire system is more troublesome, as it requires a greater number of cheeses in press—three times as many. We measure this additional trouble at one extra woman for 100 cows. More dishes of cheese are necessary, and greater room. The cheeses are made only once a day; the night's milk, being properly cooled, needs no heating to mix with the new milk of the morning. There are three cardinal points which must be observed in making good cheese, either Cheshire or Dunlop:—

“1st. To use sweet steep. The Ayrshire practice is to make as much rennet ready as may last a week, fortnight, or even a month at a time. The steep thus becomes rancid. The Cheshire system is to ‘lay’ to-day what is needed for to-morrow, and no more; thus it is always fresh tasted, nor is there any loss of rennet by this practice. 2d. To lay the milk ‘asteep’ at a temperature of 76° to 78°, in such proportion that the curd will form in about 45 minutes, when it must be very tenderly broken. The Ayrshire practice is to thicken at the natural temperature of the milk as it comes from the cows, 90° to 100°, and to put in such a quantity of rennet as thickens the milk in 15 minutes. 3d. To dry or ripen the cheeses thoroughly after they are made; for this purpose they must be stored on a dry warm loft, or the store should be heated by a stove.

“By close attention to these three points, and without any other material alteration, the Ayrshire dairies might rival the Cheshire either in quality or price. The cheeses of this dairy having been made this season as above described, a few were sent to an agent in Manchester and realised above the average price of Cheshire cheese, while the whole make was sold to an Ayrshire cheesemerchant, on the 18th August, at 62s. 6d. per cwt. You will thus see that, to improve the quality greatly, it is not necessary to make an entire change of system. We did so the first year and made pure Cheshire cheese, and sold them for 9s. a cwt. more than Dunlop made in the same dairy. The minutiae of practice cannot easily be explained, but my dairyman, Robert M'Adam, is satisfied that the three leading points above described are the main cause of the superiority of Cheshire cheese, and these may be readily adopted in all dairies. His cheese may therefore be described as Dunlop cheese, made in the Cheshire fashion, without all the detail of the Cheshire system. This year the finest Dunlop are selling as high as Cheshire. The quantity of cheese made from the same quantity of milk, in the above fashion, will be fully larger than in the Dunlop, and



there is no loss of butter from the cheese by pressure, as there is often in the Dunlop.

"Eight years ago I was impressed with the unnecessary (as I believed it) inferiority in the price of our Scotch cheese; and Mr. Livesey, the great cheese factor of Preston, assured me that the difference lay altogether in the mode of making the article. By his desire I sent a man to Lancashire, who, in three weeks, in one of the best dairies there, acquired a knowledge of the system. There being points of detail about the Lancashire system more troublesome than the Cheshire, and the cheese not being quite so preferable, I determined to adopt the Cheshire plan. A knowledge of it was acquired in the same manner by the dairyman going for three weeks to a Cheshire dairy; he brought home the Cheshire chisels, &c., and we find no difficulty in carrying out the system. And after a full experience of it, as I have already said, is of opinion that, by close attention to the three principles already mentioned, either Dunlop of the finest quality or Cheshire cheese may be made by after management from the same tub of milk. I shall be happy if this information proves of any use to you; and remain, dear sir, faithfully yours,"

"JAMES CAIRD."

In answer to further inquiries, Mr. Caird states that, "By the 1st October we raise the temperature of the milk to 80° in thickening, and keep the dairy a little warmer than the external air. The cheeses are the better to be bound by a cloth, in the Cheshire fashion, when taken out of the chisel—the binding being kept on for two months. The expense is trifling. One hundred and twenty of our first-made cheeses this season were not bound, and are quite shapely. All the rest have been bound. Our best dairymen think that the difficulty of 'stoning' the cheese in some dairies is attributable chiefly, if not solely, to the management. The preparatory process to 'making up' must be continuous, and not interrupted or postponed, otherwise temperature is lost."

### Home Correspondence.

**Land Drainage.**—It is with great pleasure that I see the good effect of directing "C's" attention to Mr. Trimmer's Keythorpe draining. I have long since observed the furrowed condition of the gault, kimmeridge, and Oxford clays, the furrows usually running at right angles with the dip of the strata. In a field of my own on the gault covered by a bed of diluvial gravel, I cut a drain, by way of experiment, from a low spot in which the water always stood, after rain, to a very distant outfall, and was almost deterred by the anticipated expense, as the surface of the land rose for some distance between the out to be drained and the outfall. I found on cutting the clay beneath, that the surface was furrowed, and that it was only necessary to intersect these furrows to point at which the surface of the clay suddenly dipped forming a subterranean escarpment) below an increasing depth of gravel, into which the water then sank and did its way to a natural vent at a lower level; thus the tiles I had provided for one drain I was able to make five or six, and lay my land effectually dry. I may observe that my attention was first directed to the necessity of ascertaining the geological condition of the soil, before draining, by Dr. Buckland. I may take this opportunity of noticing another fact connected with draining. I planted a piece of drained land with Mandel Wurzel; the main drain cut in the gault to its junction with the rubble, or rock of the greensand above is a carrier for running water all the year, the branches terminating in the gault only run after heavy rains. On removing the Mandel Wurzel, the main drain (in a 3-inch pipe) was choked, and threw the water over ground at various points; it was found on examination that the drain pipe was filled from end to end with roots; this was confined to this drain in which water was always running, the lesser pipes of the other drains had not attracted the roots to their interior. The conclusion I draw from this, is that it is dangerous to plant Mandel Wurzel over a drain carrying ever-running water. J. C. C., Long Wittenham.

**Export Prospects.**—The deficiencies in the growth of wheat last year, looking back to my own five-and-twenty years' experience in farming, is unparalleled, and I believe it to be very much greater than that of any year since 1816; and as we have been requiring for the 6 years 4 or 5 millions of quarters of foreign wheat, in addition to our own growth, to feed us when our harvests have been good, I quite agree with those looking to what we have been getting, and taking deficiencies of this year to account, are of opinion we shall require 9 or 10 millions before the harvest of 54; and it thus be so, or if only half the quantity required, the question arises of "Where are we to find it?" to which, it will be seen, there is great difficulty in making any satisfactory answer. The greatest quantity of wheat we have ever imported in any year was 3,330,368 quarters, and this was obtained when we were world to draw from; and were the only country open ports to receive it; but how different is the present year—of the countries which sent us this year, America and Russia are the only two of any notice that have any to spare, and they have never more than 3½ millions, the rest came from countries this year without a sufficiency for their own consumption; and Britain, having a population of 28 millions, and wanting a supply of 9 millions, has this year to seek it from markets which have never afforded more than 3½ millions, at the same time that France, Belgium, Holland, Switzerland, and a part of Prussia (countries having a population of 70 millions)

are all deficient and are seeking supplies in competition with us, and have only these markets to apply to. Hewitt Davis, Nov. 15, 1853.

**Lois-Wedon Wheat Cultivation.**—The statements made by a correspondent in the *Agricultural Gazette* of the 29th ult., on the cultivation of Wheat on the above system, induce me to make a few remarks thereon, as I think they will scarcely bear out the conclusion he appears to have come to as regards profit. I will therefore take his first year's statement, wherein he assumes to realise a clear profit on the half-acre of 3l. 9s. 8½d. Now, taking all his items of expenses as correct, I find he does not debit himself with either rent or rates, which unquestionably he must pay except he be his own landlord; even then he is entitled to an equivalent for interest on capital. Suppose, then, his land to be worth 30s. per acre, the rent for the half-acre will be 15s., which, when deducted, reduces his first year's profit to 2l. 14s. 8½d. The second year to analyse it fairly requires more attention, his profit thereupon being stated at 2l. 9s. 10d., a great reduction on the former year; but in making statements of this kind, to show the real relative merits of any systems of cultivation, a uniform price should be put upon the produce, so as to simplify the result without having recourse to additions or deductions for differences in marketable values or otherwise. His statement, then, for 1852 shows a decrease in produce of 4½ bushels; whether arising from a general failure in crops or in the mode of cultivation, I am not prepared to discuss; but comparing the two years, they will stand thus:—Profit, supposed, 2l. 9s. 10d., from which deduct difference in selling price on 15 bushels at 5½d., and 1 bushel at 7½d. = 7s. 6d.; rent 15s. = 1l. 2s. 6d., which makes the profit 1l. 7s. 4d., being about half the amount of the previous year, of course making no allowance for the overcharge for the double digging your correspondent appears to consider unnecessary. The present year he appears to have had a golden harvest, realising a profit of 4l. 14s. 6d.; but in so doing has to take credit for the very favourable state of the grain market in respect to prices, disposing of his produce at nearly two-thirds more per bushel than the two previous years. I am not finding fault on this head, as every farmer, whether amateur or otherwise, shares more or less in these fortunate changes of mercantile values; but, to come to an equitable comparison, we must suppose prices to have been as heretofore, which possibly might have been the case; the statement would stand thus:—Difference in selling price on 16 bushels, at 3s. 7½d. = 2l. 18s., rent 15s. = 3l. 13s., which when deducted from 4l. 14s. 6d., leave only 1l. 1s. 6d. for the last year, and an average profit for the three years of 1l. 14s. 8d. per year for the half-acre. You will perceive I have given no credit for the double digging (as I have before named), not being aware whether it is absolutely necessary to adopt that plan in carrying out this mode of cultivation (your correspondent says not); but I think it very conclusive, had it not been for the fortunate state of the market for his last year's produce, either the system of cultivation or the general decrease of crops would have told largely both in the pocket and deterioration of the soil.

**Critic.** [The above is one of several letters we have received calling attention to this subject.]

**Agriculture.**—The inhabitants of the United Kingdom have the credit of possessing more common-sense, and standing higher in the scale of industry and scientific pursuits, than most other nations. Self-confidence induces presumption, bringing with it a train of false movements, combined with obstinacy, palpable enough to the looker-on, however blind the actors in the drama may appear to be. Englishmen are proverbial for "having their own way," and would rather carry out a project, because they like it, than receive instruction which would steer them clear of an error in judgment. The feeling of unwillingness to diverge from the beaten track followed by their fathers and grandfathers is fast disappearing, yet improvement in agriculture is not sufficiently rapid to save the country from high prices in the event of a season not proving quite what the farmer requires. The want of judicious draining, loosening stiff soils by cultivation, and the application of lime, sand, ashes, peat, &c., were the reasons of so small a quantity of Wheat being sown on clay lands in the autumn of 1852, resulting in the present high price of grain. It is quite impossible to cross stiff land satisfactorily without carrying off the superfluous moisture; it is not the water percolating through the soil that does the mischief—the stagnant, sour fluid is injurious to vegetation. Many hundred pounds would be saved, if after heavy and continued rains in autumn, clay land could be cultivated, allowing a reasonable time to elapse for the water to disperse, and find its way to the brooks and rivers, instead of showing itself on the surface of the land, rendering it utterly impossible to work the plough and harrows for weeks; thus allowing the critical season to slip away into short damp days, driving the work off, till probably a wet spring and late harvest produce a light midwintery yield. Proper dressing, frequent stirring, draining according to the nature of the soil, are the chief means of rendering a farm productive; if land will not pay for "doing well," it will certainly not increase the tenant's gains by neglect. The common and subsoil ploughs, the scarifier and harrows, are quite sufficient to bring the most stubborn soil into till, without the aid of steam as a moving power in the field. Propulsion by an engine on a soft surface will be found a difficult task; if five or six horses are to be attached to a machine to drag it along the ground, whilst fire and water do the grubbing work,

the animals would be better employed in double ploughing, the expense would be less, and the whole proceeding more manageable. On a large farm a steam-engine to cut chaff, Turnips, &c.—to grind Barley, crush Oats, pump water, and irrigate with liquid manure—might be well employed; but it is a question whether it can be brought into operation to break up land without the aid of a railroad, which in small inclosures would be almost useless; the frequent moving the iron ways would be a ruinous waste of time and money. In agriculture there is a point much neglected, which is of vital importance—thoroughly cleaning the soil before cropping, and pressing the weeds under when vegetation is advancing; attention to the destruction of these pests is worth half a dressing of manure, and the constant application of the hoe will effect this; Couch-grass is an exception, as nothing but forking-up and burning will eradicate this scourge; burying is of no use, it will survive after being covered with many inches of earth. Choose a dry time, hand-pick the land, and submit the roots to roasting; the trouble will be well repaid. Farmers should bear in mind that more labour expended on the land, and admitting the air and moisture, would increase the produce in value far beyond the amount of extra wages. "Penny wise and pound foolish" is true enough. Falcon.

**The Cattle at St. Kitts.**—I cannot think the looseness of horn, mentioned by your correspondent "Philobos," is peculiar to any breed of cattle; it is purely the result of accident. The cattle I saw at St. Kitts, and I think I saw most of the cattle upon the island, were small, ill-fed, ill-shaped, quarrelsome little wretches, of which it took some 8 to 10 to draw one sugar-cask. Food was scarce and quarrels numerous, hence the broken horns. I know the cross-breed mentioned by "A Subscriber," in your number of the 22d of October, but I was not aware that they were more subject to broken horns than any other breeds. The cure is, remove the mutilated horn and bind the stump with well-tarred or pitched parceling; any fabric will do to bind with, if the wounded part be first well covered with warm pitch. W. Lort, Great Heath, near Tenbury.

**The American Threshing Machine.**—This threshing and separating machine is the invention of John R. Moffitt, of Piqua, Ohio, and is the subject of letters patent in England, dated February, 1853. It has been introduced into England by Mr. Moffitt and his partner, Edward H. Knight, of Cincinnati, Ohio, and during the past week has been put in operation at Tiptree Hall, on the farm of J. J. Mechi, Esq., where it threshed 32 quarters of Wheat, and cleaned it ready for market in one operation in the space of four hours; and threshed, hummelled, and cleared 56 quarters of Barley in six hours, without breaking any kernels. Several farmers who were present purchased their seed Wheat for the ensuing season from the machine on account of its being so free from grains, and, strange as it may seem, it is nevertheless the fact, that in threshing and cleaning 448 bushels of Barley not a kernel was observed to be broken. The machine is simple in its construction, and may be afforded at a less price than other machines adapted for the same amount of power. The driving power in the late trials was equivalent to a power of four horses, and was derived from a steam-engine kindly lent by Mr. Partridge, of Braxted Hall. The machine weighs (independently of the running gear) 1400 lbs., and is therefore much more portable than other machines of large caliber, which are ordinarily about three times that weight. The machine will thresh well and clean thoroughly as much as one gang of men can handle, which is not often more than 50 or 60 quarters per diem. The grain is fed into the machine through the opening in front of the cylinder, which is toothed, and operates against teeth on the concave. The straw is delivered from the cylinder into an endless apron, or straw carrier, which, carrying the straw obliquely upwards and onwards, by its peculiar vibratory motion allows all the grain and chaff to fall into the well of the machine, from whence it is delivered into an open "slat" riddle, formed like a partly closed Venetian blind; the grain escapes downwards through the intervals of the riddle, while the chaff is blown away out of the end of the machine, and may be collected in a chaff-riddle if desired. Should any ears of grain pass through the threshing cylinder without being thoroughly operated upon, they are collected and brought back again to the cylinder by a contrivance for that purpose. This machine is now on exhibition at the World's Fair, in New York, where it has obtained high commendation and notice from the press of America, and also from some of the English journals, including the *Times*. It also obtained the first premium at the late State Fair, held in Ohio, in September, after a public trial and competition. Ohio is the first grain-raising state in the American Union, and its verdict is final in machines of this class. From a Correspondent.

**The Potatoes in Ireland** have suffered generally very much from disease, in many places from one-fourth to one-third, and in some heavy grounds to one-half; in bog and moory land they are generally safe unless they have been limed or clayed; on some lighter lands they are also pretty safe. The Oats are a short crop, and, being late, have suffered very much from being got in a moist state. The high prices of Oats encourage the sale, and it is apprehended that a scarcity of food will exist to an extent that threatens famine in the summer. Hay and straw are scarce. We must depend on America. J. M. G.

**Wheat Sowing.**—The growth of Wheat will assuredly be made the paramount object of the next year, and we now possess direct evidence that, in the metropolitan



counties at least, the breadth of land already seeded is very considerable, and is daily extending; but this should not satisfy us, for there yet remains a great step which, if immediately taken, will in all probability yield a quantity of Wheat more abundant than any which has been harvested during many of the bygone years. It is a fact acknowledged by really practical men that Grass lands thoroughly broken up may be harrowed and sown the same day, be the weather what it may, even though it rain all the time; but on the other hand, if old worked ground, especially when the texture is strong and binding, be disturbed while soaked with water, it is rendered quite intractable for an indefinite period. New ground under Grass, though perhaps naturally rather poor, is almost sure to produce a good, if not a fertile crop of corn. Now then, and immediately, let every spare plot of such land be ploughed (or rather dug up, and the turf turned in), then harrowed and the Wheat sown without loss of time. Thus having committed the seed to the ground in increased quantity, and under conditions propitious as they are at present, let the results be trusted in confidence to the fostering care of a divine Providence, who has promised "seed to the sower and bread to the eater." *J. T., Croydon, Nov. 11.*

**Steamed Food.**—In your *Gazette* of the 5th inst. (p. 715), is an article signed "G. P. S.," upon the purifying "effects of steam on mouldy or decayed substances." In confirmation of these purifying qualities, I would bring to your notice, and through your instrumentality to that of the public, if you should think its publication as likely to be productive of a useful result, the following fact, viz.:—Upon the premises of a factory where a steam-engine is daily at work, is a privy in which very unpleasant odours were generated, particularly during the summer, and which being in the vicinity of the counting-house, was not unfrequently an intolerable nuisance. It happened that in blowing off the engine, the steam, by accident, found its way into the drain communicating with the soil pit, and rising up through the open space over it, quickly filled the superstructure. This at first caused us some dismay, lest the before intolerable nuisance should be still further spread; all apprehensions on this subject were, however, soon dispelled, for in a few minutes all the offensive effluvia vanished, and the steam, whilst it remained, was not only pure in itself, but it purified the privy also, and the occasional blowing off from the engine was sufficient to keep it in that state. With respect to steamed food for cattle, I cannot help thinking that now the farming world will descend to read, and not despise information, because, as they formerly considered it, "book learning," the advantages of feeding cows with steamed food, as detailed by John Christian Curwen, Esq., formerly M.P. for Cumberland, and by Mr. Franklyn, to the Society of Arts, published in the 30th volume of the Society's Reports, p. 59, might be brought with advantage to the notice of agriculturists; it has been too long hidden amongst the scarcely-read reports of that Society, published in bygone times, and in that report of Mr. Curwen will be found a sketch of the steamer employed by him, simple, but efficient, though possibly not so much so as those of more recent construction. He says—"Wheat chaff, which alone I use, is commonly thrown upon the dunghill, as of no value but to augment the quantity of manure. It requires three hours to boil. Two lbs. of oilcake are allowed to each stone of chaff. The milch cows and oxen are fed twice, morning and evening, having an allowance of one stone each time." Again, "The milch cows are never allowed to be turned out. The condition, health, and milking of the cows fed upon this plan at the Schoose, has created considerable interest. Most, if not all the milch cows at the Schoose are in such a condition that a few weeks' feeding, after they are dry, makes them fit for the shambles, with very little loss from the first cost. As a substitute for chaff and oilcake, I should recommend cut hay; this steamed would make a much superior food, and I make no doubt would greatly augment the milk, as well as benefit the health and condition of the cows." The whole of Mr. Curwen's communication is full of interest; his patriotism in his day was well known. He proposes that the Society should hold out some inducement to cowkeepers to visit his Schoose farm, and adds, "If the statement I have made be found erroneous, the expenses of the persons who may be induced to take so long a journey shall be at my charge;" and he further says, "In order to prove what might be expected from steamed hay, I am trying 4 lbs. of Clover-hay, boiled with chaff, instead of 2 lbs. of oilcake; I am sanguine it will answer. The milch cows drink the liquor in which it is boiled with great avidity. By steaming, two-thirds is added to the weight." Mr. Franklyn's communication to the Society, which follows that of Mr. Curwen is fully confirmatory of the latter gentleman's statements. He says, "I have made a long and decisive trial thereof, and have found it to answer both in respect to the carcase and milk of my cows. They daily increase in quantity, and the quality of the milk is far superior to any I ever saw. I give steamed food once a day to my horses, namely, in the evening when they have done work, and I find it to answer much better than dry food." There are several other communications from Mr. Curwen to the Society, in subsequent volumes, well worthy perusal. *J. S.*

**Drainage Labour.**—Having been for some time back a subscriber to and a great admirer of your Journal, owing to the many useful and practical remarks it affords the British agriculturist, I venture to suggest the great assistance it would be to many of your readers if a table were published, containing the prices paid for

draining at different depths and in various soils, collecting the information from most of the counties in England and Scotland. The draining in the part of the county where I reside is done principally by contract, by the road of 7 yards, for which a price is paid which far exceeds any of which I have ever heard in other districts. This is attributable to the work being done almost entirely by one man, and there being no competition, the price is regulated by his standard. All the work in my district has for many years back been done very inefficiently, principally with tiles without soles; and the natural consequence has attended the work, as in most instances the tile has gradually sunk till the free passage for the water has become stopped up. I have therefore suggested that your publication of a paper, drawn out in the way I have alluded to, would be a great assistance to my neighbourhood, as it would afford sufficient grounds for correcting an enormous overcharge for old-fashioned work, and for which no one will return you more grateful thanks than your obedient servant *Agricola*. [Our correspondent will find the experience of many of our correspondents and others published in past volumes. This, however, we will endeavour at his suggestion to collate, and present in a tabular form, as soon as possible.]

**Receipts for Dressing Rice.**—"Clericus," in your Paper of Oct. 29, wishes for a few receipts for dressing rice, which I send. The only difficulty will be that the poor must have a fire to dress it. If "Clericus" would have one receipt tried, and shown, the poor might be induced to take the trouble.

**Savoury Rice.**—Put 1 lb. of rice into 3 quarts of boiling water, let it simmer for 20 minutes, then skim the water and add 1 oz. of hogs-lard and a little salt and allspice; let it simmer gently over the fire, closely covered, for an hour and a quarter, when it will be fit for use. It will produce rather more than 8 lbs. of savoury rice, which, if purchased at a moderate price, will not cost quite three farthings a pound.

**Baked Rice Pudding.**—Put half a lb. of rice into 3 quarts of skim milk, and add 2 oz. of treacle, or a little pepper and salt, and bake it. It will make nearly 4 lbs. of pudding, and will cost about a penny a pound. If East Indian rice is used it should be previously soaked for a few hours in water.

**Boiled Rice Pudding.**—Boil 1 lb. of rice in a pudding bag, so loose as to be capable of holding five times the quantity. It will produce 5 lbs. of solid pudding, and may be eaten with treacle. It will cost about three farthings a pound.

**Maccaroni Rice.**—Put 1 lb. of rice in 5 pints of cold water, and boil it gently for two hours, by which time it will be of the consistency of thick paste; then add 2 pints of skim milk and 2 oz. strong Cheshire cheese grated pretty fine; add a little pepper and salt, and boil the whole very gently for another hour. It will produce 9 lbs. of maccaroni rice, and will cost not quite three farthings a pound.

**Rice and Barley Porridge.**—Put 1 lb. of rice and 1 lb. of Scotch Barley into 2 gallons of water, and boil them very gently for four hours over a slow fire; then add 4 oz. of treacle and 1 oz. of salt, and let the whole simmer for half an hour more. It will produce 16 lbs. in weight, and will cost rather more than one halfpenny a pound.

**Sweet Rice.**—Put 1 lb. of rice in 5 pints of cold water and boil it gently for two hours, by which time it will be of the consistency of thick paste; then add two pints of skim milk and 4 oz. of treacle, and boil the whole very gently for another hour. It will produce 9 lbs. of sweet pudding, and will cost rather more than one halfpenny a pound.

Where no milk is to be had, the first, third, and fifth receipts are recommended; where there is plenty of milk the second receipt is recommended; and where there is little skim milk to be obtained the cottager is recommended to try the fourth and sixth. By means of these receipts those of the poorer classes who earn but a few shillings a week are able to be furnished daily with a cheap, good, and wholesome meal.

**Economy in Food.**—1 lb. of whole rice boiled with 5 quarts of water, thickened with 1 lb. of Oatmeal, will make 8½ lbs. of good food. Put the rice down first with 1 quart of water and add the remaining 4 quarts of water as the rice swells, then put in the Oatmeal, stirring all; cost sixpence. Add salt, or pepper, or sugar, to suit the taste. If the rice is steeped for five or six hours it will be better.

**Keep Moving.**—I have read with much interest Mr. Todd's communication in your Number of Oct. 29, and it has occurred to me that perhaps some good may be done by urging on the British farmer the important act of "Keep moving." Mr. Todd refers to Couch-grass and weeds. Now let us look at the market gardeners round London; they know nothing about Couch-grass, nor weeds, nor slugs, nor any annoyance to the soil except climate and want of manure. They keep their ground moving so quickly, and with such high manure, and so well trenched, that neither Couch, weeds, nor slugs have any time to grow or mature. Why should not farmers do the same? If your subsoil is gravelly or shaley, never mind, stir it up, don't bring it to the surface, but move it; it will amply repay you. Keep your ground moving and well manured, nothing will pay better. Sir R. Stephenson said before a committee of the House of Lords on the subject of the "Navvies" regarding food and drink, "We have found, sir, that if we put nothing into the men we can get nothing out of them." Precisely the same is applicable to the soil; you will get nothing out of it but in proportion as you put it in. But Nature, or more properly our Heavenly Father, is most bountiful in return for our exertions, for it is surprising what produce can be obtained from highly cultivated land. I therefore say again to the farmers of England as regards your land, "Keep moving." *M., Torquay.*

**Dwellings of the Poor.**—Where nuisances affecting the community at large exist, not only should public notice be taken of the fact, but the persons who are to blame should be pointed out, and compelled to remedy the evil. Much information has been published relative to the damp, unwholesome, filthy, ill-drained habitations of the lower classes in the large towns of England. More fearful descriptions of the pestiferous dens, in which men, women, and children are compelled to herd together, regardless of common decency, it is impossible to imagine. The idea of thousands of our fellow creatures living in dirt, misery, and the last state of vice, infinitely more degraded than animals, and showing propensities more savage, is a reflection on a Christian

country Great Britain may well be ashamed of. However, it is too true that human beings, of all ages, are crowded together in apartments where they lie in close contact, breathing a vitiated air, caused by a dozen persons being crammed into a disgusting room scarcely large enough for two; added to which, open drains of the most horrid character dispense their perfumes throughout the house. Reports from visitors and inspectors have thrown some light on these matters, yet there is one point which appears to have escaped their attention, or they may not have deemed it necessary to inform the public who own the tenements in which human creatures waste their lives, sinking into an early grave, surrounded by unheard of wretchedness, or who receive the rents. The property must belong to somebody, yet it is almost impossible to imagine any respectable individual allowing poor people to pay for such pest-houses. To remedy this frightful evil and place the responsibility upon the right shoulders, the authorities should name the owners of the abominable dwellings, under their superintendence, in order that public opinion may deal with the offenders as they deserve. It may be said "men are free to go where they please;" certainly, but they must depend upon their richer neighbours for dwellings to live in; they cannot afford to build, and are therefore compelled to put up with the dens provided for their shelter, for which they pay exorbitant rents in comparison with the upper and middle classes. Let the world know who are the kind and considerate landlords who thus charitably house their tenants, receiving as rent a sum extravagant for refuge, even clean, air and watertight;—what wretchedness, poverty, and vice, are within a stone's throw of wealth, extravagance, profligacy and selfishness. *Falcon.*

## Societies.

### AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

**Nov. 1.**—A paper was read by Mr. Harkness, on the most advantageous Method of Feeding Farm Stock. He drew attention to several reports on the subject, one of which we now present to our readers in an abridged form:—

*Mr. Littleboy's Report of the Feeding of Cattle in his establishment (Larkfield, Lucan), for the season 1852-53.*

"We had 13 acres of Turnips, an excellent crop. Estimated for I did not weigh them, that there were over 50 tons per Irish acre, and we had rather more than 3 acres of inferior ones, grown after Vetches, which would not exceed 35 or 40 tons per acre. Two acres of these were Swedes, and 1 acre White Globe and Yellow Turnip. We had also 3 acres of Mangold Wurzel grown solely with guano, with about 600 per acre; the weight of roots was from 40 to 50 tons per acre. We fed 30 sheep, with our usual stock of cows and store cattle, 60 pigs, getting boiled and steamed Turnips and Mangold Wurzel every day. I had Mangold Wurzel for our pigs all summer, and only finished them in August. My calculation is, that cows, store pigs, and sheep consumed 3 acres of green crops, leaving 16 acres to be consumed by stall-fed cattle. We had 75 cattle in all; the dates of purchases and sales will show you the time they were under feeding. We tied up our stock on hand on the 20th November, and gave Turnip and straw up to the 2d April, when we commenced to give hay with two feeds of Turnips and one feed of Mangold Wurzel, and continued that during the remainder of the time we had them. I bruised 10 barrels of Oats, and gave that mixture every day, to bring them into the same condition as the others. I could not say that I saw much improvement in the cattle that got the meal and Oats over the others that did not get such food. I had to keep back part of their Turnip food to make them eat the meal for a considerable time, which was very much against them, and some of the never eat the meal freely as they should have done. While they were getting straw they eat about 10 lbs. per day, and when they got hay they eat about 14 lbs. per day. I think, if I were to take their average consumption for the whole time they were feeding, they would consume about 8 stones of Turnips per day—say, to commence giving them 6 stones per day, and increase until some of them got 12 stones; but none got all that quantity continuously. The cattle varied very much in weight; some of them were very little over 3 cwt. when tied up, and others a little over 6 cwt. The price will nearly show the weight as I think they were bought at a little more than 22. per cwt. The small cattle increased in weight only about 1½ cwt., and large cattle increased something over 2 cwt. I consider that there is most profit by feeding good medium-sized cattle, if take feeding and all expenses into account. I hope I have given you details enough to enable you to make the calculation require. I shall now conclude by giving you the first cost, selling price, and all cash paid by way of expenses, leaving nothing out but the value of Turnips, hay, and straw. I count the latter two items to be well paid, when we have the market price.

CATTLE PURCHASED.—1852.		£	s	d
Stock on hand.				
October 1,	2 two-year-old bullocks	20	0	0
—	4 stripper cows	40	0	0
—	1 Kerry heifer	7	0	0
—	10, 7 heifers, bought at Athy	68	1	0
—	20, 5 do. do. Naas	55	0	0
—	28, 3 do. do. Smithfield	35	0	0
Nov.	1, 14 do. do. Newbridge	163	0	0
—	16, 20 do. do. Strokestown	250	0	0
—	29, 6 do. do. West Highland	150	0	0
—	29, 6 do. do. Balleyarnham	45	0	0
1853.				
Feb.	25, 2 do. do. Smithfield	14	0	0
—	25, 2 1 year-olds (own)	16	0	0
—	4 do. do. Smithfield	57	0	0
March	1, 4 do. do. do.	65	0	0
—	29, 5 do. do. do.	65	0	0
75 cattle bought at ... ..				
Deduct commission ... ..				
— Two men feeding ... ..				
— Sundry expenses ... ..				
— Linseed-meal ... ..				
— 10 brls. Oats, at 11s. ... ..				
— Interest ... ..				
96				
Profit, exclusive of value of Turnips, Hay, and straw				
514				
£143				

The above represents the Dr. or cost side of the account: on the next page is the Cr. side, containing the receipts for cattle sold.



Sold by Richard Coffy, Esq.—1853.				
March 17, 2 beasts	...	...	32	14 0
April 21, 2 do.	...	...	26	0 0
May 19, 4 do.	...	...	96	0 0
— 26, 10 do.	...	...	207	0 0
June 2, 16 do.	...	...	205	0 0
— 2, 2 do.	...	...	29	0 0
— 9, 16 do.	...	...	328	0 0
— 9, 1 do.	...	...	15	15 0
— 16, 2 do.	...	...	44	0 0
— 16, 12 do.	...	...	232	17 6
— 23, 12 do.	...	...	188	15 0
— 23, 1 do.	...	...	13	10 0
1 cow kept for the dairy, at	...	...	16	0 0

75 beasts, sold at ... £1434 11 6

The above account shows a profit of 5147. 7s. This I calculate to be the value received for 16 acres of green crops, at 321. 2s. 11d. per Irish acre.

Since receiving this document we have seen Mr. Littleboy, and gone minutely over the value of feeding material—Turnip, Mangold Wurzel, straw and hay—and quantity and quality taken into account, the following seems a fair and reasonable amount of the net profit from feeding the 75 cattle on Larkfield, in winter 1851-52.

The quantity of food consumed, and its value on the farm.

The Turnip crop I assume to be as follows:—7 acres at the rate of 50 tons per acre, and 7 acres more, at 45 tons per acre, worth on the farm 8s. per ton; 2 acres Mangold Wurzel, at the rate of 40 tons per acre, at 10s. per ton. The number of tons of Mangold Wurzel and Turnips are 745. Taking the number of days each beast was feeding they consumed about 133 lbs. per day, or 94 stones. They were fed on straw, at the rate of 10 lbs. per day, from November 20 till April 2.—Total of straw, 35 tons, at 15s. per ton; and from April 2 to time of sales, they got 14 lbs. hay per day each. Total of hay, 30 tons, at 30s. per ton. These prices are at a high rate, if we take into account the expenses that would have been incurred had they been carted into the Dublin market, which is about 5 miles, and turnpike and commission to pay. The following table will show the total value of feeding, &c.:

	Cost.	£	Dr.	s.	d.	Cr.	Produce.	£	s.	d.
655 tons Turnips, at 8s. per ton	£266	0	0							
80 tons Mangold Wurzel, at 10s. per ton	40	0	0							
30 tons Hay, at 30s. per ton	45	0	0							
35 tons straw, at 15s. per ton	26	5	0							
1½ ton of Linseed-meal, at 9s. per ton	4	10	0							
40 barrels Oats, at 11s. per brl.	5	10	0							
				387	5	0				
50 tons of straw, for litter, at 15s. per ton	£323	17	6							
First cost of 75 cattle	14	0	0							
Interest on money	15	0	0							
Sundry expenses	22	0	0							
Two men feeding	35	17	0							
Commission on sales										
				910	14	6				
Gross sales of 75 cattle	1335	9	6	1434	11	6				
600 tons manure, at 4s. per ton				120	0	0				
Balance gain by feeding	219	12	0							
				1555	1	6	1554	11	6	

The pecuniary results of Mr. Littleboy's feeding seem, from these tables, to be as follows:—

1st. Converting Irish into statute or imperial measure (that is, 16 into 26 acres in round numbers), the 75 cattle paid at the rate of 20l. per statute acre for Turnip, including hay and straw, or upwards of 6l. 15s., exclusive of manure, with upwards of 25, 25 more, in whole 8l. per head for six months' feeding. 2d. Making out this feeding account of the cattle in a more complete way, that is, putting their whole cost and expense of keep on one side of the account, and their sales value on the other, the result would be (paying full value for Turnips, hay, and straw, and all other expense) that they still leave a balance in their favour (in round numbers) of 220l., a profit within a trifle of 3l. per head.

Mr. Mechi, in some of his recent interesting agricultural observations, has characterised the feeding of cattle as a losing concern, and that the only inducement to persevere in the practice is the consequent and necessary requisition of manure for the root crops of the following year. These valuable reports, by Mr. Littleboy, of his method of feeding with uncut or uncooked food, making a clear profit of 3l. per head on each beast fed for six months, and the recent important experiments made by Colonel McDonnell, of Logan, both with food raw and cooked, show beyond doubt that cattle feeding, properly managed, will pay.

## Notices of Books, &c.

*Willik's Income Tax Tables.* Fourth edition, 1853—1860.—Useful as an exact reply to every possible question of mere fact which any one may desire to ask about the character or degree of his own amenability to Mr. Gladstone's Income Tax Act; useful also for a variety of statistical information relating to the general subject.

## POULTRY.

**SELECTION OF BIRDS FOR EXHIBITION.**—*Spanish fowls*, like all others, should be very carefully selected for exhibition, and their chief points carefully examined. Weight is desirable, but not essential in this breed. There are certain imperative rules in all classes, from which judges cannot deviate; a white face in a Spanish fowl is one of them, and all other qualities, as size, carriage, plumage, comb, &c., will not compensate for a deficiency in it. That will therefore be the first point to observe in selecting for competition. Next choose a cock with an upright comb if possible, and the hens with ample ones filling well over. Examine all of them, and especially the cock, to see that there be no red feathers mixed with the black. Let them all have blue, not black, legs—a leaden colour—good upright carriage both of head and tail. Let their high condition, and the brilliant contrast of the red comb, white face, and raven plumage, speak for them, and justify their admitted appellation of a "aristocratic fowl." You may wash their faces with a soft—very soft—sponge and cold spring water, but do not be persuaded to use pearl-ash or any such matter.—*Poland fowls* have by some been called by way of reproach the "dealers' fowl," but I fancy there is none in which they traffic so little, or by which their gains are so little increased. It is not a poor man's fowl, and the demand for them is not general. Those

who exhibit these birds must be careful to keep them in high condition, as they suffer more than any others from confinement. The first thing to be done in selecting them for exhibition is to examine the back, that no deformity may be found there by the judges; next see that the tails are all upright, as a curve is common among them. Then see that the legs are alike in colour. The top-knots of the white-crested should be as white as possible, but I have never seen them in my life without more or less black in front. In these, as in all others, never remove a feather with the idea of improving your bird; the probability is detection, and disqualification will follow. The top-knot of a good Poland hen of any colour should be like a well and full-grown Cauliflower; in the cock, the feathers similar in shape and make to those of the hackle and saddle should rise from the middle of the crown and fall over outwards; the larger they are in both sexes the better. They must be erect, not fall over on the side. Having observed these rules, and the bodies of your birds being black, and their condition being perfect, you may exhibit with safety.—Your *gold* or *silver-spangled* should be well spangled all over the body, and the spangling should not be a mere spot on a light ground, but approach more to lacing, every feather being distinctly marked, making the spangling uniform and continuous. The top-knots of these birds should be neither white nor black, but every feather should be, if possible, laced or tinged with black, on a gold or silver ground, according to the class to which the birds belong. Where they are in bearded classes, the larger the beards are the better. Weight is very desirable in these classes, but it is not essential. *John Bailey.*

## Miscellaneous.

**Improvements in Deodorising Sewage Water and Cess-pools, and in Manufacturing Manures.** By Jacques Francaise Pinel, of Pall Mall, Middlesex, agricultural chemist. Patent dated March 3, 1853. (No. 581).—This invention consists in applying to sewage water sulphate of zinc, potass, alum, chloride of sodium, and sand, so as to precipitate the solid matter contained in it, and then manufacturing the solid deposit into manure by combining it with such substances as pulverised chloride of sodium, nitrate of potass, soot, ashes, slaked lime, or muriate of ammonia, that will concentrate the gases necessary to vegetation. *Mechanics' Magazine.*

## Calendar of Operations.

### NOVEMBER.

**BERWICKSHIRE FARM, Nov. 7.**—Since my report at the beginning of last month, the weather has been on the whole very unfavourable to the completion of harvest. At that period, a small portion of the Merse grain and most of that in Lammernuir was still in the fields; and much of it was inevitably sprouted by the humidity and unusually mild temperature of the air during the ten days of rain which followed. Oat stocks especially assumed such a blackened hue that farmers began to despair of securing them at all, when, on the 14th, a fine west breeze sprung up, and revived their drooping spirits. A week of fine hard winds effected an extensive clearance of the fields, and finished the cutting of some more elevated patches. Black corn also began to find its way, though slowly, into the barn-yard. But a return of mild and heavy rains at the end of the month brought operations nearly to a standstill, save where some anxious party spread out his corn between the showers, and sometimes succeeded in getting it tied up and carried dry. I believe, however, that these few dry days have nearly brought to a close this very protracted harvest in the Lammernuirs. The crop, so far as threshing has proceeded, seems likely to yield well; but there is much of very inferior quality brought to market from high districts. Winter Wheat is sadly deficient on low-lying clay lands. Barley is nearly an average and Oats fully that—especially in point of straw. Peas have been carried in very inferior condition, but Beans promise much better. Wheat sowing made considerable progress last month on bare fallows; but, after a green crop, little has been done, on account of the superabundance of sap still in the ground. This afternoon, the wind has become much sharper, and the barometer is rising, so that we may perhaps expect better weather. Potatoes have proved a fair crop; but whites are much more diseased than red varieties, though less extensively than last year. Turnips have luxuriant foliage, but the roots are not an average crop, and consequently prices range high—7d. per week for sheep and 4d. for hoggies being freely given. All markets maintain high prices, and seem to be steady; Wheat rising every week. *J. T.*

**CHEESHIRE FARM.**—The sowing of Wheat, pulling and storing away Mangold Wurzel and Turnips is now the principal business of the farm, and considerable progress has been made in these several operations during the past week of fine weather. Barley and Oats, as was anticipated, are generally fair yielding crops, but there is still a scarcity of both in the markets. Wheat, as was predicted, is very far from an average, and the bulk of what has been threshed is still in bad condition, and consequently difficult of sale, unless at reduced prices; the few samples of really dry Wheat which make their appearance in the market are readily sold at a good price. Farmers have begun to take up their dairy stocks during the night, and are giving them straw and Mangold Wurzel or Turnip-tops, there being very little Grass left on the land. Slugs are very prevalent on the Clover roots, and some farmers are applying lime before sowing Wheat, for the twofold purpose of destroying them and manuring the land. Cheese has rather declined in price, although the quantity made is considered much below an average. Barren cows intended for the butcher are now on full feed in the stalls. The Green Melon Turnips, sown after early Potatoes, and without any additional manure, as late as the 30th July last, are now an excellent crop, and have at once proved to be a most remunerative produce on the farm. *H. M. Stapleford Hall.*

**SOUTH DEVON, Nov. 14.**—The last week of very fine weather has not only dispelled all the gloomy faces of the agriculturists, but enabled them to get on briskly with the sowing of the Wheat crop. This and the lifting and storing of Mangold Wurzel form the principal farming operations at the present time. The Mangold Wurzel crop, in the whole, is better than was contemplated, but cannot be considered an average crop. We are also busy just now making cider, and as the buyers have at length spoken out and fixed the price at 30s. per hogshead of 54 gallons from the press, most parties are readily selling all they have to spare beyond what is necessary for their own home consumption. As yet we have had little or no opportunity of buying foreign Apples at anything like a remunerative figure. Prices still continue well up. Best Wheat is now worth from 61s. to 72s., and Barley 36s. to 40s. per quarter; beef and mutton, 6d. per lb. New Wheat appears to be yielding very light in many places.

## Notices to Correspondents.

**BONES AND ACID.** *C. W.* The bones, however finely reduced, are phosphate of lime, which is very slowly soluble in rain water. The bones after treatment by acid are said to be superphosphate of lime, which is very easily soluble in rain water. No amount of division, therefore, is a perfect substitute for the action of the acid.

**DISCHARGE OF PIPES.** *C. F. A.* be the difference of level between the water in the reservoir and at the end of the pipe, and *l* the length of the pipe, both in feet, and *d* the diameter of the pipe in inches, then the quantity discharged in cubic feet per minute is equal to the square root of  $\frac{h^3}{l + 4.2d}$

Ex.—A two-inch pipe 100 feet long and dropping 5 feet between the reservoir and its discharge should yield  $\frac{5 \times 32}{100 + 4.2 \times 2} = 160$  = near 33 cubic feet per minute.

The rule we take from Gregory's "Mathematics for Practical Men."

**FLAGS IN GRASS LAND.** *King's Co. Sub.* If it grows in patches you would do well to pare and burn such patches, and dig the land and remove the roots. These patches can be easily covered again by planting bits all over of good turf taken from the good portions of the Grass. The plan of inoculation, as it is called, might be adopted for recasting the bare places thus made. We suppose the land to be drained.

**ROOT-GRATING MACHINE.** *A. Z.* We do not know what you refer to, but we are quite sure that no one with a regard to his own respectability will advertise his ability, by means of it or any other such contrivance, "to effect a saving of 50 per cent. in feeding cattle."

**SKYE TERRIERS.** *A Dog Fancier.* What do you say to "Skye," "Rona," "Staffa," the names of their islands; or "Tousie," as descriptive of the animal; or to the "Grip," "Snapp," "Pincher" order of name? If you would state them in their own language, "Speerack" and "Rappach"—we do not vouch for the spelling—are Gaelic respectively for "Hawk" and "Rough." Lastly, there are the whole class of "spicy" designations, "Nettle," "Ginger," "Pepper," "Mustard," &c., which, if you have many to name, you may, on the Dandie Dimont principle, multiply to any extent, as "Wee Pepper," "Big Pepper," "Auld Pepper," "Young Pepper," "Wee Mustard," "Big Mustard," &c., &c., &c.

**SIXEY HORSES.** *W. B.* A broad web under the belly attached at each side to a round stick, so as to keep the web stretched out; a rope about the size of a common halter is attached to each end of the stick, and on each side sufficiently long to meet above the horse's back, and is here suspended by the hook of a pulley, which of course must have a strong attachment above. A breast-band and a breech-band attached to the belly-band, and also made of stout web, prevent the horse falling or slipping forwards or backwards. An apparatus required to support half a ton must of course be very strong, particularly at the points of attachment. *W. C. S.*

## Markets.

### COVENT GARDEN, November 19.

Vegetables and Fruit are well supplied. Late Grapes are sufficient for the demand. Beans chiefly consist of Marie Louise, Giant Moreau, Chaumontel, Duchesse d'Angoulême, Passo Colmar, and Winter Nellis. The supply of Cobs is still deficient, and prices for them high. Chestnuts have made their appearance. Importations of Potatoes from the Continent are still kept up; they are also arriving in large quantities from Scotland, and very good. Asparagus is beginning to come in at from 4s. to 10s. per 100. Carrots and Turnips fetch from 2d. to 4d. per bunch. Mushrooms are tolerably plentiful. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

### FRUIT.

Pine-apples, per lb, 3s to 6s  
Grapes, hothouse, p. lb, 2s to 5s  
— Portugal, p. lb, 6d to 1s 6d  
Apples, per bush, 4s to 8s  
— dessert, p. lb sieve, 2s to 4s  
Pears, per doz, 1s to 3s  
Lemons, per doz, 1s to 2s  
Oranges, per 100, 3s 6d to 5s

### VEGETABLES.

Lettuce, Cab., p. score, 6d to 8d  
— Cos, per score, 9d to 1s  
Corn Salad, p. hf sieve, 9d to 1s  
Small Salads, p. pun, 2d to 3d  
Horse Radish, p. bundle, 2s to 4s  
Mushrooms, p. pott, 6d to 1s 9d  
— per bushel, 6s to 8s  
Sorrel, per hf sieve, 6d to 1s  
Artichokes, per doz, 3s to 5s  
— Jerus., p. hf sieve, 1s to 1s 6d  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Parsley, p. 12 bunch, 1s 6d to 3s  
Mint, green, per bunch, 2d  
Basil, do., per bunch, 4d  
Marjoram, do., do., 2d to 3d  
Watercresses, p. 12 bun, 4d to 6d

### HAY.—Per Load of 36 TRUSSES.

**SMITHFIELD, THURSDAY, November 17.**  
Prime Meadow Hay 85s to 105s  
Inferior do. ... 50 70  
Rowen ... 45 55  
New Hay ... 120 130

**CUMBERLAND MARKET, THURSDAY, November 17.**  
Prime Meadow Hay 105s to 112s  
Inferior do. ... 45 88  
New Hay ... 120 130  
Old Clover ... 120 130

**WHITECHAPEL, THURSDAY, November 17.**  
Fine old Hay ... 100s to 105s  
Inferior do. ... 90 95  
Fine new Hay ... 72 75  
Inferior do. ... 36 65  
Fine old Clover ... 118 123  
Inferior do. ... 108 112

**HOPS.—BOROUGH MARKET, FRIDAY, November 18.**  
Messrs. Pattenden and Smith report that the Hop market is in a quiet but very firm state, buyers holding off in the hope of a reduction, whilst holders are anticipating much higher prices after Christmas, the stock of good new Hops being already very scarce, whilst the stock of previous year's growths are reduced more than at any period for very many years past.

**COAL MARKET.—FRIDAY, November 18.**  
Eden Main, 24s.; Wallsend, 24s. 6d.; Wallsend  
Stewarts, 24s. 6d.; Wallsend Tees, 24s. 6d.—Ships at market 11s.

**WOOL.—BRADFORD, THURSDAY, November 17.**  
WOOL.—There is but little doing in any kind of combing wools; the spinners find, at the prices sought, it is impossible to cover cost, and they prefer their machinery being idle. There was, at the end of last week, a slight move among the staplers; but for actual consumption the demand was never slack.

**YARNS.**—The same causes we have for some weeks referred to are still in operation, the quantity of idle looms having suspended the operations of the spinning frames, and which will ere long







# HARTLEY'S PATENT ROUGH PLATE GLASS,

FOR HORTICULTURAL PURPOSES, ONE-EIGHTH OF AN INCH THICK,  
SPECIMENS OF WHICH WERE SHOWN AT THE GREAT EXHIBITION, AND OBTAINED THE PRIZE MEDAL.

JAMES PHILLIPS AND CO. respectfully beg to submit the following extracts in favour of HARTLEY'S PATENT ROUGH PLATE GLASS, taken from letters addressed to them.

"I am glad to state that my Melon plants, under Hartley's glass, are far in advance of those under the common glass, though all of the same age, in the same pit and soil, and what is more, though the former do not get the sun so soon, on account of the angle of the house."—*E. Woodlands, Esq., York Lodge, Southampton.*

"I am quite satisfied with it (Patent Rough Plate) in every way, and have no doubt of its superiority over every other kind of glass. . . . One thing I find certain, that it will bear very rough handling, without breaking or cracking."—*Mr. T. Ward, Baham Hill, Surrey.*

"As far as my experience has as yet gone, your Patent Rough Plate Glass, which I have used in my greenhouse and Viney, answers very well: AND NOTWITHSTANDING ITS WANT OF TRANSPARENCY, THERE IS MORE LIGHT IN THE HOUSE THAN BEFORE. . . . I OBSERVED NO BURNING OF THE PLANTS, NEITHER DID MY GARDENER."—*N. Hibbert, Esq., Munden House, Watford.*

"HARTLEY'S ROUGH PLATE GLASS.—The description of this material, which was supplied for the roof of a greenhouse at this place, is fully up to my wish in every respect. Its utility, generally, for all horticultural purposes, I consider surpasses all other descriptions of glass. In the first place, by its use, no troublesome, costly shading is required. Again, light is beautifully diffused by it in the interior of the house, imparting to all descriptions of plants (growing under it) a healthy, green, and dwarf appearance and habit. I am so perfectly satisfied with its action and good appearance, that I hope not to use any other description of glass in future."—*Geo. Brown, Gardens, Powis Castle.*

"My Rough Plate (bought of Phillips and Co.), has proved itself invaluable. During that trying week of June, when the thermometer was at 85° in the shade, I had no sort of protection, and many of my Vines being in pots, were close to the glass, and not one leaf was affected: whereas I know of persons who lost their crops of Grapes, from having roofs of crown glass unprotected."—*Arthur Moore, Walpole Rectory, Lynn.*

"ROUGH PLATE GLASS.—I have given the rough plate 12 months' trial, and I find it answer better than any other glass I have in use; the plants keep more dwarf, and the foliage is of a better green. I do not find it to collect more dirt, and the

condensed vapour runs down it quite as freely as on other glass. If I build more new houses, I shall certainly use HARTLEY'S Rough Plate. I purchased what I have had of Messrs. Phillips and Co. I have two houses glazed with it, which can at any time be seen at my nursery."—*N. Guiney, Surrey Lane, Battersea.*

"I am glad to say I still more and more admire 'HARTLEY'S PATENT ROUGH PLATE.' I have on all occasions recommended it among my friends, who have all liked it very much. I only wish I had used it for all my roofs. It requires no shading whatever. It admits sufficient light and heat for all purposes; and I am convinced the TRUE Hartley's Patent Rough Plate must give satisfaction. I AM MUCH SURPRISED THE ROOF OF THE CRISTAL PALACE WAS NOT GLAZED WITH IT."—*The Rev. J. Wells, Rectory, South Perrott, Crewkerne, Somerset.*

"Mr. Canning (Elsenhaw Vicarage, Nov. 28, 1851), after two years' experience of PATENT ROUGH PLATE GLASS, can have no hesitation in giving his opinion that it is admirably adapted for the roof of a viney. Mr. Canning's Grapes under it, both last year and this, have been perfect in colour and flavour, and the wood is thoroughly ripened so as to give every indication of a crop of fruit next year. The glass in question is not disfigured by dirt, offers no obstruction to the light, and not the slightest tendency to scorch has been noticed."

"I have had the experience of two years with the Rough Plate Glass, and I can speak most favourably of its beneficial effects for Peaches, Vines, Strawberries, and Pines. There is no scorching or falling of the glass, and in my opinion there is no REASONABLE OBJECTION TO ITS MORE EXTENSIVE USE, WHERE SUCH ADVANTAGES ARE ACQUIRED."—*Thomas Hobling, Esq., White Barnes.*

From the *Gardener's Chronicle*.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of gardening purposes. The best samples of it which we have yet seen is sold by MR. JAMES PHILLIPS, 116, BISHOPSGATE STREET. Among other attempts, is one to persuade buyers that thin and genuine Rough Plate, one-eighth of an inch thick, cannot be made; and consequently to compel the public to buy a thicker glass, at a higher price. There is no truth in the statement," &c.

**HORTICULTURAL GLASS WAREHOUSE, 116, Bishopsgate Street Without, London.**

**GLASS FOR CONSERVATORIES, ETC.**  
**HETLEY AND CO.** supply 16-oz SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES AND SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardener's Chronicle* first Saturday in each month.

**ESTABLISHED ABOVE SIXTY YEARS.**  
**ROBERT METTAM, BRITISH AND FOREIGN**  
**WHOLESALE WINDOW GLASS WAREHOUSE, 30, Princess-**  
**street, Leicester-square.**

16-oz. Sheet Glass in Boxes of Sheet Glass cut to size, not exceeding 40 inches.

Under 6 ins. by 4 ... 11d. p. foot.	16 oz. ... 3d. to 3½d. per foot.
6 by 4, and not exceeding 8½ by 6½	21 oz. ... 3½d. to 5d. "
8 by 6, " 12 by 10, 2½d. "	26 oz. ... 6d. to 7d. "

Foreign Sheet Glass, packed in boxes of 200 feet each, large sizes—4ths, 2½d.; 3rds, 2½d. per foot net.

Hartley's Patent Rough Plate Glass, Glass Tiles and Slates, and every description of Glass now manufactured. Estimates and Price Lists forwarded post free.

**SHEET GLASS AND ROUGH PLATE GLASS.**  
**THOMAS MILLINGTON** begs attention to his present prices of SHEET GLASS, per 100 feet:—

6 by 4, and not exceeding 8½ by 6½	14s. 6d.	Package
9 by 7, " 12½ by 9½	17s. 3d.	included.
12 by 10, " 24 by 14	20s. 0d.	

HARTLEY'S PATENT and other ROUGH PLATE, from one-eighth to 1 inch in thickness; Striking and Bee Glasses, Fern Shades, Hyacinth and Root Glasses, Cucumber Tubes, Milk Pans, Preserve Jars; genuine White Lead, Linseed-oil, Colour, Putty, Brushes, and every article required in this branch for Horticultural purposes. For List of Prices, see first Saturday in the month.—Warehouse, 37, Bishopsgate Street Without, same side as Eastern Counties Railway.

**FIRE ANNIHILATOR, OR VAPOUR FIRE ENGINE.**—Its practical value proved incontestably by 23 remarkable cases of successful use. See "Bradshaw" of this month, p. 134. Engines for Dwelling-houses, 3l. to 4l.—Office of the Fire Annihilator Company, 105, Leadenhall Street, London.

**REDUCTION IN PRICE.**  
**WEIR'S IMPROVED GALVANISED WROUGHT-IRON LIQUID MANURE PUMP.**

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

**WARNER'S PATENT FARM AND COTTAGE PUMPS.**

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. 2 s. d.

Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... 3 0 0

Larger sizes if required.

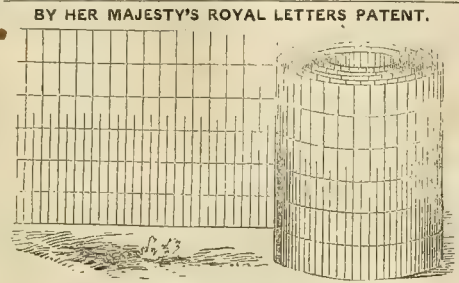
They are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

**JOHN WARNER & SONS,**  
8, CROWNED, JEWELL STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

**BIRD NETS, SHEEP NETS, RABBIT NETS, BAT FOLDING NETS** with Bamboo Poles, 14 feet long, 10s. each; Partridge Nets, 2d. per square yard; Rabbit Nets, 4 feet wide, 1½d. per yard; Cocoa Nut Fibre; Sheep Folding Nets, 4 feet high, 4d. and 6d. per yard.—At W. CULLINGFORD'S Manufactory, 1, Edmund Terrace, Ball's Pond Road, Islington (late of Strathmore Terrace, Shadwell), London.



**BY HER MAJESTY'S ROYAL LETTERS PATENT.**  
**BENJAMIN GREENING AND Co's. PORTABLE WIRE FENCES,** Manufactured by Patent Machinery.

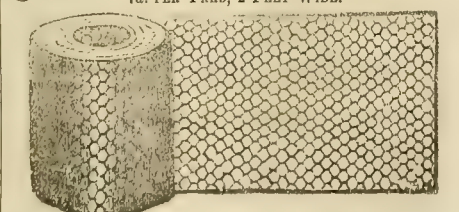
The new method of manufacturing Wire Fencing (which B. G. & Co. have invented and patented) makes it at once the cheapest, strongest, and most durable fence ever offered to the public. It is elegant in pattern and light in appearance, being also an entire fence in itself; it is much superior to the common Wire Netting Fence now in use. It can be fixed or removed by any labourer. It requires fewer supports than any other, and is infinitely cheaper than hand-made fences.

**PORTABLE HORSE AND CATTLE FENCE.—PORTABLE SHEEP AND LAMB FENCE.—POULTRY-PROOF FENCING.—PORTABLE HARE AND RABBIT-PROOF FENCING.**

Trainers for Peas, Garden Bordering, Aviaries for Poultry Pheasant Breeding Cages, Ornamental Varieties, Light and Cheap Kinds, Twisted Wire Strand Fence for the Colonies, &c.

For Prospectuses, Engraved Sheet of Patterns, and any other information, apply to Messrs. B. GREENING & Co., 1 and 3, Church Gates, and 2 and 2a, Cateaton Street, Manchester.

**GALVANISED WIRE GAME NETTING.—**  
7d. PER YARD, 2 FEET WIDE.



	Galvan- ised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong	9 "	6d "
2-inch " extra strong	12 "	9 "
1½-inch " light	6 "	6 "
1½-inch " strong	8 "	8 "
1½-inch " extra strong	14 "	11 "

If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

**MECH'S, 4, LEADENHALL STREET, LONDON.**—A visit to the SHOW ROOMS of this well-known emporium will afford an agreeable occupation for an hour or two. They will be found to contain the most superb specimens of Papier Maché produced in this country. Meich has also a world-wide reputation for Bagatelle Tables, Dressing Cases, Work-boxes, Work-tables, Desks, Table and all other descriptions of Cutlery, everything for the toilet and work-table, and an infinity of other articles.

N.B.—The renowned Magic Strip, Paste, and Razors.

**FORD'S EUREKA SHIRTS.**—Best quality, six for 4s.; second quality, six for 3s. Gentlemen desirous of obtaining shirts in the very best manner in which they can be made, are solicited to try Ford's Eureka.—"The most unique, and the only perfect fitting shirt made." *Observer.*

Country residents purchasing in any provincial town are requested to observe on the interior of the collar-band the stamp—"Ford's Eureka Shirts, 38, Poultry" (without which none are genuine). Illustrated price lists, containing directions for self-measurement, and every particular, are forwarded post free; and the pattern books to select from of the new Registered Coloured Shirting, on receipt of six stamps. Agents are now being appointed in all towns. Terms, &c., forwarded on application.

RICHARD FORD, 38, Poultry, London. Manufactory, Hay's Lane, Tooley Street.

**THE ROYAL EXHIBITION.**—A valuable, newly-invented, very small, powerful, waistcoat-pocket Glass, the size of a Walnut, to discern minute objects at a distance of four to 5 miles, which is found to be invaluable for YACHTING, and for FORESMEN, GENTLEMEN, and GAMEKEEPERS.

**TELESCOPES.** A new and most important invention in Telescopes, possessing such extraordinary powers that some 34 inches, with an extra eye-piece, will show distinctly Jupiter's Moons, Saturn's Ring, and the Double Stars. They supersede every other kind, and are of all sizes—for the waistcoat-pocket, Shooting, Military purposes, &c. Opera and Race-course Glasses with wonderful powers; a minute object can be clearly seen from 10 to 12 miles distant. Invaluable Acoustic Instruments for relief of extreme Deafness.

Messrs. S. & B. SOLOMONS, Opticians and Astrucis, 39, Albemarle Street, Piccadilly, London, opposite the York Hotel.

**FENDERS, STOVES, AND FIRE-IRONS.**—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 38, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and Perry's Place. They are the largest and most complete stock of such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ornate ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ornate ornaments and two sets of bars, 6l. 10s. to 12l. 12s.; Bronzed Fenders complete, with standards, from 7s. to 3l.; Steel Fenders from 2l. 15s. to 6l.; ditto, with rich ornate ornaments, from 2l. 15s. to 7l. 7s.; Fire-irons from 1s. 9d. the set to 4l. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges, 1st.—From the frequency and extent of his purchases; and, 2dly.—From those purchases being made exclusively for cash.

**DISH COVERS AND HOT-WATER DISHES** in every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 6s. the set of six; Block Tin, 12d. 3d. to 27s. 2d. the set of six; elegant modern patterns, 23s. 3d. to 57s. 6d. the set; Britannia Metal, with or without silver-plated handles, 73s. to 110s. 6d. the set; Sheffield Plated, 10l. to 16l. 10s. the set; Block Tin Hot-water Dishes, with wells for grates, 13s. to 19s.; Britannia Metal, 20s. to 72s.; Sheffield plated, full size, 9l. 10s.

**GAS CHANDELIERS AND BRACKETS.**—The increased and increasing use of gas in private houses has induced WILLIAM S. BURTON to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Ironmongery Establishment the largest and most remarkable in the kingdom, viz., from 12s. 6d. (two lights) to 16l. 6s.

**LAMPS OF ALL SORTS AND PATTERNS.**—The largest, as well as the choicest, assortment in existence of PALMER'S MAGNUM and other LAMPS, CAMPBINE, ARGAND, SOLAR, and MODERATEUR LAMPS, with all the latest improvements, and of the newest and most recherché patterns, in ornate, Bohemian, and plain glass, or papier-mâché, as at WILLIAM S. BURTON'S, and they are arranged in one large room, so that the patterns, sizes, and sorts can be instantly selected.

**PALMER'S CANDLES,** 8½d. per lb.—Palmer's Patent Candles, all marked "Palmer."

Single or double wicks	8½d. per lb.
Mid. size, 3 wicks	9d. "
Magnums, 3 or 4 wicks	9½d. "
English Patent Campbine, in sealed cans	6s. per gallon.
Best Colza Oil	4s. 0d.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

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No. 48.—1853.]

SATURDAY, NOVEMBER 26.

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**J. G. HENRY, Mount Carmel Nursery, Guernsey,** has for sale a few Thousand ROOTS of GUERNSEY LILIES and BELLA DONNAS in good condition, and suitable for immediate planting.

**LIME TREES,** 10 feet, 30s. per 100; 12 to 14 feet, 42s. per 100.—SPRUCE FIRS, transplanted every second season, well formed and bushy to the ground, 2 to 3 feet, 6s. per 100; 3 to 4 feet, 10s. per 100; and 5 to 6 feet, 15s. per 100; 20s. per 100.—LAURESTINUS, bushy, 2 feet, 25s. per 100; 3 feet, extra fine, 30s. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

## PLANTING SEASON.

**WILLIAM URQUHART and SONS' Priced**  
List of Nursery Plants is now ready, and may be had on application.—Dundee, Nov. 26.

**STANDISH and NOBLE'S CATALOGUE** for the present season is now ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Nov. 26.

**N. GAINES'S CATALOGUE** for the present season is now ready; it contains lists of Show and Fancy Pelargoniums, Azaleas, Fuchsias, Cinerarias, Chrysanthemums, Camellias, Calceolarias, Verbenas, Correas, Rhododendrons, &c., also a Miscellaneous Collection of Stove and Greenhouse Plants, and may be had post free on application.  
Nursery, Surrey Lane, Battersea.—Nov. 26.

**GEORGE JACKMAN, NURSERYMAN, Woking,** Surrey, 1 1/2 mile from Woking Station, South-Western Railway, begs to announce that he has just published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c. &c., and may be had on application by enclosing two postage stamps.

**ROBERT M. STARK** begs to intimate that his prices, wholesale and retail, of TREES, SHRUBS, NEW PLANTS, and FLOWERS for the season are now ready, and may be had on application.  
**CHOICE DUTCH BULBS, EARLY SEEDS, &c.,** at 145, Princes Street.—Edgehill Nursery, Edinburgh, Nov. 26.

**GEORGE BAKER** begs to say that his DESCRIPTION CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.  
G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.  
G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.  
American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.  
The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.  
The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

## PROGRAMME OF THE GREAT AND GENERAL EXHIBITION OF FLOWERS AND PLANTS, which is to take place in the Winter Garden of the SOVEREIGN DUKE OF NASSAU, at BIEBRICH, from APRIL 1 to APRIL 15, 1854.

The Exhibition begins on April 1, and closes on the 15th of the said month. It is to take place in a large Hall conveniently erected for the purpose, situated in the Duke's garden. According to the beneficence of the Duke, who allows or grants a considerable sum of money for the construction of the building and arrangement of it, as well as for the distribution of Prizes, it is expected that many partakers will find some encouragement. The greatest care will be taken of the Plants and Flowers during their stand in the said building; and will be advantageously placed, according to their different species and nature. Persons desirous of sending Plants are invited to forward them by the 25th of March at the latest, so as to give time to place them in a proper and convenient order. They are to be packed up and taken away on April 16, by a clever and intelligent man.

The Plants and Flowers specified as follows are to obtain prizes or premiums fixed by competent men:—

1st Prize.—400 florins for the finest collection of PLANTS of CULTURE, to the number of 30 at least, and 50 exemplars; 40 florins to the accessory.

2d Prize.—300 florins for the finest collection of ERICAS, to the number of 50 different species at least; 100 florins to the accessory.

3d Prize.—300 florins for the finest collection of ROSES, to the number of 100 different species, and 300 exemplars; 75 florins to the accessory.

4th Prize.—300 florins for the finest collection of AZALEAS INDICA, to the number of 50 at least, and 100 exemplars; 75 florins to the accessory.

5th Prize.—300 florins for the finest collection of CAMELIAS, to the number of 50, and 160 exemplars; 75 florins to the accessory.

6th Prize.—300 florins for the finest collection of RHODODENDRONS ARBOREUM, and their HYBRIDS, to the number of 50 at least, and 60 exemplars; 75 florins to the accessory.

7th Prize.—150 florins for the finest collection of AZALEAS pontica, in open ground, to the number of 50, and 150 exemplars.

8th Prize.—150 florins for the finest collection of bulbous plants, such as AMARYLLIS, TULIPS, HYACINTHS, and ANEMONES, to the number of 150 at least, and 300 exemplars.

9th Prize.—60 florins for the finest collection of CINERARIAS, to the number of 50 at least, and 150 exemplars.

N.B. The Gardeners of Biebrich have no intention to co-operate.

It is necessary to give notice to those gentlemen appointed to decide upon the prizes, that it is required the plants should have all the bloom or freshness of flower, and should be bloomy or very where the nature and species of the plant allows and requires it. Any new or unknown plants will obtain the preference they deserve, but in observing that besides their rarity or novelty, they should possess a flower's value or estimation.

The sending of plants to the exhibition is free from transport, and sending them by water (that is by the steamer) or by the train, and addressed EXHIBITION OF PLANTS, Biebrich.

Biebrich, Oct. 22. THIELEMAN, Director of the Garden.

## NEW SEEDS FOR 1854.

**SUTTON'S NEW CATALOGUE OF SEEDS** is now ready, and will be sent post paid on receipt of one penny stamp.

Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

## NEW SEEDS FOR THE COMING SEASON.

**WILLIAM E. RENDLE and CO., SEED MERCHANTS, Plymouth,** are now harvesting and receiving from the Growers a choice assortment of all seeds of Garden and Agricultural Seeds. Their New Catalogue will be ready early in December.

## NEW EARLY PEAS, EARLY DUTCH HORN

**FORCING CARROT, FRAME RADISH,** and other Seeds required for early sowing, are now ready.

**FAIRBEARD'S NONPAREIL, RENDLE'S FIRST EARLY, EARLY EMPEROR,** and all the best PEAS, can now be had. Apply to Wm. E. Rendle & Co., Seed Merchants, Plymouth.

## NEW HOLLYHOCKS of 1853.

**JOHN CHATER and SON** beg to announce that they can now supply good plants of the following NEW HOLLYHOCKS, and which will be found first-rate, having obtained 1st prize wherever exhibited.—Glory of Haverhill, 10s. 6d.; Admirer, 7s. 6d.; Duke of Rutland, 7s. 6d.; or the three for 21s. For description of the above see Catalogue, which may be had on application to CHATER & SON, Haverhill.  
Hollyhock Seed, 1s. 9d. per packet, containing 200 seeds.



**RENDLE'S NEW AUTUMN CATALOGUE OF FOREST TREES, SHRUBS, AND FRUIT TREES,** is just issued from the press, and can be had in exchange for one penny stamp.

The Catalogue should be obtained by all who intend Planting this Autumn, as the prices of many of the articles are very low, in consequence of the large Stock we have of many of the sorts.

We have to offer the following:—

300,000 Seedling and Transplanted	SCOTCH FIR.
600,000 do.	LARCH FIR.
200,000 do.	PINUS AUSTRIACA.
150,000 do.	THORNS or QUICKS.

As well as all other Forest Trees in proportion.

All orders above 10l. will be delivered carriage free to all the Railway Stations in Scotland, West of England, and to Cork, Dublin, and Liverpool by Steamers.

For Catalogues and further particulars apply to

**WILLIAM E. RENDLE AND CO.,**

NURSEYMEN AND SEED MERCHANTS,  
ESTABLISHED 1786. Plymouth.

**BENJAMIN R. CANT** begs to offer the following, in extra strong plants:—

#### NEW SHOW GERANIUMS.

Hoyle's Astrea, 5s.; Basilisk, 3s. 6d.; Butterfly, 3s. 6d.; Leonora, 5s.; Oscar, 5s.; Zaria, 5s. Foster's Eleanor, 3s. 6d.; National, 3s. 6d.; Optimum, 7s. 6d.; Rachel, 5s. Dobson's Gertrude, 5s.; Harriet, 3s. 6d.; Jupiter, 3s. 6d.; Pasha, 5s.; Spot, 5s.; Vulcan, 5s. The above 16 for 55s.; any 12 for 48s., or 12 of my own selection for 38s.

Any 12 of the following first-rate varieties may be selected for 20s., or 12 of my own selection for 16s.:—

Aethusa	Exhibitor	Ocellatum
Ajax	Incomparable	Purple Standard
Alibi	Lavina	Plantagenet
Butterfly	Magnet	Silk Mercer
Commissioner	Mechanica	Tyrian Queen
Diana	Major Domo	Village Maid
Enchantress	Nephris Prince	

Good older sorts 6s., 9s., and 12s. per dozen.

#### FANCY GERANIUMS.

Purchasers may select any 12 of the following for 12s., or my own selection 9s. per dozen:—

Anis	Fleur d'Marie	Miss Sheppard
Albani	Hero of Surrey	Pelopides
Beauv	Jehn Improved	Purity
Belle Marie	Little Wonder	Prince Albert
Diana Vernon	Mulberry	Prima Donna
Delicate	Marion	Queen Victoria
Exquisite	Madame Mieliez	Statuick
Fairy Queen		

#### NEW CINERARIAS.—The set of 8 for 18s.

Charlotte, 2s. 6d.; Charles Dickens, 2s. 6d.; Conspicua, 2s. 6d.; Kate Kearney, 3s. 6d.; Loveliness, 3s. 6d.; Marguerite d'Anjou, 3s. 6d.; Prince Arthur, 3s. 6d.; Rosalind, 3s. 6d.

Purchaser's selection from the following, 9s. per dozen; my own, 6s. per dozen

Annie	Effie Deane	Mr. Sidney Herbert
Adela Villiers	Experimental Blue	Nymph
Angelique	Flora M'lor	Nonsuch
Agnes Wakefield	Fornosa	Othello
Bessy	Lady Hume Campbell	Prima Donna
Catherine Hayes	Lady Gertrude	Rosy Morn
Catherine Seaton	Madame Cerito	Resplendens
Carmine	Madame Soutag	St. Clair of the Isles
David Copperfield	Mazzini	Susie
Eleanor	Marianne	

Carriage paid to London and Norwich, and all intermediate Stations. A liberal discount for cash, and the usual allowance to the trade.—St. John's Nursery, Colchester.

#### KNAP HILL NURSERY, WOKING, SURREY.

**WATERER AND GODEFREY, Nephews and Successors to the late HOSIA WATERER,** respectfully invite the attention of parties engaged in planting to the following list:—

ARACATIA imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6, and 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.

Governiana, 2 to 3 and 4 feet.

Funebris, 2 and 3 feet.

thyroides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.

Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.

repandus, 3, 4, 5, to 8 feet.

Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.

Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.

Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.

Gold Striped, 1, 2, and 3 feet.

do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

elegantissima (new striped), standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.

Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5, and 7 feet; a few magnificent plants, 10 to 12 feet high.

insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.

cembra, 3, 4, to 6 feet.

Canadensis (Hemlock Spruce), 3, 4, and 6 feet.

morinda, 3, 4, and 6 feet.

Menziesii, 3, 4, 6, and 8 feet.

cephalonica, 3 to 4 feet.

Pinsapo, large and handsome, 3 and 4 feet.

Nordmanniana, from seed, 14 feet; a few larger, 2 feet.

nobilis, stout plants, with perfect heads, about 13 feet; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arborvitae, American, 3 to 6 feet. We recommend this plant for hedges.

Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.

aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 12, 2 and 3 feet. This is a very distinct and beautiful plant of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown in this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

#### NEW PLUMS.

**MR. HENRY DOWLING**, Woolston Lawn, Southampton, most respectfully invites the attention of the nobility and gentry generally to his three new Plums—ANGELINA BURDETT, BLACK GAGE, and STANDARD OF ENGLAND, at the following reduced prices:—Fine strong 3-years-old trained trees, at 5s. each; or 2-years do., at 3s. 6d. each.

H. D. having the opportunity of fruiting them this season, can, with the greatest confidence, recommend them to far exceed all other Plums ever yet produced; they having also been laid before a committee of gentlemen, and the most competent judges in the world, and considered by them to throw all other Plums in the shade, their possessing a more sugary sweetness, the flavour almost equal to the Pine. The above can be supplied by Mr. CHARLES TURNER, Royal Nursery, Slough, Bucks; the only agent, who can give satisfactory testimonials of their quality, having this season tasted the fruit. The fruit will be figured in the December Number of the "Florist." H. D. begs also to inform the public generally, that no trees can be supplied from any other Nursery true, except those grafted in March last. Gentlemen favouring H. D. with early orders will be strictly attended to.

#### CHALLENGE TO ALL ENGLAND.

**MR. D. KING**, GARDENER AND FLORIST, Southampton, having had the pleasure of fruiting the ANGELINA BURDETT and the BLACK GAGE this season, can with confidence show the above two Plums against the Reine Claude Violette and the Purple Gage for 50l., or any other two Plums England can produce, between August 20 and September 6, 1854, and to be decided by three competent judges, and met half way to any part of England.—Southampton, Nov. 26.

"**FRIGI DOMO**," Patronised by Professor Lindley for the Royal Horticultural Society, the Royal Zoological Society, by his Grace the Duke of Northumberland at Syon House, and many cultivators of first class Horticultural and Floricultural produce.

"FRIGI DOMO," a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufacture, Royal Mills, Wandsworth, Surrey.

#### FULLER'S EARTH WORKS,

CHART LODGE, REIGATE, SURREY.

**GAWKROGER AND HYNAM** beg to inform the Nobility and Gentry, Gardeners, Nurserymen, Florists, and Seedsmen, that they are prepared to supply them with the REIGATE SILVER SAND, which is known by its superior whiteness and fine quality, and is much used in the Propagation and Growth of Greenhouse Plants, &c.

It will be sent in fine bags, and delivered to any of the Railway Carriers or Wharfs in London, not less than one ton lots of 20 bushels to the ton, at 2l. per ton. Parties requiring lots of four tons and upwards can have the Sand delivered loose or in bags, at the Bricklayers Arms Station, or within five miles of the same, at a very low price.—For further particulars, apply at the Offices of JAMES GAWKROGER, 21, Union Street, Halifax, Yorkshire; and JOHN HYNAM, 7, Princes Square, Wilson Street, Finsbury, London.

#### HORTICULTURE IN ALL ITS BRANCHES.



**J. WEEKS & Co., King's Road, Chelsea.**



#### HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation. The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

#### E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

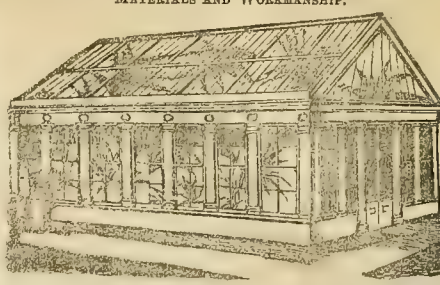
The present price for these PATENT HOTHOUSES is 1s. 3d. per foot super, and the Houses are perfectly framed and fitted up on the Premises, and then taken down again and every portion marked. E. D. having fixed these Houses in all parts of the United Kingdom, and finding, by the great demand for them, that they need no praise from him, will leave the Houses to speak for themselves.

GLAZING WITHOUT PUTTY, being only Glass and Iron used, has been considered of sufficient value to be used in Roofing in the Public Baths and Washhouses, Endell Street, Bloomsbury; and E. D. is now engaged roofing the Baths and Wash-houses at Bermondsey. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, the most practical principles, and all the best materials used.

Printed Price List sent on application.

#### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY AND ORMSON**, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

#### SHEET GLASS AND ROUGH PLATE GLASS.

**THOMAS MILLINGTON** begs attention to his

present prices of SHEET GLASS, per 100 feet:—

6 by 4, and not exceeding 54 by 64 ... 14s. 6d. } Package

9 by 7, " 12 1/2 by 8 1/2 ... 17s. 3d. } included.

12 by 10, " 24 by 14 ... 20s. 0d.

**HARTLEY'S PATENT** and other ROUGH PLATE, from one-eighth to 1 inch in thickness; Striking and Bee Glasses, Fern Shades, Hyacinth and Root Glasses, Cucumber Tubes, Milk Pans, Preserver Jars, genuine White Lead, Linseed-oil, Colour, Putty, Brushes, and every article required in this branch for Horticultural purposes. For List of Prices, see first Saturday in the month.—Warehouse, 87, Bishopsgate Street Without, same side as Eastern Counties Railway.

#### GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

**JAMES PHILLIPS** and Co. have the pleasure to

hand their present prices of Glass for Cash:—

SHEET SQUARES. CROWN SQUARES.

In Boxes of 100 feet. In Boxes of 100 feet.

Under 6 by 4 ... £ s. d. ... 8 6

6 by 4, and 64 by 44 ... 0 12 6 ... 12 6

7 " 5, " 74 " 54 ... 0 15 0 ... 14 0

8 " 6, " 84 " 64 ... 0 15 0 ... 14 0

9 " 7, " 10 " 8, 12 by 9, 12 by 10, 14 by 10 ... 1 0 0

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 5d. per square foot, according to size.

21 oz. " 3d. to 5d. " " " "

28 oz. " 3 d. to 7d. " " " "

Squares for Orchard Houses, on Mr. Rivers' plan, 20 by 15, 20 by 14, 20 by 13, and 20 by 12 always on hand. Cases of Sheet-Glass, about 40 by 30, 16 oz. to the foot, 2l. 2s. per Case of 200 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

#### GLASS FOR CONSERVATORIES, ETC.

**HETLEY AND CO.** supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 8d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

#### TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

#### PATENT GLASS TUBES, Iron

Coated with Glass, Gutta, Percha, Combined ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Shice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

**FREEMAN ROE,**  
HYDRAULIC ENGINEER,  
70, Strand, and Bridgefield, Wandsworth.

#### PROTOXIDE ANTI-CORROSION PAINT, at a

very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it.—Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

#### LIGHT, CHEAP, AND DURABLE ROOFING.

#### CROGGON'S PATENT ASPHALTE ROOFING

FELT is perfectly impervious to rain, snow, and frost, and has been tested by long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by unpractised persons.—Price ONE PENNY PER SQUARE FOOT. Croggon's Patent NON-CONDUCTING FELT for steam-boilers and Pipes, saves 25 per cent. of fuel.—Samples and testimonials sent by post on application to CROGGON & Co., 2, Dowgate Hill, London, who also supply SHIP-SHEATHING FELT and INODOROUS FELT for damp walls, and lining iron houses, to equalise the temperature.

#### STEPHENSON AND PEILL, 61, Gracechurch Street,

London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.







up to keep them in their places till the rollers were applied beneath them. The ball, which was square, was next undermined on all sides, and four planks were put round it and underneath it, all fastened together at the corners with strong iron bolts, thus making a frame to which the upper planks in the tunnels were attached. The ball was again tunnelled through cross-ways in five places, in each of which a roller was put so as to cross the main tunnels above the planks in their bottom, and below those at their top. Two more planks were put down at the sides to support the ends of the rollers. This having been done, all the earth was carefully cleared from below the ball, which on its plank table, as it were, was thus let quietly down on the rollers. And now, having got the whole ball set free, a level roadway made for it, furnished with planks, and everything in readiness for moving, with the aid of three crabs, one a double purchase one, and two of single purchase, two screw jacks, and some able-bodied men, the mass travelled on the rollers (which were continually picked up from behind and placed in front as soon as they were disengaged), the distance already mentioned. The ball of earth was 15 feet square, and averaged 3 feet 6 inches in depth.

Such is our reporter's description of the operation, which we dare say will prove quite as successful as Mr. M'GLASHAN'S. But at what a difference of cost!—to say nothing of the failure of a first attempt to move the tree at Smallberry Green. The Scotch apparatus would have torn it up with the earth attached to it, and might perhaps have moved 20 trees while Mr. DAVIES'S plan was removing one. But to have done this with any reasonable chance of success Mr. M'GLASHAN'S machine must have been much improved, and far more time must have been expended upon the work than was the case in the Garden of the Horticultural Society. It is impossible to succeed generally in moving large trees if the fibres of the roots are much destroyed. The tree moved at Chiswick was a Poplar, the easiest of all trees to transplant, and the wet season that followed it almost ensured the success of the trial. Had the tree been a Thorn, and had the season been hot and dry, we have no doubt that the experiment must have failed. Let no one, therefore, imagine that the careful preservation of the fibrous roots of trees is unimportant, and that main force can be substituted for skill. Such doctrines may be held in the Royal Forests, but are certainly not entertained by rational men who understand the nature of vegetable life.

The Scotch apparatus was imperfect, as we pointed out at the time; and some part of its action was highly objectionable. To cut out a cubical mass of earth by long spades driven into the soil through whatever roots might intercept their edges, was an idea that would never have occurred to a person possessing experience in transplanting, or even a knowledge of the rudiments of vegetable physiology. Neither was proper provision made for preventing the mass of earth thus cut out from crumbling down in the act of removal. But these defects appeared to us beside the true question to be considered. It was the mode of lifting that demanded attention far more than the manner of preparing the tree for the lift. The first was good; the second bad. But the second was obviously capable of great improvement. Had a cube of earth, of sufficient size, been marked out; had the earth beyond the cube been removed in the usual manner to the depth of 3 feet, and the fibrous roots been carefully tied up before the Scotch apparatus was applied, then the mass could have been held securely together by planking, or other timber-work of sufficient power, and the tree might have been wrenched out of the ground without injury; for the perpendicular roots torn off by so violent a lift are of no importance to the life of any tree. Of course, such a process would be costly if applied to a single tree, though not so expensive as that above described; but when much work has to be done the case would alter materially, and the process would, we apprehend, become the cheapest known.

VOLUMES have been written during the present season respecting the Grape mildew, which has spared but few Vineyards, and left but poor comfort for the future, and, as if to verify the old proverb that misfortunes never come single, our attention is now drawn to a new enemy, which is destroying the WINE stored up in our CELLARS. A gelatinous crust spreads over the corks, insinuating itself for some distance down the neck of the bottle, penetrating deeply into the cork by means of delicate threads, &c., destroying its texture, and after establishing a communication with the contents below, as appears very clearly in a vertical section, imparting to them its offensive odour, and so rendering the wine perfectly nauseous. A single specimen

only of the parasite has at present reached us, but though not in a good state it has at least satisfied us that the enemy is a fungus. On the seal it forms a dirty yellow or brownish crust of a slightly gelatinous texture, and exhibiting a quantity of tender irregular branched threads containing a quantity of nuclei, resembling strongly those in some *Tremella*, without however any trace of fruit; but where it has been protected from external contact, the mass, which in parts acquires a reddish tinge, and looks slightly lobed and corrugated under a common lens, when examined with high powers exhibits a quantity of more or less confluent sub-hemispherical bodies seated on myceloid threads similar to those just described, and filled within with that peculiar tissue which occurs in the fungoid productions known under the name of *Sclerotium*, and in the immature perithecia of *Sphaeria* and its allied genera. Beneath the fungus the cork is mottled with large white patches abounding in mycelium, and having when fresh a very offensive smell, which however vanishes when the cork is dry; in a few months more the mycelium would clearly have penetrated much more deeply, but the slightest communication between a matter so offensive and liquids so susceptible of imbibing the taint of noxious matter as wines, is quite sufficient to produce a degree of evil which is past remedy.

The nature of the offending substance being ascertained, though with the materials before us we cannot point out its immediate affinities, it may perhaps not be difficult to find a remedy. We should suggest that as soon as the wine is corked the top of each bottle should be dipped in a strong solution of corrosive sublimate, which, though not penetrating deeply into the cork, would prevent any superficial growth of fungus, without any possibility of detriment to the wine; and a portion of the same substance might be mixed up with the sealing-wax; or instead of sealing-wax a little cap of metal might be used, which, if nicely fixed, would prevent the access of any fungus from without. Or even without the use of any substance so dangerous to handle as the sublimate, if the corks were steeped in boiling water when used, and as soon as the bottles were corked the tops were dipped in a mixture of wax and resin, and a metal cap at once put on the whole, there would, we conceive, be a complete prevention of the mischief, and at the same time those larvae which sometimes do so much injury by eating round the cork would be completely baffled. *M. J. B.*

#### DIPLADENIA CRASSINODA.

Few plants of a twining character are so suitable for pot culture as this charming *Dipladenia*. It does not grow too strongly, and under proper management it produces a profusion of large, *Convolvulus*-like blossoms, which remain long in perfection. For the decoration of a conservatory or flower-house during summer and early autumn, I know of no more useful plant; for if carefully removed to a cool temperature as soon as the blossoms expand, they will become higher coloured, and remain longer in beauty than in a stove.

Cuttings made of short-jointed, half-ripe shoots, will root freely if planted in sandy, peaty soil, covered with a bell-glass, afforded a gentle bottom heat, and carefully tended with water. Propagation should be proceeded with as early in the season as circumstances will admit, in order that the plants may be well established before autumn. To effect this, however, the cuttings should be potted as soon as they have become sufficiently rooted to bear handling. After potting, let them be placed near the glass, in a gentle bottom heat, with a moist, warm atmosphere. Shade them from the mid-day sun, and keep them growing briskly till late in autumn. On the approach of winter, gradually inure them to a cooler and drier atmosphere, in order to ripen the wood. While at rest afford them a light airy situation, where the temperature may range from 50° to 60°, and give very little water to the soil. The plants should now be strong and healthy and in 7-inch pots; and if this is not the case, as possibly it may not be, they should be grown on another season in the nursery pit, for it is useless to think of producing a large handsome flowering specimen without a good strong healthy plant to commence with. As early in spring as a spare corner in a pit or house with a gentle bottom heat and a moist warm atmosphere is at command, where the plants can be kept near the glass, turn them out of their pots, repair the drainage, and clear away all unkind soil, repotting in the same pots, and plunging in a bottom heat of about 80° or 85°. Any sickly points that may happen to be on the shoots should be cut back to a plump bud, and weakly ones removed altogether, which will throw the sap into the stronger shoots, and those should be kept regularly tied, so as to expose the foliage to light, and induce the buds to break regularly. When growth commences regulate the shoots so as to induce the buds to break regularly all over the plant, and as soon as active root action has been induced shift into the blooming pots. Apply the trellis at once and keep the shoots regularly tied in as they advance in growth, bending the points of any gross one downwards, which will equalise the growth, and keep them sufficiently thin

to admit light and air. Plants, the pots of which are plunged in any warm moist material, require much less water than if the pots are exposed to a warm dry atmosphere, and as this *Dipladenia* is very apt to suffer from excess of moisture at the root, water must be applied with care, especially in the case of recently potted specimens. To give a liberal watering every time the surface soil may appear dry would probably destroy the specimen so treated, and therefore means must be used to ascertain that the ball is really dry before applying water, and when this is the case give a liberal soaking. When the trellis or frame is well covered with strong healthy wood, which, if all goes on well, should be the case early in summer, unless the plants exhibit a tendency to produce flowers, remove them from bottom heat to a rather dry atmosphere for about a fortnight, and give but very little water at the root, which will check growth, and produce a tendency to bloom, and return them to a warm moist place, where they will soon be covered with blossom buds. I have already stated that the plant may be removed to a cool conservatory or greenhouse when had in bloom in summer, but in removing it from a moist warm close situation to a cool dry air one some management will be necessary to prevent the leaves getting discoloured, or the plant sustaining a check. After blooming place the plants in a house where the temperature may range rather high, to ripen up the wood, before placing them in their winter quarters; or in the case of plants that flower early, they may be allowed a short season of rest, then repotted, pruned back, &c., and be placed in bottom-heat and induced to make growth before winter; plants so treated must not be placed in a low temperature during the winter, as this would discolour the foliage, and probably injure the roots and wood, but should be wintered in a light house where the temperature may range from 55° to 60° and be very carefully watered; specimens managed in this way will be ready to burst into bloom at any time in spring; they may be placed in a warm moist temperature.

The *Dipladenia* is not a favourite with insects, and with a properly moist atmosphere it will hardly suffer from any pest except black thrips, which may probably attack it, and if so should be eradicated by frequent doses of tobacco-smoke. The best soil for this lovely plant is good rich turfy peat and light sandy turfy loam, in the proportion of about two-thirds of the former to one-third of the latter. To this add a very liberal allowance of clean sharp sand, say one-fourth of the whole, and a quantity of clean potsherds broken small, and well mix the whole together. The soil should be ready mixed, and before using it placed where it will acquire about the same temperature as that of the ball of the plant to be shifted, and it should be in a proper state as regards moisture. *Alpha.*

#### MANAGEMENT OF CIDER APPLE TREES.

(Continued from page 741.)

*Insects which attack Apple Trees.*—We will not speak here of caterpillars, the way of destroying which (collecting and burning their eggs, which are glued in rings upon the shoots), is well known. The Apple has two more formidable enemies, one of which, the *Aphis lanigera*, or American blight, affects to live exclusively on it. The fecundity of the *Aphis lanigera* is amazing, and the cottony flocs with which it is surrounded allow of its being carried to a distance by the wind, and so it infests a great many trees in a very short time. This insect pricks the bark to suck the sap, and as more of it is drawn than the insect can suck in, numerous little knobs, sometimes as big as a Walnut, are formed. It prefers placing itself on the under sides of shoots and branches, on the wounds resulting from these being removed, and also in cracks in the stem. It may be destroyed by the application of alkaline leys, and by fatty matters, such as oils of any sort, which suffocate the insect immediately; but it is dangerous to apply oil to the green leaves and young shoots, because it destroys them also. But these modes, and some others of a like nature, can only be employed in the nursery and garden. They would be impracticable in the case of large trees in orchards and fields. The following is a remedy which, if its virtue were established, would be of the greatest importance. We have not yet had time to try it, but we give it according to a statement made in an elementary treatise on pruning and training fruit trees, published at Bordeaux in 1846, by M. Ramey. M. Ramey says, that soot preserves Apple trees from the *Aphis lanigera*, and he recommends its application in the following ways:—For young trees about to be planted, the roots should be steeped for three or four days in a decoction of soot; or a shovelful of soot is thrown on the roots before they are covered with the earth. In the case of trees that have been planted some time, the extremities of the roots must be uncovered, and the soot laid within reach of their spongioles. M. Ramey states that Apple trees thus treated have been ten years free from the aphid. Another insect, a little coleopterous one, prefers to attack old varieties; it is unfortunately alike impossible either to prevent or repair its ravages. It is to this that we should ascribe the loss of the trees of the *Reinette grise* (an excellent table Apple), of the *Peaux de Vache*, and of some other kinds, and not to the American blight, as has been erroneously asserted. This insect deposits its eggs under the bark at the base of young shoots. When the eggs hatch, a brood of very small worms come out, which gnaw under the bark, and, in consequence, the whole of the shoot that is above their place of operation appears in the following spring as dead wood. By taking off the bark at the base of these



dried up shoots, the erosions made by the worms are easily perceived.

**Parasitical Plants.**—Only one really parasitical plant lives on the Apple tree. This is the Mistletoe, *Viscum album*, a little dioecious shrub, which grows on the Apple, Virginian Poplar, Sorbus, Hawthorn, &c.; it is a little, green, round bush, the female of which produces white berries as large as a Pea, having a viscid pulp, and each containing a seed. The blackbirds and thrushes are fond of the berries, the seeds of which they sow. The Mistletoe lives on the sap of the Apple tree, and when present in great quantities it renders the trees sickly and barren; and it often eventually causes their death. It is, therefore, very important to destroy all the Mistletoe we can see on the trees by cutting or breaking it off as close to the infested branch as possible by means of a pruning-hook; a cow-boy or other farm-labourer can do this. The Mistletoe thus obtained may be given to sheep or cows, for both these animals are very fond of eating it. A law is said to exist which renders compulsory the destruction of Thistles; one compelling that of the Mistletoe would be equally useful, if enforced; for unless that were the case, careful persons would fall victims to the negligence of their neighbours, because the seeds are sown by the birds wherever they perch.

(To be continued.)

## ENTOMOLOGY.

### THE GRUB OF THE RASPBERRY BUD.

Our attention has been several times directed by our correspondents, in the course of the spring, especially from the middle of April to the end of May, to the serious injury committed upon the bloom buds of the Raspberry by a minute scarlet-coloured caterpillar, which devours the whole of the interior in the same way as the Rose-buds are destroyed by the caterpillars of several species of Tortricidae. It is not, indeed, surprising that the young shoots of this or any other plant should form the especial point of attack by its enemies among the insect-tribes; full of juices and swelling with young vegetable matter, the interior of the buds, occupied by the embryo fruit, soft and delicate, offers a dainty dish to the young grubs which have undergone a fast of several months' duration; at the same time, however, the attack of the insect involves the destruction of the numerous berries which would have been produced from that particular bud, and thus, where the insects are numerous, not only is the crop destroyed, but the growth of the shoots for the following year's crop must also be affected.

The caterpillar which is found in the heart of the bud, feeding thus luxuriously, is about a quarter of an inch long, thickest in the middle of its body, and growing attenuated towards its hinder extremity; it is fleshy in texture, of a bright scarlet colour, with a few very short slender hairs scattered over its surface, the head black, with a central pale longitudinal line, and a transverse pale one across the base of the upper lip; the segment following the head has two blackish double spots (each pair placed longitudinally) in the middle, and the anal segment is also black. It has three pairs of black, jointed legs attached to the three segments following the head, and four pairs of ventral and one pair of anal prolegs of a fleshy colour. After consuming the bloom-buds, it eats out the principal body of the fruit-stalk, leaving only the skin, and causing the remainder to become languid and die off. Of course the presence of the depredator is easily detected at this period by the drooping and withered state of the young buds and shoots.

At the middle or end of the month of May or beginning of June, the caterpillar forms a slight web amongst the shrivelled-up leaves, in which it becomes a small light chestnut coloured chrysalis of the ordinary form, but distinguished by two peculiarities of structure deserving of notice. The tongue-case, instead of lying flat and straight on the breast, is rolled up spirally, although flat; and the penultimate segment of the body has two small rather strong recurved spines on the back, serving to retain the chrysalis partially in its cocoon when the period for assuming the perfect state arrives, and when the chrysalis wriggles itself partially out of its cocoon. The chrysalis state lasts about a fortnight or three weeks; some which I reared appearing as moths in the last week of May, whilst those which Bjerkander observed in Sweden came forth on June 23—a difference, of course, produced by the difference in the locality where these observations were made. The moth is a charming little creature, with shining brown upper wings, which are beautifully varied with gold-coloured spots, two of which, of larger size than the rest, are placed on the inner or upper edge of the wings, meeting (when the wings are closed) those on the opposite wing, and five or six on the fore margin, with a number of small ones on the disc beyond the middle, forming several irregular rows. The hind wings are uniform dark brown, and the head is thickly clothed with gold-coloured hairs. The insect is the *Tinea corticella* of Linnaeus, so named because the Swedish naturalist found it in the crevices of Apple bark, and so supposed it to be attached to that tree. It is described by Haworth, Stephens, and myself under this specific name, being placed by Stephens in his genus *Lampronia*. Another Swedish naturalist, Bjerkander, observed its habits in 1789, and published a description and figure of the insect in the Transactions of the Swedish Academy for 1781, naming it *Tinea rubicella* (Kongl. Vetensk., &c., 1781, p. 20, pl. 1, f. 9, 10). Fabricius (followed by the more recent German entomologists)

described it again as a new species under the name of *Alucita variella*; Duponchel, under that of *multipunctella*; and Sodoffsky, under that of *Fischerella*; and it is the *Glyphipteryx variella* of Mr. Stainton's Catalogues of Tineidae.

The parent moth deposits her eggs on the stems, and the minute larvæ are hatched at the beginning of August, being about a line long on the 4th of that month, according to Bjerkander. They feed on the foliage and secrete themselves during the winter months,



renewing their attacks on the young buds in the following spring. It is, of course, important to know where their winter quarters are to be found, and it is most probably upon the stems of the young shoots which are destined to produce the next year's fruit that the female has the instinct to deposit her eggs, and not upon the old wood, and it is here also most probably that the winter quarters of the larvæ are taken up. Its destruction, however, at this period would, doubtless, be too troublesome to be attempted to a considerable extent, and it seems to me that the only available plan for the destruction of the insect must be deferred until they have attacked the spring buds, the drooping appearance of which give evidence of their presence; of course the mischief would be done for the current year, but if they are then destroyed the crop of next year's fruit would be saved. This destruction may be accomplished either by splitting open the buds and killing the caterpillar when found, or more simply by giving such buds as appear diseased a smart pinch, which would be equally efficacious in killing it. A child trained to this process would kill hundreds in a day. J. O. W.

## Home Correspondence.

**The Weather and Fruit Crops.**—Permit me to furnish you with a few notes I have made upon the difference of temperature between this part of Shropshire and the neighbourhood of London. I take the extremes of cold from June 19 to Nov. 21, 1853.

	BISHOPSCASTLE. Fahr.	CHISWICK. Fahr.
June 19.—After thunderstorm, young shoots and leaves of Pears crimped for a day or two	35°	41°
Aug. 21.—Thunder and rain; dense fog at nightfall	34	44
Sept. 6.—Very hot day; early copious dew at night; hoar frost in the morning	34	42
Sept. 10.—Very dry, and frosty at night (Dahlias not much injured)	30	41
Oct. 2.—Hailstorm at 4, P.M.; Dahlias, Tom Thumb Geraniums, &c., destroyed	26	27
Nov. 9	25	24
Nov. 17	20	18
Nov. 21.—Very hoary and rhimy	17	21

My thermometer (self-registering), I purchased at Watkins's, Charing Cross. I am in a low situation, soil deep hazel loam, very fertile for Grass, timber, &c., but our late spring and early autumn frosts interfere very much with our fruitfulness. There is no standing water near us; a very small rivulet drains the valley, which is sufficiently drained, the soil being sound, and indeed dry. You will observe the great disagreement of our cold temperatures with those of Chiswick. In the summer months Chiswick is the highest, whilst in the late severe nights we have not sunk so low as Chiswick; and I have long remarked this fact, of the range at Chiswick being much higher than ours in hot seasons, and lower in cold ones. Surely, then, we may inquire, Why do we suffer so much more in our fruitfulness? We have had no Pears these seven years. I have about 30 varieties in my garden and orchard, but with very few exceptions none of them have brought fruit to perfection this season; all are cracked and blackened, even Poir d'Auch and Hæcon's Incomparable, against walls or on standards. Has the neighbourhood of London been remarkably deficient in Pear, Cherry, or Plum crops of late years? Have the Pears this season been cracked and blackened—utterly worthless? We have had a fairish sprinkling of Apples. You would greatly oblige me by noticing what has been the condition of the Pear and Plum crop round London, generally speaking, during the last seven years. Hereabouts, the seasons have certainly been unpropitious. Some of my friends say our new fruits are too tender; but the old kinds, Swan's Egg, Black Burgundy, Autumn Burgundy, Jargonelle, fare no better than the new ones. No Damsons where we used to have sackful. Orleans and Green-

page Plums used to be in our market, such things never heard of now. Surely all these matters are but symptoms of some change in temperature or atmosphere which has caused other more palpable destruction and loss in our productions, e.g. Potatoes and Carrots. W. M. R.

**Wintering Antirrhinums.**—I have found the following plan of wintering these preferable to any other mode I have hitherto adopted; it not only preserves them from the effects of damp, to which they are so very liable in winter, but it protects them from slugs. I strike the cuttings in July and August, under cap-glasses, on a cold cutting bed; and when rooted I pot them into well-drained 3-inch pots, using mould of ordinary quality. I put four and six plants in each pot, the later the cuttings are rooted the more plants I put into a pot, and increase the drainage in the same proportion; my reason for doing this is to get the pots as full of roots as possible before the winter sets in, as, the less mould there is about them not penetrated by roots the better; the frame in which they are wintered is raised by means of a brick at each corner; in this way a plentiful supply of air is secured, which contributes greatly to their preservation, and to still further promote this desirable object, as well as keep slugs from the plants; I place each store pot on an inverted pot of the same size; I do not water during winter when the weather is wet, or close and damp, for three weeks and a month together, and then the morning of a fine day is chosen for the operation. I keep the lights off day and night in dry weather; if sparingly watered and sheltered from rain they stand the sharpest frosts without injury. R. Miles, Kingsdown.

**Protecting Pits, Frames, &c.**—Nothing is equal to or so effectual and inexpensive as a protection to pits, frames, &c., as glass crates stuffed with shavings, and placed all round these structures; they are dry non-conductors, and when packed together have a neat tidy appearance. Trellis shutters also, stuffed with shavings, when laid over the lights, are very efficient in keeping out frost. As mats are scarce and dear, and we are likely to have a sharp winter, the above method of protecting plants, &c., might become very general with great advantage, as it has three essential qualities—namely, durability, cheapness, and simplicity to recommend it. An Observer.

**Wooden Shingle versus Thatch.**—It is surprising that in countries where Oak "obtains," especially where Oak paling is much used, wooden shingles should not be employed instead of thatch in all out-houses, and especially in all garden summer houses. If made of winter-felled Oak, they will last for 50 years; no mischievous boys can break them as they invariably do tiles, and the pleasant grey they put on in the third year is more pleasing to unesthetic islanders than the red tiles; they are cooler for cattle than either tile or ugly slate, and can be made by any clever out-of-door man. In the case of a circular arbour, belfry, or dovecot, there is not the expense of different sized tiles, moreover they are very light. Somerset.

**A New Double Yellow Rose.**—Mrs. Hervey, in her book recently published ("The Adventures of a Lady in Tartary, &c."), says, "We saw some Rose bushes bearing double yellow Roses, both near Himme, and also in the vicinity of this village (Lamerou in the country of Ladak). The leaf is a briar, very sweet." Some young enterprising Rose-grower ought to go in search of this. She also mentions a Walnut cultivated in the valley of Kashmir, with a shell "as thin as paper, and easily broken by the hand." T. R. [We have already in this country Walnuts, called Highflyers, whose shell is quite as soft as this.]

**Hybrid Ferns.**—Having carefully perused your article (see p. 691) on the means for producing hybrid Ferns, I have come to the conclusion that though it may be possible occasionally to obtain hybrids, still the probabilities of raising numerous crosses are small; nevertheless, regarding the subject as one of great interest, and open to much further inquiry, I shall without hesitation state the difficulties that strike me as being in the way, hoping that further research will either overcome my objections, or show that they are only imaginary. Permit me, then, to ask for an explanation of two or three botanical terms which it is desirable clearly to understand. Pray what is a Fern seed? Is it a small body separated from a cluster of fructification? [Yes.] And what is a protothall? Is it a single germinated seed? [Yes.] You say, "In each protothall is lodged an abundance of antherozoids and spores"—this induces me to inquire whether the former exercises a sexual power, or is merely the matrix in which is lodged the antherozoids and spores. Allow me now to offer the reasons why I think it is improbable that many hybrid Ferns will be raised. The antherozoids seem to represent the farina of flowers, whilst the spores take the place of unfertilised seeds; assuming this as correct, the probable obstacles to hybridisation will be manifest by considering the difficulties that the hybridist has to contend with. Is it not generally admitted that if several sorts of farina be mixed together and applied to a flower, that that flower can only receive one kind of farina; and do not hybridists know to their cost that a flower will rather seed with its own farina than with that of a stranger—and is not this a wise provision of nature to keep each species of plant pure and distinct. It therefore seems reasonable to suppose that where several kinds of antherozoids are mixed together, the Fern spores will select their own antherozoids in preference to those of other species, especially as the protothall is the receptacle of its own spores and antherozoids. I have only to add that I shall



shortly adopt your instructions, when it will afford me great pleasure to be able to report that my judgment has been in error; hitherto I have only raised one distinct seedling Fern, and I regard it as an accidental sport of *Scolopendrium vulgare*; it has the singular propensity invariably to produce two fronds on each stalk—these fronds are often divided at the ends, whilst all are crisped, and several toothed or indented. *Abraham Clapham, Scarbro'*. [If our correspondent will read our former articles attentively, he will find his inquiries answered by anticipation.]

**Hardiness of New Pears.**—The unusual severity of late frosts and long continuance of easterly winds this spring having injured the crop of many sorts of Pears, besides other fruits, it appears desirable to record such of the new varieties as have proved hardy in my small stock:—*Poire d'Avril*, *Susette de Bayay*, *Soldat Espereu*, and *Belle apres Noel*, were without blemish on a south-west wall (the abundant fruit of the latter beautifully coloured much resembled small Peaches); on a south-east aspect *Triomphe de Jodoigne* and *Elise de Heyst* were also good. Among older varieties the following escaped with a very few cracked or spotted, although the flavour suffered for want of sun, viz., *Easter Beurre*, *Beurre Rance*, and *Glout Moreau* on a south-east wall; *Beurre Diel* on north-east and north-west walls; *Vicar of Winkfield*, *Broom Park*, and *Seckle*, on pyramids; and *Ne Plus Meuris* on a south-west aspect. If persons in other places possessing more of the new varieties would also note their success this season, it might be of assistance in making future selections. On observing in one of your late Numbers a well merited tribute to the memory of the raiser of the *Blenheim Orange Apple*, it occurred to me that admirers of good dessert Pears are not a little indebted to Mr. Rivers, who, if I am not mistaken, is the introducer amongst us of many valuable additions of this desirable fruit of later years, such as *Triomphe de Jodoigne*, weighing 9 oz., and *Poire d'Avril* 8 oz., even in this unfavourable season. *J. Abell, Limerick*.

**Root-pruning and annual Lifting of Wall Trees.**—The frequent failure of the Peach and Apricot crops (at least in this neighbourhood) naturally attracts attention to plans which are said to be successful elsewhere. Now I hear of a garden where invariable success attends the annual lifting of the wall trees. Do you think the plan safe? I continually root-prune Pears, &c., in the open garden with good results, but upon attempting the same on a healthy *Bellegarde* Peach last autumn, I found that (notwithstanding the usual sulphur wash) the tree became covered with red spider, and remains so to the present moment, notwithstanding the damp season and lime-water syringing through the summer besides. The tree has, however, made wood sufficiently strong to show that the root-pruning was not excessive. Two years ago I root-pruned a *Winter Nellis* Pear against a wall. This also, the next spring, was covered with red spider. *J. M. B.* [Whilst wall trees are young, they may be, with care, safely removed every year, or once in two years; but removals often repeated cannot be advantageous. Removal tends to the production of numerous fibrous roots, and to the nonformation of large roots, conditions that are desirable in cases of bad subsoils, but immaterial where the soil and subsoil are good; for in such the trees grow strong enough, so much so that various shoots in each tree will most assuredly form wood more like that of stems than branches, whilst others will be too weak if not timely looked after. It is an easy matter to set off the branches of a tree so as to form equidistant radii; but if means be not adopted to equalise the flow of sap among all the branches, the tree will not continue in good condition; the weaker branches are the most liable to have their foliage attacked by insects, and the least able to withstand the shock. Perhaps, by root pruning your *Bellegarde* you have rendered the supply of sap unequal to the demand; then the juices, too much inspissated for flowing freely, are nevertheless rendered extremely palatable to insects; and what these like most they doubtless thrive best upon. Your tree, it appears, has made good shoots, but probably not without a severe struggle in the early part of the season, during which it became the prey of numerous enemies. Had the tree been accustomed to annual or even biennial lifting, the flow of sap would have suffered less derangement. Root-pruning may be very properly resorted to in some cases; but it is not always safe. Lifting is generally more to be preferred. But the roots are often blamed when, so far as they are concerned, they are only doing their duty. We can often perceive that they are affording a sufficient supply of sap for the whole of a tree; but we sometimes mutilate them because they do not distribute that supply equally into branches which we, to suit certain purposes, have found necessary to constrain from their natural position. This equal distribution they cannot effect; we can to a great extent, and always with certain advantage. Therefore, until we have acted properly in this respect, we cannot say that we are justified in meddling with the roots.]

## Societies.

ENTOMOLOGICAL, Nov. 7.—*J. O. Westwood, Esq., V.P.*, in the Chair. Amongst the donations received since the last meeting were a box of splendid Lepidoptera from Bogota, presented by Mr. T. Jones Stevens, including a fine specimen of *Morpho Ganymede*, hitherto unique in Dr. Boisduval's collection; also a herma-

phrodite *Smerinthus Populi*. Mr. Curtis exhibited various fine Coleoptera, from Mozambique, described by M. Bertolini; Mr. Edwin Shepherd, various rare moths from Perthshire, collected by Messrs. Weaver and Cooper, including a new British Noctua (*N. sobrina*, H. Sch.); Mr. S. Stevens, a very curious variety of *Trichius fasciatus*, also collected by Mr. Weaver; also a box of beautiful butterflies, forming part of a collection of upwards of a thousand specimens sent from Nicaragua, each enclosed in a separate piece of paper, the wings being folded, and thus travelling with the greatest facility. Mr. Shield, of Dublin, exhibited two new Microlepidoptera, one being a Neptulica bred from the leaves of the Sorrel. Mr. F. Smith exhibited several living specimens of the curious tropical ant, *Odontomachus unispinosus*, brought with Orchidaceous plants from Jamaica. Mr. Douglas exhibited plants of *Glechoma hederacea*, the leaves infested with galls formed by *Cecidomyia bursaria*, of Winnertz, also a larva of *Talæporia*, found crawling with its case during the preceding week, and leaves mined by the larvæ of a Dipterous insect, and those of a Neptulica. Mr. Boyd exhibited some fine Lepidoptera from the New Forest, taken in July and August, including *Limacodes Asellus*, and some curious varieties of *Paphia* and *Janira*. Mr. Curtis exhibited a box of specimens of the minute yellow larvæ of *Meloe*, found upon various insects, and a black one on a saw-fly; also an African *Amnophila*, with a *Stylops* in its body. He also stated that he had observed in the body of a pupa of a *Stylops* a great number of minute worms tapering at each end. Mr. F. Smith stated that he possessed an exotic *Spheg*, with an exerted *Stylops* larva, which was three times as large again as any previously known. Mr. Clifford exhibited some *Pearl Barley* injured by *Anobium paniceum*, and *Ptinus ovatus*. Mr. Desvignes described a new British Ichneumon; and Mr. Baly a new Indian genus of Chrysomela. Mr. Westwood exhibited drawings of the larva of *Diglossa mersa*, received from Mr. Hogan, and of *Cleogene Peletieraria*, a large, black geometrid moth from the north of Ireland. Mr. F. Smith read a memoir on the habits of *Anthophorabia fasciata*, which he has determined to be identical with the previously-named *Melittobia* Audouini of Westwood; and Mr. A. R. Wallace read the commencement of a memoir on the habits of the butterflies of the valley of the Amazon river.

## Notices of Books.

*The Remote Cause of Epidemic Diseases, &c.* By John Parkin, M.D. Part 2. A pamphlet of 16 pages, with three maps. Hatchard.

In 1846 and 1847 Dr. Parkin published his views upon the subject now again treated of in the pages before us. We then stated what his views were, and what appeared to us to be difficulties in the way of adopting his conclusions concerning the connection of volcanic action with the Potato disease. That charcoal, his supposed antidote, was unable to prevent the affection is now matter of notoriety. We therefore turned to his new essay in the full expectation that some allusion would be made to that fact. In this we are disappointed; the whole tenor of the learned author's additional remarks goes to speculative points, with which we cannot concern ourselves. The reader who is desirous of making himself acquainted with Dr. Parkin's theory, must consult his treatise "On the Remote Cause of Epidemic Diseases," published by Hatchard in 1841. We can only find room for his reply to one of the objections taken to his theory, namely, that no volcanic gases have been detected in places where animal and vegetable epidemics are most rife.

"To this," says Dr. Parkin, "I would observe, that cholera and other diseases cannot be produced by any of those gases which are generally, and almost uniformly, given out from the ducts of volcanoes; not only because these gases, when inspired artificially, produce different results, but also from the fact that, although the evolution of gaseous matter is pretty uniform, and sometimes very abundant, persons who reside in the immediate neighbourhood of volcanoes are seldom attacked with disease—at least as the consequence of eruptions. As, therefore, the poison of cholera, if generated in subterranean reservoirs, must be different to the gases usually given out from the ducts of volcanoes, the whole of which, at least those that have been detected, correspond with well-known chemical compounds; it cannot be more surprising that this unknown and invisible substance should have escaped detection, than that malaria, the existence of which we are certain of, should have remained so long undetected and unknown. Not only are we certain that the latter poison exists in the air of particular places, and over extended surfaces of the globe; but we also know the laws which regulate its extrication from the surface, and its diffusion in the surrounding air. Notwithstanding this, and the fact that it must be, at particular times and in particular localities, in a highly concentrated state; chemists have altogether failed in their attempts to detect this poisonous substance, or to ascertain its nature or composition. And thus it will continue, until the science of chemistry is more advanced, or until accident demonstrates the existence and nature of these invisible agents. We have, however, ample proof that poisonous elements, destructive of animal life, are generated in subterranean reservoirs; for, occasionally the surrounding inhabitants are attacked with disease immediately after a particular

eruption. But it is more particularly after the occurrence of earthquakes, when chasms are produced, that men and cattle have been swept off by pestilence—several examples of which have been recorded in the first part of this work."

To us it certainly does seem that the question is left exactly where it was in 1841.

*Commentaries on the Laws of England.* By Sir Wm. Blackstone, 23d Edition. By James Stewart, Esq., 4 vols. 8vo. Stevens and Norton.—The favourable opinion which, in a late Number of the *Gardener's Chronicle*, was expressed of the second volume of Mr. Stewart's edition of "Blackstone's Commentaries," is equally deserved by the work in its now complete form. The learned editor has, by incorporating all the important acts of the last session, brought the text down to the present time; but at the same time the plan adopted has enabled him to do this without encumbering the work with notes, which serve alike to distract the attention of the reader and to dilate the original to an unwieldy bulk.

As an introduction to the study of the English law, and for the purposes of general education, "Blackstone" has always been, and still is, the best work extant; and although the information contained in the Commentaries is not alone sufficient for the purposes of those who have practically to apply the law, yet there is no one book upon the law in general so useful to country gentlemen and magistrates as that published a century ago by the celebrated commentator. The present editor has not only stated what the law now is, but has so noticed the many and important alterations which have of late years been made on almost every legal subject, that this, the 23d edition of Blackstone's Commentaries, may safely be said to be at once the most readable and best adapted for general use.

*One Penny Stamps.* Eyre and Spottiswoode.—This little pamphlet, published by the authority of the Commissioners of Inland Revenue, contains a clear, and we presume accurate statement of the recent alterations made in the Stamp Laws. Persons living in the country, and all who are unskilled in the interpretation of modern acts of Parliament, will find the present publication extremely useful, and its price, only one penny, cannot fail to ensure its general acquisition.

## New Plants.

26. *IPOMÆA DIGITATA.* *Linnei sp. pl.* 228. *De Cand. Prodr.* IX., 389. *Rev. Hort.* 2 Ser. II., 581, t. 20.

We find that this handsome but obscure plant, of which no information had been obtained by M. Choisy when he wrote the *Convolvulacæ* in *De Candolle's* "Prodromus," has lately flourished in the Garden of Plants in Paris, where it has been received from Guadalupe. Mons. Decaisne thus speaks of it in the *Revue Horticole*:

"The root of this plant forms a large roundish tuber, 13 inches in diameter, having a grey skin. From the crown several stalks arise, of the thickness of a large quill, smooth, dark green, climbing, and branching. The leaves are soft, digitate, with seven linear-lanceolate lobes, slightly crenated in young leaves, obtuse in old ones; the three middle lobes more deeply divided than those at the sides; the middle one being  $5\frac{1}{10}$  inches in length and  $\frac{3}{4}$  of an inch in breadth; their edges are slightly sinuous, but not dentate; their colour is a pale dull green on the upper side, glaucous on the under, which is covered with extremely small and brilliant points corresponding to stomates. The petiole is flatly channelled on the upper side, somewhat tubercular, sometimes tinged with violet at its base, with a callus at the apex, which corresponds to the two nervures of the lateral lobes. The peduncle is longer than the leaves, cylindrical, and bears at its summit three lilac stalked flowers, each accompanied with a small and very deciduous bract. The calyx is composed of five alternate very obtuse unequal sepals, of which the largest is more membranous than the two which stand next within it. The corolla is funnel-shaped, contracted within the calyx; the tube, rather more than an inch long, having numerous very fine nervures, which give it a striped appearance; the border, which opens only during the day, measures  $2\frac{3}{4}$  inches across.

"This *Ipomœa* is not new. It was mentioned by Linnaeus, from a figure and description made by Plumier, who had observed the plant in the West Indies; but as it had never been seen alive in Europe it was ranked among doubtful species. It is easily propagated by cuttings, in heat, taken from the young shoots, which appear when the main stems begin to push. It has produced perfect seeds in one of the hothouses belonging to the museum, where the plant is trained over a trellis about 6 feet wide." It is about as handsome as *I. scabra*.

27. *SCHIZANTHUS VIOACEUS* of the French Gardens.

A handsome hardy annual, seeds of which were received in 1853, from Messrs. Vilmorin. It is a stout branching pale-green downy plant, from 2 to 3 feet high, with leaves like those of *S. pinnatus*, and a great abundance of violet-coloured flowers. They are deeply divided into irregular lobes, as is usual in the genus, and are only different from those of *S. pinnatus* in the upper lip being oblong-lanceolate and bifid, not oblong and entire, and in wholly wanting the yellow stain which is so characteristic of both *S. pinnatus* and *Hookeri*. Although apparently not distinct from *S. pinnatus*, it is quite sufficiently different to form a good addition to our hardy annuals. *Hort. Soc. Journal*.



## Garden Memoranda.

CASTLEMARTYR, THE SEAT OF THE EARL OF SHANNON.—Having, with a friend, spent a portion of two days in examining some of the most interesting objects at this fine place, and Mr. Mitchell, his lordship's gardener, having taken much pains to show us everything worth seeing, we have ventured to furnish you with some account of what came under our notice. At a little distance from the lodge gate is what is called the "old flower garden," in which there are three good plant-houses, one filled with specimen Azaleas, Aphelexis, Chorozemas, &c., and Ericas; among the latter we observed a very fine specimen of *E. depressa*. In the centre house was a large bed filled principally with Orange trees, Epacris, &c.; in the other house we found some good examples of the best kinds of Fuchsias in excellent bloom. In the open grounds were several very fine specimens of Deodars and Sweet Bays; of the latter we noticed one which was 35 feet in height. *Juniperus excelsa* is here 6 feet high, and *Lambertiana* 10 feet; while *Metrosideros lanceolatus* forms an immense bush. *Picea Webbiana* has made the extraordinary growth of 3 feet 11 inches this season, that of the previous year having been 30 inches; this will give some idea of the rate of growth of other trees and shrubs in these grounds. The mansion is a large plain building, apart from the old castle, which is covered with Ivy. On the left side is a cascade, and on the right a noble expanse of water, with the park on one side, and on the other a plantation half a mile, or more, in length. The trees by the water side consist principally of evergreen Oaks, which are very numerous and large. The growth of *Laurustinus* here is surprising. They were just coming into flower at the time of our visit (October 13th), and Mr. Mitchell informed us that they would continue in blossom until April next. Among Conifers we observed two specimens of *Abies morinda* 20 feet in height. We never saw before such verdant well kept lawns, and such a profusion of evergreen trees and shrubs as we met with here. We are now at a wooden bridge which spans the lake, and leads immediately into what are called Bridgetown Grounds; but before crossing let us direct attention to some plants of Hydrangeas. These were growing in the open ground, and were covered with flowers of the most beautiful blue colour, while on either side of the bridge, close to the water, were immense patches of *Phormium tenax*, on which we observed several old flower stems. In "Bridgetown Gardens" we found a border of Camellias growing in the open air, as large as good sized Laurel trees, and loaded with flower buds; the only protection these ever receive is an asphalt covering overhead to throw rain off the flowers, which begin to expand about Christmas, and continue through the season; they were principally old kinds, planted many years ago, such as *Colvilli* and *Waratah*, &c.; at the end was pointed out to us the original plant of Double White, which the late Earl of Shannon obtained many years ago from Messrs. Lee and Kennedy, of Hammersmith—it was full of flower buds and in good health. In this garden we observed a large bed of the white Indian Azalea, which stands out well without any protection. There were also here large clumps of all the tender and finer kinds of scarlet *Rhododendrons*, fine young Deodars 30 feet in height, and plants of *Dammara australis* planted out. There was a fine young tree of *Araucaria imbricata* 15 feet high, and a plant of *Cedrus argentea*, 17 feet high; but perhaps the finest plant of all was a *Cryptomeria japonica* 18 feet high, and only six years planted. This is a tree of remarkable beauty; the branches and foliage being very close and dense, and covered with cones; the stem measures 26 inches in circumference. We do not attempt to particularise all the interesting objects of this charming spot, still we cannot depart without mentioning the handsome Yew that stands nearly in the centre of the grounds; also the enormously large Portugal Laurels. We had not gone far before we met with a species of *Eucalyptus* 28 feet high, and large trees of *Paulownia imperialis*, which we understood had not yet flowered here. We next found ourselves on the south front of the mansion, where there is one of the most beautiful and well kept lawns we had ever seen. The walks, too, are everywhere equally well kept; not a weed or particle of moss to be met with, and all well rolled. The park connected with the house, though rather flat, is very extensive, and beautifully wooded with Oaks, Chestnuts, Limes, Beeches, Firs, &c. &c. No deer are kept in the home park, which is stocked with sheep and cattle. In front of the gardener's house were great numbers of large Hydrangeas in flower. In the kitchen garden we were first shown through a range of excellent forcing-houses, consisting of four Vineries, two Peach-houses, and in the centre a plant-house. The leaves were off the Peach trees, the wood of which appeared in excellent condition for forcing next spring.

In one of the Vineries there was an excellent crop of Muscat Grapes, and in another a very good crop of well coloured Black Hamburgs. In front of this range of houses is a large geometrical flower garden, bounded by a Yew hedge, which separates it from the culinary department. This flower garden looked as fresh and gay on the 13th October as flower gardens elsewhere usually do in August; the beds were filled with the best kinds of *Verbena*, *Calceolarias*, Scarlet *Geraniums*, &c. &c. In this garden stands a noble tree of *Edwardia grandiflora*, 35 feet high and 40 feet in diameter. At the west end of this garden are three ranges of glass houses; the back range is divided into three compartments; these were formerly Pine stoves, but latterly Mr. Mitchell

has planted one of them with Peach trees, and the other with Vines, both of which have done remarkably well. The other house is a plant stove; the middle range of glass is divided into four compartments, one of them is full of Pine plants all planted out; the other three divisions are filled with bedding plants for next season. The front or third range of glass is also divided into four compartments; one of these is filled with Pine plants, also planted out. These kitchen gardens, which are both well kept and well managed, are very extensive, being something more than 9 acres. The plantations between the park and garden are well filled at bottom with evergreens. We observed at the outside several good trees of *Paulownia imperialis*, &c.; all the roads here are made of limestone broken small, and are as firm as a rock. As the noble proprietor of this magnificent demesne allows the grounds to be shown to the public, we may mention here that we know of no place which will so richly and amply repay a visit as Castlemartyr. The visitor should not, however, omit seeing the Deer Park, which is distant from Castlemartyr about two miles; it comprises about 500 acres, all walled in. In it is a valley, on each side of which the ground rises to a very considerable height—that on the right more particularly so, and which is covered with a young plantation. On the very summit, among some tolerably large trees, there is a very beautiful cottage, from which a fine view of the surrounding country for many miles can be obtained. On ascending to this cottage we were not a little surprised to find great quantities of Deodars planted among Larch and Scotch Firs, and growing equally well. *Araucaria imbricata* has likewise been planted here in great quantities. We had never seen the *Cotoneaster* so fine, nor planted so appropriately as here. In forming the roads which wind round this hill, considerable cuttings had to be made; at the top of these the *Cotoneaster* has been planted, and has already in many places reached the ground. In the centre of the valley there is a large natural mound consisting of about some 12 or 14 acres. The soil here appears of a very poor nature, being a sort of red slaty stone. Taking a path that led to the right round the mound, we found that whilst Scotch Firs and Larch had been planted for shelter, the mound was completely covered with all the best Conifers, which, with very few exceptions, have made, for the time they have been planted, very rapid and extraordinary growth. *Araucaria imbricata* and Deodars are here by hundreds, and all in the highest possible vigour. After wandering from tree to tree, we stumbled upon one of the finest we had ever seen, and that is a plant of *Picea nobilis*, 14 feet in height; the growth of the tree for the last two seasons is 5 feet. Nothing can exceed its health, beauty, and grandeur; this tree would itself repay a visit of 200 or 300 miles. There are here several good trees of *P. Webbiana*, 8 and 10 feet high, also of *P. Pinsapo*, *Cephalonica*, and *Pichta*, 6, 8, 10, and 12 feet high; of *Abies morinda* there are several trees 12 feet high. There are also great numbers of the Douglas Fir 30 feet high, all very young trees. We noticed several that had grown 12 feet in four years, which is at the rate of 3 feet in a season. An *Abies religiosa*, 22 feet high, has stood here uninjured. In England, most of our Pinetums are on well kept lawns; we know one where the trees are all planted in rows like a rood of Cabbage plants, but here there is a forest in miniature of all the best Conifers, growing in the most natural position, being on an elevated piece of ground, about 12 acres, among long Grass and Fern. To enumerate one-tenth part of all the beautiful Conifers here would, indeed, be a tedious task. In two years hence, this will be one of the grandest Pinetums in the United Kingdom. M. S.

## FLORICULTURE.

WINDOW GARDENING.—There are many who have not the convenience of a greenhouse, who are, nevertheless, fond of flowers, who spend considerable sums yearly in purchasing plants, and bestow a great deal of pains in attending to them. It is not to be denied, too, that, after all their endeavours, their plants frequently look sickly, and finally die. The blame is often laid at the door of the florist who supplied them for not giving healthy plants, when in almost every instance the fault lies with the buyers. The plants, it is true, which come into the market have generally been under a high state of cultivation. They have been regularly watered, potted in soil according to their different habits, and grown in pots according to their size. The heat, air, and light have all been arranged and regulated as the utmost skill and experience could suggest. The transition from all this regularity to the tender mercies of the purchaser is soon felt. Drowning or starving, or neglecting altogether, is no uncommon fate. The pots are taken home, put into pans or saucers, deluged with water, and the water left in the saucers, or they are set in some conspicuous place, and left to their fate. In the first case, the leaves turn yellow and drop, the flowers fall, and in a very short time all that can be seen of them is their naked stems, with little tufts of green on the tops or points of the shoots, which a few days before were in perfection; in the latter case, the plants die with all the leaves and bloom upon them. Nearly all the evils attending plants grown in windows are to be traced to these two causes. I will therefore attempt to lay down a few general rules, which, if properly attended to, will do away with nearly all the complaints under this head. Ist. Never water but when the plants actually want it. That is easily known

by feeling the soil with the finger, or giving the pot a rap on the sides with the knuckles. While it is moist no water is needed; when it feels dry, then water—which latter will not be oftener than three times a week in autumn and winter, and every day in spring and summer—giving it copiously every time, and allowing it to run away entirely from the plant, so that the pots may never stand in it. The water used should be either rain or river water. If necessarily from the pump or spring, it ought to stand in the air a day or two before using. 2d. Give plenty of air at every possible opportunity, when the weather is mild, either by having the window up, or by removing the plants outside. If, in warm weather, this is done under a bright sun, the pots will have to be shaded, as the sun upon the sides of the pots would prove injurious to the young roots, and would greatly injure the plant; and if in bloom and exposed to the sun, the flowers would soon fade and drop. 3d. Keep the rooms where the plants are of as uniform a temperature as possible, and the plants themselves as near the window as is convenient, except in severe weather, when they are better near the middle of the room during the night. 4th. Examine them occasionally, to see if the pots are full of roots. If this is the case, and the plants are worth it, get some good soil, and shift them into pots a size larger; or if not shifted, be more careful in supplying water, as they will require more when in this state. In summer, water them frequently over the foliage, but not except they also need it at the root as well. These may be adopted as very general rules, though more absolutely necessary for some plants than others, but very good for all. There is a good deal to be considered in buying plants, in making the proper choice; for, however gratifying it may be to have those which look best in full bloom, it is most satisfactory to have those which last longest in perfection, especially those which have a succession of bloom, and whose foliage is interesting when the bloom is gone. This rule may be deviated from in behalf of Tulips, Crocuses, Hyacinths, and other bulbs, which are valuable when little else is in flower. These will also bloom in the darkest streets of our cities. They ought to be purchased either in the beginning of this month, when the roots are dry for planting yourselves, or in pots when they are beginning to grow; for if delayed till they are in bloom, nine-tenths of their value is lost, because they are interesting in every stage of their growth, from the first formation of the leaves to the perfection of the flower. Every day of development has its charm; and therefore they ought to be possessed from the first. If in pots, all these require a plentiful supply of water when in a growing state; and if kept cool after showing flower, their season of blooming is prolonged. H.

CHRYSAETHANUM: A. B. As the bloom dies off you may cut down the stems, which will have broken from the bottom, and will furnish sufficient increase for your own growing.

ROSES: A. K. A specimen Tree Rose should be selected thus: first let it be on a strong healthy stock, perfectly straight; secondly, the bud should have been placed on a strong shoot, and nearly close to the stock; thirdly, it should be of a sort calculated to form a good head. If a standard be not attended to at first, it never will be handsome. As regards pruning, the object should be to get the head as large across as the height from the ground to its under part; and in thickness, from the bottom of the head to the top, two-thirds its diameter. In pruning standards, the end bud should be left under the branch, in order that the lower branches may incline downwards; and these end shoots being left two or three eyes long every time the trees are pruned, the latter soon arrive at the desired size; but when any portion of the tree wants filling up, four or five eyes may be left. As the trees advance to a large size, they require less assistance from us. They assume an imposing appearance, and the increase of the head is very much slower, for the tree has more to support, and therefore requires but little pruning.

## Miscellaneous.

Truffles.—The cultivation of the Truffle, so long deemed an impossibility, has at length been accomplished. The discovery was made at Macon, where Madame Nagel, proprietress of a chateau in the neighbourhood, has, this autumn, succeeded in producing a large number of Truffles, in her garden. All the conditions under which the cultivation of this product must be prosecuted are known, and nothing more is required than to improve and perfect them by experiment. The Macon "Horticultural Journal" says:—"Like other cryptogamic plants of the same family, Truffles are parasites, requiring humus of a special character. For example, a sub-stratum of Chestnut or Oak leaves, mixed with an argillo-calcareous soil, is just as necessary to them as a bed of horse-dung to the common Mushroom. We are satisfied that, if this new branch of culture were seriously studied, the production of the Truffle would be as easy and profitable as that of the most ordinary vegetables." *Bath Chronicle*, Nov. 17.

Dr. Berthold Seemann.—We learn with pleasure that the University of Gottingen has conferred the degree of Doctor of Philosophy on this gentleman "in consideration of his eminent services in the cause of science as an author and traveller."

Unfermented Bread.—Patent granted April 27, 1853. (No. 1016).—George Turner, of Bradley Terrace, Wandsworth Road, Surrey, and Robert Holloway, of St. James's Street, Hatching New Town, Old Kent Road. Improvements in the manufacture of unfermented bread, which improvements are also applicable to other purposes as a substitute for yeast. This invention consists in combining certain materials, and thereby forming of them a substance to be used as a substitute for yeast; they are tartaric acid, 120 parts, by weight; bicarbonate of potash, 141 parts; loaf-sugar, pounded, 30 parts; finest Patna Rice, ground fine, 116 parts; and East India Arrow Root, 30 parts. *Mechanic's Magazine*.



### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

The present frosty nights will render fires necessary to greenhouses; and to prevent any undue excitement to the plants, care must be taken to manage them with caution, heating the house no more than is absolutely required to keep out frost; this will more especially be necessary with Heaths, and hard-wooded plants generally, which if our previous directions have been carried out through the late fine weather, assisted by abundant ventilation, will be in a position to stand a temperature a mere trifle above the freezing point by night, if the internal air of the house is at the same time moderately dry, which may easily be managed by combining a little fire heat with a free ventilation during the day, when there is no sun, but of course the above will be unnecessary during sunny days. We wish to be particular on this point, because any extra heat at this season will induce a disposition in some plants to commence growing, an evil which should by all means be avoided with plants expected to bloom in perfection in the spring. Where practicable, canvass coverings or mats will prove a useful substitute for fire heat to the more hardy greenhouse plants. Soft-wooded greenhouse plants, as Pelargoniums, Cinerarias, and Calceolarias, should not be permitted in a temperature below 40° by night, but they will bear 5° more than the above if they are wanted to bloom early. Although everything like cold currents of air should be avoided, yet by slightly opening all the means of ventilating, a supply of pure air may be diffused through the house, without exposing the plants to direct currents. Keep the plants thin, and remove decayed leaves and superfluous shoots from Pelargoniums; the fancy kinds will require being kept at the warm end of the house. Water all kinds of plants early in the day, that the damp occasioned thereby may have time to dry up before the houses are closed. Green fly at this season should be closely looked after. Some hard-wooded plants, as *Leschenaultias*, *Boronias*, &c., as well as *Calceolarias* and *Cinerarias*, suffer from its attacks at this season; and nothing is so effective to keep it under as fumigation with Tobacco, repeated, if the insects are not entirely destroyed, in two or three days' time. Japan Lilies and *Gladioluses*, if not previously potted, should now be taken in hand; this class of plants is impatient of having their roots much disturbed in potting, and therefore use caution when dividing the roots. Yellow turfy leaf and fibrous peat and sand form the best compost; drain the pots well, and keep the bulbs of the Lilies well up to the surface. *Lilium Japonicum* and *Browni* require the same treatment: plunge them for the winter in ashes or sawdust, in a pit or cold frame; and give no water till they commence growing—they only require to be kept from freezing.

#### FORCING DEPARTMENT.

**EARLY VINERY.**—The frosty nights will render it necessary to have fires; but keep a moderate heat only till the buds begin to swell; 45° in the morning will be sufficient, increased to 50° as the buds advance; syringe two or three times daily, and close the houses early on sunny days, damping them at the same time. This will make a genial heat for the Vines, and is much superior to artificial heat. Late Grapes will require fires each evening, when frosty, and on damp mornings; remove decayed berries, and give air on all occasions. If the sashes are put on the early Peach-house, the trees should be dressed and trained as before noticed; after which the trees should be wetted over with the syringe two or three times each day; no fires for some time will be necessary. The Peach is very averse to being hurried, and it is only by progressing very slowly during the early stages of forcing that success can be realised. This should be acted on up to the time when the stones are fully formed, after which they will bear a degree of heat equal to the Grape. **PINES.**—Succession and newly-potted suckers growing in pits, &c., will require good covering each night, as the frost is at the present time severe. Keep up the internal heat by applying additional linings where dung is used, or by fires where hot water is employed. Keep the pits as free from damp as possible, as the temperature for the next three months should not be sufficiently high to excite the plants into active growth; and a comparatively low temperature and damp atmosphere will not agree with the well-being of the plants. Pines intended for next summer's crop, especially those intended to show fruit early, should not be kept in a temperature below 53° by night, and should at the same time be exposed to the full influence of light. **FORCING GROUND.**—Give air freely to Asparagus, as it gets above the ground; cover well at night to protect from frost. Bring forward successional crops of the above, with Rhubarb and Seakale. French Beans in pits, if still in bearing, will require a night temperature of 60°. Water when dry, and syringe on the mornings of sunny days. Fresh sowing in pots may be made for the Pine pits.

#### HARDY FRUIT GARDEN.

Pruning should now be commenced in earnest with wall trees; Apples, Pears, Plums, and Cherries may be taken in the order in which they are named. Remove all the old shreds where they are used, those that will do another season should be boiled, to destroy the eggs of insects, before using them again; the large wood looks better neatly tied in with osier twigs. Before tying or nailing, examine the trees, and if infested with scale, or other insects, dress them with soft soap dissolved in hot

water, to which, add sulphur, quick-lime, and tobacco-water; mix the ingredients well together, which should be of sufficient consistence to adhere to the branches; with this dress the branches over, but not during frost. Apricots, Peaches, Nectarines, and Vines, may be left till February and March, taking Apricots first, on account of their being the earliest to open the flowers. If Figs are not yet protected, the sooner they are done the better. The present dry weather is favourable for wheeling dung and compost for the fruit tree quarters, forming borders, and trenching ground for subsequent planting, which should be carried out as circumstances permit; and above all attend to mulching newly planted trees. Young plantations of Strawberries should have some short dung spread between the rows, to preserve their yet shallow roots from frost, which otherwise might lift them out of the ground. Look the beds over, and tread the ground firm round the plants; this is more necessary when the soil is light and rich, as the frost will make such ground more porous. Apples and Pears in fruit rooms should be looked over to remove the decayed fruit, which, if allowed to remain, will damage the adjoining ones; when there is room, lay all the Pears and choicest kitchen and dessert Apples singly. Keep out frost, but do not aim at much beyond that.

#### FLORISTS' FLOWERS.

At this season of the year the amateur cannot do better than get together those soils, &c. &c., which are indispensable for the proper growth of his favourite flowers. Where there is the opportunity of so doing, turf pared 2 inches thick from a loamy pasture, or a green lane side, stacked together to decompose, will be the foundation of his composts. A large heap of Melon bed manure should also be secured, not forgetting as large a quantity of fallen leaves as possible. A cart-load of sharp river sand is an indispensable adjunct, and the florist should keep a bright eye for Willow dust, and decayed and rotten sticks. We know some of the most successful growers of the Polyanthus and Auricula in the manufacturing districts who obtain a quantity of excellent "food" for their plants by scraping it out from hedge bottoms. Allow Auriculas to have abundant air, but no moisture except when necessary, the plants being in a state of rest require but little. Tulips out of the ground suffer every day.

#### KITCHEN GARDEN.

While the weather continues dry the wheeling of dung and compost should be proceeded with, preparatory to trenching and digging whatever ground is vacant. As the frost has commenced so early, protection must be given by night to such vegetables as Cauliflowers, Broccoli, Lettuce, and Endive, as are fit for immediate use; and if our previous advice has been taken in getting to hand materials for the purpose, not much damage will have been done, as a slight covering of dry Fern or straw will exclude a deal of frost. Lettuce, Endive, and other salad plants in frames, intended to succeed the present crop in the open ground, must have air daily, and the former will require the addition of a mat on frosty nights to the glass. Endive merely requires being kept free from damp, if it was full grown when transferred to the frames. A dry sheltered piece of ground should be selected for the purpose of sowing the earliest crop of Radishes; break the ground well in digging, for which a five-grained fork is preferable. A sprinkling of Early Horn Carrot may be added, to come in after the Radishes are gathered. Now will be a favourable time to get in the first crop of Peas and Broad Beans. Select a warm sheltered spot, and dig the ground deeply; but no dung need be applied now, provided the previous crop was well manured, as the crop will come in earlier to use than when sown in rich soil. Let the rows run north and south; and before drawing the drills, throw up a slight ridge of earth to the east of each drill. This will break the effect of the cold easterly winds when the plants come up. Sow rather thick; as mice and other vermin may make free with some unless well watched. As the seedsmen's lists of vegetables, &c., are now so descriptive of what they sell, we must leave our readers to make their own selection.

#### COTTAGERS' GARDENS.

In case of severe frost, those cottagers who have the convenience of a frame for keeping half-hardy plants in over winter, had better place round it some dry Fern, Pea-haulm, or other litter recommended to be collected and saved some time ago, for the purpose of excluding frost. Cover the glass with a dry mat, and shaking upon this a little hay or straw, cover again with another mat. When the frame is uncovered in the morning, let the under mat and hay be removed into some place where it will be kept dry. By this means Pelargoniums, and such like plants, may be effectually protected during winter. Keep the soil in the pots as dry as the health of the plants will admit of; and in watering take care to scatter as little water as possible. Air should be given at all times when it can be done with safety. In damp weather tilt up the sashes; and in dry days, when not too cold, remove them altogether. If some of the hardier varieties of Fuchsias, such as *Riccartoni*, *Gracilis*, &c., permitted to winter in the open ground, have their stems protected for a few inches with Fern, and their roots covered with leaf-mould, litter, or some such material, they will survive the winter in good condition, and flower considerably earlier next year than if they had been left without any protection. Artichokes will require to have a small quantity of leaves or litter placed round their stems. Seakale, if any, and wanted early, should now be covered. The weather proving still favourable, advantage should be taken of it for forward-

ing any operations that could not be attended to last month, especially the digging and trenching of vacant ground which should now be completed as soon as possible, laying it up rough in order that it may profit by the winter frost. Continue to prune fruit trees, and forward every operation of the season as much as possible.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON, For the week ending Nov. 24, 1853, as observed at the Horticultural Gardens.

Nov.	Moon's Age.	BAROMETER.		TEMPERATURE.			Of the Earth.	Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.		
Friday 18	17	29.995	29.956	41	21	31.0	41.4	S.W.	.09
Satur. 19	18	30.054	29.969	48	25	37.0	39	S.W.	.00
Sunday 20	19	30.086	29.987	46	23	34.5	40	S.W.	.06
Mon. 21	20	30.292	30.230	46	21	33.5	40.4	N.	.00
Tues. 22	21	30.295	30.178	36	23	29.5	39	S.W.	.00
Wed. 23	22	30.327	30.049	39	24	28.5	38.3	S.W.	.00
Thurs. 24	23	30.057	29.934	41	29	35.0	38	S.	.12
Average		30.143	30.027	41.7	23.7	32.7	39.50	43.57	0.18

Nov. 18—Sharp frost; very fine; clear and frosty.

19—Frosty; fine; clear and frosty.

20—Overcast; slight rain; frosty at night.

21—Frosty; clear; sharp frost.

22—Frosty and foggy; very dense fog at night.

23—Frosty and foggy; excessively dense fog throughout.

24—Overcast; rain commenced in afternoon.

Mean temperature of the week 9.5 deg. below the average.

STATE OF THE WEATHER AT CHISWICK, During the last 27 years, for the ensuing week, ending Dec. 3, 1853.

Nov. and Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27	46.9	35.3	41.0	12	0.88 in.	1	1	4	1	4	8	4	3
Mon. 28	48.8	35.8	42.0	10	1.31	1	1	4	1	4	8	4	3
Tues. 29	47.2	34.9	41.3	14	0.50	1	1	4	1	4	8	4	3
Wed. 30	45.5	35.8	42.1	15	0.31	1	1	4	1	4	8	4	3
Thurs. 1	43.4	37.0	42.7	12	0.25	1	1	4	1	4	8	4	3
Friday 2	47.9	36.0	41.9	12	0.51	1	1	4	1	4	8	4	3
Satur. 3	47.4	35.8	41.6	11	0.17	1	1	4	1	4	8	4	3

The highest temperature during the above period occurred on the 28th, 18.5 deg.; the lowest on the 29th, 14.6 deg.; the lowest on the 16th, 10 deg.

#### Notices to Correspondents.

**DISEASED ARBUTUS: C.F.** We do not find any foreign organisation in the leaves sent us; and we should refer their appearance to the accumulation of water in the cells during this wet cold season. These appearances seem quite analogous to the spot in the leaf of Pelargoniums. We have sent your inquiry respecting Pycnidia to the gentleman who uses the term.

**ELATE SYLVESTRIS: J.M.** You cannot make your cut spike of this keep its colour; but you may prevent the flowers falling off by plunging it, for one minute, in boiling water.

**FRANCISCA CALYCINA: W.H.D.** It is a Brazilian shrub with violet flowers. When first introduced we do not know.

**HUC AND GABET: G.B.** We will give you and others a full answer next week.

**INSECTS: W.C.E.** The flies you observed in such numbers issuing from Wheat whilst being threshed, are the common *Musca rudis*, which generally passes the winter in a torpid state in retired holes and corners. We believe they have no other connection with the Wheat.—*A.B. Newcastle.* The insects which have destroyed your vegetables are the common millipede—*Julus piluliferus*. Their presence in such numbers shows that your ground wants well cleansing. You may trap them by laying slices of Turnip or Potato in the ground, or by burying small potties of damp moss, which should be looked at every other morning. *W.*

**NAMES OF FRUITS: Rudolph.** 1, Glout Moreau; 2, 3, Bellissime d'Hiver; 4, Winter Nels; 5, Beurre Rance; 6, Bequene Musque; 7, Eyewood; 8, Chaptal; 9, 10, Easter Beurre; 12, Minchall Crab; 13, Marie Louise.—*T.B.* 1, Cockle Pippin; 2, Requette du Canada; 3, Braddick's Nonpareil; 7, Nelson or Nelson Codlin; 8, Court-pend; 9, Beurre d'Automne; *H.E.L.* 1, Louise Bonne (not of Jersey); 2, Doyenne Blanche; 3, Bezi de Montigny; 4, Gilgil; 5, Easter Bergamot; 6, Winter Bon Chretien; 7, Old Colmar; 10, Fearn's Pippin; 11, Northern Greening; 12, Easter Pippin or French Crab.—*Rodius.* The Apple, red inside as well as outside, is the Sops of Wine.—*R.W.* Not known; a sort of wild Apple which appears as if it would keep a twelvemonth.—*S.E.S.* We do not know any Apple called Stephen's Lud. In the Supplement to the Horticultural Society's Catalogue of Fruits lately published, we find the names of Dryburgh Ludd, and Lauder Ludd.—*W.C. Bedhampton.* Easter Beurre.

**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*H.H.* 1, Abies Menziesi; 2, Pinus hispanica.—*L.F.* Eugenia planipes, from Chili.—*A Lover of Mosses.* It seems to be merely *Hypnum proliferum*; but there is no fruit.—*C.E.S.* One of the many hybrid varieties called *Gladiolus Gandavensis*, and, we believe, *Salvia Grahami*, as far as we can judge from such a fragment.—*A Constant Reader.* Veronica speciosa and a Tropaeolum, not to be determined from fragments destroyed in the post bag.—*Shrewsbury.* 1, not in flower; 2, *Cirriophetum nutans*.—*A.C.* *Juncus squarrosus*, a very bad neighbour and generally the inhabitant of land as bad.

**PEARS: J.M.** observes that "Pears, we know too well, often fail to set their bloom. Some recommend soaking their roots in water just as they flower, others say that a plant kept dry, almost to flagging, sets best. Which is right?" We think neither—in the case of the Pear at least, for we have often observed that the bloom of these trees not only sets best, but the young fruit is least liable to drop when the roots have just sufficient moisture. If a tree has suffered from drought, if its roots have completely dried the soil into which they have penetrated, then they may be soaked, not less as the tree flowers, but before vegetation commences.—*Englisson.* North Lincolnshire. Against north-east and north-west aspects you may try the following Pears: Jargonelle, Williams' Bon Chretien, Beurre de Capiaumont, Marie Louise, Broom Park, and Eyewood.

**TRYMA: A.A.** This name appears to have originated with the Dendrologist Watson, who stated that it only differed from a *Drupis* in its having two-valved endocarp; according to him it should therefore belong to *superior* fruits. But since Juglans is its representative, it is clear that Watson was wrong; his error was overlooked in the "Introduction to Botany" but is corrected in the Glossary and "Vegetable Kingdom." The term itself is obsolete, as it deserves to be. The words "endocarp" and "sperm" have been accidentally omitted in the Glossary.

**Misc: H.H.** Abutilon insignis is a greenhouse plant.—*W.F., Southampton.* We see no ground for interfering. The facts are already before the public, so far as the public is concerned in them. We cannot regulate the language of advertisers.

\* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made.



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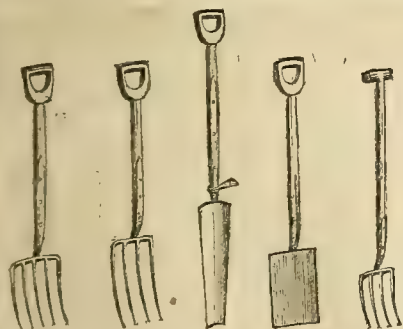
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The Company is incorporated by "THE LANDS IMPROVEMENT COMPANY'S ACT, 1853," the powers and provisions of which apply to England, Wales, and Scotland, and have been framed with especial reference to the exigencies of modern agriculture.

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The improvements will be executed under the sanction of the Inclosure Commissioners, and the authorized outlay, in which the preliminary expense is included, is constituted by the Act a first charge on the inheritance of the land in the shape of a terminable annuity or rent-charge.

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3rdly.—From fees charged for the use of the Company's powers, where Landowners execute their own works and employ their own capital.

In Scotland, where restrictions on Ownership extensively prevail and where Farm Improvements are thoroughly appreciated, the Company's Act is the only measure for Land Improvement hitherto granted to a public Company; and from the applications already received, the Directors anticipate from that country a most extensive demand for assistance.

Applications for shares in the annexed form may be addressed to the Managing Director, at the Company's Offices, 2, Old Palace Yard, Westminster, where all further information may be obtained.

## FORM OF APPLICATION FOR SHARES.

To the Directors of the Lands Improvement Company.  
I request you will allot me shares in this Company, and I agree to accept the same, or any less number that may be allotted to me, and to pay the deposit thereon of £2 per share, when required.  
Dated this day of 1853

Signature.....  
Name in full.....  
Address.....  
Occupation.....  
Reference.....

## SMITHFIELD CATTLE SHOW.

**BURGESS AND KEY** will exhibit at their Stands, Nos. 63, 64, 65, 66, 67, 68, 69, 70, 71, and 72, a large assortment of AGRICULTURAL MACHINES, &c., by the best makers, Richmond and Chandler's Chaff Cutters; Turner's Prize Oat, Linseed, and Bean Mills; M'Cormick's Reaper, Parkes' Celebrated Steel Forks (B. and K. are sole wholesale agents). Oilcake Breakers, the American Churn, Pumps for Manure, and Farm Fire Engines, Turnip Cutters, &c., &c., strictly at manufacturers' prices.  
103, Newgate Street, and 52, Little Britain, London.

**THE BIRMINGHAM CATTLE AND POULTRY SHOW.**—The FIFTH GREAT ANNUAL EXHIBITION OF STOCK AND DOMESTIC POULTRY will be held in BINGLEY HALL, Birmingham, on December 13, 14, 15, and 16. The Entries of Poultry exceed 2000 Pairs. The Private View and Annual Dinner on Tuesday, December 13.

There will be Special Trains on all the principal Lines of Railway, full particulars of which will be duly announced.

**BEDFORDSHIRE EXHIBITION OF POULTRY** at the BEDFORD CORN EXCHANGE, on November 30, and December 1 and 2—Wednesday, Thursday, and Friday.

**PRIZE CATTLE SHOW OF THE SMITHFIELD CLUB.**—The Annual Exhibition of Prize Cattle, Seeds, Roots, Implements, &c., commences on TUESDAY morning and closes on FRIDAY Evening, 8th, 7th, 6th, and 5th December, at the Bazaar, King Street and Baker Street, London. Open from daylight till 9 in the evening. Admittance, One Shilling.

## The Agricultural Gazette.

SATURDAY, NOVEMBER 26, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Dec. 1	1—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 7	7—Agricultural Society of England.
TUESDAY, — 6	6—Smithfield Club.
WEDNESDAY, — 7	7—Smithfield Club.
THURSDAY, — 8	8—Agricultural Imp. Society of Ireland.

WHATEVER opinion be entertained of the suggestions made by Mr. PUSEY in his lately published letter on AGRICULTURAL STATISTICS, but one can exist of its value as a testimony to the national importance of the subject. Government can do nothing in the matter, except as urged or permitted by public opinion; and this cannot but have received a most valuable impulse aright from the testimony of a man so well known and esteemed for his ability, caution, and anxiety on behalf of the interests of agriculture. When it is seen that the President of the Royal Agricultural Society of England, whose knowledge and advocacy of the practical interests of the farmer have been so long tested and exercised, so far from looking with doubt on the proposed experiment, is for extending it into details, the collection of which was not originally contemplated, few will hesitate, and none can reasonably refuse to contribute to the success of this preliminary effort. And this is the chief fruit of the letter in question, which in the meantime we expect, or indeed hope, to see produced from it.

It is exceedingly desirable, all intelligent farmers will admit, that every possible light be thrown upon the history of our agricultural progress, and upon that stage in the course of it at which we have at present arrived; but it is necessary that our annual production of food for the people should be published as early every autumn as possible. Let all our energies, then, be directed to the solution of the simpler and more important problem in the first place. Lord ASHBURTON has to labour to overcome the difficulties in the way of this. Mr. PUSEY's letter will assist him not so much immediately as indirectly—not so much by the suggestions it contains for extending the inquiry, as by the evidence it bears of an enthusiasm on behalf of the inquiry which, as in his case it exists in the same mind, is seen to be perfectly consistent with the most cautious wisdom and common-sense.

Government are now in possession of the estimates—or rather, as we believe we may call them, the facts—relating to the agricultural produce of three counties in Scotland. Mr. HALL MAXWELL, through whom the inquiry was conducted, forwarded the results to town last Saturday, and they will, no doubt, be immediately made public. Were our knowledge, instead of being limited to these counties, extended to all the counties, can any one doubt that the corn-trade would more fitly, confidently, and steadily correspond to the wants of the people? It has been by an expenditure under 300l. per county that the facts have been arrived at in the case of Roxburghshire, Haddington, and Sutherland. But let the expenditure be what it may, such knowledge ought to be attained, when the interests, not of the trade or of the capital involved there, but of the people are so intimately concerned as they are in the existence of a sound public opinion as to the state of the food question.

It might be disputed whether or not it were the duty of Government to direct inquiries having for their object only the elucidation of agricultural progress, and the present condition of that or indeed of any other art; but it cannot be disputed that it is binding on them always to have a careful eye upon that first-class, national, essential question—THE FOOD OF THE PEOPLE. We believe that no duty can be proved of Govern-



ment that does not rest, share and share according to ability, upon the individuals governed; and we believe, too, that as a general rule this will be acknowledged by the cultivators of the soil. Whether it may be advisable, in order to the attainment of the object, in order to secure the sympathy of those with whom its attainment rests, to unite with the inquiry as to food, questions relating to points of merely agricultural importance, so that the resulting information shall be useful to us not only as Englishmen but as farmers, may be questioned. Our own opinion is that those, surely but few, who would refuse to assist the simpler and stricter inquiry, would feel still more indisposed, would be still more suspicious of its objects, if it were extended into points of merely agricultural interest. At all events as long as there is doubt of the result, it will, we believe, be wiser to confine the research to the fewest possible points. The Scottish experience goes to show that the difficulty of the inquiry will be greatly increased by elaborating and extending it, and engrafting additional features upon it. Every intelligent man hopes, with Mr. PUSEY, to see agricultural statistics made the means of ascertaining and recording the progress of agriculture: we may, through them, ultimately acquire valuable information as to drainage, labour, and many other important matters—but not at first: we must walk before we run, and we earnestly recommend that the inquiry be continued for some time in as simple and initiatory a form as possible. Adhere at first to the immediate object of Government, viz., a knowledge of the supplies of food for the people. Get the machinery into working order—cultivators will thus ultimately, if they cannot immediately, come to regard it without jealousy, and it can then be made to serve their interests in other directions.

As to the details of method and machinery by which the task is to be accomplished, that is a subject we do not now discuss—we may rest assured that the success of the Scottish experiment will enforce it here. With a season, and consequent state of the market, such as now exist, none of the forces which mere prejudice and habit put in the way of the promoters of experiment will prove able to resist it. Agricultural statistics will therefore very soon, greatly to the national advantage, and especially to that of the agriculturist, be ascertained and published year by year. Those in the corn-trade will learn early each summer to estimate the maximum of the produce from the extents, which by that time they will know to have been sown: and early each autumn they will know the actual produce of those extents with sufficient accuracy for commercial purposes. Both facts thus known will be found to exert a beneficial influence upon the most important of all material questions—the food question.

MR. LOCKE has recently published an essay entitled "Ireland's Recovery,"\* which was read at Hull before the British Association for the Advancement of Science, in September last. It contains many important and most interesting facts tending to show the decrease of pauperism, and of that emigration which had resulted from it; the improvement of the labour market; and the increase in number and solvency of landed proprietors.

MR. LOCKE's object evidently is to show the benefits which have been, on the whole, conferred upon Ireland, by the agency of the Encumbered Estates Commission; and we think he has perfectly succeeded in his design. Even since the publication of the pamphlet, we know that a much increased amount of social good has been effected by the transfer to solvent hands of very extensive estates heavily burthened; and we rejoice to think at very fair rates of sale; high, we should have considered them two years ago. But we shall give a short analysis of the statements before us. First, as respects the emigration of the labouring population in particular, and the effects on the labour market. The number who emigrated in six years, ending Dec. 31, 1852, amounted to 1,313,226, of whom 479,534 departed within the last two years, and the remittances by many of the emigrants for the purpose of paying the passage money of pauper relatives in the workhouses, or in poverty and distress, amounted to nearly 2,400,000*l.* And a strong evidence of the increased comforts and facilities for saving money, obtainable by the emigrants themselves in the lands which have adopted them, is presented in the fact that the emigrants in 1852, though less by one-eighth in number than in the preceding year, have sent home 400,000*l.* more than the amount remitted in the former year.

MR. LOCKE considers that the three reparative agencies for checking excessive emigration are now exhibiting their influences. "First in decrease of

pauperism—concurrent with general diffusion of employment. Secondly: Establishment of civil and social order, evidenced by decrease of crime. Thirdly: Increased solvency of the landed proprietary—concurrent with the improvement of agriculture." Notwithstanding all the unreasonable outcry in Ireland at the infliction of poor rates, and the utter ruin which we were told would ensue to the landed interests, it appears that the decrease of pauperism has been so considerable that the average poundage this year will not exceed 1*s.* 8*d.* There are, however, some unions in four of the most westerly counties, which are still suffering severely from the effects of the famine.

Ireland is evidently improving, and will, we have little doubt, improve at a more rapid pace—as labour becomes remunerative to all parties, as crime decreases, and industrial efforts progress. The workhouse industrial system pursued in Ireland is worthy of all praise and encouragement, and may yet serve as a basis for British imitation, if from any causes, orphan or deserted children more especially, should crowd into our union houses, as in Ireland they have been forced to do in very large proportions.

The crowded state of our columns prevents us from noticing any of the statistics of the Incumbered Estates Court—but we cannot deny ourselves the pleasure of inviting attention to some facts relating to the improved management of workhouses and the diminution of crime. The length of a very interesting report, with the debtor and creditor account of the Ballymeney workhouse farm in the county of Antrim, prevents us from inserting it in detail. Every one belonging to the establishment is employed in reproductive labour; every article worn in the house is made up in it. The live stock consists of 4 cows, 14 pigs, and 1 horse; the amount received in cash for cows, calves, pigs, Oats, and vegetables, sold, was 133*l.* last year, and the value of sweet milk at 5*d.* per gallon consumed in the house, with pots and other products, amounted to 104*l.*

"Now contrast these reproductive results with the wasteful management of former years.—Ireland in 1846-47 was, in fact, one huge Poor Law Union, under the administration of government relief and British benevolence. At one period in the latter year, 734,000 persons were drawn from their ordinary pursuits to an unprofitable system of employment; the superior cereal products of our soil were exported, and an inferior grain substituted for food; and millions were wasted on works, generally of a useless, frequently of an injurious character, having no relation whatever to the production of food for a famishing population, while the greater portion of the tilth of the country lay utterly waste."

One of the most gratifying results of the exodus of the peasantry from Munster, and the increased means of employment and agricultural education, &c., for the residuary portion, is the great diminution of crime. Tipperary and Limerick were pre-eminent in crime, how is it now?

	County of Limerick.	
	Spring Assizes, 1849.	Summer Assizes, 1853.
Number of Crown witnesses and prosecutors	900	110
Number of criminals for trial	520	25
Of those for murder	11	4
In arms and attacking houses by night	30	None.
Cattle stealing	63	"
Highway robbery	20	"

We must conclude in the words of Major LARCOMB, written two years ago:—"These (agricultural and beneficial) changes have been concurrent with a rapid decrease of the population. There can be little doubt from what class of the community the defection has taken place, and the agricultural changes which, there is reason to believe, had already begun, have been doubtless precipitated or hastened by that defection. The present agriculture of the country is more favourable than that which it has replaced, or is replacing; and with respect to those who remain, there can be little reason to regard the future with apprehension."

#### THE AMERICAN THRESHING MACHINE.

As I get some half-dozen letters daily on the subject of the American threshing machine, I had better at once state that I have threshed more than 100 qrs. of Wheat and 50 qrs. of Barley with it, and that it is, in my opinion, in every respect far superior to our English threshing machines, as exhibited at the great shows. Although a very light implement on carriage wheels, its steadiness under steam power indicates the easy movements of all its parts, and it must be a very enduring machine. All its parts work continuously on the rotary or revolving principle, the only exceptions being two very light portions; whereas in our great clumsy threshing machines, the jerking or checking movements sway them, in spite of their great weight, in a most destructive, power-consuming manner. In cleansing

and dressing powers we have nothing, in my opinion, to compare with it. A three-horse power steam-engine, worked at 60 lbs. to 70 lbs. of steam per inch, and 120 revolutions per minute, would, I consider, work it efficiently, and thresh of reaped Wheat 6 to 8 qrs. per hour, and of mowed Wheat 5 to 7 qrs. It threshed for me last week 34 qrs. Wheat in 5½ hours, and 54 qrs. Barley in 6½ hours, at 45 to 55 lbs. pressure, and two-thirds the power of a six-horse engine. In fact, it is a simple question of being able to feed it fast enough. I annex the dimensions, and, to save correspondence, state that Mr. Moffitt, the inventor, (who I have reason to consider a most able mechanic, although only 26 years old), will stay for some time at the Star and Fleece, Kelvedon, Essex. He is trying to dispose of his patent. If he does not succeed, I suppose he will either license or manufacture. Although the machine is said only to cost the maker in America 23*l.*, I have no doubt that, when profit, royalty, &c., are added, 50*l.* will be a likely price.

However displeasing it may be to some of our agricultural implement makers (for whom I have a great respect, and often try to serve where deserving), I consider it my duty as an agricultural improver to state what I believe of this machine: that it will compel, both in price and quality, either its adoption or an improvement on our own. The cavings and chaff, though now thrown together, might be easily separated if required.

I see clearly in perspective great changes and improvements in our agricultural steam-engines—lighter and cheaper implements, with 100 lbs. per inch steam pressure. The steam cultivator, which progresses favourably, will show that a power equal to 10 pairs of real horses may be concentrated on a pair of wheels, and of a weight less than two tons. When not cultivating, the engine may be driving mill-stones, a threshing machine, circular saws, irrigating pumps, or working Fowler's draining plough.

However inconvenient it may be to present arrangements, we must expect our agricultural placidity and stolidity to be assailed by scientific progression, involving more thought, action, and care, and greater ultimate economy. Our village blacksmiths must be transformed into, or make way for, a different class of workmen capable of comprehending the action of a steam-engine, and of repairing its defects. The use of horses in threshing machines is a barbarism, for my experience with Hornsly's and Ransome's steam-engines of 6-horse power has shown them (and no doubt many others), to possess a power equal to that of 16 to 18 good horses, and this at a cost of 5*s.* for coals, instead of 2*l.* 10*s.* for horses. Strange to say our go-ahead American friends brought over with them a horse gear in connection with their machine, but after seeing the miserable contrast with steam, they have abandoned it for ever.

It appears the American farmers all use horse power for threshing; no doubt they can keep them cheaper than we can. The American threshing machine will remain at my farm until exhibited at the Smithfield Show, where Mr. Moffitt will attend personally.

Dimensions of Moffitt's Threshing Machine.—Extreme length, 17½ feet; drop-platform, 2 feet; extreme width (from nave to nave), outside measure, including wheels, 6 feet 6 inches; height, 9 feet; width of drum, 2 feet 6 inches.

J. J. Mechi.

#### "A WORD IN SEASON."

[The following is the preface to the new edition of the Loise-Woodon pamphlet (12th) just published; we extract it bodily, as being of the highest interest to a large number of our readers. It shows that the author retains the most perfect confidence in the trustworthiness of his principles; and it points out the causes of their apparent failure where they have not been properly developed in practice. With regard to the criticism with which Mr. Jones's statements of his experience have been received by some of our correspondents, we have only to say that the omissions complained of are obvious enough; they arose accidentally from the circumstance that the patch of land treated by the reporter was not subject to the charges in question, and of course any one reading the papers would at once add them, and to the extent of their influence, modify the conclusions to which the paper led him.]

LOISE-WOODON, November 1st, 1853.

I HAVE little to add to the new edition just called for, beyond a few words addressed to the unsuccessful experimenter in this plan of growing Wheat; and one more direction, inserted in page 51, number 9, of no small importance to the uprightness and beauty of the ripening crop.

If there were one weak point in the scheme, or if a shadow of a doubt had crossed my mind as to its extreme advantage or general practicability, no consideration would deter me from openly and at once avowing my error and uttering my recantation. But, it has now been on its trial for many years; I have probed its principles to the bottom; I have fully tested them, as I conceive, by the researches of men most eminent in this branch of science; and all have issued in a confirmation of their entire soundness throughout.

In practice, every process has been watched with the most searching assiduity; and the end has been, admiration, first of all, of the truthfulness and accuracy of that science which has been brought to bear with such infinite benefit on the labours of agriculture, and of its wonderful harmony with experience; and then a deep persuasion of the practical value of that scheme of growing Wheat which it is the object of this publication to set forth.

Had any argument or any fact been wanting to strengthen this persuasion, it would have been supplied by the incidents of the present year. The year 1853

\* Published by W. Parker and Son, 445, West Strand.



long be remembered as, perhaps, one of the years for Wheat, in respect to yield, ever known. One good farmer looked for 5 quarters per acre reaped only three; where another felt of four, he found it dwindle to two. There are exceptions; but so it has been generally. Now, I do not repeat what is said in p. 37 of the nature and condition of the 4-acre piece I am cultivating, but that it is light land, not manured for the last 7 years, and that this year's crop of Wheat was the fourth in succession. What, in my case, has this year's produce told the tale without comment; none is required. I am not unworthy wish, God forbid! to taunt my neighbour with the comparison; but the facts are open and obvious, and my case demands their publication. It opens that two fields, to the right and left of mine, of precisely the same character and quality with mine were also in Wheat this year. The one crop had Beans manured with the richest dressing of dung; the other crop was, part on fallow, and after Vetches, fed off. The yield of the former, in my opinion, is set at 16 bushels, or thereabouts; the latter, at 20. For mine, no one, I believe, not the most incredulous scoffer, has ever estimated produce at less than 40 bushels.

But there have been failures on the plan, notwithstanding. I know it to my great sorrow. And here I have to bespeak indulgence from those whom it concerns, whoever they may be. "There have been failures," but, with the utmost sincerity I declare never knew an unsuccessful case where I knew the plan had been strictly carried out. Is it not possible, that the obscure directions have been misunderstood in some cases, in others unknowingly overlooked? I am forgiven if I presume to think it possible, with that impression, reproduce them in another place and place them in a stronger light, clear, distinct, intelligible,—the form of question and answer; and let unsuccessful experimenter look each question boldly in the face, and reply to it himself. Any annoyance, distasteful recurrence to catechism, rather than to be on in error.

begin with the material on which you work, put yourself —

"Is it Wheat land I am cultivating,—clay or loam? If not, have I manured it? Before commencing, drain, clean, and level?"

"In sowing, did I drop or drill my well-selected seed early; and give it a solid bed?"

"In digging the intervals, did I bring up only so much of the subsoil as could be thoroughly pulverised and allowed for the succeeding crop; of clay only a ches, of any subsoil just so much as would lose its effect during the twelvemonth's fallow?"

"In cleaning the rows of Wheat and the spaces between them, did I hand-pick and hand-hoe the weeds, and keep the surface open?"

"In scarifying the intervals, did I, besides cutting and removing the hungry weeds, so time the operation of cleaning and stirring, that I fed the Wheat plant required it?"

The latter question is a high refinement in farming, has been left in the directions to the judgment of the operator. The intelligent farmer is fully aware that in the spring a well-timed application of guano or soda is of infinite service to the poverty-stricken plant. Now, a judicious stirring of the intervals, under similar circumstances, is equal in its good effects to dressing of either; just as an ill-timed and injudicious application of the horse-hoe is equal in its ill effects to dressing of guano or the nitrate, given without judgment; and the result of that is now well known, in over-luxuriance, and mildew.

There are many other questions to be responded to, but these may be considered the leading ones. One and all to be satisfied in order to full and entire success; and if these are indispensable to any success at all, and if, as judge, accuser, and defendant in one, I confess myself unable to reply to them affirmatively, I stand convicted out of his own mouth, and I am to the sentence of his own honest judgment.

### Home Correspondence.

I have been patiently waiting for the information Mr. Mechi solicited in the *Gazette* of Oct. 15, but no one intends to reply, therefore I will. I think I were to have a centrifugal pump, similar to that exhibited in Hyde Park in 1851, by Bessemer, could be no liability to choke, as it will raise solid as well as fluid; and this would never get out of the amount of friction is so small. I should like Mr. Mechi to erect a tank above his manure heap, the weight of liquid shall be the forcing power, pipes always being full will entirely prevent any stoppage. If Mr. M. entertains these views I shall feel his naming it in the *Gazette*. C. B.

**Artificial Draining Match at Burton Wood.**—An artificial draining match was held on the Burton Wood estate, the property of Samuel Brooks, Esq., Manchester, situate near to the Warrington station of the Liverpool and Manchester Railway, Wednesday, Nov. 23. The field selected was a good one for the purpose. The soil consists of a loam on a marly substratum, with occasional clay and sand. The attendance of drainers and interested in such works was very large, and the proceedings passed off with much gratification to all. The first event was a match for diggers of

drains. For this class of workmen three prizes were offered of 5*l.*, 3*l.*, and 2*l.* respectively, the conditions being that three labourers should work at each drain, and that the prizes should be awarded to those who should cut 48 lineal yards of drain 4 feet deep in the most workmanlike manner, with the least unnecessary excavation of earth, and without occupying more than four hours in the execution, superiority of work to be the first consideration in awarding the prizes. For these 35 sets of candidates, from various parts of the kingdom, including some from Hants, had entered, and 28 competitors were started at 10 o'clock by the firing of a gun. The prizes were awarded as follows, viz. :—

	Leader of Gang.	Where from.	Time.	Top Width.	Bottom.
First prize	J. Cubbin	Ormskirk	3.48	12 ins.	
Second do.	Lucas	Worsley	3.51	13 "	
Third do.	J. Birket	Preston	3.58	13 1/2 "	
Highly Commended	R. Strattocks	Garstang	4.3	13 "	
	H. Conway	Newton	3.39	12 1/2 "	
	Gayley	Fatton	3.45	12 1/2 "	
Commended	G. Goe	Worsley	4.0	13 1/2 "	
	E. Orrell	Ormskirk	4.0	12 1/2 "	

The execution of the work was generally good, and elicited unusual praise; several of the candidates who were disqualified through not having performed their work within the time specified, displayed much merit. The work of H. Conway's set being the first completed, and very fairly done, attracted much attention, and the men were liberally rewarded by voluntary donations from several of the gentlemen present. For the pipe-laying two prizes were offered of 2*l.* and 1*l.* respectively; 13 candidates entered, and six competed. Owing to the lateness of the hour, the number to be laid was reduced from 300 to 144 for the 48 lineal yards cut by the drainers. The conditions were that the prizes should be awarded to those who should lay their pipes in the most workmanlike and expeditious manner, placing each end to end, so as to form one continuous pipe. Execution of work to be the chief consideration. This work was commenced by signal, as before, and the prizes were awarded as follows, viz. :—

	Name.	Where from.	Time.
First prize	Jas. Hodges	Garstang	16 minutes
Second do.	Jno. Mountain	Burtonwood	12 1/2 "
Commended on account of quickness of execution	J. Batton	Fatton	10 "

The judges were G. Thompson, Esq., Engineer to the Landowners' Drainage Company, Exeter, and 30, Parliament Street, London; William Mercer, Esq., of Newton, agent to S. Legh, Esq.; and H. White, Esq., Secretary to the South Lancashire Agricultural Society. The steward to the match was Thos. Suttle, Esq., agent to Samuel Brooks, Esq., of Whalley House. There were upwards of a thousand persons present.

**Receipts.**—Unfortunately the housewives of our cottages are so ignorant in the culinary art that beyond boiling a Potatoe or frying a rasher of bacon, they have no idea; and if you give them the best materials, and the best manner of making use of them, they are either too ignorant or too indolent to benefit by the one or the other. A Frenchwoman, with a few eggs, will make a good omelette, and with a few herbs a good soup, let her be in ever so poor a cottage; but our poor women can only supply their husbands and children with a scanty meal of bread and weak tea for breakfast, bread and cheese or bread and Potatoes for dinner, and again bread or bread and cheese for supper, with a second edition of weak tea; consequently the husband becomes dissatisfied and retires for his evenings to the beer-shop, and there spends upon himself alone what would provide his wife and family with many a good meal. At the present price of bread and cheese, it is impossible for a labourer's family to purchase as much as they require; therefore the women should learn to make use of cheaper substitutes, such as Rice, grey Peas, Turnips, &c.

**Rice Soup.**—Take an ox-head (cost 9d.), or the same amount of liver, lean beef, or sheep's tripe; put it on with four or five quarts of water, and stew it gently five hours; let it stand till cold, take off the fat, and in this take fry two or three onions; put these to the stock made by the cow-head, add 2 lbs. of Rice, and boil for an hour and a half slowly; then add pepper and salt to taste, one quart of skim milk, and two spoonfuls of flour, stir it into the soup by degrees, keep stirring for a few minutes, and then serve.

**Turnip Soup.**—Slice four or five Turnips and three Onions, put them into a stew-pan with half a pound of dripping; cover close and let it stew without water, turning it now and then, for half an hour. Then add three quarts of cold water, boil slowly two hours, or until the Turnips will be all in a pulp, break them fine with a spoon, add pepper and salt to taste; boil half an hour longer till it is quite smooth, then add two spoonfuls of flour and milk as before.

**Vegetable Soup, French.**—Take two Cabbages or Lettuces, a handful of Spinach, and a little Parsley, all well washed; chop them very small; take six Carrots, as many Turnips, three or four Onions, also cut small; stew them in a quart of a pound of butter or dripping, add two quarts of boiling water, stew them for two hours; put in a little pepper and salt, a pint of young Peas in summer or grey Peas in winter; but the latter must have been previously soaked and boiled; let all stew another hour.

Where there is a garden all these soups may be made at the cost of very little more than 1*s.*, for which a good dinner may be provided for two days, as more water may be added to the stock than is here stated; and a basin of this broth, thickened with a little boiled Rice, would make a comfortable breakfast for a poor man, before he went to his work, instead of his present comfortless meal of dry bread and sloppy tea. L. P., *Shrewsbury*.—I observed in the *Agricultural Gazette* of October 29 an inquiry from "Clericus," requesting information as to the best methods of making rice

available as food for the poor. The following receipts may assist the benevolent object of the inquirer. They were printed and circulated in a rural district of Staffordshire some years ago, at a period when provisions were at a high price, and were found to be well adapted to the wants of those to whom they were addressed.

**A good Breakfast, Dinner, or Supper.**—Put 1 lb. of rice and 1 lb. of Scotch Barley into 2 gallons of water; boil them gently for four hours over a slow fire; then add 4 oz. of treacle and some salt; let the whole simmer half an hour. It will produce 16 lbs. of good food.

**A Savoury Dish.**—Put 1 lb. of rice into 5 pints of cold water; boil it gently for two hours, by which time it will be a thick paste; then add 2 pints of skim-milk and 2 oz. of strong cheese grated fine, a little pepper and salt; boil the whole very gently for another hour. It will produce 9 lbs. of macaroni rice.

**Sweet Rice.**—Put 1 lb. of rice into 5 pints of cold water, and boil it gently for two hours till it is a thick paste; then add 2 pints of skim-milk, and 4 oz. of treacle; boil it all very gently for another hour. It will produce 9 lbs. of sweet rice.

**Rice Pudding.**—Tie 1 lb. of rice in a pudding bag, so loose as to be capable of holding 5 lbs.; let it boil gently till it swells enough to quite fill the bag; turn it out and pour 2 oz. of treacle over it. The expense of the above dish is less than 1d. per lb.

**Peas-Soup without Meat.**—Take a pint of whole Peas, let them soak all night; next day put them into 3 quarts of boiling water, let them boil till tender, then smash them together so as to form a paste; put them back into the water along with a quantity of Turnips and Carrots, all cut into dice, with some sliced Onions; let the soup simmer gently for two hours, then thicken with oatmeal, and season with pepper and salt.

—F. Berks.

**Land Drainage.**—My engagements preclude my entering into any lengthened controversy, and I should be much inclined to take "C.'s" hint, and not again "commit myself to paper," were it not that you, with editorial discretion, have placed both the communication of Mr. Trimmer "on the Keythorpe Drainage," and that of "A Draining Engineer," in distinguishing positions under large type headings, implying, it is presumed, a more favourable acceptance of the views they set forth than of those which led to them, and which were very properly placed among your "Home Correspondence." It would appear to be the unfortunate fate of all who write in the columns of the *Gazette* to be misinterpreted. "C." has felt this; Mr. Trimmer cannot fail to feel it when he reads the "Draining Engineer's" summing up of the Keythorpe system: while I would beg that correspondent to do me the favour of again reading the little I have written in your columns on the subject of draining, when he will see that the animus which has directed my pen has been precisely that which governed his. The only opposition I have offered to Mr. Trimmer's views is on the ground that he has already prescribed a "system" of drainage based on certain geological conditions of soil, which he has proved to exist, and which he describes to be more general and regularly inclined than I have found them to be; and when prescribing that system he has disregarded the fundamental law of gravity which should rule in all hydraulic operations. But to prove that I neither underrate Mr. Trimmer's geological knowledge of soils and subsoils, nor am actuated by any other motive in my opposition to his application of that knowledge, than the broad and honest one which springs from a desire to unite unprejudiced practice with scientific knowledge, I may mention that I have professionally sought and gained Mr. Trimmer's opinion on certain soils, where I believe his superior information may be of considerable value to me in my practice. But I do not mean, nevertheless, to disregard the principle of gravitation, which I take as my text when dealing with water, nor to adopt as a "system" Mr. Trimmer's exposition of Lord Berner's proceedings at Keythorpe. Nothing could more opportunely show the probability of the misapplication of Mr. Trimmer's views than the unlucky communication of "J. C. C.," who shows that the furrows he has observed are at right angles to the dip of the strata, the exact reverse of Mr. Trimmer's observations. But as I have intimated, there is much more to be said on the subject than I have time and power to write, and therefore I can only desire that your correspondent the "Draining Engineer," and any other person who may be interested in the subject, will view the several works of drainage now in progress under my charge, which will be sufficient evidence that neither "the gridiron" nor cross-drains prevail as a rule, but that every work has a "system" of its own. *J. Bailey Denton*. [We had hoped to have inserted in this week's Number of the *Gazette* a full account of Mr. Trimmer's views, as they have been published elsewhere in various papers by him. So far as we understand his account of what he has seen, the "furrows" have nothing to do with the dip of the strata, and may or may not cross it. We shall endeavour to state the affair more fully next week.]

**Agricultural Labourers.**—I observe a leader in your *Gazette* of the 29th ult., on societies for the benefit of agricultural labourers, in which, as I take it, you express a wish to see agricultural labourers put on much the same footing as mechanics in towns. Now this appears to me a false and mischievous view of the subject. The independent position of mechanics (I mean independent of their masters, except in the mere fact of receiving wages for work done) is a great evil and results from the selfish practices of the masters, and in part from the great numbers employed by one man; and they would be infinitely improved by being considered as "junior branches of the great mechanical family." Indeed, to some extent the foremen and managers are so in well regulated establishments. Nothing would more tend to raise the status of our labourers than their being considered part of their master's family. Much requires to be done in the way of education and enlargement of mind; but this is more likely to be the case when they



are a part of the family, and are not viewed in the light of mere machines. Nothing in my opinion is more conducive to the interest of the labourer and his master than length of service, and any institution which does not reward this I think can be neither the labourer's nor the master's friend. That policy which would encourage the master to get as much out of his workman as he can, and the workman to get as much wages as he can, irrespective of higher considerations, is, I fear, only a manifestation of that covetous spirit which is too rife in this age. *Owl.*

*Anthony's American Churn.*—"G. D." having some months since purchased one of these churns and been much disappointed in it, would feel greatly obliged to any of your correspondents who may have tested its merits, to give her the result of their experience. She finds, instead of its producing (as is stated weekly in the advertising sheet of your *Chronicle*) more butter from a given quantity of cream than the old-fashioned box churn, that the case is reversed, and from 6 quarts of cream in the box churn obtains 5½ lbs. of butter, the same quantity in the American giving only 4 lbs. 3 oz. This has happened more than once, when the directions given with Anthony's churn were implicitly followed, and the weights and measures adjusted with the greatest nicety. Under these circumstances, some information to be relied on will be very acceptable. Time of churning varied very little—with Anthony's churn, 18 minutes; with the box churn, 20 minutes. *Parson's Green, Nov. 16.*

*Over-Feeding.*—The remarks relative to over-feeding, objected to by "Clod-Crusher," were intended to condemn a system. It was, therefore, quite unnecessary to introduce the name of a person who appears to have been disappointed in not receiving a prize at the late meeting of the Royal Agricultural Society at Gloucester. It should be a rule amongst all exhibitors, where judges are appointed to decide upon the merits of stock, or anything else, to consider them competent to undertake the duties imposed upon them. It is paying men a poor compliment, when engaged in a very unpleasant task, to tell them their opinion is not worth having. No doubt there is a wide difference between the hard, firm condition of an animal which does not deprive it of the natural use of its legs, and the flabby, soft, unwieldy state of the carcase, pampered up for a particular occasion, rendering the grunter almost incapable of locomotion. The former is commended—the latter only condemned. "Clod-crusher" is rather confused in his criticism, as he finishes his effusion by the following words, apparently agreeing with the point of the letter he would annihilate. "The great utility of this society (the Royal Agricultural Society) being the transfer of breeding stock from one part of the country to the other, the intelligence of purchasers would be a guarantee for all the young stock bought; and the exhibitors finding it would not answer their purpose to pamper animals for which they could not find a market, would soon relinquish a practice now so much complained of." Why should not the Royal Agricultural Society hasten the relinquishment of a "practice now so much complained of?" as suggested by *Falcon*.

### Farmers' Club.

FETTERCAIRN, Nov. 12.—*Shed-feeding Sheep.*—Major M'Inroy read a paper on this subject, from which, as reported in the *Montrose Review*, we make the following extract:—"My first trial was on Mr. Huxtable's plan—on boards. It was a decided failure. Before the winter was far advanced, the sheep, which had thriven well for about six weeks, fell off perceptibly, some died; and being satisfied that the cause was the effluvia of the manure below them, and having no means of correcting this, I turned them out to the fields, and my experiment abruptly terminated. It appears to me that it cannot be wholesome feeding sheep on open boards, unless the manure be periodically removed, and the place below kept sweet and clean. There may be some plan of fixing the ammonia which would prevent any noxious effluvia escaping, in absence of which I cannot conceive how board feeding can be successful or advantageous. The second winter I fed about 50 hogs in the following manner: They were in a cattle court, which was kept littered and dry with straw, and they had access to shelter under cover. Here they received as many Turnips as they could eat, a quarter of a pound of crushed Oats, and one-eighth of a pound of oilcake. I lost one or two by braxy, a few days after being put up—the rest thrived amazingly and became very fat, and were sold after being clipped for 26s. 6d. per head. The winter was dry and cold, but little or no snow—consequently the court was very dry all winter. The result of this I may thus state:

Lambs, 13s. per head, when weaned	...	£0 13 0
Grass, till put up	...	0 2 6
Grain and oilcake	...	0 5 6
Turnips, 5s.; attendance, 1s.	...	0 6 0
Nett	...	1 7 0
Sold for 26s. 6d.; wool, 5s.	...	1 11 6
Profit, per head	...	£0 4 6

The third winter I fed 70 hogs, in a covered dung court, upon cut Turnips, 14 lbs. per day, ½ lb. of crushed Oats, 1-16th lb. crushed Linseed, and Oat straw. The litter from the stable was spread daily under them; this, with some chaff, and the straw which they drew down from the racks but did not eat, kept the place dry and comfortable. I had no deaths, and all thrived and became good and fat but two, which afterwards fattened on the Grass. I clipped from them 3½ lbs. of wool. They

were sent to Edinburgh, and sold for 23s. per head. I happened to get the very worst market of the season, and was much disappointed with the result. The 70 hogs in question were the shots of 150—my crop of lambs. The result of last year's experiment was—

Lambs, per head, when weaned	...	£0 13 0
Grass, till put up	...	0 2 6
Grain and Linseed	...	0 4 6
Turnips, 5s.; attendance, 1s.	...	0 6 0
Nett	...	1 6 0
Sold for 23s.; wool, 6s.	...	1 9 0
Profit per head	...	£0 3 0

The 50 of the previous winter were the average of a smaller crop of lambs. No general or comparative result can be drawn from these experiments, different in character, and also in the description of the stock. I prefer the latter mode of treatment; and I will persevere with it until I am satisfied that it does or does not give a paying result. The animals continuing perfectly healthy, and having no deaths from the time they were put up, is sufficient evidence that there is nothing unwholesome in the practice. I was apprehensive that their feet might become affected by the soft straw, but such was not the case; and when it is considered that, fed on Turnips or on pasture during the winter, they would have been exposed to much wet walking, it ceases to be a matter of surprise that they remained sound on the dry straw. I may remind you that the winter before last was a dry one, and consequently much in favor of my sheep, which were only partially under cover. Again, last year was extremely wet; and my hogs had the full benefit of the shelter afforded, thriving at a time when thousands of sheep were dying in England, and when there was a general complaint that "feeding sheep" were doing no good in this district. I may call your attention to the small quantity of Turnips consumed last year—14 lb. of cut Turnips per day, which, at only 20 tons per acre, would keep for six months 18 head, a number far more than is usually kept upon an acre. The quantity ate by the sheep under cover is less; and there is no waste when cut and given in troughs. If I be correct in assuming an acre of Turnips of average crop to weigh 20 tons, and to feed 18 sheep for six months, it would give 4l. 10s. per acre for Turnips, leaving the dung and all the grain and oil-cake or Linseed upon the farm. I have charged the grain at the full market price. Under these circumstances, exclusive of the direct profit, which I admit to be very small (4s. 6d. and 3s.), a certain allowance must be made for the manure so improved, and also the advantage of the home market for the corn consumed. I make no calculation of the value of the manure; for it would be impossible to come to anything like accuracy, without numerous and carefully conducted experiments; but I think I may assume that the benefit is very considerable. An allowance ought also to be made for the Turnip-shaws left on the ground, which results from this mode of consuming the Turnips; and as I allow 4s. 6d. per ton for Turnips, I bring them to a good market. I think a farmer in this district might grow Turnips at 4s. 6d. a ton, getting back the manure, leaving a very handsome margin for profit. While I thus do not wish to represent the profit or advantage of "house-feeding sheep," as far as it has gone, beyond what it has been, or misled you with imaginary or speculative results, I must admit that my trials have been such as to establish no fixed data either for or against the system. What I have satisfied myself of is, that sheep housed and treated as I did my stock last year will grow fat on a comparatively limited quantity of Turnips and a small allowance of corn or oil-cake, and, after paying a full price for what they consume, leave a small profit to the feeder and the manure in its improved condition. I wish to state facts, and let you draw your own conclusions; but I may remark that, had I sold my hogs in the wool, or a week earlier or later in the season, I know that I should have had several shillings per head additional profit. From these results, moderate as they are, I am disposed and encouraged to proceed in this system of feeding; but with better accommodation, which I will soon have, I shall endeavour to arrange them in more equal lots, and try them with and without oil-cake and Oats, in addition to the Turnips, and thus ascertain whether they will grow fat without, or whether the oil-cake and Oats are fully paid by the superior progress of the stock. The manure manufactured under cover is of superior quality: last year, mine was excellent, was turned in the shed and carted direct to the Turnip drills, and I had a most convincing proof of the great advantage of manure made under cover, were it wanted to satisfy any reasonable man of its great practical advantage. I do not think it wasting your time to adduce any well-established fact in support of such a truth—a truth which will, sooner or later, force itself upon our attention, and make us all desirous of having our courts covered in—to my mind, one of the greatest practical improvements in modern agriculture. If tenants were once fully impressed with the importance of having their manure manufactured under cover, they would be eager to avail themselves of so great a boon, and willing to pay for the advantage. A per centage upon the cost of such accommodation would be readily paid, and be an easy way of securing much additional command of the best manure. I consider that, under ordinary circumstances, a space containing 500 square yards, in which, at least, 1000 cubic yards of dung might be made, could be covered in with blue slates for about 100l. An annual payment of 6l. or 7l. as interest would be a small addition to the rent of a farm, say, of 200 acres, compared with the advantage to be derived from

it. But to the case which I was about to mention you: the whole of the manure at the barn last year manufactured under cover, with the exception of a small quantity in a small open court. Soon after the turning of my Turnips, I remarked that 10 drills were very inferior in appearance to those in the adjoining part of field sown the same day. As the season advanced, difference was still more marked; and, on inquiry, I found that the manure of these 10 drills had been taken from small open court exposed to the casualties of weathering a very wet thrashing season. A few days ago, to satisfy myself that it was not all in appearance, I had a portion of the two parts taken up and weighed. The follow was the result:—10 yards of a drill of court manure with shaws, 53 lb., without shaws, 28½ lb.; shed manure with shaws, 62 lb., without shaws, 39 lb.; or shed manure with shaws, at the rate of 18 tons 15 cwt. per acre without shaws, 12 tons 10 cwt. 2 qrs. 24 lb. do.; open court manure, with shaws, 17 tons 0 cwt. 2 24 lb., and without shaws, 9 tons 3 cwt. 0 qrs. 24 lb. showing a difference, without shaws, in favour of covered manure of about 27 per cent. It may not be considered out of place that I give the club a particulars of a crop of Potatoes, grown with manure from these covered courts. I have heard of wonderful results this year from Potatoes, arising from two causes—a very large crop, and a very high price. I had 1 acre of Potatoes in a field of 30 Scotch, the rent of which was, when in pasture in 1836, 12 8s. per Scotch acre. From 1-4th of this acre I got 12l. worth of Potatoes: thus 1-4th of an acre produced two crops, 120 times the amount of the rent 1836! A grower of Potatoes this year (when an acre of food are so very high) may be considered a natural benefactor. I have to regret, on my own account as well as on that of the public, that the whole field was not been Potatoes.

To feed sheep successfully under cover, one must provide the necessary accommodation, and that is always attainable; nor am I in a position at present to say that the profit derived from that mode of feeding as compared with the usual mode adopted in this district, is such as to justify the necessary outlay, am inclined to think favourably of the practice; as I said, I certainly shall continue it, until I am convinced that it will not pay. In my own case, as I did, the buildings covered in for manure cost the "feeding of sheep." I had the advantage of additional expense, and, if the custom of having manure courts were more general, I think the two might be combined with advantage. At all events "feeding sheep under cover" is worth trying; and I trust some of our members may be induced to do so, in which will enable me to experiment more extensively sheep-feeding under cover, and I shall be happy if it is in my power to state the result.

### Notices of Books, &c.

*Suggestions for an Annual Return of Agricultural Statistics, in a Letter to the Right Hon. the President of the Board of Trade.* By G. W. Cooke, Barrister at Law. Stevens and Norton, Bell Yard, Fleet Street. The suggestions are:—

1. "It is possible to select in every county some parishes which shall fairly represent all the divisions of soil, culture, and climate, that obtain throughout the county."
  2. "Having settled his representative parishes (and, of course, to changing them for others, if any alteration should occur in their culture which would destroy representative character), the surveyor will select himself with a field-book of each. Every field-book contains columns headed 'according to the questions which the system of inquiry would include.'"
  3. "With this field-book in his possession, it is the duty of the district surveyor to keep his attention steadily fixed upon the representative parishes, from time the seed is in the ground to the time of harvest that the estimates contained in the produce column be worthy of his reputation. The returns printed, with the name of the surveyor attached, each will have careful criticism from the agricultural and the professional valuers of the vicinity. When the report is complete, the totals will give the culture and produce of the representative parish."
  - "The proportion of the parish to the district is being known, we shall then have, by a operation of arithmetic, the culture and total produce of the district. If the proportion of the representative parish be one-tenth of its district, we have multiplied by 10, and the agricultural statistics of the district lie before us."
  - "Add the totals of each district together, and the total culture and produce of the county."
  - "It is unnecessary to state, that when we have the totals of the counties together, we have, in one total culture and produce of the kingdom."
- The selection of representative parishes is possible in some districts of large extent, but we are bold to say, be utterly impossible in others of equal extent. Let any one walk from Teal Oldbury-on-Severn, in Gloucestershire. The five or four miles are over a district of remarkably character as regards soil and cultivation: Mr plan would, we believe, apply to the Cotswold Gloucestershire with tolerable accuracy: 1 Wotton-under-Edge to Oldbury, some 10 or



ssenger traverses all sorts of soil, all sorts of gy," and no two farms, let alone parishes, are ie another till he comes to the alluvial district the Severn. Apart from these first facts of the oo, it must be remembered that the error of the ep in Mr. Cooke's plan is just the error of the ep in the existing plan—it is the error of the first e; but in Mr. Cooke's plan this error, whatever ill be multiplied by the proportion between the and the district; while in the existing plan, where arm has its own estimate, we believe that errors ash in the process of addition, and be ultimately lised. If the facts cannot be directly ascertained; must be estimated, which is, we suppose, the case, events let them be estimated in every individual and not merely in a selected number of instances. on may destroy the error unavoidably attaching original statements, multiplication must increase it.

POULTRY.

Winchester and Southern Counties Society for the vement of Domestic Poultry held its second show John's Rooms, at Winchester, on the 16th and November. Before entering into details, it is our ice, as faithful chroniclers, to notice anything to exhibitors generally seemed to object, and we are to say our task will be an easy one. Much dis- ction was expressed at the classification of the list, and we confess we are at a loss to see any foundation than that of originality for classes ng three prizes for adults and only one for chickens. ormer are not yet recovered from their moulting, he latter are now in full beauty preparatory to g. Such an arrangement offers little inducement y maturity, which has hitherto been considered a eratum, and one of the objects of such societies as . The other objection was the poor sum given for ottagers' prizes, the whole amount being 15s. We ot understand on what principle such prizes are d, unless it be that the poverty of the class to h they are open makes any sum, however small, ble. Our own feeling is strongly in favour of ums being offered to cottagers, as we believe a good may be done thereby. Such as those now e notice are more mischievous, from their evident distinction, than beneficial by their operation. As remarks are made in perfect good faith, and in the est of the society, we hope they will be taken in part, and considered by the committee before promulgation of their prize-list for next year. increase in the number of pens exhibited very satisfactory, having nearly doubled those of 52. The Dorkings were excellent, and so were y of the Cochins. The game classes were ent, having but 12 entries in the same number asses. Mr. Punchard took the first prize for buff in Chinas with some very good birds; Mr. Chase, ewick, had the second. In the old birds Mr. hard also took the first prize. The prize for k Cochins went to Birmingham, being taken by Holmes; the second was awarded to Mr. Chris- er Rawson. For adult Dorkings Mr. Dutton, ofatham, had first, and Mr. Chambers, of Portsmouth, second prizes. Mr. Turner, of Bishopstoke, had prize for chickens. Other birds in this class ded the same honours. Mr. Adkins, of Birmingham, was successful in golden spangled Hamburgs. Ker Seymour had prizes both for gold and silver illed, Mr. Rawson for silver spangled, Mr. A. C. rs took both prizes for Malays. The "other dis- eed" class was an amusing one as usual. The migans were in force, mustering four pens, and of them was bearded. The white Polands also ved three pens. There were some good silk fowls. rs. Rawson, of Walton, and Adkins, of Birming- ere, were among the largest prize takers, and the est exhibitors. It was well conducted, and all s seemed to be taken to ensure the comfort both of rs and birds. The judges were the Rev. W. W. ghfield, and J. H. Catling, Esq., of London.

Second Exhibition of the Hitchen and Home Counties ciation for the Improvement of Domestic Poultry, was on Friday, Saturday, and Monday, the 18th, 19th, 21st of this month. The building which it was ded to use for this purpose last year, and which ot not be finished in time, was now made use of. places are better adapted than the Corn Exchange uch a purpose. Entirely closed in, free from any ight, lofty and well lighted, having a glass roof, it e be considered among the best buildings in the dom for such an exhibition. Save Bingley Hall, ave not yet seen its equal. There were 370 pens bited, and all well represented, but we looked in for the display of Cochins there was in 2. The worst class in the exhibition was beyond pt that of the white birds of this breed. The first e was taken by the Rev. G. Calvert, of Bechy. rs. Eason, J. Harrison, and Kegworth, took the es in their order, against 32 competitors for buff ens. The white Dorkings were weak, but their ured brethren made amends for them. This was lendid class, and the Rev. Mr. Boys, the Countess andwich, and Mr. Oliver Stead, took the prizes. hing could exceed the merits of many of these s, and those who gained high commendations, Mr. ry, of Aylesbury, and Mr. Harrison, of Snelton e, should think much of it. Messrs. Boys, Nee, Holland, took the remaining prizes in the Dorkings, t of them were sold at good prices, and we believe

we are correct in saying one pen belonging to Mr. Boys was claimed at 50 guineas. Mr. Botham, of Slough, took both first prizes for Spanish. Messrs. Boothby, Ridgway, and Terry, were also successful. The game fowls were unusually good; the principal prizes were awarded to Messrs. Wilson (two), Thurnall (two), Lucas (two), Strange, Davis, Reed, and Monsey. The Rev. T. L. Fellowes, took three prizes for Hamburgs, and Messrs. Lightfoot (two), Strange, Dutton, Dixon (two), Chapman, Thurnall, Rawson, McCann, Harvey, and Whiting were fortunate. In Polands, Mr. Youell, of Yarmouth, took four prizes, Mr. Boothby four, Mr. Stephenson two. The bantams were as they always are at Hitchen—beautiful. It is the home of the Sebright, and we doubt if a better selection can be anywhere seen. Mr. Sparry took both the first prizes, but the second prize went to Great Yarmouth, being taken by Mr. Palmer. Mr. Monsey was three times successful with his bantams, and Messrs. Rowsey and Jackson also appeared in the prize list. The turkeys were entitled, in the opinion of the judges, to universal commendation, the prizes were awarded to Messrs. Arnold, Fowler, Hoggitt, Bermell (two), and Roberts. Two pens of geese, belonging to Mr. Terry, of Aylesbury, were of unusual weight and merit, and took the first prizes in their class, the third went to Mr. Harvey. The ducks mustered 35 pens, and were a capital class. The limits of a report will not admit of greater enlargement. It was an excellent and, we hope, a successful show. Nothing daunted at the pecuniary loss of last year, the committee have gone steadily on, and deserve the support of the amateurs of the kingdom. We doubt not, that next year, fortified by the experience of two preceding shows, they will still increase their entries, and become deservedly one of the most popular and prosperous societies of the sort. The fact that almost every county sends to this exhibi- tion, may well induce them to continue the liberal prize list they publish, especially the encouragement given to chickens of the year. The judges were E. Hewitt, Esq., of Spark Brook, Birmingham, and Mr. Baily, of London.

Poland Fowl.—I must protest against the condemna- tion of the bearded Polands in last week's paper, in the article signed "John Baily," (under the term "Poland Fowl") than which nothing can be more unjust, or more at variance with the facts. There is no fowl that is harder, or that will bear confinement better (I speak from experience, and without fear of contradiction). They are totally different in constitution, carriage, size, and form to the Black Poland with white top, and others of Dutch extraction; and if any corroboration of what I say were necessary, I doubt not it would be readily afforded, as they are now in the possession of nearly all the first amateurs. They are also most excellent layers, very seldom wanting to sit, if at all; and "that they are, by way of reproach, called dealers' fowls," and are not in demand, is sufficiently refuted by the increas- ing numbers and beauty in which they figure in each succeeding show, and I have no doubt will continue to do, till they take up a most prominent position, which their qualifications will command in spite of any opposi- tion; and it is most unfair and ungenerous that, not content with having endeavoured (unsuccessfully) to deprive them of their beards, an attempt should now be made to filch from them their good name, I trust with the like result. I would say more in their favour (they are in the greatest perfection in the South of France) but that I fear to trespass on your space; my apology for having done so thus far must be that, knowing them so well, I was naturally concerned to see them so misrepresented. S. C. Baker.

POULTRY: A.M. The latest period at which I would hold a poultry show would be the end of January. The objection to April or even March is, that the fowls are laying and sitting, and that a valuable bird engaged in producing a progeny as valuable as herself, would be out of place and less profitable at an exhibi- tion, even though she gained a first prize. Admitting she were only laying, it interferes both with her comfort and her profit to her owner.—A.B.D. Give no more Hempseed—it is too heating; let the pheasant have plenty of green and cooling food, and give her a teaspoonful of castor-oil every third day until she is convalescent. She is out of condition, and probably too fat. If she has not access to Grass, she must have it.—Rus. The best way of sending fowls to an exhibition is in a basket 20 inches high and 87 in circumference; the top of it should be covered with a stout cloth instead of a wicker lid. J. Baily, 113, Mount Street.

Miscellaneous.

English Rotation of Crops.— "Warwick.—Heavy land—1st, Wheat; 2d, Beans; 3d, Wheat; 4th, fallow, part of which is under Turnips; 5th, Wheat or Barley; 6th, Clover. "Ditto.—Light land—1st, Wheat; 2d, Peas, followed by Turnips; 3d, Barley, or spring Wheat; 4th, Turnips; 5th, Barley; 6th, Clover. "Lancashire.—1st, Oats; 2d, green crops; 3d, Wheat, or Barley; 4th, Grass, continued for three or four years. "Yorkshire.—In following the four-course system, the land has become both Clover and Turnip sick; an extension similar to that of Norfolk recently found necessary. "Durham.—1st, fallow; 2d, Wheat; 3d, Oats; 4th, fallow; 5th, Wheat; 6th, Clover. "Ditto.—1st, Potatoes; 2d, Wheat; 3d, Turnips; 4th, Potatoes; 5th, Wheat; 6th, Clover. "Cumberland.—1st, Oats; 2d, green crops; 3d, Wheat; 4th, Clover. "Ditto.—1st, Oats; 2d, Turnips; 3d, Wheat; 4th, Barley; then Grass seeds for a few years.

"Northumberland.—1st, Oats and Beans; 2d, Tur- nips; 3d, Wheat or Barley; 4th, Clover, allowed to stand for two years.

"Derbyshire.—1st, Oats; 2d, Wheat; 3d, Oats; 4th, fallow; 5th, Wheat; 6th, Clover; 7th, Wheat.

"Northampton.—1st, Wheat; 2d, Barley; 3d, Turnips; 4th, Barley; 5th, Clover, allowed to remain two years.

"Bedford.—1st, fallow; 2d, Wheat; 3d, Clover; 4th, Oats; 5th, Beans; 6th, Wheat.

"Huntingdon.—1st, fallow; 2d, Wheat; 3d, Beans; 4th, Barley; 5th, Clover; 6th, Wheat.

"Ayrshire.—1st, Oats; 2d, Turnips; 3d, Barley; 4th, Grass seeds, to remain for three years.

"Berwick.—1st, Oats; 2d, Turnips; 3d, Wheat; 4th, Grass seeds, to remain for three years.

"Ditto.—1st, Wheat; 2d, Turnips; 3d, Barley; 4th, Beans or Peas; 5th, Wheat; 6th, Turnips; 7th, Bar- ley; 8th, Grass seeds, to remain for three years.

"Dumfries.—1st, Oats; 2d, Turnips; 3d, Wheat or Barley; 4th, Grass, to remain for a few years.

"Leithgow.—1st, fallow; 2d, Wheat; 3d, Beans or Peas; 4th, Barley; 5th, Clover; 6th, Oats.

"The above list affords instances of two systems of cultivation. The first is that of growing corn and green crops alternately in an uninterrupted series. This is principally confined to the south, midland, and eastern counties, where the climate is dry and well adapted to encourage the growth and maturity of corn. The old and celebrated Norfolk rotation was based upon the assumption that the growth of a crop of any particular kind rendered the soil upon which it was grown less fit for the production of a second crop of a similar kind, although it may not have injured it for the production of a crop of a different kind. We have abundant evidence of the truth of this assumption; and the great difficulty is in determining, practically, the extent of its application, by fixing limits to the number of crops which should intervene between a recurrence of those of similar kinds, so as to produce the greatest possible result. It is now matter of notoriety, that the Norfolk farmers, in establishing their celebrated four course shift, werenot sufficiently cognisant of the fact, that certain crops render the soil in which they are grown not only less adapted for their production in successive years, but also less adapted for a series of years. It is now known that Clover cannot be grown to advantage in ordinary soils oftener than once in six or eight years. This fact has been made known to the Norfolk, and also to the Yorkshire farmers, by expensive experience, and they have been forced to substitute Peas or Trefoil for their Clover crop in every alternate recurrence of their course. The knowledge on this subject which the Norfolk and Yorkshire farmers have acquired, at a comparatively recent date, has long been possessed by the Flemish farmers, who have for ages adopted rota- tions which occupy a large circle of time, and in which certain crops which are found to sicken land soonest, are not allowed to recur until the lapse of several years.

"The second system into which the foregoing rotations may be divided is, that of growing a series of arable crops, and then of laying down the land to pasture for a series of years. This appears to be the system more generally pursued throughout the kingdom, and parti- cularly in the northern and western parts. Both systems have their peculiar advantages in peculiar situations. Near large towns, where markets for farm produce are high, and where our crops have a high character for productiveness both in quantity and in quality, the advantages of pursuing the former system are apparent; but in situations at a distance from good markets, and particularly where the crops we can grow are, as is the case generally in this county, not of good quality, the latter system is to be preferred. Indeed, in a pursuit such as that of agriculture, in which a variety of circumstances are periodically conspiring to effect fluctuations in the value of our produce, there does not appear to be any system so well adapted to afford facilities for meeting the requirements of the time as the latter, or the con- vertible system, by which we are enabled without any material derangement of our system, to increase or to diminish the comparative breadth of our arable or pasture lands. These are processes which, in a short time, affords a great degree of elasticity to our resources; and they have before now been the means of enabling us to withstand the baneful effects of agricultural panics, under which the farmers of more favoured districts have sunk. While land is under good pasturage, it appears naturally to acquire a certain degree of fer- tility in proportion to the number of years it remains down; and though this fertility may not be perceptible in the pasture, it exercises a very favourable influence on the succeeding crops of corn." Morgan's Essay on Caermarthenshire Agriculture.

Improvements in the Manufacture of Manure, by Thos. Rhodes, of Regent Works, Leeds. Patent dated March 12, 1853 (No. 629). This invention consists in producing manures by reducing wool or hair into a finely divided condition or pulp by machinery, and then treating this pulp with acid or alkali to dissolve it, and, when drained, mixing charcoal, coprolites, &c., with it, and moulding the mixture into blocks. Mechanics' Mag.

Calendar of Operations.

NOVEMBER.

WEST SUSSEX, Nov. 21.—Since our last report we have had a continuance of very fine weather, which has been as well suited for Wheat sowing as we could wish, and so all fear of a like season with the last has vanished. Sowing is finished in most



places, except where Turnips have to be fed off, which is only upon the dry lands, as it is seldom or never attempted to do so upon the flat and heavy land; and if it were there is not the prospect of having a good crop, as the sowing must of necessity be late, and even if the land be in working order (which at this time of the year we can hardly expect) it has got cold, and the young plant is not well advanced so as to stand the winter, so that we must trust to an Oat crop instead. We have had a few sharp frosts, and the sheep have had to be turned out, and in some instances have been put upon the Turnips, especially the younger ones, but up to the present time they have done well upon the stubbles and may for some time find a great part of their sustenance on them. Ploughing the land intended for Turnips and other roots is now the chief employment for our horses, while men have sufficient work in clearing out ditches, trimming hedges, and such like. The Wheat, in many places, is hurt by the slug, especially that sown on Clover lea, but we trust that the sharp frosts that we have had will put a stop to their ravages. That sown after Beans or Peas is not said to be hurt, but we question whether it is yet far enough advanced to render it liable to their attack, but as the season is likely to settle the matter we shall probably know no more on the subject just yet. Markets for grain still remain firm, though it was anticipated that with fine weather the prices would fall; but though such expectations tended, upon the first clearing up of the weather, to slacken the price, yet it soon turned up again, from which we may infer that the supply is not over-abundant; but if we are to have statistics, which most other interests have, then it will not be so much work in the dark, and those who give themselves the trouble to study supply and demand will be able to regulate their sales to the best advantage. G. S.

### Notices to Correspondents.

**LEASES:** O. G. You say that the land was several years in Grass, then Oats, then Turnips, well manured, and now it is to be Wheat, the Turnips having been all carried off; it is to be given into your hands in March, and you want it for Potatoes. You will have to pay the farmer the cost of labour and seed, for the young Wheat in spring, and then plough it all up for Potatoes, and clean and manure it well before planting the sets; i. e., unless an amiable remembrance shall prove efficient, as we should suppose it would. The tenant so far as you describe the matter, has not exceeded ordinary powers.

**STEAMING HAY:** L. R. asks "G. P. S." for his plan of steaming. The ordinary plan is to enclose a lot of the hay in a box, large cask, or otherwise, to let steam in from below, where there is also a stop-cock, by which the water of condensation may be allowed to escape at intervals.

**ERRATA:** C. who inquired last week about the discharge of pipes, will have noticed that the example given in col. c. p. 749, did not fully act up to the rule. The answer should have been not 33, but the square root of 33, or, as nearly as possible, 5.7 cubic feet per minute. We may mention also another error of calculation in Mr. Littleboy's paper, p. 748, which we quoted in our leading article (see p. 746), the number of cattle being 81, not 75, which will of course diminish the profit per head upon the cattle, though it does not alter the result of the experiment as regards the food consumed.

### Markets.

#### COVENT GARDEN, November 26.

Vegetables and Fruit continue to be well supplied. Late Grapes are sufficient for the demand and still very good. Pears chiefly consist of Marie Louise, Glout Moreau, Crassane, Chaudmont, Duchesse d'Angoulême, Passe Colmar, and Winter Nelis. The demand for Cobs has greatly fallen off. Chestnuts have made their appearance. Importations of Potatoes from the Continent are still kept up; they are also arriving in large quantities from Scotland, and prices for them have fallen at least 10s. per ton. Asparagus is beginning to come in at from 8s. to 10s. per 100, and Seakale at from 3s. 6d. to 4s. 6d. per punnet. Carrots and Turnips fetch from 2d. to 4d. per bunch. Mushrooms are tolerably plentiful. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

#### FRUIT

Pine-apples, per lb. 3s to 5s  
Grapes, hothouse, p. lb. 2s to 5s  
— Portugal, p. lb. 6d to 1s 6d  
Apples, per bush, 4s to 8s  
— dessert, p. hf. sieve, 2s to 4s  
Pears, per doz., 1s to 3s  
Lemons, per doz., 1s to 2s  
Oranges, per doz., 1s 6d to 8s

#### VEGETABLES.

Cabbages, per doz., 9d to 1s  
Cauliflowers, each, 6d to 1s  
Greens, per doz., 1s 6d to 3s  
Brussels Sprouts, do. 1s 6d to 2s  
Potatoes, per ton, 60s to 160s  
— per cwt., 5s to 7s  
— per bush., 2s 6d to 5s 6d  
Turnips, per doz., 2s to 3s  
Cucumbers, each, 6d to 1s  
Celery, per bundle, 6d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 1s to 1s 6d  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
— per bushel, 2s 6d to 3s  
Leeks, per bunch, 1d to 2d  
Shallots, per lb., 6d to 8d  
Garlic, per lb., 6d to 8d

#### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, THURSDAY, November 24.**  
Prime Meadow Hay 84s to 105s  
Interior do. ... 50 70  
Rowen ... 45 60  
New Hay ... 40 80

#### CUMBERLAND MARKET, THURSDAY, November 24.

Prime Meadow Hay 105s to 112s  
Interior do. ... 40 84  
New Hay ... 40 84  
Old Clover ... 120 130

#### WHITECHAPEL, THURSDAY, November 24.

Fine old Hay ... 100s to 105s  
Interior do. ... 90 95  
Fine new Hay ... 75 80  
Interior do. ... 36 65  
Fine old Clover ... 120 126  
Interior do. ... 110 115

#### POTATOES.—SOUTHWARK, Monday, November 21.

The Committee report that during the past week there have been very large arrivals, both coastwise and by rail, which has caused a great reaction in the trade, and many cargoes in very bad condition, being so much blighted, are almost unsalable at any price. The following are this day's quotations:—East Lothian Regents, 110s. to 140s.; Perthshire do., 70s. to 100s.; Forfarshire do., 70s. to 100s.; Fifeshire do., 70s. to 100s.; Reds and Cops, 7s. to 100s.; Prussians, 70s. to 100s.; Irish, 90s. to 100s.

#### HOPS.—BOROUGH MARKET, Friday, November 25.

Messrs. Patenden and Smith report that there is rather more inquiry for Hops, and the supply on offer is very limited.

#### COAL MARKET.—Friday, November 25.

Wallend Hutton, 26s. 6d.; Wallend Tees, 26s. 6d.—Ships at market, 44.

#### WOOL.—BRADFORD, Thursday, November 24.

The small arrivals from the country, and the prices there demanded, prevent any new purchases for this market; the sales effected are still limited. In noils and brokes there is more inquiry, and the supply on hand and making very limited.

**YARNS.**—The settlement of the dispute with the weavers in the Burnley district, who resume work on Monday next for four days per week, will somewhat improve the demand for spools, and as the cost to produce yarns has been on the increase, it is not improbable higher prices will be sought for December contracts.

**PRECES.**—The thoroughly sea-sonable month is favourable for stuffs, and there is an improvement in the warehouse. In grey goods there is also more confidence and somewhat more doing, and the opinion is very strong that goods have seen the lowest price.

#### SMITHFIELD.—MONDAY, November 21.

We have about the same number of Beasts as on Monday last. Prices are fairly maintained, although a clearance cannot be quite effected. There are more Sheep, and trade is very dull. The prices of Monday last cannot be realised on the average; indeed, several inferior qualities remain unsold. Trade is rather worse for Calves. From Germany and Holland there are 2660 Beasts, 6140 Sheep, and 248 Calves; from Scotland, 60 Beasts; and 2900 from the northern and midland counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Here-	Best Long-wools...
forbs, &c. ... 4 4 to 4 6	Do. Shorn ... 0 0 0 0
Best Short-horns 4 2 4 4	Ewes & 2d quality 3 8 4 2
2d quality Beasts 2 8 3 6	Do. Shorn ... 0 0 0 0
Best Down and	Lambs ... 0 0 0 0
Half-breeds ... 4 10 5 0	Calves ... 3 6 4 8
Do. Shorn ... 0 0 0 0	Pigs ... 3 4 4 6
Beasts, 6623; Sheep and Lambs, 28,260; Calves, 284; Pigs, 305.	

#### FRIDAY, November 25

The number of Beasts is rather large, and the trade dull, but the choicest descriptions are not lower. We have only a small supply of Sheep, fully adequate, however, to the demand. Monday's prices are with difficulty maintained. Good English Calves are scarce, and consequently in demand at rather higher rates, but trade is dull for other descriptions. From Germany and Holland there are 307 Beasts, 1110 Sheep, and 259 Calves; the number of Milch Cows is 55.

Best Scots, Here-	Best Long-wools...
forbs, &c. ... 4 4 to 4 6	Do. Shorn ... 0 0 0 0
Best Short-horns 4 0 4 4	Ewes & 2d quality 3 8 4 2
2d quality Beasts 2 8 3 6	Do. Shorn ... 0 0 0 0
Best Down and	Lambs ... 0 0 0 0
Half-breeds ... 4 10 5 0	Calves ... 3 6 4 8
Do. Shorn ... 0 0 0 0	Pigs ... 3 4 4 8
Beasts, 976; Sheep and Lambs, 3690; Calves, 334; Pigs, 285.	

#### MARK LANE.—MONDAY, November 21.

The supply of English Wheat to this morning's market was small, and met a ready sale at the extreme prices of this day's night. Having a large attendance of country buyers, there was a good retail inquiry for foreign Wheat, but chiefly of intermediate qualities, at fully the prices of Monday last. Of Barley we have a good supply, and the trade is very slow at a decline of 1s. to 2s. per qr. Beans bring an advance of 1s. per qr. Peas are unaltered in value. Oats are a fair sale, and Russian are 6d. to 1s. per qr. dearer. In the value of Flour there is no alteration.

#### PER IMPERIAL QUARTER.

Wheat, Essex, Kent, & Suffolk ... White	68-76 Red	60-70
— fine selected runs ... ditto	70-80 Red	68-76
— Talavera ... ditto	70-82	—
— Norfolk ... ditto	— Red	—
— Foreign ... ditto	58-69	—
Barley, grind, & distill, 34s to 38s ... Cheviot	38-43 Malt	36-40
— Foreign, grinding and distilling	26-40 Malt	38-42
Oats, Essex and Suffolk ... ditto	17-21	—
— Scotch and Lincolnshire ... Potato	22-24 Feed	17-21
— Irish ... ditto	21-23 Feed	19-20
— Foreign ... Poland and Brew	17-30 Feed	20-27
Rye ... ditto	29-44 Foreign	—
Rye-meal, foreign ... ditto	41-46 Harrow	41-46
Beans, Mazagan ... 40s to 45s ... Tick	— Longpod	—
— Pigeon ... 50s — 55s ... Winds	52-68 Egyptian	48-50
— Foreign ... ditto	60-63 Suffolk	61-65
Peas, white, Essex and Kent ... Bolders	44-47 Foreign	40-62
— Maple ... 45s to 49s ... Grey	— Yellow	—
Maize ... ditto	White	—
Flour, best marks delivered ... per sack	70-75	—
— 2d ditto ... ditto	55-65 Country	55-65
— Foreign ... per barrel	35-42 Per sack	58-65

#### FRIDAY, November 25.

Less activity has been observable in the Wheat trade of the north this week, and purchases in Liverpool, Manchester, Glasgow, and Newcastle might have been made on rather easier terms. Here we have experienced a healthy country demand, and on Wednesday an evident disposition was manifested by the town millers to increase their stocks, which has imparted great firmness to holders, and caused prices to be well supported.

We have again to report a good arrival of foreign Wheat and fair of Flour; also of Oats from Ireland; other grain moderate. There was only a small attendance at market to-day; the little English Wheat fresh up sold at the prices of Monday last, which were also obtained upon the sales effected in foreign, but business in the latter was limited and chiefly confined to retail purchasers. In floating we heard of only two cargoes of Egyptian being taken, one at 50s. per qr., cost, freight, and insurance for the U.K., the other at 50s. for the Continent. A cargo of Roumelia Rye arrived sold at 45s. 9d. per qr. for the latter. Barley is a very dull sale and rather cheaper. Beans and Peas are unaltered in value. Oats meet a fair sale, and old bring an advance of 6d. to 1s. per qr. For Flour there is a fair inquiry at full prices.

#### ARRIVALS FROM NOVEMBER 21ST TO NOVEMBER 25TH.

Wheat.	Barley.	Oats.	Flour.
English ... 1070 qrs.	2110 qrs.	840 qrs.	1530 sacks
Irish ... 600	9610	9830	7350 brls
Foreign ... 22160	5570	—	—

**LIVERPOOL, Tuesday, Nov. 22.**—There was a good attendance of millers from a distance at this morning's market—several from the Yorkshire side—but the operations generally were upon a limited sale, at a decline from last Tuesday of about 1d. per bushel on American white Wheat. Good red Wheat still scarce, and wanted. American Flour also moved slowly, and the advance made at Friday's market was lost, and prices closed as quoted on this day's night. Indian Corn very dull. Oats and Oatmeal were each rather easier to purchase. Beans and Peas remain scarce. Barley again rather lower.

AVERAGES.	Wheat.	Barley.	Oats.	Kye.	Beans.	Peas.
Oct. 15 ... 68. 47	40. 107	24. 107	39. 117	45. 87	45. 44	—
— 22 ... 68. 11	40. 107	24. 107	39. 117	45. 87	45. 44	—
— 29 ... 69. 1	40. 9	24. 8	40. 10	45. 7	45. 10	—
Nov. 5 ... 71. 9	41. 3	25. 5	43. 0	48. 10	53. 9	—
— 12 ... 73. 7	42. 2	25. 5	42. 7	49. 9	56. 7	—
— 19 ... 72. 9	42. 3	26. 0	43. 11	52. 6	56. 7	—
Agg. Aver. 70. 9	41. 2	24. 11	41. 6	48. 6	52. 4	—

#### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Oct. 15.	Oct. 22.	Oct. 29.	Nov. 5.	Nov. 12.	Nov. 19.
73s 7d	...	...	...	...	...	...
72 9	...	...	...	...	...	...
71 9	...	...	...	...	...	...
69 1	...	...	...	...	...	...
68 11	...	...	...	...	...	...
68 4	...	...	...	...	...	...

**FORD'S HOTEL, 13 to 16, Manchester Square,** within 3 minutes' walk of the SMITHFIELD CATTLE SHOW. Gentlemen will find every accommodation on reasonable terms.

SOUPS, DINNERS, &c., ALWAYS READY.

**TO PIG AND SHEEP FEEDER**  
DAMAGED WHEAT ... 35s. per q  
LENTILS ... 48s. per q  
IRISH CORN ... 47s. per q  
RICE MEAL ... 97. per ton

A Quarter of Wheat and 2 cwt. of Rice Meal sent for Post-Order of 2l. 18s. as a Sample; 1s. 6d. each charged for Post-Delivered free to any Railway in London.

N.B. These Prices are only for the present week.

JAMES MAY & CO., Finsbury Wharf, City Road Basin, London.

**FARM WANTED TO RENT, in Surrey, Hants, Kent, or Sussex.**—About 100 Acres of Meadow or 50 to 60 Acres of Arable and Pasture, within 40 miles of London, and not more than 4 miles from a Station. moderate.—Address full particulars to M. C., Mr. Box, 196, Warwick Bridge Road, Southwark, London.

**TO BE LET.**—A large FARM, in the North Division of Northumberland, from the 12th of May. The Farm being out of condition a long Lease and Liabilities will be granted to an enterprising tenant with adequate capital.—Information may be had by application to Mr. G. of Milfield Hill, Wooler.

#### TO FORESTERS, ETC.

**WANTED IMMEDIATELY,** a quantity of SHARP BASKET WILLOWS. A small bundle as sample sent, carriage free, and a letter by post stating price, to P. LAWSON & SON, Nurserymen, Edinburgh.—Nov. 26.

**TO BE DISPOSED OF, 30 Large CAMELLIA** well set with flower buds, and seven ORANGE TREES in a healthy condition; also, about 800 yards of splendid EDGING.—May be viewed any day at the Castle Garden, Dorking, Surrey.

**LARGE IRON CONSERVATORY FOR SALE.**

**TO BE DISPOSED OF,** by private contract, well known elegantly-constructed CAMELLIA HOUSE belonging to C. Loddiges & Sons, 118 feet long, by 24 wide, 20 high, in excellent preservation. The above will be sold at its speedy removal being absolutely necessary.—For terms to view, apply at C. Loddiges & Sons' Nursery, Hackney.

#### TO NURSERYMEN AND GARDENERS.

**TO BE DISPOSED OF IMMEDIATELY,** in consequence of the ill-health of the Proprietor, a NURSERY BUSINESS, which has been established upon a century in a flourishing Market Town, in Hampshire; it is also a good Seed Business connected.—For further particulars address X. Y. Z., Mr. Sheppard, Nurseryman, Winchester.

**PRIZE WHITE COCHINS.**—An Amateur, who this year gained for this variety the Silver Medal at West Kent Exhibition, and First and Second Prizes at Bury Surrey Gardens, has now for Sale a few splendid CHICKS carefully selected from his best birds. Also, for Disposal, a C Bird of great size and weight, which last year took prizes Cheltenham, Halifax, and Yarmouth; also a Pullet that already gained the First Prize at Gloucester and Baker Street and Second Prize at Surrey Gardens.—For price, &c., apply T. B. F., Maldon, Essex.

### Sales by Auction.

**COCHIN CHINA AND SPANISH FOWLS OF VARIOUS CHOICE QUALITY.**

SALES BY AUCTION ON TUESDAY, 8TH, AND FRIDAY, 9TH DECEMBER (The First and Last Days of the Smithfield Club Cattle Show).

**MR. J. C. STEVENS** begs to announce that he will hold Sales by Auction of FANCY POULTRY at Great Room, 38, King Street, Covent Garden, on the days mentioned above, at 12 o'clock precisely. ON TUESDAY, 6th Dec The Cochins entered are from Mr. J. Bidwell, of Guildford, his celebrated Prize Birds; from Mrs. Fooks, of Blandford, winner of 1st Prize for Chickens at Dorchester; and save other Breeders of Choice Stock. The Spanish are from 1 Fox's famed Birds, and from E. Kingston, Esq., of Exeter ON FRIDAY, 9th December will be included a choice collection of MISCELLANEOUS POULTRY, and Pigeons from W. Haynes, Esq., of Sutton, Surrey, and other amateur fanciers Catalogues by enclosing a stamped directed envelope letter Mr. J. C. STEVENS, 38, King Street, Covent Garden.

**GRAND SHOW OF PIGS & POULTRY AT DONCASTER** ON NOVEMBER 30 AND DECEMBER 1.

**MR. WEBB** begs to inform the public that he will sell by Auction, on the first day of this great Exhibition about 50 LOTS of POULTRY, consisting of Cochins China (but Golden Spangled Hamburg, Silver Spangled Hamburg, Silver Pencilled Hamburg, and Sebright Bantams). Also a number FANCY PIGEONS, comprising Carriers, Almond Tumble Turbets, and other varieties. The time of Sale will be made known in the handbills.—Hall Gate, Doncaster, Nov. 26.

#### TO GENTLEMEN, FLORISTS, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** will sell by Auction at the Mart, Bartholomew Lane, on THURSDAY, December 1, at 12 o'clock, a first-class collection of DUTCH BULBS, consisting of the finest double and single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Snowdrops, Tulips, &c., also a selected assortment of Standard and Dwarf Roses, Ornamental Trees and American Plants well set with bloom-buds. May be viewed the morning of Sale; Catalogues had at the Mart and of the Auctioneers, American Nursery, Leytonstone, Essex.

#### CONSIGNMENT FROM BELGIUM FOR ABSOLUTE SALE.

**MESSRS. PROTHEROE AND MORRIS** will sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, December 2d, at 12 o'clock, 300 Selected Herbaceous Plants, 5 Choice Ghent and Indian Azaleas, 400 Standard Roses, 24 Orange Trees in fruit, 50 Choice Double Camellias, well set with bloom-buds; with a variety of Greenhouse Plants, Dutch Bulbs, &c. May be viewed the morning of Sale; Catalogues had at the Mart and of the Auctioneers, American Nursery, Leytonstone, Essex.

#### GUANO, FLOUR, BARLEY, AND OATS.

**MESSRS. TOPLIS AND SON** will sell by Auction at the Ruins, Shad Thames; at Easton's Warehouse Weaver's Lane, Tooley Street; and in the Railway Archway Spa Road, Bermondsey, near the Station, on TUESDAY, November 29, at 12 o'clock punctually, on account of the Insurance Companies, the SALVAGE from the late fire at Dudin's Granary, Shad Thames, comprising 700 tons of GUANO, the greater part but slightly injured, 600 quarters of BARLEY and OATS in good condition; also 120 barrels of FLOUR slightly injured, a large quantity damaged.—May be viewed at the respective depots, as above, three days prior to the Sale, and Catalogues had or forwarded, on application, to Messrs. TOPLIS and SON, 1 St. Paul's Church Yard, London.



**BAKER'S FOUNTAINS.**  
THE PHEASANT, BEAUFORT STREET, KING'S ROAD, CHELSEA.  
**MESSRS. BAKER** can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no new or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s.; and at 3, Half-moon Passage, Gracechurch Street.

**LOCKWORK, ORNAMENTAL WATER-FALLS, FOUNTAINS, RUSTIC WORK, AND LANDSCAPE GARDENING** undertaken on a large or small scale by Mr. LEXN, who will attend for consultation in any part of the Kingdom.—420 Strand.

**AUSTIN'S ARTIFICIAL STONE.**—Garden Fountains and other ornamental works continue to be executed in this material by Mr. Austin's late partner, JOHN SEELEY, the original manufacturer, Nos. 1 to 4, Keppel Row, New Road, near the Regent's Park. N. B. This material is strictly an artificial limestone, of an agreeable grey colour, and wholly free from the glazed and reddish appearance of Terra Cotta and other pottery. It is quite waterproof, and may be laid under water for any time without injury. The following list will give some idea of the variety of the stock:—

- VASES, in all styles, from 10s. to 30l. each.
- FOUNTAINS, more than One Hundred Designs.
- STATUES copied from the Antique.
- MODERN FIGURES, from 2 to 12 guineas.
- BASKETS, with Suitable Pedestals, from 1 to 30 guineas.
- SHELLS, from 12s. to 15l.
- FIGURES OF ANIMALS AND BIRDS.
- CRESTS FOR GATE PIERS.
- TAZZAS, OR FLOWER BASINS, from 30s. to 24l.
- MEMORIAL URNS AND PEDESTALS.
- SUN-DIAL PEDESTALS.
- BALUSTADING in every Style.
- BAPTISMAL FONTS.

**SLATE WORKS, ISLEWORTH, MIDDLESEX.**  
**EDWARD BUCK** manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.  
Price lists of plant tubs and boxes forwarded on application.

**MAW'S ENCAUSTIC TILE PAVEMENTS.**  
**MAW AND CO.** send free per post their NEW BOOK OF DESIGNS (with prices), adapting this most durable, economical, and decorative production of Medieval Art to Entrance Halls, Passages, Conservatories, Verandahs, and every description of modern and ancient Building.  
Bentham Works, near Broseley, Shropshire.

**WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.**

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11 " 9 " "	17 " 10 "	19 " 12 "	21 " 13 "	23 " 14 "	23 " 14 "
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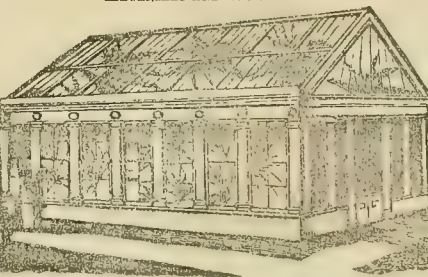
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14 by 10 " 1 1/2 ft. sup., if the length does not exceed 20 inches—above 20 and not above 30 inches long	0 5 1/2	0 7	0 8 1/2
1 1/2 ft. sup. " 3 ft. sup., or if above 30 and not above 30 inches long	0 6	0 7 1/2	0 9
3 " " 4 " 20 "	0 6 1/2	0 8	0 9 1/2
4 " " 5 " 30 "	0 7	0 8 1/2	0 10
5 " " 6 " 35 "	0 7 1/2	0 9	0 10 1/2
6 " " 8 " 40 "	0 8	0 9 1/2	0 10 1/2
8 " " 10 " 45 "	0 8 1/2	0 10	0 11
10 " " 12 " 55 "	0 9	0 10 1/2	0 11 1/2
12 " " 14 " 65 "	0 9 1/2	0 11	0 12
15 " " 20 " 75 "	0 10	0 11 1/2	0 13
20 " " 25 " 90 "	1 0	1 1	1 1 1/2
25 " " 30 " 100 "	1 1	1 2	1 2 1/2
30 " " 30 " 120 "	1 2	1 3	1 3 1/2
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**SAGGS' "ROYAL EXHIBITION,"** a cross between The Scotch Hero and Mills's Jewess. It has been awarded two first prizes at the Stamford Hill Show, one first prize at the Surrey Gardens, and has been exhibited at 21, Regent Street, and very highly commended. It is considered by Nurserymen, Seedsmen, and Gardeners who have seen it to be the best Cucumber yet let out.

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"A GRAPE THAT DON'T HOW TO SHANK."

**JOHN BUTCHER** in again bringing into notice the Barbarossa Grape, begs to inform Growers he has fine plants of the above sort, free from mildew, &c. There is no Grape grown that will do the Grower more credit, nor keep up a supply so late in the season. The Vine is a luxuriant grower, a free bearer, bunches large and finely shouldered, berries large and globular. I exhibited a bunch on the 19th of Oct., 1852, weighing 3 lbs. 9 oz., at the Horticultural Society's Rooms, Regent Street, London, for which a Banksian Medal was awarded, with the following eulogium:—"Among sorts of second-rate quality this is certainly one of the very best, and it deserves a place in every house, not only on account of its size but also for keeping so late in the season."—See *Gardeners' Chronicle*, Oct. 23, 1852, page 679.

Also, Oct. 18, 1853, a Banksian Medal was awarded to JOHN BUTCHER for three bunches of Barbarossa Grapes, quite black, and covered with a fine bloom.—See *Gardeners' Chronicle*, Oct. 22, page 679.

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## NEW PLUMS.

**MR. HENRY DOWLING**, Woolston Lawn, Southampton, most respectfully invites the attention of the nobility and gentry generally to his three new Plums—ANGELINA BURDETT, BLACK GAGE, and STANDARD OF ENGLAND, at the following reduced prices:—Fine strong 3-year-old trained trees, at 5s. each; or 2-years do, at 3s. 6d. each. H. D. having the opportunity of fruiting them this season, can, with the greatest confidence, recommend them to far exceed all other Plums ever yet produced; they having also been laid before a committee of gentlemen, and the most competent judges in the world, and considered by them to throw all other Plums in the shade, and their possessing a more sugary sweetness, the flavour almost equal to the Pine. The above can be supplied by Mr. CHARLES TURNER, Royal Nursery, Slough, Bucks, the only agent, who can give satisfactory testimonials of their quality, having this season tasted the fruit. The fruit will be figured in the December Number of the "Florist." H. D. begs also to inform the public generally, that no trees can be supplied from any other Nursery true, except those grafted in March last. Gentlemen favouring H. D. with early orders will be strictly attended to.

## CHALLENGE TO ALL ENGLAND.

**MR. D. KING, GARDENER AND FLORIST**, Southampton, having had the pleasure of fruiting the ANGELINA BURDETT and the BLACK GAGE this season, can, with confidence show the above two Plums against the Reine Claude Violette and the Purple Gage for 50s., or any other two Plums England can produce, between August 20 and September 6, 1854, and to be decided by three competent judges, and met half way to any par of England.—Southampton, Dec. 3.

## ROSE CATALOGUE.

**WOODLANDS NURSERY, MAREFIELD, NEAR UCKFIELD, SUSSEX.**  
**WILLIAM WOOD AND SON** beg to announce that the New Edition of their Rose Catalogue, for 1853-54, is now ready for distribution, and will be sent gratis on receipt of Two Penny Postage Stamps.

Their Catalogue of General Nursery Stock may also be had on the same terms.

Collections of ROSES will be supplied on the following terms, when the selection of sorts is left entirely to Wm. Wood & Son:—Extra tall Standards, 4 to 8 feet, with 3 to 6 best varieties of Climbing and Perpetual Roses, in each stem, suitable for training, &c., 3s. 6d. to 5s. each.

Tall Standards, fine picked stocks, from 4 to 6 feet, with large heads, of the most superior kind, for planting in conspicuous situations on lawns, &c., 3s. 6d. per dozen.

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Fine Dwarfs, on own roots, in 50 varieties, 2l. 10s. per 100.

Fine Climbing and Noisettes, 9s. to 12s. per dozen.

Hybrid Perpetuals, budded on 6-inch stems, or on own roots in pots, 12s. to 18s. per dozen, or 5l. per 100.

De de Bourbon, in pots, or budded on 6-inch stems, 12s. to 18s. per dozen, or 5l. per 100.

Chin. in pots, 9s. to 12s. per dozen.

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Climbing Roses, mixed, without names, for covering banks, 1l. 10s. per 100.

Good Dwarfs, on own roots, without names, 1l. 10s. per 100.

**HAWKE'S CHAMPAGNE RHUBARB.**—This most desirable variety is now for the first time offered to the public. It has stood the severest test that can be applied, and has beaten everything in Covent Garden and other London Markets in realising higher prices, from its magnificent colour and size. It has been seen by the very highest authorities and pronounced to be a most valuable introduction. In earliness it equals the Prince Albert, but of a deeper colour, and much greater bearer. It forces remarkably well, and is very highly out of doors. Mr. HAWKE has placed the entire sale in the hands of Duncan Hailes. One-year-old plants, strong, 6s. each. A few two years old, very strong, for sale.

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Apples, standard, in choice varieties ... per dozen ... 6s.

" dwarf do. ... " ... 4s.

" trained do. ... " ... 24s.

Cherries, standard, in variety ... " ... 12s.

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" trained do. ... " ... 36s.

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Enchantress Major Domo Village Maid

Good older sorts 6s., 9s., and 12s. per dozen.

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Beauté Belle Marie Purity

Diana Vernon Little Wonder Prince Albert

Delicate Mulberry Prima Donna

Exquisite Marion Queen Victoria

Fairy Queen Madame Mieliez Statinski

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Adela Villiers Experimental Blue Nymph

Angelique Flora M'Yvor Nonsuch

Agnes Wakefield Pormosa Othello

Bessy Lady Hume Campbell Prima Donna

Catherine Hayes Lady Gertrude Romy Morn

Carminata Madame Cerito Resplendens

David Copperfield Mazzini St. Clair of the Isles

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Carriage paid to London and Norwich, and all intermediate Stations. A liberal discount for cash, and the usual allowance to the trade.—St. John's Nursery, Colchester.

**JOHN JEFFRIES (Successor to Mr. Gregory),** NURSERYMAN, SEEDSMAN, &c., Cirencester, Gloucestershire, begs to inform parties about planting, that in consequence of a portion of his Nursery being sold for building ground, he has a large stock of FRUIT and ORNAMENTAL TREES, EVERGREEN and DECIDUOUS SHRUBS, consisting of several hundred species, which must be cleared by Christmas next, including—

Standard Pears ... .. 15 0 — 100 0

Abies alba, 5 feet ... .. 13 0 — 130 0

" canadensis, 7 feet ... .. 9 0 — 50 0

" morinda, 3 to 4 feet ... .. 12 0 — 75 0

" nigra, 3 to 4 feet ... .. 9 0 — 40 0

Althaea frutex, 1 1/2 to 2 feet ... .. 2 6 — 7 6

Aucuba japonica, 1 1/2 to 2 feet ... .. 6 0 — 40 0

" 2 to 3 feet ... .. 9 0 — 60 0

Araucaria imbricata, strong, 12 to 15 inches, pots ... .. 30 0 — 220 0

American Arbor-vitae, 5 feet ... .. 7 6 — 40 0

Chinese " 4 to 5 feet ... .. 15 0 — 100 0

" 5 to 6 feet ... .. 18 0 — 40 0

Siberian " 2 to 3 feet ... .. 12 0 — 80 0

Purple Beech, 6 to 8 feet ... .. 24 0 — 100 0

" 10 to 12 feet ... .. 24 0 — 100 0

Cedar of Lebanon, 4 to 5 feet, pots ... .. 50 0 — 100 0

Upright Cypress, 3 feet, pots ... .. 9 0 — 60 0

Double Furze, strong, pots ... .. 6 0 — 40 0

Gleditsia triacanthos, 5 to 6 feet ... .. 2 0 — 12 6

Holly, Green Hedgehog, 2 to 3 feet ... .. 6 0 — 40 0

" variegated, of sorts, 1 1/2 to 2 feet ... .. 9 0 — 60 0

Mahonia aquifolium, 1 to 1 1/2 feet ... .. 12 0 — 100 0

" 2 to 3 feet ... .. 15 0 — 100 0

Pinus excelsa, 1 1/2 to 2 feet, bedded ... .. 9 0 — 50 0

" 2 to 3 feet, pots ... .. 18 0 — 120 0

" 3 to 4 feet, pots ... .. 20 0 — 150 0

" 7 feet, fine ... .. each, 5s.

" Gerardiana, 9 to 12 inches ... .. 9 0 — 60 0

" Laricio, 2 to 3 feet ... .. 9 0 — 50 0

" 3 to 4 feet ... .. 12 0 — 80 0

" 4 to 6 feet ... .. 15 0 — 120 0

" 6 to 8 feet ... .. 21 0 — 150 0

" mughus, 1 to 1 1/2 feet ... .. 12 0 — 100 0

" 2 to 3 feet ... .. 18 0 — 120 0

" austriaca, 3 to 4 feet, extra fine ... .. 9 0 — 60 0

Evergreen Oaks, 2 to 3 feet, pots ... .. 12 0 — 80 0

" 3 to 4 feet, pots ... .. 18 0 — 120 0

Irish Yew, 4 to 5 feet, strong ... .. 36 0 — 100 0

Standard Thorns, in 69 varieties ... .. 9 0 — 50 0

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" 4 to 5 feet ... .. 15 0 — 120 0

Deciduous Shrubs, by name ... .. 20s. to 60s.

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**MESSRS. COLE AND SHARP** beg to announce that their Catalogue is now ready, and may be had on application.

"**MRS. WILLMORE.**"—This superb light variety of the Floribundus section, which obtained the highest distinctions at various leading exhibitions of the present and preceding year, will be found worthy of especial attention.

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## DILCOCK'S BRIDE BROCCOLI.

**BAINBRIDGE AND HEWISON** (late Jas. Edward), have the pleasure of offering again to their friends and the public their **DILCOCK'S BRIDE BROCCOLI**, at 2s. 6d. per packet, each containing 1300 Seeds; and while returning their thanks to the numerous patrons of last season, they beg to refer them to the following extract, taken from the *Yorkshireman* newspaper of the 30th of April last, when it was exhibited at York, for the fourth time:—"Mr. Dilcock deservedly obtained all the three prizes for Broccoli with his Seedling—the 'Bride.' Taking the season into account, these vegetables were really remarkable specimens." It was equally successful the two previous years.

B. & H. will be prepared to send out their Catalogue of Kitchen Garden and Flower Seeds for 1854, early in January, post free, on application, and also their Catalogue of Plants early in March, containing Stove, Greenhouse, &c., including many of the newest and choicest of the season. Their Seeds will be of the very best quality, and in the greatest possible variety.

Sold Wholesale by NOBLE, COOPER, & BOLTON, Fleet Street; CHARLWOOD & CUMMING, Covent Garden; and by all respectable Seedsmen in town and country.—7, Bridge Street, York, Dec. 3.

## RENDLE'S NEW AUTUMN CATALOGUE OF FOREST TREES, SHRUBS, AND FRUIT TREES, is just issued from the press, and can be had in exchange for one penny stamp.

The Catalogue should be obtained by all who intend Planting this Autumn, as the prices of many of the articles are very low, in consequence of the large Stock we have of many of the sorts.

We have to offer the following:—

300,000 Seedling and Transplanted SCOTCH FIR.

600,000 do. do. LARCH FIR.

200,000 do. do. PINUS AUSTRIACA.

150,000 do. do. THORNS or QUICKS.

As well as all other Forest Trees in proportion.

All orders above 10l. will be delivered carriage free to all the Railway Stations in Scotland, West of England, and to Cork, Dublin, and Liverpool by Steamers.

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**WILLIAM E. RENDLE AND CO.,**

NURSERYMEN AND SEED MERCHANTS, ESTABLISHED 1786. Plymouth.

## The Gardeners' Chronicle.

SATURDAY, DECEMBER 3, 1853.

## MEETINGS FOR THE ENSUING WEEK.

MONDAY, December 5	Entomological .....	8 P.M.
	Chemical .....	8 P.M.
	Horticultural .....	2 P.M.
TUESDAY, —	Luncheon .....	8 P.M.
	Civil Engineers .....	8 P.M.
	Pathological .....	8 P.M.
WEDNESDAY, —	Society of Arts .....	8 P.M.
	Edinburgh .....	8 P.M.
	National Horticultural .....	8 P.M.
THURSDAY, —	Antiquarian .....	8 P.M.
	Royal .....	8 P.M.
FRIDAY, —	Astronomical .....	8 P.M.
	Philological .....	3 P.M.
SATURDAY, —	Royal Botanic .....	3 P.M.
	Medical .....	8 P.M.

We are sometimes asked whether MISTLETOE injures the trees on which it grows. Questions are put doubtfully as to the injurious effects of such parasites as the Dodder (*Cuscuta*) upon plants. We have even heard well educated (!) persons maintain that parasites do no harm, because Lichens, Mosses, and Air plants are manifestly without injurious influence. A young friend of ours once ventured, when this subject was on the tapis, to hint to Sir BOOKHAM ASCOT, a well-known baronet, rather celebrated for his philosophical genius, that he did not understand the difference between an epiphyte and a parasite; for which the gentle youth was described the next morning as an impertinent pedant.

We fear that society includes many a Sir BOOKHAM ASCOT—very clever people, who don't know that some plants grow upon trees, feeding on the atmosphere and the dead bark that bears them, while others grow into trees, devouring the materials which Nature provides, and appropriating to themselves what is required to sustain the life of the trees which are attacked by them. We need not say that the first are the real epiphytes—Lichens, Mosses, and Air-plants—which are perfectly inoffensive; while the last, the true parasites, such as Mistletoe and Dodder, are always injurious and often fatal enemies. Let any one look at a Thorn loaded with Mistletoe, or at Clover attacked by dodder, and no further evidence of what attends the presence of such parasites is needed.

How the Mistletoe acts may be seen by the visitors to the Museum in Kew Gardens, where are preserved most instructive illustrations prepared by Professor HENSLAW. When this parasite attacks a tree its young root is applied to the bark like a "sucker;" processes are then emitted from the face of the sucker which penetrate the bark and get into communication with the medullary rays, out of whose cellular matter, as well as that of the liber, they absorb their food. The pro-



cesses in question, although having no resemblance in form to roots, nevertheless act as such in every way, and may be so denominated. The result is they displace the wood, and intercept all the natural nutriment formed in the branch for the support of itself and the organs belonging to it. In this country, however, we have little conception of the effect which such parasites produce upon vegetation. A more instructive set of examples is before us, for which we are indebted to Mr. SKINNER. They consist of the ends of dead branches so elegantly and curiously sculptured and curved that at first sight they would be regarded as works of art executed in imitation of the Corinthian capital. The account given by him of the "Parasite's nests" is as follows:—

"The natural curiosities which I sent you last month exhibiting an example of the strange effects of tropical fructification, I culled from the forests on the north-western side of the Volcano de Fuego, and they exist in great abundance in the neighbourhood of the village of Alotenango, and in many of the hilly districts throughout the country about the old city of Guatemala. They are produced from two species of parasitical plants, attaching themselves to the branches of trees; these species of parasites have strong fleshy leaves of a deep green; their flowers are pipy yellow tubes, and scarlet, like the Honeysuckle. From what I could observe, they attach themselves to a branch near its extremity, and there form their nest, if it might be so called, for such is the form produced by their roots. As they draw the juices from the branch the nest swells, and increases sometimes to a considerable size, the parasite in such a case becoming a large bush; when the life in the branch is extinct, which in the course of time results, the parasite dies, and very soon after, from the nature of the climate, rots away, and, falling out from the nest, leaves the branch exhibiting the extremely fantastical sockets observed in the annexed specimens.

"I unfortunately omitted to bring over with me a specimen of the dead parasite after it had fallen from the socket, but it would have been next to impossible to get them in an entirely perfect condition. The Calabash tree is one that never escapes from the ravages of this parasite; but where the specimens I send you were found, the Coco Plum and a species of Ash were the great sufferers. Oaks they never appear to touch, nor any species of the Fir."

The accompanying figures represent a pair of parasite's nests, that is to say, of the ends of branches from which the dead parasites have fallen. Fig. 1 shows the result of the attack by a single Loranth (for such were those adverted to by Mr. SKINNER), on the end branch of a tree. The deep furrows are the edges of medullary plates absorbed, and the ridges between are the intervening wood which has been unable to form in consequence of the vertical resistance offered by the parasite. Lengthening in the presence of such an enemy being impossible, a great lateral horizontal development has resulted, in the form of the incurved lobes of the edge. In No. 2 the same structure is observable, but in this case several parasites appear to have attacked the branch simultaneously, and to have produced a much more complicated disorganisation. Surely such productions might be turned to account by sculptors and other artists.

Cases like those now produced show what parasites can do at the worst. In order to understand the nature of their action in cold latitudes, like ours, we have only to suppose that what is here shown is excessively diminished. We have no doubt that such appearances might be even produced here if means were taken to kill the Mistletoe, and leave alive the branch it had seized upon.

Singularly enough, we had written thus far, with the intention of deferring till a future opportunity some remarks upon the practicality of cultivating many kinds of parasites, when we received the following interesting communication from Dr. BERTHOLD SEEMANN, the distinguished traveller and naturalist.

"A horticultural problem still to be solved is the successful cultivation of true parasites. There can hardly be finer plants than many of those charming species of Loranthus, inhabiting tropical and sub-tropical regions, yet we never find them in any of our gardens.

Imagine a dense grove of Mistletoes bearing, instead of the insignificant green flowers of our common *Viscum album*, blossoms of the brightest scarlet or yellow, and often averaging more than 8 inches in length. Such are the

species of *Loranthus* alluded to, which, to render them still more worthy of the attention of the horticulturist, do not in most cases grow on the top of high trees, where

their beauty would be almost concealed from the naked eye, and their charming effect in a great measure lost, but upon low shrubs, and often so near the ground, that several botanists have been induced to consider them as terrestrial plants. But we need not go to far distant countries to find beautiful parasites. What gardener has ever looked over the plates of our European Floras,

or herbarised in any part of the British Isles or the Continent, who has not been struck with some of the *Orobanches*, and regretted his inability to rear those rivals of *Orchideæ* in the establishment under his care? Hitherto it appeared as if the different ornamental species of *Loranthus*, *Orobanche*, and other parasites, existed only for the gratification of herbaria-keepers, or to be admired in the closet of the artist; now the time seems to have arrived when they are fairly to become the property of the garden and the ornament of the conservatory and drawing-room. In several botanical establishments of Germany, *Loranthus europæus* and *Viscum album* are now sown, and brought to perfection as easily as any terrestrial plants commonly cultivated; and, knowing such to be the case, we are induced to think there would not be much difficulty in raising any of the tropical and sub-tropical species of that genus. Provided we had the plant upon which any given species has been ascertained to grow, we could import the seed, perhaps by imbedding it in the wood of the tree or shrub with which the parasite is associated, and afterwards transfer it to the plant.

got ready for its reception. To preserve the germinating power of the seed would be the chief difficulty to be encountered, and to overcome this, the rapid inter-oceanic communication will go a great way. The cultivation of the *Orobanches*, and the *Orobanchaceæ* in general, is easier than that of the *Loranthaceæ*, and has already been accomplished with success in the Botanic Garden at Göttingen, at least as far as the middle European species are concerned. Professor BARTLING, the learned director of that establishment, collected, some years ago, seeds of all the *Orobanches* he could, and sowing them in pots upon the roots of those plants they are partial to, he had the satisfaction of seeing them spring up, and produce their elegant flowers: The experiment is easily imitated, but he who is about to attempt it should make himself perfectly acquainted with the mode of growth of each individual species he has determined to raise. Some of them, for instance, will be found attached to the extremities of the roots, others close to the main stem of the plants. Without these points being attended to, the *Orobanche* seeds may remain for years in the ground without coming in contact with those parts of the plants which alone are capable of calling their vegetating powers into activity.

"In penning these remarks I have endeavoured to draw attention to an important and interesting problem. I shall be glad to learn that the road I have indicated has been followed by some of your readers, or at least become the subject of their serious consideration."

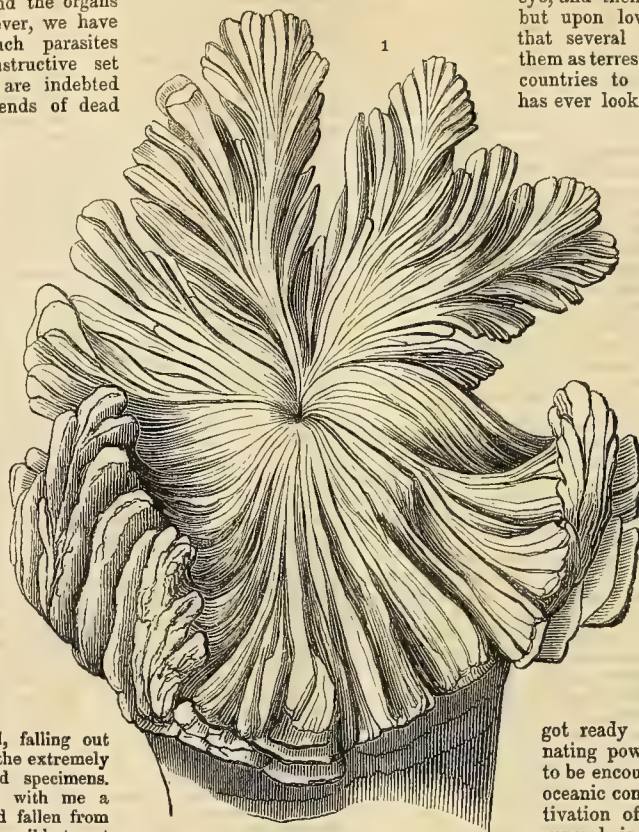
How probable it is that the seeds of *Loranthus* may be obtained alive in Europe, as Dr. SEEMANN

suggests, will be seen from the following interesting extract from a letter written by Mr. JAMES DRUMMOND from Swan River, and printed in this month's number of HOOKER'S "Journal of Botany":—"Some months ago, when I was dis-

solving some *Acacia* gum, which had been for three quarters of a year in my possession, I noticed

that it contained seeds of the beautiful *Loranthus* which grows on our *Acacia*. They seemed so fresh that I placed them on the bark of a tree in the neighbourhood, where they quickly germinated. I have accordingly coated some seeds with gum, and I send them in the expectation that you will find them succeed in England. The species is not only among the most beautiful of our *Loranthi*, but it exhibits a highly curious structure, and is of extremely easy cultivation. It is a mistake to suppose that the *Loranthus* takes root in the trees whereon it grows. The mode of attachment is precisely that

of a bud to the stock in which it is inserted. The unknown influence which these parasites exert on various trees, thence deriving their very existence, is, no doubt, among the hidden secrets of nature; but it is easy to perceive





that, in effecting the union, it is the tree which constitutes the active agent, its bark, sap, and wood projecting always from the branch, on whatever side the parasite may happen to be placed. *Acacia acuminata*, *A. stereophylla*, and *A. Meisneri*, produce the *Loranthus*; but by far the most magnificent specimens, both for the size and brilliancy of their scarlet flowers, are grown on *A. cyanophylla*."

#### JUSTICIA CARNEA.

SOME plants, though really valuable, grow so rapidly and form specimens with so little skill and care that good growers seem to consider them unworthy of attention, and they soon fall into unmerited neglect, through being left to the care of indifferent cultivators. To this class belongs the plant at present under notice, which although of the easiest possible culture, forming superb specimens in a very short time, and blooming most profusely two or three times in a season, is seldom met with except in a neglected state. Those who had the pleasure of seeing the fine example of this *Justicia* which was exhibited in the Horticultural Society's rooms, in Regent Street, by Mr. Catleugh, some years ago, will readily agree with me when I say that it is well deserving of more attention than it at present receives. The specimen referred to was about 3 feet in height, upwards of 4 feet in width, and was covered to the edge of the pot with flower-spikes, the number of which was 156. This splendid specimen was grown by Mr. George McIntosh, then plant cultivator at Mr. Catleugh's, and I am happy to be able to give in Mr. McIntosh's own words the treatment by which such a magnificent result was obtained.

"The plant was struck in April, and shifted into a 7-inch pot in August, in which it was wintered, keeping it in a cool house, and rather dry at the root. In the beginning of March it was shifted into a 15-inch pot, and placed near the glass, in a house where the temperature ranged from 50° to 60°, with fire heat. Here it was afforded a slight bottom heat, a moist atmosphere, and a free circulation of air whenever the weather would permit. This plant being impatient of an excess of moisture at the root, water was applied very sparingly to the soil, until it was evident from the growth of the shoots that the roots had got good hold of the fresh soil; indeed, beyond syringing morning and evening, very little water was given. The plant is a very rapid grower, and very much inclined to become leggy and thin at the base, which stopping will hardly prevent, as the back buds do not break freely, and the centre shoots always have an inclination to take a decided lead over the others. To remedy this, the shoots were pegged down, bringing them almost close to the surface of the soil, which caused the back buds to push, and when the points of the old shoots turned up and showed a tendency to grow too fast for the others, they were stopped, and any shoot towards the centre, which seemed inclined to rob its fellows, was pegged down, so as to equalise the growth. Early in May the plant produced 10 fine spikes of blossom, and was removed to the flower house, observing, of course, to prepare it for the change. When the beauty of the flowers was over, the spikes were cut off, the shoots shortened, cutting out some of the weakly ones, and it received no water at the root for some ten days, and was placed in a cool airy position. It was now returned to the house in which it was previously grown, freely supplied with water at the root, and received the same attention as to pegging down the shoots, with the view of equalising the growth. The weather being now warm, the lights were entirely drawn off on bright hot forenoons, but they were replaced early in the afternoon after syringing, thus maintaining a moist growing atmosphere at night, and whenever it could be done, avoiding, at the same time, the etiolating effects of a hot shady situation. The buds broke very freely under this treatment, and strong short-jointed shoots were produced. In July it bloomed a second time, when it produced 92 spikes. It was removed to the flower house, and managed, after the decay of the flowers, as last time, and when rested placed in a mild bottom-heat. The only different treatment observed this time was to feed the plant with clear weak manure water, which was rendered necessary through the pot having become full of roots, and the soil somewhat exhausted; and as a matter of course the lights were not removed when the weather became so cool as to render this unnecessary. In September the plant produced 156 heads of bloom, in which state it was exhibited.

"The soil used was rich fibry peat and loam in about equal proportions, well mixed with sharp gritty sand, and a slight sprinkling of bone-dust."

Young plants grow so rapidly that, except in the event of a large specimen being wanted in bloom, early in the season, it is never worth while to winter large plants. Were it desirable to do so this plant might be kept growing and blooming the whole season round, but the flowers do not colour well in winter, and it is impossible at that season to afford the amount of air necessary to have compact good specimens. *Alpha*.

#### MANAGEMENT OF CIDER APPLE TREES.

(Continued from page 757.)

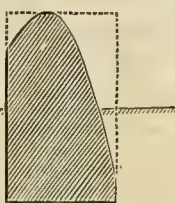
*Utility of taking off the old bark of trees, and the best way of performing that operation.*—This extremely useful practice appears to be of Norman origin. Its introduction is due to the Abbé Adrien Le Gendre, curé of Hénonville near Rouen, about the time of Louis XIII., therefore this practice must have been in use nearly two

centuries. Nothing is more injurious to the trees than the old dead and cracked bark on the stem and thick branches, as it affords a soil and footing for mosses and lichens. Protected by these cryptogamic plants, and hidden in the crevices of the bark, great quantities of eggs are hatched; and here also numerous larvæ wait for the return of vegetation, in order that they may mount into the top of the tree, and devour the buds, leaves, and flowers as they come out. The removal of the old bark is therefore doubly advantageous, inasmuch as the living bark is brought in contact with the air, and myriads of insects, prejudicial to trees, are destroyed. But, in performing this operation, we must be careful not to take off the live bark, and lay bare the alburnum, for in that case almost as much harm as good would be done. The best time for the operation is after heavy rain, as the dead bark is detached much more easily when it is moist. When there are no scrapers for the purpose, old spades, Dutch hoes, &c., may be used, but the edge of the instrument should not be too sharp, lest it should go to the quick. As soon as the trees have been scraped, all the bark, moss, &c., should be collected and burnt; for unless that is immediately done, the larvæ will not be long in taking shelter in the ground, or in the Grass round the bottom of the tree. After this, and especially if the trees have been scraped too near the quick, it is well to apply, with a paint brush, or with a soft broom, a sort of wash made of fresh cow-dung, to which is added a little clay; this is diluted with urine, in which some lumps of quick-lime have been slacked. The soft mud at the bottom of puddles may be used as a substitute for this preparation.

*Gathering and Preserving the Fruit.*—The fruit should if possible be gathered in fine weather, in order that it may be dry when brought in. The time of gathering varies from the end of August to the end of November, according to the varieties and the locality. Before gathering, the fruit should have arrived at a proper degree of maturity. This may be known, especially in early varieties, by the smell, by the colouring of the seeds, and also when the weather is calm by finding fallen fruit which is neither wormy nor in any way imperfect. The fruit is detached by shaking the branches, either by getting up in the tree or by means of a hook. Poles should be employed as little as possible, and with great care, because they break and destroy the fruit spurs. It is advantageous to keep each sort of Apple separate, in order to be able to mix them, so as to produce the best quality of cider. It is of the greatest importance to shelter the Apples; for if left out of doors, the rain or melted snow carries away part of their juices, and, in consequence, cider of only middling quality can be obtained. We know that in years of abundance there are, in many instances, insufficiency of buildings to shelter the whole of the fruit; but it is neither difficult nor expensive to erect temporary sheds by means of straw mats, from 2 to 2½ inches thick, and made of long straw squeezed between two pieces of wood, which are fastened with osier or wire. Two of these mats leaning against each other like a roof form a sufficient protection against rain. Apples should be protected from frost, for it deteriorates them as much as rain does. This is so much the easier, as at the time of the hard frosts nearly all the Apples are crushed, except those that are not ripe, and we can therefore put them in the regular buildings. If these buildings are accessible to frost, the best way to preserve the fruit is to cover it with straw and damp cloths, as previously recommended. The manufacture of cider requires more attention and cleanliness than it generally receives. Not only should all the instruments and vessels used in crushing be clean and free from smell, but the straw also on which the pomace is laid should be fresh, clean, and, above all, free from mildew. It is said that the English in Herefordshire, Somersetshire, and other counties, give and preserve an agreeable taste to the cider by mixing large Turnips with it. We may with propriety mix bitter with sweet Apples; and provided the former are not present in too great proportion the cider is sometimes improved by the mixture; but when we wish to obtain cider that will keep long, we should reject the sour Apples, as the liquor they produce is very pale, and soon turns acid.

#### Home Correspondence.

*Garden Edgings.*—I have seen a very neat edging made with common white bricks, slightly modified in shape, as in the annexed sketch. They were made in the usual brick mould, altered in shape for the purpose. The simple fillet forms a most appropriate edging; and when once the lengths are thoroughly imbedded in the soil, and cemented at the joints, they are not easily displaced. If a very neat appearance is required, the portion above the soil should be "rubbed down" after the joints are thoroughly set, and before the beds and walks are finished. The perpendicular side of the brick should be the walk boundary. *Crayon*.



*Diervilla canadensis.*—In recording the occurrence of this plant at Gannachy Bridge, my friend Mr. Black has made a slight mistake, which I am sure his good sense will excuse me in correcting, especially as I do so at the

urgent request of several botanists who are personally acquainted with the facts, and who deem the correction necessary for the good of science. Mr. Black having had his attention directed to the *Diervilla* at Gannachy Bridge, by so good a botanist as Mr. Croall, naturally supposed that the plant had some claim to be considered either indigenous or naturalised, and that its occurrence there was previously unknown. I beg to state, however, that the plant cannot be considered as either indigenous or naturalised, and that it is not now observed for the first time. It has been long familiar to Scotch botanists. In company with my friends Messrs. Kerr and Anderson, I observed it at the station indicated in the month of July, 1848, and I believe that it was known to Mr. Croall (perhaps to many others) long before that time. The reason why its occurrence has not hitherto attracted general attention is, that the numerous botanists who have seen it in passing through the Burn wood to the localities of other rare plants (*Pyrola secunda*, *uniflora*, *media*, *Linnaea borealis*, *Galium boreale*, *Saxifraga aizoides*, *Goodyera repens*), have not regarded it as entitled to a place in the British flora. This has arisen, not so much from the improbability of an American plant, unknown to continental Europe, having a solitary "out-post" on the east coast of Scotland, as from the very suspicious character of the station itself, which affords a preliminary objection to the nativity of the plant that renders further inquiry unnecessary. I do not refer to the proximity of houses, for I believe there are none within a hundred yards of the station. The Burn wood forms part of the pleasure grounds of — M'Inroy, Esq., of Burn House (so I am informed), and is inclosed by a stone wall on the one side, and the river South Esk on the other; a walk goes up between, leading to a neat bridge, and it is along either side of this walk that the clumps of *Diervilla* occur. The *Diervilla* is associated with *Spiraea salicifolia*, *Lonicera xylostemon*, and *Ligustrum vulgare*. It has always appeared to me (and several letters received within the last few days strengthen the supposition), that the *Diervilla* was probably planted along with the shrubs mentioned for the purpose of adorning the walks through the wood, which is not a mere foot-path but a regularly made walk. That the *Diervilla* originated in this way has been the general belief of botanists, Mr. Black being the first to question its correctness. So suspicious, indeed, or rather so certainly spurious is the locality, that no botanist has until now thought it worth while to record the plant as even naturalised. So far as I can learn, it has never ripened seeds at Gannachy, which is quite in accordance with the statement respecting it in the "Botanical Magazine." Although *Diervilla* is one of those plants that maintain their ground wherever planted, still I do not think there is more reason to regard it as naturalised than there is to so regard *Thuja occidentalis*, and other ornamental shrubs that grow under precisely similar circumstances in Hawthornden. To enumerate such plants in our lists of native species would "confound all botany." *G. Lawson, 7, Hill Square, Edinburgh.*

*Mildew on Cinerarias.*—In the autumn of 1852, I received a mildewed Cineraria from a friend, and with a view to clear it of the fungus, I resolved on cutting off all its leaves down to the surface of the soil. As soon, however, as the plant made fresh growth, mildew reappeared, and so I determined on repeating the operation every time I saw any symptoms of the malady. Up to the present time the disease still continues to make its appearance, which would seem to prove that after a plant has once had this pest established upon it, it becomes (if I may use the term) malady stricken; it therefore requires timely precaution to keep it in check. I may mention, that none of my other Cinerarias, though similarly circumstanced, exhibit any sign of the disease. *A. O. B.*

*Annual Lifting of Wall Trees* (see p. 758).—Permit me to say that Peach and Nectarine trees may be lifted annually or once every two years with safety, provided the operation be performed with care, and at the right season, which is when the leaves are falling. The Peach, to succeed satisfactorily, requires a good border well prepared for it. This should be effected by excavating the soil to the depth of 2 feet, allowing 6 inches of brick rubbish in the bottom, in order to carry off superfluous water. The soil should be friable turfy loam used in a rough state, and elevated 9 inches above the ordinary level of the ground. As to red spider, that should be kept down by having the trees carefully washed with a mixture of soft soap, sulphur, soot, and clay; and if it is convenient, the walls should also be smeared with this composition as well. *W. W., West Dean.*

*Ripening the Fruit of Musa Cavendishi.*—We have a splendid plant of this *Musa* showing an immense bunch of fruit. Will any of your correspondents have the kindness to give us their experience, to enable us to ripen it thoroughly. We have our own opinion on the subject, but wish to have other people's ideas as well. *J. Weeks & Co.*

*Wooden Shingle versus Thatch.*—If "Somerset" would have the kindness to give some instructions as to the fixing of shingles on roofs, I am sure he would be doing a great favour to many of the readers of your useful paper. *T. Diggle, Higher Broughton, Manchester.*

*Abutilon striatum.*—It may be interesting to learn that this, planted at the foot of a wall with a western exposure, stood last winter, with a slight protection of Spruce branches, and flowered, though not profusely, this summer. I may also mention that the white variety of *Salvia patens* grows and flowers very freely when



planted out in the open border, and both last year and this I have gathered well-ripened seeds. Indeed I have raised a number of seedlings from seeds thus saved. *Morningside, Edinburgh.*

*Picea nobilis*.—Your correspondent "M. S." describing the beautiful seat of the Earl of Shannon, notices a plant of the *Picea nobilis* as the finest specimen of the kind he had ever seen, and as worth a journey of 200 or 300 miles to see it—its height having been 14 feet, and its growth in the last two years equalling 5 feet. I beg to inform him that the *Picea nobilis* here (Northumberland) is 18 feet 3 inches in height, and that the shoots of the last two years measure 2 feet 3 inches each. Nothing can exceed the beauty and healthy vigour of this tree—the foliage on its large horizontal branches being as thick as a door-mat. I may add that the *Abies Douglasii* near it measures 52 feet in height, and its circumference at 2 feet from the ground is 6 feet, and at 6 feet from the ground it measures 5 feet in circumference, feathering quite to the ground, and bearing an abundance of cones. These plants are growing at an elevation of 750 feet above the level of the sea, and where many of the plants which flourish at Castlemartyr would not live. *W. Ord, Whitfield Hall, Northumberland.*

## Societies.

LINNEAN, Nov. 1.—T. BELL, Esq., President, in the chair. C. Collingwood, Esq., was elected a Fellow. Among the plants presented were specimens of nearly 250 species from West Australia, collected by Messrs. Drummond and Gilbert. Mr. Stevens exhibited living plants of *Stangeria paradoxa*, recently sent from Natal by Mr. Plant. Mr. T. Moore exhibited the male and female cones of *Stangeria paradoxa*, from Natal, together with a remarkable morphological specimen, from the garden of the Rev. T. Wharton, of Jamaica, of a rose having the petals, stamens, and pistils all converted into simple serrated leaves. The following communications were made:—1. On the Inflorescence of *Cycas revoluta* and *Macrozamia spiralis*, illustrated by specimens produced in his stove at Lauderdale House, by J. Yates, Esq., F.R.S. 2. Observations on *Rhinanthus Cristagalli*, and its injurious effects on Barley, by J. Clarke, Esq. In a field of Barley, the *Rhinanthus* grew in patches, occupying at least half the surface, by which about 2 acres were destroyed, and the remainder much injured. The fibres of the parasite attach themselves to the fibres of the Barley, on which they form small spongioles, which suck the juices of the plant, and destroy it. 3. On the Reproduction of Lost Parts in Earth-worms, by G. Newport, Esq. Three specimens of Earth-worms were produced which had parts of their bodies reproduced, the author being desirous of demonstrating the errors committed by Dr. F. Williams, in a report on British Annelids, published by the British Association for the year 1851. "On the authority," says Dr. Williams, "of hundreds of observations, laboriously repeated at every season of the year, the author of this report can declare with deliberate firmness that there is not one word of truth in the statements of Bonnet and Spallanzani!"

Nov. 15.—The President in the chair. Dr. Robert Brown presented a portrait of the late A. B. Lambert, and also a series of Tasmanian flowers, modelled in wax by Miss Luckman, of Hobart Town. Read a notice of *Trichosanthes heteroclitia*, Roxb., a new genus of Cucurbit, named Hodgsonia, by Drs. J. D. Hooker and T. Thomson. This remarkable plant, which extends from Sikkim to Penang, is one of the handsomest and most curious of the order, having the inflorescence and flower of *Trichosanthes*, but a fruit widely different from any of the extensive natural order to which it belongs. The fruit is 6-10 inches across, of a fine deep red brown colour, with whitish pulp, and very large seeds or nuts, covered with pulp. They are eaten by the natives of Sikkim. A Paper was also read on *Potamogeton flabellatus*, by Mr. C. C. Babington.

## Reviews.

*Souvenirs, &c. (Recollections of a Journey in Tartary, Thibet, and China, during the years 1844, 5, and 6).* By M. Huc, Prêtre Missionnaire de la Congrégation de Saint Lazare. 2 vols. 8vo. Paris, 1850.

THESE volumes purport to be an account of the travels of two Roman Catholic Missionaries, Messrs. Huc and Gabet, in the little-known regions mentioned in their title page. The recital of their adventures, put, as it is, into a very entertaining form, has created much interest in Europe, and has been, for the most part, accepted by critics as above the reach of doubt. It is certain that such a journey as that described was actually performed; the travellers were known in China—were heard of in India—and returned to Europe. Moreover, it is the opinion of persons conversant with China, that the scenes described must have been really witnessed. What grounds, then, can there be for questioning the authenticity of the work?

Nevertheless, there were readers who from the first appearance of the volumes regarded the details of the journey as open to suspicion. The credulity of the travellers was unquestionable; and their narrative, when looked into critically, did not tend to remove doubt. Among the sceptics we have always ranked, as is shown by a leading article of Dec. 25, 1852, in which the following passages occur. The occasion was an inquiry into the truth of a marvellous story about a marvel-

lous tree of "ten thousand images," to which we shall presently again advert. Our words were—"Before dismissing this subject, it may be well to pause and inquire whether we may not be pursuing a phantom in this investigation, and what reliance can be placed on our authority. There is proof in their volumes, that MM. Huc and Gabet were no impostors, nor is evidence wanting of there being some foundation for many of their most marvellous stories of the Californian richness of Thibet in gold—of the salutation by lolling out the tongue, and scratching the ear—of the little wooden cups which cost ounces of silver, whilst others exactly like them cost but a few pieces of copper—and of the custom the Lhasa belles have of blackening their faces with varnish, though the ungallant monks slander the fair sex of Thibet by the fabulous origin of the custom they quote. That they went to Lhasa and lived there has been reported to Europeans on the frontier of India, and that they returned through China is as certain as that they have since become the authors or originators of a book, as remarkable for its fables and fictions (perhaps not all their own), as for its novelties and truthful representation of the manners and customs of the Thibetans. The integrity of the authors, and the honesty of their intentions we do not doubt; but we cannot help remembering that no journal or diary was kept during nearly three years of wanderings; that a 'few notes' were worked up at Macao in 1847 and 1848, and that in 1850, from such materials, nearly 1000 well-filled pages of souvenirs appear in Paris! stored with anecdotes, occurrences, and prolonged conversations in Chinese, Mongol, and Thibetan, such as no imagination, however fertile, could wholly invent and clothe with the garb of truth, and as no memory, however retentive, could retain aught but the traces of."

To this we should not now recur, were it not that, in consequence of similar doubts having been since expressed by us, some letters have reached us, from among which we select the following. The Rev. R. Smith, of Penrith, says:

"I am glad that it is in my power to undeceive the reviewer of 'Christianity in China' on this subject, by informing him and your readers that I had the pleasure of being introduced to the Abbé Huc not more than ten days ago in Paris, in the College of the Lazarists, Rue de Sévres, 95; where, after a two years' sojourn in the Pyrenees, he is enjoying comparatively good health, and preparing to bring out in March a still more important work on China. It is true that M. Huc's companion, the Abbé Gabet, died about a year ago; and that M. Huc himself has suffered severely from the effects of excessive fatigue. He expects to visit England in March, to superintend the publication of an English translation of his forthcoming work on China."

Messrs. Longman and Co. have also favoured us with the following communication:—

"PATERNOSTER ROW, November 22, 1853.  
"Our attention has been called to your remarks in the *Gardeners' Chronicle*, of November 6th, on the 'Travels in China of Huc and Gabet,' which you appear to consider as a work of dubious authority. We never doubted that the work in question was genuine, and that the statements contained in it were to be depended upon. In order to confirm our own opinion we have written to a gentleman who would be admitted to be the highest authority, and who permits us to make use of his reply, without his name. We send you the following extract from his letter, dated Nov. 15, 1853: 'The main facts of MM. Huc and Gabet's travels were known to me in China some years before their book came out, from the communications of M. Gabet. He, poor man, fell a victim since to the horrors of the Alpine journey so graphically described in their book, and M. Huc is now himself paying the penalty with severe rheumatism in the south of France. He writes me,—"A cause de mes douleurs rhumatismales, je dois passer l'hiver dans le midi de la France. Cela me privera peut-être du plaisir de vous voir pendant l'hiver." &c. To any one really acquainted with China, the accurate knowledge of the language, institutions, &c., which the work bears internal evidence of, renders it highly interesting to Sinologists of 40 years' standing; the *Gardeners' Chronicle* pronounces the whole thing a myth, you might just as well question the reality of Humboldt's Travels! In justice to M. Huc, we beg the favour of your inserting this letter in the *Gardeners' Chronicle*.'

The paragraph, dated November 5, referred to in this letter, was the following:—"We must remark, too, that the travels of Huc and Gabet, which are now admitted to be the work of some ingenious *littérateur*, are treated as if altogether authentic." It seems as if this sentence had been misunderstood, and taken for more than it really meant. The word *altogether* was used advisedly; and we presume to think that, after the following statement, few will be inclined to believe M. Huc's narrative to be "altogether authentic." As to the want of entire authenticity being admitted, we can only say that many intelligent and well-informed persons, whose names we withhold for the same reason as that which influenced Messrs. Longmans, not only admit but insist upon the want of it; among whom, we are informed upon high authority, are to be included M. Huc's ecclesiastical superiors, who are said to have placed his book in the *Index expurgatorius*. Whether that is really so or not, we have no personal means of ascertaining, nor is the point material. We are content to rest our case upon internal evidence.

M. Huc's own statement (II. 511) is that he and his companion reached Macao in the beginning of October, 1846; and that during their residence there they took advantage of the leisure to put in order the *few notes* (les quelques notes) collected during the journey. *De la ces Souvenirs de Voyage*; out of this grew the recollections addressed to the public. What was the process which expanded a few notes into nearly a thousand pages of narrative? Pages too filled, it must be remembered, with an infinite multitude of the smallest possible details which the notes in question could not have furnished, and which no exertion of memory could bring to mind. That the notes must have been slight enough is manifest from the fact that the volumes scarcely give half a dozen dates. The very time at which the travellers left Peking would have been as

doubtful as anything else, if we had not been told on the title page of the volumes that the expedition started in 1844. Nevertheless, we have the most exact account of what befel when M. Gabet lost his way near the monastery (*lamaserie*) of Rache Tchurin—of what M. Huc said, and what Samdachiamba said—and of the precise spot on which the worthy Lama cast his eyes (I. 316)—the whole story told in a manner worthy of Defoe. If ever a clever feuilletonist had papers under his hands, such a one must surely have had these.

Another not unimportant circumstance connected with these travels is that the map by which they are illustrated was executed four years before Messrs. Huc and Gabet started, and ten years before the *Souvenirs* were published; and so meagre do the "*quelques notes*" appear to have been, that M. Huc has not ventured to lay down upon this map the route which he and his companions followed. Upon the supposition that he really was able to recollect the conversations he records, this is incomprehensible. If the papers were worked up in Paris the circumstance is intelligible enough, for no *éditeur* could, we venture to assert, lay down upon such a map a track, which to even experienced geographers is all but undiscoverable. We infer from this, among other things, that M. Huc had nothing to do with the preparation of his book for press. Had he been its real author, he would surely have either laid down his route, or refused to give his sanction to such a map.

Circumstances of this kind throw, we think, doubt enough upon the details of M. Huc's journey. Our next and last case seems conclusive. We allude to the account he gives of the tree with 10,000 images, out of which this discussion has arisen. What sort of tree this is we need not again describe, after what was said last December: we confine ourselves to M. Huc's evidence. He expressly declares that he and his companion saw it; that they were in fact astounded (*consternés d'étonnement*) at beholding "upon every leaf extremely well-formed Thibetan characters." After a most minute examination, they were satisfied that there was not the least fraud; and they further declare that the bark of the trunk and the branches is also marked with letters. Does any one really believe that M. Huc wrote this? or that he ever saw any such sight as is described? We must, in justice to this gentleman, acquit him of attempting to palm such a monstrous tale upon the world. That such a story is current is not unknown, as many other not more improbable tales are current among the Lamas; that it was found among his papers is likely enough; but it really is tasking our courtesy too far to ask us to believe the "with these eyes I have seen it." We therefore submit that, if this tale is untrue, we have no means of knowing how much credibility attaches to the other parts of this narrative, which we are perfectly justified in regarding not only as "not altogether authentic," but to a great extent apocryphal, even although it should prove not to have been included in the *Index expurgatorius*.

We do not believe that M. Huc ever put on paper these ridiculous statements; and we now call upon him, for the sake of his own honour, to disavow publicly, as we are told he does privately, all concern in such palpable fabrications. His journey was a most remarkable one; his account of Thibetan manners is admirable, and we believe true as a general picture; but many of the details we utterly disbelieve: and as in the present state of the work, no human being except himself and his friend the *littérateur* can say what is true and what is false, we with others, quite ready to acknowledge his zeal and most exemplary courage, call upon him to throw overboard without the least scruple the literary gentlemen who have made him their scapegoat. If this is not done no greater value can attach to his Recollections than to the *Adventures of Robert Drury*, another remarkable book, as certainly founded on fact. No one will know whether there really are such places as Tolon Noor, the city so graphically described, and not many marches from Peking; or Kounboom where the wonderful tree grows, and which geographers imagine may be somewhere about 37° N. lat., and 100° E. long., or any of the other towns of which no trace is to be found in the great maps of the Jesuits.

## New Plants.

### 28. CATTLEYA LUTEOLA of Gardens.

*C. pseudobulbis ovalibus ancipitibus sulcatis monophyllis, foliis oblongis v. ovato-oblongis foliorum longioribus, spatia angustis membranacea paucifloris, sepalis petalisque aequalibus concoloribus angustis ovalibus obtusis planis, labello cucullato indiviso apice rotundato crenulato intus plano velutino, columnâ ntrinque unidentatâ.*

For a specimen of this very pretty and curious little species we are indebted to Robert Hanbury, Esq., who received it as a Brazilian plant from Messrs. Backhouse of York. We understand that it has gained elsewhere the above name. The largest of the pseudobulbs are not more than 2 inches long. The leaves, which are hard and flat, are as much as 6 inches long. The flowers, the smallest in the genus, have exactly the whole yellow colour of *Lælia flava*; the habit of the plant and the pollen-masses are those of *Cattleya*. The velvety lining of the lip is delicate and peculiar. The Mexican *Cattleya citrina*, a totally different species, is the only other yellow *Cattleya* at present known. There is no difference in depth of colour in any part of the flower except the edge of the lip, which is paler.

### 29. BAHIA LATIFOLIA.

An annual, with erect branching woolly stems, the colour and size of *Antennaria margaritacea*. The



lower leaves are opposite, somewhat pinnatifid or three-parted, and coarsely serrate above the middle, dull green, covered with cobweb-like down, the upper alternate, slightly pinnatifid, coarsely serrate, and entire, those next the flower-heads almost amplexicaul; all are strongly marked with deeply-impressed rib-like veins. The flower heads are solitary, at the end of long woolly erect stalks; their involucre is covered with cottony wool, except at the ends of the scales, where it sometimes disappears. The florets of the ray are about 12 or 14, broad, deep yellow, and handsome. The young achenia are silky, and surmounted by a pappus consisting of eight membranous scales, four of which are alternately much smaller. Seeds of it were purchased from Mr. Carter, who obtained them from California.

Although related to *B. lanata*, this plant is assuredly different in its much greater stature and very broad leaves, with their deeply sunken veins, and divaricating segments. *Hort. Soc. Journal.*

### Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN. —In the Orchid houses several species of that interesting tribe are now in flower. The large plant of *Phalænopsis amabilis*, which the Society had from Manila, is again, as it nearly always is, beautifully in blossom, and associated with it were *Barkeria Skinneri*, producing charming spikes of purple flowers, as well as *Cypripedium insigne*, and other kinds of Lady's Slippers. In another house were the sweet-scented *Maxillaria picta*, *Cymbidium giganteum*, the large variety of *Zygopetalum Mackayi*, which is much superior to the common kind; *Lycaste macrophylla*, *Oncidium crispum*, and one or two other Orchids. The flower-spikes of the fine plant of *Laelia superbiens* in the curvilinear stove continue to progress. They are eight in number, and bid fair to be as beautiful as they were last year.

Among other plants in the stove just alluded to, the following were in bloom, viz., the well known *Justicia speciosa*, whose multitudes of purple blossoms have a pleasing and gay effect, at this time of the year; *Manettia bicolor*; neat standard plants of *Epiphyllum truncatum*, worked on *Pereskia* stocks; the lovely blue *Eranthemum pulchellum*, *Gesnera Herberii*, which much resembles but is different from *G. zebrina*; and last, but not least, the yellow *Linum trigynum*, whose large *Convolvulus*-shaped blossoms measured more than an inch across. Where a little heat can be given it, this is one of the most effective of all plants at this season.

In a greenhouse next the Orchid house were the ever-flowering *Chorozema Lawrenceanum*, which is certainly one of the most useful of the genus; the charming *Veronica Andersoni*, full of flower-spikes just bursting into beauty; *Bauera rubioides*, also said to be a good plant at this season; and the old-fashioned *Coronilla glauca*. In the propagating house there was a new Mexican Passion-flower, the foliage of which is beautifully variegated all over with silvery markings, and along with it were young plants of a peculiar looking creeping *Hydrangea* called *urophylla*, which was stated to come from the north of India, where it attaches itself to rocks and trees, covering them like Ivy. On the roof of this house *Allamanda cathartica* and *Hoya imperialis* were in bloom. The former, indeed, has scarcely been out of flower all the summer and autumn.

The greater portion of the *Chrysanthemums* in the large conservatory is now in flower, but owing to the dulness of the weather the blossoms are not so double or fine as usual. The plants having been struck late, are extremely dwarf and bushy, and well covered with foliage down to the very pot. Most of them are continental varieties, which were received from M. Van Houtte, of Ghent, without names, and therefore they cannot be referred to individually. Some of them, however, more especially the Pompons, are certainly very beautiful, and well worth inspection. The large trees of *Brugmansia* and *Cestrum*, planted out in the bed of this house, are again coming thickly into bloom, and the gaiety of the shelves is kept up by numerous plants of the little white flowered *Selago distans*, which had been struck from cuttings last spring, and grown on for the purpose.

The fruit trees in Mr. Ewing's glass walls have succeeded as well as could have been expected; they have made good wood, which is well ripened. The severe weather which we have had of late has, however, injured the tender plants that had been placed in them. *Bous-singaultia baselloides* has been killed to the root; and most of the *Fuchsias* have been more or less injured, as have also *Cestrum aurantiacum*, *Mandevilla suaveolens*, *Tacsonia Helleri*, *Witheringia superba*, *Ichroma tubulosa*, Citrons, and one or two other plants, while *Viburnum suspensum*, *Lindleya mespiloides*, *Laridzabala triternata*, *Abutilon striatum*, *Edwardsia chilensis*, and some others have escaped unhurt. The last named plant has flowered and done much better here than on the conservatory wall.

Out of doors, very little has as yet been injured; the *Chusan Palm* planted out in the American garden, where it has received no protection, is perfectly green and healthy. *Eucalyptus coccifera* and *globulus* have suffered nothing, and the same may be said of *Dracæna indivisa*, and of various *Sikkim Rhododendrons* which have been planted out here, among which are *ciliatum*, *Edgeworthii*, *cinnabarinum*, and *alpinum*, which latter has much of the aspect of *ciliatum*. *Laurus regalis* has also escaped without injury. It may be mentioned that the ordinary *Rhododendrons* here pro-

mise well for bloom this season, which we learn is not the case in some other parts of the country.

The alterations in the arboretum are being proceeded with; but, with the exception of pulling down the arch which spanned the broad walk leading from the school gate to the conservatory, nothing has been done beyond carrying out and forwarding the operations mentioned in our last report.

In the fruit room we remarked some good fruit of the Flemish *Bon Chrétien* Pear, a firm fleshed sort which, although not very melting, does either for table or kitchen use; *Glout Moreau*, and a few other kinds; but fruit, generally, has not kept well this season, and, consequently, all the best has been disposed of. It may be worthy of mention that *Rivers's* double-bearing Raspberry still continues to ripen fruit out of doors, and that if it were not for the unfavourable weather we are now experiencing, a dish of good Raspberries might yet be gathered from it. It is a valuable variety, which every collection should possess.

Cucumbers in pits are succeeding satisfactorily, notwithstanding the dull weather we have had. The sort is *Weeks's White Spine*, from which a fruit was cut the other day 18 inches in length.

### FLORICULTURE.

LATE CUTTINGS OF CHRYSANTHEMUMS (See p. 711).—I have had perfect success in growing and flowering late cuttings. The plants of the best form and also good blooms are from cuttings put in the first week in August; and I have nice strong dwarf plants from cuttings put in the 25th September last. I am now alluding to the large kinds, and from the experience I have had, I intend for the future to strike cuttings either the last week in July, or the first in August. My plan is to place the cuttings in 3-inch pots in a light sandy loam, and then place the pots in a cold frame, keeping them warm and shaded; they strike freely in less than 3 weeks, when I transplant them into blooming pots, using good rich compost, of which one-sixth is turfmould. After the first shift, and when the plants are well established, I allow them out in the open air until the buds are set, when I bring them into the greenhouse for blooming. They are from 12 inches to 18 inches high, and covered with blossoms. *J. W.*

DELPHINIUMS.—The culture of this tribe of plants is simple enough. The ordinary sorts, indeed, grow without difficulty in any good garden earth, which is neither saturated in winter nor parched in summer, neither of which extremes suit them. For varieties of improved breed, such as *D. Wheeleri*, more careful culture is, however, well bestowed. The soil prepared for it should be a light rich loam, such as a good mellow loam enriched with about a fourth part of well decomposed manure; or, where the soil is naturally of tolerably good quality, the simple addition of the manure will be all that is necessary. If fine blooms are desired, the plants must not be allowed to become dry, as they are apt to do in very hot weather. In order, too, that they may produce their bloom-spikes in perfection, the plants must be well established. Seminal varieties can seldom be propagated by any other means than the process of separation; but they admit of tolerably extensive increase by means of very careful division, which is, moreover, best done in spring, at the time when the plants are starting into their annual growth; the divisions should produce good strong flowering plants the following year. *M.*

STOKE NEWINGTON CHRYSANTHEMUM SHOW.—In consequence of the wet sunless autumn we have experienced, fears were entertained that the *Chrysanthemums* at the late annual meeting of this society, would not have been produced in nearly as fine condition as on former occasions. We are, however, happy to be able to report that the flowers shown, both on plants and in a cut state, were generally good. Indeed, some of the plants were unusually fine, both as regards growth and bloom, more especially the collection of Pompons, shown by Mr. Robinson, of Pimlico, which were about 2 feet in height and as much through. The plants produced by Mr. Spary, of Brighton, are also worthy of notice. These were low conical bushes, the lower branches being trained in such a manner as to project horizontally about 6 inches beyond the rim of the pot, from which to the top of the cone (which was little more than 1 foot in height), there was a regular succession of flowering shoots. Mr. James's plants were also excellent examples of good cultivation. Some of the cut blooms were of great size and well "filled up," and it is certainly much to be regretted that such flowers cannot be exhibited on well grown plants. The following awards were made:—6 Plants, in 11-inch pots: 1st, Mr. James, with *Pilot*, *Mount Etna*, *Christine*, *Defiance*, *Madame Cameron*, and *Queen of England*; 2d, Mr. Scruby, with *Mount Etna*, *Defiance*, *Annie Salter*, *Vesta*, *Christine*, and *Queen of England*; 3d, Mr. Holmes, Hackney, with *Defiance*, *Christine*, *Mount Etna*, *Annie Salter*, *Vesta*, and *Pilot*. Pompons, in 8-inch pots: 1st, Mr. Robinson, with *Drine Drine* (yellow), *Bijou de Horticulture* (creamy-white, inclining to yellow towards the centre), *Autumnum* (bronze), *Solfatere* (bright yellow), *Atropus* (crimson), and *Cedo nulli* (blush white); 2d, Mr. Terry, with *President*, *Decadence*, *Solfatere*; *Autumnum*, *Mignon* (blush white), *Drine Drine*, and *Cedo nulli*; 3d, Mr. Scruby, with *Graziella*, *Autumnum*, *President*, *Decadence*, *Model* (creamy-white), *Le Nain Bobé*, *Bijou de Horticulture*. Pompons, in 6-inch pots: 1st, Mr. Robinson, with *Penella* (golden yellow), *Mignon*, *La Paquette* (bronze-yellow), *Daphne* (rosy-purple), *Model*, and *Drine Drine*; 2d, Mr. Holmes, with *Drine Drine*, *Autumnum*, *Model*, *Sacramento* (yellow), *President*, *Decadence*, and *Penella*. 21 Cut Blooms: 1st, Mr. Wortley, with *Queen of England*, *Cyclops*, *Madame Andry*, *Formosum*, *Dupont de l'Eure*, *Campesotrom*, *Golden Cluster*, *Leysins*, *Duke*, *Plutus*, *Defiance*, *Rabais*, *Annie Salter*, *Plo Non*, *Vesta*, *Nompareil*, *Rosa Mystica*, and *Phydias*; 2d, Mr. Sanderson, with *Beauty*, *Queen of England*, *Golden Cluster*, *Defiance*, *Phydias*, *Queen of England*, *Golden Cluster*, *Goliath*, *King*, *Alcibiades*, *Bacine*, *Vesta*, *Warden*, *Goliath*, *Rosa Mystica*, *Artiside*, *Formosum*, *Madame Corbey*, *Christine*, *Dupont de l'Eure*, *Admiral* and *Rosa Mystica*. 12 Blooms: 1st, Mr. James, with *Queen of England*, *Regina*, *Beauty*, *King*, *Christopher Columbus*, *Rosa Mystica*, *Warden*, *Leon Legancy*, *Plutus*, *Dupont de l'Eure*, *Leysins*, *Formosum*; 2d, Mr. E. Sanderson, with *Beauty*, *Queen of England*, *Cluster*, *Yellow*, *Goliath*, *Warden*, *Dupont de l'Eure*, *Defiance*, *Thémis* *Formosum*, *Plo Non*, *Plutus*, and *Rosa Mystica*. 6 Blooms:

1st, Mr. E. Sanderson, with *Cluster*, *Yellow*, *Goliath*, *Queen of England*, *Defiance*, *Beauty*, and *Warden*; 2d, Mr. James, with *Beauty*, *Queen of England*, *King*, *Regina*, *Leon Legancy*, and *Plutus*; 3d, Mr. Hutton, with *Golden Cluster*, *Beauty*, *Nompareil*, *Dupont de l'Eure*, *Madame Andry*, and *Plutus*. The finest specimens were *Queen of England*, *Dupont de l'Eure*, *Plutus*, *Thémis*, *Plutus IX.*, *Vesta*, *Defiance*, and *Beauty*.

HOLLYHOCKS: *K. Cuttings* may be taken from the old stools, as soon as they have pushed shoots from 3 to 4 inches long; these will strike readily in sandy soil, placed in a little heat. Damp is the principal thing to guard against at this season; in propagating the Hollyhock a moderately moist heat is best; weak plants should also be encouraged with a little warmth.

PELARGONIUMS: *J. H.* Little need be done with these plants during this or next month. Water but seldom, and never unless they absolutely require it, which is easily learnt by rapping the pot outside with the knuckle. Clean all the glass thoroughly; for the more light they get in the dull months the better. Place the plants in the situation they will occupy when in bloom; the space between may be filled up with flowering bulbs, *Primulas*, &c. Tie a piece of strong bast under the rim of the pot, and to this train down the shoots, taking care not to break them out of the stem. The best time to do this is when the plants are dry and the shoots pliable. No more shifting will be required till January. Seedlings not removed into their blooming pots had better be shifted at once, if well rooted round the ones they are in. A 5 or 6-inch size will be quite large enough for them to flower in.

#### SEEDLING FLOWERS.

CINERARIA: *W. G. W.* A very pretty variety, which is well worth taking care of.

### Miscellaneous.

Disease in Balsams.—A new and hitherto unobserved disease has made its appearance at the establishment of Messrs. Courtois-Gérard and Malingre at Thernes. The Balsams, of which there is a very rich collection, are seized with a disease which first manifests itself by a general drooping of the principal branches of the plant. Five or six days after the appearance of this symptom the plant dies; but at the same time the root seems to be in a healthy state, at least such is the case in all the plants which have been examined. It is impossible to discover the presence of any insect. The disease appears to be wholly internal. On the stems of those plants which are most severely attacked, long black blotches may be discerned, indicating a complete mortification, which seems to progress from the top downwards. Hundreds of plants cultivated for seed have died in a single quarter, which is only some rods in extent, and others are attacked daily. The dwarf have not suffered so much as the tall varieties. *Ysabeau*, in *Rev. Hort.*

Large Potatoes.—*W. B. Goss* has left in our office a few Pink-eyed Potatoes, raised on his ground adjacent to the city, which has been now in cultivation without manure for four years. The largest one weighs 3½ lbs. The yield, we are told by Mr. Goss, is over 400 bushels per acre. *Galena (Illinois) Jeffersonian.*

Pentasilphide of Calcium a Means of Preventing and Destroying the Vine Mildew.—Of those substances which have been employed to arrest the devastating effects of this disease, none appear to have been so pre-eminently successful as sulphur, whether employed as powdered or flowers of sulphur, or by sublimation in houses so affected. But notwithstanding the several methods described for its application to the Vines, I am not aware that any has, or had, appeared prior to 1851, when these experiments were instituted, by which sulphur might be uniformly distributed over, and become to a certain extent firmly attached to the Vines. Three houses, situated at Margate in Kent, in the vicinity of the one in which the disease first made its appearance in England, having been for five consecutive years infected with the disease, and notwithstanding the employment of sulphur as flowers of sulphur, no abatement in its ravages could be detected, I was induced to employ a solution of pentasilphide of calcium, a diluted solution of which having been found to act in no way injuriously to the young and delicate shoots of several plants, was applied to the Vines: the object in view being that the pentasilphide should be decomposed by carbonic acid, and that four atoms of sulphur, together with the carbonate of lime formed, should be deposited in a uniform and durable covering on the stems and branches of the Vines affected. Although but few applications were made, the stems became coated with a protective deposit of sulphur, and the disease gradually but effectively disappeared, inasmuch that the houses have been, and now are, entirely free from any disease or symptoms of infection. The young shoots are in no way affected by its application, and the older wood, covered with the deposited sulphur, continues exceedingly healthy. The specimens exhibited to illustrate the durability and protective influence of the deposited sulphur were from Vines which in the autumn of 1851 were covered with the disease, but which since the autumn of 1852 have received no further treatment. The Vines in the immediate neighbourhood, and adjoining one of the houses, are covered with the disease; but notwithstanding their close proximity, no indication of the disease has at present been detected in either of the three houses. A solution of pentasilphide of calcium is prepared by boiling 30 parts by weight of caustic lime with 80 parts by weight of flowers of sulphur, suspended in a sufficient quantity of water; heat is applied until the solution has acquired a dark red colour, and the excess of sulphur ceases to dissolve. The clear solution is drawn off, and after dilution with water may be applied to the Vines by means of either a sponge, brush, or syringe. A saturated solution of pentasilphide of calcium may be diluted with from 12 to 20 times its volume of water previous to being employed. *Dr. A. P. Price, F. C. S., in Chemical Gazette.*



## Calendar of Operations.

(For the ensuing week.)

## PLANT DEPARTMENT.

THE conservatory should now be kept as gay as the limited number of plants in bloom at this season will permit. Remove *Chrysanthemums* as their flowers fade, to make room for other things. The earliest started *Camellias* and *Euparicis* will be advancing into bloom, as will the useful *Erica hiemalis* and *Willmoreana*. Oranges and *Daphnes* should be introduced as they show bloom; their fragrance will prove a boon at this season. *Neapolitan Violets*, *Mignonette*, and *Cyclamen persicum*, will assist, with the forwardest Roman *Narcissi*, in making the house agreeable till the more showy forced plants come into flower. Let the borders be frequently stirred and raked over to preserve a fresh appearance, and attend to the greatest cleanliness in every part. The night temperature may stand at 45°, and may range up to 60° on sunny days; let the ventilation be regular, avoiding currents of cold air. To obtain as much light as possible, the creepers under the roof may again be reduced, and tied closer together, washing the glass at the same time, if necessary. Where stove plants are largely grown, there will be a considerable number at this season, which, after flowering and ripening their wood, will require wintering in a moderate and dry temperature. If the collection is extensive, there should be a house devoted to this purpose; and as light is not essential to plants at rest, it might have a north aspect, when it would prove equally useful in the summer, either for retarding plants in bloom, or for growing such tender-leaved plants as are injured by exposure to the direct rays of the sun. Where, however, such accommodation does not exist, late *Vineries* will answer to keep *Clerodendrons*, *Allamandas*, *Justicias*, &c., while in a dormant state, as well as *Hedychiums*, *Alpinias*, *Gesneras*, and similar plants. The fire-heat required to preserve the *Grapes* will generally prove sufficient, unless during frost, when a little extra heat should be put on to keep the thermometer not less than 45°. The woody plants should be watered very sparingly, but the bulbous rooted and herbaceous sorts may be allowed to get nearly dry. **FORCING PITS.**—Pay attention to the stock of forcing shrubs and bulbs in these structures; directly the more forward are moved on to warmer houses, or the conservatory, fill up the spare room with a fresh supply, so as to keep up a regular succession. If fire-heat is employed be very moderate in its application to plants recently brought in. Pits not artificially heated should be carefully covered at night, to exclude frost. The stock of forcing plants yet out should (if not done previously), be at once plunged in some dry material to preserve their roots from frost.

## FORCING DEPARTMENT.

Take advantage of wet weather to put any forcing houses into order for immediate work, when the time for starting them respectively arrives. If the Vines, Peaches, &c., are not already pruned, such may now be done, as by this, all except the latest *Vineries* will be cleared for the purpose. The roofs and sashes of such houses as have not been painted recently should be washed with warm water in which a little soft soap has been dissolved. This will remove any filth which may be on the glass, and will destroy the eggs of insects which are often deposited on the inside wood work of the house. Of course we are presuming that such houses as may have been exposed, either for repairs, or to expose the trees to the influence of the weather, will now be put right (as we are decidedly averse to exposing Vines or even Peaches to the effects of severe frost by placing them out of the house during winter). The interior walls should be whitewashed and the plants, whether Vines, Peaches, or Figs, dressed over with the sulphur composition, and properly trained; and if at the same time the heating apparatus is put into working order, everything will be in readiness for actual work the moment it is wanted. On outside borders we have given previous directions to secure them from the weather. From this time to the period of commencement the house or houses may be occupied by any kind of plants, or bedding-out stuff, as circumstances may dictate, bearing in mind that the cooler and more airy the internal air is kept the better; and fire-heat should only be employed to keep out frost. To Cucumbers in bearing keep up a steady bottom-heat to preserve a uniform action at the root, without which the fruit is apt to shrivel at the end, instead of swelling regularly. Regulate the growing shoots so as to expose them fully to the light, and water with liquid manure at 80°. Temperature as before. **STRAWBERRIES.**—Plunge in a mild bottom-heat, and well up to the glass; a portion of Cuthill's Black Prince, or Scarlet Strawberries for the earliest crop. Ingram's Prince of Wales may be commenced by those fortunate enough to possess it.

## FLOWER GARDEN AND SHRUBBERY.

In addition to the different kinds of decorative plants which are planted yearly, are a variety of plants principally of a half shrubby character, which are found sufficiently hardy to stand our ordinary winters in the open borders, by covering their roots with some protecting material to exclude frost; and, if we can exclude wet at the same time, success will be more certain. Among this class we may mention many kinds of *Fuchsias*: *Aloysia citrodora*, *Hydrangea* (in the northern counties), and the choice kinds of *Tea Roses*, &c.; these should now have Fern or saw-dust placed over their roots and between their branches; tying the latter up if necessary, and enclosing them in Fern. When we

consider how much freer plants remaining in the ground all the winter bloom to those partly turned out, the somewhat untidy appearance of protected beds during winter is well compensated for, the ensuing season, by the additional size and profusion of bloom which belongs to plants established in the open soil. Among herbaceous and bulbous plants *Dielytra spectabilis*, various kinds of *Alstroemerias*, *Nerines*, and *Tropeoliums*, the *Belladonna Lily* and various *Gladioli*, *Ixias* and other Cape bulbs thrive infinitely better when allowed to remain in the open border, being merely protected from frost and rains during the winter. One condition to their success out of doors is however imperative, which is, that they are planted on a well drained soil; for anything like stagnant dampness about the roots would prove fatal to many kinds, which on dry soils will grow freely and bloom in the greatest perfection. Large Osier baskets of various forms and sizes should be in readiness for protecting any shrubs of which doubts exist of their being perfectly hardy; in frosty weather a little Fern may be placed round the plant, and the basket inverted over; a piece of flat board or felt placed on this keeps the plant dry as well.

## KITCHEN GARDEN.

Look to former Calendars, and bring forward any arrears of work which may remain on hand. All will depend on the state of the weather; and the proper time when to carry out the various directions must in a great measure be discretionary at this season. Where herbs are wanted through the winter in a green state, roots of Mint, Taragon, Burnet, and Sweet Marjoram should be potted and placed in a little heat; while Parsley and Sorrel in pots may be accommodated in a spare house, which is tolerably light. Protect as much as possible vegetables under glass from the effects of damp. Avoid working land (especially of a heavy nature), when in a wet state; but rather look to draining wet soils, making or repairing walks, and turning and preparing composts for future requirements.

## COTTAGERS' GARDENS.

This being an excellent time for planting *Roses*, we would recommend those who are desirous of possessing a small collection of good sorts to procure the following, which are mostly *Perpetuals*, or which flower from June until late in autumn, when frost puts an end to their beauty:—*Bourbon*: Paul Joseph, Queen, Madame Angelina, Bouquet de Floré (P.), Dupetit Thouars (P.), George Cuvier, Souvenir de la Malmaison (P.) *Hybrid Perpetual*: Duchess of Sutherland (P.), Madame Laffay (P.), Baronne Prevost (P.), Queen Victoria, Géant des Batailles, Standard of Marengo, William Jesse (P.), Auguste Mile, Lady Alice Peel, Robert Burns, Bossuet. *China*: Archduke Charles, Mrs. Bosanquet, Henry the Fifth, Fabvier. *Tea Scented*: Elise Sauvage, Goubault, La Pactole, Queen Victoria, Safranot, Souvenir d'un Ami, Vicomtesse Decazes. *Noisette*: Jaune Desprez (P.), Lamarque (P.), Miss Glegg (P.), Luxembourg. *Moss*: Mauget, White, General Drut. *Damask Perpetual*: Rose du Roi and Mogador. The above are all good, and are not expensive to buy. Those marked P. are well adapted for covering walls, or for training up pillars, &c. If planted in a bed, they had better be placed in the centre, or wherever it is wished that the bed should be highest. *China*, *Tea*, and *Noisette* *Roses*, should be kept in pots until spring; other kinds may be planted with advantage about this season, when the weather is dry and not frosty. The pruning of the Vine and other fruit trees may now be proceeded with. In pruning the Vine, cut out a portion of the old wood, especially where such can be replaced by well-ripened shoots of last season. Let all the young shoots be more or less shortened, according to their strength and maturity; for it is of no use to have soft, unripe, or weak wood. If left so thick as that the whole of the wall would be covered with foliage, the rays of the sun would be thereby prevented from heating the wall, and thus the latter would afford little assistance in ripening the crop. It is, therefore, advisable to train thinly; for by so doing, the bunches will be larger and better ripened than could be obtained from crowded wood.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON, For the week ending Dec. 1, 1853, as observed at the Horticultural Gardens.

Nov. and Dec.	Moon's Age.	BAROMETER.		TEMPERATURE.					Wind.	Ra. inches.
				Of the Air.			Of the Earth.			
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.		
Friday 25	24	30.095	29.959	46	33	39.5	39	42	S.E.	.25
Satur. 26	25	29.974	29.781	43	31	37.0	40	43	N.	.05
Sunday 27	26	30.119	30.033	40	37	38.5	40	43	N.E.	.40
Mon. 28	27	30.291	30.126	45	37	41.0	40	43	S.	.60
Tues. 29	28	30.266	29.980	50	39	44.5	41	43	S.	.05
Wed. 30	29	30.098	30.025	52	47	49.5	41	44	S.E.	.01
Thurs. 1	30	30.068	29.971	58	24	36.0	41	45	S.E.	.40
Average		30.103	29.943	46.3	35.4	40.8	40.7	43.5		0.37

Nov. 25—Hazy throughout; rain at night.  
26—Partially overcast; overcast; rain.  
27—Fine; drizzly; clear; overcast.  
28—Overcast throughout.  
29—Overcast; densely and uniformly overcast; rain.  
30—Uniformly overcast; hazy; slight rain.  
Dec. 1—Uniformly overcast; fine; clear; frosty.  
Mean temperature of the week & day below the average.

STATE OF THE WEATHER AT CHISWICK, During the last 27 years, for the ensuing week, ending Dec. 10, 1853.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.			
						N.	N.E.	S.E.	W.
Sunday 4	47.14	36.51	41.97	12	0.39 in.	4	2	2	4
Mon. 5	47.62	35.53	41.58	16	0.25	—	—	—	—
Tues. 6	46.96	35.59	41.27	15	0.39 in.	1	1	1	1
Wed. 7	47.44	37.03	42.23	17	0.52	2	1	3	6
Thurs. 8	46.25	35.74	40.99	15	0.36	1	3	2	1
Friday 9	45.83	35.01	40.44	12	0.81	2	2	1	1
Satur. 10	46.74	35.03	40.87	10	0.20	—	2	1	7

The highest temperature during the above period occurred on the 10th, 1848—therm. 60 deg.; and the lowest on the 31st and 6th, 1841—therm. 11 deg.

## Notices to Correspondents.

**BOOKS:** *Vicarage Br.* If your people are so drunken and disorderly, you should distribute among them George Cruikshank's "House that Jack Built," penny copies of which may be had of Tweedie in the Strand. Of course you know that Mr. Cruikshank is the modern Hogarth.—*Anne H. Gardner's* "Lessons in British Mosses" & and, if you can get it, his dried specimens of British Mosses and Hepaticae.

**CAMELLIAS:** *Admirer.* The leaves are diseased in consequence of the wet summer. The soil has filled them with water, which they have been unable to decompose. The plants will probably die, as thousands of hard-wooded plants have this year, from the same cause. Your best chance of saving the plants is to take them up, repot them, and keep them in a little heat.

**FRENCH MEASURES:** *C.P. and R.D.* It is unnecessary to apply to us for information regarding them, when you can buy at our office a complete set of conversion tables for 2d.; or 3d. post paid.

**FRIGI DOMO:** *Inquirer.* The high price of mats has forced this article into use, and we venture to predict that it will put an end to their employment altogether. One thickness of it is better than one thickness of mats. It was used last winter in the garden of the Horticultural Society, and is now largely employed there. Its great fault is that it shrinks a good deal. It is expected to remain serviceable for three years, if care is taken of it.

**FRUIT TREES:** *W.S.P.* For a garden in Monmouthshire, at an elevation of 500 or 600 feet, exposed to the south and southwest, but sheltered from all other quarters, you may plant against your walls the following sorts:—*Peaches:* Acton Scott, Royal George, Noblesse, Bellegarde, Barrington. *Nectarines:* *Violette Hâtive*, Downton, Balcovan. *Apricots:* Large Early, Moorpark, Breda, Royal. *Plums:* Green-gage, Purple-gage, Royale Hâtive, Jefferson, Coe's Golden Drop. *Pears:* Williams's Bon Chrétien, Marie Louise, Eyewood, Winter Nells, Beurré de Capiaumont, Beurré Diel, Broom Park, Knight's Monarch, Easter Beurré.

**HEATING:** *O.P. A* "Chunk," well managed, is not a bad contrivance; but your ironmonger ought not to have told you that it will burn for two days without attention. For although it may be made, perhaps, to keep alight for 48 hours, which we nevertheless doubt, it would give very little heat under such circumstances. You cannot have heat without combustion. It is probable that you do not know how to manage this stove; or else you have been supplied with a bad one. The ironmonger ought to show you how to make it burn slowly and well. The main point is to reduce the draft to a minimum; you seem to have increased it to a maximum.—*J.T.* A brick Arnot stove, such as is described at p. 51 of our volume for 1846, will perhaps answer your purpose best.

**HYBRID SPIRÆCAMPLX:** *W.Epps.* Your seedling between *S. manetifolius* and *microstoma* is a capital scarlet, and very pretty.

**ICERHOUSES:** *J.M.L.* There is no doubt that your house draws air—probably through the train, which should be what is called an S drain like that of a water-closet, and always full of water. Straw is necessary, but neither that nor anything else will keep your ice, if air is allowed to find its way in.

**INSECTS:** *Young Gardener.* No. 1 is a cocoon, within which are, accidentally (?), two small white membranous globules like eggs of snails; 2, a similar cocoon, containing seven small black oval pupae of some parasitic two-winged fly. If you find any more of these cocoons please send them to us.

**NAMES OF FRUITS:** *Capt. Cooks.* No. 1, which you received as Poire Melon, and 2, as Dorothea Royale, are both the Beurré Diel; 3, is Napoleon.—*O.P. 1*, *Crimson Queen* is 2; *Beauty of Kent*; 4, *Dumelow's Seedling*; 5, *Golden Reineette*.—*M.C. 1*, *King of the Pippins*; 2, *Wheeler's Russet*; 3, *Sometimes called Louise Bonne*, but not of Jersey.—*W.E. 1*, *Yellow Pear*; 2, *Beurré Diel*.—*C.H. 1*, *Downton*; 2, *Yellow Ingestrie*; 3, 12, *Nonpareil*; 4, *Golden Reineette*; 9, *French Crab*; 10, *Lamb Abbey Pearmain*; 13, *Ribston Pippin*; 15, *Beurré de Capiaumont*; 17, *Brown Beurré*; 18, *Beurré Diel*; 19, *Beurré d'Arenberg*; 20, *Crassane*; 21, *Glout Morceau*.

**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them from examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Mary M.C. 1*, *Phytolacca decandra*; 2, *Cyclamen europæum*; 3, *Mezembryanthemum formosum*; 4, *Juniperus virginiana*, or *Red Cedar*.—*R.H. Dublin*, *Cataetum Naso*.—*W.F.S.* We imagine the little specimens to belong to *Setaria italica*.—*R.B.* *Woodwardia radicans*, the common Hare-foot Fern.—*J.M.* Numbers lost, the largest is *Pteris arguta*; the next is *Woodia obtusa*; the *Lycopodium* is *L. Schottii* so called, but (?) *S.-T.H. 1*, *Aspidium trifoliatum*; 2, *Cyrtidium falcatum*; 3, *Adiantum ethiopicum*; 4, *Scelopendrium officinarum* var. *crispum*.—*S. Carmel.* The determination of *Willows* is almost impossible from mere fragments. We however believe yours to be *Salix fragilis*. G. Lindley's "Guide to the Orchard and Kitchen Garden."—*Morningside*, *Goodenia ovata*.

**PINE PLANTS:** *H.C.* They are occasionally advertised. We never name dealers. Read Glendinning's and Mills' and Hamilton's books on the Pine Apple.

**PINUS:** *H.W.* We never recommend dealers. Those who have the variegated *Pinaster* for sale should advertise it.

**PHYCIDIUM:** *C.F.* This is a name proposed by M. Tulasne in his memoir on lichens for such perithecia as bear naked spores (or as they are called by the same author stylospores) in genera whose normal mode of fructification is ascigenous. The name is not intended to comprise those organs which are presumed to have the power of impregnation, but those only which bear fertile reproductive generally terminal vesicles, capable of germination, and producing a new mycelium. In such cases there are frequently three modes of propagation, independently of the mycelium itself or its fragments, viz., from conidia borne on threads springing immediately from the mycelium, from sporidia contained in distinct asci, and from naked spores. A familiar example is afforded by *Erysiphe*, in which the moniliform threads or *Oidium* belong to the first; the sporangia, or more properly perithecia, filled with fertile sacs to the second; and the true *pycnidia* to the third. *M.J.B.*

**ROSES:** *Inquirer* says "Mrs. Bosanquet is a beautiful rose, but I find on all my stocks that it makes very weak wood, and dies off in two or three seasons after the head is formed," and he will be obliged by any of our correspondents informing him whether its requires any particular treatment as to pruning, &c.

**TERRA CULTURE.** Can any correspondent inform us what is meant by this term employed in the United States to designate some method of managing land, proposed by Professor Comstock, of Wisconsin County. It would appear from the American papers to deserve examination.

**TEYMA:** *A.A.* It is surely obvious that *indehiscent* is a mere typographical error for *dehiscent*.

**VALES:** *S.A.* This provincial expression, signifying perquisites, is, we imagine, a corruption of the French *trouvaillies*; but we do not see the connection between the question and gardening.

**YOUNG GARDENERS:** *Rhyl.* We cannot interfere between masters and men about wages. No doubt young men are often scandalously treated and infamously lodged, but they must make their own representations to the persons who employ them. As to wages they should remember that they are in a state of pupillage, and paid accordingly.

•• FULL PRICE will be given for Numbers 35, 37, and 39—1853.



TO AGRICULTURAL IMPLEMENT MAKERS.  
**THE DIRECTORS of the CRYSTAL PALACE**  
COMPANY having now determined the disposition of  
EXHIBITORS' SPACE, and fixed the Rent to be charged for  
the same, are prepared to arrange with Agricultural Implement  
Makers for the Exhibition of Implements and Machines in  
motion or otherwise. Particulars may be had at the Company's  
Offices, 3, Adelaide Place, London Bridge.  
Dec. 3. (By Order.) G. GROVE, Secretary.

**PERUVIAN GUANO.**  
**CAUTION TO AGRICULTURISTS.**—  
It being notorious that extensive adulterations of this  
MANURE are still carried on,

**ANTONY GIBBS AND SONS,**  
AS THE ONLY IMPORTERS OF PERUVIAN GUANO,  
Consider it to be their duty to the Peruvian Government and to  
the Public, again to recommend Farmers and all others who buy  
to be carefully on their guard.

The character of the parties from whom they purchase will  
of course be the best security, and, in addition to particular  
attention to that point, ANTONY GIBBS AND SONS think it  
well to remind buyers that—

The lowest wholesale price at which sound Peruvian  
Guano has been sold by them during the last two years is  
9*l*. 5*s*. per ton, less 2*½* per cent.

Any resales made by dealers at a lower price must therefore  
either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO, the guaranteed import of**  
Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano  
Superphosphate of Lime, and all Artificial Manures, Linseed and  
Rape Cakes, &c.—WM. INGLIS CARNE, 10, Mark Lane, London.

**MANURES.**—The following Manures are manu-  
factured at Mr. LAYNE'S Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0  
Office, 69, King William Street, City, London.

N.B.—Peruvian Guano guaranteed to contain 16 per cent. of  
Ammonia.—Sulphate of Ammonia, &c.

**THE LONDON MANURE COMPANY'S WHEAT**  
MANURE, made principally from animal substances, yield-  
ing nitrogen by slow decomposition, will be found most valuable  
at the present season. The London Manure Company supply on  
the best terms Peruvian Guano, Nitrate of Soda, Superphosphate  
of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt,  
and every other Artificial Manure. EDWARD PURSER, Sec.  
Bridge Street, Blackfriars.

**SEWAGE CHARCOAL MANURE.**—This highly  
fertilising Manure, which is Peat Charcoal completely  
saturated with London Sewage, will be found most efficient for  
every species of crop; more especially for Peas, Beans, Turnips,  
Mangold Wurzel, and other root crops. It will produce a greater  
return for the outlay than Guano or any other Manure at an  
equivalent value; it also possesses the property of retaining its  
fertilising power longer than other Manures now in use. It may  
be obtained from the SEWAGE MANURE WORKS, Stanley  
Bridge, Fulham, at 6*s*. per ton, and in quantities less than half  
a ton, at 4*s*. per cwt., for ready money only, and in quantities not  
less than a ton, will be delivered at the London Termini of the  
Railroads free of charge for cartage.

It may also be had from Messrs. G. Gibbs & Co., 26, Down Street,  
Piccadilly, Agricultural Seedsmen, and from all the other Agents  
of the Company. Recommendations and Testimonials may be  
seen at the Works.

**SMITHFIELD CATTLE SHOW,**  
BAKKE STREET, BAZAAR, LONDON.—STANDS Nos. 99 to 105.  
**SAMUELSON'S PATENT DIGGING OR**  
**FORKING MACHINE,** which obtained the SILVER  
MEDAL of the Royal Agricultural Society at GLOUCESTER,  
1853; 5*l*. 5*s*. Prize of the YORKSHIRE SOCIETY; and 5*l*.  
Prize of the CLEVELAND SOCIETY; capable of cultivating  
3 acres per day with four to six horses, may be seen at STANDS  
99 to 105, SMITHFIELD SHOW; and at work at Banbury,  
and in Kent, Middlesex, Surrey, Cheshire, Yorkshire, North  
Wales, Berwick, Gloucestershire, Worcestershire, Leicestershire,  
Herts, &c.

To meet the demand of SMALL OCCUPIERS, where horse  
power is limited, Mr. SAMUELSON has constructed an implement  
equal to 3 or 3½ acres per day, with a draught of three to four  
horses only. Price 27*l*. 10*s*. and 24*l*. 10*s*. respectively, at Banbury.

**PRIZE at Gloucester (the eighth time) to SAMUELSON'S**  
**improved GARDNER'S TURNIP CUTTER.**  
Manufacturer of McCormick's Reaper (highly commended at  
Pusey), Anthony's Churns (3*l*. prize at Gloucester), Liquid Manure  
Pumps, Chaff Cutters, Crushing Mills, Lawn Mowers, &c.  
B. SAMUELSON, Britannia Works, Banbury.

**SMITHFIELD CATTLE SHOW.**  
**BURGESS AND KEY** will exhibit at their Stands,  
Nos. 63, 64, 65, 66, 67, 68, 69, 70, 71, and 72, a large as-  
sortment of AGRICULTURAL MACHINES, &c., by the best  
makers, Richmond and Chandler's Chaff Cutters; Turner's Prize  
Oat, Linseed, and Bean Mills; McCormick's Reaper, Parkes's  
Circular Suck Fodder (B. & C. and sole wholesale agents),  
Oleate Breakers, the American Churn, Pumps for Manure,  
and Farm Fire Engines, Turnip Cutters, &c., &c., strictly at  
manufacturers' prices.  
103, Newgate Street, and 52, Little Britain, London.

**THE BIRMINGHAM CATTLE AND POULTRY SHOW,**  
DECEMBER 13, 14, 15, and 16.

**MAPPLEBECK AND LOWE, MACHINISTS** and  
MANUFACTURERS, respectfully invite Agriculturists and  
others who may visit the Birmingham Cattle and Poultry Show,  
to inspect their very extensive Collections of AGRICULTURAL  
IMPLEMENTS, in the Smithfield and Gloucester Street Ware-  
houses; also many CHOICE WORKS OF ART, and every  
kind of useful HARDWARE, in their Furnishing Ironmongery  
Show Rooms, Bull King, Birmingham.

**THE GENERAL LAND DRAINAGE and IM-**  
**PROVEMENT COMPANY.**—Incorporated by special Act  
of Parliament.—Offices, 52, Pall Mall Street, London.

**HENRY KER SEYMOUR, Esq., M.P.,** Hanford, Dorset, Chairman.  
**Sir John VILLIERS SHILLERY, Bart., M.P.,** Maresfield Park,  
Sussex, Deputy Chairman.

John Chaveller Colbold, Esq., M.P., Ipswich.  
Sir William Cubitt, F.R.S., Great George Street, Westminster.  
Henry Currie, Esq., Cornhill, London.  
Thomas Edward Dicey, Esq., Claybrook Hall, Lutterworth.  
William Fisher Hobbs, Esq., Boxed Lodge, Colechester.  
Edward John Hutchins, Esq., M.P., Eaton Square, London.  
Samuel Morton Peto, Esq., M.P., Somerleyton Hall, Suffolk.  
William Tite, Esq., F.R.S., Lowndes Square, London.  
William Withers, Esq., the Frythe, Welwyn, Herts.

This Company executes Works of Land Improvement, viz.,  
Drainage, Irrigation, Roadmaking, Enclosing, Reclaiming, and  
the erection of Farm Buildings, on advantageous terms; the  
amount of the outlay being repaid by annual instalments, varying  
according to the number of years over which Landowners may  
determine the repayment shall extend.

WILLIAM CLIFFORD, Secretary.

**ROYAL AGRICULTURAL COLLEGE,**  
CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.  
PRESIDENT OF COUNCIL—Earl BATHURST.  
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.

Chemistry—J. A. C. Voelcker, Ph.D., F.R.S.  
Geology, Zoology, and Botany—James Bucknan, F.G.S., F.L.S.  
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.  
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.  
Manager of Farm—G. Austin.  
Assistant to Chemical Professor—A. Williams, M.R.C.S.

The first Session of 1854 will commence early in February.  
The annual fees for Boarders vary from 45 to 80 guineas,  
according to age and other circumstances. The Fee for Out-  
Students is 40*l*. per annum. The College Course of Lectures and  
Practical Instruction is complete in one twelvemonth—though a  
longer time is recommended. There is a department for general  
as well as for agricultural purposes. Prospectuses and information  
can be had on application to the Principals.

THE GUIDE TO THE ROYAL AGRICULTURAL COLLEGE  
FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster  
Row, London; and EOWIN BAILY, Cirencester. Price 1*s*.

**COLLEGE OF AGRICULTURE AND CHEMISTRY,**  
Lower Kennington Lane, near London.

Principal—J. C. NESBIT, F.G.S., &c.  
Gentlemen visiting the Exhibition of the Smithfield Club, are  
respectfully solicited to inspect the Laboratories, Grounds, and  
General Arrangements of the Kennington Agricultural College.  
Cab direct can be obtained at all the Railway Stations.

**LAND DRAINAGE.**

**MR. JOHNSON** (several years principal Assistant to  
Mr. Josiah Parkes, C.E.) will undertake the Supervision of  
Land Drainage at a charge of Five Shillings per acre; or if under  
30 acres, three guineas per day, for setting out the Drains, taking  
Levels, &c. No objection to Drain by Contract. Offices, 12,  
Abingdon Street, Westminster.

**PROSPECTUS OF THE**

**LANDS IMPROVEMENT COMPANY.**—  
Incorporated by special Act of Parliament. Liability limited  
to amount of share. Capital 100,000*l*. in shares of 10*l*. each (2*l*.  
to be paid on allotment). With power to increase to 300,000*l*.  
With power also to Reproduce the Capital, by the issue of Trans-  
ferable Debentures founded on the Rent-charges.

**Directors.**  
Thomas Brassey, Esq., 56, Lowndes Square.  
Thomas R. Brook Cartwright, Esq., Aynhoe, Northamptonshire.  
Robert Westley Hall Dare, Esq., Wennington House, Essex.  
Frederick Loftus Dashwood, Esq., Kirtlington Park, Oxon.  
Arthur Goodrich, Esq., Lincoln's Inn Fields.  
John Horatio Lloyd, Esq., 1, King's Bench Walk, Temple.  
The Honourable William Napier (Manager), 5, St. James's Place.  
Colonel North, M.P., 16, Arlington Street.  
J. F. Powell, Esq., Welwyn, Herts, and Albion Place, Hyde Park.  
Frederick Twynan, Esq., Bishopscote, Hants.

With power to add to their number.

**Bankers.**  
The Union Bank of London—West Branch, 4, Pall Mall, East.  
*Standing Order.*  
Richard Griffiths Welford, Esq., 2, New Square, Lincoln's Inn.

**Solicitors.**  
Frederick West, Esq., 3, Charlotte Row, London.  
Messrs. Vizard and Shute, Dursley, Gloucester.

**Surveyors.**  
Messrs. Hewitt Davis and Francis Vigers, 3, Frederick's Place,  
Old Jewry, and 2, Old Palace Yard, Westminster.

**Offices of the Company.**—2, Old Palace Yard, Westminster.  
**Agents in Scotland.**—Messrs. Hunter, Blair, and Cowan, W.S.,  
11, York Place, Edinburgh.

The Company is incorporated by "THE LANDS IMPROVEMENT  
COMPANY'S ACT, 1853," the powers and provisions of which  
apply to England, Wales, and Scotland, and have been framed  
with special reference to the exigencies of modern agriculture.

By means of this Act the landed proprietor is enabled effec-  
tually to overcome those various obstacles arising from pecu-  
liarities in the ownership of real property, and from accidental  
circumstances, which have hitherto so injuriously impeded the  
application of capital to agricultural improvements. To what-  
ever extent his estate may be encumbered, or his interest in it  
restricted by settlement or otherwise, if its value can be ade-  
quately increased by the judicious outlay of capital, the owner is  
empowered to effect, through the medium of the Company, the  
requisite works of improvement, without costly investigation of  
title, and at a very moderate preliminary expense.

The improvements will be executed under the sanction of the  
Inclosure Commissioners, and the authorised outlay, in which the  
preliminary expense is included, is constituted by the Act a  
first charge on the inheritance of the land in the shape of a termi-  
nated annuity or rent-charge.

The Company possess also an important advantage in the mode  
of obtaining money to be advanced or expended for improvements.  
In the case of existing Drainage Companies, the only mode of  
reproducing the capital is by sale of the rent-charges. The de-  
mand, however, for these securities being necessarily limited, the  
Company devised a scheme for rendering available for Land  
Improvement the floating capital of the country. With this  
view, they applied for and obtained the additional and very valua-  
ble power of issuing, under the authority of the Inclosure  
Commissioners, debentures founded on the rent-charges, and trans-  
ferable, &c. of duty by endorsement under hand only; thereby  
securing, under ordinarily favourable circumstances, a cheap and  
unlimited supply of capital.

By this Debenture scheme, commercial principles are for the  
first time, perhaps, applied to Land Improvements. The Com-  
pany is made, in fact, an agency between the Landowner requir-  
ing money for improvements, and the public seeking a safe and  
convenient investment. A small amount of paid-up capital will  
enable the Company to outlay, or to advance a very large amount  
of money, and the profit being made on extensive transactions,  
and divisible on a limited amount of Share Capital, it is evident  
that it may and will afford a most ample return to the Share-  
holders with very moderate charges to the Landowner.

The Company's profits will be derived—  
1stly.—From works undertaken and executed by them.  
2ndly.—From Commissions on advances to Landowners  
executing their own works.

3rdly.—From fees charged for the use of the Company's  
powers, where Landowners execute their own works  
and employ their own capital.

In Scotland, where restrictions on Ownership extensively pre-  
vail and where Farm improvements are thoroughly appreciated,  
the Company's Act is the only measure for Land Improvement  
hitherto granted to a public Company; and from the applications  
already received, the Directors anticipate from that country a  
most extensive demand for assistance.

Applications for shares in the annexed form may be addressed  
to the Managing Director, at the Company's Offices, 2, Old Palace  
Yard, Westminster, where all further information may be obtained.

**FORM OF APPLICATION FOR SHARES.**

To the Directors of the Lands Improvement Company.  
I request you will allot me shares in this Company, and I  
agree to accept the same, or any less number that may be allotted  
to me, and to pay the deposit thereon of £2 per share, when required.  
Dated this day of 1854.

Signature.....  
Name in full.....  
Address.....  
Occupation.....  
Reference.....

**ROYAL AGRICULTURAL SOCIETY**  
OF ENGLAND.

The December GENERAL MEETING will be held at the  
Society's House, in Hanover Square, on SATURDAY, the 10th  
DECEMBER, at Eleven o'clock in the Forenoon.

By order of the Council,  
JAMES HUDSON, Secretary.

**PRIZE CATTLE SHOW OF THE SMITHFIELD**  
CLUB.—The Annual Exhibition of Prize Cattle, Seeds,  
Roots, Implements, &c., commences on TUESDAY morning and  
closes on FRIDAY Evening, 6th, 7th, 8th, and 9th December, at  
the Bazaar, King Street and Baker Street, London. Open from  
daylight till 9 in the evening. Admittance, One Shilling.

**THE BIRMINGHAM CATTLE AND POULTRY**  
SHOW.—The FIFTH GREAT ANNUAL EXHIBITION  
of STOCK and DOMESTIC POULTRY will be held in  
BINGLEY HALL, Birmingham, on December 13, 14, 15, and 16.  
The Entries of Poultry exceed 2000 Pairs. The Private View  
and Annual Dinner on Tuesday, December 13.

There will be Special Trains on all the principal Lines of  
Railway, full particulars of which will appear in the Advertise-  
ments and Bills of the several Companies.

**MALVERN EXHIBITION OF POULTRY.**—1854.

The Second Annual Exhibition will be held in the  
PROMENADE GARDENS, on WEDNESDAY and THURS-  
DAY, Sept. 13 and 14. Under most distinguished Patronage.

The Committee are aware that a Show in September is open  
to some objections, but they consider it impossible to have a  
successful Show in Malvern in any other month. They have  
confined this Exhibition to Birds hatched in 1854, except in the  
case of Dorkings and Bantams (the former bird they consider  
deserving of extra encouragement), and have decided on the  
following Prizes:—

**DORKING.** £ s.  
Class 1.—Hatched before 1854: For the best Cock and two  
Hens, three prizes, amounting to ... .. 6 0

Class 2.—Chickens of 1854: For the best Cock and two  
Pullets, three prizes, amounting to ... .. 6 0

**SPANISH.—CHICKENS of 1854.**  
Class 3.—For the best Cock and two Pullets, three prizes,  
amounting to ... .. 6 0

**COCHIN CHINA.—CHICKENS of 1854.**  
Class 4.—Cinnamon and Buff: For the best Cock and two  
Pullets, three prizes, amounting to ... .. 6 0

Class 5.—White: For the best Cock and two Pullets, three  
prizes, amounting to ... .. 6 0

Class 6.—Grouse, Partridge, or Dark: For the best Cock  
and two Pullets, two prizes, amounting to ... .. 5 0

Class 7.—Black: For the best Cock and two Pullets, two  
prizes, amounting to ... .. 5 0

**GAME.—CHICKENS of 1854.**  
Class 8.—Black-breasted and Duck-wings:—For the best  
Cock and two Pullets, three prizes, amounting to ... .. 3 10

Class 9.—Any other variety: For the best Cock and two  
Pullets, three prizes, amounting to ... .. 3 10

**HAMBURGH.—CHICKENS of 1854.**  
Class 10.—Silver Pencilled: For the best Cock and two  
Pullets, three prizes, amounting to ... .. 3 10

Class 11.—Gold Pencilled: For the best Cock and two  
Pullets, three prizes, amounting to ... .. 3 10

Class 12.—Silver Spangled: For the best Cock and two  
Pullets, three prizes, amounting to ... .. 3 10

Class 13.—Gold Spangled: For the best Cock and two  
Pullets, three prizes, amounting to ... .. 3 10

**POLAND.—CHICKENS of 1854.**  
Class 14.—Black, with White Crests: For the best Cock  
and two Pullets, three prizes, amounting to ... .. 3 10

Class 15.—Silver Spangled: For the best Cock and two  
Pullets, three prizes, amounting to ... .. 3 10

Class 16.—Silver Spangled: For the best Cock and two  
Pullets, three prizes, amounting to ... .. 3 10

**BANTAMS.—OF ANY AGE.**  
Class 17.—Gold Laced: For the best Cock and two Hens,  
two prizes, amounting to ... .. 2 5

Class 18.—Silver Laced: For the best Cock and two Hens,  
two prizes, amounting to ... .. 2 5

Class 19.—Any other variety: For the best Cock and two  
Hens, two prizes, amounting to ... .. 2 5

Class 20.—For any distinct variety of fowls, of any age,  
not named in the foregoing list, four prizes, of 1*l*. each,  
will be awarded to the most deserving specimens of a  
Cock and two Hens ... .. 4 0

**DUCKS.—HATCHED IN 1854.**  
Class 21.—Aylesbury: For the best Drake and two Ducks,  
two prizes, amounting to ... .. 3 0

Class 22.—Bouen: For the best Drake and two Ducks, two  
prizes, amounting to ... .. 3 0

Class 23.—Buenos-Ayres, or Labrador: For the best Drake  
and two Ducks, two prizes, amounting to ... .. 3 0

**GEES.—HATCHED IN 1854.**  
Class 24.—For the best Gander and two Geese, two prizes,  
amounting to ... .. 3 0

Cottagers' Prizes ... .. 10 0

Prize Lists, &c., may be obtained on application to the Honorary  
Secretary, THOMAS MCCANN, Graham House, Malvern.

**SMITHFIELD CATTLE SHOW.**  
W. M. SKIRVING, Walton Nursery, Liverpool, begs

to acquaint his friends and the public that he will attend  
at the ensuing Smithfield Cattle Show to exhibit Roots of his  
IMPROVED SWEDE and other TURNIPS, and to take orders  
for the Seed of them, and all other approved kinds of Agricul-  
tural Seeds.

**GENUINE NEW SEEDS.**  
**SUTTON AND SONS, SEED-GROWERS,** Reading, Berks,

can supply all kinds of Agricultural and other Seeds genuine as  
grown, and true to their kinds. The advantages of procuring Seeds  
direct from the Growers are obvious, especially in scarce seasons  
like the present.

**The Agricultural Gazette.**

**SATURDAY, DECEMBER 3, 1853.**

**MEETINGS FOR THE FOLLOWING WEEK.**  
MONDAY, Dec. 5.—London Farmers' Club.  
TUESDAY, — 6.—Smithfield Club: Baker Street.  
WEDNESDAY, — 7.—Agricultural Society of England.  
THURSDAY, — 8.—Agricultural Imp. Society of Ireland.  
FRIDAY, — 9.—Agr. Society of England (General Meeting).

The past season will be noted in the HISTORY OF  
THE SHORT-HORN BREED as the most remarkable of  
the many it has witnessed since it emerged from the  
hands of CHARLES COLLING, with whom it may be  
said to have originated. And we do not exclude  
the earliest of these seasons from the series. We  
take 1810—the date of the Ketton sale—as one of



them. If in 1810 the demand for these animals was less—how much smaller was the supply? CHARLES COLLING's sale stands alone of its kind until the year 1818, when the sale of his brother's stock again produced an extraordinary excitement among breeders; but now, in 1853, upwards of 500 animals of pure blood have been sold by one auctioneer alone, and probably on the whole 50,000% to 60,000% worth of short-horn stock have changed hands. At the first sale of the kind it might well be that a bull should sell for 1000 guineas; there may have been a much smaller number of men interested in the fortunes of the breed, but COMET stood alone among short-horns of that date, as being in himself the concentrated result of all the ability, experience, and judgment which had yet been devoted to the improvement of the breed. Those who should possess him felt that they would hold in their hands almost the sole existing key to the future fortunes of the short-horn breed. Nothing like that can be said of any animal now-a-days, nor does any breeder now occupy the position which COLLING did. The attention of very many able men is now directed to the subject, and the results of their skill are now to be seen in hundreds of herds and thousands of cattle. And yet there are sales among those of the past season which vie with that of nearly half a century ago in the expenditure to which competition drove the purchasers; and animals have been sold which far exceeded in their money value any of those which were sold at Ketton. We have seen a letter written before the Tortworth sale, commissioning the purchase of animals there, which extended to 1100 guineas for one of the bulls then sold. The animal did not fetch so much as that, but the judgment of the writer of that letter is not to be impugned on that account. The further commissions that he gave show that if he erred, it was in too low an estimate of value. He says, after referring to the information he had received as to the probable character of the affair—"We have concluded to make a desperate effort to purchase, at Earl DUCIE's sale, the animals enumerated in my former letter, which, owing to information since received, requires revision as follows:—

No.	Cows and heifers.	Age.	Estimated value.	If a previously named Duchess be purchased.
10	Oxford 6th	6½ years old	£168 0	
20	Duchess 64th	4 "	525 0	
27	" 66th	3 "	525 0	£367 10
39	Pride	11½ months	136 10	
40	Duchess 68th	11 "	168 0	136 10
44	" 69th	5 "	147 0	126 0
47	" 70th	7 weeks	126 0	105 0

A person who had given such a spirited commission as that—offering 500 guineas for a three-year-old heifer—was not inconsistent in offering 1100 guineas for a three-year-old bull of such character and pedigree as the Duke of Glo'ster. And yet his valuation of the cows and heifers, as we know, was far exceeded by his purchases, and those of other men: his 500 guinea animals fetched 600 and 700 guineas apiece; those valued by him at 120, 140, and 160 guineas, fetched 310, 400, and 300 guineas respectively; and if his valuation was not equally exceeded in the case of the bull, it was owing—not to speak of the accident of a previous purchase—to extreme and honest carelessness in the gentleman commissioned, to keep the secret of its destination from those who, if that had been discovered, would have driven the prices realised as far beyond the prices estimated in the case of the bulls, as they did in the case of the other animals. We hold, therefore, that the Tortworth sale—but one of the present year—stands far higher in its evidence on the present status of the short-horn breed, than that of Ketton did, or does.

CHARLES COLLING's sale—we have a worn and ragged price list of it before us—contained 60 animals; 61 are enumerated, but one, owing to lameness, was withdrawn; the total amount they realised was 7379l. 8s., so they averaged about 123l. apiece. Thirteen of these, indeed, were not of Mr. COLLING's breed, and so the sale is generally reported as having yielded 7116l. 18s. for 47 animals, 151l. 6s. apiece; but many of our acknowledged pure bred short-horns trace their pedigree to one or other of these 13 rejected animals, and the names of Champion, Lax, Skipworth, Strickland, Tempest, among their purchasers, are still known to readers of the Herd-book. At Tortworth, as we have before recorded, 62 animals fetched 9361l. 16s., or within a penny of 151l. apiece, a price far beyond that of COLLING's stock, whether the whole number be, or be not taken; if they be, a difference of nearly 30% apiece in the value of short-horns, now and then, must be recorded; if they be not, then against 47 animals at 151l. 6s. 4d. apiece, as representing the value then, we have to put 62 animals at 150l. 19s. 11d. as representing value now; and the latter, taking

the number into account, must be acknowledged the higher value of the two.

But we need not, in order to state the present estimation of the breed, compare it with a period so distant. The Kirkleavington sale, 3 years ago, when Mr. BATES's herd was sold, furnishes a nearer date for comparison, and the results furnish still more extraordinary evidence of the present high value of pure short-horn blood. It so happens, that six of the animals sold at Kirkleavington were resold, of course three years older, at Tortworth, and the following is the comparison of their values:—

Name.	Prices at Kirkleavington.	Prices at Tortworth.
	£ s. d.	£ s. d.
Duchess 55th*	110 5 0	52 10 0
Oxford 6th	131 5 0	215 0 0
Duchess 59th	210 0 0	367 10 0
Duchess 64th	162 15 0	630 0 0
Oxford 11th	131 5 0	262 10 0
4th Duke of York	210 0 0	525 0 0
	£955 10 0	£2052 10 0

The animals had more than doubled in value; a competition headed by Earl DUCIE himself in the former case, has since been more than doubled, and this in the face of a supply of stock—a number and quality of sales—unprecedented in any year during the present century. And this, after all, is the most extraordinary aspect of the matter. Excluding the sales of the stock of Lords MONCK and TALBOT DE MALAHIDE, and others by Mr. GANLY in Ireland, and the sales of the herds of Messrs. MARJORIBANKS, GRUNDY, and MAYNARD, in Herts, Lancashire, and Yorkshire, by Mr. WETHERELL, of none of which have we been able to procure details, we find that Mr. STRAFFORD alone has conducted 20 sales comprising more than 600 short-horns, many of which sold at prices between 100 and 300 guineas, thus vying with, and even exceeding those which were reached when extensive sales of pure short-horn blood happened but once in years. Thus, at the sale in March, of Mr. FAWKES, of Farnley Hall, in Yorkshire, 12 bulls and calves were sold for upwards of 860%—126% and 136% being reached in particular instances; at Mr. FULLER's sale, Holcomb, Surrey, 42 animals were sold for 1250%, a heifer reaching 115 guineas, and a bull 70 guineas; at the sale of some of Mr. COMBE's herd at the Bazaar, 20 cows and heifers reached the high average price of 60%, the highest fetching 150 guineas, and a bull calf of Mr. TANQUERAY's reaching 80 guineas; at Mr. COLVIN's sale, in Essex, a bull reached 80 guineas; at Mr. THURSBY's sale, Northamptonshire, 44 cows and heifers, and 11 bulls, fetched 1900%; at Mr. FAVIELL's sale, in Yorkshire, 19 cows and heifers, and 4 bulls, were sold, and the sum of 105 guineas was reached; at Captain DILKE's sale in Warwickshire, 64 head of stock were sold, and 140 and 200 guineas were reached; and above them all, if Tortworth be excluded, at the sale of Mr. HOLMES's herd, in Ireland, 39 animals fetched 2583%, one calf fetching 240 guineas, and heifers 200 and 275 guineas; the highest bull being 150 guineas. Here have been unprecedented supplies, and yet demand unprecedented has produced unprecedented prices. The short-horn breed never stood so high, we may be sure, as it does at the present moment in the estimation of breeders, whether on this side of the Atlantic or the other.

We have mentioned only Mr. STRAFFORD's sales in detail, simply because of these alone have we been able to procure particulars. An exclusive reference to him, so far as this aspect of his position is concerned, has been forced upon us unwillingly; but there is another relationship to the subject, in which he stands alone, and, therefore, merits this exclusive reference. The exactness and publicity of pedigrees, to which much of the market value of the breed is due, are attributable to his labours as editor of the Short-horn Herd-book; his knowledge of the subject, which has grown out of his labours here, can of course, considering his opportunities of acquiring it, be excelled by none; and we are glad to know that as the latter are being rewarded, so the former is being usefully applied, in the extensive business which he now conducts in connection with sale of pure-bred stock.

It is very plain that Mr. DENTON and Mr. TRIMMER will between them sufficiently inform our readers on the peculiarities of the KEYTHORPE DRAINAGE without any interference on our part. Nevertheless, in fulfilment of our last week's promise, we must add a single paragraph to the many which have already appeared on the subject.

It appears to us that the process of natural

\* Duchess 55 sold for so little, owing to the doubt which existed as to whether she would breed again. A somewhat similar doubt hung over her at the time of Mr. BATES's sale; since which time she has had one calf, Duchess 66, which, with its calf, sold for upwards of 1000 guineas at the sale—and with Duchess 64, and Grand Duke, the two previous calves of Duchess 55, three animals have realised within the past year 2300 guineas.

drainage might be usefully studied by those who would conduct the artificial process with economy. Take any island with an undulating surface, and notice how the rain-water falling evenly upon that surface finds its way to the sea. The "laws of gravity" are undoubtedly the sole cause of its motion after it reaches the surface of the land, as they were before, but we do not find that it sinks evenly through the land as it did through the air. It does not ooze evenly out at the sea level all round the coast line of the island; its path is directed by obstacles as much as by its downward tendency, and it collects in porous beds and is obstructed by impervious beds, is absorbed here and thrown out at a lower level there, and ultimately finds its way in surface rivulets and rivers down the valleys to the ocean. The more notable variations in the structure of the land, which operate in this way on the passage of the water, have long exerted an influence on the practice of draining. ELKINGTON adopted the plan of tapping porous beds so as to make them drains instead of reservoirs, and SMITH and others have taken care to cut across the line of stratification whenever the dip of the surface permitted a drain to be made in that direction. They took care that their drains should, if possible, be directed across both porous and impervious strata, in order to avoid the accident to which they would otherwise be liable, of having one cut wholly in the clay, and the next one wholly in the sand; one, therefore, over-worked, and the next with so much less to do. These strata had no necessary and constant relationship to the dip of the surface; the two were due to different causes acting at different times. Now, the undoubted truth, as we believe it to be, that drains, except when the slope is such as to create a mischievous rapidity of water in them, should be directed right down the slope, was not by intelligent men permitted to cancel the considerations just alluded to arising out of the geological structure of the subsoil through which the drains were cut; and where these latter facts obtained, the practice adopted was properly guided by the double consideration. But it is very far from being uncommon to find this structure of the geological formation to commence so much below the surface as to exert but little influence on the direction of the passage of the water, while that is still near enough the plants to be of agricultural importance. The rock is often covered by thick beds of transported material, whether gravel or the finer stuff called *warps* drift by Mr. TRIMMER; and as previous geologists have called attention to the influence of the original structure of the rock upon the practice of drainage, so Mr. TRIMMER has called attention to the influence which the structure, or rather the surface conformation of this bed of transported material should exert. The cases are entirely parallel; and their influence must be admitted to be the same in kind though not in quantity. This *warps* drift is often still the subsoil—covered, therefore, by the true soil—and there may have been long intervals of time, and very different agencies at work to produce the surfaces of the two respectively. There is not, we believe, any necessary relationship between the outer surface (the inner structure is, as we understand it, of comparatively smaller importance, for it must generally prove pretty nearly homogeneous) of this *warps* drift and that of the soil itself. Whatever may have been their cause, furrows, gutters, and holes are found on the former surface, which present no indication of their existence on the latter. Mr. DENTON says that these gutters have been produced by the passage of water under the influence of gravity, and he contends that the same laws acting now will induce the continued passage of water down them still. Probably the former part of this statement is the case, though we do not suppose that the motion of the water which produced these gutters was necessarily connected with the way in which the surface of the land at present falls. At the time of their production, the surface of the land may have been very differently disposed; and, independently of that, there is we believe evidence of the action of a general current long ago, quite irrespective of the slopes which it traversed, just as currents in the ocean now-a-days may be supposed to traverse generally an undulating bottom in one common direction, up hill, across hill, down hill, indifferently; so that we do not suppose that the further examination of these gutters and furrows will show them to have any necessary connection with the present direction of the surface of the land. Since they were made they have become filled up with the present surface soil, so that where they exist they are altogether covered over and disguised. Now where this *warps* drift is of a different consistency from that of the soil which has covered it, so that these gutters in a clay subsoil have become filled with the sands and porous matter of a lighter soil, it would, surely, be possible by means



of them, were their position and direction known, to economise the labour and the cost of drainage. Such an examination of the soil and subsoil would therefore surely be a useful preliminary to the work of the drainer. Whether or not the cost and time of the necessary examination shall prove excessive—whether the degree of certainty which it may give us may be practically insufficient—whether the instances in which no such furrows shall be found, and the cases in which their direction or their depth may render them useless for our purpose shall prove too numerous—whether, in the practical carrying out of the idea which Mr. TRIMMER has started, cost may exceed returns, we do not venture to say; but whatever practical difficulties exist, and on these Mr. DENTON seems to lay the greatest stress, we may safely contend that a knowledge of this inner surface of the subsoil to which Mr. TRIMMER has called attention may often be of use. It has been so we know in the case of Lord BERNERS' estate at Keythorpe; and, though we do not suppose that Mr. TRIMMER would exalt his discovery so as to take it the basis of any 'system' of drainage, yet we believe with him that his facts are worth searching for, and that when discovered, as they were at Keythorpe, they may usefully modify the practice of the drainer.

#### THE KEYTHORPE DRAINAGE.

ANOTHER draining engineer has honoured me with his notice! I had flattered myself that my paper on the Keythorpe drainage was tolerably clear, but as these gentlemen cannot understand it, there must be obscurity somewhere, and as it cannot be on the part of the draining engineers, I am willing to take it to myself, and enter into further explanations. I shall commence by giving the same advice to your anonymous correspondent "A Draining Engineer," which I gave to one who wrote in his own name—to look at the paper again, and to read it more attentively. I have no doubt that with an attentive perusal most of his difficulties will vanish. He complains of the use of the term "system," and says that there ought to be no system in draining. By system, I understand him to mean one general rule applied indiscriminately to all cases. In that sense, the Keythorpe method of draining cannot be called a system, because under varying conditions, it combines or selects parts of several systems. Its merits are economy and efficiency. It attains these ends by means of one great principle—a complete and systematic examination of the soil and subsoil, and of levels, before it commences the drainage of each field. It uses drains of all depths from 1½ to 7 feet, and it places them at various distances, according to the nature of the soil and subsoil. Its great object is to cross the subterranean channels which have described so often; and it crosses the line of greatest descent only when those channels follow that line. It crosses them obliquely. Those channels are not present in all soils and under all forms of surface, but they are of very general occurrence in every district and on every formation which I have examined. This is stated in my paper published in the Journal of the Royal Agricultural Society. If the "Draining Engineer" cannot discover the passages, I shall be happy to send him a copy on which they are marked. The "Draining Engineer" wishes also to be informed whether Mr. Denton invariably carries his minor drains up and down the hill. It is not for me to answer that gentleman—I leave that to himself. I shall therefore merely advise the "Draining Engineer" to read the last letter which I addressed to you, in which he will find me stating that of all the various methods of systems of draining, Mr. Denton's approaches the nearest to that of Keythorpe. I certainly should not have made this statement had I supposed his minor drains invariably followed the line of greatest descent. Again, the "Draining Engineer" asks if nobody ever tried drains obliquely across the fall of the ground, before it was done at Keythorpe. To be sure they did, but this is a favourite mode of draining with farmers, and other "practical men" who are not draining engineers, and in so doing they are sometimes right and sometimes wrong. But except at Keythorpe, and in the case of the farmers near Guildford, I never heard any systematic attempt to take advantage of the natural drains formed by the subterranean furrows on which so much of the success of the Keythorpe system depends. There are many reasons, however, which must be obvious to your correspondent, which render that system more suited to those landowners who drain their lands with their own money, under the superintendence of their own agents, than to those who are obliged to have recourse to borrowed capital, draining companies, and Government inspection. There is one point, moreover, which cannot be too strongly impressed on landowners, farmers, and professional drainers; and that is, that at Keythorpe drainage is followed by subsoiling or double ploughing, and good cultivation. I have only to add in conclusion, that you will perhaps be glad to hear, that Mr. Denton, I, thinking it a pity to disturb the peace of the world, like the Russians and Turks, have concluded an amity, on the principle of *ut possidetis*. Each is to claim his own opinions on the subject of draining, until some can be devised to secure an honourable retreat

for whichever party may have occupied an untenable position. We might approximate more closely but for those unfortunate laws of gravity. As we can neither get rid of them, nor agree in our reading of them, we have agreed to differ. In the meantime we are co-operating in the investigation of the internal structure of soils and subsoils very much to our mutual satisfaction. I believe I may say that I have the honour of being Mr. Denton's geological adviser. If I thought one so conversant with soils as the "Draining Engineer" would condescend to accept my humble assistance, I would tender it to him also, but it would be on the understanding that, like the late Sir Robert Peel, I do not prescribe without a fee, J. Trimmer.

**Land Drainage.**—As you append a note to my remarks, published last week, promising a further explanation of Mr. Trimmer's views, and as I have received some letters requesting me to explain more particularly than I have hitherto done, the reasons why I consider cross drains, under the circumstances explained by Mr. Trimmer, to be opposed to the laws of gravitation, I will ask you, in justice to the case, to make use of the following remarks in such a way as to render my views clear to your readers. Without going into the question whether furrows do exist with any such regularity of position or inclination, as to be made the foundation of a "system" of drainage (which I consider impracticable), it would appear, from Mr. Trimmer's exposition, that hollows of porous soil alternate with clay banks; that these hollows or furrows are of different depths; that "they are generally found on land with considerable fall" (in fact, to use Mr. T.'s own words, in lands of slight inclination "there are few or no claybanks and furrows"); that Lord Berners has therefore laid his parallel drains "across the line of greatest descent" (a method modified by Mr. Trimmer into an oblique direction across the fall); and that these cross drains are dug at the average (or mean) depth of the furrows. Now, let any one consider these facts and determine: 1st. If the furrows exist, what caused them? If it was the current of water or the re-elevation of the land above the sea, will not the same element find its way under ground through the porous soil by the channels it worked out for itself? My experience tells me that there is no more difficult matter in practice than to establish new courses for water in opposition to those it has found for itself; and every engineer, who is practised in water and drainage works, will bear testimony to this. Intercepting drains across these natural channels will no doubt take away a considerable proportion of the water trickling downwards, and that proportion will be increased as the direction of the drains are more oblique. No one has ever doubted that the drains will intercept a certain quantity; but so long as any water passes the drains intended to intercept it, they are neither perfect in system nor economical in cost. Again: 2d. If the depth of the furrows are unequal, and the intercepting drains cross some of the furrows above their bottom and some below, how can the intercepting principle be economically applied? Will not the water still find its way by the deeper furrow under the drain? Will the drain be applicable in the crossing of the shallow furrow, unless there be shafts of porous matter from the bottom of these furrows downwards to the main? Will not the water, running along the drain through the clay bank, go out of it as soon as it comes to the porous soil at the bottom of the furrow, there to be discharged by some other cross drain lower down the slope? When these points have been disposed of, we can enter upon the question whether Lord Berners' soil is "clay" at all. I have known a soil called clay (by common repute) to consist of 75 per cent. of chalk, and as Lord Berners' can consume Turnips with sheep on the land (I presume after continued wet weather, or there is nothing in the fact), I am very much inclined to doubt the assumption. Does anybody expect to feed sheep on the Oxford or London clay after continued wet, without poaching it? I am aware that many persons expect the very nature of clays to alter by draining, and to become as dry and "useful" as a sandy loam. But they are and will be deceived in their expectations. The nature of the soil remains the same, though its condition be altered. I do not presume to deny that Lord Berners' land is sufficiently drained; all I say is, that if the soils be as represented, and the interceptive theory has been applied successfully, the same time and attention bestowed upon a system of work having more regard to the laws of gravity, would have resulted in equal success with a saving of money. But again, let me ask, can all landowners afford the time to be carrying on a series of experimental draining? and how would the tenants of a large estate like a system which necessitated the opening of fresh drains, as experience showed the first laid drains to be inefficient? J. Bailey Denton.

#### NOVEL MODE OF APPLYING LIQUID MANURE.

THE value of liquid manure to the agriculturist and the gardener is too well authenticated to require further proof. The examples of the Chinese and the Belgians show us that both antiquity and utility are in its favour, and our modern scientific improvers, our Kennedys and Mechis, as well as our Sewage Manure Companies, have done much to bring this manure into common use. But they will hardly overcome the English prejudice against it, on account of its odour. Liquid manure, as commonly applied, is a nuisance, and the accounts of its success, as at Edinburgh, where enormous crops of Grass

are produced from the town sewage, are counterbalanced by the ideas of the cholera and fevers, which the evaporation of such foul matters from a large surface must tend to increase, if not produce. The application of faecal matter to the foliage of plants eaten on the ground by cattle, must also tend to produce disease in them, and has, in fact, been considered to do so with respect to the Edinburgh cows. In short, the present method of using liquid manure is prejudicial to health, and exceedingly wasteful.

It was with much pleasure, therefore, that, in company with two other gentlemen, I, a few days back, witnessed the success of experiments carried on at Wokingham, Berkshire, on a most novel and ingenious plan, viz., that of applying this manure to the subsoil instead of the surface, and to the roots of plants instead of the leaves. The apparatus consists of tiles somewhat resembling the old-fashioned draining tile and sole, only larger and placed in a reversed position, the bottom tile being semicircular, and about 8 inches in diameter, with a flat cover perforated with holes, so as to allow the manure to rise through. I call the upper tile a cover, but it is not so, for it only reaches half way up the internal part of the semicircular one to prevent the liquid overflowing the sides.

The tiles are laid at a foot deep from the surface, to prevent any accident to them while cultivating, and are placed 3 feet apart, either on a dead level or on a very slight descent. The seeds are sown exactly above them; if of corn or forage plants, two or three rows may be drilled over each manure tube; for roots of course only one row. Perpendicular tubes are fixed at short intervals to the horizontal ones, and through these the manure is poured and rises partly by hydraulic pressure, partly by capillary attraction of the soil above, but more especially by the attraction and suspensive power which the spongioles or fibres of the roots possess.

As to the kinds of manure that may be liquefied on the patentee's principle—of a cistern with a perforated false bottom, from which the manure may be pumped up on a plan analogous to that practised by tanners with bark—in towns we may take diluted sewage, or other waste refuse from the houses; where animals are kept, their manure largely diluted, and so filtered as to remove the grosser impurities. Where neither of these are to be had, solutions of guano or other artificials. Besides manuring, this subterranean method appears applicable to aerating the soil, to draining it in some degree, and to applying preventives or cures to the diseases of plants.

The effects of the mode of application can be stated as very satisfactory. Mangold Wurzel, Swedes, and Cabbages were grown at Wokingham on light inferior soil (part of a common) to a very great size, and, what is better, of excellent quality; and on a spot of garden ground of better quality, the roots on this plan were doubly superior to those cultivated near them, for the sake of comparison, on the common method. Nor must it be forgotten that this year was particularly ill suited for comparative experiments, as, from its extreme wetness, liquid manure seemed almost superfluous, and common manure had an accidental advantage. In dry seasons and in hot climates the superiority of liquid applications would be still more conspicuous.

As to its probable applicability, whether the plan is altogether suitable to entire farms, I do not pretend to decide. Probably there are few farms which do not possess a portion of land to which it might be applied. For gardens of all kinds, and particularly for those places where the value of the land per acre is very great, and there is a large demand and high price for its products; and for cottage gardens, and allotment grounds, it is particularly applicable—the improvement of course being made by the landlord, as the house refuse, with the manure from a pig or two, might almost be sufficient to supply vegetables for a whole family; for the produce and rapidity of growth which liquid manure encourages are immense, as is well exemplified in Dickenson's experiments on Rye-grass, and in other trials.

For fruit trees, and especially gross feeding plants, as Vines and Hops, it is well suited; indeed, in Holland, liquid manure is even now applied to the roots of fruit trees, in an analogous though inferior manner, viz., by making holes in the earth about 18 inches deep close round the tree, and pouring the liquid into these, so as to reach the roots. Some objections to the plan that might strike a casual observer are—first, that the newly sown seed appears to get no benefit, and the plant itself little till it has attained some growth; for we now manure on the surface partly to hasten germination, and also to accelerate the first growth, and put the plant out of the reach of its insect enemies. But to this we may reply that the using liquid manure does not prevent our steeping the seed, or adding a moderate dose of guano or superphosphate. Second, that the manure would soak out of the pipes unless these were glazed or embedded in puddled clay. I understand, however, that the evil is imaginary, the pipes overlapping and the waste being imperceptible. The third is to its universal application;—that it is more suited to gardens than farms—and to Cabbages, Beet, and Turnips than to cereal crops, which it would probably render more rank in growth, and more liable to be laid. This last objection would, however, hold good against the application of liquid manure in any form as against this particular method. Finally, I may state that I am wholly unconnected and unacquainted with Mr. Wilkins, the patentee but that I consider it an act of justice to assist in making known an invention in which neatness, novelty, and utility seem combined. William Raybird, Charlwood, Surrey, near Crawley, November 29.



## Home Correspondence.

**Land Drainage.**—I beg to remind Mr. Bailey Denton that my words are "I have long since observed the furrowed condition of the gault, kimmeridge, and Oxford clays; the furrows usually running at right angles with the dip of the strata." By the dip of the strata, I mean dip of the geological series in which the clays occur, not the inclination of the surface. The exposed surface of these clays is, we know, often flat; sometimes it presents low undulating hills, of which the sides incline to every point of the compass. This is, I believe, very often its condition when covered by diluvium, warp, drift, &c.; and it is for this reason that it is necessary to examine its condition before draining. The subterranean furrowed surface which I described is antinatural to the dip of the strata. All systems of draining must, to be successful, be adapted to the varied geological condition of the surface and substratum. *J. C. C., Long Wittenham.*

**Agricultural Statistics.**—When a subject of such vital importance to the consumers of this country, as the above undoubtedly is, comes to agitate men's minds, all suggestions bearing upon it should be thankfully received. Even though they be not sufficiently practical in their nature to be acted upon, yet they are often of use in calling attention to the subject and suggesting ideas which otherwise might have to remain buried and useless. In this light we must regard the letter of Mr. G. W. Cooke to the President of the Board of Trade, reviewed in the *Gazette* of the 26th November, in which is detailed a scheme for averaging districts by the yield of a single parish. We feel confident had the author been a practical agriculturist, instead of a barrister of law, he would not have suggested such a scheme. For besides the objections stated by the reviewer, as to the variations of soil in even the most limited districts, is it not apparent that the yield depends quite as much upon the skill and intelligence of the management as upon the nature of the soil? Agricultural statistics, to be really accurate, and therefore of any value, must be collected from every parish, and must comprise the exact amount of land sown with Wheat, Barley, and Oats on every farm, as compared with the total arable acreage. Also the average yield of such land, which previous experience would afford. If the statistics were required of the Wheat crop only—such returns could be made up and forwarded by or before Christmas, and be thus in ample time to guide the corn factor as to the probable home supply. The actual yield must form the subject of another communication, as early in the autumn or winter of the next year as possible; and this second collection of statistics would, in a manner, check the former, and being much more positive and exact, set right any inaccuracy in the averages, and register the actual yield of Wheat every year. The first report, as before stated, would prove sufficiently accurate for all purposes of trade, and tend in a great degree to regulate the supply. There would be little difficulty in collecting such data from intelligent men, aware of their utility; but, unfortunately, in many districts, the farmers would refuse the information, imagining it was some scheme for reducing the price of produce, or injuring them in some unknown manner. The very fact of the collectors being appointed by Government would set them against it. These remarks are not intended to apply to farmers generally, or they would be a great libel upon a class which contains much that is honourable and excellent. We speak of the smaller cultivators, among whom there often exists an amount of ignorance that would astonish an intelligent mechanic. We speak also only of those districts where our own experience lies. Let us trust we may have seen the worst sample. Now it has occurred to us, that in such cases, and indeed generally, these statistics might be most readily obtained by the landlords' agents, scattered as they are so generally throughout the country. Taken as a body, they are intelligent men, generally well acquainted with the value and character of the estates they manage, and competent to check the farmers' averages, as also from their personal inspection to judge of the accuracy of the acreage returns. In such hands, the prejudices above referred to would be more easily removed, since from position and education the agent is generally looked up to and respected by the tenant; at any rate, they would not like to disoblige him, or, it might be, their landlord, in so small a matter; and thus, in one way or other, I am firmly persuaded the returns, if intrusted to these parties, would be accurately got together. The whole parish does not in every case belong to one landlord, but the agent of the principal owner would have no difficulty in obtaining the necessary information. On the other hand, many estates comprise several parishes, and thus large returns could be made by one party. There may be many disadvantages in the plan above suggested; possibly, the agents, as a body, would not undertake the somewhat onerous task, but, if properly appealed to, as to the importance of the subject to the public generally, and of course adequately remunerated, we think they would generally come forward. Doubtless, many objections may exist against the plan we propose. The idea was first started by reading the letter of Mr. Cooke; like the latter, it may only serve to bring out some fresh hints, and if so, we shall be satisfied. *C.*

**Direction of Drains.**—The proper direction of drains being a subject now under discussion in your columns, I hope you will bear with me while I state a few particulars connected with a field about to be drained, in

the hope that some of your experienced correspondents will be kind enough, through the medium of your pages, to state their opinions as to the best direction to lay the drains—opinions that will of course be valuable in proportion to the power of argument that may be advanced in their support. I have no doubt but that your "draining engineer" correspondent could solve the difficulty, if it be one; as it is probable it may neither come under the Mr. Denton nor the Mr. Trimmer's system, each of which he places upon the shelf as being both right and both wrong, taking care, while he denounces both systems, not to advance one of his own, lest he might be "compelled to persist in it or confess himself in error." And while he can sympathise with and excuse the amateur drainer, because of his ignorance arising out of inexperience, he leaves the perusers of his essay to infer that the annihilation of all these amateurs would be a boon to the public, but more especially to landowners, "who can pursue the most advantageous course in the drainage and improvement of their estates" only by consulting a member of that learned fraternity who can produce their diplomas and subscribe themselves "draining engineers." I hope, however, that your correspondent will not monopolise but give publicity to the secret which he insinuates is in his possession, though it be antagonistic to his anticipations of a fortune looming in the future. To return, then, after this digression, the following are the particulars of the enclosure I wish drained. Its inclination from south to north is 2 inches every 100 feet, and from east to west  $3\frac{1}{2}$  inches in every 100 feet; the drains, and let this be kept in mind, cannot be got more than 3 feet 9 inches deep, by reason of the river which flows along the side of the field. Were a drain cut from south to north—thus having only 2 inches of fall every 100 feet—its lower as well as higher end would, at 3 feet 9 inches deep, be into a fine sand or gravel, from which the water will spring copiously; but throughout half its length this depth would not reach the gravel, but be in a retentive mixture of peat earth and clay, perfectly impervious to water, and into which it would, I think, be of no use laying tiles. The part of this diluvial deposit, below the bottom of the drain, might be not inaptly described as the segment of a circle, having the drain, say 100 yards long for its chord, and the height of segment 3 feet. This bed extends lengthwise from east to west, or with the greatest fall of the ground. I presume I have now stated all the details necessary, and the question I would ask is, which way must I put in my drains to dry the land thoroughly? or how is the water to be got out, or kept out, of this impervious mixture? No doubt if an outfall could have been brought up sufficiently deep to allow a drain to be put along the middle or deepest part of this retentive stratum into that below it, which is sand, the whole could have been dried effectually; but how satisfactorily to manage this under these circumstances puzzles me. *J. R. B.*

**Draining Clay Land.**—In these days I fancy few persons will be found to say a word against the advantages derived from draining clay lands; but we all know that it is a very expensive operation, so much so that it frequently deters persons from undertaking it. The most expensive part is cutting the drains, which I think might be much lessened by a very simple and cheap machine in the shape of a plough, with three coulters, but without a moulding board. There should be three beams placed at such distances from each other as would be required for cutting the drains, through each of which a coultre should pass, fastened on the usual plan. A strong connecting bar, to which a wheel should be attached, should be placed behind the coulters, which might be on the screw principle, so as to set the beams at various distances, and another where the front wheel is attached. The coulters in the two outside beams should be parallel, and the one in the centre about 5 or 6 inches behind, in order to prevent clogging. The coulters might be set to cut 2 feet, or even more in depth, and one horse would, I think, be sufficient in moderate ground. Supposing the drains to be 15 or 16 inches wide at top, the three coulters would divide the ground into two equal parts, so that the labourer would only have to insert his spade once and lift out the soil; the two outer coulters should be set to point inwards, as the drains need not of course be as wide at bottom as at top. *W. F.* [As a general rule, the cutting parts of a plough create one-half of the draught, its weight one-third, and the lifting and turning of the sod not much more than one-sixth. You very much under estimate the draught required for your machine.]

## Notices of Books, &amp;c.

**The Greyhound**, by "Stonehenge." Longman, Brown, Green, and Longmans.—A large and handsome octavo volume, with wood engravings by artists of the highest skill and reputation. It contains all in the way of instruction, description, and history, which the coursers can desire. The work of both author and publisher is of the first quality; so that while the volume will necessarily find a place in the libraries of sportsmen, it will be an ornament to the drawing-room table.

**Supplement to the Cabinet Lawyer.** Longman, 12mo.—In this brochure the important acts of Parliament, passed in the last session, are given in a condensed form, so as to bring the work, of which it forms part, down to the present time.

**Incumbered Estates Court, Ireland: Summary of Proceedings from the filing of the first Petition, Oct. 21st,**

1849, to Oct. 21st, 1853, inclusive. Compiled by the Appointed Officer of the Court, Dublin.

The facts disclosed by these tables are both curious and important. It appears that during the four years for which the Incumbered Estates Court has now been sitting, more than 1,500,000 acres have been sold, that nearly 10,500,000<sup>l</sup>. have been paid for them by 4214 purchasers, and that of 181 of these who were not Irish, no fewer than 73 gave London as their address. It further appears that of the estates so sold 17 belonged to Earls, and 27 to Baronets, and that 974 of the estates had been over 3 years, and nine more than 50 years in Chancery; whilst during the last 4 years the commissioners have executed 3500 conveyances. In the majority of cases the estates were sold in lots for less than 2000<sup>l</sup>. each. The tables do not show the cost incurred in passing an estate through the Incumbered Estates Court, and we think this omission important for the great benefits conferred on Ireland by the summary process of transfer now applicable to incumbered estates would be much more evident if it appeared from a table like the present that those costs were comparatively very trifling in amount, which we believe to be the fact. If we remember right, certain estates belonging to Mr. Darcy were sold for upwards of 47,000<sup>l</sup>., at a cost of little more than 100<sup>l</sup>. over and above the interest obtained by the temporary investment of the purchase money. The table would, we think, be much improved if the comparative costs of sale and transfer under the old and new systems were brought prominently forward.

## POULTRY.

**SOUTHAMPTON.**—It is pleasant to be the historian of a deserved success, and therefore without any misgiving we report the doings at Southampton, where a Poultry Exhibition was held for the first time last week. One of the principal accessories to the success of such an undertaking is a fitting locality, and this town is fortunate in possessing one replete with every requirement. It was held in the Archery Rooms, a long building, very lofty, well ventilated, and admirably adapted for the purpose. In the upper room were the first 24 classes, and in the lower the remaining 115. A spacious ante-room was a great comfort, with every convenience, such as seats, a good fire, and refreshment at moderate prices. We also noticed in the exhibition room, seats placed for the visitors, and wherever space admits of it, we would strongly advise the imitation of this courteous and considerate proceeding. The ladies to whom these exhibitions are so deeply indebted, will be grateful for this little addition to their comfort. For a first attempt this was perhaps one of the best of record. There were 357 pens, containing some of the best birds ever exhibited. We will merely notice those most remarkable for their quality, and give a short account of the principal prizes afterwards. The adult Spanish was hardly a good class, the pens being unevenly matched. There was a very good hen belonging to Lady M. Macdonald. In the chickens, Mrs. Stow exhibited three of the best pullets we ever saw, their mate was unworthy of them—these had the first prize. The second prize was taken by Mr. Clarke, of Hartle Row. Here the cock was excellent, the pullet not so good. Lady M. Macdonald, taker of the second prize for adults, was here twice highly and once simply commended. This is a rising class. The Dorkings were beautiful and numerous, and better birds than common were necessary to take even a high commendation. Messrs. Simonds, Fisher, Gorwell, and Lewry, took prizes, and Messrs. Turner, Bishopstoke and F. Noyes, Salisbury, were highly commended. The adult Cochins, Messrs. Punchard and Rawson took first and second prizes. In the chickens, Captain Snel took a first prize with a beautiful pen, but one pullet in particular was the *beau ideal* of a Cochins fowl. Mr. Johnson, of Winchester, took the second prize. This was a very good and numerous class. The old-fashioned beautiful dark birds belonging to Mr. Cave, Hartle Row, sustained the reputation they gained at Winchester, and took the first prize. The white again testified to the difficulty of getting yellow and well feathered leg but there were two very good pens belonging to Messrs. Holmes and Antill, which respectively took first and second prizes. Good black pullets were plentiful, but purely black cock would seem to rank among fabulous birds. With the exception of the golden pencilled, the Hamburgs were good and numerous. The Polands were beautiful, and the game also. The Malay class was weak in number and quality. Of the cross breeds, we will say nothing, as this class has no of our sympathies. The bantams were excellent, a prize pen was immediately claimed at 10 guineas. The geese were very heavy, and prizes were taken. Messrs. Rawson and Fookes. The ducks were numerous and very good; Mr. Breavington took the first prize for Aylesburys, the others went to Lady Macdonald, Messrs. Punchard, Edwards, Mills, and Rawson. Lady M. Macdonald took both first prizes for turkeys, with some birds of uncommon merit. The "various" class had many Parnians, so unusually good hybrids. We do not approve of practice of putting "not for sale" on pens; any pen may be named, but some price should be put. Messrs. Rawson, Wilson, Ansor, Fisher, and Edwards, were amongst the largest prize takers. In our experience we have never seen a better managed show, and hope the determination expressed by the committee to be second to none, will be next year vigorously carried out. They have only to continue as they have begun.



and success is certain. The judges were G. J. Andrews, Esq., of Dorchester; E. Hewitt, Esq., of Birmingham; and Mr. John Baily, of London.

**NORWICH SHOW.**—We have a report for which unfortunately we cannot this week find room. It shall appear next week.

Miscellaneous.

**The Guano Trade.**—Mr. Caird has written to the *Times* calling attention to the following memorial:—"To the Right Hon. E. Cardwell, M.P., President of the Committee of her Majesty's Privy Council for Trade. The memorial of the undersigned, representing various associated commercial and agricultural bodies, humbly sheweth—1. That the increasing and widely-extended use of guano throughout the United Kingdom, renders the existing mode of importing the Peruvian supply, upon which this country mainly depends, most unsatisfactory to the merchant, the agriculturist, and the shipowner. 2. That on four separate occasions the supply of Peruvian guano has fallen short of the requirements of the country, viz., during the spring of 1844, the spring of 1848, the spring of 1850, and during the spring of this present year, 1853. 3. That your memorialists believe that this periodical deficiency is clearly traceable to the fact, that the Peruvian Government confines the distribution of the supply in this country to one channel, and the consequent proved impossibility of meeting the varied requirements of so extended a trade by such a monopoly. 4. That, were the trade thrown open, merchants and shipowners being allowed to purchase the guano at the Chincha Islands, it is not likely that a similar scarcity would again occur. 5. That in seeking to get the guano trade thrown open, your memorialists have no desire to do so to the injury of the Peruvian Government; but on the contrary, they believe that an extra addition of nearly 10s. on every ton of guano imported would accrue to the Peruvian Government; without raising the price to the British consumer 10s. per ton, being about the average difference in freight at high vessels could be loaded for direct ports instead of being chartered, as all are at present chartered, to call or orders." Your memorialists pray, therefore, that the Government will take the subject of this memorial into consideration, and endeavour, by a friendly negotiation, to convince the Peruvian Government that would be for their own interest to throw open the trade, and to permit all nations to buy guano from them direct, without the intervention of any agents in this country. And your memorialists will ever pray."

Calendar of Operations.

NOVEMBER.

**BORDER OF THE FENS, Nov. 28.**—Wheat seeding is nearly finished; some of the very keen hands, who are always before their neighbours, have had the trouble of sowing their Wheat seed, from the great depredation of slugs; as last year the weather prevented much being sown, this year they began too soon. The month has been very favourable, and a large breadth is now making its appearance in strong and healthy condition. The usually protracted harvest has this year thrown autumnal ture in heaps, so that we have been glad to do what we could—so much as could be wished. The most essential work has been to get land prepared for seed, and the sowing completed as far as practicable. 1st, on the Clover land; 2d, Bean land; after Coleseed, from 2 bushels to 2½ bushels per acre, using 1 lb. of sulphate of copper to each comb of Wheat, as a pickle for rot. We have proceeded with ploughing all vacant land; mowing and scuffling that intended for spring cropping, digging deeper for fallows, cleaning and storing Mangold wurzel, which are far from a heavy crop this year. One friend writes me he has a very good crop cultivated in a 16 acre field, divided into four parts, of 4 acres each—two parts in Wheat, one part Mangold Wurzel, one part Rye-grass, cut green for horses in the spring; the Mangold Wurzel are grown after a heavy dressing of manure. We have begun to clean and cart Turnips feeding beasts and young stock. They are not good this year; forward sown Turnips had "fingers-and-toes," and have many decayed ones among them; the late sown are good in quality, but small. The late dry weather has lowered the level of water in the dikes more than it has been all the year previously there, where necessary, we are clearing them at from 7d. to 8d. per yard of 6 yards. Ditches on high land also require attention. In autumn the banks require mending, and clearing of brambles and rubbish; the outfall deepening, and drains looked after; the old wood taken out of gaps in hedges, and live wood and young trees laid in as much as possible; side-shoots trimmed off, and the hedges cut down to start a fresh spray, that the hedge may be taken without occupying too wide a space of ground—you can always shorten it to the required height. Tups are now separated from the ewes, which are then treated with some ointment. If an ewe, 2 lbs. to the score; if scabbed, 2½ or 3 lbs. The charge is 1d. per score to the shepherd for the operation. Ewes have been well lately, and are getting forward in lamb; they are now ready to a dry pasture, or, if poor, a piece of Coleseed or Turnips for a few weeks, with a dry hair, would be serviceable. Spare pigs are trapped, and then turned among the lambs to feed. Poultry are pretty well employed, the general rate of pay in the neighbourhood being 13s. per week. *J. W., Peterborough.*

**WINTER DROPS, Nov. 21.**—The weather during the last fortnight been all that could be wished for out-door operations. Wheat sowing has progressed rapidly, and on Clover leas has been brought to a termination; the greater part has been put in good condition. The slug has done much injury to the Rye Winter Vetches, and in some cases the early sown Wheat suffered, the frost has now luckily put a stop to its innovations for the present. The high prices of Barley has induced us to thresh a considerable quantity; we are making from 35s. to 40s. per quarter. We use our portable engine and threshing machine, which, during fine weather, we work out of doors; the men, two chaff-baskets, carry the threshed corn into the barn, the two other men either carry the straw into the straw-house, or, if it is a cold day, we thresh from 30 to 40 quarters at a time, at a cost of 8d. per quarter, which is little more than we pay for taking into the barn, when we take into account the cost of unloading, tacking in the barn, hire of horses, &c. &c. and nearly the same number of hands to house the same quantity of corn. Our sheep have suffered severely from lameness, owing, no doubt, to the wet autumn. We have tried several remedies, but no permanent application, we have been enabled to some, but as the weather gets better another gets worse, and until we have a continuance of fine weather we are not likely to effect permanent cures. Some stock of all kinds is rather cheaper,

especially pigs, which are from 6s. to 8s. lower than they were in October. The present high prices of corn and cake, and the inferior quality of hay, will prevent numbers from fattening both sheep and cattle, consequently we may expect beef and mutton to run high at spring. Our Swedes and Turnips have been rapidly improving, and although foul, will now be a fair crop. Our Mangolds are deficient, the season being altogether unfavourable for the growth of that root. Our breeding ewes, 400, have a run on the stubble and young Grass during the day, and at night fold on Rape and Turnips; our tregs have been on Turnips for the last six weeks, and in addition to the Turnips have a liberal allowance of chaff and pollard. We shall not give them any corn till after Christmas. *G. W. M.*

Notices to Correspondents.

**BLACKIE'S CYCLOPEDIA: A Constant** It is a new work; the publication is not yet completed. The various articles are written by some 60 of our ablest practical and scientific men. You will find the dairy management of Dorsetshire, Gloucestershire, Cheshire, Leicestershire, and Ayrshire described in it in an article by Mr. Haxton, of Drummond, Fifeshire. The work appears in monthly parts, and will fill 25 parts; 24 have appeared.

**Poultry.**—We repeat a notice given a few weeks ago by Mr. Baily:—"If you want a learned book on poultry, read 'Ornamental and Domestic Poultry,' by the Rev. E. S. Dixon; if the opinions of many of our most successful breeders, read 'The Poultry Book,' if you want a plain, practical little work, read mine. If the disease you wish to combat is the roup, I can send you some pills will do it. With all due respect to quakers, it is the last time I can answer about poultry books, as I neither wish to puff my own, nor to disparage others."

**STANLEY'S STEAMING APPARATUS: Agricola.** We suppose our correspondent "G. P. S." refers to W. Proctor Stanley, of Peterborough, whose name we see in the English Agricultural Society's Implement Catalogue at Gloucester, as the exhibitor of a steaming apparatus at the prices of 16l., 11l. 10s., and 22l. respectively.

**TIPS ON TURNIPS IN BUTTER: T. J.** The following recipes have been published frequently in our columns:

1. Dissolve half an ounce of chloride of lime in a gallon of water, and add a table-spoonful of that solution to every gallon of the milk just as it comes from the cow. Authority, *Rev. A. Huxtable, Sutton Waldron, Shaftesbury.*
2. Put the milk in a can, and place the can in the boiler, and stir the milk rapidly while it is getting hot, and while it is hot, until the Turnip smell goes. Authority, *Ellen Jackson, Beech-hill.*
3. If you collect so many gallons of cream before churning, then put that number of half-pints of vinegar into the jar to begin with, and churn when the usual quantity is collected. "Queerous" is the authority for this. He "had it from a friend of his who supplies a large quantity of butter of the best quality to one of the crack shops at the west end."
4. Do not feed the cows until they have been milked, by which means the flavour of the vegetable may be to some extent got rid of in the processes of digestion. *Walhamstown.*
5. Make a strong solution of nitre, and add a dessert-spoonful of it to every two gallons of milk as it is brought in from the cow. Authority, *A. Wrasleydale Dairyman.*

Markets.

COVENT GARDEN, December 3.

Vegetables and Fruit continue to be well supplied. Late Grapes are sufficient for the demand and still very good. Pears chiefly consist of Glout Moreau, Crassane, Chaumontel, Winter Nelis, Bourré d'Hiver, Monsieur le Curé, and Bourré d'Arenberg. The demand for Cobs has greatly fallen off. Chestnuts have made their appearance. Potatoes continue to arrive from Scotland, but the supply is not so great as last week. Asparagus is beginning to come in from 8s. to 10s. per hundred, and Seakale at from 3s. 6d. to 4s. 6d. per punnet. Carrots and Turnips fetch from 2d. to 4d. per bunch. Mushrooms are tolerably plentiful. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

FRUIT.

Pine-apples, per lb. 3s to 5s  
Grapes, house, per lb. 2s to 5s  
— Portugal, per lb. 6d to 1s 6d  
Apples, per bush, 4s to 8s  
— dessert, p. h. sieve, 2s to 4s  
Pears, per doz., 1s to 3s  
Lemons, per doz., 1s to 2s  
Oranges, per 100, 3s 6d to 8s

VEGETABLES.

Cabbages, per doz., 9d to 1s  
Cauliflowers, each, 6d to 8d  
Greens, per doz., 1s 6d to 3s  
Brussels Sprouts, do., 1s 6d to 2s  
Rhubarb, per bundle, 1s to 1s 6d  
Potatoes, per ton, 60s to 160s  
— per cwt., 5s to 7s  
— per bush, 2s 6d to 5s 6d  
Turnips, per doz., 2s to 3s  
Cucumbers, each, 6d to 1s  
Celery, per bundle, 6d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 1s to 1s 6d  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
— per bushel, 2s 6d to 3s  
Leeks, per bunch, 1d to 2d  
Shallots, per lb., 6d to 8d

HAY.—Per Load of 36 Trusses.

**SMITHFIELD, THURSDAY, December 1.**  
Prime Meadow Hay 80s to 100s  
Inferior do. ... 50 70  
Rown ... 40 60  
New Hay ... — —  
CUMBERLAND MARKET, THURSDAY, December 1.  
Prime Meadow Hay 100s to 112s  
Inferior do. ... 40 90  
New Hay ... — —  
Old Clover ... 120 180

WHITECHAPEL, THURSDAY, December 1.

Fine old Hay ... 95s to 100s  
Inferior do. ... 90 94  
Fine new Hay ... 75 80  
Inferior do. ... 35 50  
Fine old Clover ... 115 120  
Inferior do. ... 95 100

POTATOES.—SOUTHWARK, MONDAY, November 28.

The Committee report that during the past week there has been a very large number of arrivals, both coastwise and from the Rhine, and trade is much depressed, and the larger proportion of cargoes in very bad condition. The following are this day's quotations:—East Lothian Regents, 100s. to 130s.; Perthshire do., 70s. to 100s.; Forfarshire do., 70s. to 100s.; Fifeshire do., 70s. to 100s.; Reds and Cups, 70s. to 80s.; Rhinish whites, 50s. to 80s.

HOPS.—BOROUGH MARKET, FRIDAY, December 2.

Messrs. Pattenden and Smith report that there continues a steady demand for middling and fine Hops, at about the same prices as last week.

COAL MARKET.—FRIDAY, December 2.

Wallsend Whitwell, 30s.; Wallsend Penuish, price not fixed. —ships at market, 12.

**WOOL.**—BRADFORD, THURSDAY, December 1.  
WOOLS.—The impression is that prices have seen the lowest point at present. The holders in the country evince no disposition to give way to meet the prices recently current here, and the staplers are seeking prices which cannot be met by the spinners. Bright-haired wools more inquired after, and a little higher prices are obtained. In other descriptions of wool not much doing, spinners only buying for present use. Nails and brookes are more inquired for; prices without alteration, and stocks are low.

**YARNS.**—The prices sought for wool prevent any more machinery being put to work, and short time working is very general. In some instances better prices have been obtained for yarns adapted for the Lancashire market; upon the whole there is a better feeling. Prices, however, are so low, that there is little inducement to set the idle machinery going.

SMITHFIELD.—MONDAY, November 28.

There is a considerable falling off in the supply of Beasts, and consequently on the average higher prices are obtained. In a few instances 4s. 8d. has been reached, but too seldom to quote. There are also fewer Sheep. Trade is, nevertheless, dull. Late prices are, however, fully maintained, and in some cases rather exceeded. Calves meet with a steady sale at fully Friday's quotations. From Germany and Holland there are 1017 Beasts, 3900 Sheep, and 222 Calves; from Spain, 130 Sheep; from Scotland, 60 Beasts; and 2550 from the northern and midland counties.

Per st. of 8 lbs. — d s d Per st. of 8 lbs. — d s d  
Best Scots, Here- 4 4 to 4 6 Do. Shorn 0 0 0 0  
fords, &c. 4 4 to 4 6 Do. Shorn 0 0 0 0  
Best Short-horns 4 2 4 4 Ewes & 2d quality 3 10 4 2  
2d quality Beasts 3 6 3 8 Do. Shorn 0 0 0 0  
Best Downs and Lambs ... 0 0 0 0  
Half-breeds 4 10 5 0 Calves ... 3 8 4 10  
Do. Shorn ... 0 0 0 0 Pigs ... 3 8 4 10  
Beasts, 4343; Sheep and Lambs, 25,350; Calves, 272; Pigs, 240.

FRIDAY, December 2.

We have a fair supply of Beasts. There is also a good attendance of buyers, consequently a pretty good clearance is effected at fully Monday's prices. There are but few Sheep on offer, and those of inferior quality. Trade is exceedingly dull, and it is very difficult to realise Monday's quotations. Good Calves are scarce; they are readily disposed of at a slight advance. From Germany and Holland there are 295 Beasts, 1270 Sheep, and 212 Calves; the number of Milch Cows is 85.

Best Scots, Here- 4 4 to 4 6 Do. Shorn 0 0 0 0  
fords, &c. 4 4 to 4 6 Do. Shorn 0 0 0 0  
Best Short-horns 4 2 4 4 Ewes & 2d quality 3 10 4 2  
2d quality Beasts 3 6 3 8 Do. Shorn 0 0 0 0  
Best Downs and Lambs ... 0 0 0 0  
Half-breeds 4 10 5 0 Calves ... 3 8 4 10  
Do. Shorn ... 0 0 0 0 Pigs ... 3 8 5 0  
Beasts, 1055; Sheep and Lambs, 3970; Calves, 278; Pigs, 240.

MARK LANE.—MONDAY, November 28.

The supply of English Wheat to this morning's market from Essex and Kent was moderate, and met a slow sale at our quotations of this day se'night. Notwithstanding a good attendance of country buyers, foreign Wheat was neglected, and but a small amount of business transacted, holders being disinclined to make any concession in prices. In floating cargoes from the South we heard of nothing doing. There was a large supply of Barley, and the trade very dull at a decline of 2s. per qr. Beans and Peas are unaltered in value. New Oats sell slowly, but good old bring an advance of 6d. to 1s. per qr. In Flour there is but little doing, and prices remain as last quoted.

PER IMPERIAL QUARTER.		s. s.	s. s.
Wheat, Essex, Kent, & Suffolk	White	68-76	Red 80-70
—	fine selected runs	ditto	70-80
—	Talavera	70-82	Red 80-70
—	Norfolk	58-82	Red 80-70
—	Foreign	58-82	Red 80-70
Barley, grind. & distill.	34s to 35s	Chevy	33-43 Maltng. 38-40
—	Foreign	grinding and distilling	26-39 Maltng. 38-42
Oats, Essex and Suffolk			26-29
—	Scotch and Lincolnshire	Potato	28-31 Feed 28-32
—	Irish	Potato	25-29 Feed 25-29
—	Foreign	Poland and Brew	17-30 Feed 20-28
Rye			29-44 Foreign 20-28
Rye-meal, foreign			
Beans, Mazagan	40s to 45s	Tick	41-46 Harrow. 41-46
—	Pigeon	50s — 58s	Winds. Longpod.
—	Foreign		52-58 Egyptian 48-50
Peas, white, Essex and Kent		Boilers	60-63 Suffolk 61-65
—	Maple	45s to 49s	Grey 44-47 Foreign 40-62
Maize			Yellow 40-62
Flour, best marks delivered	per sack	70-75	
—	2d ditto	65-65	Country 55-65
—	Foreign	per barrel	35-42 Per sack 58-65

FRIDAY, December 2.

The arrivals of foreign Wheat and Flour continue good; of other grain, either English or foreign, the supply is scanty. The attendance at this morning's market was unusually small, and holders generally evincing great indifference to sell, prices may be considered nominally the same as on Monday; but to have forced sales a reduction of some shillings would have been necessary. For Barley there is no sale, although offered at a reduction on Monday's prices. Beans and Peas are unaltered in value. Oats are a slow sale, and new 6d. to 1s. per qr. cheaper. For Flour there is no demand.

ARRIVALS FROM NOVEMBER 26TH TO DECEMBER 2D.			
Wheat.	Barley.	Oats.	Flour.
English ... 1510 qrs.	1560 qrs.	310 qrs.	1480 sacks
Irish ... 800 "	600 "	1000 "	
Foreign ... 1720 "	3050 "	5360 "	10,000 brls

**LIVERPOOL, TUESDAY, Nov. 29.**—There was a good attendance of country millers at this morning's market, who bought to a tolerably fair extent of American Wheat, indicating a requirement for current consumption. The finer qualities of Wheat and Flour were not any lower, but for second-rate sorts of both articles we were slightly easier than on Friday, making the reduction since last Tuesday 1d. to 2d. per bushel on Wheat, and 6d to 1s. per barrel and sack on Flour. Indian Corn in slack demand, and the prices almost nominal. Fine Oats and Oatmeal a shade lower; inferior sorts nearly unsaleable, at wide prices. Barley, Beans, and Peas were unchanged in value. Arrivals into Liverpool and Runcorn from the 22d to the 28th Nov., inclusive:—Wheat, 29,744 qrs.; Barley, 1170; Malt, 689; Oats, 8563; Beans, 3406; Peas, 450; Indian Corn, 4413; Indian Corn meal, 2058 brls.; Oatmeal, 10,275 sacks; Flour, 806 sacks and 41,768 barrels.

AVERAGE.						
Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.	Flour.
Oct. 22 ... 68 11d	40s 7d	24s 2d	38s 4d	45s 7d	40s 7d	60s 7d
Nov. 5 ... 71 9	41 3	25 5	43 0	48 4	41 10	61 10
Nov. 12 ... 73 7	42 2	25 5	42 7	49 9	56 7	
Nov. 19 ... 72 9	42 3	26 0	43 11	52 6	56 7	
Nov. 26 ... 70 2	41 9	26 0	43 7	50 11	54 9	
Agg. Aver.	71 4	41 6	25 3	42 1	49 4	53 11

FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

Prices.	Oct. 22.	Oct. 29.	Nov. 5.	Nov. 12.	Nov. 19.	Nov. 26.
78s 7d	...	...	...	...	...	...
72 0	...	...	...	...	...	...
71 9	...	...	...	...	...	...
70 2	...	...	...	...	...	...
69 1	...	...	...	...	...	...
68 11	...	...	...	...	...	...



IN OPERATION, AT THE ATLAS WORKS,  
UPPER PARK PLACE, DORSET SQUARE.

**SOLID BRICK-MAKING MACHINES** (Awarded the Great Medal Prize, Exhibition at Amsterdam, Nov. 7, 1853); Hollow Brick Machines, Tile and Pipe Machines, Pugging and Crushing Mills, and Brick-moulding or Pressing Machines of various sizes and construction.

CLAYTON'S PATENTS.

(Patronised by H.R.H. Prince Albert.)

**PRIZE MACHINES**, workable by Hand, Horse, or Steam Power, during the days of the Smithfield Club Cattle Show (in consequence of the space at the Show not being sufficient), WILL BE ON VIEW, in operation, from 10 till 3, on Dec. 6, 7, 8, and 9, 1853, at the Atlas Works, Upper Park Place, near Dorset Square, 5 minutes' walk from the Show Yard.

NOTICE.

**THE CHAMPION BRICK-PRESSING MACHINE.**

THE BRICK-PRESSING MACHINES which have been made and sold under this name by Mr. W. C. S. Percy and others have been proved an INFRINGEMENT upon CLAYTON'S PATENT. PUBLIC CAUTION

Is in consequence hereby given against any infringement of CLAYTON'S PATENT CLAY-SCREENING, TILE, PIPE, or BRICK MACHINERY.

(IN THE COURT OF EXCHEQUER.)

CLAYTON versus PERCY.

The trial for infringement on this Patent took place at the Guildhall, in the City of London, on Saturday last, July 2, before Lord Chief Baron Pollock and a special jury, when a verdict was recorded proving the infringement upon, and establishing CLAYTON'S Patent on every point and claim of this Patent.

Mr. CLAYTON therefore hereby cautions all persons against the MANUFACTURE, SALE, or USE of "SCREENING APPARATUS" for forcing Clay through to cleanse it from stones or other extraneous matters, in the TILE, BRICK, or POTTERY MANUFACTURE, or any other portion of this Patent, WITHOUT HIS LICENSE.

Otherwise such persons will be liable to injunction to restrain the further manufacture, sale, or use thereof.

HENRY CLAYTON,

PATENTEE AND SOLE MANUFACTURER,

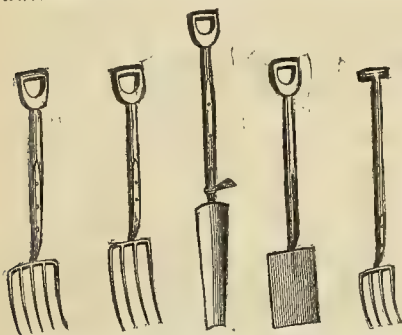
Atlas Works, Upper Park Place, Dorset Square, London.

**FIRE ANNIHILATOR, OR VAPOUR FIRE ENGINE.**—Its practical value proved incontestably by 23 remarkable cases of successful use. See "Bradshaw" of this month, p. 132. Engines for Dwelling-houses, 3l. to 4l.—Office of the Fire Annihilator Company 105, Leadenhall Street, London.

PRIZE CHURN.

**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BURGESS & KEY, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.

WINTON'S PARKES' STEEL DIGGING FORKS.



I HEREBY GIVE NOTICE that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. Burgess & Key, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.

Signed, FRANCIS PARKES.

REDUCTION IN PRICE.

**WEIR'S IMPROVED GALVANISED WROUGHT-IRON LIQUID MANURE PUMP.**

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

**WARNER'S PATENT FARM AND COTTAGE PUMPS.**

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required.

They are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.



FULLER'S EARTH WORKS,  
CHART LODGE, REIGATE, SURREY.

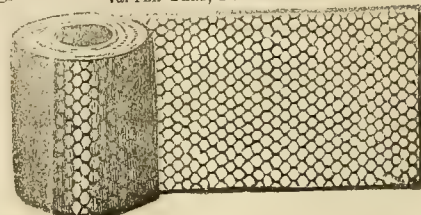
**GAWKROGER and HYNAM** beg to inform the Nobility and Gentry, Gardeners, Nurserymen, Florists, and Seedsmen, that they are prepared to supply them with the REIGATE SILVER SAND, which is known by its superior whiteness and fine quality, and is much used in the Propagation and Growth of Greenhouse Plants, &c.

It will be sent in fine bags, and delivered to any of the Railway Carriers or Wharfs in London, in not less than one ton lots of 20 bushels to the ton, at 2l. per ton. Parties requiring lots of four tons and upwards can have the Sand delivered loose or in bags, at the Bricklayers' Arms Station, or within five miles of the same, at a very low price.—For further particulars, apply at the Offices of JAMES GAWKROGER, 21, Union Street, Holford, Yorkshire; and JOHN HYNAM, 7, Princes Square, Wilson Street, Finsbury, London.

**GUTTA PERCHA BOOTS FOR SHEEP**, for the Cure and Prevention of FOOT-ROT (price 4d., 5d., and 6d. each). Price of the Powder, in tin cases, sufficient for 100 sheep, 2s. 6d.—Address JOHN JONES and Co., Patent Works, Sheffield. London Agent, Mr. F. HAINES, 22, Lime Street, City.

**BIRD NETS, SHEEP NETS, RABBIT NETS, BAT FOLDING NETS** with Bamboo Poles, 14 feet long, 10s. each; Partridge Nets, 2d. per square yard; Rabbit Nets, 4 feet wide, 1d. per yard; Cocoa Nut Fibre; Sheep Folding Nets, 4 feet high, 4d. and 6d. per yard.—At W. CULLINGFORD'S Manufactory, 1, Edmund Terrace, Ball's Pond Road, Islington (late of Strathmore Terrace, Shadwell), London.

**GALVANISED WIRE GAME NETTING.**—7d. PER YARD, 2 FEET WIDE.

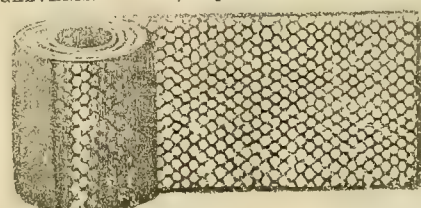


	Galvan- ised.	Japanned iron.
2-inch mesh, light, 24 inches wide ...	7d. per yd.	5d. per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

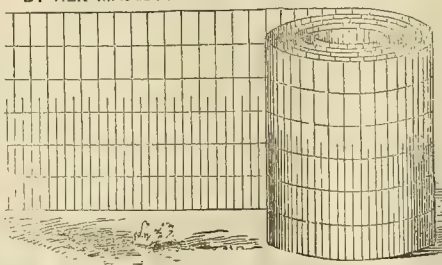
**CHEAP WIRE GAME & POULTRY NETTING,** 5d. per running yard.  
**GALVANISED DITTO,** 7d. per running yard, 2 feet wide.



	Galvanised.	Not Galvanised
24 in. wide, 2 in. mesh, 7d. per yard. ...	5d. per yard.	6d. per yard.
30 in. " 2 in. " 9d. " ...	7d. " "	8d. " "
36 in. " 2 in. " 10d. " ...	8d. " "	9d. " "
48 in. " 2 in. " 1s. 2d. " ...	10d. " "	11d. " "

Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to F. H. FOX, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



**BENJAMIN GREENING and Co's. PORTABLE WIRE FENCES.** Manufactured by Patent Machinery.

The new method of manufacturing Wire Fencing (which B.G. & Co. have invented and patented) makes it at once the cheapest, strongest, and most durable fence ever offered to the public. It is elegant in pattern and light in appearance, being also an entire fence in itself; it is much superior to the common Wire Netting Fence now in use. It can be fixed or removed by any labourer. It requires fewer supports than any other, and is infinitely cheaper than hand-made Fences.

**PORTABLE HORSE and CATTLE FENCE.—PORTABLE SHEEP and LAMB FENCE.—POULTRY-PROOF FENCING.—PORTABLE HARE and RABBIT-PROOF FENCING.**

Trainers for Peas, Garden Bordering, Aviaries for Poultry Pheasant Breeding Cages, Ornamental Varieties, Light and Cheap Kinds, Twisted Wire Strand Fence for the Colonies, &c.

For Prospectuses, Engraved Sheet of Patterns, and any other information, apply to Messrs. B. GREENING & Co., 1 and 3, Church Gates, and 2 and 2a, Cateaton Street, Manchester.

PRIZE MEDAL—1851.

AT A VERY ECONOMIC RATE.

**SAMUEL CUNDY, MASON and BUILDER, PIMLICO** MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Libraries, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

**EDWARD BECK** manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

MAW'S ENCAUSTIC TILE PAVEMENTS.

**MAW and CO.** send free per post their NEW BOOK OF DESIGNS (with prices), adapting this most durable, economical, and decorative production of Mediæval Art to Entrance Halls, Passages, Conservatories, Verandahs, and every description of modern and ancient Building.

Bentham Works, near Brusely, Shropshire.

**AUSTIN'S ARTIFICIAL STONE.**—Garden Fountains and other ornamental works continue to be executed in this material by Mr. Austin's late partner, JOHN SMILEY, at the original manufactory, Nos. 1 to 4, Keppel Row, New Road, near the Regent's Park. N.B. This material is strictly an artificial limestone, of an agreeable grey colour, and wholly free from the glazed and reddish appearance of Terra Cotta and other pottery. It is quite waterproof, and may be laid under water for any time without injury. The following list will give some idea of the variety of the stock:—

VASES, in all styles, from 10s. to 30l. each.

FOUNTAINS, more than One Hundred Designs.

STATUES copied from the Antique.

MODERN FIGURES, from 2 to 12 guineas.

BASKETS, with Suitable Pedestals, from 1 to 30 guineas.

SHELLS, from 12s. to 15l.

FIGURES OF ANIMALS and BIRDS.

CRESTS FOR GATE PIERS.

TAZZAS, or FLOWER BASINS, from 30s. to 24l.

MEMORIAL URNS and PEDESTALS.

SUN-DIAL PEDESTALS.

BALUSTADING in every Style.

BAPTISMAL FONTS.

LIGHT, CHEAP, AND DURABLE ROOFING.

**CROGON'S PATENT ASPHALTE ROOFING** FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by unpractised persons. Price ONE PENNY PER SQUARE FOOT. Crogon's Patent NON-CONDUCTING FELT for steam-boilers and Pipes, saves 25 per cent. of fuel. Samples and testimonials sent by post on application. Crogon & Co., 2, Dowgate Hill, London, who also supply SHEATHING FELT and INODOUROUS FELT for dam walls, and lining iron houses, to equalise the temperature.

WARMTH AND VENTILATION.

**THE PATENT PORTABLE SUSPENSION** STOVE will warm and ventilate at the same time, and recommended by eminent medical men as the only stove suitable for the chamber of the invalid. It is made in sizes suited for the largest building or the smallest office. To those who study health, comfort, and economy, it offers advantages which no other processes. No 3, price 20s., will burn 10 hours without attention, a cost of three farthings. Prospectuses, with prices and instructions, post free. In operation daily at DEANE, DRAY, & Co.'s show rooms, &c., London Bridge.

**PROTOSIDE ANTI-CORROSION PAINT,** a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hot sun has no effect upon it.—Manufactured by CHARLES FRANK and SONS, Cement Works, Nine Elms, London.

**THE COMFORT OF A FIXED WATERCLOSET** for 1l.—Places in gardens converted into comfortable water closets by the PATENT HERMETICALLY-SEALED PA with its self-acting valve, entirely preventing the return of air or effluvia. Any carpenter can fix it in two hours. Price Hermetically-sealed Inodoriferous Chamber Commodes, 1l. 4s., 2l. and 3l.; also Improved Portable Waterclosets, with pump, cist, and self-acting valve. Articles forwarded by railway, carried paid. A prospectus, with engravings, forwarded by enclosing postage stamps.—At FRYE & Co's, 26, Tavistock Street, Covent Garden, London.

**HEAL and SON'S ILLUSTRATED CATALOG** of BEDSTEADS, sent free by post. It contains descriptions and prices of upwards of One Hundred different Bedsteads, of every description of Bedding, Blankets, and Quilts; and new Warehouses enable them to keep one Bedstead of every design fixed for inspection, as well as an extensive assortment of Bed-room Furniture, Furniture Chintzes, Damasks, and Dimities, so as to render their Establishment complete for the general furnishing of Bed-rooms.—HEAL & SON, Bedstead and Bed Manufacturers, 196, Tottenham Court Road, London.

**BERDOE'S WINTER OVER-COATS and CAP**—One of the largest stocks in London of superior garments at reduced charges, all possessing the distinguishing improvement of resisting any amount of rain without confining spiration (the fatal objection to all other waterproofs); also Shooting Jackets, Ladies' Capes, Mantles, &c. The well-known Waterproof Light Over-Coat, the PALLIUM, long been reputed one of the most economical and valuable garments ever invented, price 45s.—W. BERDOE, 96, New Street, and 69, Cornhill (and no where else).

**MR. HALSE'S FIVE GUINEA APPARATUS** are now ready.—Invalids are solicited to send to Mr. HALSE, of 22, Brunswick Square, London, for his Pamphlet MEDICAL GALVANISM, which will be forwarded free receipt of two stamps. In it will be found the particulars of cures in cases of asthma, rheumatism, sciatica, tic douloureux, paralysis, spinal complaints, general debility, indigestion, stiff joints, nervous disorders, &c. Mr. HALSE'S method of applying galvanic fluid is quite free from all unpleasant sensation. To One Guinea per week. The above Pamphlet contains his Letter on Medical Galvanism.



## NOTICE.

**MRS. PARKES'S CLUB SUBSCRIPTION OF 2894 SHARES,** will CLOSE on SATURDAY, December 17; and on Monday, the 19th, the Committee of Subscribers will meet at 22, Golden Square, at 12 o'clock, to deliver the Share Vouchers. Subscribers not in attendance will have their vouchers forwarded by post. Shares, One Guinea each, which will entitle the holder to one of the Allotments named in the Catalogue.

The Picture Cabinets of Books, &c., may be seen at the Gallery, 22, Golden Square, London, where Catalogues may be had, or which will be forwarded on application. Subscriptions are received by Mrs. MARY PARKES, Publisher, &c.; also by her Agents throughout the United Kingdom.

**ALLSOPP'S PALE ALE.**—The salutary properties specially belonging to the Ales of Messrs. Allsopp and Sons, have been indisputably vouched for by the following, amongst others, of the most eminent medical and scientific authorities of the day:—

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Professor Graham, F.R.S.  
Professor Hofmann, Ph. D., F.R.S.  
Professor Muspratt, F.R.S.E.  
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Sir Chas. Clarke.  
The Sanitary Commissioners of the Lancet, &c.

Messrs. HARRINGTON PARKER and EDWD. TWINING, 53, PALL MALL (late Harrington Parker), call the attention of the Public to the special recommendation of ALLSOPP'S PALE ALE by the high authorities above given, and beg to state that they undertake to supply Messrs. Allsopp's Pale Ale (in which alone they deal) genuine as from the brewery, and in the finest possible condition.

Prices:—Quarts, 8s. per doz.; pints, 5s. per doz.; half-pints, 3s. per doz.

PARKER and TWINING, BEER MERCHANTS (LATE HARRINGTON PARKER), 53, PALL MALL, LONDON.

## OUTFITS FOR INDIA. — Cadets, Assistant-Surgeons, and others, are supplied with the necessary Outfit for India at wholesale prices; and lists of the articles required will be forwarded on application, by TREBESHER &amp; GLENNY, next door to 5 Mercer House, Strand.

**PIGGOTT'S GALVANIC BELT,** without any fluid, for the Cure of Disease. See the Treatise, sent free, for one stamp.—Mr. W. P. PIGGOTT, Medical Galvanist, 523c, Oxford Street, London.

**FORD'S EUREKA SHIRTS.**—Best quality, six for 40s.; second quality, six for 30s. Gentlemen desirous of obtaining shirts in the very best manner in which they can be made, are solicited to try Ford's Eureka. "The most unique, and the only perfect fitting shirt made." *Observer.*

Country residents purchasing in any provincial town are requested to observe on the interior of the collar-band the stamp—"Ford's Eureka Shirts, 38, Poultry" (without which none are genuine). Illustrated price lists, containing directions for self-measurement, and every particular, are forwarded post free; and patterns to select from of the new Registered Coloured Shirts, on receipt of six stamps. Agents are now being appointed in all towns. Terms, &c., forwarded on application.

RICHARD FORD, 38, Poultry, London. Manufacture, Hay's Lane, Tooley Street.

## FENDERS, STOVES, AND FIRE-IRONS.—

Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURNES'S SHOW, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ornola ornaments and two sets of bars, 5l. 10s. to 12l. 12s.; Bronzed Fenders complete, with standards, from 7s. to 32l.; Steel Fenders from 2l. 15s. to 6l.; ditto, with rich ornola ornaments, from 2l. 15s. to 7l. 7s.; Fire-irons from 1s. 9d. the set to 4l. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges.

1st.—From the frequency and extent of his purchases; and

2dly.—From those purchases being made exclusively for cash.

## DISH COVERS AND HOT-WATER DISHES

In every material, in great variety, and of the newest and most *recherché* patterns. Tin Dish Covers, 6s. the set of six; Black Tin, 12s. 3d. to 27s. 2d. the set of six; elegant modern patterns, 23s. 3d. to 57s. 6d. the set; Britannia Metal, with or without silver-plated handles, 7s. to 110s. 6d. the set; Sheffield Plated, 10l. to 112l. 10s. the set; Black Tin Hot-water Dishes, with wells for gravy, 13s. to 19s.; Britannia Metal, 20s. to 72s.; Sheffield plated, full size, 9s. 10s.

## GAS CHANDELIERS AND BRACKETS.—The

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"SEEING IS BELIEVING."—Times, 17th November.

As it is next to impossible to answer the numberless inquiries which the advertisement above referred to has produced, to give further publicity to the subject and to announce, in order that my plan may be fairly and widely tested for the Wheat crops, I have resolved by so very many solicitations to furnish a model of experimental trough upon my patent principle.

This shall be forwarded to any address for the mere nominal sum of 5s.; this charge includes cost of model registration, of letter model enclosed and postage, together with the charge of royalty or permission for the use of one trough; and also a pamphlet, posted free, with illustrations as soon as published. The applicant may then provide himself with a wood trough any dimensions; the same to be used by him until the 31st December, 1854. Post-office Orders to be made payable to me, at Walworth, Surrey; or to Messrs. Thomas Davies & Co., 1, Finch Lane, Cornhill, London, payable at chief office. Printed directions will accompany the experimental trough.

To many inquiries whether on my patented principle would not Wheat be likely to run to straw, I answer, no—most emphatically; amongst other experiments, I tried Pens in very poor light soil, taken off the common—they produced an immense crop of superior quality, sown and cleared off the ground in two months, whilst Scarlet Runners obtained a height of 12 feet, and continued to yield abundantly to the last; others sown in the usual way acquired half the height, and yielded about half the produce. I am fully persuaded that the Wheat crop will be much earlier, certainly greater in quantity, and finer in quality. Specimens of the roots and Cattle Cabbage may be seen at the Smithfield Show, Baker Street; at the Stall of George Gibbs & Co., No. 15 Gallery, where will also be seen specimens of the earth they grow in. Please notice particularly the comparison under patent and usual mode of sowing, and the four times weight, in every thing I have tested I find about half difference. The root and seed being sown late I must expect to see larger in the show. I should like to see exhibited with them the earth they grew in; a slice of mine worked with any other will best confirm the quality. The Pamphlet will be ready in a few days wherein I will enter at large upon the simple mode of preparing liquid manure, application, &c. Due announcement will be made in the Times and in this Journal, with terms of license, which I hope to make unobjectionable to any one, to induce fair trial and insure confidence.

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# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 50.—1853.]

SATURDAY, DECEMBER 10.

[PRICE 6d.

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ERRATUM.—In MESSRS. JACKSON & SON'S Advertisement of Ornamental Trees and Shrubs, inserted Dec. 3d, for "Rhododendrons, 12 kinds in pots, 3s.", read 6s.

## THIRD APPLICATION.—JANUARY ELECTION, 1854.

**THE ROYAL GARDENERS' BENEVOLENT INSTITUTION.**—TO THE SUBSCRIBERS.—Your Votes and Interest are earnestly solicited in favour of JOHN BLACKIE, of Ryme, near Sherborne, Dorset, who has subscribed three years to the Institution, and is now 50 years of age. He was gardener to the late Rev. B. Cooper, of Yetminster, Dorset, upwards of 30 years; nine years to the late Windham Gooden, Esq., Compton House, Dorset; several years to the late Sir Alexander Hood, Bart.; and 13 years gardener to his late employer, the Rev. J. Blennerhasset, of Ryme, Dorset. He possessed the highest character, and has brought up a family of eleven children in respectability. Having had a great deal of sickness in his family, with the death of his wife, and having helped to support a daughter (a widow) and her little family for several years, his little savings are very nearly gone, and he is now, through age and infirmity, unable to support himself.

This case is strongly recommended by John Gooden, Esq., Compton House, Dorset; Rev. J. Blennerhasset, Ryme, Dorset; Mr. C. Turner, Royal Nursery, Slough; Mr. Pierce, Yeovil Nursery, Somerset; and C. Cooper, Gardener, Coker Court, Yeovil, Somerset. Proxies will be thankfully received by Mr. C. Turner, Royal Nursery, Slough; or by C. Cooper, Gardener, Coker Court, Yeovil, Somerset.

## DOUBLE LILY OF THE VALLEY.

**J. REID**, in consequence of numerous inquiries, begs to inform the nobility, gentry, &c., that he has a few fine roots of the above beautiful ornament for the drawing-room to dispose of, one dozen of which will be sent free to any part of the United Kingdom on receipt of 36 penny postage stamps. J. Reid, Monkton Nursery, Hyde, Isle of Wight.

## NEW HOLLYHOCKS OF 1853.

**JOHN CHATER and SON** beg to announce that they can now supply good plants of the following NEW HOLLYHOCKS, and which will be found first-rate, having obtained Prizes wherever exhibited.—Glory of Haverhill, 10s. 6d.; Admirable, 7s. 6d.; Duke of Rutland, 7s. 6d.; or the three for 21s. For description of the above see Catalogue, which may be had on application to CHATER & SON, Haverhill. Choice Hollyhook Seed, 1s. 6d. per packet, containing 200 seeds.

## SUPERB DOUBLE HOLLYHOCKS.

**WILLIAM CHATER** has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp. Saffron Walden Nursery, December 10.

## NEW SEEDS FOR THE COMING SEASON.

**WILLIAM E. RENDLE and CO., SEED MERCHANTS**, Plymouth, are now harvesting and receiving from the Growers a choice assortment of all kinds of Garden and Agricultural Seeds. Their New Seed Catalogue will be ready early in December.

**NEW EARLY PEAS, EARLY DUTCH HORN FORCING CARROT, FRAME RADISH, and all other Seeds required for early sowing, are now ready.**

**FAIRBEARD'S NONPAREIL, RENDLE'S FIRST EARLY, EARLY EMPEROR, and all the best PEAS**, can now be had. Apply to Wm. E. RENDLE & Co., Seed Merchants, Plymouth.

## WAITE'S NEW EARLY PEA.

**DANIEL O'ROURKE**—The earliest and best Pea in cultivation; a week earlier than the Emperor, longer pods, and a much better cropper; height 2½ to 3 feet. If this Pea does not give general satisfaction the money charged will be returned. Trade price to be had on application to J. G. WAITE, Seed Merchant, 151, High Holborn, London.

**JOHN WATERER** has to offer in any quantities the following AZALEAS, &c., which are of fine growth, and beautifully set with blooming buds for Forcing. Prices forwarded on application.

**AZALEAS**.—Coccinea, c. major, Taylor's Red, Noregag, glauca, arantia, pontica, p. alba, p. multiflora, Ghent Azaleas in varieties.

**KALMIA latifolia**, myrtifolia (a new and very superior variety), glauca,—Andromeda, of sorts; Ledums, &c.; Rhododendrons, &c.; Rhodora canadensis.

The American Nursery, Bagshot, Surrey.

## TO ADVERTISERS.

**THE ADVERTISEMENT DUTY** being repealed, the PROPRIETORS of the GARDENERS' CHRONICLE announce that they have reduced the customary charge for each Advertisement by 1s. 6d., the amount of duty taken off by the Government.

Advertisements of GARDENERS and BAILIFFS OUT OF PLACE, of not more than four lines in length, 1s. 6d. each.

## GERMAN SEEDS FOR 1854.

**MESSRS. PLATZ and SON, SEED GROWERS**, Erfurt, Prussia, intimate that their Catalogue of Flower and Vegetable Seeds may be had on application to their agent, Mr. ROBERT KENNEDY, Bedford Conservatory, Covent Garden.

**CRIMSON BOURSALTO ROSES**.—Strong plants of this desirable climbing variety for planting in Shrubberies, &c., at the following low prices:—Large plants, 30s. per 100; small ditto, 25s.; under 50, 6s. and 5s. per dozen. C. G. WILKINSON, Western Rose Nursery, Ealing, near London.

**TIGRIDIA CONCHIFLORA**.—The finest roots can be supplied at 15s. per 100. The usual discount to the Trade. YOEUELL & Co., Royal Nursery, Great Yarmouth.

## TO PLANTERS.

**YOEUELL and CO.'s Catalogue of Rare and Hardy Conifers, Hardy Ornamental Shrubs, Greenhouse Plants, Hollyhocks, &c. &c.**, is now ready, and will be forwarded free on application.—Royal Nursery, Great Yarmouth.

**STANDISH and NOBLE'S CATALOGUE** for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Dec. 10.

**RENDLE'S NEW SEED CATALOGUE** will not be ready as soon as previously advertised. But it is now in the Press, and will appear in a short time, due notice of which will be given.

All kinds of SEEDS for early purposes can be had immediately; and general orders will be executed in relation as received.—WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

**ROBERT M. STARK** begs to intimate that his prices, wholesale and retail, of TREES, SHRUBS, NEW PLANTS, and FLOWERS for the season are now ready, and may be had on application.

**CHOICE DUTCH BULBS, EARLY SEEDS, &c.**, at 14s, Princes Street.—Edgell Nursery, Edinburgh, Dec. 10.

**GEORGE JACKMAN, NURSERYMAN**, Woking, Surrey, 1½ mile from Woking Station, South-Western Railway, begs to announce that he has just published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c. &c., and may be had on application by enclosing two postage stamps.

**GEORGE BAKER** begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

**CHARLWOOD and CUMMINS** beg to announce that they have just received an importation, in good condition, of Acorns, of the four following varieties, of American Oaks which they offer at—

	Per bushel.	Per peck.	Per quart.
Quercus alba	26s. 0d.	8s. 0d.	1s. 3d.
" Banisteri	45s. 0d.	13s. 0d.	1s. 9d.
" obtusiloba	35s. 0d.	10s. 0d.	1s. 6d.
" nigra	...	...	2s. 0d.

14, Tavistock Row, Covent Garden, London.—Dec. 10.

## SUPERB HOLLYHOCKS AND PERPETUAL ROSES.

**R. B. BIRCHAM**, Hedenham Rosary, Bungay, Suffolk, begs to state that he has strong, healthy plants of most of the leading kinds of Hollyhook; see Catalogue published in the *Gardeners' Chronicle*, Oct. 22. If the selection be left to R. B. B.—12 first-rate sorts, 30s. to 40s. per dozen; 12 good show flowers, 15s. per dozen; 12 good double flowers for borders, without names, 6s. per dozen. Hollyhook Seed, saved exclusively from the best kinds, at 1s. 6d. per packet, containing upwards of 200 seeds.

**PERPETUAL ROSES**.—Strong dwarf plants, suitable for beds or borders (or for pot culture), including the best kinds in cultivation, 9s. to 12s. per dozen. Strong dwarf plants of Show Roses, 6s. to 9s. per dozen.

Carrriage paid to London, and plants added to compensate for long carriage.

## PELARGONIUMS.

**JOHN WESTWOOD** begs to inform the public and the trade, that having an immense stock of GERANIUMS and FANCY GERANIUMS (upwards of 60,000 in number, exclusive of Scarlets, &c.), and comprising almost every kind cultivated, he is enabled to offer them at prices which must afford satisfaction. His Advertisement in the *Gardeners' Chronicle* of the 5th and 12th inst. may be referred to for the names and prices of a portion of his stock. All applications and orders will receive prompt attention.

The Floral Nursery, Acton Road, Turnham Green, Middlesex.

## SEEDS FOR PRESENT SOWING.

**WILLIAM HAMILTON, SEEDSMAN, &c.**, 41, Margaret Street, Cavendish Square (first door from Regent Street), London, begs to announce that he has got in his Stock of EARLY PEAS, BEANS, and other seeds for present sowing. He also begs to state that he has still on hand a variety of BULBOUS ROOTS for those who have not already planted.

**GLASS DISHES**, with Hyacinths growing in Moss, and which are easily transmitted to the country, 5s. and 7s. 6d. each. The advantages of these Dishes are that they require no trouble, and are exceedingly pretty.

W. H.'s Descriptive and Priced Catalogues containing a list of BULBOUS ROOTS, the most popular ROSES, the best CARNATIONS and PICOTEES for Exhibition, FRUIT TREES, &c. &c., may be had post free for two stamps. This Descriptive Catalogue of Flower and Vegetable Seeds, Greenhouse Plants, &c., will be published as usual early in January.—Address, 41, Margaret Street, Cavendish Square, London.

**ROUGH CHEAP EVERGREENS**.—Red Cedars, 4 to 5 feet; Box Leaved and Myrtle Leaved Evergreen Privets, 5 to 6 feet; Portugal Laurels; Arbor-vitae. The above will all remove safely, and are well adapted for filling up plantations and for blinds.—Particulars and Prices can be had of Mr. KERNAN, 4, Great Russell Street, Covent Garden, London.

**JAMES MELDRUM, NURSERYMAN**, Kendal, Westmoreland, begs to announce that he has a very large stock for sale, of fine one-year Seedling ASH, and one-year Seedling OAKS, also a quantity of fine TRANSPLANTED OAKS, 2 to 3 feet. Prices very moderate; may be obtained on application.

**CHARLES DALY and SON** will sell two years Seedling, one and two years Transplanted THORNS, 2 to 3 feet; BEECH Forest Trees and Seedlings do, and SHRUBS cheap. IRISH YEW, 6s. to 8s. per 100. Catalogues, with prices, sent free.—Coleport, Dec. 10.

**ONE MILLION WHITE THORN QUICK**, one, two, three, and four years transplanted; 500,000 LARCH, one, two, and three years transplanted; with a general stock of Forest and Fruit Trees, Evergreens, Flowering Shrubs, &c. &c., all in good condition, and will be sold on reasonable terms.—Apply to ANDERSON CROWDER, Nurseryman and Seedsman, Horn-castle, Lincolnshire.

**LIME TREES**, 12 to 14 feet, 42s. per 100.—SPRUCE FIRS, 2 to 3 feet, 6s. per 100.—LAURUSTINUS, very fine, 30s. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

**CORNWELL'S VICTORIA RASPBERRY**.—Canes of the above to be had of GEORGE CORNWELL, Market Gardener, Barnet, at 15s. per 100. The usual allowance to the trade. Post-office orders made payable at Barnet.

**BALSAM SEED IMPROVED**.—Nearly 400 testimonials prove GLENNY'S Improved Balsam Seed to be the best that has been obtained. The six classes in sealed packets, 37 stamps; a packet of mixed, 13 stamps.—420, Strand.

## BAKER'S FOUNTAINS.

THE PHEASANTY, BEAUFORT STREET, KING'S ROAD, CHELSEA.

**MESSRS. BAKER** can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily fixed, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

**ROCKWORK, ORNAMENTAL WATER-FALLS, FOUNTAINS, RUSTIC WORK, and LANDSCAPE GARDENING** undertaken on a large or small scale by Mr. GLENNY, who will attend for consultation in any part of the kingdom.—420 Strand.

## MAW'S ENCAUSTIC TILE PAVEMENTS.

**MAW and CO.** send free post their NEW BOOK OF DESIGNS (with prices), adapting this most durable, economical, and decorative production of Medival Art to Entrance Halls, Passages, Conservatories, Verandahs, and every description of modern and ancient Building.

Bentham Works, near Broseley, Shropshire.

## SLATE WORKS, ISLEWORTH, MIDDLESEX.

**EDWARD BECK** manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

**"FRIGI DOMO."**—Patronised by Professor Lindley for the Royal Horticultural Society, the Royal Zoological Society, by His Grace the Duke of Northumberland at Syon House, and many cultivators of first class Horticultural and Floricultural produce.

"FRIGI DOMO," a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.







# JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.

N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

## SUPERB LATE WHITE BROCCOLI—"EMPEROR."

P. DIXON having purchased the entire stock of the above Broccoli of Messrs. Elliston, Market Gardeners, Thorngumbald, near Hull, begs to announce that on and after the 1st of January next he will be prepared to send it out in sealed packets at 2s. 6d. each. This Broccoli has been raised by the Messrs. Ellistons, the raisers of the Mammoth, sent out some time ago, who state that the *EMPEROR*, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NORTON, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London. Also of the Advertiser, 57, Queen Street, Hull.

**PASTOLFF RASPBERRY.**—"It is with much satisfaction that we announce a third award made by the London Horticultural Society, on 26th of July last, for examples of the above most excellent Raspberry, unequalled by any other variety for the size of its fruit and richness of flavour.

It is reported in the *Gardeners' Chronicle* of July 30th, page 486, as follows:—"Messrs. Youell, of Great Yarmouth, sent a boxful of beautiful fruit of the Pastolff Raspberry; they were unusually fine, and well deserved the certificate of merit awarded them."

Strong well-rooted canes, 15s. per 100; Large White Raspberry, 24s. per 100; New Monthly Fruiting, 24s. per 100.

For particulars of their advertisement of Choice Plants, see *Gardeners' Chronicle* Oct. 15th; and for Rare and Hardy Conifers, Oct. 22d.—YOUNG & CO., Royal Nursery, Great Yarmouth.

## YELLOW SEEDLING DAHLIA—MRS. H. N. FERGUSON.

DOWNE and LAIRD have much pleasure in intimating that they will send out the above-named Dahlia, raised by Mr. John Young, Gardener, Archerfield. It has been successful wherever exhibited, which is as follows:—Letter of Commendation at Royal Caledonian Horticultural Society in 1852 (one bloom), ditto at ditto, in August 1853 (two blooms); Certificate of Merit at ditto, September 1853 (six blooms); 1 of 12 Blooms which gained the Silver Cup at ditto, in September 1853; 1 of 16 Blooms which gained the First Prize at Haddington, September 1853; 1 of 12 Blooms, ditto at ditto, September 1853.

This Flower was also submitted to Mr. Turner, Royal Nursery, Slough, for his opinion: see "*Florist*," Sept. 1853, under J. F. "A large and fine formed yellow, very deep and full; if as good late as early will be a great acquisition." Plants in May 1854, 10s. 6d., with the usual discount to the trade.

D. & L. have also to intimate their stock of Florist Flowers is now very complete, embracing all the newest and finest in cultivation, a new List of which for 1854 may be had on application. —17, South Frederick Street, Edinburgh.

### CHOICE AND CHEAP.

**SELECT HARDY HERBACEOUS PLANTS AND ALPINES.** 100 in 50 choice sorts, our selection, 25s. per 100; in 100 choice sorts, our or purchaser's selection, 30s.

Flowering Evergreen Shrubs, Trees, &c., purchaser's or our choice, per 100, in 100 sorts, 21s.; our choice, in 100 sorts, 11s. Common Laurels, 14 to 2 feet, per 1000, 31s.; per 100, 8s. Evergreen Privet, 3 to 4 ft., fine, p. 1000, 35s.; 2 to 3 ft., 30s. p. 1000. Horse Chestnuts, 5 to 6 feet, 15s. per 100. Spanish Chestnuts, 4 to 6 feet, 20s. per 100. Limes, 8 to 10 feet, 10s. per 100.

Hollyhocks, fine double coloured, 20s. per 100. Apples, standard, in choice varieties ... per dozen ... 8s. " dwarf do. ... " ... 4s. " trained do. ... " ... 24s. Cherries, standard, in variety ... " ... 12s. " dwarf do. ... " ... 9s. " trained do. ... " ... 36s.

Currants, May's Victoria, 4s. per dozen, or 20s. per 100. N.B. A fine stock of Larch, Spruce, Oak, &c. Sizes and prices on application. MAY'S Descriptive Catalogue, in Three Parts. Greenhouse Plants, Hardy Herbaceous Plants and Shrubs, and Fruits, to be had on application.

Address all orders and communications to HENRY MAY, the Hope Nurseries, Leeming Lane, near Bedale, Yorkshire.

**BENJAMIN R. CANT** begs to offer the following, in extra strong plants:—

### NEW SHOW GERANIUMS.

Hoyle's Astrea, 5s.; Basilisk, 3s. 6d.; Butterfly, 3s. 6d.; Leonora, 5s.; Oscar, 5s.; Zaria, 5s. Foster's Eleanor, 3s. 6d.; National, 3s. 6d.; Optimum, 7s. 6d.; Rachael, 5s. Dobson's Gertrude, 5s.; Harriet, 3s. 6d.; Jupiter, 3s. 6d.; Pasha, 5s.; Spot, 5s.; Vulcan, 5s. The above 16 for 66s.; any 12 for 48s., or 12 of my own selection for 36s.

Any 12 of the following first-rate varieties may be selected for 20s., or 12 of my own selection for 16s.:—

Arethusa	Exhibitor	Ocellatum
Ajax	Incomparable	Purple Standard
Alibi	Lavinia	Plantagenet
Butterfly	Magnet	Silk Mercer
Commissioner	Mohanna	Tyrian Queen
Diana	Major Domo	Village Maid
Enchantress	Nephele Prince	

Good older sorts 6s., 9s., and 12s. per dozen.

### FANCY GERANIUMS.

Purchasers may select any 12 of the following for 12s., or my own selection 9s. per dozen.

Anak	Fleur d'Marie	Miss Sheppard
Albion	Hero of Surrey	Pelopides
Beauté	Jehu Improved	Purity
Belle Marie	Little Wonder	Prince Albert
Diana Vernon	Mulberry	Prima Donna
Delicata	Marion	Queen Victoria
Exquisite	Madame Millez	Statiuski
Fairy Queen		

### NEW CINERARIAS.—The set of 8 for 18s.

Charlotte, 2s. 6d.; Charles Dickens, 2s. 6d.; Conspicua, 2s. 6d.; Kate Kearney, 3s. 6d.; Loveliness, 3s. 6d.; Marguerite d'Anjou, 3s. 6d.; Prince Arthur, 3s. 6d.; Rosalind, 3s. 6d.

Purchaser's selection from the following, 9s. per dozen; my own, 6s. per dozen:—

Annie	Elle Deans	Mr. Sidney Herbert
Adela Villiers	Experimental Blue	Nymph
Angelique	Flora M. Ivor	Nonsuch
Agnes Wakefield	Formosa	Othello
Bessy	Lady Hume Campbell	Prima Donna
Catherine Hayen	Lady Gertrude	Rory Morn
Catherine Seaton	Madame Gerbo	Resplendens
Carmina	Madame Sontag	St. Clair of the Isles
David Copperfield	Mazini	Sonic
Eleonor	Marianne	

Garrages paid to London and Norwich, and all intermediate Stations. A liberal discount for cash, and the usual allowance to the trade. —St. John's Nursery, Colchester.

## TO NOBLEMEN, GENTLEMEN, AND COMPANIES PLANTING.

THOMAS JACKSON AND SON respectfully invite an inspection of their extensive and fine collection of ORNAMENTAL SHRUBS and TREES; they are of fine growth, and in excellent condition for planting for immediate effect. To the undersigned T. J. & Son especially desire attention. Prices may be obtained by letter or personal application.

American Arbor-vitæ, 2 to 10 ft.  
Chinese do., 2 to 8 feet, fine  
Arbutus, 2 to 5 feet  
Aucubas, 2 to 4 feet, very bushy  
Cedar, Decid., 2 to 12 feet, fine  
Cedar of Lebanon, 2 to 9 ft., fine  
Variegated Hollies, 2 to 9 feet  
Green do., 2 to 9 feet  
Weeping do., 5 feet stems, fine  
Berberis aquifolium, 2 to 3 feet, bushy  
Taxodium sempervirens, 3 to 12 feet, fine  
English Yews, 2 to 9 feet  
Irish do., 2 to 8 feet, very fine  
Tree Box, 2 to 7 feet  
Araucaria imbricata, 1 to 5 feet, fine  
T. J. & Son have added to their previously good stock of American Plants, about one-third of the entire stock of the Norbiton Nursery, so long famed for its collections of Hybrid Rhododendrons, Azaleas, &c., can now offer on most advantageous terms—

Rhododendron ponticum, 1 to 5 ft., in great variety.  
Do. aureum, and the varieties of yellows, 1 to 7 ft.  
Do. Smithi, tigrinum, and other scarlets, 1 to 9 ft.  
Do. campanulatum and light varieties, 1 to 7 ft.  
Azaleas, Indian, American, and Ghent varieties, 1 to 6 ft.  
Kalmia latifolia, and others, 1 to 4 ft.

T. J. & Son have a splendid healthy stock of the Sikkim Rhododendrons, of which they will furnish the 12 following fine kinds, in pots, for 63s., viz., Thompsoni, fulgens, glaucum, glaucum nanum, niveum, Falconeri, ciliatum, Edgeworthii, laetifolium, cinnabarinum, ferrugineum, and calycatum.  
Fine Fruit and Forest Trees; strong Quick for Fences, and all other kinds of Nursery Stock.  
Nurseries, Kingston, near London.

**CONIFERÆ.**—Gentlemen who may be desirous of completing their collections of this interesting class of plants may find some scarce species in the following list, selected from a very large stock, embracing most of the kinds in cultivation, and many of them fine specimens.

Pinus muricata, 2 ft. ...	21s. 0d.	Abies amabilis, small ...	21 0
" Massoniana ...	7 6	" grandis, true 3 to 4 ft 63s.	21 0
" Persica ...	21 0	" Apollinis ...	21 0
" Benthiana ...	42 0	" Cedrus atlanticus,	
" insignis, 3 to 4 ft.,		2 to 5 ft., 3s. 6d. to 21 0	
7s. 6d. to 10 6		" Cedrus Decid.	
" tuberculata, 3 ft. ...	42 0	" viridis, 7s. 6d. to 10 6	
" radiata, 3 ft. ...	31 6	Libocedrus Chilensis,	
" Sabiana ...	15 0	2 ft. ...	10s. 6d. to 15 0
" cembroides, 2 to		Larix pendula, 7 ft. ...	5 0
Montezuma, 2 ft. ...	7 6	" Cryptomeria japonica,	
" monticola, 3 ft. ...	10 6	5 to 8 ft., 7s. 6d. to 84 0	
" Lambertiana, 5s. to 10 6		6 Taxodium sempervirens,	
" parviflora, small ...	42 0	4 to 5 ft. ...	2s. 6d. to 5 0
" Araucanensis ...	10 6	Biota filiformis, 2 to 4 ft.,	
" Fremontiana ...	42 0	3s. 6d. to 10 6	
" filifolia, 5s. to ...	7 6	Chamaecyparis squarrosa,	
" macrophylla, 2 ft. 31 6		2s. 6d. to 7 6	
" Padua ...	42 0	" ericoides,	
" abchasica ...	21 0	2s. 6d. to 7 6	
" Lindleyana ...	21 0	Cupressus macrocarpa,	
" Pence ...	83 0	2 to 7 ft., 3s. 6d. to 15 0	
Abies Whittmanniana ...	5 0	" Goveniana,"	
" Brunonian ...	5 0	2 to 6 ft., 3s. 6d. to 15 0	
" Douglasi, 1s. 6d. to 10 6		" Coreana ...	7 6
" rubra cerulea ...	5 0	" funebris, 1s. 6d. to 7 6	
" orientalis ...	3 6	" new species ...	
" Nordmanniana,		mountains of Mexico ...	21 0
10s. 6d. to 15 0		Taxus adpressa ...	5s. to 21 0
" nobilis, 7s. 6d. to 42 0		" baccata monstrosa 7 6	
R. GLENDINNING, Chiswick Nursery, London.		" ericoides ...	7 6

JOHN JEFFRIES (Successor to Mr. Gregory),

NURSERYMAN, SPEDSMAN, &c. Cirencester, Gloucestershire, begs to inform patrons about planting that, in consequence of a portion of his Nursery being sold for building ground, he has a large Stock of FRUIT and ORNAMENTAL TREES, EVERGREEN and DECIDUOUS SHRUBS, consisting of several hundred species, which must be cleared by Christmas next, including—

Standard Pears ...	15 0	100 0
" extra strong ...	18 0	130 0
Abies alba, 5 feet ...	9 0	50 0
" canadensis, 7 feet ...	18 0	0
" morinda, 3 to 4 feet ...	12 0	75 0
" nigra, 3 to 4 feet ...	9 0	40 0
Althaea frutex, 1½ to 2 feet ...	2 6	7 6
Aucuba japonica, 1½ to 2 feet ...	6 0	40 0
" 2 to 3 feet ...	9 0	60 0
Araucaria imbricata, strong, 12 to 15 inches, pots ...	30 0	220 0
American Arbor-vitæ, 5 feet ...	7 6	40 0
Chinese ...	15 0	100 0
" 5 to 6 feet ...	18 0	0
Siberian ...	6 0	40 0
Purple Beech, 5 to 6 feet ...	12 0	80 0
" 10 to 12 feet ...	24 0	0
Cedar of Lebanon, 4 to 5 feet, pots ...	50 0	0
Upright Cypress, 3 feet, pots ...	9 0	60 0
Double Furze, strong, pots ...	6 0	40 0
Gleditsia triacanthos, 5 to 8 feet ...	2 0	12 6
Holly, Green Hedgehog, 2 to 3 feet ...	6 0	40 0
" variegated, of sorts, 1½ to 2 feet ...	9 0	60 0
Mahonia aquifolium, 1 to 1½ foot ...	12 0	0
" 2 to 3 feet ...	15 0	0
Pinus excelsa, 1½ to 2 feet, bedstead ...	9 0	50 0
" 2 to 3 feet, pots ...	18 0	120 0
" 3 to 4 feet, pots ...	20 0	150 0
" 7 feet, fine ...	each, 5s.	
" Gerardiana, 9 to 12 inches ...	9 0	60 0
" Lario, 2 to 3 feet ...	9 0	50 0
" 3 to 4 feet ...	12 0	0
" 4 to 6 feet ...	18 0	120 0
" 6 to 8 feet ...	21 0	150 0
" mughus, 1 to 1½ foot ...	12 0	0
" 2 to 3 feet ...	18 0	0
" austriaca, 3 to 4 feet, extra fine ...	9 0	60 0
Evergreen Oaks, 2 to 3 feet, pots ...	12 0	80 0
" 3 to 4 feet, pots ...	18 0	120 0
Irish Yew, 4 to 5 feet, strong ...	36 0	0
Standard Thorns, in 60 varieties ...	9 0	50 0
" strong ...	12 0	80 0
Weymouth Pine, 3 to 4 feet ...	18 0	0
" 4 to 5 feet ...	25 0	0
Deciduous Shrubs, by name ...	20s. to 50s.	

Also a collection of choice Conifers, prices of which may be had upon application.  
Orders to the amount of 3l. and upwards delivered free to any Station on the Great Western Railway. A remittance or reference expected from unknown correspondents.

SUTTON'S COMPLETE COLLECTIONS OF SKITCHEN GARDEN SEEDS FOR ONE YEAR'S SUPPLY contain all the best sorts of Vegetable Seeds for sowing, from January to December, to stock the garden throughout the year, with descriptions and instructions.

No. 1.—A complete Collection of Garden Seeds for one 2 s. d.  
year's supply, including 20 quarts of the best Peas for succession, 10 quarts of Beans, and full quantities of French Beans, choice sorts of Broccoli, Cucumbers, Melons, Lettuces, Cauliflowers, and every other sort of Vegetable required, in full quantities ... 3 0 0  
No. 2.—A complete Collection, in quantities proportionately reduced ... 2 0 0  
No. 3.—A complete Collection, equally choice sorts ... 1 5 0  
No. 4.—A small and very choice Assortment ... 0 15 0

If some kinds of Seeds are already possessed, purchasers are requested to name them, that increased quantities of others may be sent in lieu of them.

As some sorts are very short in crop this year, purchasers are respectfully recommended to send their orders early.  
CARRIAGE FREE, from JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**BASS AND BROWN** beg to refer to their Advertisement in the *Gardeners' Chronicle* of Oct. 22 and Nov. 5, for their fine selected assortment of GERANIUMS, which are unusually strong. CHEYSANTHEMUMS and various GREENHOUSE and HARDY PLANTS, GLADIOLI, and a great variety of BULBS and ROOTS, of all which they possess a large and fine stock.

GLADIOLI, 50 splendid vars. for early and late flowering ... 50s.  
" 25 do., 80s.; or, per dozen ... 6s. to 20s.  
" splendid mixed early varieties, per 100 ... 20s.  
" do. do. per dozen ... 3s.

The Autumn Catalogue supplied free for three penny stamps.  
Seed and Horticultural Establishment, Sudbury, Suffolk.

### CHOICE SELECT GERANIUMS.

HENRY WALTON, FLORIST, &c., Edge End, Marsden, near Burnley, Lancashire, begs to offer the following Choice Show Geraniums for 24s. per dozen (strong plants), hamper, &c. included; or H. W.'s selection, 18s. per dozen:—  
Optimum, Cordelia, Kulla, Butterfly, Lagonia, Heroine, Chloë, Pulchra, Lavinia, Eucharistia, Elise, Rosa, Commissioner, Surprise, Jullien, Lord Gough, Bride of Abydos, Flying Dutchman, Renown, Exactum, and Lancashire Witches.

Fancy Geraniums, strong plants, 18s. per dozen. Fuchsias, all the new varieties of this season, 18s. and 21s. per dozen. Cinerarias, of which H. W. possesses a large collection of strong healthy plants, 6s., 9s., 12s., and 15s. per dozen. Pansies, the finest show varieties, 6s., 9s., 12s., and 18s. per dozen; Salter's Fancy Pansies, 2s. each, or a set of 13 for 18s. 25 pairs of Carnations for 1l.; 25 pairs of Picotees for 1l.; 25 pairs of Pinks, 8s. to 12s.

Descriptive Lists of the above may be had for one stamp. It is respectfully requested that all orders be accompanied with a Post Office Order payable at Marsden, Lancashire. H. W. begs to refer parties to his more detailed advertisements in *Gardeners' Chronicle* for Oct. 22d and Oct. 29th, 1853.

### SPLENDID FANCY PELARGONIUMS.

GEORGE CLARKE, particularly calls the attention of Amateurs, &c., to his very fine and unusually healthy collection. They are very strong, perfectly free from disease, and waiting an immediate shift. Any of the following first-rates for 15s. per dozen, hamper included:—Advancer, Caliban, Miranda, Brunette, Duchesse d'Amale, Conspicuum, Triumphans, Lady Downes, Mrs. London, John Bull, Gipsy Queen, Prince Albert, Resplendens, Richard Cobden, Formosissimum, Gaity Muirillo, and Berryer.

The following fine varieties for 9s. per dozen:—Hero of Surrey, Madame Rosa, Parodi, Lilacina, Odorata superba, Reine des Français, Cleopatra, Mignon, Perfection, Magnificum, Formosum, Roland Casbel, Jenny Lind, Albion, Decora, Fairy Queen.  
Streatham Place Nursery, Brixton Hill, Surrey.

## The Gardeners' Chronicle.

SATURDAY, DECEMBER 10, 1853.

### MEETINGS FOR THE ENSUING WEEK.

MONDAY, December 12	British Architects ...	8 P.M.
	Geographical ...	8½ P.M.
	Syrian ...	7½ P.M.
TUESDAY, — 13	Civil Engineers ...	8 P.M.
	Medical and Chirurgical ...	8½ P.M.
	Zoological ...	9 P.M.
	Literary Soc. ...	3 P.M.
	Royal Soc. of Literature ...	4½ P.M.
	Society of Arts ...	8 P.M.
WEDNESDAY, — 14	Geological ...	8 P.M.
	Graphic ...	8 P.M.
	Pharmaceutical ...	8 P.M.
THURSDAY, — 15	Antiquarian ...	8 P.M.
	Royal ...	8½ P.M.
SATURDAY, — 17	Asiatic ...	2 P.M.
	Medical ...	8 P.M.

A PRUSSIAN nobleman, with whom it was once our chance to come in contact, distinguished more for his love of the elegancies and other good things of this world than for intellectual attainments—though not without some share of that general information for which his countrymen are so distinguished—amongst other topics of conversation fell upon that of the supposed discoveries made by EHRENBURG, of races of Diatomaceæ propagated for generations in the upper regions of the trade winds, and in the antediluvian beds of Tripoli. His notions on the extent to which these matters were asserted were most exaggerated, reaching even to the point that with every breath of air which we inhale, some of these flinty cuirassed pigmies enter into the lungs; and it was consequently some relief to him to learn that such assertions were not received with such implicit credit here as in Berlin. It was mentioned, besides, that EHRENBURG's views as to the animal nature of these bodies had been quite disproved by the discoveries of Mr. THWAITES, though he seemed to pay little attention to them when pointed out to him at Oxford, at the meeting of the British Institution, at which he was present. The information was full of interest to a person writhing under the imagination of all the evils that might be consequent on the invasion of such herds of enemies as he was persuaded peopled the air and waters, and in a moment of



good-natured spleen at the partial discomfort of his "bourreau," who he believed had

"heartless left, like moody madness, stared  
To see the phantom train their secret work prepare,"  
he exclaimed, "I am so glad; it is so uncomfortable to believe that one is breathing such things, and that the whole earth is heaving with them."

Now, uncomfortable as such an imagination may be, though without foundation, one scarcely less uncomfortable, and resting upon strict truth, is afforded by recent discoveries of the vast extent to which fungi exercise a baneful agency, not only on plants, but on the animal kingdom. Every day is clearing up the prejudices which have impeded the general reception of the fact that fungi do produce disease in vegetables where none was present before; but this is no less true of animals, and of man also, to a considerable degree.

Setting aside such fancies as the fungal origin of cholera, which seem to have died away, though no one yet has shown what is the nature of the curious bodies which, in 1848, were so prevalent in every case of cholera in the West of England, or the extravagant notions put forth by MITCHELL in his lectures on the influence of fungi in the production of disease, who sees miasma in every place where a fungus of any kind whatever is abundantly produced; though we have little faith in such Epidaurian acuteness of vision as can sift and pry into the earth, and at once detect what especial fungus may grow in a particular locality; and though again we do not believe, because we have no data in support of such an opinion, that the influenza and other analogous diseases arise from the inhaling of spores of fungi floating in the air, yet it is most certain that every living man has at times fungi vegetating about him, sometimes, indeed, producing serious disease, but in general unaccompanied by any appreciable effects on the constitution. A hundred memoirs or more, from the pens of people of every different qualification which may be requisite for such researches, prove the fact incontrovertibly, and a glance at ROBIN'S work lately republished in a very enlarged form under the title "Histoire Naturelle des Végétaux Parasites qui croissent sur l'Homme et sur les Animaux Vivants," will show the varied situations in which these bodies find a fit nidus for development, and the multitudinous forms which they assume. Indeed, when it is considered that these organisms flourish under the combined influence of heat and moisture, and that while the spores of some species are capable of sustaining a heat equal to that of boiling-water without losing their powers of vegetation, they are almost uniformly produced and multiply prodigiously in fluids which contain saccharine matter; though they do not bear their proper fruit in such circumstances, it is easily conceivable that no great impediment can be presented to their propagation, even in healthy individuals. Their spores, too, exist in every part of creation; we inhale them every time we breathe, and not a mouthful of food we take which does not swarm with them, while, with other impurities, they adhere to our bodies, insinuating themselves wherever there is any inequality of surface; and wherever there is a weak or languid organ, or an inactive or mucous membrane which cannot resist the invasion of their sprouting threads, they spread with amazing rapidity and aggravate the existing mischief. Fungi have been long known as one of the principal agents of decomposition in the vegetable kingdom; many of the phenomena of fermentation depend upon their presence, and it is now apparent that they act a far more important part in the animal world than was once conceivable. That there should be a principle of decay in everything, and especial agents to produce it, seems the common lot of created matter, and we cannot even have the poor satisfaction of the person who, after reading ACCUM'S "Death in the Pot," would not eat for fear he should be poisoned, for it is impossible to fly from their ubiquity. As regards their internal agency little can be done, but the superior degree of cleanliness which the diffusion of baths and washhouses will gradually produce in the habits of the people, will doubtless be a most effectual check to many of those cutaneous disorders which depend upon fungi for their origin. *M. J. B.*

THAT HARICOT BEANS are not sufficiently appreciated in this country seems to arise from ignorance of the proper mode of cooking them, particularly the need of freeing them from the offensive water in which they are first boiled; probably it is this water which causes them to disagree with many persons. There being many other details to be observed in the preparation of Haricots on which their salubrity and excellence materially depends, receipts are subjoined as drawn up by a lady well acquainted with the ordinary modes of preparing these Beans in France. The particulars given may

seem superfluous at first sight, but in practice they would not be found too minute.

The receipt indicates that meat may be stewed with Haricots; in France even for the moderately affluent, 2 oz. of meat with half a pint of Haricots, would be sufficient for a person's dinner, but with English habits, perhaps half a pound of meat to the half pint of Haricots would not be amiss. Even in France for the much esteemed dish, the *gigot* (leg of mutton) with Haricots, the weight of meat in proportion to Haricots may often be as much as a pound of meat to a pint of Haricots.

In France the Haricot de Soissons is the most esteemed variety, though there are many other sorts that nearly equal it. In England the Scarlet Runner has been recommended, but of all varieties it is perhaps the least desirable for its dried Beans, on account of their leather-like skin.

*Receipts for a small dish of Haricot Beans, as prepared in the South of France.*—Put into an earthen pot or iron saucepan half a pint of Haricot Beans, and one quart of cold soft water; let them boil gently but unceasingly until the skins commence cracking. (This cracking of the husk will take place in about an hour and a half, more or less, according to the quality of the Bean). Carefully draw off the water, which will have become nauseous, not emptying the Beans out of the saucepan, but making use of the pot lid to prevent their falling, as they must not be allowed to cool. Place them quickly on the fire again, with a quart of clean boiling soft water. When they boil up, which ought to be immediately, add a tea-spoonful of salt. If this water, or liquor, is to be used as soup, add also a few cloves and other seasoning, such as Garlic, in small quantity, or an Onion, a Leek, &c. Boil gently for two hours more, or three, if the Beans are not of the year's growth; they ought to become soft and mealy.

The Beans may be strained, and served very hot, with a bit of butter placed in the midst, and garnished with chopped Parsley, with which is often mixed a little finely-chopped raw Garlic, Shallot, Chives, or Onion, according to taste: usually Garlic or Chives.

Or, in lieu of butter, the Beans may be dressed, hot or cold, with pepper, salt, vinegar, and olive oil.

Or, stewed with meat, after having been sufficiently boiled by means of the first water, to get rid of the bad flavour of the husk.

Or, the Beans may be allowed to stew in the second water, adding pepper, chopped Parsley, or tender Celery leaves, and oil, butter, lard, or dripping, until it is nearly evaporated. If there be too much water, part is separated to serve as soup, before the addition of the oil or butter, &c., as it is usual to place these on the top of slices or rather shavings of bread in the soup tureen. (English baker's bread is not suitable for French soups, it becomes too soft when soaked.) When intended for soup, a little bit of salted flake of pork is often boiled in the liquor, instead of using oil or other fat.

A precise length of time for boiling Haricot Beans cannot be fixed without knowing the quality, which depends not only on their freshness, but also on the variety, the soil in which they are grown, &c. Five or even six hours' stewing may be necessary for stale Beans; fresh ones have been cooked in two.

For very long boiling, a small addition of water is required; the Beans must not dry.

It will be remarked, that it is essential not to allow the boiling to cease an instant, till the husks are cracked. *B.*

#### GRAFTING.

In discussing the experiments of M. Gaudichaud, I have given the following as some of those facts which are apparently the most favourable to the theory of radical fibres descending from the leaves. A Poplar root was uncovered at the middle and cut completely across, so that neither the wood nor the bark of the two parts remained in any way connected. The cut surfaces were brought together and maintained in close contact with collars; they were then surrounded with moss and covered over with earth. The two halves of the root united. According to the partisans of this theory, the two parts of the root unite by the radical filaments which descend from the leaves, and these, they say, having come in contact with the lower part of the root, penetrate between its wood and bark, thus continuing their downward course. According to my observations, the phenomenon takes place in quite another manner. Although I have not myself made the experiment, which I am only acquainted with by means of the parts sent to me by M. Gaudichaud, yet I believe that a satisfactory explanation can be given, one founded on the principles laid down in my different memoirs, and on what occurs during the taking of the graft. A swelling of cellular tissue is produced round each of the two sections by the cells of the cambium (*Couche génératrice*); the swelling on the upper portion of the root is larger than that on the lower, but that is of no importance. When the two sections come in contact, the nascent tissues unite all round the root or on a part only of its circumference. This union by means of the protruded tissue consolidates by the formation of fibro-vascular elements in the interior of the aforesaid tissue. These fibro-vascular elements are developed in this tissue in the same way as they are in that which first of all constitutes the excrescences on the surface of the albumen when it has been barked. In the same manner on this swelling a bark is formed, which covers the young ligneous layer. From that time vegetation goes on as

usual. Still, however, more wood is produced at this point than elsewhere, because the primitive accumulation presents an obstacle to the flow of the nourishing fluids contained in the descending sap, which passes from cell to cell and not between the wood and bark as it was once generally supposed to do. The partial stoppage of the juices at this point also causes the fresh layer of albumen to be thicker above than below the graft. Cleft-grafting may be explained in the same way. Protrusions of cellular tissue form along the edges of the cleft in the stock; they are also developed on the parts of the cambium which are laid open, the protrusions unite and consolidate as before said. The new wood and bark afterwards gradually close up the cleft of the stock, which at the end of a few years is only apparent at the exterior by the bulging which usually exists at the junction of the stock and graft.

Shield-budding does not differ from the two preceding, except that the cells of the cambium of the bud are brought into more direct contact with those of the stock. The union is made in exactly the same manner, and the ultimate development is identical.

This development is like that of an adventitious shoot. In fact, a graft bears the same relation to its stock as an adventitious shoot to the plant on which it grows. When the parts have once united by means of the cellular tissue, and when the first fibro-vascular elements have been formed, there is perfect continuity between the wood and the cambium, or between the inner bark of the stock and those of the graft. All the other anatomical phenomena are also the same; for although the nature of the stock is not modified by the graft, the vascular filaments (called erroneously radical fibres) or vessels, for they are nothing else, do not the less appear to descend from the graft to the stock, in the same way as they seem to descend from the adventitious shoot to the stem that bears it. This is in both cases merely an appearance; because cellular multiplication is always carried on horizontally, and because it is the cellulose which results from this horizontal multiplication which change some into vessels, and others into woody fibres and medullary rays.

Like the adventitious shoot, the graft draws nutriment from the wood of the stock; it elaborates it in its leaves, and returns it principally by its inner bark to the lower part of the plant. In descending from cell to cell, the juices leave part of their assimilable substance; each cellule appropriates what is best adapted to its nature. This is the reason why the nature of the stock is no more modified by the juices which descend from the graft than the last mentioned is by the juices which it derives from the stock. The cells nourished in this manner produce, by their division in a horizontal direction, cells of the same nature as themselves, which are modified according to the functions they are called on to fulfil. *Trécul, in Rev. Hort.*

#### SELAGO DISTANS.

If this plant bloomed in spring or early summer, it would probably soon disappear from our collections; for the peculiar odour of its foliage is not agreeable to many persons, and the flowers being destitute of colour are not particularly striking; but, notwithstanding these little faults, the plant is likely to be long a favourite. Its easy culture, free habit of blooming, and the length of time which the plants remain in beauty during the dull season, fully entitle it to be considered one of the most useful for winter decoration in cultivation.

Cuttings rooted early in spring and treated rather closely during the summer, will form nice sized specimens, and bloom profusely from the middle of November to the end of January; but persons who may wish large specimens, and those with little accommodation for growing the plants rapidly, will probably find it better to propagate them and get them well established in 5-inch pots the previous season. Firm bits of the young wood planted in sandy peaty soil, covered with a glass, and placed in a shady part of a moderately warm house or pit, will soon be sufficiently rooted to bear potting singly. Place the young plants in a close shady situation for a fortnight after potting off, and as soon as they get established remove them to a cool light airy situation, and stop the shoots regularly, to induce compact bushy growth. When the pots become full of roots, which will soon be the case, give a small shift and keep the plants growing slowly during the autumn; and as long as it can be done without danger from frost, expose them freely to the night dews. In winter, place them near the glass in the greenhouse, or wherever they will be safe from frost and damp, and give sufficient water to the soil to keep this in a moist, healthy state; and I may observe, that as the plant roots very freely, and grows slowly during the winter, it requires a larger supply of water at that season than most greenhouse plants. Unless with the view of obtaining monster specimens, active growth need not be promoted by artificial means early in spring, but the plants should be placed in a close part of the greenhouse early in March, or if more convenient, may be removed to a pit, the temperature of which may range a few degrees higher than that of the ordinary greenhouse. But it must be borne in mind, that if strong vigorous wood is to be obtained, air must be freely admitted whenever the weather will permit, and the plants must occupy a position near the glass, where they will receive all the light possible, and the temperature should not exceed 50° except with air and sunshine. If the balls are full of healthy roots repot at once, giving a rather liberal shift, but otherwise defer this until active growth commences, which, if the



plants occupy a rather close place, will soon be the case. This Selago is not particular as to soil, and will grow freely in any light rich compost, but the following will be found to suit it perfectly, and should be used where convenient:—Turfy sandy loam, fibry peat, and leaf-mould in about equal proportions, with a quantity of sharp silver sand added to keep the mass porous. Let the loam and peat be nicely broken up, and the whole be well intermixed together; and in potting make the fresh soil rather firm about the ball of the plant. As soon as the roots appear to have taken to the fresh soil admit air very freely, except during cold drying winds, and expose the plants to all the light possible. Also stop and peg down the shoots, or tie out the stronger ones, which will admit light and air among the branches, and induce stocky robust growth. A cold frame will be the best situation for the specimens, and to this they should be removed as soon as the state of the weather will allow of doing so with safety, and be inured to full exposure to sun and air, merely using the lights as a protection from cold drying winds and storms of rain. It will be advantageous to have the frame so placed in summer as to be shaded for a few hours in the forenoon from the sun. About a month or six weeks after potting it will probably be found that the pots are full of roots, and in this case another shift should be given at once, which may be into the flowering pots. The size of these must be regulated by taste and convenience, 12-inch will be large enough to produce good sized specimens; but the plant is such a vigorous grower that there is little danger of overpotting. It will be advisable, however, after giving a large shift, to keep the atmosphere rather close and damp, and syringe the plants over-head morning and evening, till the roots lay hold of the fresh soil. When this is the case, the plants will grow very rapidly, and the main shoots will require to be stopped occasionally, and a few stakes may probably be needed to keep the specimens open; but if the plants are grown slowly, very little attention will be required to secure handsome shaped specimens. When the weather becomes unfavourable in autumn, remove the specimens to the greenhouse, where they will soon be covered with blossom, which will be produced on every shoot; if the plants are properly supplied with water, and guarded from the effects of damp, they will remain some three months in beauty. I have found clear, weak manure water useful in prolonging the season of beauty. Young plants are so easily got up, and occupy so little space, compared with old specimens at the season when every available corner is filled with something, that I remove the specimens from the flower house to the rubbish heap, taking care to have a sufficient supply of young plants; but there is no doubt that by cutting the plants back closely, and wintering them in a cool place, they will be serviceable a second season. *Alpha.*

## ASSESSMENT OF MARKET-GARDEN LAND, FULHAM.

### APPEAL—KENSINGTON SPECIAL SESSION.

It appears that the parish of Fulham has been re-surveyed under order of the Poor-law Board, which came into operation upon making the last rate for the relief of the poor, dated 16th October, 1853. The appellants were Messrs. Fitch, Mr. Broadbent, Mr. Poupart, Mr. Steele, &c. The number of market gardeners in Fulham, as stated by the parish surveyor, is 16 or 18, of which four is a tolerably good proportion. The rating of land in Fulham has been generally raised from 20 per cent. to 30 per cent., and in some instances from 4l. or 5l. to 6l. 15s., 8l., and even 10l. per annum.

On Monday the special session was held for the western division of the county of Middlesex, at the Holland Arms, Kensington, before Robert Tobbs, Esq., chairman and a full bench. Mr. Sleigh, barrister, Mr. Curwood, solicitor, supported by Mr. Paine, architect and surveyor, Mr. James Poupart, Mr. E. M. Newman, &c., appeared for the appellants. Mr. Jones, solicitor, Mr. Hackman, vestry clerk, Mr. M. Clure, surveyor, for the respondent parish.

On opening the case, Mr. Jones desired proof of the due service of notice of appeal. Mr. Broadbent replied that Mr. Hackman, vestry clerk, had undertaken that no advantage should be taken of technical objections, but that each case respectively should rest upon its own merits.

Mr. Sleigh stated that as Mr. Jones was in possession of the original he should produce it. Mr. Jones declined. Mr. Sleigh contended his right to produce secondary evidence, which was overruled by the Bench. Mr. Sleigh requested an adjournment for two hours, that he might proceed to London for authority to justify the course, which was accordingly granted.

On Mr. Sleigh's return due notice was proved. Mr. Jones then urged that the notices were informal, as they were not properly addressed, although Mr. Broadbent's notice was personally served on Mr. Hackman.

The Chairman overruled this objection, stating that the printed form contained the words "to the overseer or collector," &c., which he held to be sufficient, although Mr. Hackman's name was not inserted. The case then proceeded.

Mr. Paine, architect and surveyor, was then called: Had surveyed Lambeth, Bethnal Green, Isleworth, Chelsea, and three other metropolitan parishes. He had had very considerable experience, and well knew the value of market garden land. Rental was no correct criterion of assessment. Mr. Broadbent's land was good land in ordinary cultivation, and its outside value was 6l. 10s. per annum, i.e., "from year to year," &c., subject to statutory deductions as follows, viz., 10l. for repairs of homestead, &c., 2s. for insurance on 800l. to re-insure, 10s. per acre per annum for the maintenance of gates, fences, &c. Hothouses and growing fruit trees, as stock in trade, were not separately rateable. Hothouses conferred a certain additional value on land, but the cost of maintenance was great. Fruit trees were generally planted on the best land. Land was unequally assessed throughout the parish in comparison with the gas works. The preceding deductions brought the value of Mr. Broadbent's land to a rateable value of about 5l. an acre (79s.), which was charged 110s., or 12l. per acre in the new survey.

Mr. Jas. Poupart supported Mr. Paine's valuation, which, however, he considered rather high—at least the full value of the land. Mr. Broadbent stated that he paid 94l. per annum, on lease. The exactions from the gas-works were prejudicial to vegetation, and deteriorative of the value of his property. Mr. M. Clure supported the assessment of Mr. Broadbent's land at 4l. per acre, which he designated as the "best land in the parish." He had valued the whole land throughout the parish at

its full value. The survey of Fulham was the first survey of a parish to which he had been appointed. Mr. Hackman confirmed Mr. M. Clure's statement, but knew the value from the rate-books. Had only let a small portion of his own land, and knew the rental.

Mr. Sleigh having replied, after some discussion among the magistrates as to the rateable value of Mr. Broadbent's property being 80l. or 90l., both of which sums were contended for, it was decided that the appellant's assessment should be reduced to 90l.

Mr. Sleigh applied for costs, which were immediately granted, when the respondents gave notice of appeal to quarter sessions. The Sewage Manure Company's works were reduced 40l., Mr. Hughes' brickfields 100l. Mr. Fitch's appeal, also Mr. Poupart's and Mr. Steele's, adjourned to Jan. 9, 1854. (From a Correspondent.)

## Home Correspondence.

**Hardiness and Quality of Pears.**—I trust that those who cultivate many varieties of this most useful of fruits will respond to the letter of Mr. Abell, inserted in your Paper of the 26th November. But in addition to mere hardiness, there is a much more important point to attend to, viz., quality, and I hope the gentleman who has started the question will do the public the favour of stating whether the fruit of the Belle après Noël, which so resembles the Peach in beauty, possesses anything more than that skin-deep attribute. We know that of all fruits the Pear is most capricious as regards flavour. Even the Marie Louise itself is in some soils and situations second rate; and if so, what constancy can we expect from less hardy and inferior varieties? Nevertheless, we cannot be too diligent in collecting facts, as they may hereafter lead to profitable experience. In my own garden this year (2° colder than Chiswick), Winter Nelis, against a south-east wall is, as usual, excellent. As pyramids, Seckel, Marie Louise, and Williams' Bon Chrétien were good; Catillac, the same; Easter Beurre, of good appearance, but not yet ready. Rousselet de Reims (which ought to be "exceedingly sugary") and Jersey Gratioli (which ought really to be "honeyed") were very watery and poor, while Fondante d'Automne was most delicious. This Pear cannot be praised too much, nor can Thompson's, though the fruit of the latter was much speckled this year. Ne Plus Meuris speckled and bad, ripening prematurely. Duchesse de Mars, described by Mr. Rivers as one of the most delicious Pears known, was much cracked. It was sufficiently sweet and juicy, but most unpleasantly astringent; and this is a fault which, I fear, a better season will not remove. *J. M. B.*

**Vine Mildew; its Prevention and Cure.**—Again and again has sulphur been recommended for destroying mildew on Vines, and I believe there are no two opinions with respect to its efficacy when properly applied and in time; notwithstanding this, however, I have this season witnessed a splendid crop of Grapes entirely destroyed by mildew, almost to a bunch. I therefore naturally asked why sulphur had not been applied; and the answer was that every bunch had been dusted over and over again with it, as well as syringed with sulphur water, but without the slightest benefit. It had not, however, been applied in time, nor in the proper way; for although dusting over the berries immediately the disease is perceived would certainly stop its progress, yet, used in this way, it must be admitted to have a very slovenly appearance, as well as more or less to taste the Grapes. Now, as sulphur will destroy the mildew after it has attacked the Vine, why not apply it as a preventive, which surely at all times is better than a cure? I would not recommend dusting the bunches or syringing the leaves with sulphur, or anything that has an unsightly appearance; but the method I would advise is simply the one practised by myself with the best results, viz., washing my hot-water pipes or flues regularly over every fortnight with sulphur, during the forcing season, when the pipes or flues are sufficiently hot to evaporate it. This is not only a preventive of mildew, but a sure check to our great enemy, the red spider; and, from some years' experience, I am certain that if the above be properly attended to, no one will have any reason to complain of mildew. In proof of the success of the above, in the spring of 1852 I visited a gentleman's garden, a few miles from London, where he had lost his crop for two successive years, and he had every appearance of doing the same again. Sulphur had been applied to the bunches, but the mildew had spread over the foliage, and even the young wood was attacked. In course of conversation with the gentleman and his gardener, I told them that I thought it was yet possible to destroy it, provided they would clear the house of the plants. This was done, the fire was lighted, and the flue made hot; sulphur was then mixed up in a pail and applied to the flues by means of a brush. The application was repeated twice a day for three successive days, and by the fourth day the disease had altogether disappeared, the berries that had been very badly attacked were cut out, and the remainder ripened and did well, so that, by the aid of sulphur applied to flues sufficiently hot to evaporate it a good crop was secured. I never remember seeing any house of Grapes so badly affected with mildew as the one I have just mentioned. With respect to my own late Vineries, I have fires lighted occasionally, with a view to evaporate sulphur by way of prevention in the manner I have already mentioned. *E. Bennett, Perdiswell Hall, near Worcester.*

**Mr. Glasen's Tree Transplanter.**—A friend having directed my attention to your Number of the 25th November, in which an article appeared referring to my transplanter—the high respect I entertain for your opinion, and justice to myself, has induced me to write to you, for the purpose of referring to some of the remarks in that article. Being perfectly satisfied in my own mind, after very careful examination of trees and shrubs transplanted by my patent, that it has been eminently successful, I naturally feel anxious to impress the same views on others; and being well assured of your strict impartiality on the one hand,

while I on the other part am only anxious to elicit the truth, I feel satisfied you will bear with me in the following remarks. It is admitted on all hands, so far as I am aware, that my transplanter is superior to all previously invented machines for lifting trees in a horizontal (?) position, with a large adjacent mass of earth around the tree, thus forming a ball which includes within it a vast number of the rootlets, and further affording for its weight when placed in its new position an efficient preservative against that injurious oscillation which in other modes of transplanting require so many standing helps to the tree, which in mine are quite unnecessary, thus saving labour and anxiety, but what is of more importance, giving more reasonable ground for success; so that further reference to this point in the superiority of my invention is unnecessary. But it is objected in the article referred to, that by my apparatus the roots were cut to such an extent as would in ordinary seasons be injurious to the tree transplanted, and that this might be prevented by removing the earth round the cube by the ordinary mode, and then carefully gathering up the fibrous roots before applying my apparatus. I believe that in all previous methods of transplanting, the amount of care bestowed on the rootlets regulated the amount of success, and hence the objection was a natural one; but without calling in question the necessity of the utmost care on these, I beg to direct your special attention to this point, that my patent preserves entire the whole mass of rootlets in their native earth within the ball embraced by the cutters. Further, that when cut they are not exposed to the air, but are at once plunged into new soil, where the wound is soon healed, and innumerable spongetlets formed in the new soil to which it has been introduced. In all previous methods of tree transplantation the ball is reduced, and the spongetlets handled and exposed to the air to a much greater extent than by my patent, thereby destroying their functions; there is thus to this extent reasonable ground to anticipate greater success by my method than by any previous modes. It is admitted, by almost all, that the mere cutting the spongetlets, even to the extent that I require to do it, has no permanently injurious effect on the tree, if it is allowed to remain after this is done; the evil then must arise from the rough usage the tree sustains by removal, not from the cutting; but it has been said, why not gather up the fibrous roots and preserve these? In answer, I beg respectfully to say that to preserve these, and apply my machine, is impracticable; but even if practicable, unnecessary. Impracticable, for the application of the necessary mechanical force to secure the ball would crush them to such an extent as would render them useless; unnecessary, as the result of my experience, as after stated, will, I trust, show. Still then the question remains, is not this separation of the tree from the soil by force, injurious to the success of the transplanted tree? All such questions, it is evident, are best answered by a reference to facts, and to these I now beg to direct your attention. I have transplanted within a circle of 50 miles round Edinburgh, and consequently in various soils, 1200 trees and shrubs of almost all sorts, with balls of earth varying from 10 feet square down to 1 foot 10 inches, and all with the exception of three are not only alive, but succeeding apparently as well as if they had not been disturbed. It is true that a few Vines when measured have made a little less wood than those not transplanted, but this might have been expected, and even the three failures can be clearly explained from the peculiar position of the plants not admitting the proper application of my machine. But while gratified to observe the outward tokens of success, I have not been satisfied with this, but have opened the earth round the outside of my ball, and I find that every one I have examined has sent out innumerable spongetlets from every point round the ball where a root has been cut by my apparatus, the existence of these showing me that the gathering up of the spongetlets was unnecessary, assuring me of the continued health of the tree, and further that the trifling deficiency of growth observed this year will be abundantly made up in succeeding ones. As previously stated, my earnest desire is to give the most true assertions to the utmost of my power, and nothing could give me greater pleasure than to submit for your inspection the root of a Scotch Fir, one of 35 transplanted by my machine in March last, and which I have no doubt would at once satisfy you of the truth of my assertions. If you approve of this, I would immediately send it to London for your inspection. In conclusion, then, if the outward appearance of the transplanted tree is satisfactory, and the root when examined equally so, what more can be desired? What further can be done to satisfy the gardening world that my machine is worthy of their approval? At the request of friends whose opinion I highly value, I delayed expressing the conviction of my own mind that my machine would be eminently successful, until proof had been obtained that it would be so. "Delay," said they, "until you see what effects are produced on the transplanted trees; you have no doubt removed them expeditiously, but it still remains to be seen what are its effects on the growth and general appearance of the transplanted trees after the trying season has passed." Well, I have delayed, the result is now seen, appears to be satisfactory to all here, and now submitted for your judgment. I confidently trust that the response to the appeal now to be made to the gardening world: viz., is Mr. Glasen to be supported or not? will be, "The machine is original, it has accomplished what it promised, and deserves and will receive our hearty approval and support." *Stewart M. Glasen, Canonmills Bridge, Edinburgh.* [We should much like to see the specimens Mr. M. Glasen offers to send.]

**Oak Shingles.**—In answer to a question of one of your correspondents as to how Oak shingles are fastened on roofs, I do not remember to have seen any other than the common plan, with hard-burnt plain tiles, viz.: two wooden pins or copper wire, but I do not see why cast iron garden nails should not do, particularly if galvanized. *Somerset.*

**Hartley's Rough Plate Glass.**—I am glad to be able to add my testimony to that of your correspondent Mr. Brown as to the excellence of this kind of glass for horticultural purposes. We have a large conservatory here glazed with it, the plants in which seem particularly fond of the light which is transmitted through it. Among several very fine specimens of Camellias, we have one of the old Double White 12 feet in height, and from 9 to 10 feet through the branches; one of Imbricata of similar dimensions, and several others of Chandleri and other sorts not much inferior; these stand in the centre of the house along with Tree Rhododendrons, all of which flourish beautifully under this glass, blooming abundantly, and annually making short-jointed wood, clothed with beautiful foliage, while Fuchsias and other plants of a similar description used for summer decoration likewise exhibit the greatest luxuriance. Plants under rough plate remain much longer in bloom than they do under ordinary glass, and that, too, without shading, a practice which, however necessary with common glass, is objectionable, as it takes up time and has a bad appearance. We have the roof of a stove in which Orchids are kept, glazed with Hartley's glass, which also suits these plants admirably, and they grow under it with great vigour. I have no doubt that it will ultimately supersede all other glass for horticultural purposes, as it can be used economically in much larger sheets than other glass; for example, the roofs of the



conservatory and stove just referred to are ridge and furrow, and are glazed with sheets 4 feet by 2 feet 3 ins., the sheets used for glazing the sides of the conservatory being the same width but rather shorter. This does away with much of the wood-work in such erections, and consequently increases the light in them, a point of great consequence in our climate, where every ray is wanted. *W. Hepburn, Millfield Gardens, Stirlingshire.*

*Journeymen Gardeners in New York.*—A journeyman gardener left Scotland during the present year, and writes home thus to a friend:—"You will be anxious to know how I have got on since I landed. I could have commenced work the first day that I landed, but did not incline to engage in such a hurry. I thought that I would take a week to look about me and consider things. During that time I went to twelve different parties, each of whom would have given me instant employment, so at last I made a bargain with one. He is a Scotchman, and commenced here 14 years ago with a small greenhouse, and slept in the stove-hole; now he is independent. He has a large nursery and about a dozen greenhouses. He wished me to engage for a year at 80*l.* sterling, but I preferred engaging for 3*l.* 6*d.* per week, and if I get a better offer I am at liberty to take it on a week's warning, unless he chooses to give me as much. I pay 1*l.* 5*s.* 6*d.* for bed, board, and washing. Gardeners are not here as they are in the old country, afraid to leave one place till they are sure of another. Here you may leave one place to-day and be sure of another to-morrow. Flower gardens are not so numerous as in the old country, but they are commencing new ones with spirit. Several hundreds of gentlemen are building fine houses, and are going to lay out flower gardens next summer. It is supposed that, in consequence, the wages of journeymen gardeners will be as high as two dollars, or 8*s.* 4*d.* sterling a day, by Whit-Sunday next. A friend who came out here some years ago has been fortunate enough to get a situation as head gardener with between 200*l.* and 300*l.* a year." *T. Long, Kilmarnock.*

*Picea nobilis* (see p. 774).—Your northern correspondent is surprised that "M. S." should think that a journey of 200 or 300 miles would be amply repaid by seeing a plant of *Picea nobilis* 14 feet high, since he in Northumberland has a paragon of loveliness 18 feet 3 inches. I would, however, refer both gentlemen to the Duke of Devonshire's Pinetum at Chatsworth, where I have seen a plant of the above species 42 feet high, 3½ feet in circumference, with its lower branches quite covering a circumference of 51 feet. *M. P., Dec. 4.*

### Foreign Correspondence.

*Bombalo, Manaroo District, New South Wales* July 11, 1853.—I live on Manaroo Plains, 60 miles west of Twofold Bay by the road, and about 9 miles from the township of Bombalo. The elevation of this sheep-run above the sea is, by aneroid, 2383 feet. The road from the bay to the plains is but a track, practicable in fair weather for bullock teams. The extent of the run in circumference is 28 miles, containing an area of somewhat under 24 square miles, and capable of keeping perpetually 5400 sheep. In a very dry season they are forced to live on the roots of the Grasses or the leaves of the Gum trees. This winter is unusually wet. In June I gauged nearly 7 inches of rain, of which nearly 5½ fell in 48 hours. In the same month the aneroid was observed at 10 P.M.—highest, 27,950; lowest, 27,230 inches. Fahrenheit's thermometer at dawn (mean for the month), 38°; it is hung at the back of the house in a small porch, with a southern exposure only. The prevailing wind was from the south, as it has been for some time past, causing a coldness in the seasons latterly. In November last, influenza was raging up here; that month being shearing time, we flock-masters were put to great inconvenience through it. The disease has now appeared again. The English vegetables and flowers thrive well with us. Wheat is grown for the use of the stations; servants require to be supplied with 1 peck a week a man, or with 10 lbs. of flour. The hay grown is either Lucerne or Oats. This place is a little to the north of the 37th parallel of latitude, and nearly intersected by the 149th meridian; it is watered by a chain of ponds through the centre, which extend from a range on the north to the Bombalo river on the south for upwards of 8 miles; three or four are, in places, close together—others, half-a-mile apart. On the west, rise bold undulating hills, some 300 feet above the ponds; they are clear of timber, except here and there a plantation of Gums, for the most part saplings. On the east there is similar rising ground, only that it is mostly wooded with an open forest; the trees are almost all the white Gum, a few Mimosa, and others with flowers like the Mimosa, but of a dingy white instead of yellow—carpenters call it lightwood, and the Vandiemianians, I believe, stinkwood. There is also the native Cherry, with the stone outside its Yewberry-like fruit. The sheep station huts for the families are near these ponds; at each are two flocks, folded at night in hurdles and shepherded by children—the dry flock consisting of 1000 and the ewe flock of 800. The father of the family, or one of the grown-up lads, sleeps in a box outside of the hurdles; his dogs give the alarm, should a native dog come near. Wages just now are high. I am giving to a family for shepherding and watching two flocks 63*l.* a year and three weekly rations; a single ration consists of 10 lbs. of flour, 10 lbs. of meat, 2 lbs. of sugar, and 4 oz. of tea per week. Some idea may, therefore, be gathered of the kind of encouragement given here. *I. B.*

### Societies.

HORTICULTURAL, Dec. 6.—Dr. HENDERSON in the chair. This being a day on which Chrysanthemums were invited, several collections of that useful autumn flower were produced. Of these by far the best was a group of Pompones from Mr. Robinson, gr. to J. Simpson, Esq., of Thames Bank, Pimlico. As regards good cultivation nothing could possibly surpass the varieties shown, being in perfect health, dwarf and bushy, and literally covered with bloom. The sorts were Mignonne, brownish yellow, Daphne, purple; Nelly, white with a yellow centre; La Gitana, bluish white; Atropos, brownish red; and Drine Drine, yellow. A Knightian Medal was awarded. A second collection of large flowered sorts came from Mr. Giffins, gr. to P. Johnson, Esq., of Church Street, Stoke Newington. It consisted of extremely large plants which, although showy, were what gardeners term "leggy," and also very much stunted. The kinds were Phidias, General Negrier, Christine, Pilot, Annie Salter, and Madame Camerson. A Banksian Medal was awarded. Messrs. E. G. Henderson, of the Wellington Road Nursery, St. John's Wood, furnished a group of Chrysanthemums, but they arrived too late for competition. The most remarkable among them was perhaps President Decaise, a reddish-brown sort with a light centre, the two colours in the same bloom producing a charming contrast. Of some new kinds exhibited by the same firm from M. Van Houtte, of Ghent, the following were the best, viz., Marcian, a medium-sized kind with pink petals, fading off at their points to white, thereby giving the flower the appearance of being striped or mottled; Jonas, a small-flowered sort with reddish brown petals, tipped with yellow; and Mdle. Angeliue Richard, a medium sized sort, with compact heads of flowers nearly white in the centre, with a pink rim round the circumference of each bloom, and altogether very pretty. Messrs. Chandler, of Vauxhall, sent a collection not for competition. It consisted of Alveoliflorum, Justine Tessier, Junon, La Fiancée, Daphne, Fenella, Graziella, La Rousse, Mignonette, La Sapagon, Atropos, and Nelly. These, as will be seen, were all fine kinds of Pompones. Mr. Spary, of Brighton, sent a plant of Queen of Gipsies, with a view to exhibit a peculiar mode of training, which, when carried well out, as in the present instance, has a neat effect. Mr. Spary stated that the plant was struck in March last, in a 3-inch pot, and had been kept in a cold frame till the end of April, when it was shifted into a 6-inch pot, pinching the top off and exposing it to the open air. In June it was shifted into an 8-inch pot, when training was commenced by placing a horizontal wire trellis on the pot, so as to project about 6 inches beyond the rim, dividing the shoots, and leading the longest to the outside, keeping the next lengths to fill in between, and the shortest for the middle. These were tied as they progressed every week, until July. Then each of the shoots was topped, and as soon as the plant began to break, it was again shifted into a 9-inch pot. When the laterals were long enough, they were then regulated and tied, so as to fill and form the plant, until September, when the centre shoots were allowed to turn up, keeping the outside ones tied down a fortnight longer, to make them shorter, so as to make the plant assume the form of a cone. When it was set for bloom, it was again shifted into a larger pot, to strengthen the flowers, and prolong its growth. The plant was then removed to the greenhouse to bloom. The Pompon varieties are admirably calculated for this style of growth, but they require autumn-struck plants to carry the plan out to perfection. Plants managed in this way are dwarf and compact, and very suitable for front shelves or table stands in conservatories or greenhouses. A Certificate of Merit was awarded.

In addition to Chrysanthemums, table Pears from places south of the Humber formed subjects of special exhibition on this occasion. Of these the best came from Mr. Snow, gr. to Earl de Grey. They consisted of Beurré Diel, Chaumontel, Glout Moreau, Passe Colmar, Van Mons Leon le Clerc, and Napoleon. These were all beautiful fruit of their respective kinds and well deserved the Banksian Medal which was awarded them. Scarcely inferior was a collection furnished by Mr. Ingram, from the Royal Gardens, Frogmore, and to which a Certificate of Merit was awarded. This contained Glout Moreau, Chaumontel, Beurré Diel, Vicar of Winkfield, Marie Louise, and Knight's Monarch. These, as well as the former, were extremely well ripened. They were all from a west wall, except the Chaumontel and Beurré Diel, which were off the semi-circular wire trellises which span the borders like an arch by the sides of the principal walks at Frogmore, and which had in consequence acquired a rich cinnamon brown skin. Mr. Hill, gr. to R. Sneyd, Esq., of Keele Hall, Staffordshire, produced the following: viz., Beurré Bosc, Glout Moreau, Duchesse d'Angoulême, Beurré Diel, Louise Bonne, and Marie Louise. With the exception of Glout Moreau, which was very green, these were fair fruit for the part of the country in which they were grown. Mr. M'Ewen, gr. to the Duke of Norfolk, at Arundel Castle, also sent a collection of Pears; but they arrived too late for competition. The Rev. J. E. Gray, of Wembley Park, Middlesex, sent two specimens of the well-known baking Pear, Uvedale's St. Germain; they were off a west wall, the tree on which was stated to have borne 111 fruit. The specimens exhibited were reported to weigh respectively, when first gathered, 1 lb. 7 oz. and 1 lb. 4 oz.

Of foreign Pears, Mr. Lewis Solomon, of Covent Garden Market, sent examples of Chaumontel, Glout Moreau, St. Germain, Easter Beurré, Winter Nelis, and Beurré Diel; although these were large and fine as fruit from so southern a climate might be expected to be, yet some of the sorts were nearly, if not quite, matched, as regards size and good appearance, by similar kinds in the collections of Messrs. Snow and Ingram. The same cannot, however, be said of some specimens of the White Calville and Reinette du Canada Apples, which were also furnished by the same eminent dealer; these were certainly very superior to anything of the kind we can produce in England, more especially as regards fine colour. They were also very large in size. A Banksian medal was awarded. M. Langelier, of St. Helier, Jersey, sent a large collection of Pears, which were, generally, poor specimens, but which were useful, inasmuch as they served to show to what kinds certain names have been given in Jersey. The more important sorts were, Bergamotte de Parthenay: Rather large, Bergamotte-shaped, with an open deep eye, russeted. Philip: Medium sized, obovate, tapering to the stalk, which is very long. Beurré gris d'Hiver: Shape of brown Beurré, colour dark brown russet. Doyenné Marbré: Roundish obovate, not unlike a large Winter Nelis, said to be rich; one of the fruits was obscured by being streaked with red. Suzette de Bay: Middle sized, turbinate, greenish. Beurré d'Amber: Middle sized, pyriform, thickly covered with cinnamon russet. Blanc Perné: Middle sized, roundish obovate. Beurré Chien: Rather large, irregular shaped, greenish. Mansuette d'Hiver: Middle sized, pyriform, skin smooth, yellow. Duc de Bourdeaux: Middle-sized oblong-obovate, yellow dotted with brown, and tinged with bright red next the sun. Doyenné des Chasseurs: Middle-sized, onion-shaped, greenish brown. Beurré Duhamel: Said to be a first-rate fruit, middle-sized, obovate, russeted. Belle de Brissac: Middle-sized, obovate. Bezi de Montgeron: Size, shape, and somewhat the appearance of the Swan's-egg. De Grosellier: Middle-sized, pyramidal, with a long straight stalk; colour greenish brown. Colmar Nelis: Form of Passe Colmar. Herefordshire Seedling: Has the appearance of Winter Nelis. Icône: Small and round, with a long stalk. Marjol: Middle-sized, obovate, with an open eye. Reine d'Hiver: Small, roundish-obovate, deep red next the sun. Grand Mogul: Middle-sized, pyriform, smooth, yellow. Mansuette: Different from that figured in Duhamel. Beurré d'Effingham: Round, hollow at the eye and stalk; much resembles Pomme Poiré. Bon Chretien Musqué: Resembles Bezi de Montigny. Crasane d'Hiver: Like a Gilgil from a standard. Roi de Rome: Probably Napoléon. Beurré de Flandre: Appears to be the Beurré Rance. Princess d'Orange: Doubtful. Beurré Bronze: Like that of Bréfort's collection; but different from that received from Van Mons. Orange d'Hiver, Buffon, Beurré d'Hiver: These are different from the sorts received under these names in the Society's garden. Van Mons' Beurré: Middle-sized, obovate, colour of a russeted Beurré Diel. Gros Retin d'Enghien: Appeared to be the Catillac. Passe Colmar Doré: This is retained as distinct by various foreign nurserymen; but it is, doubtless, nothing but the Passe Colmar. Beurré Chargaue: Resembles the Beurré de Capiaumont. St. François: Small, roundish, stalk short; skin russeted; said to be first-rate. (Girondelle) or Jarvondelle: Resembles the Beurré Rance. No. 1031, Seedling, 1853: Middle-sized, obovate; colour of a russeted Beurré Diel. Langelier's Seedling Queen Victoria, bore considerable resemblance to the Glout Moreau. No. 1019, unknown: In the way of St. Germain. Large Pear, unknown: Appeared to be the Bon Chretien de Verneis. No. 297, unnamed: Is probably the Burgermeister. Beurré Goubault: Form of Passe Colmar. Duchesse de Berri d'Hiver: Resembled Beurré d'Arenberg. Nouvelle Doré: Middle-sized, obovate; skin shining, yellowish; different from one received under this name in the garden, which was very like Doyenné Gris. Dutrior: Middle-sized, roundish, with a long stalk; greenish brown. A Certificate of Merit was awarded. Finally, J. Abell, Esq., of Limerick, sent a collection of fine looking Pears from that part of Ireland of which some account was published at p. 758. He likewise furnished fruit of the Tankard Apple, more commonly named Catshead, and of Easter Pippin or French Crab, the produce of 1852, and still in good condition. A Banksian Medal was awarded for the Pears, which were highly coloured and extremely well ripened. F. Nash, Esq., of Bishop's Stortford, sent, as he always does about this season, a beautiful basketful of Grapes, consisting of Cannon Hall Muscat, Muscat of Alexandria, and Black Hamburgh. These were large, both in berry and bunch, quite equal to the produce of former years, and well deserved the Banksian Medal which they received.—Some Strawberries were shown by Mr. Morgan, gr., Raynham Hall, near Fakenham, Norfolk. They consisted of Cuthill's Black Prince, for which a Certificate of Merit was awarded. They were stated to be from forced plants, which after bearing an excellent crop in spring, were turned out into the open ground and their flowers removed. After being out some months, they were brought into a Vinery and encouraged to bear, and on the 20th of September a large dish was gathered from them. The fruits shown were small, but it was stated that up to the middle of November they were very fine.

Of plants, Messrs. Jackson, of Kingston, sent an interesting group of Orchids, comprising *Barkeria Skinneri*, and its large variety beautifully bloomed; *Cymbidium giganteum*; the scarce *Oncidium Barkeri*;



*Odontoglossum Inseayi*; the red-eyed variety of *Calanthe vestita*; the buff coloured *C. curculigoides*; a handsome white veined *Anæctochilus*, and cut specimens of *Cissus discolor*. The latter were sent to show the insignificant character of the flowers of this charmingly variegated plant. A Banksian Medal was awarded for the four first-named plants. From Messrs. Standish and Noble came a new half shrubby *Gentian*, which, owing to the sunless state of the weather, unfortunately did not open well. By means of placing it before a bright fire, however, sufficient blooms were forced to expand to show how pretty it is. The flowers are light coloured and spotted inside the base of the bell, while towards the top they exhibit a beautiful blue. Messrs. Standish say "it is quite hardy, having stood in the open border during the winter of 1852 and 1853. In September last it showed signs of flowering, when it was taken up and placed in heat for the purpose of bringing it at once into bloom. About a month since it opened its first flower; these blossoms are only open in the day; at night they are closed. But they are of great duration; for the first flower is still in perfection, opening every day." A Certificate of Merit was awarded it. Mr. Lidgard, of Hammersmith, sent three heads of *Manchester Solid Red*, and a similar number of Wall's *Invincible White Celery*. From the Garden of this Society came *Bilbergia Moreliana*, *Selago distans*, a most useful plant for winter flowering, a very fine variety of *Cymbidium giganteum*, several *Pompona Chrysanthemum*, a collection of Pears in which was *Beurre gris d'Hiver Nouveau*, a new sort likely to prove a good winter kind, and *Epine Dumas*, also new and promising. Roots of the following vegetables also came from the Society's Garden, viz., *Oca Rouge*, *Gesnera esculenta*, a tender plant, *Oxalis Deppei*, and *Lathyrus tuberosus*, or what are called Dutch Mice. Since the failure of the Potato, roots of this kind have been brought into notice, more especially on the Continent, in order to discover what could be made of them as food; but with the exception of *Oxalis Deppei*, little good has been done with them, and even the latter has of late years fallen greatly into disuse. As to the Dutch Mice, they are of about the same value as ground nuts.

## Notices of Books.

*Twenty Lessons in British Mosses*, by Wm. Gardiner. First series. Fourth edition. Longmans.—We are glad to see a reissue of this most useful and unpretending little work, which teaches more than books of formal science to those who turn to botany as an amusement, rather than a serious pursuit. Ladies and children may, by the aid of this, and the second series, make themselves acquainted practically with the common species of Moss, and learn to understand the nature of what they only before admired. We have frequently recommended the little book to our friends, and never was the recommendation followed by complaint. Such books are important, though humble, helps to the great and difficult art of knowing how to observe. We are the more anxious to renew our recommendation because buyers will so contribute their mite to poor Gardiner's orphan child.

*Seeman's Botany of the Herald* (Reeve & Co.) has reached a third number, which carries the Flora of Panama as far as Onagraceæ. Among the admirable plates are included figures of a new genus, called *Erblichia*, allied to *Turnera*, and of a *Pentagonia Tinajita*, which must not be confounded with Schauer's *Pentagonium*.

*Horsemanship; or the Art of Riding and Managing a Horse*: adapted for the guidance of Ladies and Gentlemen on the Road and in the Field; with Instructions for Breaking in Colts and Young Horses. By Captain Richardson, late of the 4th Light Dragoons. London: Longmans, pp. 140.

The object of the author of this excellent essay is, as we learn from himself, "To teach the noble art of horse-manship, with reference to the ease and perfection of the rider, and to the comfort and welfare of the animal." The art of horse-manship, like the arts of fencing, swimming, &c., can only be thoroughly acquired by long practice, early commenced; but the hints of a master are, in each, of great use and save the learner much time and trouble. The 10 lessons now before us are written by one evidently well acquainted with the subject, and in a style clear and precise, without being wearisome. Throughout the work the reader's attention is directed to that which it is most necessary to remember; the illustrations are of great assistance in this respect, and are not, as is too often the case, mere representations, more or less well executed, of a horse with something on his back. Great stress is everywhere laid upon the management of the reins, the most difficult as well as most important part of horse-manship. The instructions for ladies contain whatever it is necessary for them to know of riding, and is possible to be communicated without actual demonstration; and the appearance of the book in general is also such as to merit a place upon their table.

*The Botanist's Word Book* (Reeve & Co.).—It has been our lot to examine many bad books, but we never yet saw one so thoroughly worthless as this. What pretensions "George Macdonald, Esq., Fellow of the Royal Educational Institute of Scotland," or "James Allan, Ph.D., A.M., &c., Professor of Chemistry in the Royal School of Medicine and Surgery, Pine Street, Manchester," who avow themselves the authors of such

a farrago of disreputable blunders, may have to acquaintance with other branches of knowledge, we cannot say; but it is clear that they are profoundly ignorant of their own ignorance of the particular science which this book pretends to illustrate. Only imagine a teacher of botany telling his students that *aceros* is a term applied to the leaves of the Yew, that *acina* (*proh pudor!*) is the name of the "small granules which make up a bramble or Mulberry"—as if there were the smallest analogy between these two kinds of fruit; that the *arillus* is "the outer covering of a seed," and that *placentation* is "the arrangement of the cotyledons at the time the seed is beginning to grow!!!" Messrs. Reeves are respectable publishers, who have a character to lose, and many of the works brought forward by them deserve all praise. We therefore trust they will see the propriety of instantly withdrawing a book which is perfectly disgraceful to all concerned in its publication, and which is only fit to be consigned to the trunk-maker.

## New Plants.

### 30. CŒLOGYNE PANDURATA.

*C. racemo pendulo, petalis sepaliisque lineari-oblongis, labello basi concavo corbato-oblongo recto, ciliis apicem crispis setosis-mucronatis (lateribus deflexis panduratis) lobis basilatis natis acuminatis disco laevi tricarinato utrinque cristâ altâ duplici verruculosa aucto citra cristam copiosè verrucoso.*

We are indebted for this striking species to Mr. Lodiges, who informs us that it was imported from Borneo by Mr. Low. The flowers are green, in a pendent raceme furnished with brown cucullate deciduous bracts as long as the peduncle. Each flower is about 4 inches across if fully expanded, with pale green sepals and petals, and a singularly warded lip, marked with deep, broad, black veins and stains, upon a greenish yellow ground. The crests are two deep double-warded lines on each side of a three-ribbed central disk; these crests converge towards the middle of the lip, where they lose themselves in a field of pallid, rugged, irregularly situated, often two-lobed warts. The column is green, slightly expanded into thin rounded edges. The lip, although really oblong, yet, in consequence of the manner in which the sides are bent down, has much the form of a violin.

31. *GOLDFUSSIA ISOPHYLLA*. Nees von Esenbeck in *De Candolle's Prodrum*, XI. 176.—*Ruellia isophylla* of Gardens.

A small hothouse shrub, resembling the now common *Goldfussia anisophylla* in general appearance, but having all the leaves of equal size, and a less straggling habit. The leaves are narrowly lanceolate, tapering to the point, slightly serrated. The flowers usually appear in threes at the end of a rather slender short axillary peduncle. Their calyx is very unequal. The corolla has quite the form of *G. anisophylla*, is very pretty, pale violet, with dark violet herring-bone veins on the tube at the back of the lobes. The stamens are enclosed within the tube, stiff, erect, hairy on the outer side; the two larger anthers have hemispherical fleshy connectives, on which is planted a pair of deep lobes, one above the other, each opening towards the side of the corolla by a pair of valves; the smaller stamens are almost rudimentary, stand at the foot of the others and are firmly united to them, so that this plant is at once didynamous and diadelphous. The ovary is oval, tipped with glandular hairs, and seated in a fleshy toothed disc; each cell contains two superposed ascending ovules. The stigma forms one side of the end of an acuminate style, and is therefore perfectly simple. *Hort. Soc. Journal*.

## FLORICULTURE.

**TREATMENT OF THE CINERARIA.**—Few flowers are more valuable during the dull winter and spring months than the *Cineraria*, exhibiting, as it does, almost every shade of colour, from a bright rich crimson to a beautiful sky blue; and few plants last longer in beauty. *Cinerarias* are readily propagated by means of suckers, which are pushed freely from old plants, provided they have been properly cared for, liberally supplied with water, cut closely down after blooming, and placed in a shady situation; and if required they should be top-dressed with a light compost, in order to encourage the suckers to strike fresh root; or they may be turned out of their pots and placed in a light compost of decayed leaves, &c., under a shady wall. The old plants may be broken up early in August, by which time the suckers will be found sufficiently strong. Select as many as may be required, which should be potted in 3-inch pots and placed in a cool shady frame, kept close for a few days, and slightly watered with a fine rose. Care must be taken, however, not to over water, as *Cinerarias* are very liable to damp off at this stage; in fact, more are lost at that time than during any other period of the season. As soon as they are sufficiently established, remove them to a more airy situation, and place them as near the glass as convenient, in order to keep them dwarf and stocky. As soon as the roots have made their appearance through the soil give a liberal shift, say a 6-inch pot, but never pot unless the soil is in a good moist state. From this time until they are placed in their blooming pots little will be required beside a liberal supply of water and air, unless they become attacked by green fly, which, however, will not be very troublesome provided the plants have been kept sufficiently moist, and occasionally on fine days watered with a fine rose overhead. Should it, however, be found troublesome, fumigating with tobacco must be resorted to. When the roots have again made their appearance through the

soil, the plants may be transferred to their blooming pots; 9 or 11-inch pots will be found sufficiently large for handsome specimens. During the winter months watering should be done in the early part of the day with care and judgment, admitting air on every favourable opportunity, and never allowing any decayed leaves to remain on the plants to encourage dampness. If intended for large specimens the early blooms should be pinched off, and the shoots regularly tied or pegged out, in order to admit a free circulation of air. Liquid manure, with occasional waterings of soot water, will be found very beneficial from this time to the end of the blooming season. Little more will be required, except neatly tying out, giving a free circulation of air in bright weather, and avoiding at all times wetting the blossom. After their blossoms have faded and seed gathered, they may be again treated as above. In saving seed, the most brilliant, distinct, and best-shaped flowers only should be selected, dwarfness of habit should also be a matter of consideration at all times; remove the seedling plants to a frame by themselves, and be careful not to let the wind blow upon them, or the seed may be entirely lost. Many persons prefer raising seedlings annually, which they consider less trouble, the plants being generally much stronger and more healthy than those from root suckers; besides, a greater variety of colour is obtained. My own opinion is that for those who study to make a fine display of bloom, and at the same time have but little convenience, seedlings are preferable, as the latter will produce enormous heads of flowers in very small pots, if encouraged with plenty of manure water. The seed may be sown at intervals from the end of April to July; if wanted in blossom from November, April will be the best month to sow. The seeds may be sown in pans or in a shady open border, and as soon as the plants have become sufficiently large, they should be potted in 3-inch pots. The remainder of their treatment should be the same as for offsets or suckers. The soil best suited for the *Cineraria* is two parts fibrous maiden loam, one ditto of rotten cow-dung, and one ditto of leaf-mould. To this add a portion of silver or river sand; if this is not procurable add a portion of fibrous peat, which will be found to keep the soil open and porous. These should be all well mixed together in a rough state, merely taking out the large hard lumps or stones; success in plant cultivation depends chiefly on drainage, therefore this should always be borne in mind and well attended to at all times. The above instructions, if properly carried out, will be found to produce perfectly successful results, whether the plants be intended for home decoration or for exhibition. *E. B.*

**TREATMENT OF THE ANTIRRHINUM.**—This beautiful plant is among the most constant and showy of summer and autumnal flowers, as it produces two successions of abundant and brilliant bloom during the season; and yet it is a flower which few florists think it worth their while to cultivate: still, with the little care that has been bestowed upon it, few have made more improvement during the last half-a-dozen years; and no plant requires less attention, or repays you with a greater or more pleasing variety. To obtain new sorts, save no seed except from the choicest varieties. Sow in February, in seed-pans, which place in a gentle heat, till the plants are from 2 to 3 inches high. Then prick them out into boxes or pots, about 2 inches apart, and gradually harden them off, till the weather is sufficiently mild to plant them out, which do in good rich soil. With this treatment, they get a good size early, and bloom about August. Such as are worth keeping, propagate from by cuttings; destroy all bad-coloured flowers, as soon as you see them bloom. For stock the next season, take cuttings of the whole of your plants you intend keeping; which, when rooted, keep in single pots, in a cold frame. During the winter, it is not well to trust to your old plants, for a severe winter will destroy them; besides the blooms from young plants, that are well grown, are much finer. In the spring, bed them out in a rich soil, varying the colours as much as possible, so as to produce a fine effect; in July, they will be a mass of bloom. When the beauty of the flower, which lasts a long time, is over, cut off all the old flower-stems, with the exception of a single spike, for seed, if you want it: thus treated, they will be covered again very soon with flowers, and remain in bloom till the latter end of November. The second blooms are not so large in the spike as the first, but the plants are more compact, and the colour equally brilliant. The only reason for raising the seedling plants in heat is, that by that means you gain a season. I raise mine in a Vinery, February being the time I commence forcing, and the house is then at a moderate temperature. *J. R.*

## Miscellaneous.

**Large Apples.**—There are two Apples on exhibition at Rochester, belonging to Col. James Gallery, of enormous size. One is a *Pippin*, 15½ inches in circumference, weighing 19 ounces. The other is a *Russet*, 11¼ inches in circumference, weighing 10 ounces. *American Paper*.  
**Improvements in the Manufacture of Manure.** By E. T. Simpson, Calder Soap-works, Wakefield, York.—Patent granted May 13, 1853. (No 1230).—Claim: The dissolving of wool, hair, woollen-wags, shoddy, and other waste products of wool and hair with acid, by means of artificial heat, and combining the fluid obtained with bones, coprolites, animal charcoal, or other similar substances, for the purposes of manuring. *Mechanics' Magazine*.



## Calendar of Operations.

(For the ensuing week.)

## PLANT DEPARTMENT.

Very little can be attempted at this season, beyond attending to the mere requirements of plants in the way of air and water. This attention is requisite at all times; but for the next two months more care is needed in their application than at any other season. In dull foggy weather air should be admitted so as to pass over the heating pipes or flues on entering the house; when this can be done, a constant circulation, more or less, may be allowed to hard-wooded plants with advantage; frequently change the position of the best specimen plants, that their foliage may be equally good on all sides. Keep the very delicate plants on shelves near the glass, or otherwise elevated, to give them the full benefit of what light there is at this season. Remove any moss, lichens, &c., which may yet remain on the surface of the soil, and let decayed leaves be removed as they occur. Stove plants which are yet in bloom will require air once daily; the air of the house may now be kept nearly in a dry state, as the temperature will be comparatively low and the external air damp; the necessary waterings, &c., given to the plants will produce an atmosphere damp enough, even with the counter-acting effects of fire heat. A few plants required to bloom may be started into growth, or where early cuttings for propagation are required. Bring forward hardy plants being forced for the conservatory gently, and remove them to more heat and light as they advance. Guard against damp in pits and frames by proper ventilation; dry peat or charcoal ashes are good preventives against damp when used as a floor for placing plants on in damp structures. In foul weather materials for future operations should be prepared. Labels, crocks of various sizes, including broken charcoal, dry moss, sticks for tying and training, and a variety of other things should be got ready.

## FORCING DEPARTMENT.

**PINERY.**—Pines now ripening should be fully exposed to what little light we have, to improve both colour and flavour; when grown in pots the plants may be taken from the bed and placed near the glass for the above object. Water with caution, and then only when the plants require it. Swelling fruit should be syringed on the mornings of sunny days; at other times the moisture of the internal air will be amply sufficient with the low amount of light we have just now. Night temperature 60°, rising 10° by day, accompanied by ventilation; 10° in advance of this may be permitted by sun-heat. The earliest rested plants, which will have been in a stationary state for a few weeks, if wanted up early in January, may now have the temperature slightly raised by day, and the bottom-heat at the same time should be increased, unless the plants are very dry. No water need be given for a fortnight after being started, as the bottom-heat will excite the roots quicker when moderately dry. Succession plants in pits should be kept as free from damp as circumstances will permit. Keep up the heat by linings, without, however, inducing undue excitement for the next two months, when the plants will be in a position to grow freely. **EARLY VINERY.**—Where this was started the early part of November, the buds will be swelling; damp the wood two or three times daily, to encourage them to break regularly. The temperature should be advanced very slowly, so as not to exceed 55° by the time the buds are ready to burst into leaf—the day temperature may rise 10 or even 15° higher on bright days. Vines in pots in a similar stage will want water occasionally, and the roots keeping moist. A second house may now be started if a large continuous supply is required in the spring. **LATE GRAPES.**—Look at previous directions: slight fires by day, with air, and the removal of decaying berries and ripe leaves are the principal things to attend to. **PEACH HOUSE.**—Unless very early Peaches are wanted, fires by night, except the frost is severe, should be dispensed with—a little, however, by day when the weather is dull, may be applied; damp the shoots in the forenoon of bright days, but in dull weather the internal air will be sufficiently damp without, until more fire-heat is put on. Cherries, Plums, Peaches, &c., in pots for forcing, if not already prepared, should now be dressed over, and placed in an empty Vinery or Peach-house for two or three weeks before; we directed the necessary repotting, &c., earlier in the season, and all they will now require will be a surfacing of fresh loam to such as were not then potted. Continue to protect from frost the roots of any fruit trees in pots yet remaining out.

## FORCING GROUND.

Much will be required here in the way of preparing beds for successional crops of Seakale, Asparagus, French Beans, Rhubarb, &c. Asparagus is greatly improved by full exposure to light, to give them a natural green colour, without which the flavour is nothing. A slight hotbed may now be made, on which sow a crop of frame Radish and short Horn Carrot; as the heat should remain at a moderate pitch for a considerable time, it will be better to mix a considerable portion of leaves with the dung; when the heat is up, put on 6 or 8 inches of dry light sandy soil, mixed with a little leaf-mould, cover slightly, and close till the plants come up; we prefer sowing each by itself, for in pulling the Radishes (unless they are sown in alternate drills), the Carrots get injured. Make up Mushroom beds, and spawn the last made, when the temperature declines to 70° or 75°.

## FLOWER GARDEN AND SHRUBBERY.

As the routine management of the flower garden will now consist principally in keeping the beds, &c., edgings, and turf clean, and the walks in proper condition, there will be time to look over the shrubbery for the purpose of marking out any alteration in the disposition of the trees and shrubs which circumstances may render desirable, as well as for arranging for future planting. In the arrangement and planting of the shrubbery, whether as single objects or masses near buildings of any kind, some thought should be bestowed in selecting plants which will harmonise best with the architecture or character of the building, on the one hand, and with the adjoining scenery on the other; and the season of the year when it is desirable they should produce the most striking effect should likewise be considered; for, when the grounds of residences are seen principally during the autumn and winter (which is sometimes the case), a selection of trees and shrubs should be employed which are most attractive at this season, either by blooming late, or by giving a warmth of tone to the shrubbery during the above season by the colour of their foliage; thus different kinds of Sumach, Maples, American Oaks, the Liquidambar, and hardy Azaleas, may be named as examples among many others; while the common Dog-wood, when planted in masses, produces a fine effect through the winter, from the red colour of the wood. American plants, Roses, and the principal part of flowering shrubs, should be selected for spring and early summer. Again, Evergreens, including Coniferous plants, are most effective, when the leaves have fallen from deciduous plants, but, perhaps, more especially so, in February and March. We do not, of course, advocate planting exclusively with any one section of the above (except under particular circumstances), but we think much may be done to improve that cold appearance English scenery generally presents, by a judicious employment of plants whose leaves attain a warm tint of colour as they decay.

## FLORISTS' FLOWERS.

The mild damp weather is peculiarly favourable for the ravages of slugs, and Polyanthes on beds are extremely liable to their attacks; no better plan can be adopted than carefully examining the plants after dark with "candle and lantern;" to this may be added an occasional sprinkling of soot. Hollyhocks too, are often grievously attacked by them, and between the crown shoots they harbour securely; the same process must be adopted as with the Polyanthes. Auriculas in frames should have very little water, but abundance of air; look over the plants occasionally, stripping off dead leaves, and stirring the surface soil, this will comprise all the attention they need at present. Many Tulips, from the wet weather, are still unplanted; seize the first favourable opportunity. Pinks and Pansies will require fastening, late planted ones are apt to be uprooted by worms. If opportunity serves, look over Dahlia tubers, to see that they are all right.

## KITCHEN GARDEN.

When the ground is tolerably dry, hoe between Spinach, Parsley, Cabbage, and other growing crops, leaving the soil somewhat rough between the plants as a partial protection. Look to Cauliflower and Lettuce under glasses, to prevent them from drawing, which would irreversibly injure them. In preparing ground for future crops, bear in mind what description of crop the land is intended for; avoid, by all means, cropping with the same kind of plant two years following; and, if possible, allow three years to intervene between the same plant occupying the ground a second time—by a little management this may be easily accomplished. When the future crop and its successor are known, the preparation of the ground becomes easy, and by selecting manure suitable for each, the preparation for the first crop may be made to embrace a partial preparation for the second, at an economy of both manure and labour, as well as the gradual improvement of the soil.

## COTTAGERS' GARDENS.

Pelargoniums that were cut down, disrosted, and re-potted in fresh soil early in autumn, should now, if they have been well treated, be handsome plants, and should be carefully protected from frost. In weather like the present, these, as well as other plants, should be drawn back from the window, or set down on the floor at night. Water very sparingly in time of frost, and even in mild weather no more ought to be given to plants in windows in winter, than just enough to keep all the soil in the pots sufficiently moist to maintain the plants in a healthy state. Cauliflower plants, if any, growing under a south wall, will be greatly benefited by a few Spruce Fir branches, or some other material being laid over them, partly with a view to keep off the severe frost, and partly for the purpose of preventing the plants from being suddenly thawed by sun-heat in the middle of the day, for no plant that is at all tender will stand being subjected alternately to hard frost at night, and a moderately high temperature during the day, which is generally the case with plants that are unprotected in such a situation.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON, For the week ending Dec. 8, 1853, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	BAROMETR.		TEMPERATURE.				Wind.	Rain.
		Max.	Min.	Of the Air.			Of the Earth 1 foot 2 feet deep.		
Friday	1	29.937	29.889	42	21	31.5	41	44	.00
Satur.	2	29.939	29.951	41	36	33.5	40	44	.02
Sunday	3	29.954	29.934	43	35	39.0	40	44	E. .00
Mon.	4	29.907	29.892	46	34	40.0	41	45	E. .01
Tues.	5	30.040	29.930	45	36	40.5	42	44	N.E. .00
Wed.	6	30.019	30.088	44	24	36.0	42	44	N.E. .10
Thurs.	7	30.236	30.164	43	29	36.0	41	45	N. .01
Average.		30.023	29.975	43.4	31.3	37.3	41.2	44.5	0.03

- Dec. 2—Foggy throughout; clear and frosty at night.  
 3—Foggy; dense fog; overcast at night.  
 4—Foggy; densely overcast.  
 5—Foggy throughout; slight rain at night.  
 6—Foggy; densely overcast.  
 7—Foggy; overcast; frosty at night.  
 8—Foggy; fine; partially overcast.

Mean temperature of the week 41.5 deg. below the average.

## STATE OF THE WEATHER AT CHISWICK.

During the last 27 years, for the ensuing week, ending Dec. 17, 1853.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 11	46.44	33.14	39.79	7	0.63 in.	1	3	1	3	5	7	5	3
Mon. 12	46.32	34.59	40.46	1	0.25	1	2	1	6	8	6	5	3
Tues. 13	46.58	32.79	39.82	9	0.16	1	2	1	1	8	8	2	1
Wed. 14	46.60	31.67	40.03	10	0.32	2	3	3	3	7	4	4	1
Thurs. 15	46.93	35.01	41.47	16	0.31	1	1	2	4	7	4	3	1
Friday 16	45.60	36.74	41.67	14	0.68	1	1	2	4	7	4	3	1
Satur. 17	46.74	34.73	40.73	15	0.37	3	1	2	4	7	4	3	1

The highest temperature during the above period occurred on the 13th, 1842—therm. 61 deg.; and the lowest on the 13th, 1846—therm. 11 deg.

## Notices to Correspondents.

MISCELLANEOUS CORRESPONDENTS. May we, while we thank many friends for their good intentions, suggest that, since we have no space whatever in "the Newspaper" for correspondence, it is not in our power to make use of communications, however able, which do not relate to subjects belonging to either the *Gardeners' Chronicle* or the *Agricultural Gazette*.

BACK NUMBERS. Full price will be given for Nos. 37 and 39, 1853.

**FERNS: A C.** We regret to be unable to put the question of Fern fertilisation in any clearer light. Your idea of what a prothallium or prothallus is, is correct. It is nowhere stated that these prothallia are destitute of antherozoids, or spores; exactly the contrary—both are present either on the same prothallus, as in monocious plants, or on different prothallia, as in dioecious plants. If what has been said in our columns does not satisfy your uncertainty, then we must refer you to the works, illustrated with plates, in which the matter is fully treated of. Moore's "British Ferns"—last edition—may be consulted; and you should procure the work.

**FESTUCA SCHREBERI, &c.** *Macoma* will feel obliged by any of our correspondents saying where plants of *Festuca Schreberi* and *Gynerium argenteum* are to be procured; also if either have ripened seed in this country.

**FIR TREES FROM CUTTINGS: Picea nobilis.** You may peg your plant down as soon as the shoots are supple enough to bend. When full of sap they are brittle, when empty they bend easily. Try from time to time. If you cannot satisfy yourself thus, then you should bend the shoots gradually, from week to week, till the operation is complete, beginning now. Do not remove the existing buds. The new one, if it comes, will appear from the surface of the ground; but you must not be too sanguine of success.

**GAS-WATER: A Cricketer.** This will kill the worms, and improve your Grass, although it may at first appear to have killed the latter also. Its strength is so variable that it is impossible to say whether it should be diluted or not. We never saw it strong enough to destroy Grass. As to its effect upon moles we are sorry to say we possess no experience upon that point.

**HEATING: Amateur.** Your plan is perfectly intelligible. We doubt its success, with descending pipes. If you would stop the lower until the water is in motion in the upper pipe, you might succeed; but the plan is very open to objection. It would have been far better to have carried your path over your pipes than to have forced your pipes down lower than the path. We shall be glad to hear how you get on under such circumstances.

**MEALY BUG: Enquirer.** A dry atmosphere has the greatest tendency to generate mealy bug; but it produces no fast pest, any circumstances. The only mode of getting rid of this pest is continual brushing, sponging, and washing, with a mixture of tobacco-water and soft soap.

**NAMES OF FRUITS: S E S.** We do not know of any Apple called Stephen's End. Beurré d'Hardenpont, or Beurré d'Ardent, as it is sometimes written, is synonymous with the Glout Moreau.—*W H H.* A is a large kitchen Apple, resembling the Beauty of Kent; B, Northern Greening; C is worthless. Seeding No. 1 is like a small Downton, but sweeter; No. 4 resembles the Ribston Pippin, and partakes of its flavour; No. 9, a small Russet, tolerably good; No. 10 is tolerably rich. All the others possess but little merit. Having space for two trees on a south-west wall, you may plant, as you propose, an Apricot and a Plum; the former may be the Moorpark, and the latter Coe's Golden Drop.—*E D C.* The Chamois.—*W Golds.* Not Haeon's Incomparable, but Beurré d'El.—*J Wilson.* 1, Ribston Pippin; 3, Hoary Morning; 4, King of the Pippins; 6, Scarlet Nonpareil; 9, Wyken Pippin; 10, Spanish Bon Chretien; 11, Roussellet de Rheims; 12, Swan's Egg; 14, Keswick Codlin.—*McGregor.* 1 and 13, Wyken Pippin; 2 and 3, Blenheim Pippin; 4, Cluster Golden Pippin; 5, Yellow Ingestrie; 7 and 14, King of the Pippins; 8, Easter Pippin or French Crab; 9, Scarlet Nonpareil; 12, Norfolk Paradise.—*C M C.* Blenheim Pippin, or, as it is sometimes called, the Blenheim Orange.—*Shem.* If you will look again at our Number for Nov. 5, you will find that the names of the Apples to which you allude ("No. 1, Alexander; 2, apparently Non-such") are not given without reference to any person. They are given, as you will see, with the names of some Pears, to "*Dor*." Those names do not therefore apply to your Nos. 1 and 2, which appear to be the same sort, but unknown.

**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*T O M.* Apparently a leaf of the Fan Palm, *Corypha umbraculifera*.—*Enquirer.* *Cyanotis vittata*, *Malva cristata*. Plants not in flower cannot be named.

**OAK SHINGLE: O W.** will feel obliged by the gentleman who recommended "Oak Shingle" as a roofing for out-houses informing him (in Yorkshire), who is not acquainted with the exact thing meant by shingle, how it is made, what thickness and what length; whether sawn or riven, and how it should be laid on to produce a neat appearance, as well as a good covering.

**PHARMACEUTICAL SOCIETY: E D W.** We could not meddle with what does not concern our readers, even if we understood the merits of this case.

**POISONING BY MONKSHOOD: A L T.** It is a melancholy case no doubt; but what else can be expected while the merest rudiments of natural history are excluded from the schools of so many of our wise and learned masters? There is no more discrepancy between *Aconitum*, *Napellus* and *Horse-radish* than between a pigeon and a grasshopper; and yet people are so unacquainted to observe, that they do not know the difference. Would not an acquaintance with such things be as useful as puzzling over the spelling of Ne-bu-cha-do-no-zor, or the history of He-li-o-ga-ba-lus?

**VINES: W N.** You may plant in the same house the Sweet-water, Royal Muscadine, Frontignans, Black Hamburgh, and Black Prince; but West's St. Peter's (Oldaker's), would require a house or compartment for itself.



**TO AGRICULTURAL IMPLEMENT MAKERS.**  
**THE DIRECTORS of the CRYSTAL PALACE**  
 COMPANY having now determined the disposition of EXHIBITORS' SPACE, and fixed the Rent to be charged for the same, are prepared to arrange with Agricultural Implement Makers for the Exhibition of Implements and Machines in motion or otherwise.—Particulars may be had at the Company's Offices, Agricultural Department, 3, Adelaide Place, London Bridge.  
 (By Order.)  
 December 10. G. GROVE, Secretary.

**PERUVIAN GUANO.**  
**CAUTION TO AGRICULTURISTS.**  
 It being notorious that extensive adulterations of this MANURE are still carried on,

**ANTONY GIBBS AND SONS,**  
 AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.  
 The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO**, the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—Wm. INGLIS CARVE, 10, Mark Lane, London.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
 Turnip Manure ... .. per ton £7 0 0  
 Superphosphate of Lime ... .. " 7 0 0  
 Sulphuric Acid and Coprolites... .. " 5 0 0  
 Office, 69, King William Street, City, London.  
 N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**THE LONDON MANURE COMPANY'S WHEAT MANURE**, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec. Bridge Street, Blackfriars.

**LAND DRAINAGE.**  
**MR. JOHNSON** (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five Shillings per acre; or if under 80 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

**LAND DRAINAGE.**  
**MR. BAILEY DENTON'S TABLES OF COST**, &c., price 1s. 4d. Sold by METCAL, Parliament Street.  
**MR. BAILEY DENTON'S WORKMAN'S A LEVEL**, price 1l. 10s. Sold by JONES & Co., High Holborn, London.

**WEIR'S DRAINING LEVEL**, PRICE 30s.  
 These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.  
 EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

**PRIZE CHURN.**  
**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BRASS & KEY, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.

**WINTON'S PARKES' STEEL DIGGING FORKS.**



**I HEREBY GIVE NOTICE** that the Steel Digging Forks, hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Steel Digging Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. BRASS & KEY, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.  
 20th Sept., 1853. Signed, FRANCIS PARKES.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Cast-iron BOILERS, and Conservatory and Hothouse Builders, (either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nonconformists to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.  
 From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

**WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.**

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. The parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNs, CATTLE-SHEDs, FARM-YARDs, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

**BIRD NETS, SHEEP NETS, RABBIT NETS, BAT FOLDING NETS** with Bamboo Poles, 14 feet long, 10s. each; Partridge Nets, 2d. per square yard; Rabbit Nets, 4 feet wide, 1½d. per yard; Cocoa Nut Fibre; Sheep Folding Nets, 4 feet high, 4d. and 6d. per yard.—At W. CULLINGFORD'S Manufactory, 1, Edmund Terrace, Ball's Pond Road, Islington (late of Strathmore Terrace, Shadwell), London.

**THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.**—Incorporated by special Act of Parliament.—Offices, 52, Parliament Street, London.

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 This Company executes Works of Land Improvement, viz., Draining, Irrigation, Roadmaking, Enclosing, Reclaiming, and the Erection of Farm Buildings, on advantageous terms; the amount of the outlay being repaid by annual instalments, varying according to the number of years over which Landowners may determine the repayment shall extend.

WILLIAM CLIFFORD, Secretary.

**THE BIRMINGHAM CATTLE AND POULTRY SHOW.**—THE FIFTH GREAT ANNUAL EXHIBITION OF STOCK AND DOMESTIC POULTRY will be held in BINGLEY HALL, Birmingham, on December 13, 14, 15, and 16. The Entries of Poultry exceed 2000 Pairs. The Private View and Annual Dinner on Tuesday next, December 13. There will be Special Trains on all the principal Lines of Railway, full particulars of which will appear in the Advertisements and Bills of the several Companies.

## The Agricultural Gazette.

SATURDAY, DECEMBER 10, 1853.

**MEETINGS FOR THE TWO FOLLOWING WEEKS.**  
 WEDNESDAY, Dec. 14—Agricultural Society of England.  
 THURSDAY, — 15—Agricultural Imp. Soc. of Ireland.  
 WEDNESDAY, — 21—Agricultural Society of England.  
 THURSDAY, — 22—Agricultural Imp. Society of Ireland.  
 FARMERS' CLUBS.—Dec. 12: Botley.—Dec. 13: Framlingham, Hingham.—Dec. 14: Harleston.

THE *Times* of Thursday contains a report from Admiral MORESBY, commanding in the Pacific, conveying very important information on the quantity of GUANO remaining on the Chincha Islands. We must delay the publication of it for a week, but make the following extract from it, for the information of our readers. It appears, then, that from the principal island one-third is already removed, while, of the first quality, there remains about 3,500,000 tons; of the second, 1,500,000 tons; and of inferior about 500,000 tons. On the centre island there may be about 800,000 tons of first, and 700,000 tons of second quality. The southern or smallest island has not yet been worked, but the guano is inferior, and has no great depth. The whole quantity remaining is believed not to exceed 8,600,000 tons. Admiral MORESBY states, as the result of his data, in which he says that he has confidence, that the islands will be exhausted of guano in eight or nine years!

Our readers will remember the force with which certain experiments in the application of manures were expounded a few years ago by Mr. LAWES, of Rothamsted. He showed that it was the quantity rather than the character of produce that was capable of modification by skilful management in this particular: that, whatever naturally were the characteristic features of any plant, the development and not the alteration of those features, was all that lay within the scope of the mere act of cultivation. You could not by the skilful use of nitrogenous manure increase the nitrogenous character of the Wheat grown upon it; all that you could hope to do was to develop to its utmost the character, whatever that might be, of the grain that was being grown. Wheat is peculiarly a starchy seed; and Mr. LAWES found that, by the proper use of nitrogenous manures, that grain became richer, not in gluten and its other nitrogenous ingredients, but in starch its natural product. The whole plant exhibited a more vigorous growth, and proved both more abundant in produce and more marked in the natural character of that produce than ordinarily it was. If, therefore, any one should desire to procure a produce of a different sort, he must aim at it from the very beginning by impressing a different character on the plant he

grows, rather than in the course of cultivation by varying the treatment of the plant in respect of manure. It is by hybridising artificially, or by selection, which is just choosing instances of natural hybridising—so obtaining plants with a natural bent towards the end at which you aim—and then by artificial stimulants which will give them an extra-natural impulse along the course their nature dictates, that this end at which you aim can alone be fully reached.

Now all this finds its parallel and close analogy in the animal world. We have, during the past week, examined several herds of cattle comprising at least 500 head of stock, and yielding among them three different kinds of produce. And we have been exceedingly struck with the similarity of the management, along with the diversity of the result. Just as two fields shall be manured and cultivated alike, and yet the vegetable produce at harvest differ exceedingly, owing to original and inherent difference in the plants, and to that alone; so here were cattle yielding beef, or milk, or young stock of peculiar quality, according to the original and inherent character of the animals, and to that alone. The work of selection has more to do with the result than anything else, and that is as true of any dairy herd near London—of Smithfield, or the show at Baker Street—as it is of a first-class short-horn herd, like that of Mr. TANQUERAY's, at Hendon.

The following is the treatment at one of the places we have lately visited. The cattle are fed at half-past 5 in the morning with a bushel of grains between two, after 6 they have about 4 lbs. weight of hay apiece, and at 9 they get an oilcake between two, or 3 lbs. each; after that another bushel of grains between two, and they are then let out, two at a time, for a few minutes to water; they then come in to a clean fresh bed, and lie down till the afternoon; they then receive 30 lbs. of Mangold Wurzel apiece, and at night get 4 or 5 lbs. more hay. Now can any one tell whether that is meant for milk or beef—or breeding stock? Perhaps the last is the least likely to be named; but we know that the proverb still obtains with many, "that more than half the quality of a beast goes in at the mouth;" and it is said that the English Agricultural Society have cancelled all their plans of the past summer for discountenancing a maxim so mistaken; and certainly high feeding is not unknown in herds of highest character. The bill of daily fare just quoted is, in fact, that at the present time of a great dairy establishment in Camden Town; but that it would be as admirably adapted for making beef as it is for making milk, is proved by experience of it on the spot. Mr. BROWN, the intelligent owner of the herd, tells us no difference is made in the treatment of the animals; and those which are running dry get rapidly fat on the very same food as is given to the good milkers in adjoining stalls. Some of them may yield 16 to 20 quarts a day, though the average of the herd and of the year does not much exceed 10 quarts each a day, and good milkers are bare of flesh on the very food which is making Christmas beef beside them. Here, then, the lesson is plainly taught that quality of animal no less than quality of food, and, if that be ordinarily good, that quality of animal, even more than quality of food, guides and produces the result. And "quality of animal," we must remember, does not "go in at the mouth;" it is handed down from generation to generation until the temperament, habit of growth, and natural tendencies become fixed and constitutional. At the Baker Street Bazaar, during the past week, there has been many an animal covered thick with flesh which has been fed no better than many a milk cow with projecting bones is now being fed in the London byres; and at Hendon we have seen heifers out at grass in which no stinting of food seems able to keep down the natural tendency to fat.

It is this natural character, altered and improved by breeding—as in the vegetable world by hybridising—to which Mr. PUSEY alludes in his letter on agricultural statistics. It is owing to this that maturity is being attained at so much earlier a period, so that the more generous winter feeding which now obtains is made profitable by the natural tendency of the animal, so much increased, to a rapid formation of fat and flesh. Such large breeding establishments as that of Mr. TANQUERAY, at Hendon, and of other short-horn breeders, as well as breeders of other stock, have had and will continue to exert the most powerful and immediate influence on that department of farm economy whose maxima we have this week been looking at in the Bazaar at Baker Street. Mr. PUSEY takes the case of a farm maintaining a flock of 300 sheep half a century ago, but capable now of keeping double the number; and he shows how, though the number is only doubled, the annual supply of meat from that farm is sixfold what it was; for if the art of the cultivator has



doubled its ability, that of the breeder has increased threefold—if owing to well directed exertions on the one side, food for twice the number of stock is provided, yet, owing to exertions on the other, the same number of stock will in the consumption of the same food produce three times as much flesh.

In olden time the flock when numbered in summer would consist of ewe and lamb, shearing, two shear, three-shear, and perhaps four-shear sheep, respectively, only the last being ready for the butcher; the food of five and perhaps six per annum thus resulting in the maturity of one; but now the flock, counted earlier in the season than before, is the ewe, its lamb, and a shearing already fit for slaughter.\* The food of four or five, counting ewe and lamb as one, was needed to produce one fat sheep a year, but now the food of two suffices for that purpose. And the history of cattle is quite as instructive: the influence of skill in the breeding has tended to as great an economy in the feeding—as great a produce of meat from the consumption of a given quantity of food—in the case of cattle as in that of sheep. All this is proved by the way in which the same food acts respectively upon well-bred oxen and on mongrels; it is proved in the experience of all breeders and all feeders; and it is shown in instances exhibited in Baker Street this week.

All those men, therefore, from COLLING downwards, who have devoted themselves to the task of improving the natural character of our live stock, hold a most useful position between the cultivator and consumer. How useful—is shown by the prices which their stock fetches in the market. We hope next year, with the assistance of Mr. STRAFFORD, to describe in detail the steps by which the present condition of our principal herds has been reached: the principles of breeding will thus receive useful illustration; and its results to which nationally and socially we owe so much will be laid open before our readers. It will appear that the quality of stock does not “go in at the mouth,” that a maxim so mischievous as that deserves all the condemnation which any society aiming at agricultural improvement can give it. It will, we believe, on the contrary, appear that many of the qualities of our best stock have been spoiled by what has gone in at the mouth. There was many a heifer sold next market day at Darlington, after CHARLES COLLING’S sale in 1810 when “Young Duchess” was bought by Mr. BATES; and any one of them, we believe, might be taken, and if we knew and could enumerate her progeny through all these subsequent years, and their number now, what a subject for consideration would the contrast be which it would present when compared with the progeny and present number (all of which are known) of the pure-bred animal. Nothing can exceed the symmetry, and especially the quality of the Duchess tribe—and these are valuable characteristics—how valuable, the Tortworth sale has shown. But what about their present number, and their fruitfulness, a quality as valuable? The relationship in which all these qualities stand to what “goes in at the mouth,” is a subject deserving the most serious study and examination by every breeder of our short-horn stock, or any other. We shall endeavour to keep sight of it during our examination of the herds, whose history we hope to give in our next volume.

THERE are several points connected with the results of THE HIGHLAND SOCIETY’S STATISTICAL INQUIRY, published in another column, which deserve particular notice. In the first place the remark occurs—how little is the influence of agricultural maxima on agricultural averages. Here is the far-famed East Lothian agriculture producing but 12½ tons of Turnips per acre over the whole extent of that crop within that county, and but 26 bushels per acre of Wheat. We are assured, indeed, that they are respectively from 4 to 8 tons, and 4 to 8 bushels per acre (Scotch) short of an average crop; but to those who have not been fully awake to the very small influence of maxima on averages in things agricultural, we believe that even

32 bushels of Wheat and 18 tons of Turnips will appear poor returns for Haddington. They are, however, *in fact* very high average returns, such as very few counties in the country can parallel. We may here add the average results of the crops enumerated in the three counties respectively, obtained of course by dividing the total crop by the acreage.

	Wheat.	Barley.	Oats.	Beans & Peas.	Turnips.	Potatoes.
	bush.	bush.	bush.	bush.	tons.	tons cwt
Roxburghshire.	22	35	36	26	15	5 14
Haddington.	26	42	45	27	12½	5 13
Sutherland.	32	34	30	17	16	6 18

It is right that we should add that this year some of the crops were much below an average in Roxburghshire and Haddington. In East Lothian the breadth of Wheat sown was less than usual, and the crop is from 4 to 8 bushels per acre (according to the district) beneath an average. Turnips, too, are deficient from 4 to 8 tons per acre (Scotch). The other cereals in that county, including Beans, are full average crops, and of good quality, when not injured by late exposure. In the Wheat districts of Roxburghshire, the land used in that crop was not more than a third of the usual breadth, while the produce was wanting in quality, and was a third beneath an average in quantity. Barley and Oats were there a full average produce, and rather above an average in quality. Beans and Peas were of average quantity and quality when not injured by weather; and Turnips more than a fifth beneath an average. In the higher districts of Roxburghshire, Wheat was wanting equally in quantity and quality; Oats were about 6 bushels short, and inferior in quality; Barley about 4 bushels short, and inferior; Beans about 6 bushels, and Peas about 9 bushels short, and both inferior; Turnips were about 4 tons per acre below an average. In the upper districts, too, all the cereals suffered much from exposure. In Sutherland the crops generally were more of an average, and the Turnips were superior. In all the three counties Potatoes are above an average both in quantity and quality. These facts are necessary to enable us to make use of the figures now published in their bearing upon Scottish Agriculture, though, as that was not the purpose of the inquiry, they are not alluded to in the return made to Government. We take the liberty of extracting here a passage from Mr. HALL MAXWELL’S letter to Mr. BOOTH of the Board of Trade, when these estimates were sent up, because the example of Scottish agriculturists in relation to this subject, which it holds up to our view, is of great importance in England at the present time:—

“The machinery employed in obtaining the estimates was simple, and proved efficient. In every district there was a committee, composed of the enumerator and of experienced farmers selected from and representing each of the associated parishes. The nature and object of their services were explained in a circular addressed by me to the members of these committees before harvest. Their attention was called to the standing crops; and they were requested to institute inquiry and obtain information within their respective parishes. Their observations were continued during the progress of the harvest; and, at a later period, when experiments in threshing and weighing had been made, the committees were convened by their enumerators, the views of the members were compared and considered, and a statement was prepared and forwarded to me, showing the average acreable produce of each parish, in bushels of grain and tons of roots.

“It is my duty to report to my Lords that I experienced in every district the utmost anxiety to forward the object in view in a thoroughly faithful manner. The communication I have had directly with the enumerators warrants me in making this statement as to them; and they concur in representing the alacrity and good feeling with which the members of their respective committees co-operated with them.”

On Monday last an interesting and, we must add, amusing discussion took place before a very large and influential meeting of the London Farmers’ Club, on THE POLICY OF ESTABLISHING A CENTRAL SOCIETY FOR UNITING THE FARMERS’ CLUBS OF THE KINGDOM. The subject as discussed took pretty much the form—Is it advisable that the *London Farmers’ Club* be the society in question? Mr. BAKER, of Writtle, satisfied with its present position and usefulness, thought not; but he appeared to admit the desirableness of such a central association, and it seemed to be the general opinion that the formation of another body to undertake duties for which the existing club seemed so well adapted, would be fatal to the latter. The upshot, we believe, is that the managing committee are to consider the subject and report hereafter. We have not room for a detailed account of the discussion, and

must be satisfied to give a mere abstract of it here. This, however, we regret the less, because it was one of the most discursive and least instructive that we have listened to.

The question as proposed was *the desirability of a central farmers’ club*. This and its natural offshoot, the policy of permitting the existing society to take that office upon itself, was all that properly was before the meeting; and Mr. RAMSAY, of Newcastle, who ably opened the discussion, confined himself strictly to the former division of the subject, which alone was on the card; and we may add that within those limits he found scope enough for a very interesting and instructive lecture. Subsequent speakers, however, lost sight of the subject altogether: and, from considering the policy of a bond of union by which the general sentiment of the agricultural body on any subject could easily be ascertained, and by which facts could be disseminated as well as opinions gathered—from pointing out that there were many subjects either ignored at existing meetings or incapable of useful discussion in merely local societies which might thus receive thorough investigation, and on which the agricultural body might thus be able to express an influential because a united opinion—they diverged into a discussion of what the subjects were which the central club could thus send out to its constituents. Mr. RAMSAY had referred to the way in which parochial and county rates are levied and corn averages are struck, and, in considerable detail, to the subject of agricultural statistics, as matters which it would be well to discuss in this way; and Mr. BAKER added the general subject of Relations of landlord and tenant, including Tenant right, notices to tenants, &c.—a deservedly high compliment, unanimously cheered by the assembly, being meanwhile paid to Mr. PUSSEY for his efforts in Parliament and out of it, for the benefit of the farmer—and, in connection with this, the imperfect way in which the farming interest is represented in the House of Commons, was alluded to. Other speakers, especially gentlemen from the Winchester Farmers’ Club, referred to the Tenure of land as well as the terms of its mere occupation, as being proper for examination; and topics of political interest, such topics even as have furnished the war cries of political parties were suggested and commended; and this line of the discussion, on an attempt to check it being made, brought out the fact that if the London Farmers’ Club ever had a rule excluding political subjects from consideration, it had long since been in abeyance, and now had no existence whatever. Mr. BENNETT then stated his opinion that all subjects of political character which, at the same time, immediately affected agricultural interests were proper for examination and decision by local agricultural societies, and by their central referee in London. Others considered that the ballot was a question whose bearings upon agricultural interests could not be denied; and others, still, contended that the things needing discussion were not such matters as were connected with farm practice, as shed-feeding cattle, economy of manure, and all that sort of thing, but political details of all kinds—the whole conduct, in fact, of the existing Government, whatever party might be “in” in relation to the agricultural body, which had been the football of every “party” in office in succession, simply because they had had no mouthpiece, no central society, like the proposed association, through which Government could be approached. At length one extremely vigorous and energetic speaker, whose political sentiments evidently did not tally with those of his hearers, declared his opinion that the proposed institution should be for the purpose of discussing, not agricultural subjects only, whether political or practical, but every subject affecting the political and social interests of the people; and so far as the existing opportunity permitted, he appeared determined to proceed with the discussion of such subjects there and then, commencing with the emphatic and twice repeated declaration that “the reason why tenant farmers did not exert the political influence, which was properly their own, was because they were *not men*.” This proceeded as long as very great good humour on the part of the large meeting of gentlemen who were present could permit; and when the speaker was at length called to order, he brought the whole thing to a climax, by declaring, with uncontrollable heat and energy, that in his person, “the farmer and his interests were *put down* by an association of land-valuers and schoolmasters.”

The business of the meeting, after this extravagant display, was at length brought into its proper channel again by Mr. SIDNEY, who gave, in our opinion, the best address of the evening, enlarging, in answer to the gentleman who had just been silenced, upon the advantages which association with local farmers’ clubs would confer in the way of

\* Mr. PUSSEY puts it thus in his letter to Lord ASHBURTON:—“At the opening of the century, in other words, when you and I were boys, you will remember that five-year-old mutton was thought right and proper for a gentleman’s table. If we could learn the truth, I apprehend we should now find that many a saddle has not surpassed one-fifth of that age. In fact, every year mutton is growing younger. What, then, will have been the real increase of production on a farm that maintained, in 1800, 300 sheep, and in 1850 600 sheep? When George III. was king, the flock of 300 might consist of 50 ewes, and of their progeny, five sets of 50 sheep, advancing through five winters upon hard keep to respectable tardy maturity—50 sheep only being draughted off each year to market. But in these better days the flock of 600 sends, perhaps, not 100, but 300 fat sheep every March up to Smithfield. The increase, therefore, is not twofold but sixfold. Besides, as we know that it is fattening stock, especially forced stock, which strengthens the productive powers of the land, the action of the stock upon the crop will likewise have been far more than doubled. Though we knew the exact increase in the number of stock on any particular farm—say as before from 300 to 600—we might fall very short of the truth in assuming that, because the sheep had been doubled, so also, and no more, had the production of meat been augmented.”



balancing the prejudices of those dangerous people, "land-valuers and schoolmasters;" and calling the attention of those who feared the existing club, if the field of its operation should thus be enlarged, to the example of the Society of Arts, whose own usefulness has been vastly increased, at the same time that it had disseminated similar spirit and activity among all the mechanics' institutions in the kingdom, by the association with itself which it had offered and effected much to their mutual advantage.

This example is one most admirably in point, and deserves the attention of the London Farmers' Club. There may be many who may think that its interests would have been better consulted by omitting all reference to such excrescences and extravagances of discussion as took place last Monday. Certainly we are not of them. We entirely agree with a speaker, Mr. PYLE, we think, from Winchester, who emphatically expressed his abhorrence of all secrecy in these matters; this was stated in connection with the subject of agricultural statistics, but it is equally true of agricultural societies. We believe that the long life and usefulness of a society is in proportion to its vigour and activity, and that the vigour of the society will be pretty much in proportion to the entire publicity of all its proceedings, which ought to receive and ought to court the fullest criticism, whether by friends or enemies—a consideration, by the way, which should guide our national agricultural societies as well as our farmers' clubs. The London

Farmers' Club has, in the discussion of which we have thus drawn an imperfect but not inaccurate sketch, shown two things, both of the greatest importance to its future standing: it has shown that it can good-naturedly receive even unreasonable criticism; and it has shown that it contains within its limits men of all opinions and all professions having any connection with agriculture. We believe that the prominent position it already occupies, the frank and independent tone of the speakers, the very fact complained of that men of a variety of professions are in its membership, and, above all, the cordial support of the propositions evinced by the members of some distant farmers' clubs, who had purposely attended the discussion of this subject, point out the course plainly enough which the London Farmers' Club ought to pursue; while the example of the Society of Arts shows with what safety to itself and usefulness to others such a course may be adopted.

As to what the Central Farmers' Club is to do when it is constituted, that must remain for discussion hereafter: there are, however, two points which may now be named in connection with the matter, to which the attention of the managing committee should be directed. The first is the character of Monday's discussion, in illustration of the sort of unanimity which this central body is likely to exhibit when political subjects shall come up for discussion; and the second is, that the Farmers' Clubs intended to be united are nearly all already dead.

### SCOTTISH AGRICULTURAL STATISTICS.

ESTIMATE OF THE CROPS IN THE COUNTIES OF ROXBURGH, HADDINGTON, AND SUTHERLAND, 1853.

NOTE.—These returns are printed by permission of the Board of Trade, but the Highland and Agricultural Society is responsible for their authenticity and correctness.

DISTRICTS.		1. ROXBURGH.				ENUMERATORS.	
No. 1.	Parishes of Kelso, Smailholm, Ednam, Spronston, and Stitchell	...	...	...	...	John Dudgeon, Spylaw, Kelso.	
No. 2.	Yetholm, Morebattle, Linton, and Honnam	...	...	...	...	A. B. Boyd of Cherrytrees, Kelso.	
No. 3.	Melrose, Ancrum, Bowden, St. Boswell's, Lilliesleaf, Minto, Maxton, and those parts of Galashiels and Selkirk in Roxburghshire	...	...	...	...	G. W. Hay, Whiterigg, Melrose.	
No. 4.	Eckford, Crailing, Makerstoun, and Roxburgh	...	...	...	...	James Robertson, Ladyrigg, Kelso.	
No. 5.	Hawick, Wilton, Cavers, Kirkton, Robertson, and Ashkirk	...	...	...	...	Daniel Mather, Hallrule, Hawick.	
No. 6.	Jedburgh, Southdean, Hobkirk, Oxnam, and Bedrule	...	...	...	...	John Ord of Muirhouselaw, Kelso.	
No. 7.	Castleton	...	...	...	...	John Jardine, Arkleton, Langholm.	

DISTRICTS.		WHEAT.		BARLEY.		OATS.		BEANS AND PEAS.		TURNIP SEED.		TURNIPS.		POTATOES.		MANGOLD.		CARROTS.	
		Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.
No. 1.	...	2888	4 2	16,782	1 0	18,951	6 2	1509	4 0	10 7 2	52,695	0 0	1820	5 0	20 0 0	4 0 0	0 0 0	0 0 0	0 0 0
No. 2.	...	1980	5 2	7,317	4 0	12,515	6 2	487	4 0	0 5 1	34,555	10 0	651	5 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
No. 3.	...	3426	2 2	12,110	7 2	42,370	4 0	1738	2 3	11 2 0	59,532	5 0	1519	0 0	12 0 0	17 10 0	0 0 0	0 0 0	0 0 0
No. 4.	...	3028	5 0	14,463	1 2	19,882	5 0	495	6 0	0 0 0	66,992	10 0	1293	10 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
No. 5.	...	650	2 0	4,698	3 3	14,143	4 0	660	5 2	5 5 0	40,490	0 0	1078	7 2	0 0 0	8 15 0	0 0 0	0 0 0	0 0 0
No. 6.	...	2231	0 2	8,437	4 2	21,221	1 1	565	7 2	15 0 0	64,894	5 0	1462	10 0	82 10 0	11 17 2	0 0 0	0 0 0	0 0 0
No. 7.	...	0	0 0	240	7 2	1,732	4 0	3	0 0	1 2 0	2,550	0 0	462	10 0	0 0 0	1 15 0	0 0 0	0 0 0	0 0 0
Acreage.		5181½		14,615½		28,862½		1642½		43½	23,809		1454½		16½	6½			

\* The returns of acreage for District No. 4 show a small breadth under Turnip seed, Mangold Wurzel, and Carrot which was not sown.

DISTRICTS.		2. HADDINGTON.	ENUMERATORS.
No. 1.	Parishes of Haddington, Gifford, Bolton, Morham, and Garvald	...	George Harvey, Haddington.
No. 2.	" Pencaitland, Fala, Salton, Humble, and Ormiston	...	Henry M. Davidson, Haddington.
No. 3.	" Prestonpans, Tranent, and Gladsmuir	...	David Wright, Southfield, Gladsmuir.
No. 4.	" North Berwick, Aberlady, Athelstaneford, and Dirleton	...	George Hope, Fenton Barns, Drem.
No. 5.	" Prestonkirk, Whittingham, Stenton and Whitekirk	...	Matthew Buist, Tynningham, Prestonkirk.
No. 6.	" Dunbar, Innerwick, Spott, and Oldhamstocks	...	P. H. Hume, Lawfield, Cockburnspath.

DISTRICTS.	WHEAT.			BARLEY.			OATS.			BEANS AND PEAS.			TURNIP SEED.			TURNIPS.			POTATOES.			MANGOLD.			CARROTS.				
	Q.	B.	P.	Q.	B.	P.	Q.	B.	P.	Q.	B.	P.	Q.	B.	P.	T.	C.	Q.	T.	C.	Q.	T.	C.	Q.	T.	C.			
No. 1.....	8218	0	0	16,074	0	0	20,934	2	0	2342	0	0	18	3	0	43,406	0	0	3122	0	0	59	10	0	0	0	0		
No. 2.....	6142	4	0	11,527	6	0	14,670	6	0	1647	6	0	45	7	2	31,084	5	0	1578	15	0	0	0	0	24	0	0		
No. 3.....	7336	6	0	11,667	6	0	12,249	2	0	2445	2	0	56	7	0	24,283	10	0	5296	3	0	118	10	0	446	0	0		
No. 4.....	12,247	6	0	13,775	0	0	17,442	0	0	3715	0	0	36	2	0	*36,419	0	0	5876	10	0	270	0	0	716	0	0		
No. 5.....	9605	1	2	8,490	3	2	16,729	4	0	3499	3	1	19	1	0	36,258	0	0	4176	5	0	127	10	0	90	0	0		
No. 6.....	6811	4	0	6,145	0	0	12,797	4	0	3055	0	0	30	0	0	31,704	0	0	3927	0	0	44	0	0	102	0	0		
			50,941	5	2	67,079	7	2	94,823	2	0	16,734	3	1	206	4	2	203,154	13	0	23,976	15	0	619	10	0	1378	0	0
Acreage.			15,339½		12,909½		16,802		4809		157½		16,260		4246½			48½									107		

\* In multiplying the acreage by the average of District No. 4, allowance has been made for 30 acres returned as Turnips, but subsequently bare followed.

DISTRICTS.		3. SUTHERLAND.		ENUMERATORS.	
No. 1.	Parishes of Assynt, Eddrachillis, and Western Portion of Durness	...	...	...	Evander M'Iver, Scourie.
No. 2.	Farr, Tongue, Eastern Portion of Durness, and that part of Reay in Sutherland	...	...	...	Alex. Clarke, Eriboll, Tongue.
No. 3.	Dornoch, Creich, Lairg, and Rogart	...	...	...	Robert B. Sangster, Golspie.
No. 4.	Clyne, Golspie, Kildonan, and Loth	...	...	...	C. Hood, Inverbrona, Golspie.

DISTRICTS.		WHEAT.		BARLEY.		OATS.		BEANS AND PEAS.		TURNIP SEED.		TURNIPS.		POTATOES.		MANGOLD.		CARROTS.	
		Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.
No. 1.	...	0	0 0	2520	4 2	3409	6 0	0	0 0	0 0 0	1,253	10 0	6651	15 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
No. 2.	...	0	0 0	3027	3 0	3074	5 0	0	0 0	0 0 0	2,420	10 0	4310	2 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
No. 3.	...	229	4 0	4712	1 0	12,425	3 2	140	0 0	1 6 0	17,251	0 0	3718	3 2	0 0 0	5 0 0	0 0 0	0 0 0	0 0 0
No. 4.	...	633	6 0	4928	0 2	5327	4 0	5	0 0	0 0 0	12,064	10 0	2623	13 1	0 0 0	10 0 0	0 0 0	0 0 0	0 0 0
Acreage.		883	2 0	15,797	1 0	21,837	2 2	145	0 0	1 6 0	32,989	10 0	17,298	13 3	0 0 0	15 0 0	0 0 0	0 0 0	0 0 0

### ABSTRACT.

COUNTIES.		WHEAT.		BARLEY.		OATS.		BEANS AND PEAS.		TURNIP SEED.		TURNIPS.		POTATOES.		MANGOLD.		CARROTS.	
		Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	Q. B. P.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.
1.	Roxburgh	11,305	1 0	14,050	5 3	130,797	7 1	5458	5 3	44 5 3	361,349	10 0	8,287	7 2	114 10 0	43 17 2	0 0 0	0 0 0	0 0 0
2.	Haddington	50,344	5 2	67,079	7 2	94,823	2 0	16,734	3 1	206 4 2	203,154	13 0	23,976	13 0	619 10 0	1378 0 0	0 0 0	0 0 0	0 0 0
3.	Sutherland	883	2 0	15,797	1 0	21,837	2 2	145	0 0	1 6 0	32,989	10 0	17,298	13 3	0 0 0	15 0 0	0 0 0	0 0 0	0 0 0
Acreage.		65,449	3 2	116,927	6 1	250,458	3 3	22,338	1 0	253 0 1	597,493	15 0	49,562	14 1	734 0 0	1436 17 2	0 0 0	0 0 0	0 0 0

### Home Correspondence.

Butter and Cheese.—In answer to "G. D.'s" inquiry as to the qualities of Anthony's churn, or any others, we can say from experience the box-churn we prefer to all others, whether wood or tin. As to time in the butter coming we do not say "the sooner the better," a little delay produces more butter than those short periods boasted of by some makers. Besides, the quality of the cream is to be considered, the food the cows re-

ceive, and much depends upon the temperature of the cream. The cream in cold weather should be placed on a warm, not hot, hearth, for 10 or 20 minutes before being put into the churn, which might also receive a warm



number—shape and quality, not size, being the object aimed at. In Class II.—Devon Oxen over three years old—Mr. Coate, of Dorsetshire, carried off the first prize with the best Devon bullock that we have seen for some years in the show-yard. His fore-quarters are deep and wide; his head is ornamented with a magnificent pair of horns—his back broad and well covered—flank and twist good. Earl Leicester takes the second prize with a very straight and well proportioned animal—head and fore-quarters very good. In Class III., among Devon Heifers under four years old, Mr. Farthing, of Stowey Court, takes the first prize, with a very fat and level animal, drooping slightly in the hind-quarters, but a very compact little beast. In Class IV.—Devon Cows—the first prize, to Lord Leicester, is for a beautiful little animal, perhaps the most compact of all the Devon females shown; she shows no defect in the hind-quarters, which is sometimes observable in Devons. The second prize is to Lord Portman, for rather a large framed animal, girthing 8 feet 3 inches, a useful carcass of beef, not very well proportioned. No. 29, shown by Mr. Milton, of Langport, Somerset, is also a thick and heavy-fleshed cow.

In Class V.—Hereford Oxen under three years—Lord Radnor has deservedly carried off the first prize, for a very good specimen of the Hereford breed, not too fat but very level, and with remarkably deep good flank. The second prize is for a useful steer with very firm and good flesh. The sixth class consisted of 13 oxen over three years old, and not an inferior animal among them. After the first prize was awarded, the judges must have had great difficulty in awarding the second. The winner of the first is a level well-made beast, with first-rate quality of flesh; fore-quarters, back, loin, and flank are remarkably good; girth, 8 feet 10 inches; length, 5 feet 9 inches. The second prize, won by Mr. Phillips, of Wantage, is for a shorter ox, with deep wide chest, back well covered with firm good flesh, somewhat light in flank. H.R.H. Prince Albert shows a large steer in this class, very fat, but not well proportioned—drooping rump, and flesh not evenly spread. Classes VII. and VIII.—Heifers and Cows—contained only three animals between them.

In Class IX.—Short-horn Steers—under three years—the first prize was carried off by Mr. Stratton, of Swindon. This gentleman has carried off several other prizes. There is evidence of the justice and honesty of the awards at our shows, in the fact that the enterprise, ability, and energy of Mr. Stratton find such constant and liberal acknowledgment. A more level perfectly-made beast we rarely see than his prize ox. The shoulders, back, and loin, are beautifully covered with first-rate quality of flesh. The second prize animal is somewhat defective in one point, but elsewhere good. This class generally is very good. In Class X.—Oxen over four years old—the first prize and gold medal for the best ox in the yard, is awarded to Mr. Stratton, and very deservedly so. It is not so heavy as the one shown by that gentleman last year, but in our opinion it is superior in point of form and quality, and that is speaking very highly of it. It is got by the "Red Duke," connected distantly with the "Duchess" family of short-horns. The second prize is awarded for a very useful beast—loin, flank, and side good: a bareness in the fore-quarter strikes us as being a defect. Sir H. Verney, Bart., shows an enormous ox in this class (No. 65 in the catalogue). In Class XI.—Short-horn Heifers under 4 years old—it is generally considered, and confidently believed by ourselves, that the judges have made a mistake. The heifer winning the second prize was decidedly the best "heifer or cow" in the yard, and as such entitled not only to the first prize in its class, but to the gold medal for the best cow, neither of which she obtained. The first prize was carried off by a very nice level red heifer of good quality—a very compact animal. The second prize, as we have said, was won by an animal—a white heifer of remarkable symmetry and quality—which eclipses every other beast in the yard; nor do we think there has been one shown equal to her since the celebrated heifer "Peach" was shown by Sir C. Tempest, Bart., some 10 years ago. We are very reluctant to differ from the judges, but are quite at a loss to know the grounds of their award. In Class XII.—Short-horn Cows—the first prize and gold medal were awarded for a light roan; a remarkably thick useful cow, with very good flesh; with all points full and good.

Class XIII. contains nine animals, among which there are good specimens of the Galloway and Highland Steers; we may add here our opinion that these breeds ought to be more highly encouraged than they are—not perhaps by such societies as the English Agricultural Society, which aims at the improvement of breeds—but by the Smithfield Club, which aims at improvement and quality of beef. There is, at all events, a fair claim on their behalf for equal patronage, but this they do not receive, and the expense of conveying animals such long distances as their exhibition have to incur ought to be taken into account.

Among the Extra Stock we may refer to Mr. Barrett's short-horned heifer, No. 123, as having very deep good fore-quarters, with firm good flesh; Mr. Gunter's (Earl's Court, Brompton) short-horned heifer, too, deserves notice, as a nice level well-made heifer, of very good quality—not quite so heavy as the others.

In Class XIX., a cross between Durham and Galloway, shown by Mr. Farrer, of Swaffham, is a very complete, well-made, little beast, with fine bone and good quality. Mr. Gunter shows a very good heifer here, too, not so fat as the winner, but much heavier.

**SHEEP.**—The first class included fat wethers of any long-woolled breed under 22 months old. The first prize and gold medal were for a pen of very even well-made sheep, shown by Mr. Foljambe, of Osberton—one, however, somewhat defective in the loin. Pen 147, by Mr. Mudford, of Hinckley, won the second prize; well matched, and good individually—equal to the gold medal sheep in many points, though not so good in the legs. The second class—long-woolled Sheep under 22 months old, and under 220 lbs. weight—was represented by seven pens; Mr. Foljambe again carried off the first prize, the second being taken by the Marquis of Exeter, for three very equal sheep, of good quality and symmetry, not large, but very compact; and the third by Mr. Bradshaw, for three very well fattened animals. The next class excludes Leicesters, and the prizes were carried off by Cotswold sheep, bred and fed by Mr. Slater, of Stratton. Mr. Hower, Mr. Porter, and Mr. Beman showed useful sheep in this class. The next two classes were largely represented by many pens of cross-bred sheep. Mr. Druce, of Eynsham, carries off the first prize for a pen of more than ordinary merit, being both large, firm, and well-formed; the second prize is taken by a pen of good quality, but not quite so firm in the flesh as the others. Lord Walsingham carries off the prize for the class of smaller sheep under this head. We come now to short-woolled sheep, and here we have to chronicle the extraordinary success of his Grace the Duke of Richmond, who has carried off the first prize in three classes. The second prize in one class is taken by Mr. Rigden, one of the most energetic farmers of the day, and in another class by the Earl of Radnor. The prizes for short-woolled sheep, *not Southdowns*, are both taken by Mr. King, of Hungerford, for Hampshire downs. The prize sheep—bred by the Duke of Richmond—in the first class of short-woolled sheep, are perfect models; we can scarcely see a fault in them. Pen 220 again, by the same breeder, and winners of the first prize in the next class, are remarkable animals for quality; not perfectly matched, however, one being slightly deficient in the neck. In the third class for old sheep, his Grace is again a winner, with three very large well-made sheep, with good wool and firm well disposed flesh. The second prize to Lord Radnor is won by three square well-made animals, not quite so large as the others, but equal in quality and form.

**PIGS.**—We refer very shortly to the pigs, as exhibiting the usual number of extraordinary specimens of fatness, with a preponderance, perhaps, of specimens of the smaller breeds. Mr. Coate, of Hammoon, Dorsetshire, was a successful exhibitor. It certainly reflects great credit on that gentleman for the very useful description of pigs that he exhibits—that so many prizes should have been won by him. His Royal Highness Prince Albert exhibited the prize pen, receiving also the gold medal for the best pigs in the yard. They well deserve the prizes awarded to them—for quality and symmetry they would be difficult to beat. In the first class of pigs the first prize was given to three of first-rate quality and form—the usual style of Mr. Coates' breed; the second prize was carried off by his Royal Highness Prince Albert.

#### THE IMPLEMENT SHOW.

This is no farther acknowledged by the Club than by the provision of room, and the laborious arrangements consequently undertaken by, rather than officially devolving upon, the indefatigable secretary, Mr. Gibbs. No catalogue is provided—no prizes are awarded—no facilities or inducements of any kind are given to either exhibitors or visitors—beyond the labour of packing and arrangement to which we have alluded; and yet such is the buoyant and vigorous character of the manufactures and the trade, that as much energetic competition, and almost as remarkable a display of machines, is exhibited at this show as at the country meetings of the English Agricultural Society. It is of course impossible to do more than refer, in very short and general terms, to the exhibitors and their several stands and displays. This, therefore, is all we shall attempt, confining our more detailed remarks to three new machines which were shown; one outside the yard and the others within it. On walking round, the eye is caught perhaps more directly by the remarkable specimens of vegetables exhibited than by anything else. They constitute the stepping-stone, as it were, between the ploughs, &c., in the galleries and the fat cattle below; and they certainly were as remarkable in their way as either of the other departments. The Royal Dublin Society's stand in particular was justly attractive; it showed specimens of Turnips, Swedes, Mangold Wurzel, Carrots, Onions, and especially of Cabbages, which last were of uncommon dimensions. Mr. Skirving showed remarkable specimens of his Swedish Turnip; Messrs. Geo. Gibbs & Co. exhibited numerous specimens of roots, characterised by quality as well as size; Messrs. H. Gibbs and Co.'s stand contained a large assortment of seeds and specimens. The finest long red Mangolds, both for size and quality, were exhibited here. Messrs. Sutton of Reading, Chivas of Chester, Grove of Great Baddow, and others, contributed to this department of the exhibition. Then, as regards machines, Messrs. Garrett and Messrs. Hornsby were both present, with their usual show of drilling machines, threshing machines, winnowing machines, chaff-cutters, and steam-engines. At the stand of the former the automaton reaper was exhibited. Messrs. Ransome and Sims had a large stand occupied with ploughs, corn-crushing machines, chaff-cutters, &c. Mr. Busby, of York, had his well known

ploughs and carts; Messrs. Crosskill, too, was present with carts, reaping machines, &c.; Mr. Stanley, of Peterborough, exhibited the steam apparatus referred to in our columns last week; Messrs. Barrett & Exall, of Reading, showed steam engines, threshing machines, &c.; Mr. Howard, and Mr. Williams, of Bedford, exhibited ploughs and harrows; Messrs. Burgess & Key, Messrs. Dray & Co., and Messrs. Cottam & Hallen, all of London, were present in great force, with the many agricultural implements for the sale of which they are agents; Mr. Edgington, with catalogues, &c., of his marquees and tents, so well known, had a stand; Mr. Samuelson's (Banbury) stand exhibited his well-known forking machine and Turnip-cutters; Mrs. Wedlake, and Messrs. Wedlake & Co., of Romford, were both present with a large assortment of chaff-cutters, corn bruisers, &c.; Mr. Carson, of Warminster, exhibited his conical root-grater, which is peculiarly adapted for the reduction of that sort of cattle food, especially when it is desired to use the reduced food in mixture with other material. Among the exhibitors of drilling machines we must not omit the well-known name of Smyth, of Peasenhall, with their simple well made specimens of the Suffolk drill, of which they have been manufacturers for a longer period than any other firm in the kingdom. Among the exhibitors of steam-engines, the well-known manufacturers, Clayton and Co., of Lincoln, were present, as also Messrs. Tuxford and Co. Among the exhibitors of apparatus connected with the distribution of liquid manure, we may name Mr. Read, of Regent's Circus; Mr. Weir, of New Road; Messrs. Burgess and Key; and Mr. Freeman Roe, all of London, and all well known both to purchasers of hose, pumps, tubing, valves, &c., and to readers of our advertising columns. We find at Mr. Freeman Roe's stand, among other novelties, a new patent sluice valve for mains of towns, fountains, and the distribution of liquid manure over farms, &c. It can be readily repaired without removal, incurring only an expense of a few shillings instead of incurring a new valve. It will be of use to water companies as well as to farmers.

In the yard adjoining the Bazaar a number of steam-engines were at work, exhibiting the qualities of threshing and other machines. Here also were the American threshing machine, and Lawson and Company's Flax-scutching machine, while at the Atlas works in the neighbourhood, Messrs. Clayton and Company exhibited their Brick-making machine—the three implements which we shall attempt to describe in somewhat greater detail. They are all to some extent new, and one of them, Lawson and Co.'s Flax-scutching, is one of the most elegant specimens of inventive skill that we have ever witnessed. After Flax is retted, the bark or "bone" has to be separated from the fibre. This is usually done by hand, the dried stalks after being broken by blows between a ribbed and jointed apparatus, are taken in successive handfuls, and beaten with a thin, wooden board over a fixed edge of wood, beside which the operator sits or stands. This tedious process results in the separation of tow and bark from the long fibres of the Flax. It is found, however, that if four pairs of fluted rollers, with gradually increasing fineness and number of the flutings, combined with a gradually increasing nearness of the rollers, be employed, and handfuls of the unbroken retted Flax be taken and held successively, for about 8 or 10 seconds each time, between these pairs of rollers in succession, while they revolve in towards one another at the rate of 150 revolutions per minute, that the Flax will thus be effectually both broken and scutched. Now all this is done in the machine before us. Two sets, alongside one another, of four pairs each of rollers are in operation—a framework over each set, holding four bundles of Flax, oscillates up and down, allowing these bundles to pass through the rollers, thus well breaking them, and then pulling them up again, thus separating the broken bark from the fibre: and not only so—but, by means of an exceedingly ingenious apparatus, these bundles are passed along the framework successively, so that each when it has been pulled out of one pair of rollers is immediately shifted to the left, and dropped between the next finer pair, so that the furthest handful has gone four times between successively finer rollers and is finished, while the attendant is just putting in a fresh one at the near end, which at the next movement of the machine will be taken in and passed through the first or coarsest pair. These complicated movements, up and down, united with the continuous revolution of the rollers, and the lateral alternate movement and position of the bundles, are all effected by an exceedingly ingenious combination of contrivances, which, however, it would be impossible to describe without diagrams. The result is, that 6 or 8 handfuls per minute are thus scutched, and 25 stones of Flax prepared per day by each machine, worked by one horse-power, and attended by eight lads.

The second machine to be alluded to is the American threshing machine. It is a peg drum machine, and its principal peculiarities consist in—first, the use of Archimedean screws for the conveyance of grain and chaff from one part to another; 2d, in the combination of creeper and shaker in the apparatus for removing the threshed straw; and, 3d, in the use of a particular form of "Venetian blind" riddle, the position of the separate bars being capable of regulation with reference to the direction of the blast of the winnowing machine which is being directed upon them; and although, in the instance exhibited, this arrangement was a fixed one, still we can conceive that much additional power in



accommodating the machine to the character of the material on which it is operating would be possessed, were the fans of this "Venetian" slat riddle moveable in the way suggested.

The machine is the invention of John R. Moffitt, of Lima, Ohio, U.S., and was patented in the United States, 1852, and brought to England by E. H. Knight and Mr. Moffitt, and here patented in 1853. Its principal peculiarities are, as we have said, in the traversing, open straw carrier, which is formed of links, and rounds" or rods, which connect the links on each side of the machine. This straw carrier is propelled by a union, and runs over rollers disposed along its course, which serve the purpose of carrying it. On the links are cogs or projections, which, as the straw carrier reverses, come in contact with the rollers and impart short vertical motion to the belt or carrier, which tends to shake down through the straw the corn and chaff which has been received into it from the threshing cylinder, the straw being discharged at the end of the machine. The corn, chaff, &c., which pass between the rounds of the straw-carrier fall into the well of the machine, from which they are conveyed by an Archimedean screw, on to the "slat" riddle, which is formed like a partly closed Venetian blind, with its "leaves" more or less inclined in the direction of the blast of wind from the fan. This peculiar riddle forms the second special point in this machine. Any imperfectly threshed matters are collected at the end, in a trough, and conveyed back by another screw to the threshing cylinder, to be again operated upon, and the combination of conveniences to effect this purpose is the third point of novelty. The grain to be threshed is fed into the machine in the ordinary way to the cylinder armed with teeth, which act against similar teeth on the concave; this cylinder is propelled by a pulley on the under shaft, or by suitable gearing from the horse-wheel. The grain as it passes from the riddle, which separates it from the chaff and other refuse, is discharged at either side of the machine. This may be at a height from the ground as to be suitable for a stack or measure to be placed under, or in stationary machines may connect directly by a spout with the granary.

The third machine to which we shall now refer is the clay-making machine of Mr. Clayton. The clay is fed to a cylinder at top; a vertical shaft passes downwards through it, armed in the usual way with radial blades, by which it acts as a pug-mill above, and at the bottom by a set of blades twisted, so as during their rotations to press the clay continuously downwards and forwards, thus forcing its passage through an opening which is made of the ordinary size of the broadside of a brick. A continuous stream of material is thus pushed down, and when it has protruded sufficiently, it is cut asunder by the operation of Mr. Clayton's cutting apparatus, which is used for his ordinary drain-tile machines, and as pieces continue to be pushed forward, they are taken by lads in attendance to the drying stands. The clay-machine will make from 1000 bricks per hour. The recent improvements effected in the machine consist in alterations of the moulding orifice or die, which now has rotating sides formed by (vertical) rollers instead of all fixed sides as heretofore. These rollers rotate freely, as the clay is delivered through the die, thereby producing and preserving a sharpness of edge which hitherto unattainable in the manufacture of bricks through dies. This new principle has reduced friction and power required, considerably increased production, and improved the quality of the bricks generally. The machine is worked by one horse, and employs one man to feed it, and two boys to clear the bricks. The rotating vertical cylinder is covered with a sort of fustian or moleskin wrapped around a low and pierced iron cylinder, into which at intervals water is allowed to drop, and this, oozing through the cloth, keeps the surface wet, and thus allows the clay to be freely from it as it revolves. The machine seems likely to be practically useful.

AWARD OF PRIZES.

CATTLE.  
CLASS I. Devon Steers, not exceeding 3 years old.—251, the Earl of Leicester, Holkham Hall; S.M. to the Earl of Leicester; George Turner, Barton, Exeter.  
CLASS II. Devon Steers or Oxen, above 3 years old.—251, J. E. Blandford; S.M. to the Earl of Leicester; 101, the Earl of Leicester.  
CLASS III. Devon Heifers, not exceeding 4 years old.—151, the Earl of Leicester, Bridgewater; S.M. to the Earl of Leicester.  
CLASS IV. Devon Cows, above 4 years old, that must have had at least one live calf.—201, the Earl of Leicester; S.M. to the Earl of Leicester; 101, Lord Portman, Bryanston.  
CLASS V. Hereford Steers, not exceeding 3 years old.—251, the Earl of Leicester, Holkham Hall; S.M. to the Earl of Leicester; 101, the Earl of Leicester.  
CLASS VI. Hereford Steers or Oxen, above 3 years old.—251, the Earl of Leicester, Holkham Hall; S.M. to the Earl of Leicester; 101, the Earl of Leicester.  
CLASS VII. Hereford Heifers, not exceeding 4 years old.—151, the Earl of Leicester, Bridgewater; S.M. to the Earl of Leicester; 101, the Earl of Leicester.  
CLASS VIII. Hereford Cows, above 4 years old, that must have had at least one live calf.—201, the Earl of Leicester; S.M. to the Earl of Leicester; 101, the Earl of Leicester.  
CLASS IX. Shorthorn Steers or Oxen, above 3 years old.—251, the Earl of Leicester, Holkham Hall; S.M. to the Earl of Leicester; 101, the Earl of Leicester.  
CLASS X. Shorthorn Heifers, not exceeding 4 years old.—151, the Earl of Leicester, Bridgewater; S.M. to the Earl of Leicester; 101, the Earl of Leicester.  
CLASS XI. Shorthorn Cows, above 4 years old, that must have had at least one live calf.—201, the Earl of Leicester; S.M. to the Earl of Leicester; 101, the Earl of Leicester.

CLASS XII. Short-horned Cows, above 4 years old, that must have had at least one live calf.—201, H. Smith, Cropwell, Butler; S.M. to Wm. Smith, West Rasen; 101, H. Roberts, Paxford, Worcester.  
CLASS XIII. Scotch, Welsh, or Irish Steers or Oxen, of any age.—101, Rev. J. Arkwright, Hadlow, Essex.  
CLASS XIV. Scotch, Welsh, or Irish Heifers or Cows, of any age.—51, the Earl of Leicester.  
CLASS XV. Steers or Oxen, of any pure breed (except Devons, Herefords, Short-horns, and Scotch, Welsh, or Irish), of any age.—101, J. H. Gurney, Easton, Norwich; S.M. to G. S. Kett, Brooke, Norfolk.  
CLASS XVI. Heifers or Cows, of any pure breed (except Devons, Herefords, Short-horns, and Scotch, Welsh, or Irish), of any age.—101, J. Caines, Cheselborne, Dorchester; S.M. to J. Davis, Dorchester.  
CLASS XVII. Cross or Mixed-bred Steers, not exceeding 3 years old.—151, Wm. Haver, Sevenhampton, Wilts; S.M. to the same.  
CLASS XVIII. Cross or Mixed-bred Steers or Oxen, above 3 years old.—151, the Earl of Darley, Cobham Hall; S.M. to J. Rogers, Leominster.  
CLASS XIX. Cross or Mixed-bred Heifers, not exceeding 4 years old.—101, W. M. Farrer, Swaffham, Norfolk; S.M. to C. Twiss, Swardeston Hall, Norwich.

SHEEP.  
CLASS XX. Fat Wether Sheep, of any long-woolled breed, 1 year old (under 22 months).—201, G. S. Foljambe, Osberton Hall, Nottingham; S.M. to the same; 101, Joseph Melford, Thurlston, Leicester; 51, R. F. Hall, Hesley Hall, Batwry.  
CLASS XXI. Fat Wether Sheep, of any long-woolled breed, 1 year old (under 22 months). Each sheep not to exceed 220 lbs. live weight.—201, G. S. Foljambe; S.M. to the same; 101, Marquis of Exeter, Burghley Park; 51, R. L. Bradshaw, Burley-on-the-Hill.  
CLASS XXII. Fat Wether Sheep, of any long-woolled breed (not Leicesters), 1 year old (under 22 months).—101, W. Slatter, Stratton, Gloucester; S.M. to the same.  
CLASS XXIII. Long and Short-woolled Cross-bred Fat Wether Sheep, 1 year old (under 22 months).—101, S. Druce, Eynsham, Oxford; S.M. to the same; 51, J. Hitchman, Little Milton, Oxon.  
CLASS XXIV. Long and Short-woolled Cross-bred Fat Wether Sheep, 1 year old (under 22 months). Each sheep not to exceed 220 lbs. live weight.—101, Lord Walsingham, Merton Hall; S.M. to the same.  
CLASS XXV. Fat Wether Sheep, of any short-woolled breed, 1 year old (under 22 months).—201, the Duke of Richmond, Goodwood; S.M. to the same; 101, William Rigden, Hove, Brighton.  
CLASS XXVI. Fat Wether Sheep, of any short-woolled breed, 1 year old (under 22 months). Each sheep not to exceed 200 lbs. live weight.—101, the Duke of Richmond; S.M. to the same.  
CLASS XXVII. Fat Wether Sheep, of any short-woolled breed, 2 years old (above 22 and under 34 months).—201, the Duke of Richmond; S.M. to the same; 51, the Earl of Radnor, Colehill, Berks.  
CLASS XXVIII. Fat Wether Sheep, of any short-woolled breed (not southdowns), 1 year old (under 22 months).—101, Stephen King, Old Hayward Farm, Hungerford, Berks; S.M. to the same.

PIGS.  
CLASS XXIX. Pigs, of any breed, above 13 and not exceeding 26 weeks old.—101, John Coate, Hammon, Dorset; S.M. to the same; 51, to his Royal Highness Prince Albert.  
CLASS XXX. Pigs, of any breed, above 26 and not exceeding 52 weeks old.—101, his Royal Highness Prince Albert; S.M. to the same; 51, John Coate.  
CLASS XXXI. Pigs, of any breed, above 12 and under 18 months old.—101, John Coate; S.M. to the same; 51, E. L. Betts, Preston Hall, Maidstone.

GOLD MEDALS TO THE FEEDER.  
For the best Steer or Ox in any of the Classes, Richard Stratton, Broad Hinton, Wilts.  
For the best Heifer or Cow in any of the Classes, Henry Smith, The Grove, Cropwell Butler, Notts.  
For the best Pen of Long-woolled Sheep in any of the Classes, G. S. Foljambe, Osberton Hall.  
For the best Pen of one-year-old Short-woolled Sheep in any of the Classes, the Duke of Richmond, Goodwood, Sussex.  
For the best Pen of Pigs in any of the Classes, his Royal Highness Prince Albert.  
EXTRA STOCK—SILVER MEDAL TO THE FEEDER.  
For the best Beast in Extra Stock, Charles Barnett, Stratton Park, Beds.  
For the best Long-woolled Sheep in Extra Stock, Lord Berners, Keythorpe Hall, Leicester.  
For the best Short-woolled Sheep in Extra Stock, the Duke of Richmond.  
For the best Cross-bred Sheep in Extra Stock, John Hitchman, Little Milton, Oxon.  
For the best Pig in Extra Stock, W. J. Sadler, Bentham Purton, Wilts.

JUDGES.—Cattle and Long-woolled Sheep: James Hole, N. C. Stone, and A. L. Maynard. Cross-bred and Short-woolled Sheep and Pigs: A. Denman, H. P. Hart, and W. Symonds.

POULTRY.  
THE ANNUAL WINTER POULTRY SHOW held its exhibition this week at the Horse and Carriage Repository, in St. George's Road. If we take it, considering the disadvantages under which it laboured, it may be called an average show, but it must not go to the world as the best the metropolis can make. It occurred at the same time as the Leeds and Shrewsbury exhibitions, and above all, the week preceding the great poultry gathering at Birmingham. Most of the best birds in the country were engaged for these, and hence the absence of many of those names that are almost essential to the real merit of such an undertaking. The prize list was a liberal one, the locality well adapted, and every pains taken to deserve, if it could not ensure, entire success. There were 585 pens, including extra stock, and exclusive of pigeons. Of these the Cochin Chinas numbered 158 pens. Captain Snell, Mr. Eason, Mr. Fairlie, the Rev. Dr. Allen, Mr. Chater, Mr. Fox, Mr. Bridges, and Mrs. Fookes, were among the principal prize takers. The buff classes were weak in numbers and quality. The buffs were many of them good, but the prices show the present downward tendency of value in these birds. Messrs. Botham, Fox, Owen, and Simons, took all the prizes in Spanish. The Dorkings were a good class, but not so good as we have lately seen. There were some very good Polands of all classes, and the game fowls were quite equal to the average. In Mahys Mr. Manfield showed some beautiful birds. The Handbreds numbered 60 pens, and were well represented. Sebright bantams, in two classes, numbered but six pens. Buff, black, and white, were more numerous. We particularly admired a pen of the latter belonging to Mr. Symonds, of Weymouth. The distinct breed class numbered 39 entries,

and, among others, had some good Brahma Pootras in it. The geese were very good, but numbered only 7 competing pens. Aylesbury ducks had 12, and Rouen ducks 5. There were 4 pens of turkeys, and 1 of Guinea fowls. The Judges were Messrs. Hewitt and Nutt.

NORWICH.—If poultry be one of the handmaids of agriculture, and if the tie between them be as intimate as it is said to be, then the fittest place for a poultry show is a Corn Exchange. Such was the locality chosen for the Norwich and Eastern Counties Show. The present demand for poultry, and the interest taken in it, has been termed a "mania;" if it be so, at least there is now a method in the madness, which renders the success of a show, if well conducted, beyond a doubt. The Norwich Corn Exchange is a large square building, possessing all the capabilities required for an exhibition of the sort, being very lofty, well ventilated, and light. 890 pens were gathered together for the judges' awards. It is impossible in the limit of a report to chronicle all the successful, and we can only refer our readers to the prize list, which will show who were favoured, and will also, by the names it comprises, at once explain the quality of the birds exhibited. There were three novelties, a class called a committee class, in which one bird only was exhibited, a Cochin China. In the class for cocks, Mr. Fairlie gained the prize against 17 competitors, and for pullets Mr. Punchard was successful against the still greater number of 24. The third innovation was a prize for the exhibitor of the best collection of poultry. The competitors for this were the Hon. Mrs. Astley, Messrs. Rawson, Fairlie, Punchard, and Monsey. The prize was adjudged to Mrs. Astley, as she was successful in both classes of Spanish, had first prize in the Dorking class 22, and was also among the prize takers in Sebright bantams and Hamburg fowls. The band of the 6th Dragoons played during the exhibition. The first class was for adult Cochins, and here Messrs. Fairlie and Punchard took the prizes. The next was of itself half a day's work to judge; it was the chicken class of the same breed, and numbered 110 pens. Birds of unusual merit were plentiful, and the task of beating them all was accomplished by Messrs. Gilbert, Punchard, and English. The commendations awarded to Messrs. Walpole and Jeeks rode close on their heels. In dark birds Messrs. Punchard, Bridges, and Fairlie took the prizes. The white classes showed some beautiful chickens, especially a pen belonging to Mr. Mickelthwaite. The black pullets were excellent, but there was no black cock to match them. The Spanish adult class was good. Mrs. Astley got first, Mr. Rawson second prize. The chickens were so good, the judges declared the whole class highly meritorious. Here the Rev. P. Gurdon took the first, and Mrs. Astley the second. These and the Dorkings are certainly now the public favourites, and the proof is, more of them than of any others are sold at each succeeding exhibition. In adult Dorkings Mr. Rawson took the first prize, Mrs. Astley the second. It would be difficult to match one of the hens in the first pen. The competition was greater in the chicken class. Amongst the many good birds Mrs. Astley had the best; the second prize was awarded to Mr. Lewry. This was a numerous class. The white Dorkings are a weak class. The adults were probably the worst birds exhibited at this most interesting show. The chickens were better, and from the prize pens belonging to the Rev. Mr. Benyon and Mr. Rust some good cocks might have been selected. The Polands were well represented, except the golden, which were weak both in adults and chickens. Every succeeding show only serves to increase our liking for the chicken classes. In the Hamburgs all the adults looked like veterans somewhat the worse for wear, but their progeny were well able to supply their places, so far as beauty and excellence were concerned. The golden Hamburg chickens were superior to anything we have seen since Birmingham, 1851. The bantams were perfect, and we would particularise one pen of black, which had a cock the very bean ideal of a bantam, strutting like a fantail pigeon, and really looking as saucy as he could stand upright, the property of the Rev. P. Gurdon. To describe one new variety class is to describe them all; and a little of the genius of Esop would enable us to concoct some pretty fables on the conversation held by the Ptarmigans, Chamois and White Polands, Game, Bantams, and others that go the round of the country, and constantly meet together. But "coming events cast their shadows before," and the Brahma Pootras are getting too numerous for the distinct varieties, and must have a class to themselves. The geese and ducks were excellent and numerous. The turkeys were, of course, very good. Norfolk is their home. An opinion may be formed of the excellence of this class, when a cock weighing 22 lbs. could only get a commendation. Thus ended a most satisfactory and well-conducted show. Its success was deserved, and we would end with one word of advice. We doubt whether it is conducive to the interest of the exhibition to allow one person to exhibit 20 pens in one class; our own opinion is strongly against it. The judges were Mr. Baily, of London, and an amateur.

Miscellaneous.

Management of Workhouses in Ireland.—It is now three years since the industrial system was introduced into the Thurlies workhouse, and a vicious disorderly concern it was then, we learn—and the first result we would note is, that the clothing of the inmates has not cost the Union anything during the past year



and a half; and that by Wednesday next it is expected there will not be 700 paupers in the house. Another result, in our eyes equally valuable, up to the 25th of March last 244 persons of both sexes had left the workhouse after being taught trades, and are now respectable members of society, and able to maintain themselves. Mention is also made of 250 young girls who have left or are about to leave the house similarly qualified, sure of work and able to maintain themselves. In a financial point of view the returns are more than satisfactory; they are surprising. Before the present half-year a saving had been effected in the expenditure of the Union, for two years and a-half, of 3748l. 1s. 9d.; and for the last half-year there has been effected a total saving of 845l. 14s. 7½d. During that half-year goods were sold to the amount of 366l. 19s. 8½d.; clothing consumed in the house to the value of 547l. 7s.—all of course made and manufactured within doors; and other goods stored up to the value of 339l. 6s. 3d. The most surprising illustration, however, of the good working of the system yet remains unmentioned: 7l. 12s. 7d. was paid for crochet thread, and needles, and the work prepared by means of them brought 32l. 11s. to the credit of the union. The Skull Poor Law Union, in the county of Cork, which suffered so severely during the famine, has not now 100 paupers in the workhouse, and not an able-bodied man among them; nor will it be requisite to levy a rate for six months. This sign of prosperity is in great measure attributable to the demand for labour caused in that union by the extensive mining enterprises carrying on there, not less than 12 mines of copper ore being opened, and now at work."—*Commercial Journal*, September 3, 1853.

### Calendar of Operations.

#### NOVEMBER AND DECEMBER.

**CHESHIRE, Dec. 7.**—The fine weather we have had for field operations since our last report has induced the farmers to continue their Wheat sowing much later than was anticipated, therefore a considerable portion of the Turnip land intended for Wheat, which otherwise would have been left until the spring, has been sown, or is now in progress of being sown in very good condition, and the quantity of grain already deposited forms a striking contrast to the autumn of last year. There is a great difference of opinion in this county as regards sowing Wheat, many of the old school being in favour of sowing late in the season, even as late as the end of December, rather than of deferring it until spring, provided the land is in tolerable condition for receiving the seeds, whilst others contend that it is better to sow in the spring, unless it can be accomplished by the end of November. The lamentable experience of the past season has, however, made many converts to the former opinion, for a great portion of the spring-sown Wheat in this county was miserably defective both in quality and quantity. Other operations of the farm have been progressing satisfactorily, and Mangold Wurzel and Turnips generally have been secured in good condition. The slug is very prevalent and mischievous, as is always the case after wet seasons; and the only safeguard against its devastations appears to be in the application of a bountiful supply of quick-lime in warm damp mornings, or late in the evenings, for at those times the slug makes its appearance above ground, and stores of cattle, sheep, and pigs, have been rather lower in our late fairs and markets; but fat stock of all descriptions, and also cows in calf, maintain their former prices. *N. P.*

**FARM NEAR CHELMSFORD, Nov. 29.**—The operations of the past month have brought the putting in of the seed Wheat to a conclusion, with some prospect of success beyond that a short time since contemplated. The early sown has been so pestered with slugs and deluged with heavy rains as to render re-sowing absolutely necessary; the frosts that have lately taken place have to some extent checked their operations, but we fear that upon the heavy land districts a large amount of deficiency of plant will be found to exist. A question presents itself as to what is the best mode to check their ravages on the slug, make its appearance above ground, and lead to the conclusion that if Barley chaff could be drilled upon the Wheat, having been first subjected to a wetting with ammoniacal water, easily procured at the gas works, would fully effect the object, as we have ascertained already that it is exceedingly obnoxious to them; how to effect this is the question, but we suggest that if the counters of a manure-drill could be made to deposit the preparation upon the Wheat, it would fully answer, and if so, a great boon obtained. It is very true that a handy application of fresh lime, sown in the night, will answer the purpose, but it is a tedious operation, and if rain immediately follows is useless unless to a limited extent. We put in our winter Beans in the middle of November, and they are coming well into plant. We have this year put them 6 inches further apart in the rows, as they seem to require more space than we have hitherto given them; we have now five rows in a space of 8 feet 6 inches; in last season six rows in the same space. We have carried the Mangold Wurzel in excellent order, part of which is stored in clumps, earthed over, and part in a covered building excavated, and that holds 250 tons, in which they always are kept in admirable condition. We observe a new method propounded in a leading magazine, of removing the roots by a plough, but if the stock is good, they are so easily pulled as to render such process unnecessary. The long red variety we cultivate has so little fibre that it is removed by the slightest force, and even greyhounds running over the field have displaced many. We mention this to convince others who resort to mechanical means of lifting the roots, that they have not procured a good stock of seed, or of no such necessity would exist. Swede Turnips are excellent in quantity, white and green common Turnips also, but there is a general complaint of the latter. The hay of the last season is almost worthless, and we now give it to cattle *ad libitum*, as it is totally unsaleable. All our Mangold Wurzel land is prepared and made into ridges, so that no further operation will be necessary but to subsoil the furrows and get in the manure. We had 4 cwt. of fishery salt in addition to 3 or 4 cwt. of guano; an admirable dressing, and very much increases the quantity and quality of the roots. Our produce is estimated at 28 tons per acre.

**SOUTH HANTS, Nov. 29.**—Wheat sowing is all but finished, a few still sowing what land they can to this crop, but the season is past, the weather cold and frosty, and ice a quarter of an inch thick; the land consequently cold, and the brading of the Wheat plant checked. Slugs have been put *hors de combat*; rooks and larks numerous, and these some seasons strew the ridges with fragments of the young plants. The ricks that have been threshed have turned out a very indifferent yield; the deficiency will not be compensated for to the farmer by present prices. Turnips have increased in bulk and bulb during the past month. Mangold Wurzel turned out better than expected; this crop is now housed, or made into heaps and thatched in. Stubbles are mostly ploughed, and the land water furrowed or "gripped." Sheep are now upon the white Turnips; part of these roots drawn and carted for cattle and pigs in the yards. Many farms in this county are to let, and many sales have taken place at which prices

ruled very high. The Rev. Mr. Harcourt is about to sell off a large stock of sheep, and implements of the newest and best construction of every variety; he abandons agricultural pursuits, and lets the farm. The wages of bailiffs are too high in this county; they leave little margin for profit upon small farms. *Q. R. S.*

### Notices to Correspondents.

**ADDRESS: PRISON MANAGEMENT.** At page 140 of the present year's volume an article headed "Some Account of a Cheap and Profitable Mode of supplying Labour in Prisons and Workhouses" was communicated by "G. M." Will the writer be kind enough to send us his address?—we are asked for it by one by whom the information he could communicate would probably be put into practical use and working.

**BELL'S REAPER.** A. Mr. Crosskill, Beverley, Yorkshire, is the manufacturer, and he will doubtless give you every information. **CHEVROT SHEEP.** *Claret.* "House of Muri" 7 miles S.W. of Edinburgh, 1st Monday in April; "St. Boswell's Green," between Kelso and Melrose, 18th July; "Melrose," 12th August; "Lockerbie," 13th August; "Stagshead," near Hexham, 4th July. We take the particulars from Article "Markets," in "Blackie's Cyclopaedia of Agriculture."

**PAPIER MACRE HOUSES: Tonbridge.** The paragraph to which you allude is extracted from "Household Words." Perhaps some one acquainted with the subject may favour us and you with information.

**PERSPIRATION: A. C.** Profuse perspiration robs the system of nourishment; the horse should be singed. Singeing is better than clipping for farm horses. *W. C. S.*

**PORIFYING WATER: J. Roberts.** Charcoal—not chalk. **RAW FOOD FOR PIGS: Ziegler** asks for the experience of others on the subject, also the value of Irish Moss (to be had at 12s. 6d. per cwt.) as food for pigs or calves. We would not buy it at the price for the purpose; and as regards raw food, we should confine the use of it to stores.

**WEIGHT OF CATTLE:** The weight of cattle from measurement is given in tables in "The Farmers' Assistant," which we shall notice next week.

**WHEAT CROP OF FENS: M. R.** asks if the Wheat crop of the Fens of Lincolnshire does not give a greater return per acre upon an average than that of any other district of equal extent in England? We believe it has this year done so, and probably the question *as put* must be answered in the affirmative.

\* \* We have to beg pardon of our correspondents for the delay attending the publication of their communications. We have in type: Notes of an Agricultural Tour in Ireland, by Martin Doyle; Grain Fallows, by J. M. Goodfif; Purposes of Ammonia in Vegetable Economy, by J. H. H.; On the Curing of Bacon and Pork, by C.; Covered Yards for Manure, by Major M'Inroy; On Labourers' Friends' Societies, by Clathrus celatus; On Gorse, by the Newcastle Farmers' Club; Sewage as Manure, by J. T.; Cod-liver Oil as Food for Animals by Dr. Pollock in "The Lancet." Profitableness of Cattle Feeding, by Y.; Loos-Weedon Cultivation, by Rev. S. Smith; all of which shall appear as soon as possible. We have also received the following communications:—Loos-Weedon Culture, by J. Goodfif; Application of Manure, by P. H.; Receipts for Cottage Cookery, by W. Lort; Land Drainage, by S. Johnson; P. Mitchell, A. Draining Engineer and J. Trimmer; Formation of Ammonia, by J. H. H.; Breeding and Management of Pigs, by C.; Liquid Manure and Irrigation, by J. Goodfif; and many others.

### Markets.

#### COVENT GARDEN, December 10.

Vegetables and Fruit continue to be well supplied. Late Grapes are sufficient for the demand and still very good. Pears chiefly consist of Glout Morcean, Crassane, Chaumontel, Winter Nelis, Beurre d'Hiver, Monsieur le Curé, and Beurre d'Arenberg. The demand for Cobs has greatly fallen off. Chestnuts have made their appearance. Potatoes continue to arrive from Scotland, but the supply is not so great as last week. Asparagus is beginning to come in at from 5s. to 10s. per hundred, and Sea-kale at from 3s. 6d. to 4s. 6d. per punnet. Carrots and Turnips fetch from 2d. to 4d. per bunch. Mushrooms are tolerably plentiful. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

#### FRUIT.

Pine-apples, per lb., 3s to 5s  
Grapes, hothouse, p. lb., 2s to 5s  
— Portugal, p. lb., 6d to 1s 6d  
Apples, per bush, 4s to 8s  
— dessert, p. h. sieve, 2s to 4s  
Pears, per doz., 1s to 3s  
Lemons, per doz., 1s to 2s  
— Seakale, per 100, 3s 6d to 5s  
Cabbages, per doz., 9d to 1s  
Cauliflowers, each, 1d to 3d  
Greens, per doz., 1s 6d to 3s  
Brussels Sprouts, do., 1s 6d to 2s  
Rhubarb, per bundle, 1s to 1s 6d  
Potatoes, per ton, 60s to 160s  
— per cwt., 5s to 7s  
— per bush, 2s 6d to 5s 6d  
Turnips, per doz., 2s to 3s  
Cucumbers, each, 6d to 1s  
Celery, per bundle, 6d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 1s to 1s 6d  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
— Red, bushel, 2s 6d to 3s  
Leeks, per bunch, 1d to 2d  
Shallots, per lb., 6d to 8d

#### VEGETABLES.

Garlic, per lb., 6d to 8d  
Lettuce, Cab., p. score, 6d to 8d  
— Cos, per score, 9d to 1s  
Small Salads, p. pun., 2d to 3d  
Horse Radish, p. bundle, 2s to 4s  
Mushrooms, per pott., 9d to 2s  
— per bushel, 6s to 8s  
Sorrel, per h. sieve, 6d to 1s  
Artichokes, per doz., 3s to 5s  
— Jerusalem, p. h. sieve, 1s to 1s 6d  
Fennel, per bunch, 2d to 3d  
Savory, per bunch, 2d to 3d  
Thyme, per bunch, 2d to 3d  
Basil, p. 12 bunches, 1s 6d to 3s  
Mint, per bunch, 1s  
Basil, do., per bunch, 4d  
Marjoram, do., do., 2d to 3d  
Watercresses, p. 12 bun., 4d to 6d

#### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, THURSDAY, December 8.**  
Prime Meadow Hay 50s to 100s  
Inferior do. ... 50 70  
Rowen ... 45 65  
New Hay ... 45 65  
Clover ... 70s to 115s  
Good cut ... 60 100  
Straw ... 34 42  
E. J. DAVIS.

**WHITECHAPEL, THURSDAY, December 8.**  
Fine old Hay ... 100s to 105s  
Inferior do. ... 90 95  
Fine new Hay ... 70 80  
Inferior do. ... 36 45  
Fine old Clover ... 120 123  
Inferior do. ... 110 112  
Fine old 2d cut Clover 105s to 110s  
Fine new 2d do. ... 70 75  
Inferior do. ... 50 60  
Fine new do. ... 100 110  
Inferior do. ... 80 90  
Straw ... 34 42

#### POTATOES.—SOUTHWARK, MONDAY, December 5.

The Committee report that during the past week the arrivals, both coastwise and foreign, have been quite equal to the demand, and the quantity left unsold from previous arrivals still causes the trade to be heavy. The following are this day's quotations: York Regents, 100s. to 140s.; East Lothian do., 100s. to 130s.; Perthshire do., 80s. to 105s.; Forfarshire do., 90s. to 110s.; Fifeshire do., 80s. to 105s.; Reds and Cups, 80s. to 95s.; Rhensish whites, 50s. to 90s.

#### HOPS.—BOROUGH MARKET, FRIDAY, December 9.

Messrs. Pattenden and Smith report that the demand for Hops is still in a dull state, and appears likely to continue so until after Christmas. Foreign Hops continue to arrive, and find buyers at from 7l. 7s. to 9l. 9s. per cwt.

#### COAL MARKET.—FRIDAY, December 9.

Holywell, 24s.; Tanfield Moor, 21s.; Ravensworth West Hartley, 21s. 6d.; Wallend Haswell, 26s.; Wallend Stewarts, 26s.; Wallend Tees, 26s.—Ships at market, 29s. Trade brisk.

#### WOOL.—BRADFORD, THURSDAY, December 8.

Wool.—The supply of bright-haired wools is limited, commanding higher prices than a month ago. With the counter dealers there is an unusual degree of firmness in price and desire to hold, seeing it difficult to replace. The spinners, in doubt from their long absence as buyers in quantity, are looking round, but the prices sought deter them from buying, except to assort up their stocks. Noils and brokes without alteration in price, and are made only in very small quantities.

#### SMITHFIELD.—MONDAY, December 5.

Although the number of Beasts is larger, the increase is not in the best qualities; consequently we are able to quote 4s. 8d. for the choicest, it being more freely given to-day. There are a few less Sheep, however trade is scarcely as good as on Monday last, owing to the unfavourable weather. Good Calves are scarce and dear. From Germany and Holland there are 1113 Beasts, 440 Sheep, and 63 Calves; from Scotland, 120 Beasts; and 28 from the northern and midland counties.

Per st. of 8 lbs.—s d s d	Best Long-wools.—s d s d
Best Scots, Here-	Best Long-wools.—s d s d
fords, &c. ... 4 6 to 4 8	Do. Shorn ... 0 0 0 0
Best Short-horns 4 4 4 6	Do. Shorn ... 0 0 0 0
2d quality Beasts 3 0 3 8	Do. Shorn ... 0 0 0 0
Best Down and	Do. Shorn ... 0 0 0 0
Half-breds ... 3 8 5 0	Do. Shorn ... 0 0 0 0
Do. Shorn ... 0 0 0 0	Do. Shorn ... 0 0 0 0
Beasts, 4741; Sheep and Lambs, 24,090; Calves, 91; Pigs, 240	

#### FRIDAY, December 9.

We have a short supply of Beasts and a brisk demand, consequently Monday's quotations are freely given, and in some instances exceeded. There is about the usual number of Sheep at the time of year; trade for them is very heavy, and it is with difficulty they are disposed of at late prices. The number of Calves is very small, owing to the non-arrival of foreign consignments. Trade is brisk at Monday's rates. From Germany and Holland there are 115 Beasts, 1360 Sheep, and 51 Calves; the number of Milch Cows is 95.

Best Scots, Here-	Best Long-wools.—s d s d
fords, &c. ... 4 6 to 4 8	Do. Shorn ... 0 0 0 0
Best Short-horns 4 4 4 6	Do. Shorn ... 0 0 0 0
2d quality Beasts 3 0 3 8	Do. Shorn ... 0 0 0 0
Best Down and	Do. Shorn ... 0 0 0 0
Half-breds ... 3 8 5 0	Do. Shorn ... 0 0 0 0
Do. Shorn ... 0 0 0 0	Do. Shorn ... 0 0 0 0
Beasts, 362; Sheep and Lambs, 4110; Calves, 119; Pigs, 260	

#### MARK LANE.—MONDAY, December 5.

The supply of Wheat from Essex and Kent to this morning market was small, and its miserable condition rendering millers careless of the purchase, it met a slow sale at a decline of 1s. to 2s. per qr. upon the quotations of this day's evening. Although there was a fair attendance of country buyers, the amount of foreign Wheat sold was limited, holders of Ball qualities being indisposed to accept lower terms; but owing to the reduced prices at which American is offering in Liverpool, reduction of 2s. per qr. on such descriptions was acceded to. The top price of town-made Flour was fixed at 70s. per sack. Barley are 6d. to 1s. cheaper. Barley 1s. to 2s. per qr. lower. White Peas meet with little inquiry, and Grey are 2s. per qr. cheaper. For new Beans there was no sale, although offered at a reduction of 4s. per qr. The Oat trade is slow, and for new we reduce our quotations 6d. to 1s. per qr.

#### PER IMPERIAL QUARTER.

Wheat, Essex, Kent, & Suffolk	White	Red	Yellow
— fine selected runs	ditto	70—80	68—69
— Talavera		70—82	
— Norfolk		Red	
— Foreign		58—82	
Barley, grind. & distill.	34s to 38s.	Chev.	38—41
— Foreign—grinding and distilling			26—38
Oats, Essex and Suffolk			26—28
— Scotch and Lincolnshire			27—30
— Irish			25—29
— Foreign			24—28
Rye			29—44
Bees-meal, foreign			38—44
Beans, Mazagan	38s to 42s		40—42
— Pigeon	44s		40—42
— Foreign			40—42
Peas, white, Essex and Kent			61—63
— Maple	43s to 47s.		42—45
Maize			40—42
Flour, best marks delivered	per sack	65—70	
— 2d ditto	per sack	50—60	
— Foreign	per barrel	35—42	

#### FRIDAY, December 9.

The arrivals of grain and Flour this week have been moderate. Although the attendance at this morning's market was large, more disposition was apparent on the part of millers purchase foreign Wheat, and a moderate business has been transacted at the extreme rates lately obtainable. Some port of the English supply, owing to its wretched condition, remain unsold. In floating, an active demand has been experienced the Continent, and many cargoes were disposed of since Wednesday. Spring corn of all descriptions is a slow sale at Monday's prices. Flour meets with a little more inquiry.

#### ARRIVALS FROM NOVEMBER 26TH TO DECEMBER 2D.

Wheat	Barley	Oats	Flour
English ... 2110 qrs.	1290 qrs.	370 qrs.	2380 sa
Irish ... 700 "	700 "	2390 "	
Foreign ... 8920 "	4330 "	3810 "	

**LIVERPOOL, THURSDAY, Dec. 6.**—There was a fair attendance of country millers at this morning's market, but few buyers from a distance. Wheat met with a moderate consumption demand, at the full prices obtainable on Friday, being, however still 1d. to 2d. per 70 lbs. under those current on this day we Flour was less pressed for sale, the bulk of the late arrivals having been disposed of, and the extreme depression noted Friday was partially recovered, 35s. per barrel being obtained for Western Canal, and 35s. 6d. to 36s. per barrel for Baltic and Philadelphia. Oats and Oatmeal met with a very slow sale at a reduction of 3d. per 45 lbs. and 6d. per load on the white Barley and Beans were saleable in retail, at late rates. Indian Corn generally was neglected, and fine yellow 1s. per qr. was obtainable at 42s. to 43s. per 480 lbs. A parcel of fine white brought 46s., but inferior qualities were unsaleable. Arrivals to Liverpool from the 29th Nov. to the 5th Dec., inclusive: Flour, 30,947 qrs.; Barley, 1383; Malt, 25; Oats, 6788; Beans, 2773; Peas, 635; Indian corn, 16,446; Indian-oatmeal, 5372 lb. Oatmeal, 5997 sacks; Flour, 5317 sacks and 29,919 barrels.

AVERAGES.	Wheat	Barley	Oats	Rye	Beans	Peas
Oct. 29 ... 69s 1d	40s 9d	24s 8d	40s 10d	48s 4d	51s	
Nov. 5 ... 71 9	41 3	25 5	48 0	48 10	58	
— 12 ... 73 7	42 2	25 5	47 2	49 9	56	
— 19 ... 72 9	42 3	26 0	43 11	52 6	56	
— 26 ... 72 2	42 9	26 0	43 7	50 11	54	
Dec. 3 ... 72 7	40 9	26 8	43 5	52 0	53	
Agg. Aver. ... 71 11	41 6	25 8	42 11	50 5	54	

#### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

Prices	Oct. 29	Nov. 5	Nov. 12	Nov. 19	Nov. 26	Dec. 3
73s 7d	...	...	...	...	...	...
72 9	...	...	...	...	...	...
72 7	...	...	...	...	...	...
71 9	...	...	...	...	...	...
70 2	...	...	...	...	...	...
69 1	...	...	...	...	...	...



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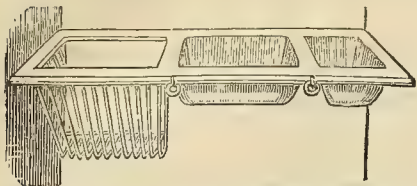
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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLARTY EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to THE EDITOR.—SATURDAY, DECEMBER 10, 1853.



# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 51.—1853.]

SATURDAY, DECEMBER 17.

[PRICE 6d.

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**COUNTY OF GLOUCESTER AND CHELTENHAM HORTICULTURAL SOCIETY.**—The Exhibition of the above Society for the year 1854 will be held in Cheltenham on WEDNESDAY, May 3d, and WEDNESDAY, August 30th. Schedules and all further particulars may be obtained on application to the Secretary, at his Offices, 123, High Street, Cheltenham.  
December 16th. HENRY J. COCHRANE, Secretary.

**SECOND APPLICATION.**  
**THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—TO THE SUBSCRIBERS.—The favour of your Vote and Interest at the next Election are most earnestly solicited on behalf of GEORGE KIDD, aged 69, who was brought up as a Gardener, and followed that occupation for 54 years, 40 of which he has been head-gardener to Noblemen and Gentlemen; he has brought up a family of 12 children, who cannot render him any assistance, and he is quite unable to get his living, having broken his wrist by a fall from a tree two years ago, while gathering fruit; he was five months in St. George's hospital, and discharged with very little use of his hand. He was a subscriber to the Institution for 10 years. The case is strongly recommended by the Committee and the following Members: Messrs. Osborne & Sons, Fulham; Messrs. Jackson & Son, Kingston; Mr. Fairbairn, Clapham; Mr. Kinghorn, St. Margaret's, Isleworth.

**SEEDS DIRECT FROM THE GROWERS.**  
**GARDENERS** and others requiring **REALLY GENUINE NEW SEEDS**, true to their kinds, are respectfully recommended to apply early to the undersigned.  
*The New Early Peas, Radish, French Horn Carrot, and other seeds for early sowing are now ready.*  
SUTTON & SONS, Seed Growers, Reading, Berks.

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SUTTON & SONS, Seed Growers, Reading, Berks.

**MESSRS. J. AND H. BROWN, Albion Nursery,** Stoke Newington, London, will forward to any part ORCHIDEA, choice species and good plants, 30s. to 40s. per doz., including Dendrobiums, Oncidiums, Stanhopeas, Cypripediums, Brassias, Vandas, &c.  
Catalogues of General Nursery Stock by post.—Dec. 17.

**SUPERB DOUBLE HOLLYHOCKS.**  
**WILLIAM CHATER** has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by enclosing a postage stamp.  
Saffron Walden Nursery, December 17.

**PEARL GONIUMS.**  
**JOHN WESTWOOD** begs to inform the public and the trade, that having an immense stock of GERANIUMS and FANCY GERANIUMS (upwards of 60,000 in number, exclusive of Scarlets, &c.), and comprising almost every kind cultivated), he is enabled to offer them at prices which must afford satisfaction. His Advertisement in the *Gardeners' Chronicle* of the 5th and 12th inst. may be referred to for the names and prices of a portion of his stock. All applications and orders will receive prompt attention.  
The Floral Nursery, Acton Road, Turnham Green, Middlesex.

**SUPERB NEW APPLE.**  
**BRADLEY'S GOLDEN PEARMAIN.**  
**RICHARD BRADLEY** begs to inform Nurserymen and the Public generally, that he is again prepared to send out this very excellent New Apple. Fine healthy plants at the following reduced prices:—Dwarfs, 2s. 6d. each; Half Standards, 2s. each; Full Standards, 3s. 6d. each; with the usual discount to the trade when three plants are ordered. For full particulars of its excellent qualities see *Gardeners' Chronicle* of October 9th, 16th, and 29th, 1852.  
Hahn Nursery, Southwell, Notts, Dec. 17, 1853.

**BASS AND BROWN** beg to refer to their Advertisement in the *Gardeners' Chronicle* of Oct. 22 and Nov. 5. for their fine selection of the most beautiful GERANIUMS, which are unusually strong, CHIRYANTHEMUMS and various GREEN-HOUSE and HARDY PLANTS, GLADIOLI, and a great variety of BULBS and ROOTS, of all which they possess a large and fine stock.  
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    " 25 do., 30s., or per dozen .. 6s. to 20s.  
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The Autumn Catalogue supplied free for three penny stamps.  
Seed and Horticultural Establishment, Sudbury, Suffolk.

## TO ADVERTISERS.

**THE ADVERTISEMENT DUTY** being repealed, the PROPRIETORS of the GARDENERS' CHRONICLE announce that they have reduced the customary charge for each Advertisement by 1s. 6d., the amount of duty taken off by the Government.  
Advertisements of GARDENERS and BAILIFFS OUT OF PLACE, of not more than four lines in length, 1s. 6d. each.

**GERMAN SEEDS FOR 1854.**  
**MESSRS. PLATZ AND SON, SEED GROWERS,** Erfurt, Prussia, intimate that their Catalogue of Flower and Vegetable Seeds may be had on application to their agent, Mr. ROBERT KENNEDY, Bedford Conservatory, Covent Garden.

**JUDSON'S RICHMOND VILLA BLACK HAMBURG VINE.**  
**ARTHUR HENDERSON AND CO.** have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.  
N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

**THE FINEST BALSAMS IN EUROPE, in Six Classes;** Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procurable to order, and all other choice Horticultural subjects.—420 Strand.

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25 American Azaleas do. do. ... 15 0  
25 Flowering Shrubs, one of a sort, by name ... 10 6  
12 Rhododendrons, hardy Scarlet, White, and Rose ... 12 0  
Azalea indica, fine blooming varieties, per dozen ... 20 0  
Camellias, very choice, do. do., per dozen ... 20 0  
24 Choice Ericas, one of a sort, by name ... 20 0  
Roses, standards and half standards, per dozen, 12s. and 15 0  
Climbing Roses, Clematis and Jasmines, per dozen ... 6 0  
Fruit Trees of all kinds, Evergreen Shrubs, &c. New Gardens and Greenhouses furnished on moderate terms.  
Albion Nursery, Stoke Newington, London, Dec. 17.

**CORN MARKET, WISBEACH, CAMBRIDGESHIRE.**  
**CHARLES SHARPE** begs to call the attention of the nobility, gentry, and trade to the undermentioned choice collection of SEED POTATOES, grown with great care upon marsh land near the sea, which is the most appropriate soil for the culture of the Potato, as it is less affected by the disease, and of finer quality. The undermentioned prices include hampers and packings. Smaller quantities can be had if required. The Trade Price can be had on application.  
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American Native ... 10s. Kentish Kidney ... 8s.  
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Yorkshire Regent ... 8s. British Queen (This is the  
Forty Fold ... 10s. best producer and best  
    quality in cultivation) ... 12s.

## TO NOBLEMEN, GENTLEMEN, AND COMPANIES PLANTING.

**THOMAS JACKSON AND SON** respectfully invite an inspection of their extensive and fine collection of ORNAMENTAL SHRUBS and TREES; they are of fine growth, and in excellent condition for planting for immediate effect. To the undernamed T. J. & S. especially desire attention. Prices may be obtained by letter or personal application.  
American Arbor-vita, 2 to 10 ft.  
Chinese do., 2 to 8 feet, fine  
Arbutus, 2 to 5 feet  
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Cedar, Deodar, 2 to 12 feet, fine  
Cedar of Lebanon, 2 to 9 ft., fine  
Variegated Hollies, 2 to 9 feet  
Green do., 2 to 9 feet  
Weeping do., 5 feet stems, fine  
Berberis aquifolium, 2 to 3 feet, bushy  
Taxodium sempervirens, 3 to 12 feet, fine  
English Yews, 2 to 9 feet  
Irish do., 2 to 8 feet, very fine  
Tree Box, 2 to 7 feet  
Araucaria imbricata, 1 to 5 feet, fine  
T. J. & S. having added to their previously good stock of American Plants, about one-third of the entire stock of the Norbiton Nursery, so long famed for its collections of Hybrid Rhododendrons, Azaleas, &c., can now offer on most advantageous terms—  
Rhododendron ponticum, 1 to 5 ft., in great variety.  
Do. aureum, and the varieties of yellows, 1 to 7 ft.  
Do. Smithii, tigrinum, and other scarlets, 1 to 9 ft.  
Do. campanulatum and light varieties, 1 to 7 ft.  
Azaleas, Indian, American, and Ghent varieties, 1 to 6 ft.  
Kalmia latifolia, and others, 1 to 4 ft.  
T. J. & S. have a splendid healthy stock of the Sikkim Rhododendrons, of which they will furnish the 12 following fine kinds, in pots, for 63s. viz., Thompsoni, fulgens, glaucum, glaucum nanum, niveum, Falconeri, ciliatum, Edgeworthi, lanceolatum, cinnabarinum, ferrugineum, and calceatum.  
Fine Fruit and Forest Trees; strong Quicks for Fences, and all other kinds of Nursery Stock.  
Nurseries, Kingston, near London.

**RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY FOR 1854** is now in the Press, and will be shortly published. Price Sixpence.

**RENDLE'S NEW SEED CATALOGUE** will not be ready as soon as previously advertised. But it is now in the Press, and will appear in a short time, due notice of which will be given.

All kinds of SEEDS for early purposes can be had immediately; and general orders will be executed in rotation as received.—  
WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

**THOMAS IMRIE AND SON'S Priced Catalogues of** Forest Trees, Evergreen, and Deciduous Shrubs, &c., are now ready, and will be forwarded, free, on application.  
Ayr, Dec. 17.

**STANDISH AND NOBLE'S CATALOGUE** for the present season is now ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Dec. 17.

**GEORGE JACKMAN, NURSERYMAN, Woking, Surrey,** 1½ mile from Woking Station, South-Western Railway, begs to announce that he has just published a new and complete Catalogue of his American Plants, Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c. &c., and may be had on application by enclosing two postage stamps.

**GEORGE BAKER** begs to say that his **DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT AND FOREST TREES, &c.**, may be had by enclosing two postage stamps.  
G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.  
G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.  
American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

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**JOHN WATERER** begs to announce that his new CATALOGUE OF RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.  
The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.  
The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

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Quercus alba ...	26s. 0d.	8s. 0d.	1s. 3d.
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" obtusiloba ...	35s. 0d.	10s. 0d.	1s. 6d.
" nigra ...	...	...	2s. 0d.

14, Tavistock Row, Covent Garden, London.—Dec. 17.  
**JAMES MELDRUM, NURSERYMAN, Kendal, Westmoreland,** begs to announce that he has a very large stock for sale, of fine one-year Seedling ASH, and one-year Seedling OAKS, also a quantity of fine TRANSPLANTED OAKS, 2 to 3 feet. Prices very moderate; may be obtained on application.

**CHARLES DALY AND SON** will sell two years Seedling, one and two years Transplanted THORN, 2 to 3 feet; BEECH Forest Trees and Seedlings do., and SHRUBS cheap. IRISH YEW, 6s. to 8s. per 100. Catalogues, with prices, sent free.—Colegrave, Dec. 17.

**ONE MILLION WHITE THORN QUICK,** one, two, three, and four years transplanted; 600,000 LARCH; one, two, and three years transplanted; with a general stock of Forest and Fruit Trees, Evergreens, Flowering Shrubs, &c. &c., all in good condition, and will be sold on reasonable terms.—Apply to ANDERSON CROWDER, Nurseryman and Seedsman, Horncastle, Lincolnshire.

**LARCH, 2½ to 3½ feet,** or 3 to 4 feet, fine, 15s. per 1000; Raspberry, Rivers' Autumn-fruited Red, 15s. per 100; Raspberry, Imrie's Large-fruited White, 15s. per 100; Boxwood, dwarf, 4d. per yard as it grows, each yard being sufficient to relay four yards. Delivered in London, Birmingham, or Liverpool, if a large quantity is ordered.—Apply to Mr. JOHN DICKIE, Seedsman, Kilmarnock, Trustee on Lang's sequestrated estate.

**LIME TREES, 12 to 14 feet, 42s. per 100.—SPRUCE FIRS, 2 to 3 feet, 6s. per 100.—LAURUSTINUS,** very fine, 30s. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

**FRUIT TREES, &c.**—The following are very strong, and finely grown:—Dwarf-trained Moor Park Apricots, and other sorts, 42s. per doz.; Standard trained Peaches and Nectarines, 60s. to 80s. per doz.; Dwarf trained Green-gage Plums, 30s. per dozen; Prince Albert Rhubarb, strong to force, 6s. per dozen.  
Berberis aquifolium and Berberis dulcis.—These beautiful shrubs are 1 to 2 feet high; 8s. per 100, 60s. per 1000.—Usual discount to the Trade.—JOHN JEVES, Nurseryman, Northampton.



**SUPREME LATE WHITE BROCCOLI—"EMPEROR."**  
**EDMUND PHILIP DIXON** having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thurgumbald, near Hull, begs to announce that on and after the 1st of January next he will be prepared to send it out in sealed packets at 2s. 6d. each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, who state that the **EMPEROR**, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'ULLEN, 6, Leadenhall Street, London. Also of the Advertiser, 57, Queen Street, Hull.

**JOHN WATERER** has to offer in any quantities the following **AZALEAS**, &c., which are of fine growth, and beautifully set with blooming buds for Forcing. Prices forwarded on application.

**AZALEAS**.—Coccinea, c. major, Taylor's Red, Nosegay, glauca, aurantia, pontica, p. alba, p. multiflora, Ghent Azaleas in varieties.

**KALMIA latifolia**, myrtifolia (a new and very superior variety), glauca—Andromeda, of sorts; Ledums, &c.; Rhododendrons do.; Rhodora canadensis.

The American Nursery, Bagshot, Surrey.

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CHART LODGE, REIGATE, SURREY.

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It will be sent in fine bags, and delivered to any of the Railway Carriers or Wharfs in London, in not less than one ton lots of 20 bushels to the ton, at 2s. per ton. Parties requiring lots of four tons and upwards can have the Sand delivered loose or in bags, at the Bricklayers' Arms Station, or within five miles of the same, at a very low price.—For further particulars, apply at the Offices of **JAMES GAWKROGER**, 21, Union Street, Halifax, Yorkshire; and **JOHN HYNAM**, 7, Princes Square, Wilson Street, Finsbury, London.

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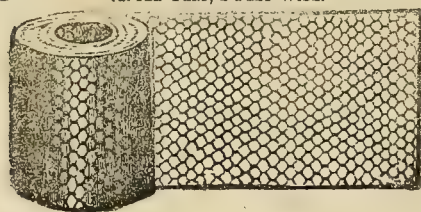
**EDWARD BECK** manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Prices lists of plant tubs and boxes forwarded on application.

**ROCKWORK, ORNAMENTAL WATER-FALLS, FOUNTAINS, RUSTIC WORK, AND LANDSCAPE GARDENING** undertaken on a large or small scale by Mr. GLENNY, who will attend for consultation in any part of the kingdom.—420, Strand

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**BAT FOLDING NETS** with Bamboo Poles, 14 feet long, 10s. each; Partridge Nets, 2d. per square yard; Rabbit Nets, 4 feet wide, 1d. per yard; Cocoa Nut Fibre; Sheep Folding Nets, 4 feet high, 4d. and 6d. per yard.—At W. CULLINGFORD'S Manufacturing, 1, Edmund Terrace, Ball's Pond Road, Islington (late of Strathmore Terrace, Shadwell), London.

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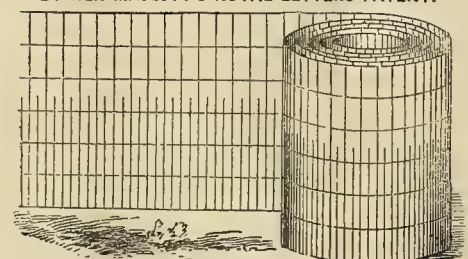


	Galvan- ised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " " strong	12 " "	9 " "
2-inch " " extra strong	12 " "	9 " "
1½-inch " " light	8 " "	6 " "
1½-inch " " strong	10 " "	8 " "
1½-inch " " extra strong	14 " "	11 " "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

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#### BY HER MAJESTY'S ROYAL LETTERS PATENT.



**BENJAMIN GREENING and Co's. PORTABLE WIRE FENCES**, Manufactured by Patent Machinery.

The new method of manufacturing—Wire Fencing (which B. G. & Co. have invented and patented) makes it at once the cheapest, strongest, and most durable fence ever offered to the public. It is elegant in pattern and light in appearance, being also an entire fence in itself; it is much superior to the common Wire Netting Fence now in use. It can be fixed or removed by any labourer. It requires fewer supports than any other, and is infinitely cheaper than hand-made Fences.

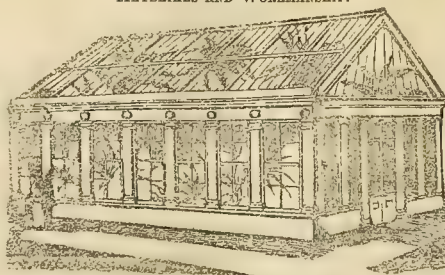
**PORTABLE HORSE and CATTLE FENCE.—PORTABLE SHEEP and LAMB FENCE.—POULTRY-PROOF FENCING.—PORTABLE HARE and RABBIT-PROOF FENCING.**

Trainers for Peas, Garden Bordering, Aviaries for Poultry, Pheasant Breeding Cages, Ornamental Varieties, Light and Cheap Kinds, Twisted Wire Strand Fence for the Colonies, &c.

For Prospectuses, Engraved Sheet of Patterns, and any other information, apply to Messrs. B. GREENING & Co., 1 and 3, Church Gates, and 2 and 2A, Cateaton Street, Manchester.

#### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



**GRAY and ORMSON**, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

#### HORTICULTURE IN ALL ITS BRANCHES.



**J. WEEKS & Co.**, King's Road, Chelsea,



#### HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The **HOT-WATER APPARATUS** (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

**J. WEEKS & Co.**, King's Road, Chelsea, London.

**HORTICULTURAL BUILDINGS, ROCK and RUSTIC WORK, ORNAMENTAL WATER FOUNTAINS and FALLS, and LANDSCAPE GARDENING**, executed on the best principles; Estates Improved, Land Laid Out for Building, &c., by Mr. GLENNY, Valuer, Estate and Horticultural Agent, 420, Strand.

BY HER



ROYAL

MAJESTY'S

LETTERS PATENT

**E. DENCH, PATENT HOTHOUSE WORKS,** KING'S ROAD, CHELSEA.

**PATENT HOTHOUSES** and excellent Glass at 1s. 3d. per foot super, which are superior to all others for price with quality, and if known would supersede all others. A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburg, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

**GLAZING WITHOUT PUTTY**—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c. 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

**PROTOXIDE ANTI-CORROSION PAINT**, at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it.—Manufactured by CHARLES FRANCIS and Sons, Cement Works, Nine Elms, London.

#### PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

**SAMUEL CUNDY, MASON and BUILDER, PIMLICO** MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

#### GLASS FOR CONSERVATORIES, ETC.

**HETLEY and CO.** supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to **JAMES HETLEY & Co.**, 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

#### ESTABLISHED ABOVE SIXTY YEARS.

**ROBERT METTAM, BRITISH and FOREIGN WHOLESALE WINDOW GLASS WAREHOUSE**, 30, Princes-street, Leicester-square.

16 oz. Sheet Glass in Boxes of 100 feet. Sheet Glass cut to size, not exceeding 40 inches. Under 6 ins. by 4 ... 13d. p. foot. 16 oz. ... 3d. to 3½d. per foot. 6 by 4, under 8 by 6, 2d. " 21 oz. ... 3½d. to 5d. " 8 by 6 " 12 by 10, 2½d. " 26 oz. ... 5d. to 7d. "

Foreign Sheet Glass, packed in boxes of 200 feet each, large sizes—4ths, 2½d.; 3rds, 2½d. per foot net.

Hartley's Patent Rough Plate Glass, Glass Tiles and Slates, and every description of Glass now manufactured. Estimates and Price Lists forwarded post free.

#### GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

**THOMAS MILLINGTON** requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares under 6 inches by 4	...	...	...	...	...	...	...	...	...
6 by 4 and 6½ by 4½	...	...	...	...	...	...	...	...	...
7 by 5 and 7½ by 5½	...	...	...	...	...	...	...	...	...
8 by 6 and 8½ by 6½	...	...	...	...	...	...	...	...	...
9 by 7 and 10 by 8	...	...	...	...	...	...	...	...	...
12 by 10 to 15 by 10	...	...	...	...	...	...	...	...	...

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet—30 inches by 12, 20 by 18, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 20s. per 100 feet.

200 feet cases at 42s., and 300 feet case 63s., in large sheets. Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

**HARTLEY'S PATENT ROUGH PLATE GLASS**, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

#### JAMES PHILLIPS & Co.,

116, BISHOPSGATE STREET WITHOUT.

PRICES OF

**HARTLEY'S PATENT ROUGH PLATE GLASS**, for CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTORIES, SKYLIGHTS, &c.

Packed in Crates, for Cutting-up of the sizes manufactured.	3th inch thick.	2th inch thick.	1th inch thick.
s. d.	s. d.	s. d.	s. d.

30 inches wide and from 40 to 50 long	0 6½	0 7	0 9
Or 20 " " 50 " 70 "	0 6	0 7½	0 9½
above 70 " "	0 6	0 7½	0 9½

In Squares cut to the sizes ordered.	3th inch thick.	2th inch thick.	1th inch thick.
s. d.	s. d.	s. d.	s. d.

Under 8 by 6	0 4	0 5	0 6
8 by 6 and under 10 by 8	0 4½	0 6	0 7
10 by 8 " 14 by 10	0 5	0 6½	0 8
14 by 10 " 12 ft. sup., if the length does not exceed 20 inches	0 5½	0 7	0 8½
1½ ft. sup. " 3 ft. sup., or if above 20 inches long and not above 30 inches long	0 6	0 7½	0 9

3 " " 4 " 20 " 30 "	0 6½	0 8	0 9½
4 " " 5 " 30 " 35 "	0 7	0 8½	0 10
5 " " 6 " 35 " 40 "	0 7½	0 9	0 10½
6 " " 7 " 40 " 45 "	0 8	0 9½	0 10½
7 " " 8 " 45 " 50 "	0 8½	0 10	0 11
8 " " 10 " 55 " 65 "	0 9	0 10½	0 11½
10 " " 12 " 65 " 75 "	0 10	0 11	0 12
12 " " 15 " 75 " 90 "	0 10½	0 11½	0 13
15 " " 20 " 90 " 100 "	0 11	0 12	0 14
20 " " 25 " 100 " 120 "	0 12	0 13	0 15
25 " " 30 " 120 " 150 "	0 13	0 14	0 16

Quarries ... 0 6 ... 1 3

"There can be no question now that Rough Plate Glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of sheet or transparent glass, and it has many advantages peculiar to itself, without a single disadvantage as a set-off."

*Gardeners' Chronicle.*

**JAMES PHILLIPS & Co.**, Horticultural Glass Merchants, 116, Bishopsgate Street Without, London.

#### LIGHT, CHEAP, AND DURABLE ROOFING.

**CROGGON'S PATENT ASPHALTE ROOFING** FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by unpractised persons. Price ONE PENNY PER SQUARE FOOT. Croggon's Patent NON-CONDUCTING FELT for steam-boilers and Pipes, saves 25 per cent. of fuel.

Samples and testimonials sent by post on application to CROGGON & Co., 2, Dowgate Hill, London, who also supply SHIP-SHEATHING FELT and INODOROUS FELT for damp walls, and lining iron houses, to equalise the temperature.

"**FRIGI DOMO**."—Patronised by Professor Lindley for the Royal Horticultural Society, the Royal Zoological Society, by His Grace the Duke of Northumberland at Syon House, and many cultivators of first class Horticultural and Floricultural produce.

"**FRIGI DOMO**," a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.



**CLARENDON NURSERIES, CAMBERWELL.**  
**JOSEPH FRYER** can supply every description of  
Fruit Trees, Ornamental Trees, Evergreen and Flowering  
Shrubs, Standard and Dwarf Roses, Greenhouse, Herbaceous,  
and Alpine Plants, Vegetable and Flower Seeds, Peat Mould,  
Loam, Manure, Silver Sand, Turf, Gravel, &c.  
J. F. can supply the trade with a large quantity of Limes,  
Planes, Elms, Poplars, Scarlet Thorns, Mulberries, Evergreen  
Privet, green and variegated Euonymus, Laurels, Lilacs, Ivies,  
Evergreen Oaks, Rhododendrons, Magnolia grandiflora, Hardy  
Geonias, Garrya elliptica, Glycine sinensis, Althea frutes,  
Thauntonia radicans major, Clematis azurea grandiflora, Passiflora  
vittata, Menispermum canadense, Salisburia adiantifolia, Gladiolus  
sittacina, Tiger Lilies, &c.

**CORNWELL'S VICTORIA RASPBERRY.**—  
Canes of the above to be had of GEORGE CORNWELL,  
Market Gardener, Barnet, at 15s. per 100. The usual allowance  
to the trade. Post-office orders made payable at Barnet.

**NEW SEEDS—GROWTH OF 1853.**  
**RENDEL'S COLLECTION OF GARDEN SEEDS,**  
FOR ONE YEAR, will be sent out as usual by  
the Subscribers.

The collections have given universal satisfaction, and  
they will be found sufficient to supply a garden during  
the whole of the 12 months.

1.—A complete Collection, to supply a large garden £ s. d.  
for 12 months, including 20 quarts of the newest and  
most approved Peas, for early, medium, and late crops;  
10 quarts of Beans, and full quantities of all other  
kinds of vegetable seeds ... 3 0 0

2.—A complete Collection, in reduced quantities, for  
a smaller garden ... 2 0 0

3.—A complete Collection do. ... 1 5 0

4.—A small and choice Collection ... 0 15 0

The quantities are stated in full in **RENDEL'S NEW PRICE  
CURRENT** and **GARDEN DIRECTORY**, now in the press.  
All orders above 20s. carriage free (see **PRICE  
CURRENT**), and all orders above 5l. delivered carriage  
free to every Railway Station in England and Wales,  
and to every Steam Port in England, Wales, Ireland,  
and Scotland.

**WILLIAM E. RENDEL & Co.,**  
Seed Merchants,  
ESTABLISHED 1786. Plymouth.  
For description of our **NEW PRICE CURRENT** for 1854,  
back page of last week's Number.

**BUTTON'S COMPLETE COLLECTIONS OF  
KITCHEN GARDEN SEEDS FOR ONE YEAR'S  
SUPPLY** contain all the best sorts of Vegetable Seeds for  
sowing, from January to December, to stock the garden  
throughout the year, with descriptions and instructions.

1.—A complete Collection of Garden Seeds for one £ s. d.  
year's supply, including 20 quarts of the best Peas for  
accession, 10 quarts of Beans, and full quantities of  
French Beans, choice sorts of Broccoli, Cucumbers,  
Fennels, Lettuces, Cauliflowers, and every other sort of  
vegetable required, in full quantities ... 3 0 0

2.—A complete Collection, in quantities proportion-  
ately reduced ... 2 0 0

3.—A complete Collection, equally choice sorts ... 1 5 0

4.—A small and very choice Assortment ... 0 15 0

If some kinds of Seeds are already possessed, purchasers  
requested to name them, that increased quantities of  
others may be sent in lieu of them.

As some sorts are very short in crop this year, purchasers are  
respectfully recommended to send their orders early.  
**ARRANGE FREE, from JOHN SUTTON & SONS, Seed Growers,  
Ling, Berks.**

**LAWKE'S CHAMPAGNE RHUBARB.**—This  
most desirable variety is now for the first time offered to  
the public. It has stood the severest test that can be applied,  
and has beaten everything in Covent Garden and other London  
markets in realising higher prices, from its magnificent colour and  
size. It has been seen by the very highest authorities and pro-  
nounced to be a most valuable introduction. In earliness it equals  
Prince Albert, but of a deeper colour, and much greater bearer.  
It is remarkably well, and is very hardy out of doors. Mr.  
Lawke has placed the entire sale in the hands of Duncan Haile,  
one-year-old plants, strong, 5s. each. A few two years old,  
very strong, for sale.

**LAWKE'S MAMMOTH RED CELERY.**—This is con-  
sidered the largest yet grown, attaining the extraordinary weight  
from 10 to 12 lbs., and at the same time perfectly solid. It is  
very perennial in its habit, as it will not, under any circum-  
stances, run to seed the first season, and it is difficult sometimes  
to second when planted out for that purpose. In colour it is a  
rich red. In flavour unsurpassed if equalled.

It has been seen growing by many practical gardeners, who  
testify it is a new feature in the garden, from the fact that you may  
eat it nearly all the year. Packets 2s. 6d. each.

**MITCHELL'S HARDY EARLY CAULIFLOWER.**—This is con-  
sidered precisely as the handfast variety, but when removed  
from the frame does not require the same protection, and comes in  
readily after. This is particularly recommended for  
gentlemen's establishments. The head is not large, but handsome  
and compact, and is so firm that you may let them stand from  
May to a fortnight and they will not get frothy or loose. This  
is quite a distinct variety. Packets 2s. 6d. each.

**DUNCAN HAILE, Seedsman, 109, St. Martin's Lane.** Post  
the orders to be made payable at Charing Cross.

**KILMARNOCK WEeping WILLOW, or SALIX  
CAPREA PENDULA.**—The Trustee on the sequestered  
estate of Thomas Lang, Nurseryman, Kilmarnock, intimates that  
he now ready to supply plants of this beautiful new Willow.  
Lang has received numerous testimonials as to its being a  
distinct, and interesting addition to our Ornamental Trees,  
as Professor Lindley, of London, Mr. MacNab, Royal Botanic  
Gardens, Edinburgh, and others; but the following letter from  
William Jackson Hooker, Director of the Royal Gardens,  
Kew, is of itself sufficient both as a description and a recommen-  
dation of the plant.

"Royal Gardens, Kew, Sept. 29, 1853.  
Sir,—The *Salix caprea pendula*, or Kilmarnock Weeping  
Willow, is doing well with us, and is much admired for its  
very weeping character. It bears the same relation to the  
ordinary *Salix caprea* that the Weeping Ash does to the Common  
Ash, and I need say nothing more in its favour. Every branch  
is beautifully curved downwards, and the great breadth of the  
leaf and its dark colour give it a totally different character  
from the common Weeping Willow, *Salix babingtonia*. I think  
highly of it as an ornamental small tree.

"I am, &c. (signed) W. J. Hooker."  
Plants—Furnished Plants, on own roots, trained to one stem,  
each; do. do. extra fine, 3s. 6d. each; a few plants, grafted  
on *Salix alba*, 5s. each.

Plants will be delivered in London for 6d. each additional,  
despatched from thence to any address.  
Orders to be addressed to Mr. JOHN DICKIE, Seedsman,  
Kilmarnock, the Trustee, who will also forward, on application,  
a list of the General Nursery Stock, which is now  
sold off at extremely low prices. The Trade supplied on  
liberal terms.

**DILCOCK'S BRIDE BROCCOLI.**  
**BAINBRIDGE AND HEWISON** (late Jas. Edward),  
have the pleasure of offering again to their friends and the  
public their **DILCOCK'S BRIDE BROCCOLI**, at 2s. 6d. per  
packet, each containing 1800 Seeds; and while returning their  
thanks to their numerous patrons of last season, they beg to  
refer them to the following extract, taken from the *Yorkshireman*  
newspaper of the 30th of April last, when it was exhibited at  
York, for the fourth time:—"Mr. Dilcock deservedly obtained  
all the three prizes for Broccoli with his Seedling—the 'Bride.'  
Taking the season into account, these vegetables were really  
remarkable specimens." It was equally successful the two  
previous years.

B. & H. will be prepared to send out their Catalogue of Kitchen  
Garden and Flower Seeds for 1854, early in January, post free,  
on application, and also their Catalogue of Plants early in March,  
containing Stove, Greenhouse, &c., including many of the newest  
and choicest of the season. Their Seeds will be of the very best  
quality, and in the greatest possible variety.

Sold Wholesale by **NOBLE, COOPER, & BOLTON**, Fleet Street;  
**CHARLWOOD & CUMMING**, Covent Garden; and by all respectable  
Seedsmen in town and country.—7, Bridge Street, York, Dec. 17.

**CRIMSON BOURSALT ROSES.**—Strong plants  
of this desirable climbing variety for planting in Shrubs-  
eries, &c., at the following low prices:—Large plants, 3s. 6d. per  
100; small ditto, 25s.; under 50, 6s. and 5s. per dozen.

C. G. WILKINSON, Western Rose Nursery, Ealing, near London.

**BENJAMIN R. CANT** begs to offer the following,  
in extra strong plants:—

**NEW SHOW GERANIUMS.**  
Hoyle's Astrea, 5s.; Basilisk, 3s. 6d.; Butterfly, 3s. 6d.; Leonora, 5s.;  
Oscar, 5s.; Zaria, 5s.; Foster's Eleanor, 3s. 6d.; National, 3s. 6d.;  
Optimum, 7s. 6d.; Rachael, 5s.; Dobson's Gertrude, 5s.; Har-  
riet, 3s. 6d.; Jupiter, 3s. 6d.; Pasha, 5s.; Spot, 5s.; Vulcan, 5s.  
The above 16 for 55s.; any 12 for 48s., or 12 of my own selection  
for 36s.

Any 12 of the following first-rate varieties may be selected for 20s.,  
or 12 of my own selection for 16s.

Arethusa	Exhibitor	Ocellatum
Ajax	Incomparable	Purple Standard
Alibi	Lavinia	Plantagenet
Butterfly	Magnet	Silk Mercer
Commissioner	Mochanna	Tyrian Queen
Diana	Major Domo	Village Maid
Enchantress	Nepaulese Prince	
	Good older sorts 6s., 9s., and 12s. per dozen.	

**FANCY GERANIUMS.**

Purchasers may select any 12 of the following for 12s., or my  
own selection 9s. per dozen:—

Anais	Fleur d'Marie	Miss Sheppard
Albion	Hero of Surrey	Pelopides
Beauté	Jehu Improved	Purity
Belle Marie	Little Wonder	Prince Albert
Diana Vernon	Mulberry	Prima Donna
Delicate	Marion	Queen Victoria
Exquisite	Madame Milleze	Statuiski
Fairy Queen		

**NEW CINERARIAS.**—The set of 8 for 18s.  
Charlotte, 2s. 6d.; Charles Dickens, 2s. 6d.; Conspicua, 2s. 6d.;  
Kate Kearney, 3s. 6d.; Loveliness, 3s. 6d.; Marguerite d'Anjou,  
3s. 6d.; Prince Arthur, 3s. 6d.; Rosalind, 3s. 6d.

Purchaser's selection from the following, 9s. per dozen;  
my own, 6s. per dozen:—

Annie	Effie Deans	Mr. Sidney Herbert
Adela Villiers	Experimental Blue	Nymph
Angelique	Flora M'Yvor	Nonsuch
Agnes Wakefield	Formosa	Othello
Bessy	Lady Hume Campbell	Prima Donna
Catherine Hayes	Lady Gertrude	Rosy Morn
Catherine Seaton	Madame Cerito	Resplendens
Carminata	Madame Sontag	Sun
David Copperfield	Mazzini	St. Clair of the Isles
Eleanor	Marianne	Suzie

Carriage paid to London and Norwich, and all intermediate  
Stations. A liberal discount for cash, and the usual allowance to  
the trade.—St. John's Nursery, Colchester.

## The Gardeners' Chronicle.

**SATURDAY, DECEMBER 17, 1853.**

MEETINGS FOR THE ENSUING WEEK.		
MONDAY, December 19	19	8 P.M.
TUESDAY, — 20	20	8 P.M.
WEDNESDAY, — 21	21	8 P.M.
THURSDAY, — 22	22	8 P.M.

In the remarks which we lately made respecting  
the effect which FUNGALS have in producing disease  
in animal tissues, we considered principally the  
higher orders of animals, in which the circulation is  
more complete, the digestion more rapid, and the  
vital temperature higher. It is amongst the lower  
tribes, especially those which live wholly on vege-  
table food, that disease, from the growth of fungi in  
their intestinal cavities or in their most intimate tis-  
sues, is most prevalent. It is very possible that a  
luxuriant growth of these productions may some-  
times exist with little derangement of health, as is  
often the case with intestinal worms, even when  
present in very considerable numbers; and, indeed,  
in some cases they seem almost to be normal.

A very beautiful volume has lately been pub-  
lished by the Smithsonian Institution, from the pen  
of Dr. LEIDY, entitled a "Flora and Fauna within  
Living Animals," in which complete forests of such  
productions are represented as existing almost  
normally in the intestines of different species of  
*Lulus*, and at the same time infesting the Entozoa  
contained in the same cavity. Though death, how-  
ever, may not always be the consequence of their  
presence, so long as they are confined to the intes-  
tinal cavities, it is, we believe, inevitable wherever  
the more intimate tissues themselves are attacked.  
The spores which fall upon their more delicate ex-  
ternal membranes, or enter their stigmata, penetrate  
rapidly by means of their sprouting mycelium into  
the tissues, where they spread in every direction till  
the vital powers are completely impeded. The pro-  
gress or symptoms of the disease may be different in

different cases, and the fungus may be more or less  
completely developed before death takes place.

In such cases as the Muscardine, which is so  
fatal to silkworms, and in the disease to which  
house-flies are subject in autumn, the mycelium  
scarcely fructifies before death takes place; and  
this also holds good with those large species of  
*Spharia* which affect the larvæ and pupæ of dif-  
ferent insects, though in some instances, as in that  
of the *Grûpes végétales* of the West Indies, the  
unhappy insects fly about with a fungus some inches  
in length attached to them. It is very singular that  
in these cases, as in those of the caterpillars and  
chrysalises just mentioned, the fungi which appear  
are very closely allied to those which M. TULASNE  
has succeeded in raising from different kinds of  
ergot, forming a very peculiar group, of which the  
greater part are produced on animal structures,  
though we are not aware that there is any peculiar  
chemical condition common to the substances in  
which they grow, which might be supposed to favour  
their development. In all cases the fungi seem  
to be very different from those which are imme-  
diately developed on living vegetables. One of the  
most curious perhaps is that to which ROBIN has  
given the name of *Laboulbenia*, but which was first  
discovered by ROUGET on the antennæ of *Brachinus  
crepitans*, occurring also occasionally in considerable  
quantity on the tarsi and other parts of the body in  
this and several other insects. Little clubs, con-  
sisting below of ample cells and containing a cavity  
above filled with large oblong spores, are developed  
in the living insects, all leaning backwards, in con-  
sequence of their being bent by the motion of the  
insects amongst the little stones which are their  
favourite lurking places. Many other instances  
might be adduced in which more or less cumber-  
ous burdens are thus borne about by living insects, like  
so many miserable SINBAIDS, without any power of  
shaking them off; and in almost every case the  
mycelium penetrates and is nourished by the tissues  
themselves. And if such be the case with insects,  
and disease and death are so evidently the direct  
consequence of their presence, we cannot see what  
tenable objection can be urged against the possibility  
of disease in the vegetable kingdom being also pro-  
duced by plants of the fungal race. M. J. B.

The long-expected REPORT upon the ROYAL WOODS  
AND FORESTS for 1852 and 1853 is now before us,  
in the form of a Blue Book of formidable dimensions.  
Press of matter prevents our noticing it for the  
present further than to request most earnestly that  
all who are interested in Crown property, or official  
misgovernment, or the management of their own  
estates, WILL TAKE THE TROUBLE TO READ IT. We  
know nothing that will better repay perusal, whether  
we regard it as a storehouse of sound practical in-  
formation upon the subject of forest management,  
or as a beacon to warn others from wasting their  
property, as that of the Crown has been by Public  
Commissioners. The reports of Mr. BROWN, the  
experienced forester, and a very able man, who we  
are happy to see is still consulted professionally by  
the present Commissioner, are most instructive and  
elaborate documents.

**ROELLA CILIATA.**

WERE it not for the difficulty of managing this plant  
so as to keep it in a healthy state, it would doubtless be  
one of the greatest favourites in cultivation; but it is  
so exceedingly liable, even in the hands of the best  
cultivators, to assume a rusty appearance, and under  
any circumstances is so short lived, that it is seldom  
met with. It is, however, by no means impossible to  
produce moderately handsome specimens, and to pre-  
serve them in good condition for a season or two, and  
the profusion of beautiful flowers, and their long con-  
tinuance in beauty, well repay any amount of attention  
which can be bestowed on its culture. The great mis-  
take generally committed in regard to its management,  
is growing it in a moist, warm atmosphere, till too late  
in autumn to allow of properly ripening the wood before  
winter, and exposing it suddenly, in a soft state, to a  
cold, damp atmosphere, which disfigures the foliage, and  
greatly injures the health of the plant.

Beginners should endeavour to obtain a compact,  
bushy plant from the nursery, at the earliest opportu-  
nity; and if a healthy plant is procured at this season, it  
will be evident that it has been well propagated, and  
properly cared for, and having secured a good foundation,  
there will be no impossibility of growing a good specimen.  
No part of the treatment of the Roella is more im-  
portant or more generally misunderstood than its winter  
management. At this season it should be placed near  
the glass, where the temperature may be kept at about  
45° by fire heat, and where the atmosphere can be kept  
moderately dry, without exposing the plants to currents  
of cold air on its entrance into the house. Any excess of  
moisture at the root, or allowing wet to hang about the  
foliage while the plants are in a dormant state, is sure  
to ruin or disfigure them, therefore never apply water  
to the soil until it is absolutely wanted, and then give  
enough to thoroughly moisten the ball, and avoid wetting



the foliage, except to remove dust, &c.; and let this be done, when necessary, on the morning of a bright day. In the case of plants that grow slowly, and are particularly susceptible of injury while in a dormant state, and our present subject is one of these, it is found a good practice to start them into growth as early in spring as circumstances will admit, which provides for a long growing season, and also for getting the wood well ripened up early in autumn. With the convenience of a light house or pit, where the temperature may range about 55° at night, and some 10° higher with sunshine and air, there will be no danger in starting the Roella into growth early in February, as after this season, with proper attention, strong vigorous growth will be easily secured. Before placing the plants in circumstances to excite growth, prune away any weakly or disfigured points of the shoots, and if the pots are full of healthy roots give a small shift; but unless the roots really require more space, it will be safer to defer shifting until growth has commenced. In potting use the very best fibrous peat, broken up into small pieces and carefully selected, with which mix about one-third its bulk of sharp silver sand and a quantity of potsherds, and observe to have the ball and soil in a properly moist state, and also to thoroughly drain the pots. The fresh soil should be pressed rather firmly about the old ball, and for the present be raised a little round the outside, to prevent the water running off the old ball through it, which is apt to be the case unless provided against. After placing the plants in growing circumstances, the same treatment will be proper, whether first repotted or not, and the greatest care must be exercised in either case to avoid over watering until the roots get into action. The shoots should be tied or pegged down to induce the buds towards the base to start, so as to secure bushy specimens. If the atmosphere is kept moist it will hardly be safe, except on the mornings of bright days, to syringe the plants over-head until the sun is sufficiently powerful to soon dry the foliage, but advantage should be taken of every fine morning to moisten the wood. When the plants start into free growth a more liberal supply of water will be required, and as the days lengthen the syringe may be used without fear of injuring the foliage. Considerable care will also be necessary to properly regulate the temperature so as to secure strong vigorous growth; if the latter is found to be weakly, remove the plants where air can be freely admitted, until a more vigorous root action shall have been induced, and endeavour during the growing season to regulate the temperature, &c., so as to induce rapid strong growth.

The best situation in which to grow this plant during summer will be a small pit, the temperature of which may be regulated according to the state of the specimens, keeping it moist and warm, or dry and airy, according as the growth may show to be necessary. It will also be beneficial to throw a slight shade over the glass for a few hours on the forenoons of bright days, but this should not be used except when absolutely necessary, and ought to be discontinued early in autumn. Attend to shifting as may be necessary to afford space for the roots, and regulate the last shift for the season, with a view to have the pots moderately well filled with roots before winter, and stop and tie out the shoots so as to maintain a close compact habit of growth. Growth should not be encouraged late in autumn, but the specimens should be gradually inured to full exposure to sunshine and a free circulation of air, in order to ripen up the young wood and prepare it for winter. The same treatment may be pursued the following spring, cutting back the shoots sufficiently early in the season to maintain a close bushy habit, and shifting as may be necessary; but if the specimens are intended to bloom in autumn, stopping must not be practised after May. When in bloom the specimens will do very well in a quiet corner of the greenhouse, but avoid exposing them to sudden changes of temperature, and maintain a dry atmosphere to prolong the beauty of the blossoms. *Alpha.*

### Home Correspondence.

*Huc and Gabet's Souvenirs.*—The remarks on the authenticity of MM. Huc and Gabet's narrative that appeared in the number before last of the *Chronicle*, have interested me exceedingly, and as one who has paid more than ordinary attention to the subject, and inquired into its details, I may perhaps be allowed to add my testimony to that of the writer of that article. As regards the facts of the case your reviewer has left little or nothing to be added. Messrs. Longmans have wholly mistaken the meaning of what was said in the *Chronicle*, and the letter of their correspondent neither adds to nor detracts from the character of MM. Huc and Gabet as honest men, which was never questioned. Supposing, however, that the *Chronicle* had asserted Huc and Gabet's travels to be a myth, the letter in question does not appear to me to controvert such an assertion in the very least; if it shows anything at all, it is that the writer does not understand such questions; for what possible comparison there could be instituted between the means available of testing the veracity of Baron Humboldt's travels and MM. Huc and Gabet's travels, it is difficult for any one really acquainted with the original editions of both works to see. One is full of dates, facts, and absolute quantities, capable of revision and remembrance by any future traveller; the other is a paraphrase of a most wonderful journey, not one page of twenty in which, or one statement out of one hundred, is capable of verification, by again going over the same ground. I do not say this with the view of

detracting aught from the value of M. Huc's travels, in estimation of which I yield to no one; but I would as soon think of comparing "Random Recollections of the House of Commons" with Hansard, or Madame d'Arblay with Macaulay, as Huc's with Humboldt's travels, so far as they afford data in themselves capable of verification. I may add that nearly all the ground gone over by Humboldt has been retraversed, and that the result has been to enlarge our ideas, if that were possible, of the astonishing powers of the traveller, and the accuracy and attainments of the philosopher. Surely Messrs. Longman's correspondent wrote in haste when he compared the *souvenirs* of MM. Huc and Gabet, with hardly a date throughout, without a map (or rather with one that falsifies the text), without a single geographical position, without a single observation on physical or natural science that is available to science or capable of proof, with the works of a man who in an equal space of time, encumbered with bulky instruments and collections, and traversing the most unhealthy regions of the globe, keeps a daily journal of his operations, lays down 700 (seven hundred) geographical positions for longitude, latitude, and elevation above the sea, 235 of which rested on his own authority wholly; measured barometrically 453 altitudes, collected 6000 species of plants, besides 453 birds, insects, shells; measured every physical fact with no less accuracy than judgment, was a scientific traveller, 20 years a-head of his day throughout, and now justly occupies the position of the father of science, as much from the quantity and quality of his results as a travelling philosopher and naturalist, as from the use he and his scientific brethren have made of them since his return. No journey has ever developed such results as Humboldt's, none has been so expansive; and that Messrs. Longman, who, we believe, published the first second, and third, and throughout the best editions of Humboldt's personal narrative, should father such a comparison is, to say the least of it, extraordinary. If Messrs. Longman's correspondent had compared M. Huc's narrations with the long speeches in Cæsar, Livy, or Tacitus, the comparison would have been fair enough, for there is as much evidence of the literal truth of the one as of the other; but as a reality to be believed or questioned on internal evidence, or by going over the ground again, the *souvenirs* are no more to be compared with the narratives of Humboldt than they are with those of Herodotus. Let us see how another author treats the same subject. In a little work called "Tibet, Tartary, and Mongolia," by H. T. Prinsep, Esq., I believe a director of the Hon. East India Company, I find the following passage, at p. 33. Talking of MM. Huc and Gabet's journal, he says, "the travellers could keep no journal, their lives would have been forfeited, if they had been seen to take notes or to make sketches of what they saw and heard. It is on this account that we find a lamentable deficiency of dates, distances, and of other particulars of the kind that one usually looks for in books of travels. Nevertheless, there is in the volume an aggregate of intelligence, and a fund of characteristic traits and well-told anecdotes, bearing intrinsically the stamp of truth, and that gives them a value and an interest far exceeding those of ordinary books of the kind, and sufficient to compensate the reader for the want of scientific details of a Humboldt and a Pallas." Here is a very just estimate of the *souvenirs*. Premising that I have no doubt of the reality of MM. Huc and Gabet's journey, and none as to the fictitious colouring to which their *souvenirs* have been subjected, I shall only be too happy to find that there is more truth in the details than the book warrants, or as it appears to me that it requires or expects our believing. I first heard of MM. Huc and Gabet when I was on the Tibet frontier in 1849; a vague report of Europeans having been recently at Lhasa. I was then within 15 days of that capital, and naturally very eager to gain particulars, but could not; my informants, with the characteristic indifference of Tibetans, knew nothing further, and cared nothing. On my return to Darjeeling, I found Mr. Hodgson in possession of a periodical pamphlet published at Rome, with notices of the labours of the missionaries of the Propaganda College. The exact title I forget, and it is immaterial; it contained a very literal sketch of MM. Huc and Gabet's journey and sufferings. It was a plain straightforward tale, and interspersed with some of the incidents that form so prominent a feature in the *souvenirs*. From its perusal I never doubted the reality of the journey, and of the individuality of MM. Huc and Gabet; but it left the impression that the travellers had neither the means nor ability to publish an authentic journal. I do not say that this was expressed at all, nor have I the work to refer to; but such was the impression I received, and it perhaps influenced the view I took of the *souvenirs* when they appeared. On my return to England I first saw the *souvenirs* mentioned in the "Edinburgh Review," where the article is prefaced with the announcement that M. Huc, the sole survivor, voyaged in company with Mr. Johnston, from Macao to Ceylon, and that the latter extracted from him much curious information. There is here no mention of a journal being kept, nor perhaps was it necessary. Throughout the article the question of authenticity is never entered upon, the reviewer appearing to me to regard the *souvenirs* as what they professed to be, and as recollections, and to consider them therefore beyond the reach of criticism. On perusing the work in the original, it never occurred to me for a moment to regard it as a personal narrative, vouched for by the author, and I was and am only astonished to find that other

should do so. I took it for what it still appears to me to be, a dramatic representation of Chinese, Tartarian, and Tibetan life, and of the chief personal incidents of what befell the travellers on such a journey; and I left it no less delighted with the travellers than with their dramatist, their scene-painter, and company: more than this, I extended my sense of obligation to Mrs. Percy Sinnett for her reproduction of the piece in English, and to the Messrs. Longmans for publishing it. MM. Huc and Gabet were evidently credulous travellers; they saw and saw no impossibility—trees of 10,000 images and lamas disembowelling themselves—and so long as they believed them, and probably are ignorant that educated men do not, I cannot see why the survivor should have been expected to draw his pen through those scenes. Now that the survivor is told that more than their credulity is involved in the statement, I doubt not he will explain. There are as credulous people in this country as MM. Huc and Gabet; such, for instance, as can believe that a man will, by its leaf, recognise specifically the tree which he once stood before as a boy! and who sees nothing suspicious, but quite the contrary, in the man's professing thus at once to recognise an American Magnolia leaf, the native of a warm country, to be identical with a central Asiatic one, where it certainly does not grow, and where, if species of the genus exist at all, they are of very different habit, form, and texture of foliage from their American congeners, and who overlooks the fact that the tree is asserted to grow nowhere else. Were such an one told that Linnaeus himself, or Jussieu, or Brown could not do such a thing, he would, did his belief involve any point of difficulty, take all that into consideration before repeating the assertion, and drawing conclusions from it. But on the other hand, there is a very large class of the community who love credulity for its own sake, under whose hands tables turn, on whose heads bumps rise, and who fancy they firmly believe in Mr. Alexis' powers, though could he have done what he professed, they would not have had a shilling left in their pockets, nor credit at the bank. These people see nothing wonderful in M. Charles ventriloquising, or in M. Robin conjuring away his wife; how—Faraday, Herschel, and Wheatstone (some of them delightful conjurers in their way), can't tell; these and such like wonders they will see and not understand, but pooh pooh, because they are told they are tricks. Let an animal magnetiser show them a bungling edition of the same, too transparent for a child to be deceived by, and let him only invest it with a scientific name, and they fall down and worship. Such people will give a guinea to be amused themselves by an electro-biologist, and grudge their children a shilling to see a conjuror or a play; accompanying the refusal, perhaps, with a lecture on the sin of deceit, or at least of encouraging idle mountebanks. Now, I am far from including all the believers in MM. Huc and Gabet's trees of 10,000 images—in their unicorns (which by the way, I have seen wild, and can both bear testimony to their being two-horned! and called: Antelope Hodgsoni)—and their disembowelled lamas, in the same category with the above class, but I may say from experience, that most of them amongst them, whom I have met with, do belong to it, and that it is positively the fraud, and so constitutionally disinclined are they to reject it, without another to supply its place. To those who are waverers, and who have as much education themselves, and candour as to accept the testimony of men educated in physics and natural history against the unauthenticated assertion of travellers who are profoundly ignorant of such subjects, I would offer as facts worthy of their attention that none of the botanists to whom I have conversed attach any importance to the story of the tree of 10,000 images; that the unicorn is disproved out of M. Huc's own mouth, by his calling it "Tchiroca," and quoting Mr. Hodgson; that there is no poisonous wind on the Booran-Boota mountains, and nothing described as experienced by the travellers there, but the ordinary effects of rarefied air; that Moorcroft was never at Lhasa, and that the Lhasan belles do not blacken their faces to hide their charms, or from aught but to screen them from the execrating salute of the Tibetan blasts. And lastly, I may add, that if he values the dear-bought experience of other travellers, he may rest assured that the opinion is unanimous in India and elsewhere that, so far as experience enables us to judge, the narrative is authentic as far as the performance of the journey is concerned; and that it is a satisfactory sign of the prudence of the travellers that they did not commit MSS. to writing, which Keysering would never have let pass at Lhasa. I maintain the highest opinion of their probity, as proved by the fact that throughout the *souvenirs* they never pretend to have kept a journal. It is but natural to suppose that they would have pointedly alluded to their journal, had they really either kept one or wished to make it appear that they did so. Not only is no such assertion made, but there is a studied vagueness with regard to facts and dates throughout, and which I have always thought was dictated by a conscientious desire to avoid the very appearance of wishing to give an undue value to them. It requires experience to appreciate the subtle evidence that lurks under a traveller's writing, just as it requires a lawyer to know a lawyer's, or a physician his fellow's mind, and I will venture to assert that most persons accustomed to journalise themselves will agree with me in seeing a want of harmony between the narratives of the journey to Lhasa and from Lhasa, which at once suggests the idea that neither were written on the spot. With regard to another statement of the reviewer,



may mention that I have heard on excellent authority that the souvenirs are placed on the Index Expurgatorius, and that this fact called forth from M. Huc an explicit denial of their authenticity, in the sense of his being answerable for the veracity of all the statements; in particular I was informed that he denies ever having seen the tree of 10,000 images, and only describes it in his notes from hearsay, and that for these and other statements the public have a feuilletonist to thank, who as it were dramatised the whole. Very thankful I, for one, feel to that same feuilletonist, and so should Messrs. Longman feel too; for I cannot but think that M. Huc was himself incapable of throwing such a charm over his own notes. In this, however, I shall be very glad to find myself mistaken; nor shall I think anything the worse of that most meritorious traveller (who is eminently entitled to a Geographical Society's medal, and I hope has had one), if it turns out that he be himself the feuilletonist. We have every day in every branch of literature and science examples of men as incapable as I suppose M. Huc to be of writing so romantic a work as these souvenirs, throwing or getting thrown for them over their writings a far more fictitious charm than this; they have no intention of deceiving thereby, and, when honestly done, in many cases they are doing good. I may further add, that I have also been told that a fellow voyager with M. Huc to Europe has stated as a fact known to himself, that M. Huc had no journal, nothing but a few notes. Both these facts came to my hearing before the subject of the authenticity of the volumes was discussed; they made no great impression on me, for the reasons I have above stated. I am taking means to ascertain the truth of the reports as to the Index Expurgatorius and other matters, and shall have the pleasure of communicating anything of importance I may hear. *Jos. D. Hooker, Kew.*

*Culture of Orobanches and other Parasites.*—English horticulturists have reason to be satisfied, and no doubt a little vain, of their proficiency in the art at which so many of them are adepts. They see it frequently stated that nothing is too difficult in horticulture for their skill to accomplish, or words to the same meaning. That this is true, to a certain extent, no one can doubt who knows the admirable manner in which most branches of horticulture are conducted in Britain, compared with the way in which similar branches are managed on the Continent; but it seems that there are other departments which require the greatest amount of ingenuity, skill, and physiological knowledge combined, in which the English horticulturist has not kept pace with those on the Continent of Europe. Well-conducted experiments on vegetable physiology, or to prove the rationale of many of the daily operations of the garden, are perhaps less general now than they were during the end of the last and beginning of the present century. Again, among all our English amateur horticulturists, not one of them has followed the footsteps of the famous Thomas Andrew Knight, who proved the inexhaustible mine of interest which lay connected with experimental horticulture. The few and unsatisfactory communications which were made some years ago in the *Gardeners' Chronicle* to the query proposed, namely, whether the wood in dicotyledonous trees was formed by a downward flow of the sap or otherwise, will perhaps fortify the observations here made, to some extent; whilst the experiments of M. Trecul, lately noticed, along with the translation of Hartig's paper on the increase of woody tissue, may serve to prove the interest those matters continue to excite among our continental neighbours. Horticultural exhibitors have done much for the advancement of fashionable horticulture, and enabled the English gardener to astonish the world by his skill in the management of fruits and flowering plants; but scientific horticulture can hardly be said to have advanced *pari passu* with the more artistic departments. Had the case been otherwise, it is probable that Dr. Berthold Seeman would not have had to write "a horticultural problem still to be solved is, the successful cultivation of true parasites." The growing of Orobanches from seed in the Botanic Garden at Göttingen is of the highest interest, and will no doubt lead many among ourselves to try similar experiments; but, in order to show that this matter has, as Dr. Seeman states, "he will be glad to hear, been followed to some extent, and become the subject of serious consideration of some of your readers," I would beg to record, that not a few living proofs exist in the Glasnevin Botanic Garden of the cultivation of true parasites—Orobanches, *Lathræa squamaria*, *Mistletoe*, and *Cuscuta*, succeed there admirably, by artificial culture; and, in a small town garden of less than 2 perches in extent, the late Leslie Ogilby, Esq., succeeded in establishing Orobanche *Hederæ*, *Listera nidus avis*, and *Lathræa squamaria*, with *Mistletoe* on his Apple trees. In neither of the gardens have the plants, however, been propagated from seed, but rather by a kind of root grafting. The Orobanche *Hederæ* grows abundantly in the neighbourhood of Dublin on Ivy, as the specific name implies. After the stems of the present year's plants decay, in the months of September or October, by searching among the Ivy roots, some will be found swollen and others with the young buds of Orobanche developed on them. By cutting off the strongest of these roots, between the plant and developed Orobanche buds, and laying bare the roots of Ivy where it is desired to establish the plant, and tongue grafting the roots of the two Ivy plants together, that on which the buds are and that on which they are to be established, covering all carefully up, the roots of the two plants will unite during the winter, and the Orobanche be developed in due course the succeeding year. In this

way Orobanches and *Lathræa squamaria* have been established at Glasnevin. They have not been raised there directly from seed sown, but sufficient proof has been afforded of their growing by that method. During the year 1849, seeds of *Trifolium hybridum* were sown in the experimental department of the garden, which vegetate freely, and during the summer one small plant of a strange Orobanche appeared among the Clover. It was carefully protected and came up again the second year, when it flowered and proved a continental species. The Messrs. Lawson, of Edinburgh, who supplied the seeds, on being communicated with, and requested to state where they received the Clover seed from, mentioned that they had it from Hamburg. There can, therefore, be no doubt of the seed of the Orobanche having been sent along with the Clover seed, among which it vegetated, and finding the roots genial for its growth laid hold of them. None of the Irish species grow on Clover. With respect to the growing of *Mistletoe*, it is as easy, I apprehend, as that of many other plants, when the proper method is taken. This was stated in a paper read before the Royal Dublin Society some years ago, which was copied into the columns of the *Gardeners' Chronicle*. There are now many plants growing in the Glasnevin Gardens, sown in the way described; some on Apple, Thorn, Lime, and Robinia *Pseud-Acacia* trees. An effort was made lately to introduce *Loranthus europæus*, which, however, failed. On learning that a gentleman who has often appeared in the pages of the *Chronicle* under the cognomen of "Dodman," was about to visit Vienna, he was requested to send some *Loranthus* berries, which, with his usual kindness, he accordingly did. They came quite fresh and were immediately put on Oak trees, as skilfully as the work could be performed, yet without success. They remained fresh fully six months, but not one of them vegetated. *Cuscuta* only require to be brought in contact with the plants on which they grow, after the seed vegetates, in a pot of earth, as other seeds do. *D. M.*

*Vine Mildew.*—Permit me to say a few words in favour of Mr. Bennett's method of destroying Vine mildew (see p. 789). When I came to this place in October last year, I found the Vines much affected with mildew, so much so that the few bunches of Grapes left fell off their stalks with the least touch, and appeared completely rotten; the young wood was covered with mildew, and when pruned quite soft; as soon as pruned I had the old loose bark pulled off, and gave the shoots a coat of soft soap, sulphur and clay, made into a paint, well rubbing it into all the crevices. I then had all the walls inside the house well washed with lime, mixed with as much sulphur as made it rather yellow when dry. This kind of wash I always use for all my houses; but notwithstanding, this year the mildew re-appeared as soon as the Grapes were nicely coloured, attacking the berries first, and it was astonishing in how short a time it spread itself over a quantity of Vines. Immediately on perceiving it, I had some sulphur mixed with a little lime, and brushed all over the flues, warming the latter a little more than usual, and this had the effect of completely destroying the mildew. I could not see that the sulphur from the hot flues did the least injury even to the most tender foliage, though it was so strong for a time that no person could work in the house. The Grapes were nothing the worse. I had two other houses similarly affected, which were quite cured by the same means; in one of them, which was affected ten weeks ago, I have now some perfectly clean Grapes. *R. Kirshaw, Swinton Park, Dec. 14.*

*Oak Shingles.*—I quote for the benefit of your readers Gwilt's "Encyclopedia of Architecture," "Shingle (Ger. Schindel), small oaken boards from 8 to 12 inches long and 4" wide, thicker on one end than the other. Fir will, however, do very well, and some Larch; but one thing is required in all, viz., that they be made from rent wood, and wood can only be rent so as not to warp, from straight, branchless, clean stems of fibrous Scotch, grown on sandy or gravelly soils. Fir shingles must, of course, have a steeper pitch than Oak. They should never be painted, but if steeped in anti-corrosive they will outlast cheap tiles or thin slate. In Switzerland, where they are much used, they are of Scotch Fir, and the ends scolloped like shells. *Somerset.*

*Fruit Culture in Sicily.*—I cannot help smiling in noticing the different opinions of your correspondents, with regard to "annual liftings," "root pruning," "composts," "soils," "drains," "grafting," "pruning," &c., of fruit trees. I have lived for nearly 30 years abroad (chiefly in the garden of the world—Sicily), and nearly all fruit trees there are left to themselves, from the day they are planted. I myself have set Peach stones (the fruit weighing 7 oz. each) in the open fields, and the trees began bearing on the fourth year, at the height of 7 feet! This, you will recollect, was without manuring, grafting, pruning, lifting, root pruning, draining, &c. I left the plants at the mercy of the weather. Almonds and all other stone fruit bear without grafting, and also Chestnuts, Nuts, Walnuts, &c.—Oranges and Lemons excepted. The only plant that is pruned is the Vine. I have seen Vines some 30 years old, with the stems as thick as my leg, spreading branches (on rough trellis-work) some 20 yards, intersecting each other, and sending down bunches of Grapes from 4 to 7 lbs. each, and berries as big as small eggs, one bunch of Grapes nearly filling a middle-sized tray. The peasants don't "thin" the bunches, neither do they remove old shoots; indeed, they only attend twice a year to their Vines, viz., in January, when they prune them—and in September and October, when they gather their crops. Some of these large Vines grow on the sides of garden walks, which

are paved, flagged, macadamised, or pebbled, and the soil just like a rock, without a particle of manure. I have seen Peach and Apricot trees as big as our Elm and Ash trees (of course, in that country they are all standards), and not one single branch pruned, though some 40 or 50 years old. The Vines from which wines are produced grow on barren chalky soils, and also in sandy soils of the worst description, and without any manures, drainings, &c. &c. What I have said can be proved, therefore I am now opening a new controversy, as it were. *J. W. H., 41, North John Street, Liverpool.* [But what analogy is there between the climates of Sicily and Great Britain?]

*Journeyman Gardeners' Wages at New York.*—Having seen an extract of a letter at p. 790, from a young man who left Scotland early this year for America, stating the wages which he receives in a nursery at New York to be 31s. 6d. per week, and employment so general as to be obtainable with no trouble, save the mere application, for even at a higher rate of wage than that at which he has engaged himself, the perusal of the said letter is very likely to make a great number of young men at present working in the London nurseries and elsewhere at a low rate of wages, very discontented with their present position, and many possibly may be induced to try their fortune in that country, trusting to the fidelity and accuracy of this account. My object in taking notice of this extract is to advise young journeyman gardeners to consider well before they act on such information, as it is by no means strictly correct. Gardeners are far from being in such request at New York as this letter would fain have us believe; and, moreover, few American nurserymen are in the habit of making such bargains for a week's labour as 7 dols. 56 cents. (31s. 6d.); but there is one point to which I wish to call the attention of journeyman gardeners, and which is generally altogether overlooked, I allude to the American money, in relation to that of the old country. Thus, a New York shilling is equal in value to an English sixpence, and the penny of the former country is equivalent to the English halfpenny. I have read many letters from America, giving glowing accounts of high wages and abundant employment, at 7s. and 8s. per day, but you will find on inquiry that the 7s. and 8s. per day is only equivalent to 3s. 6d. or 4s. English money. It is also to be remembered, that from three to four months in the year, all operations in the way of gardening are entirely precluded, and consequently there is no employment for gardeners during that period; so that, when everything is taken into consideration, employment in New York is by no means the great desideratum it would at first appear. *M. C. R., Rectory Place, Parson's Green, Fulham, Dec. 15.*

*Picea nobilis.*—If your correspondents will again read my remark relating to the *Coniferæ* at Castlemartyr, they will perceive that for the time they have been planted (seven years), they are extraordinary specimens of rapid and handsome growth—such as I have never seen anywhere in this country. I was as well aware as any of your correspondents that there are many trees in this country much larger than those at Castlemartyr; but let them consider the length of time these have been planted. I am still of opinion that for its age, and the short time (seven years) it has been planted, that the *Picea nobilis* at Castlemartyr is the finest specimen in the kingdom. I wish to correct an error in my communication at p. 759; for two years it ought to have been ten years, by which time the Pinetum in the deer park will be unsurpassed. *M. S.*

*English Maize.*—Allow me to call attention to the enclosed notes on the cultivation of Maize. They are the work of one of my pupils, and I think worthy of some notice. The experiments were very encouraging in their result. *Thornton J. Herapath.*—The sort I have tried is the one recommended by Mr. Keene, which he calls the "Forty-day Maize," from its flowers appearing about 40 days after sowing. Mr. Keene introduced this variety from the northern side of the Pyrenees, where it is cultivated, and where the summers are short and wet as in our own country. Mr. Keene directs the seed to be sown about the 24th of May; if sown earlier, the crop is liable to be checked by late frosts, and it is a plant which does not easily recover itself after injury. A sure proof of the earth being warm enough for its reception is the appearance of the ground-beetle, or cock-chaffer. Mr. K. says, "When the cock-chaffer appears, then sow your Maize." I find that if the weather be mild, it is advisable to sow earlier, although it may even be sown later, as some I sowed as late as the 1st of June ripened its seed by the 12th of October; but it required to be dried artificially before stowing away. In April, 1852, I determined to try Mr. Keene's Maize, as a friend living near London had succeeded in ripening some in an unsheltered spot. I therefore procured one cob, which was sown in the open air on the 24th of May, of that year, and it was with seed obtained from that crop I tried my experiments this year. The piece of ground I selected was situated in a garden with a south-western aspect; though not under a wall, or other protection, it was warmer than the open field would be. The whole piece measured 2 perches. My first sowing was on the last day of April, dibbling in the seed at 2 inches apart, in rows 3 feet asunder. This, however, I found, was a great waste of seed, as it became necessary, as the plants grew, to thin out from time to time the weakest, until the plants remaining were a foot or 18 inches apart. Half of these were manured with superphosphate of lime, dibbled in with the seed, and half with guano. The superphosphate manured appeared above ground in about 10 days, while



the guano manured did not appear for more than a fortnight; those manured with superphosphate, moreover, were finer and more vigorous plants, ripening their seed sooner. My next sowing was about the 24th of May; without manure, though the ground was tolerably good. I dibbled these 2 inches apart in rows, a space of 18 inches being left between the rows. These I subsequently thinned by degrees to 18 inches between each plant. These came up seven days after sowing. When the plants were 3 inches to 6 inches high, I divided the plot of ground into about four equal parts, which I top-dressed with the following manures:—1st portion, with guano; 2d, with superphosphate; 3d, with defecated sewage (Herapath's patent); 4th, peat charcoal saturated with the drainage from a stable; giving each portion an equal bulk of manure. A fifth portion was left unmanured. I found also that the plants manured soon recovered from the attacks of slugs, &c., while the unmanured were greatly retarded by their ravages. My third and last sowing was on the 1st of June, the plants being treated in the same manner as the second. These, however, I manured with superphosphate and peat charcoal manure, applying the superphosphate first when sowing, and the peat charcoal as a top dressing when the plants were 3 inches high. When the plants were 6 inches high they were ridged up with earth, in the manner followed in ridging Potatoes; and the operation was repeated when they were a foot or 18 inches high. This was necessary to prevent their being blown down, as they are very top-heavy when in flower. If the soil is drawn up round the roots, they soon become firmly established, as new roots spring from each joint when the joints are covered. As the cobs or female flowers sprouted from each joint I stripped off all but one or two, generally leaving the highest, as too many cobs weaken the plant. When the tassels of the female flowers become withered and dry, I cut off the male flower, or feather at the top, leaving one leaf above the cob to draw up the sap. During this time I kept the ground clean by frequent hoeing, and cleared away all shoots from the roots; and this was all the attention I paid it until the seed was ripe. The crop may be left out till the end of November without taking any injury, as the cobs are so thickly enveloped with leaves that no rain or frost can penetrate to them. The shoots stripped off are nauseously sweet, tasting very like liquorice, and cattle are greedily fond of them. I gave a small quantity daily to carriage horses in full work with good effect, as they are not so washy as Vetches and green Oats. In America many favourite dishes are made from the green cobs. One prepared by frying them in butter is, I am informed, a very good one, though I have not tried it. If this cereal can become acclimatised, which I see no reason to doubt after its having ripened last wet summer, I should think it would be valuable in places where, owing to a wet winter, the land is not cleaned soon enough for spring Wheat. It will doubtless be found to be a serviceable addition to our green crops, as it may be cut in six or eight weeks after sowing, and as it also comes in during the hay harvest before Grass is plentiful. It must be moreover observed that it makes capital hay when dried like meadow hay. *Berkeley Hill, Stapleton, Bristol.*

*Cyclamen.*—The article of November 19, upon *Cyclamen macrophyllum*, induces me to trouble you with a few observations. Most people seem to range the generality of *Cyclamen* under *C. europæum*, or *C. hederifolium*, nor are they always agreed which is which. The writer in the "Revue Horticole" has correctly given the former title to the summer *Cyclamen* of the Alps and South Germany; but seems, with many others, to allot the specific name *hederifolium* to that common autumnal one of Central Italy, which our gardeners usually call *europæum*, but erroneously. A better name would be *diversifolium*, for the different individuals vary almost indefinitely in leaf, though on the same plant they are strictly alike. The sameness of flower betrays their identity as species, as well as their difference from *C. europæum* and all other true species. Coinciding neither with the true *C. europæum*, nor with the true *C. hederifolium*, Tenore found it in want of a trivial name, and for lack of a better, gave it that of *Neapolitanum*, it being plentiful about Naples in nearly all its varieties, the sweet-scented I believe exclusively so. The white variety I only know in gardens. But what then is the true *C. hederifolium*? Of course, recurring to the oldest authority, it is *Cyclaminus hederæ folio verno tempore florens*, of Clusius, as quoted in Tenore's *Flora Neapolitana*; the above described *C. Neapolitanus* as being autumnal. Tenore could be under no mistake, both these species growing plentifully about Naples, in the same spots, flowering at their respective seasons. *Cyclamen persicum* is commonly known in Italy, in all its varieties, as *C. Aleppicum*. *C. Antiochum* I never heard of before. *Cyclamen vernum* has much the look of a hybrid between *C. europæum* and *C. Coum*; it is quite different from the spring species of Italy and Greece. That is *C. hederifolium vernum* of Clusius and Tenore, two good old and modern authorities. *C. repandum* I cannot consider as anything but a variety of it—perhaps the Greek form—*hederifolium* being the Italian, confined to the southern half of the peninsula. In the middle parts they have only *C. Neapolitanum*, in the north only *C. europæum*. There is a small white-flowered vernal *Cyclamen* in the south of France, near Montpellier, which deserves examination and comparison. The mouth of the flower, length and shape of the segments, both of corolla and calyx, and character of the

anthers, seem to be the characteristic points of distinction in *Cyclamen*. S.

*Potato Disease.*—This disease having continued for so many years to ravage our gardens and fields, in spite of "infallible remedies" proposed to stay its progress, we may consider this valuable root weakened in constitution by neglect, and we must endeavour to strengthen it by care. The murrain can neither be attributed to the destructive powers of an insect, nor wholly to atmospheric influence, but to predisposition in the Potato to decay. On taking up the crop this year, out of three Potatoes attached to the same fibre, sometimes two would be bad and one good, and *vice versa*, the tainted tubers being as often at the extreme point as near the stem. The outer skin of these diseased being on every occasion perfect. A root of Potatoes may be said to resemble a family of children, exposed to a prevailing epidemic, some will escape, others will catch the complaint. In the same manner part of the Potatoes at the root will be rotten and part sound. If the cause was in the stem and travelled downwards, it would probably, as a general rule, seize upon the tubers nearest the haulm; but such not being the case, it may be allowable to presume that the disease is generated in the Potato itself; of course, should the weather be warm and dry, or cold and wet, about July and August, it will have a certain influence, either in mitigating or increasing the disorder. Every effort should be used to improve the condition of the seed, and we may then hope that the disease will gradually wear itself out. The Potatoes selected for planting should be kept in a cool dry place, neither allowing them to grow nor heat; cover them with straw, to guard against injury from frost, and turn them over frequently during the winter. The ground in which the sets are to be planted should be turned up rough immediately. Weather permitting, commence planting in February, spread the manure broadcast, and dig the whole of the soil over again at planting time. The rows should be 2 feet apart, 1 foot from set to set. The space between the rows should be well forked previous to earthing up. To escape the disease is next to impossible, but by following the above plan the loss of the crop may be lessened, and the weight of food increased. The Parsnip is a valuable substitute for our favourite vegetable, very nourishing and wholesome when well boiled; unfortunately, there is a prejudice against the root. *Falcon.* [Who, except Mr. Smee, is ridiculous enough to refer the Potato disease to insects?]

*Cayenne Pepper.*—A simple process of manufacturing this is, to gather the pods as soon as they have become red, and dry them well before the fire, cutting them in two, in order that they may dry the sooner; then pound them to powder in a mortar, adding a little salt, to keep the dust out of the eyes, and sift the remains through a fine hair sieve. In this way I obtained half a pint in two hours, and I certainly prefer pepper made by this process to any I could buy. *W. Brown, Merivale.*

## Societies.

LINNEAN, Dec. 6.—Professor BELL, President, in the chair. Among the subjects exhibited were specimens from J. Hogg, Esq., of a species of winged aphid, which had appeared in myriads during the present autumn in various localities in the north of England, coincident with the cholera. Prof. Bentley exhibited a remarkably large and stout caudex of an herbaceous Fern which had grown in Jersey, and which was probably the *Lastrea dilatata*. The following communications were read:—1. "Notice of Several Species of Bats captured in England during the present autumn," by T. B. Buckton, Esq. 2. "Remarks on Sarsaparilla," by Dr. Berthold Seeman. In this interesting memoir, Dr. Seeman stated, as the conclusions at which he had arrived, after a careful investigation of the subject, that the greater proportion of Sarsaparilla imported under the commercial names of 'Jamaica,' 'Lisbon' or 'Brazilian,' and 'Guatemala' or 'Red Paraguay' Sarsaparilla, is the produce of one species only, and that the *Smilax officinalis* of Humboldt and Bonpland; and further, that the *S. medica* of Schlechtendal and Chamisso, and the *S. papyracea* of Poiret, are identical with it. *Smilax officinalis* grows in the lower coast region as well as on the mountains to an elevation of 5000 feet above the sea, and is confined, as far as is known, to the South American continent between the 20th degree of N. lat. and the 6th degree of S. lat., and the 110th and 40th degrees of West longitude. The article known as Jamaica Sarsaparilla is imported into that island from the Spanish Main. The roots, which form the commercial article, abound more or less in starch, according to the age and the conditions under which they have grown. The stem is quadrangular and prickly, the branches also quadrangular or multiangular, and with or without prickles, the petioles sheathing at the base, and having a pair of tendrils, the leaves very variable, broadly cordate, almost three lobed, gradually acuminate or ovate-oblong, or even lanceolate, and rounded at the apex, but always mucronate, generally five-nerved, and prickly on the nerves beneath, varying in length from two inches to one foot, and in texture from coriaceous to papery; the flowers, which grow in little umbels of about 16 together, are unknown, but the berries are round, red, and of the size of a Cherry. Dr. Seeman further remarks that while botanists competent to judge of the question are not likely to raise any objection to his uniting these three supposed species, pharmacologists are less likely to be convinced on this

point, except on the strongest evidence, the appearance of the commercial samples being so different; the Lisbon Sarsaparilla, which comes in rolls about 3 feet long, having fewer rootlets or beards than that termed Jamaica Sarsaparilla. This difference, however, was stated to be clearly the result of the rootlets having been removed by some mechanical means or other, before the article reaches the market. The condition indicated by the chief pharmacological distinction into "mealy" and "non-mealy" samples, he believes to depend on the age of the roots, and on the locality in which they are collected. While, however, the botanical source of the various Sarsaparillas was thus held to be identical, the value of the commercial distinctions, as such, was admitted; for "as long as the Brazilian collectors continue to strip the roots of their beard and put them up in long bundles, there will always be Lisbon Sarsaparilla; as long as the inhabitants of the Spanish Main continue to preserve the rootlets we shall have Jamaica Sarsaparilla; and as long as the climate and other physical conditions of Guatemala remain unchanged, we shall continue to receive from that locality Sarsaparilla distinguished by its abundance of starchy matter."

ENTOMOLOGICAL, Dec. 5.—The President in the Chair. Mr. Scott, of Renfrew, exhibited a new species of *Cnephiasia* from Scotland, allied to *C. bellana*; Mr. Westwood a piece of honey-comb from a hive, the queen of which only deposited male eggs, sometimes even in worker cells, which produced an irregularity in the arrangement of the series of the latter. Mr. Curtis exhibited a box of Hymenopterous insects from southern Europe, including many interesting species received from Signor Passerini, who had investigated their habits, which he was about to publish. Also specimens of *Ichneumon ruficeps*, reared from *Trichosoma lucorum*, and *Tryphon rufus*, reared from another species of *Trichosoma*. Mr. Douglas exhibited specimens of *Yponomeuta irrorella*, a brood of which had been found feeding upon *Euonymus europæus*, near Wandsworth; the cocoons were also exhibited by Mr. Stainton, and Mr. Samuel Stevens exhibited a specimen of *Pogonocerus fasciculatus*, taken by Mr. Foxcroft in the Black Forest, Perthshire, thus completely proving the indigenity of the species, which had been doubted, having been bred from the staves of a cask. Also a specimen of the new glow-worm from Scotland, also taken by Mr. Foxcroft. Mr. Wallace exhibited a splendid new species of *Acanthocinus* from California, and a specimen of the very rare *Erycina Octavius* of Cramer. The same gentleman also read the completion of his notes on the habits of the butterflies of the Amazon valley. The singular noise made by the species of *Ageronia* had been noticed by the writer, but only when two insects were flying and fighting together. The habits of the *Heliconiæ*, *Morphidæ*, and *Erycinæ*, all peculiarly natives of tropical America, were also described. Mr. F. Smith exhibited two beautiful nests of *Vespa holistica* and germanica, which had been found in a beehive and an empty cask. He also read some further notes on the bee parasite, described by Mr. Newport under the name of *Anthophorobia*, having observed that the male flies as long as seven weeks in the perfect state. He also stated that the insect was identical with the *Cirrospilus Acastor* of Walker, described in 1839, which specific name must take precedence over those given to the insect by Messrs. Westwood and Newport. Captain Cox exhibited some specimens of the wood of Elm and Ash trees destroyed by *Scolytus destructus* and *Hylurgus fraxini*. He had especially studied the habits of the *Scolytus*, and had been in communication with the office of Woods and Forests on the means of arresting the destruction of the Elms in the parks and neighbourhood of London, and which he considered was to be effected by almost entirely disbarbing the trees attacked. He had seen a fine healthy tree only 28 years old destroyed, and was satisfied that the destruction is entirely caused by the female depositing her eggs under the bark of healthy trees, the larvæ mining in the inner bark and so destroying the circulation. He had found as many as 280,000 insects in a tree killed in two years. A discussion ensued between Messrs. Newman, Curtis, Westwood, and other members, with Captain Cox, on the subject, which was considered as of sufficient practical importance to be resumed at the next meeting. It was announced that the Council had resolved to distribute their duplicate British Lepidoptera among the members.

## Notices of Books.

*The Chemistry of Common Life*; by Jas. F. W. Johnston. No. 1. Blackwood.

The plan of this periodical is to explain, in eight monthly numbers, price 6d. each, the chemistry of the following subjects:—

"The air we breathe and the water we drink. The soil we cultivate and the plant we rear. The bread we eat and the beef we cook. The beverages we prepare and the liquors we consume. The narcotics we indulge in. The odours we enjoy and the smells we dislike. What we breathe and breathe for, and what, how, and why we digest. The body we cherish and the circulation of matter, a recapitulation."

We need not say that the work is well done. The high reputation of the author is a pledge with which the public will be satisfied. An example of the simple yet perfectly scientific manner in which he handles his very interesting subject, is afforded by a paragraph selected



from his account of the chemistry of "The water we drink."

"The neighbourhood of grave-yards is equally fitted, with the accumulation of town refuse, to adulterate water with undesirable admixtures. The water of a well which is close to the old churchyard on the top of Highgate Hill, has lately been examined by Mr. Noad, and found to contain as much as 100 grains of solid matter to the gallon, consisting of—

Nitrate of lime	40.12 grains.
Nitrate of magnesia	17.06 "
Sulphate of potash	17.04 "
Sulphate of soda (Glauber salts)	9.63 "
Chloride of sodium (common salt)	9.63 "
Chloride of calcium	5.91 "
Silica	0.90 "
100.18 grains.	

This large amount of nitrates is traced to the neighbouring grave-yard, as such compounds are generally produced where animal matters decay in porous soils. While the buried bodies were more recent, animal matters of a more disagreeable kind would probably have been found in the well, as I have myself found them in the water of wells situated in the neighbourhood of farm-yards.

"Well-waters sometimes contain vegetable substances also of a peculiar kind, which render them unwholesome, even over large tracts of country. In sandy districts the decaying vegetable matters of the surface-soil are observed to sink down and form an ochrey pan, or thin yellow layer in the subsoil, which is impervious to water, and through which, therefore, the rains cannot pass. Being arrested by this pan, the rain water, while it rests upon it, dissolves a certain portion of the vegetable matter; and when collected into wells, is often dark coloured, marshy in taste and smell, and unwholesome to drink. When boiled, the organic matter coagulates, and when the water cools separates in flocks, leaving the water wholesome, and nearly free from taste or smell. The same purification takes place when the water is filtered through charcoal, or when chips of Oak wood are put into it. These properties of being coagulated by boiling, and by the tannin of Oak wood, show that the organic matter contained in the water is of an albuminous character, or resembles white of egg. As it coagulates, it not only falls itself, but it carries other impurities along with it, and thus purifies the water—in the same way as the white of egg clarifies wines and other liquors to which it is added.

"Such is the character of the waters in common use in the Landes of the Gironde around Bordeaux, and in many other sandy districts. The waters of rivers, and of marshy and swampy places, often contain a similar coagulable substance. Hence the waters of the Seine at Paris are clarified by introducing a morsel of alum, and the river and marshy waters of India by the use of the nut of the *Strychnos* potatorum, of which travellers often carry a supply. One or two of these nuts, rubbed to powder on the side of the earthen vessel into which the water is to be poured, soon causes the impurities to subside. In Egypt, the muddy water of the Nile is clarified by rubbing bitter almonds on the sides of the water-vessel in the same way.

"In all these instances the principle of the clarification is the same. The albuminous matter is coagulated by what is added to the water, and in coagulating it embraces the other impurities of the water, and carries them down along with it.

"These cases, and especially that of the sandy Landes of Bordeaux, and elsewhere, throw an interesting light upon the history of the waters of Marah, as given in the fifteenth chapter of Exodus."

"So Moses brought Israel from the Red Sea; and they went out into the wilderness of Shur; and they went three days in the wilderness, and found no water. And when they came to Marah, they could not drink of the waters of Marah, for they were bitter: therefore the name of it was called Marah. And the people murmured against Moses, saying, What shall we drink? And he cried unto the Lord, and the Lord showed him a tree, which when he had cast into the waters, the waters were made sweet."

Orr's *Circle of the Sciences* is a new twopenny serial, illustrative of the rudiments of practical science. It is written agreeably, and in a good spirit, and professes to be conducted by men of reputation. If so, it will deserve to succeed. The following paragraph is, we hope, a key to the principles which it is to maintain:—

"Ignorance of Natural Laws.—How slight is the knowledge of the laws of nature, which for the last two or three hundred years has fallen to the lot of each individual, even among the educated orders of society! And yet that mere sprinkling of knowledge in such sciences as Astronomy, Meteorology, Natural History, and Anatomy, has sufficed to banish from this part of the world astrology, divination, sorcery, witchcraft, and magic. What an encouragement does this fact afford to perseverance in that course which, within the narrow limits, has proved so successful! But there are still delusions remaining to be banished by the extension of sound knowledge. Does the favour extended by the public to clairvoyance, table-turning, and spirit-rapping tell of the advancement of our age beyond the standard of a former one? The age should blush for itself, and take to study. Such study would not only teach what to believe in matters of science, but put it fairly on its guard against blind guides, who every now and then arise, like *ignes fatui*, to mislead the unwary. There are two brilliant examples of these in the present day, who may serve as lessons to the public

in the time to come, as having led many astray from the simplicity of truth. They are distinguished men, too—the one an eminent chemist of Germany, the other one of the greatest men Scotland has produced. The public should prize both these men much, but truth more. It is melancholy to think that such men should outlive their faculties; but it is still more melancholy to think that the public should be so little instructed as not to distinguish true from false science."

*Description of McGlashen's Patent Apparatus, &c.* (Edinburgh, 4to).—We learn from this pamphlet that Messrs. Young and Co., of London and Edinburgh, have undertaken the sale of the various patterns and sizes of this apparatus. In the pamphlet before us a full account is given, with illustrations, of the prices at which it will be supplied. These prices vary from 3*l.* 3*s.* to 200*l.* It also appears that the larger machines may be obtained on hire at from 2*l.* to 30*l.* per week. Persons interested in planting should procure the pamphlet, which we presume is to be had at 19, Great George Street, Westminster.

### New Plants.

32. MONARDELIA CANDIDANS. *Bentham in Plant. Hartweg. p. 330.*

Seeds of two varieties of this were purchased of Mr. Carter in 1853. The one is rather hoary, with pale stems and white flowers; the other is much greener with purple flowers. Both are erect branching annuals, rather more than a foot high, with a very powerful and not disagreeable smell, resembling that of peppermint. Their leaves are oblong, obtuse, with long slender stalks and no teeth; the under side is closely covered with glandular pits. The flowers grow in heads surrounded by ovate ribbed involucre leaves, the veins of which are bright deep green, while the interspaces are much paler. The slender lobes of the little labiate corollas are very remarkable for a tendency to bear anthers at their points, in which it is not uncommon even to find pollen. The calyxes have very short triangular teeth, in which respect the species is distinct from *M. Douglasii*. The two varieties are of little moment, except for their powerful odour. It appears from Hartweg's collection that the white form is that on which Mr. Bentham founded the species. *Hort. Soc. Journal.*

### Garden Memoranda.

LISMORE CASTLE, ONE OF THE SEATS OF HIS GRACE THE DUKE OF DEVONSHIRE.—This beautiful mansion is situated on the verge of a hill immediately over the Blackwater River. It is at present undergoing great alterations, the designs for which were, I believe, furnished by Sir Joseph Paxton. The greater portion is already finished, including a part which was burnt down about two years ago. The scenery around Lismore is rich and beautiful in the extreme. In the valley below the castle flows the river, while on the opposite bank the ground rises at first to about the level of the castle, and then forms itself into a succession of wooded hills, each becoming higher and higher as they recede from the castle, until in the far distance the eye rests upon the Knock Maul Down Mountains, the summits of which are often buried among mist. The side of the hill on which the castle stands is also covered with wood, principally Oak, and through this there are walks of great extent, commanding many fine views of the river and adjacent country.

The flower gardens here are large, and contain many fine specimens of trees and shrubs, particularly of Irish Yews. There are also Cedars of Goa some 10 feet high, Deodars 15 feet high, and the handsomest specimen of *Cupressus torulosa* that I have ever seen. There is also a tree of *Paulownia imperialis*, 20 feet high, and an *Acacia affinis*, which Mr. Keane, the gardener, informed me was completely covered with flowers every spring. *Rhododendron arboreum* grows here most vigorously, as does also the White Indian *Azalea*, which forms bushes 7 feet in diameter. A capital specimen of *Fuchsia serratifolia* was growing here singly on the lawn: it had many hundreds of flowers on it at the time of my visit, on the 11th of last October; this does not remain out through the winter, but all the other plants named do so without any protection whatever. All the flower beds looked exceedingly gay—even the *Heliotrope* appeared as fresh and beautiful as in August.

The kitchen gardens are large and commodious. I remarked in them some Peas (Knight's Tall Marrow) which were as good when I saw them as any in England are in June, and from all appearances they were likely to furnish a good supply for a considerable time. There are several very good ranges of pits here, especially some devoted to plants; two of these were filled with specimen Heaths. In the greenhouse were *Azaleas*, *Epacris*, *Chorozemas*, and other hard-wooded plants. In the pits were Sikkim *Rhododendrons*, which are intended to be planted out next spring in a new piece of pleasure-ground.

A Vinery on the ridge and furrow principle, 80 feet long by 21 feet in width, has been erected here during the past summer for the production of autumn Grapes. In making the border, instead of excavating the soil to the depth of 3 or 4 feet, Mr. Keane laid his drains on the surface of the natural soil, then his materials for drainage to the depth of 2 feet, and on this he made his border 3 feet deep. The materials used for it were very fibry turves, from a field which had been a sheep pasture for more than 100 years, good stable manure, and crushed bones. At both ends of the border, and along the front, has been placed some nice rockwork, which

looks exceedingly well. It is impossible for this border to get close or waterlogged for a great number of years. The fibry nature of the turves will preserve its porosity, and the drainage raising it so much above the natural surface will keep it dry, and much higher in temperature than any border placed below the surface of the ground. I shall be wrong in my calculations, if Mr. K. does not produce some first-rate Grapes from this house. I have made several Vine borders, as much like the one just described as the nature of the ground and houses have permitted, and the result has been that I have never had a "badly coloured nor a shanked" bunch of Grapes in my life. I dislike the modern plan of concreting the surface of Vine borders. It is not the water which comes from above that we have to dread, though we may at times get a little more than we like; it is the water which enters from beneath that causes all the mischief. A large proportion of borders made beneath the land of the surface soil are, to say the least of them, little better than puddle holes. No wonder that we should hear so much of "shanking," want of colour, mildew, &c. I will stake my reputation as a gardener, that borders made like that at Lismore will produce finer Grapes, and last for a greater number of years, than any other description of Vine border ever made.

Ballyinn, which is on the side of the river opposite the castle, is where the gardener's residence is, and here the grounds are extensive and beautiful; some good plants of *Deodar* are scattered freely about, and the Laurel banks are very fine. The valley between Ballyinn and the castle has been, since I saw it, the scene of a very destructive flood, by which five arches of a bridge on it were carried away.

Inglis says, "the descent of the Blackwater is not surpassed by that of any river in Europe."—"A detail of all that is seen in gliding down the water from Lismore to Youghal would fill a long chapter. There is every combination that can be produced by the elements that enter into the picturesque and the beautiful—deep shades, bold rocks, verdant slopes, with the triumphs of art superadded, and made visible in magnificent houses and beautiful villas, with their decorated lawns and pleasure grounds." So much for the well wooded and beautiful scenery about Lismore. *M. S.*

### FLORICULTURE.

TREATMENT OF MIMULUSES.—Notwithstanding the remarks made by me in these columns last autumn, and those that followed from H. Clapham, Esq., to whom we are indebted for some of the finest varieties of *Mimulus* in cultivation, and who kindly offered to give three seedling varieties from his fine stock to whomsoever might succeed in inducing the Horticultural Society to give a prize to such things, but little progress I fear has yet been made in regard to the cultivation of this fine flower; certainly no one has exhibited a group, in order to try what the Society might have been disposed to do, had a collection of well grown plants been brought before it. Nevertheless, few flowers are more showy during the spring months than *Mimuluses*, and their treatment is simple and easy—facts which may possibly in some measure account for the neglect into which they have fallen. They may be propagated with facility, as they strike root from nearly every joint, and form a huge specimen in a short time, covered with blossoms. Cuttings or pieces taken off early in autumn will no doubt be sufficiently rooted to admit of their being potted at once into 5-inch pots, which should be placed in a cool frame and liberally supplied with water, frequently watering the plants overhead with a fine rose. But little air should be given during the first fortnight, after which admit it freely in the morning, closing rather early with the afternoon sun, and sprinkling the plants overhead. As soon as they have filled the pots with roots, give them a liberal shift into—say, 8-inch pots, and carefully peg down each shoot in the mould, in order that they may emit fresh roots. Continue to frequently sprinkle them overhead in dry weather, and on dewy nights leave them fully exposed, as they delight in plenty of moisture. But little is gained by stopping *Mimuluses* more than once, for if kept well pegged down they break out at nearly every joint and soon form sufficiently large and handsome specimens. The last shift should be given them about January, when liquid manure will be found very beneficial. If the plants have been kept sufficiently moist, green-fly will not be found at all troublesome. Little more can now be done to secure good specimens, with the exception of neatly tying and keeping them sufficiently moist. If they become pot-bound they will be benefited by being placed in a pan of water during their blooming season. After they have done flowering, and the seed gathered, the flower stems may be cut off, and the plants placed in a shady situation, or turned out into the open borders, where they will flourish freely, and if a little fresh compost is placed round them they will quickly take root, and may be parted in the autumn into portions best suited to the convenience of the cultivator. The pots should be thoroughly drained, and the soil should consist of one part fibrous loam, one part leaf-mould, one part rotten cow-dung, one part sand or mortar rubbish, with a portion of fibrous peat, all thoroughly incorporated and used in a rough state. Seed may be sown from May until July, in pans or in the open border. The soil should be fine and pressed down firmly previous to the sowing of the seed, which, in consequence of being so very small, should not be



covered, but merely pressed down. The young plants intended for pot culture should be potted off into 3-inch pots as soon as they have become sufficiently large to handle, and should receive the treatment described above. The *Mimulus* may also be successfully cultivated out of doors; and if covered with ashes, sand, or old tan during the winter it will make a fine display in the spring. Seedlings should be carefully attended to and protected from slugs, until they have become sufficiently established, when they will soon be found to amply repay the care and trouble bestowed upon them. *E. B.*

**SINGLE CHINESE PRIMULA.**—Fine blooming plants of this Primrose, that will continue in flower through the whole of the winter months, may be produced as follows:—In order to obtain strong plants, the seed should be sown not later than the first of May, in a well drained stone pan, in a light sandy soil, and put into a cool frame, as near the glass as possible. When large enough to be pricked off into store pans the young seedlings should be allowed a square inch between each plant; when that space has been filled, let them be potted singly into 3-inch pots, and as the pots become filled with roots, shift into a size larger pot, giving them their final shift into 6-inch pots in the early part of September. The compost in which I have found these plants to thrive best has been equal parts turfy loam and leaf-mould, and a little sharp sand. While growing, a cool pit or frame suits them best; give plenty of air, and be careful not to overwater them. Treated in this way the plants will be in flower by the middle of November, and will continue in blossom through the whole of winter, and to be seen to advantage they should be moved to the greenhouse or conservatory. *R. M.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

Now that but few attractions are in the open flower garden, the conservatory should be made as interesting as possible. Gesneras, *Justicias*, *Jasminums*, *Poinsettias*, *Euphorbias*, and various other plants which we have from time to time recommended to be grown for the express purpose of flowering at this season, will now be in bloom, and will replace *Chrysanthemums*, late *Fuchsias*, *Salvias*, &c., which as they show symptoms of decay should be removed. A few *Daphnes* and *Camellias* which have been brought forward in a gentle heat will help to make a tolerable display; at the same time *Persian Cyclamens*, *Mignonette*, *Neapolitan* and *tree Violets*, should not be forgotten, being favourites with every one. And the spare shelves and odd corners may be usefully occupied with any quantity of the above. The various kinds of greenhouse and hardy plants which are now being forced to bloom at Christmas and through January will require some management this dark weather, to get them to open their blooms freely; As we recommended them to be kept in bottom-heat until the buds got in a forward state, they should be looked over once or twice weekly, and the more forward plants removed to the lightest parts of the stove or forcing house, to give them all the advantage of a full exposure to light, without which many kinds will flower irregularly, opening a few flowers only at a time. Up to the time when the flowers open, they should be kept in a moderately moist atmosphere; but after they are in bloom, this must be reduced to a comparatively dry one, which will keep the plants much longer in perfection, and will likewise help to harden such as may be required for room decoration. *Hyacinths*, *Narcissus*, early *Tulips*, *Lily of the Valley*, and similar plants, must likewise be removed from the forcing pit to the shelves of the forcing house, or any house where they can have a moderate temperature and plenty of light to get them into bloom; at this early season *Hyacinths* are apt to open their flowers before the scape is grown sufficiently high to clear the foliage; a small pot may therefore be inverted over the crown of the plant, removing it when the scape is advanced enough for the blooms to show themselves.

#### FORCING DEPARTMENT.

The forcing of fruit trees in pots is both useful and interesting; and where there are not separate houses for each distinct kind (which only exists in the largest establishments), a valuable addition to the dessert in spring may be made by growing a collection of *Peaches*, *Nectarines*, *Apriots*, *Figs*, *Plums*, *Cherries*, and *Raspberries* in pots; they are easily managed in this form, provided there are one or two houses at work to hold them during the later stages of their growth. All the above kinds (with the exception of *Raspberries*) should have been grown in pots two years at least, and be well furnished with fruit buds. *Raspberries* are best obtained by taking up the strongest suckers early in September, and potting them either singly or three together in rich soil, shading them for a few days to make fresh roots, and then placing them against a south wall to ripen. Supposing a stock of the above kinds is prepared for forcing, the advantage of a deep pit, with a bed of leaves, affording a slight bottom heat, will be beneficial, by setting the roots in action. *Cherries* and *Raspberries* are the most impatient of heat, and should be brought forward in a very low temperature; and unless they are required very early, will succeed better when started next month. The remainder should be started with a top heat, ranging between 40° and 60°, with a gentle syringing daily, and air according to the state of the weather; here they may remain till nearly in bloom, when a

drier atmosphere being necessary, they may be removed to vacant shelves or stages in any house at work, where a moderate heat is kept up. *Peaches* and *Nectarines* may even be placed on the back shelves of the Pine-houses after they set their fruit, though a more moderate temperature will suit them better. In carrying out their subsequent treatment, we may add that *Figs*, *Peaches*, &c., should occupy the warmest part of the house in which they are to fruit, and *Apriots*, *Plums*, and *Cherries* the coolest end. If required, *Raspberries* will succeed well in pits, or in the partial shade of other plants. If circumstances permit of the whole being kept plunged in a gentle heat, it will assist the swelling of the fruit, but, with proper attention in supplying them with manure-water, they will do well without. Prepared plants of the most suitable kinds of the above fruits may be obtained at most of the principal nurseries, or maiden plants of each may now be potted in rich turfy loam for future operations, getting them into a bearing state by judicious stopping, rather than by the knife. Continue our former directions for the early *Vinery* and *Peach-house*. The *Fig-house* may now be commenced by putting on gentle fires; 45° at night will serve to start with, increasing the heat 10° or 15° by day. Syringe twice daily, and soak the inside borders, and the plants in pots or tubs, with liquid manure, if dry. Prick off seedling *Cucumbers* and *Melons*, and keep them in a moist heat near the glass. Increase the admission of air as they advance, to strengthen them. *Cucumbers* in bearing should be kept in vigour by a good heat and liberal supplies of liquid manure. Apply sulphur whenever mildew appears, and keep the internal air of the house or pit healthy by proper ventilation.

#### FLORISTS' FLOWERS.

A season of floricultural tranquillity approaches, if there is such a period in a florist's life. *Tulips* are in the ground; *Carnations* are safely housed; *Auriculas* and *Polyanthuses* are, comparatively speaking, out of harm's way. The *Ranunculus* beds are turned and ridged up, and *Hollyhocks* and *Dahlias* are as right as rest can make them. What is next to be done? We would just recommend that the *Tulip* bed (the best one) should be covered so as not only to keep the bulbs from severe frost, but also from excessive rain, both of which are sadly injurious to the coming bloom. Examine carefully the stock of *Ranunculuses* when opportunity serves; recollect that dampness is fatal to their existence. Make the necessary arrangements as to colour in the bed, for much of the beauty of a collection depends on a well studied contrast. Hoard every particle of vegetable refuse, for when well decayed and sweetened it is invaluable.

#### KITCHEN GARDEN.

We have so often condemned the practice of digging or even treading on wet land, that it would seem unnecessary to again name it, did we not almost daily see it practised. Now as one cause of wet soils is the want of proper drainage, where such an evil exists no time should be lost in getting it effectually cured, the rapidity of growth, and consequent value of garden produce, depending very much on the depth of the soil, and the facility with which rain water can be carried off. That well drained soils are many degrees warmer than undrained ones, is evident enough; and as no amount of care in cultivation, nor the most liberal assistance with manure, can compensate in any way for the wants of good drainage, every perch of ground intended to be devoted to the growth of fruits and vegetables should be made right in this respect, as the only foundation on which subsequent success can reasonably be hoped for. To be out of the way of the roots of fruit trees and deep-rooting vegetables, the drains should not be less than 3 feet deep; 4 feet will be still better, if a foot in depth of rubble stones can be afforded to lay over the pipes, which should not be less than 3 inches bore. The distance at which these are laid apart will depend on the nature of the soil.

#### COTTAGER'S GARDEN.

If it is wished to have a dish of *Seakale* towards the beginning or middle of February, now is the time for making preparations for obtaining it. If a small quantity of leaves can be collected for the purpose of mixing with a little stable-dung or other litter, which will cause a gentle fermentation to take place, there will be little difficulty in effecting this object. Let the roots be covered with tolerably large flower-pots; any old partly broken pots or other material that will keep the manure off the tender shoots are suitable for the purpose. On these shake a sufficient depth of fermenting material to raise a heat of from 50° to 60°. The heat may be less, but it should not exceed 60°, or the stems will be weakly and drawn. In the same manner *Rhubarb* may also be produced early; but in the case of the cottager possessing a warm dark room or cellar, where roots can be placed, *Rhubarb* may be produced with greater certainty, and with less trouble. At this season, under the constantly varying weather, little can be done in the kitchen garden. In open weather, however, a small sowing of the early frame *Pea* may be made; they will come in a little earlier than those sown in spring. *Raspberries* and all kind of fruit trees may now be pruned. With regard to the former, which produce their fruit entirely on the previous year's wood, the old shoots should be removed, and four or five of the strongest of the young ones tied up in their places, cutting clean off by the root all the rest of the young shoots. After they are tied up to the stakes shorten them to 4 feet in height. In exposed situations, a good way of training *Raspberries* is to tie the points of one-

half of the shoots on the stools respectively with each other, thus forming arches, which have rather a neat appearance. Those who possess a frame, containing a few choice plants, should keep a sharp look-out for insects; for in winter, the plants being comparatively inactive, cannot readily put forth fresh leaves to compensate for any destroyed. Keep everything inside the frame as dry as possible, and cover carefully at night.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.  
For the week ending Dec. 15, 1853, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	BAROMETER.		TEMPERATURE.						Wind.	Rain.
				Of the Air.			Of the Earth.				
		Max.	Min.	Max.	Min.	Mean.	1 foot deep.	2 feet deep.			
Friday 9	9	30.336	30.328	51	34	42.5	41	44	N.E.	.02	
Satur. 10	10	30.283	30.119	41	30	35.5	41	44	N.E.	.00	
Sunday 11	11	30.070	29.935	34	29	31.5	40	43	S.E.	.00	
Mon. 12	12	29.934	29.782	33	23	31.5	38	40	S.E.	.00	
Tues. 13	13	29.979	29.333	46	38	42.0	34	42	E.	.00	
Wed. 14	14	29.929	29.197	43	25	34.0	38	42	N.E.	.00	
Thurs. 15	15	29.244	23.196	33	27	30.0	38	41	N.E.	.00	
Average.		29.921	29.707	40.4	30.1	35.3	39.4	42.5		0.02	

Dec. 9—Fine; cloudy at night.  
10—Densely clouded throughout; dry cold wind.  
11—Overcast; temperature day and night varying little from the freezing point.  
12—Hazy; uniformly overcast; cloudy; frosty.  
13—Foggy; uniformly overcast; barometer falling rapidly.  
14—Foggy; occasionally overcast.  
15—Snowing occasionally throughout the day; clear at night; snow 3—4 inches deep.  
Mean temperature of the week's day, below the average.

STATE OF THE WEATHER AT CHISWICK.  
During the last 27 years, for the ensuing week, ending Dec. 24, 1853.

Dec.	Average of Month.	Average of Year.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 19	45.55	35.07	40.25	15	0.31 in	2	7	1	1	5	5	5	1
Mon. 19	45.55	35.07	41.23	15	0.38	2	7	1	1	5	5	5	1
Tues. 20	45.11	34.40	39.7	10	0.3	4	5	2	2	5	5	5	1
Wed. 21	43.62	33.77	39.69	10	0.20	1	6	2	1	3	3	3	3
Thurs. 22	45.37	34.07	39.72	14	0.37	3	4	3	1	2	7	5	1
Friday 23	43.62	32.40	38.01	13	1.13	8	7	2	1	2	7	5	1
Satur. 24	42.37	32.07	37.72	10	0.38	8	3	2	1	1	7	1	4

The highest temperature during the above period occurred on the 23d, 1835, and 24th, 1827—therm. 57 deg.; and the lowest on the 24th, 1830—therm. 10 deg.

#### Notices to Correspondents.

**ARAUCARIA IMBRICATA: C. P.** It will succeed in any good garden soil, provided the ground is well drained. †  
**BACK NUMBERS.** Full price will be given for Nos. 37 and 39, 1853.  
**BOOKS: R. D. Don's** "Hortus Cantabrigiensis," and McIntosh's "Book of the Garden" may possibly be found to suit you. †  
**DISEASED PEARS: W. H. F. C.** They are the common *Musculi*, scale, described and figured in our volume for 1843, page 776. Scrub the branches with water at 170°. †  
**FRENCH BEANS: B. C.** You could not have a better place for your French Beans than the pit of an early *Vinery*, where the pit is filled with two parts of leaves and one part of long litter, with about 18 inches of good soil on the top, provided it is not too far from the glass. †  
**FRUITS: Ravenswood.** Three good cooking Apples that will keep well through the winter are *Dumelow's Seedling*, *Mère de Ménage*, and *Rymer*. Three baking Pears: *Catillac*, *Chaptal*, and *Double de Guerre*. Three table Pears that will keep well: *Glout Moreau*, *Knight's Monarch*, and *Beurré Rance*. †  
**HEATING: W. P. H.** Fine Apples may certainly be grown, and even fruited, by means of the heat produced by plenty of leaves only; but it is not a good plan, inasmuch as the warmth is apt to be found too little just when it is most wanted, viz., in severe weather. Orchids, we should think, could not be cultivated in a house heated by leaves alone. †  
**IVY: C. M.** It is an epiphyte, not a parasite. It does no harm to the trees on which it grows, unless it obstructs a free circulation of air. †  
**LEAVES: Youngster.** We can find nothing on your leaves. They, however, look as if the atmosphere of your house had been kept too damp for the useless season we have just experienced. †  
**MUSKROOMS: A Beginner.** Since he appears to be a foreigner, had better study V. Paquet's "Culture des Champignons," or, if he prefers it, any decent English work on practical horticulture. †  
**NAMES OF FRUITS: A B. 1.** *Paradise Pippin*; 2, *Lemon Pippin*; 3, *Golden Reinette*; 4, *Cluster of Golden Pippin*, sometimes called *Twin Clusters Pippin*. You may find single specimens of it, like No. 7, and two grown together, like No. 8, on the same tree. 9, *Beauty of Kent*; 10, *Cockle Pippin*; 11, *Ord*; 12, *Kirk's Lord Nelson*.—D. D. Your Apple bears much resemblance to the *Fall Pippin*. †  
**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom our remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—M. J. It is a tuber of *Tropaeolum tuberosum*, said to be eatable.—A. B. D. 1, *Geissomeria longiflora*; 2, a *Gesneria* like *Suttoni*; 3, *Goldschmidia isophylla*. The numbers 1 and 2 were loose, and the whole of the specimens so bad as to be quite unfit for examination.—A. Subscriber. 1, *Schaueria calycotricha*, alias *Justicia flavicoma*; 2, *Cestrum aurantiacum*; 3, *Geissomeria longiflora*. †  
**NERVOUSNESS: J. D.** We have nothing to do with such matters. The active part of the prescription is strychnine. We can say no more. †  
**SEEDS: C. F. I.** Sow them in February or March in heat. *Leucodendron argenteum*, *Leucospermum conocarpon*, and the *Protea* are not worth much. *Knolkohl* is the common *Kohl Rabi* or Turnip-rooted Cabbage. †  
**MISC.: Ravenswood.** Now is as good a time as any for thinning out a belt of plantation of *Holly* and *Yew*. The cutting down of other evergreens, such as *Laurel*, &c., is perhaps best done in April.—A. Lady Subscriber. There are difficulties in the way not contemplated.—A. Subscriber. The lute in which the glass of the *Vivaria* in the Zoological Garden is set is red-lead faced with a cement, which we believe is called *Bell's Iron Cement*, prepared at Sunderland, and used a good deal by engineers.—D. W. M. Skeletons of leaves are prepared by maceration in rain-water, and by careful brushing when the parenchyma is rotten. No flowers will retain their colours, except those dry Composites which are called *Everlastings*. In this instance, moreover, it is not the flower, properly speaking, which retains its colour, but the dry bracts or floral leaves. †  
\* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.



**TO AGRICULTURAL IMPLEMENT MAKERS.**  
**THE DIRECTORS of the CRYSTAL PALACE**  
 COMPANY having now determined the disposition of EXHIBITORS' SPACE, and fixed the Rent to be charged for the same, are prepared to arrange with Agricultural Implement Makers for the Exhibition of Implements and Machines in motion or otherwise.—Particulars may be had at the Company's Office, Agricultural Department, 3, Adelaide Place, London Bridge.  
 (By Order.)  
 December 17. G. GROVE, Secretary.

#### PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

**ANTONY GIBBS AND SONS,**  
 AS THE ONLY IMPORTERS of PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, **ANTONY GIBBS AND SONS** think it well to remind buyers that—

*The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.*

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO**, the guaranteed import of Messrs. **ANTONY GIBBS AND SONS**, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—**Wm. INGLIS GARNY**, 10, Mark Lane, London.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
 Turnip Manure ... .. per ton £7 0 0  
 Superphosphate of Lime ... .. " 7 0 0  
 Sulphuric Acid and Coprolites... .. " 5 0 0  
 Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**THE LONDON MANURE COMPANY'S WHEAT MANURE**, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure.  
**EDWARD PUESER, Sec.**  
 Bridge Street, Blackfriars.

**SEWAGE CHARCOAL MANURE.**—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the **SEWAGE MANURE WORKS**, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt., for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.

It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

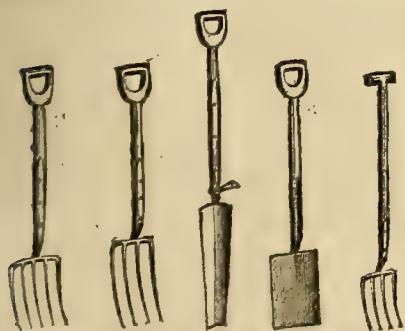
**GUTTA PERCHA BOOTS FOR SHEEP**, for the Cure and Prevention of FOOT-ROT (price 4d., 5d., and 6d. each). Price of the Powder, in tin cases, sufficient for 100 sheep, 2s. 6d.—Address **JOHN JONES and Co.**, Patent Works, Sheffield. London Agent, Mr. F. HAINES, 22, Lime Street, City.

**SAMUELSON'S PATENT DIGGING OR FORKING MACHINE**, which obtained the SILVER MEDAL of the Royal Agricultural Society at GLOUCESTER, 1853; 5l. 5s. Prize of the YORKSHIRE SOCIETY; and 5l. Prize of the CLEVELAND SOCIETY; capable of cultivating 3 acres per day with four to six horses, may be seen at work at Banbury, and in Kent, Middlesex, Surrey, Cheshire, Yorkshire, North Wales, Berwick, Gloucestershire, Worcestershire, Leicestershire, Herts, &c.

To meet the demand of SMALL OCCUPIERS, where horse power is limited, Mr. SAMUELSON has constructed an implement equal to 3 or 3½ acres per day, with a draught of three to four horses only. Price 27l. 10s. and 24l. 10s. respectively, at Banbury. PRIZE at Gloucester (the eighth time) to SAMUELSON'S improved GARDNER'S TURNIP CUTTER.

Manufacturer of McCormick's Reaper (highly commended at Pusey), Anthony's Churns (3l. prize at Gloucester), Liquid Manure Pumps, Chaff Cutters, Crushing Mills, Lawn Mowers, &c.  
**B. SAMUELSON**, Britannia Works, Banbury.

#### WINTON'S PARKES' STEEL DIGGING FORKS.



**I HEREBY GIVE NOTICE** that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. **BURGESS & KEY**, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.

29th Sept., 1853.

Signed, **FRANCIS PARKES**.

#### PRIZE CHURN.

**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2600 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—**BURGESS & KEY**, Agricultural Implement Warehouses, 103, Newgate Street, and 62, Little Britain, London.

**STEPHENSON AND PEILL**, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hot-house Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.  
 From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

#### LAND DRAINAGE.

**MR. JOHNSON** (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five Shillings per acre; or if under 30 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

**THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.**—Incorporated by special Act of Parliament.—Offices, 52, Parliament Street, London.

#### Directors.

**HENRY KER SEYMOUR**, Esq., M.P., Hanford, Dorset, Chairman.  
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This Company executes Works of Land Improvement, viz., Draining, Irrigation, Roadmaking, Enclosing, Reclaiming, and the Erection of Farm Buildings, on advantageous terms; the amount of the outlay being repaid by annual instalments, varying according to the number of years over which Landowners may determine the repayment shall extend.

**WILLIAM CLIFFORD**, Secretary.

#### THE LANDOWNERS' DRAINAGE AND INCLOSURE COMPANY.

INCORPORATED BY SPECIAL ACT OF PARLIAMENT.  
 Tenants for Life, Trustees, Mortgagees, Incumbents of Livings, &c., can have all works of Draining, Warping, Irrigating, Inclosing, and every other improvement to land, executed by the LANDOWNERS' DRAINAGE COMPANY, either by Contract or on Commission. They will provide the money by a permanent charge on the inheritance, or repayable by instalments. They are also ready to undertake the Drainage of Towns, and all works incident to such improvements. This Company having been engaged in extensive works for many years in most of the Counties in England, and having in their employ the largest Practical Staff in the United Kingdom, whose sole attention is devoted to such improvements, is the best guarantee for the success of their works.

Every information will be given at the Offices of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter.

**THOMAS MAY**, Secretary.

#### ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

**PATRON**—His Royal Highness PRINCE ALBERT.  
**PRESIDENT OF COUNCIL**—**EARL BATHURST**.  
**PRINCIPAL**—**REV. J. S. HAYGARTH**, M.A.

#### PROFESSORS, &c.

**Chemistry**—**J. A. C. Voelcker**, Ph.D., F.R.S.  
**Geology, Zoology, and Botany**—**James Buckman**, F.G.S., F.L.S.  
**Veterinary Medicine and Surgery**—**G. T. Brown**, M.R.C.V.S.  
**Surveying, Civil Engineering, and Mathematics**—**F. Armstrong**, C.E.  
**Manager of Farm**—**G. Austin**.  
**Assistant to Chemical Professor**—**A. Williams**, M.R.C.S.

The first Session of 1854 will commence early in February. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer time is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

THE GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of **HAMILTON, ADAMS, & Co.**, Paternoster Row, London; and **EDWIN BAILY**, Cirencester. Price 1s.

#### MANCHESTER POULTRY EXHIBITION.

An Exhibition will be held in the Free Trade Hall, on the 24th and 25th JANUARY. The Entries must be made with the Secretary on or before the 10th of January; the Entrance Money must be paid before the pens can be entered for competition. Prizes to the amount of 150l. will be given.—For further particulars see Regulations and Prize Lists, to be had from the Hon. Sec., Mr. **GEORGE POTTER**, 13, Cooper Street, Manchester.

#### THE GREAT METROPOLITAN EXHIBITION

OF POULTRY, PIGEONS, AND RABBITS will be held at the Bazaar, Baker Street, and King Street, Portman Square, London, on the 10th, 11th, 12th, and 13th January, 1854. Entries close 28th December.  
**WILLIAM HOUGHTON**, } Secs.  
**JOHN HENRY CATLING**, }

## The Agricultural Gazette.

SATURDAY, DECEMBER 17, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Dec. 22—Agricultural Imp. Society of Ireland.

THURSDAY, — 23—Agricultural Imp. Society of Ireland.

We publish elsewhere two papers of the highest agricultural interest. The one reports the rapid consumption of our guano supplies, and the other reports the waste and destruction of fish all round our shores.

Guano is fish. Manure is just food minus growth; and we do not suppose that the fish-eating birds frequenting the guano islands have become more numerous, larger, or have grown in any way within the past century; so that guano is just fish. It is, indeed, fish which has undergone digestion, but that is a process not difficult of imitation, and it has undergone exposure to heat and drought—but these, too, are agents we can employ. To throw back again into the sea so much of the fish that is caught before landing the cargo, which is done every time the fishing-boat returns from its station, is much the same thing as

throwing so much guano overboard within a few miles of the port.

We fear that just and unquestionable as are Mr. CAIRD'S propositions on free trade in guano, the report of Rear-Admiral MORESBY will greatly diminish their interest, unless additional sources of guano with some similar monopoly hanging over them be discovered. Home guanoes, such as those with sewage,\* or those with fish, as their principal material—the latter especially—seem to deserve the attention of inventors and capitalists. A simple and perfect way of utilising the enormous quantities of inferior fish now wasted would be of national importance.

THE objectors to the scheme of a Central Farmers' Club have one very fair ground on which to build their opposition. They may say, "The societies which you propose to associate and unite are already defunct." Let the truth on the subject be stated as fully and explicitly as possible. The following are extracts from our correspondence during the past fortnight: "I am sorry to say the Stratford-on-Avon Farmers' Club is at present in abeyance."—"The Wiveliscombe (Devonshire) Farmers' Club has ceased to exist for some time."—"I have to tell you that the meetings of the Ottery (Devonshire) Agricultural Society are discontinued for the present."—"The Swansea Farmers' Club died some years ago, insolvent."—"Our meetings have come to an end, and the Wingerworth (Derbyshire) Farmers' Club is now only a matter of history."—"The Collumpton (Devonshire) Farmers' Club has died a natural death for want of breath—funds."—"The Wickham Market (Suffolk) Farmers' Club, once 80 members, expired of inanition two years ago—aged 10."—"The Carlton-on-Trent Farmers' Club, I am sorry to say, has to be numbered amongst those useful and beneficial discussion societies and meetings that are discontinued."—"The Dartford Farmers' Club has long since ceased."—"The Ardeleigh Farmers' Club has been dissolved about a year."—"The York Farmers' Club, after a long and tedious illness, was starved to death about a year ago."—"No meeting of the Cardiff Farmers' Club has been held for a considerable period."—"The St. Germain's (Cornwall) Farmers' Club is nearly defunct, and I am inclined to think that at our next annual meeting it will be entirely broken up."—"The Bromley Farmers' Club now meets only twice or three times a year."—"The Exminster (Devonshire) Farmers' Club has ceased to exist."—"The Burton Farmers' Club has ceased to exist."—"Both the Agricultural Society and Farmers' Club at Stewpony have been broken up for several years."—"The Northampton Agricultural Book Club is nearly defunct, and its proceedings are of so little moment as not to be worth reporting."—"The Claydon Farmers' Club, though still in existence, has not met for the past year." And the number might be greatly increased. Within the past four years the mortality among these institutions has been exceedingly great, and not very easy to explain. Probably the difficulty or impossibility of obtaining lectures or essays of decidedly instructive character has had a good deal to do with it. If so, it is probable that a Central Farmers' Club would have restored them to life and activity, just as the Society of Arts has invigorated the institutions in unison with itself, by introducing lecturers and suggesting subjects for discussion.

We believe that if the central club were to undertake a correspondence with all the districts in which farmers' clubs now deceased had once existed, the renewal of the interest which they formerly excited would be no difficult task—and many a useful local institution would be set at work again. If any difficulty existed as to employment for them, enough for many years would be found in conducting statistical inquiries in the several localities, and so exciting an interest in that matter which might hereafter facilitate and enable the Government inquiry.

We confess it is more in this way than as organising a political machinery that we think a Central Farmers' Club will operate with usefulness. The argument of those who desire to separate the political from the practical in the working of these societies has not, we think, been rightly met by their opponents. It has always been received as if its advocates had any objection to full and independent political effort and action on the part of tenant farmers. But it is surely perfectly possible to be as keen in the pursuit of political ends, as any of those who urged the other day the capabilities of a central club for the attainment of those ends, and yet to desire that the club in question be confined in its operation within strictly agricultural limits. A club can exist only by the unanimity of its members in the object for which it has been established. It may be a political club, of one

\* We hear of a Manchester Sewage Guano Company selling at 2l. 10s. per ton, and apparently satisfying a great number of purchasers.



sort of sentiment, and it will attract to itself all of that way of thinking in its neighbourhood. In that case, though its membership be open only to farmers, it will not attract all the farmers of a neighbourhood, but only those who think with its founders: and just so, if it be of any other politics. It cannot embrace all the agriculturists of a neighbourhood—it cannot strictly be a farmers' club unless it confine itself strictly to agricultural objects. And though the process of its formation be not so much one of gradual attraction to its principles, yet, however full its list of members, and hearty their interest in its success—they will dwindle both in number and attachment as those subjects come up for discussion on which their judgment is outvoted, and on which people very rarely do agree to differ. And it is idle to speak of strictly "agricultural politics" alone being allowed to furnish the topics of debate; agricultural politics are as much matters of dispute and difference among farmers as any other kind. The "agricultural" party is simply a misnomer. We could name many a farmer, several probably in every farmers' club, who have all along condemned its sentiments; and there is hardly a subject on its list on which it would obtain from farmers anything like the unanimous opinion it desires, and for the obtaining of which it considers a Central Farmers' Club desirable. Let such subjects come up for discussion at our farmers' club, and just in proportion to the degree of energy and earnestness possessed by its members, will be the violence of their discussions, and the certainty of their speedy dissolution. It is not because political clubs are useless, but because agricultural clubs are useful, that we desire the entire separation of the two. If the London Farmers' Club shall become a political body, and shall survive the secession of many of its members, it may become central as regards all who hold this, that, or the other class of political sentiments—it will never become central as regards the farmers of England.

#### LOIS-WEEDON CULTIVATION.

[The following letter from the author of the "Word in Season" is so entirely to the point of the numerous questions we have received on the subject of Mr. Jones's statement that we think we shall do a service to many of our correspondents by extracting it from the *Northampton Herald*.]

VICARAGE, LOIS-WEEDON, Nov. 23, 1853.

SIR,—It cannot be denied that the statement of Mr. Jones respecting his Wheat crops is a very extraordinary statement. On the same half-acre of old-going and, according to the usual acceptance of the term, exhausted land—the character of which is gravelly loam, so light and gravelly that this autumn he has dug it shallow and top-dressed it with clay—on this half-acre he has had Wheat for three successive years. The average produce for the three years has been 17½ bushels; that is to say, on the plan he has adopted of having triple rows of Wheat, each of which triple rows covers 2 feet of land, with a fallow interval of 3 feet between each triple row, he has had in reality, from the fourth part of an acre, an annual yield of 2 quarters 1½ bushel for three years following—the land being unmanured, and the quantity of seed being only 6½ pints. It cannot be denied that this is extraordinary, but it is no less extraordinary than true.

Nor is the balance-sheet he gives less worthy of notice. He might, indeed, have drawn it up in a different way, and made it in appearance a perfect model account; but then it would, in his case, have been neither honest nor true. It would not have been honest; for he would have accounted only for digging 12 inches deep, the right depth at the outset; whereas in reality he trenched improperly 20 inches deep, and so more than doubled the expense. And it would not have been true; for he would have debited his account with payments which he never paid. He might, however, had his circumstances been different to what they were, and if he had dug his land the proper depth, have most fairly and accurately put it thus, taking the average of the three years.

	£ s. d.
Rent (at 2l.) ...	1 0 0
Digging a quarter of an acre one good spit deep ...	0 10 0
Dropping seed ...	0 1 6
Six pints and a half of seed (5s.) ...	0 0 6
Bird-keeping ...	0 3 0
Stirring, cleaning and earthing up ...	0 10 0
Reaping a quarter of an acre ...	0 3 0
Carrying to barn and unloading ...	0 2 0
Threshing and winnowing (at 6d.) ...	0 8 9
Marketing ...	0 2 0
Rates and taxes ...	0 2 2½
Interest on capital, that is, Digging 6d., wear and tear of fork and hoe 6d. ...	0 1 0
Total outlay ...	£3 3 11½

So that if Mr. Jones had had to pay rent for his land, and had hired all his labour, and done nothing for himself, and had had no kind friend to carry his small crop—a neighbourly act which no farmer ever refuses in such a case;—if all this, in addition to the other items, had come under the head of payments, his net average

profit from his half-acre of Wheat would even then have amounted to 2l. 16s. 2½d.; or, supposing it had been a whole acre in cultivation, to 5l. 12s. 4½d.

But, take an honest man's statement, and believe it: it is the part of charity to do so. Mr. Jones was speaking of what actually occurred in his own case, and which might occur in the case of many others. He holds his land rent free. He has kind neighbours who respect and love him. He has a calling which occupies the greater part of the day—and no man on earth could more conscientiously fulfil its duties; but he has a few leisure hours, as most of those have "who are circumstanced like himself and farm on a very small scale," and those few hours he devotes, with positive enjoyment, to the lighter labours of the field. When he made up his account, therefore, he could not put down rent as a payment, for he had no rent to pay. Nor could he speak of cartage, for it cost him nothing; nor of such labour as he pleasurable performed himself. Take all this into consideration, and nothing can be plainer, or, with one or two most trifling exceptions, more accurate than his statement of receipts and payments.

The exceptions are, omission of interest on capital,—that is, for digging, &c., for the wear and tear of the fork and hoe (6d.); and of rates and taxes (2s. 2½d.). And these exceptions are so self-evident and transparent that, on reading the account, any man of common candour would supply the omissions and pass by the oversight without a comment.

	£ s. d.		£ s. d.
Digging ...	1 7 2½	16 bushels of clean Wheat (5s. 9d.) ...	4 12 0
Dropping seed ...	0 1 6	1½ bushel second ditto (5s. 9d.) ...	0 7 1½
Six pints and a half of seed ...	0 0 6	14 cwt. straw sold at 1s. 6d. ...	1 1 0
Bird-keeping ...	0 3 0		
Threshing and winnowing ...	0 12 0	Deduct payments ...	£6 0 11
Interest on capital for digging and wear and tear of implements ...	0 0 1 5½	Total profit ...	£3 9 11½
Rates and taxes ...	0 2 2½		
Total payments ...	£2 10 2½		

So that Mr. Jones's net average profit from his half-acre of Wheat amounted to 3l. 9s. 11½d.; or, supposing it had been a whole acre in cultivation, to 6l. 19s. 10½d.

I never will believe it can harm a man, or any body of men, to hear the truth. If, indeed, Mr. Jones or any one else did the dishonest thing to utter an untruth, and boasted of quarters of Wheat grown out of the usual course, and the boast turned out to be empty; or, if certain stated facts, however true, were accidental, and not results of reason and common sense, harm might be done in many ways. But here, the facts are undoubted and the principles sound.

Let a farmer take a field or an acre of Wheat land—clay or loam—and test for himself the principles of the system under review. After Wheat harvest, at the end of a rotation, when the land is exhausted of all manure from without, let him well clean the stubble, broadshare it and the weeds together, burn them and spread the ashes over the field. Then let him break it up with the cultivator; and harrow, and pulverise, and clean it again, as for Barley. The staple being tilled in this way, let him turn it under, and bring up to the top a few inches of the subsoil clay or heavy loam, and leave it for the winter, rough and cloddy. At spring, and during summer, let him stir it again and again with the scuffler, mixing the subsoil and a small portion of the staple together, and leaving the greater portion of it unmoved below, to consolidate for the coming crop. Thus prepared, the land will give him a good average crop of Wheat, without any further dressing; and so will continue to do, with nothing but the same preparation, every alternate year—care being taken to keep the surface open and clean between the drilled rows of Wheat, and to bring up an inch or two of fresh subsoil every other autumn.

I put the case in this form, in order that the farmer may see more clearly the way in which the Wheat plant can be fed without manure. It is fed partly by certain substances existing in the clay or loamy subsoil, which require exposure to the mechanical and chemical influences of the atmosphere before they are fitted for their office. When they are so fitted, they absorb and retain other substances existing in the air around us; and both together make up the food on which the Wheat plant lives and grows; the very same food, in fact, which is found in farm-yard dung, guano, nitrate of soda, or any other description of manure.

In the case I have supposed—a case that would never pay, and therefore never to be practised—there is a good average crop of Wheat every alternate year on the same unmanured acre of land. Let me now turn to the scheme I advocate. Applying the very same principles, but varying the practice, so as to have a crop and a fallow at the same time, I take from the same acre of unmanured Wheat land a good average crop of Wheat every year—a practice I have found to lead to a very large amount of profit, even with Wheat at the lowest price.

For my own part in the matter, there has been little merit in adapting true and acknowledged principles to a particular practice, and none is claimed; but, as it was Tull's unswerving rule (c. 11 of his work on Horsehoeing, "We must never plough below the staple"; and as my rule is, on principle, always to do so—a rule so positive that I depend wholly on its fulfilment for continued success—I shall not be misunderstood if I state here, that, even were there no other difference between us, the system I propose never was pursued

by the followers of Tull in France, or Switzerland, or anywhere else.

It has been suggested however, that fair and tempting as all the statements I make appear to be, there may be some untold drawback to the merits of the scheme, so as to make it difficult and unapproachable to others. With the utmost sincerity I declare I know of none; unless this be considered one, that the master's eye must be upon the work; that the master himself must be up and doing; that he must watch the seasons; see that the seed is good and faithfully sown; that the digging be done when it is done, and the intervals really and truly pulverised and cleaned; and, moreover, that he must thoroughly know the value of labour and its variations on different soils, so that he may well pay, but not over-pay, for digging, and thus keep his balance-sheet correct; but all this will not be considered an invincible drawback by any one who knows that nothing really valuable was ever gained but by the well-directed exercise of energy and spirit; that the promised results are so valuable here as amply to compensate for all; and that, as I believe, there never was an unsuccessful case where the conditions of the scheme had been strictly carried out.

I can take no serious notice of the letter of "Probatum est," because it is evidently intended as a jest throughout; for the writer must be jesting, though it is with firebrands, when he proves one of the most trustworthy and truth-loving persons I ever knew, to be guilty of deliberate falsehood, while every fact he has stated can be proved on the spot to be true. He must be jesting when he proves the 4-acre piece I am cultivating to be old sward newly broken up, when it has been publicly stated over and over again, and the fact is open and notorious, that it has been under the plough for a hundred years at least; and so on through the whole of the letter, which is written from beginning to end on the lucid principle of *probatum est a non probando*; and which must therefore be intended by the writer as a jest; and I think there are few persons to be found to differ with me in opinion that it is not a very good one. S. Smith.

#### Home Correspondence.

**Land Drainage.**—A writer in a late *Gazette*, "J. R. B.," seeks advice through the medium of your pages, and wants to know how to drain his field, hoping that some experienced correspondent will put him in the way of so doing. It is clear that "J. R. B." has but little knowledge of draining, or he could not suppose that any experienced drainer would attempt to advise him as to the proper direction of his drains without first seeing the land. If, therefore, he wishes his field well drained, he should obtain the assistance of one of the few practical draining engineers, who for a fair remuneration would examine and do it effectually. But if he follows the advice of any man who lays down the same rule for all descriptions of soils, or of one who will give an opinion from the written character of his own soil, without first seeing the land, then I say he deserves to be disappointed, and the man rendering such advice can have but little practical knowledge of draining. J. Johnson.

**Cottage Cookery.**—The receipts for cottagers' wives given by your correspondent "E.," though good ones, will not, I fear, be extensively used. Rice, the chief ingredient of five out of the eight receipts, is generally disliked by the poorer classes; they say it contains no nourishment, and I suppose it does not contain a deal. I remember once, when on a long voyage, running very short of provisions; to my surprise the crew and steerage passengers refused to eat Rice, the only food on board, and were nearly starved to death in consequence. There is no food given out at sea, of which so much is wasted and so little eaten. The same result, I am afraid, would attend the distribution of it by the benevolent ashore. With so strong a prejudice as I know exists against Rice, its cheapness will not bring it into general use. Hasty pudding, made rough, where the milk is procurable, is by no means bad or dear food for a hungry man, but the best thing I know of this kind is mush, a very favourite dish on all tables in America. I only wonder it is not more eaten in England, it is cheap considering the nutriment it contains, and is quickly and easily made. I know nothing which, on long voyages, tends so much to keep up the condition of the men as the much-loved mush and molasses. If "Clericus" would procure a few barrels of good yellow Indian meal, and teach the poor to make mush, he would indeed be doing them a great service. W. Lort.

#### Societies.

##### ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held at the Society's House in Hanover Square, on Wednesday, the 7th of December. The following Members of Council and Governors of the Society were present: Mr. PUSEY, President, in the Chair; Duke of Richmond, Earl of Lucan, Lord Camoys, Lord Berners, Lord Feversham, Lord Portman, Hon. A. Leslie Melville, Sir John Villiers Shelley, Bart., M.P., Sir Matthew White Ridley, Bart., Mr. Raymond Barker, Mr. Barnett, Mr. Hodgson Barrow, M.P., Mr. Barthropp, Mr. Blanshard, Mr. Bosanquet, Mr. Bramston, M.P., Mr. Brandreth, Colonel Channon, Mr. Druce, Mr. Garrett, Mr. Grantham, Mr. Hornsby, Mr. Hudson (Castleacre), Mr. Kinder, Mr. Milward, Prof. Simonds, Mr. Simpson, Mr. Turner (Barton), Prof. Way, Mr. Wingate, and Mr. Woodward.



The following new Members were elected :

Gladstone, Captain, R.M., M.P., Bowden Park, Wilts  
Macintosh, David, jun., Tavistock Square, London  
Newton, George Onslow, Croxton Park, St. Neot's, Hunts  
Edwards, Francis, Bulstrode Park, Windsor  
Emison, John, Over-Dimsdale, Darlington  
Horton, Thomas, Harnage Grange, Salop  
Longmaid, William, Beaumont Square, London  
Dew, Tomkyns, Witney Court, Hereford  
Terry, Francis, Barchdown Farm, Bampton, Devonshire  
Leigh, Henry Thomas, Tarnham Green, Middlesex  
Beddoes, T. Minton, Minton, Church-Street, Salop  
Cook, George, Flitwick, Amptthill, Beds  
Wolton, Samuel, Kesgrave, Ipswich, Suffolk  
Barton, Rev. H. I., Wicken, Stony-Stratford, Bucks  
Deane, Francis Henry, Eastcot, Ruislip, Middlesex  
Cooper, Jackson, Eastland House, Warrace, Notts  
Stocker, John Palmer, 93, Oxford Terrace, London  
Northey, William, Lake, Lifton, Devon  
Drake, Thomas Tyrwhitt, Sparlodes, Bucks  
Hulse, Charles, Hurst, Reading, Berks  
Bateman, Lord, Shobden Court, Leominster, Herefordshire  
Ranger, Henry Wright, Court Lodge, Tonbridge-Wells, Kent  
Richardson, Robert, Lower Bebbington, Birkenhead, Cheshire  
Rhodes, James, East Benolt, Suffolk  
Jones, W. Hope, Hooton Farm, Sutton, Cheshire.

The names of 28 candidates for election at the next meeting were then read.

**FINANCES.**—Mr. Raymond Barker, chairman of the Finance Committee, laid before the Council the report on the accounts of the Society; from which it appeared that the current cash-balance in the hands of the bankers at the end of the previous month was 693*l*.

**CATTLE STEWARD.**—On the motion of Mr. Barnett, seconded by Mr. Raymond Barker, Mr. Francis Woodward, of Worcestershire, was elected one of the Stewards of Cattle at the ensuing three country meetings of the Society, in succession to Mr. Milward, who retires from that office this year by rotation.

**PRICE OF GUANO.**—A communication on the subject of the supply of guano to this country, from the Liverpool Chamber of Commerce, having been read, the Council agreed to the following memorial, which the President, accompanied by the Duke of Richmond and Lord Berners, should be requested to present to the Earl of Clarendon, H.M. Secretary of State for the Foreign Department:—

That the Council of the Royal Agricultural Society of England, being deeply sensible of the hardship inflicted on the British farmer by the excessive price of Peruvian guano, trust that the endeavours of her Majesty's Government will be directed towards the reduction of the cost of this important manure.

**WOOL.**—The President having stated Prof. Solly's wish to make a collection of English wools for the National Trade Museum, the Duke of Richmond, Lord Berners, Sir John Shelley, Sir M. W. Ridley, Mr. Hudson, of Castleacre, Mr. Druce, Mr. Turner, of Barton, and other members of the Council, expressed their willingness, in their individual capacities, to supply specimens from their respective flocks for the public object in question.

**COMMITTEE REPORTS** were received and confirmed from the chemical, implement, and poultry committees.

**STANDING COMMITTEES.**—The Council appointed the following standing committees for the ensuing year:—

**FINANCE COMMITTEE.**—Mr. Raymond Barker, Mr. H. Blanshard, Mr. Brandreth, Colonel Challoner, Mr. Fisher Hobbs, Mr. Jonas, Mr. H. Wilson.

**HOUSE COMMITTEE.**—The President, Chairman of Finance Committee, Sir John V. Shelley, Bart., M.P., Mr. Raymond Barker, Mr. Brandreth, Colonel Challoner, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Kinder.

**JOURNAL COMMITTEE.**—Mr. Pusey, Chairman; Duke of Richmond, Lord Braybrooke, Lord Portman, Hon. R. H. Clive, M.P., Sir John V. Shelley, Bart., M.P.; Sir Charles Lemon, Bart., M.P.; Sir J. V. B. Johnstone, Bart., M.P.; Mr. French Burke, Mr. Childers, Mr. Evelyn Denison, M.P., Mr. Hyett, Mr. Miles, M.P., Mr. Milward, Mr. H. S. Thompson.

**CHEMICAL COMMITTEE.**—Mr. Pusey, Chairman; Sir J. V. B. Johnstone, Bart., M.P., Mr. Dyke Acland, Dr. Daubeny, Mr. Hoskyns, Mr. Hudson (of Castleacre), Rev. A. Huxtable, Mr. Hyett, Mr. Jonas, Mr. Lawes, Mr. Miles, M.P., Mr. J. M. Paine, Mr. Sheridan, M.P., Mr. H. S. Thompson.

**VETERINARY COMMITTEE.**—Mr. Raymond Barker, Chairman; Duke of Richmond, Sir John V. Shelley, Bart., M.P.; Sir J. V. B. Johnstone, Bart., M.P.; Mr. Brandreth, Col. Challoner, Mr. E. Denison, M.P.; Mr. Brandreth Gibbs, Mr. Hamond, Mr. Fisher Hobbs, Mr. Miles, M.P.; Mr. Milward, Mr. Pym, Professor Simonds, Professor Spooner, Mr. Thompson.

**GENERAL LINCOLN COMMITTEE.**—Lord Ashburton, Chairman; Hon. Leslie Melville, Vice-Chairman; Earl of Yarborough, Hon. R. H. Clive, M.P.; Right Hon. Sir John Trollope, Bart., M.P.; Sir John V. Shelley, Bart., M.P.; Sir John V. B. Johnstone, Bart., M.P.; Sir Mark Agnew Cholmely, Bart., M.P.; Mr. Raymond Barker, Mr. Barnett, Mr. Brandreth, Major Cavendish, Colonel Challoner, Mr. Denison, M.P.; Mr. Brandreth Gibbs, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Jonas, Mr. Milward, Mr. Simpson, Mr. Thompson, Mr. Wingate.

**IMPLEMENT COMMITTEE.**—Colonel Challoner, Chairman; Lord Portman, Sir John V. Shelley, Bart., M.P.; Sir M. W. Ridley, Bart.; Mr. Brandreth, Major Cavendish, Mr. Evelyn Denison, M.P.; Mr. Garrett, Mr. Brandreth Gibbs, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hornsby, Mr. Miles, M.P.; Mr. Thompson.

**GUANO-SUBSTITUTE COMMITTEE.**—Hon. R. H. Clive, M.P.; Sir John V. Shelley, Bart., M.P.; Mr. Raymond Barker, Colonel Challoner, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hudson (of Castleacre), Mr. Pusey, Mr. Thompson.

The President, Trustees, and Vice-Presidents are, by the bye-laws, *ex-officio* members of all Committees.

**PLEURO-PNEUMONIA.**—Lord Berners informed the Council of the decided success that had attended Professor Simonds's personal examination and treatment of his cattle labouring under severe attacks of pleuro-pneumonia, not a single animal having been lost after the administration of the remedies prescribed, although many had died previously. Professor Simonds took that opportunity of laying before the Council an official report of his visit to the herd referred to by Lord Berners.

**MISCELLANEOUS.**—Communications were received, and referred to the first weekly Council on the 8th February, from Viscount Palmerston, Mr. Arkwright, of Sutton; Mr. Wm. Fox, Messrs. Burgess and Key, Mr. L. H. Spooner, Mr. Bentall, and Mr. Dalgraina.

A SPECIAL Council was held on Thursday, the 8th December. The following members of Council and

governors of the Society, were present:—Mr. PUSEY, President, in the chair; Earl of Yarborough, Lord Berners, Lord Feversham, Hon. A. Leslie Melville, Sir John Shelley, Bart., M.P.; Sir M. W. Ridley, Bart.; Mr. R. Westwood Baker, Mr. Raymond Barker, Mr. Barnett, Mr. Hodgson Barrow, M.P.; Mr. Barthropp, Mr. Branton, M.P.; Mr. Brandreth, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Kinder, Mr. Milward, Prof. Simonds, Mr. Simpson, Mr. Thompson, Mr. Turner (Barton), Mr. Jonas Webb, Mr. Wingate, and Mr. Woodward. The Council decided on the prizes for live-stock to be offered by the Society for the Lincoln meeting; referring to the Monthly Council on the 1st February the prizes to be offered, on the report of the respective committees, for implements and farm poultry, and the general conditions and regulations of the prize-sheets.

**THE AUDIT OF ACCOUNTS** was held on Friday, the 9th of December: present, Mr. Raymond Barker, Chairman; Colonel Challoner and Mr. Blandford, Members of the Finance Committee; Mr. Knight, of Edmonton, Mr. George T. Raymond Barker, of Fairford Park, and Mr. Dyer, of Barnsbury Park, *Auditors on the part of the Society.*—The accounts being examined, audited, and found correct, were certified accordingly by the signatures of the parties present.

A SPECIAL COUNCIL was held on the same day: present, Colonel Challoner, Trustee, in the Chair; Mr. Raymond Barker, Mr. Blanshard, Mr. Milward, and Mr. Simpson.—The report to be made by the Council to the ensuing general meeting of the Society was taken into consideration and agreed to.

The December GENERAL MEETING of the Society was held at the House of the Society in Hanover Square, on Saturday, the 10th of December. Among the parties present were: Mr. PUSEY, President, in the Chair, Duke of Richmond, Lord Feversham, Hon. A. Leslie Melville, Sir John V. Shelley, Bart., M.P., Mr. Astbury, Mr. Raymond Barker, Mr. George Raymond Barker, Mr. Blanshard, Colonel Blanshard, Colonel Challoner, Mr. Dyer, Mr. Christopher Erle, Mr. Eggar, Rev. James Linton, Mr. J. C. Morton, Mr. Mainwaring Paine, Mr. Pocock, Mr. G. H. Ramsay, Mr. John Russell, Mr. D. Taylor, and Mr. Towneley, M.P.

The Secretary, by direction of the President, read the following report from the Council.

#### REPORT.

The Council have to report to the members at their present general meeting that during the past half-year the Society has lost, by deaths or resignations, 43 of its Members, while 156 new Members have, during the same period, been enrolled on its list, which is now constituted as follows:—88 life-governors, 148 annual governors, 760 live members, 4073 annual members, and 20 honorary members. The Council have elected Lord Ashburton to supply the vacancy in the number of the vice-presidents, occasioned by the deeply-lamented death of the Earl Ducie; and the Hon. A. Leslie Melville of Lincolnshire, Mr. Barthropp of Suffolk, and Lord Bridport, as general members of Council, in the place respectively of Lord Ashburton, Prof. Sewell, and Mr. Bennett.

A new list of the governors and members of the Society having been prepared for insertion in the ensuing number of the Journal, the Council submit to the members on this occasion the following schedule, showing their distribution throughout the kingdom. The first row of figures in each column represents the Number of Members; the latter row, the amount of Representation in the Council:—

SCHEDULE OF DISTRIBUTION AND REPRESENTATION.					
ENGLAND:—			ENGLAND—continued.		
Beds	48	2	Suffolk	126	3
Berks	117	4	Surrey	135	2
Bucks	66	2	Sussex	186	6
Cambridge	58	3	Warwick	76	0
Cheshire	56	0	Westmoreland	25	0
Cornwall	61	1	Wilts	97	2
Cumberland	43	1	Worcester	66	3
Derby	93	0	York	229	5
Devon	208	4			
Dorset	109	1	Total	4676	86
Durham	98	0	WALES:—		
Essex	142	4	Anglesea	6	0
Gloucester	134	3	Brecon	29	0
Hants (Isle of Wight)	164	1	Carmarthen	36	0
Hereford	100	1	Carnarvon	7	0
Herts	114	3	Cardigan	16	0
Hunts	36	0	Denbigh	18	0
Kent	183	2	Flint	24	0
Lancaster	156	0	Glamorgan	66	0
Leicester	71	2	Merioneth	2	0
Lincoln	174	4	Montgomery	14	0
Middlesex	268	7	Pembroke	32	0
Monmouth	27	0	Radnor	6	0
Norfolk	256	3			
Northampton	100	4	Total	256	0
Northumberland	135	1	SCOTLAND	69	2
Notts	101	3	IRELAND	44	2
Oxon	112	3	CHANNEL ISLANDS	15	0
Rutland	7	0	(and ISLE OF MAN)		
Salop	176	3	(Abroad)	29	0
Somerset	187	2			
Staffs	137	1	General Total	5089	90

The Council consists of 76 members, several of whom represent by their residences more than a single county.

This schedule will enable those friends of the Society, and of agricultural improvement generally, who reside in districts where the number of members is below the average, to ascertain the cause and possibly remedy the evil; while it will afford an opportunity to the Council of recommending to the Society the election from time to time of such representatives of large bodies of members, at present unrepresented—particularly in the case of Lancashire and the Principality of Wales, as may best promote the agriculture of the

particular district and advance the general objects of the Society: the Council being most anxious that their body should be brought as nearly as possible to represent by its members the varied wants and wishes of the agricultural community.

The advantages already gained to the individual members and the country at large by the aggregate amount of single subscriptions from numbers contributed to the Society, are such as to induce the hope of a still further augmentation of its subscribers in different parts of the country; while the improved facilities of communication afford every opportunity by which payments may be paid, information sought or transmitted, and Journals delivered free to the members at their own homes in the ordinary course of the post: the railways furnishing rapid means of transit for passengers, live stock, and implements from every part of the kingdom, to the places where the annual country meetings may successively be held. The funds thus accruing to the society from so large a body of paying members will enable it to carry out those extended measures of public utility which it would otherwise be unable to accomplish, and the personal exertions and the practical experience brought into co-operation with the Society by their means will confer incalculable benefit on its proceedings.

The finances of the Society continue to receive the most vigilant attention of the Council, and they feel it their duty, under circumstances however apparently pressing at the moment, to guard their invested capital, derived from life-compositions, as the sheet-anchor of the Society. The floating cash-balance, available for current purposes, is constantly in a state of fluctuation, from various causes, either connected with irregularity in the remittance of subscription or from extraordinary demands arising chiefly out of the proceedings of the country meetings.

The country generally is well aware of the great service the Society has rendered in having raised up, by its prizes on the one hand and its most effective tests on the other, a new body of agricultural implement-makers, whose talent and workmanship now attract general attention. The Council have spared no outlay of money, nor their members either personal zeal or anxiety, to attain this great object; and having attained it, they feel it their duty to devise means by which the same results may be maintained at a less amount of annual expenditure. They have therefore caused a detailed statement to be prepared, for the information of the members, of the expenses connected with every branch of the Society's country meetings: this has already been completed in the case of the Lewes meeting, and will be inserted in the ensuing part of the Journal.

The Gloucester Meeting, notwithstanding the very unfavourable state of the weather on the principal day of the show, fully satisfied the expectations of the Council. The authorities of the city, the local committee, and the owners and occupiers of sites, contributed zealously to promote the objects of the Society on the occasion, and received at the time the public thanks of the members at their general meeting, held in the County-hall. The Society were again indebted to the liberality of the railway companies, in the conveyance of implements and live stock, and in their general arrangements for the convenience of the visitors. The senior-stewards of implements and live stock have drawn up reports connected with their respective departments for publication in the Society's Journal.

The Council have decided on the following schedule of cattle prizes to be offered by the Society at the Lincoln meeting, in the week commencing Monday, the 17th of July next:—

Short-horns	£180
Herefords	180
Devons	180
Other breeds	70
Horses	165
Leicesters	120
Southdowns (or other short-woolled Sheep)	120
Long-woolled Sheep (not Leicesters)	120
Improved Lincoln Sheep	60
Pigs	80
	£1285

The prizes for implements and for poultry will be decided on the reports of respective committees, on the 1st of February next, when the conditions and general regulations of the prize-sheets will be finally arranged.

Prof. Way, the consulting chemist of the Society, delivered before the members, in May last, a lecture on the management of the sewerage-matter of towns as manure for agricultural purposes; and Prof. Simonds, the veterinary inspector of the Society, is continuing his researches into the cause and treatment of diseases occurring among the live stock of the farmer.

The Council witness with much satisfaction the steady support which the Society receives in the acquisition of new members and zealous co-operators, the lively interest created in the districts assigned for the successive country meetings, and the increasing intelligence which distinguishes the agricultural community of the country. Science is no longer regarded as an unattainable acquirement, but has become an active principle, which, like the magnetic needle, points out the course to be steered, when all around is dark and uncertain: it has, indeed, been found to be that knowledge which is power.

By order of the Council,  
JAMES HUDSON, Secretary.

On the motion of the Rev. James Linton, seconded by Mr. Astbury, this report was received and unanimously adopted.

Mr. Raymond Barker, Chairman of the Finance



Committee, having read the balance-sheet from the auditors, the thanks of the meeting were (on the motion of Colonel Blanshard, seconded by Mr. Paine), voted to them for their care in auditing the Society's accounts; with a request that they would continue to favour the Society with their services during the ensuing year.

The President took the opportunity of congratulating the Society on its favourable position, and on the extreme accuracy with which the whole of its accounts were kept, and submitted to the inspection of the members; and Mr. Raymond Barker, in reply to an inquiry put to him by the Duke of Richmond, stated the amount of arrears of subscription due at that time.

Mr. Erle suggested that the Christmas Lectures should be renewed. The President informed him, that they had only been discontinued (and delivered in the spring of the year instead), in consequence of the very thin attendance of members during the Smithfield show week, when they had so many other objects of personal and public interest to engage their attention elsewhere in town; but that he would bring the suggestion before the Council, and should it be found desirable to renew these lectures in December, he had no doubt every attention would be paid by the Council to such wish on the part of the members.

The Rev. James Linton hoped the Council were pressing on the attention of her Majesty's Government the importance of a reduction in the price of guano. The President informed him, that at the previous Council a memorial was agreed to for the purpose of being laid before the Foreign Secretary of State, who had appointed that day at half-past 3 o'clock to receive it.

On the motion of the Duke of Richmond, seconded by Lord Feversham, the thanks of the meeting were voted to Mr. Pusey, for his distinguished services in the cause of the Society, and its objects.

Mr. Pusey, in acknowledging the compliment, invited the members to rally round him at the next country meeting to be held in Lincolnshire, one of the most interesting agricultural districts of the kingdom, where the farmers were prepared to give a hearty welcome to the Society.

The meetings of the Council stand adjourned to Wednesday, the 1st of February.

ROYAL DUBLIN, Nov. 25.—The first meeting for the discussion of scientific subjects, connected with practical science. G. SANDERS, Esq., in the chair. *The Manufacture of Guano from Fish*.—Dr. William Barker said: The subject is one which was brought under my notice not many days since, and which seems to me of such importance that I do not think it will need any apology in bringing it before the society, especially as my object in doing so is to subject it to full investigation, and endeavour, by eliciting opinions, to prove its commercial value. We are all aware of the extent to which the importation of guano has been carried for more than 10 years past. The importations from Africa, South America, and Australia have varied from 100,000 to 200,000 tons per annum; and if we take an average price of 9l. per ton, we find that the money value of a year's import has exceeded in some years one million sterling. It is therefore palpable that any substitute that could be found for this substance would prove a valuable adjunct to our wealth; and if we could direct a portion of this expenditure to this part of the British Empire, we should be conferring a substantial benefit on the country; and still further, if we could, in producing this effect, give employment to a branch of industry deserving of encouragement—we should be doing an amount of benefit to the country only limited by the extent to which it was employed. Now, these benefits, however, in my opinion, be all obtained were we to find that there was a source of a similar manure to be found around our own coasts, which, with a slight expenditure of capital and labour, could produce a profitable investment, and secure to our own country the money expenditure at present bestowed upon Africa, Australia, and South America. That such might be done, will be at once apparent, if we can show that we have around our seaboard in Ireland a reservoir of similar products to those of the places mentioned, and if we could, instead of trusting to the chemical agency of birds, convert the fish which swarm upon our coasts into as profitable a manure as they (the birds) produce. I think that could be accomplished, provided we could procure the supply of fish and a chemical agency—equal in efficiency to that of birds. Now, with regard to the latter part, I feel no doubt that the invention which has become the object of a patent by Mr. Pettit effects this. He has patented a plan for producing an artificial guano, by subjecting fish and all their parts to a process analogous to that which fish undergoes in the stomach of a bird. The fish, either fresh or dried, is treated with a small quantity of sulphuric acid, by which it is reduced to a pulpy state. In this state it is dried either by the direct application of heat, or by the admixture of substances capable of absorbing moisture. This, then, forms an artificial guano, which, if tested by the usual criteria of manure, may be considered equal, if not superior, to any imported. We all know that animal matter is the best manure, owing to its presenting azotised principles to the soil. Dung, urine, blood, animal remains are, as we know, the most powerful fertilisers of soils, and that fish ranks at least equal to any of these. Owing, however, to the facility of its decomposition, and the consequent difficulty of transport, it has heretofore been unemployed for this purpose, except on the coasts where it is found; but by means of this process it may be converted into a dry, inodorous, and easily transported article of commerce. With respect to the sufficiency of the supply on our coasts, papers read in this society prove the enormous supplies of fish on our coasts, and especially of fish not available for human food. Skate, dog-fish, congers, fishing frogs, &c., may all form a good manure. Prawns and small crustacea may be all converted into valuable manure. Every fisherman around the coast will testify that from one-half to two-thirds of the fish is lost or thrown overboard, which 2l. per ton would ensure being brought to land. The decrease of our fisheries is probably owing to the large ratio between marketable and unsaleable fish. The number of boats and men since 1852 was 1254 boats and 8482 men. Would this diminution have taken place had we a sure and regular market for all fish, whether edible or inedible? 2d. Of the mercantile value of manure, I could not speak; but, taking the tables of Boussingault and Payen as the criterion, and without special analysis, I should say that Pettit's patent manure must be a valuable article. By their experiments it appears that the value of manure depends on the slow decomposition of azotised substances. Now, the fish manure afforded by any dried white fish gave 16 per cent. of nitrogen, whilst blood gave but 12 per cent., marine plants but 2 per cent., guano 14 per cent., and farm-yard manure but 20 per cent. If this be the case with fish in its normal state, how much more should we expect from fish carefully prepared, without the loss of its elementary constituents. Here are the general results of the chemical analysis of artificial manure by Professor Way:—

Moisture	...	4.93
Organic matter	...	88.36
Sand, &c.	...	1.35
Earthy phosphates	...	4.06
Alkaline salts, &c.	...	1.30
		100.00
Ammonia	...	16.78

Other analyses were made by this gentleman, showing that this manure contains a greater percentage of ammoniacal salts than the best guano imported from Ichaboe or Peru. I am disposed to believe that taking into account the cost of manufacture and all the incidental expenses, this artificial manure could be manufactured at a lower price than 9l. per ton, the present price of the best guano. On referring to Mr. Sinclair's statement we find that sprats are occasionally sold round the coast at less than 1l. per ton, and waste fish at 1l. or 1l. 10s. Now, when we remember that one-fourth of all the fish taken on the coast, or at most two-thirds, is saleable, we are enabled to form some idea of the amount of the supply of refuse fish that could be obtained for the purpose of this manufacture. Moreover, what is called saleable fish, taking all descriptions together, is seldom sold at a higher rate, taking an average of the whole coast sales, than from 5l. to 8l. per ton, and even in the neighbourhood of Dublin it is, I have been informed, purchased at that rate by the wholesale dealers. The next point to be considered is, would it be possible to get a sufficient supply of fish round the coasts of this country? To this question there is only one answer to give. The quantity of fish in the sea, in spite of what the coast fishermen may say, is really illimitable. I believe that there is no limit whatever to the supply of fish which we may obtain from the ocean, and that it only depends on energy and on the exercise of skill to supply any quantity that may be required; and it must be remembered that the dog fish, the whale, the porpoise, fishing frog, &c., &c., and other inhabitants of the ocean, which consume our edible fish, may be converted into this artificial guano. I would also advocate the establishment of such manufactories on the ground that they would provide an inexhaustible field for the employment of our population, and stimulate us at the same time to use the means which nature has placed at our disposal for the augmentation of the national wealth.—Mr. Jeffery: With respect to supply of fish, I have told me to some friends, from whom I have received information of value with reference to this point. A gentleman, connected with the Dublin Steam Packet Company, writes from Killybegs to the following effect:—"With reference to the supply, no doubt this coast abounds with inferior fish, such as dog-fish, skate, rat-fish, &c.; and if there were a price offered for that sort of commodity, I am convinced that a quantity would be taken." I have also a letter from a person who was acting as agent for the Irish Fisheries Company, and he says—"I have no doubt that if there were a market, the take would be enormously increased; for all, except the ling, cod, and hake, taken here, are thrown away, the farmers refusing to use it as manure, although they are ready to admit its good qualities for that purpose." With reference to the supply likely to be obtained in our own neighbourhood, I have consulted some of the fishermen of Dublin, and they all told me that refuse fish (the scourings of their shops) could be afforded in large quantities at a cost, covering the expense of collecting it, of 30s. a ton on the average.—Mr. Andrews, secretary to the Royal Irish Fisheries Company: The question of supply is, in my opinion, one of difficulty. Having been engaged in the fisheries on the south-west coast of Ireland for some years past, I have taken pains to ascertain the quantities of fish brought in from time to time, and I have found that the average quantity of refuse fish taken by a trawl boat of 45 tons burden is from 5 cwt. to 8 cwt., consisting of skates, dog-fish, ray, frog-fish, &c. The supply from trawl boats would be small indeed. The canoes and other shore boats which work in Dingle Bay reject the refuse fish, and it is not possible for them to collect any great quantity of it, because the fishermen always carry them away from their lines. It appears that the average quantity of refuse fish taken at Dingle during the year was about 1 ton per week. I do not mean to say, however, that with a greater number of boats a larger quantity could not be brought in; but I think there would be difficulty in obtaining a regular or sufficient supply for the purpose of the proposed manufacture.—A Member: Does the gentleman mean a ton a week on the whole of the south-west coast?—Mr. Andrews: I say that the total would be a ton a week altogether.—Dr. Barker stated that the value of the prime fish was about 5l. a ton. Now, on that point he is quite misinformed, for so far from such being the case, the prime fish amounted at times to 30l. a ton.—Dr. Barker: I know that turbot, for instance, would sell at a much higher rate, but I believe that on the average around the coast the price would be about 5l. a ton.—Sir James Dombain, late Inspector-General of Coast Guard of Refuse Fish taken at Dingle. Mr. Andrews, I think it right to state that I have also made some inquiries, and with your permission I will read a letter which I received this morning, the contents of which are in direct opposition to what Mr. Andrews has advanced. It is from Mr. Daith, who writes from Kinsale, in reply to inquiries which I made as to the quantities of refuse fish that could be procured in that locality:—

"UPPER COVE, 24th November, 1853.

"MY DEAR SIR JAMES.—Dog fish and skate can readily be purchased here at 1l. 10s. per ton (and I think I may include congers), the weekly average catch of the above fish, from the month of March to August, is 80 tons or thereabouts; but it must be understood that the present system is not to bring more than one-tenth of the catch to the shore, in consequence of there being so little demand for it. But if 1l. 10s. per ton was offered, the whole would be brought to land instead of nine-tenths of it being thrown back into the sea. From the month of August to March, I say the average weekly catch would be about 80 tons, as only the row boats fish with long lines during the latter months. And as for sprats they are very fluctuating. In 1846 Kinsale harbour was full of them from the month of October till February, 1847, at which time I saw three boatsful of sprats, each containing three tons, sold for 10s.; but since that period there has not been any very great abundance. There are three other fish-curing establishments, with minor ones, exclusive of Morley, in Kinsale. Morley carries on full one-third of the business, and I think somewhat over. I will now, Sir James, give you my candid opinion upon this subject (you of course being well aware that I have no interest in the matter, or in Kinsale); but Kinsale will produce more refuse fish and offal for the purpose required than any other port in Ireland. W. DAITH."

Now, in corroboration of these statements, I may state that about the same period I was in the harbour of Glendore, and so great was the quantity of sprats in the harbour that I passed a boat myself which was loaded with 5 or 6 tons of nine-tenths of it. I inquired the price of the whole cargo I was told that I might have them all for 10s. I think that even setting aside the regular fishing stations altogether, the preparation of this artificial guano might be extended to every little fishing boat on the coast of Ireland. There are numbers of fishermen who go out in small boats and take large quantities of dog fish, skate, &c., and if a market was open they would find it worth while to dry these fish and preserve them for the purposes of this manufacture.—Mr. Barry, one of the Commissioners of the fisheries, said: I have with me here a letter addressed to Sir James Dombain by a gentleman, a fish-curer in Kinsale.

"DOCKYARD, KINSALE, Nov. 21st, 1853.

"HON. SIR.—I most respectfully beg to report for your information that it appears by my account book, from 20th April to the date hereof, the number and description of fish cured by me is as follows. Also offal from same:—Herrings, 65,000; hake, 24,000; cod and ling, 2500; small fish, 2200; congers, eels, 500; the offal, 36 tons, which I have sold for manure at 2s. 6d. per ton, amounted to 4l. 10s. JAMES MORLEY."

I have ascertained from several respectable persons that they

found it difficult to dispose of them even at that price. There are two establishments at Kinsale which have been much longer in business, and I have reason to believe that a fair estimate may be formed of what may be done in the article of offal alone, when I find that one of these men produced since April last no less than 36 tons weight, which if multiplied by three will give 108 tons within six months. I have no doubt that a large quantity of inferior fish may be added to that, for the offal merely includes the entrails, the bones, and other refuse matters, and if you take into account the amount of fish obtained in a state fit for human food and unmarketable fish, the quantity will be considerably increased. I can confirm what Sir J. Dombain told you with regard to the extraordinary influx of sprats which takes place from time to time. I have seen Glendore harbour literally a living mass of sprats. It is a remarkable fact that they came into that harbour on the 8th of August, and did not leave it until the 25th of December. But during that period the harbour was full of sprats, and being a time of distress people came in numbers and bought the fish for literally almost nothing. I have seen them offered for 2s. 6d. per boat-load, each boat containing not less than three tons, which were bought for the purpose of being used as manure. I am inclined to think that if individuals entered into a trade of this kind they would succeed to their satisfaction; but I fear that a company would from the expensive machinery they have to erect for drying hardly be enabled to make the arrangements to get a sufficient supply to render the speculation remunerative.—The Chairman: With regard to establishing the manufacture in remote places, one difficulty would be to obtain a supply of sulphuric acid, which, having to go by sea and not by land, would be an expensive thing to transport to the western and south-western coasts of Ireland.—Dr. Barker observed that with regard to the supply of sulphuric acid, he did not conceive for the quantity required for this manufacture the transport would present any difficulty.—Mr. Goslett: I will confine myself to its eligibility as a means of ameliorating the condition of the fisheries in this country and their collateral branches of industry. The state of the fisheries in Ireland has been considered a subject of interest and national importance by successive governments, laws have been enacted for their regulation, and officers appointed to watch over them, and I am sorry to add with little useful practical result; and why? because fishermen pined for a market to absorb the fruits of their toil. Governments, in coming forward with protection and aid, could not supply a remunerative outlet. Since the cessation of bounties the fisheries have been declining, and the boats have been employed in the coasting trade. Under the inducement held out by government, I find that from 1822 to 1829 the men employed in the fisheries increased from 36,159 to 63,421; and of boats from 7655 to 13,119; in other words, nearly double; whilst the decrease in fishing-vessels, since 1846, is 9431, and within the last year there has been a decrease of 1264 vessels and 8482 men. I mention these facts to show that a useful stimulus would undoubtedly improve the state of our fisheries, and I suggest that the manufacture of the superabundant fish, most of it useless as human food, into guano would supply that stimulus. That a substitute for guano would be in demand there is not a doubt. There is a want for more guano than Peru can supply; the demand is increased and the supply is falling off. All the new discoveries are phosphatic and not ammoniacal manures. In 1846 the amount of guano imported into Liverpool alone was 115,120 tons; in 1851, 92,593 tons; last year, 22,722 tons; while the stock of Peruvian in this country is now stated to be almost nil. Mr. Caird, of Baldoon, puts forward the value of guano as a manure in the following interesting shape:—"A ton of guano is the equivalent of 10 qrs. of wheat, a cargo of 1000 tons to 10,000 qrs. In the United Kingdom we grow annually 5,000,000 acres of wheat. This is accounted for annually, for the last four years, about 5,000,000 qrs. of wheat and flour. This is exactly one quarter per acre more than our home produce, and that quarter I am persuaded, might be got by the simple means I have pointed out. It do not under-estimate the many other means at our command for increasing our corn and green crops; and among these I would place the fish guano, patented by Mr. Pettit, which I had lately an opportunity of examining, as likely to become a valuable substitute for imported guano." The next question that arises is, can the supply of fish be had? On that head I think there can be little doubt—my own conviction is, that there will be an ample supply. I am not surprised at objections being raised on the score of supply, as I believe none but men engaged in the fisheries can afford us satisfactory information. Mr. Andrews has I think accounted for the small supply of waste fish that comes to shore, by stating that the fishermen cut away all the useless fish; but if any inducement was held out, all that fish would be brought on shore. I have received from Donegal the following letter from Mr. Sinclair, a gentleman to whom I was referred by the Commissioners of Fisheries, as an authentic source of information. Writing on the 5th of October last, the writer says:—"On the branch of Donegal Bay on which my property is situated, the sprat fishery has been going on for the last three months, and the average has not exceeded 2l. per ton; although, in the earlier part of the season fish was scarce. Yesterday morning the price was about 1l. 5s. per ton, and from the present appearance there is every probability of an improving take on the same coast. There is a very considerable fishery of hake and cod—in the curing of which about two-fifths of the gross weight is available for manure, while vast quantities of skate and dog-fish are thrown overboard. Two years ago I was residing in that part of the country during the sprat fishery, and made a large quantity of oil from them. The process was simply roasting in large pans of sheet iron, and pressing with a screw press; by this process the fish were reduced to a state in which they would have been easily acted on by a chemical agent, being deprived of a great part of the moisture. I have at present two boats and 14 men at the sprat fishery, and two with 10 men at the round fish. All have paid well so far, at the price I mentioned; and with increased demand there would be increased supply, as the fish are really inexhaustible. Should it therefore appear to you worth while to adopt my suggestion as to a trial, I can give you such facilities as few other people can offer." I have received from Mr. W. J. Barry, of Glendore House, the following reply to queries put by the commissioner, as to the probability of a supply which they doubted at the time could be obtained, and as to the price at which it could be had:—

"MY DEAR SIR.—I received your note with enclosed very interesting pamphlet. I have read it with much attention, and I am perfectly satisfied of the project being practicable, on very remunerating terms, to the manufacturer, and of the great advantage which would result from the establishment of markets on this coast I need not dwell; the supply can be had, and the only apprehension that I have is, that it will take some time to bring the manure into general use—in other words, to create confidence as to the article being genuine, as we farmers look with great suspicion on the preparation of artificial manures. I shall feel much obliged for any further information you may put by the commissioner on the subject. The estimated cost of fish on this coast would not average one pound per ton. W. J. BARRY."

"Glendore House, 14th Nov., 1853."

I am happy to state that Mr. James Redmond Barry, her Majesty's Commissioner of Fisheries, to whom I am indebted, as well as to Mr. Fennel, for their kindness in affording me information and assistance, has stated that notwithstanding his doubts on the subject he finds that a market for offal, damaged, and inferior fish, is of all things the great desideratum in the south of Ireland. On the east coast my information has been collected personally, aided by the kind assistance of the Coast Guard Officer at Skerries. The information received from the trawl owners, amongst whom I may mention Mr. Bartlett, often quoted by the commissioners of inquiry into the fisheries as an authority, is that at each shot of the trawl upwards of 5 cwt. of animal matter is thrown overboard as utterly useless, independent of the broke fish, or coarser sort of edible fish that is laid aside for the long



shore men, and with which the trawlers pay the services of boats taking their fish ashore. They consider that a certain market for their refuse and broke fish would be deemed a great boon, and would tend to the more perfect development of the fisheries. Mr. Bartlett, who is the first of the colonists from Torbay, and has been for 45 years employed in catching fish, considers that if an arrangement was made with the crews of the trawlers now engaged in Skerries Bay (about 60 in number) the owners would hail it as a boon; that 60 tons per week of fish and marine animal matter now thrown overboard could be supplied at Ringsend, and that the broke fish would amount to nearly the same quantity; and can safely say that every week he has thrown away more than a ton of fish useless to any one, and has frequently thrown overboard 3 or 4 tons of large ray, monk fish or mollygoons, and large skate. He adds that none but a fisherman can tell the take of a trawler. I find in the statement of the British Channel Committee that "Brixham has 150 trawls, which might be drawn 48 times in four hours. Allowing one haul per hour, would be 3600 hauls in one day, every time loaded with quantities of fish—young turbot, brill, soles, flounders, &c., returned dead to the sea." When I mention that a cod produces more than three millions of eggs, a ling nine millions, and other fish several hundred thousands, I think the question of supply, were common industry, patience, and perseverance employed in securing this vast wealth that exists on our coasts, must be set at rest for ever. Ireland is decidedly a favoured country in the riches of its waters; the Irish fisherman is enterprising and industrious, when a prospect of reward for his toil is held out. I entreat the most earnest and searching inquiry into this matter, and if it offers an opportunity of improving the condition of the working classes in this country, let it not be foolishly neglected. After some discussion as to the possibility of obtaining a regular and sufficient supply of fish for the purposes of the proposed manufacture, the meeting adjourned.

**MIDLAND COUNTIES CATTLE SHOW.**—The merits of the extraordinary exhibition of poultry in Bingley Hall this week are detailed in another column, and the prize list of the cattle, sheep, and pigs is given below. We must be content here with a very few general remarks on the character of this part of the Show. The young and vigorous Society under whose auspices it has been held may well be congratulated on the gathering which has congregated under the wide-spread roof of Bingley Hall. The cattle as well as the poultry are increasing in number and in merit year by year.

The judges of cattle at Birmingham have reversed the decision of those at Smithfield, as we had anticipated they would, in the case of Mr. Ambler's white heifer, which, with her rivals and competitors, was at this show also. The advantage of the shows being on different weeks was apparent in the presence at both of many other cattle as well, among which we may name those exhibited by Mr. Gunter, of Earl's Court, Brompton. In walking round the cattle, catalogue in hand, we find the classes arranged in a different order from that adopted at Baker Street. The Herefords come first under view, and they were, as might have been expected from the locality, present in greater number. No. 1, shown by Mr. Tucker, of Stratford, is highly and justly commended; it has a thick deep fore-quarter, and its back and loin are very neatly covered with good flesh. No. 4, to which the first prize was awarded, is a very level well-made beast; fore-quarters, back, and loin very good. No. 9 is also of good quality, with back and ribs well covered; rather bare on the top of the shoulder. The younger Hereford oxen are present in considerable numbers. Lord Warwick shows a very nice little beast, No. 114, remarkably good in the hind-quarter. No. 19 carries the first prize—a very compact animal; flesh firm and good, and equally distributed over the body; very deep and good fore-quarters. We think the judges rather liberal in their commendation of this class. Only five Hereford cows were shown, and no great merit among them. A somewhat larger number of heifers were present, and they were of better quality. No. 25, shown by Captain Musgrave, is a grey heifer of good quality.

In Class V., short-horn oxen, Mr. Stratton's prize steer at Baker Street carries off the first prize here. The second prize is taken by No. 34, a very useful beast—loin, flanks, and hind quarters, very good; fore-quarters and head not very stylish, shown by Mr. Drakeford, of Colehill. Among the younger short-horn steers, Mr. Stratton's prize animal at Baker Street takes the first prize here again; the second prize is a level, well-made beast, of first-rate quality. It is of the same blood as the two first prize beasts. Among the short-horn cows, the first prize is taken by Mr. Lees, of Birmingham, a level, fairly formed animal; but we should have preferred seeing Mr. Smith's cow, which has taken the second prize here, and which received the gold medal and first prize at Baker Street, placed first here; and Mr. Ambler's cow, No. 52, second. We fancy the prize animal does not exhibit the true character of the short-horns. Among the short-horn heifers, our readers will be glad to know that Mr. Ambler's white heifer, which received the second prize at Baker Street, has received the first here, and the gold medal as the best cow in the yard. Her rival which received the first prize at Baker Street—Mr. Phillips' heifer—is here put second.

The Devons were present in small numbers, and not of very even quality. This cannot be said, however, of the next and last class we shall notice—the Scotch or Highland cattle—among which were a number of animals of very excellent quality. The first prize is taken by Mr. Campbell, of Monzie, for an animal somewhat inclined to be patchy—but a very good beast. Mr. D. Robb adds greatly to the quality of this class, by five level compact cattle possessing more than ordinary merit; not so heavy as the winners, but surpassing them in point of form.

Our reference to the exhibition of sheep and pigs must be exceedingly short. The former are not very numerous. Among Leicester wethers, the first prize was taken by a pen of well-matched sheep, with plenty of size, and of good quality. The remainder in this class

are large useful sheep—nothing very striking. The Down sheep in Class XXV. cut a very good figure: there is hardly an inferior pen in the class, and the award of the prizes must have been somewhat difficult. The Shropshire Downs consisted of 13 pens of prime sheep. This breed was remarkably well represented at Gloucester, and a lot of very good sheep have appeared here again. Sheep classes may be said to be very good as a whole.

The pigs, too, were present in large numbers, and some enormous specimens were exhibited. In Class XXXV., pigs of a small breed, there is especially a large competition. It contains 33 pens of all sorts, sizes, and colours. A good many very young ones are exhibited, and several pens are considered too large for the class. Some undoubtedly of the best blood in the kingdom is shown, and if a few more pens of the breed had been a little older, it would have been a first-rate show. Earl Ducie, Mr. Gunter, the Rev. Mr. Thursby, and others, show some first-rate animals—all of the same blood, but too young to carry the prize.

#### PRIZE LIST.

CLASS I. *Hereford Oxen*.—101. and S.M., James Ackers, Painswick, Gloucester; 51. Joseph Greenaway, Abingdon, Berkshire.

CLASS II. *Hereford Steers*.—101. also the Gold Medal, and extra prize of 200. for the best ox or steer in the yard; S.M. to William Heath, Ludham Hall, Norwich; 51. John Tucker, Abbey Print Works, Stratford, Essex.

CLASS III. *Hereford Cows*.—101. Richard Hill, Golding, near Shrewsbury; S.M. to James Badham, Vowchurch, Herefordshire; 51. Lord Hatherton, Teddesley Park.

CLASS IV. *Hereford Heifers*.—101. William Heath, Norwich; S.M. to Charles Henry Buddoes, Hopesay, Shropshire; 51. Captain Musgrave, Claverdon, Warwickshire.

CLASS V. *Short-horn Oxen or Steers*.—101. and S.M., Richard Stratton, Swindon; 51. William Brandham, Lowthorpe, Bridlington.

CLASS VI. *Short-horn Steers*.—101. and S.M., Richard Stratton, Swindon; 51. James Strang, Reading.

CLASS VII. *Short-horn Cows*.—101. J. H. Lees, Bacon's End, near Birmingham; S.M. the late Mr. Henry Lees, Bacon's End; 51. Henry Smith, The Grove, Bingham, Notts.

CLASS VIII. *Short-horn Heifers*.—101. and S.M., also the Gold Medal and extra prize of 200. for the best cow or heifer in the yard—Henry Ambler, Watkinson Hall, near Halifax; 51. Joseph Phillips, Wantage.

CLASS IX. *Devon Oxen or Steers*.—101. Earl of Leicester; S.M. to George Turner, Barton, near Exeter; 51. William Heath, Ludham Hall, Norwich.

CLASS X. *Devon Steers*.—101. and S.M., George Turner, Barton, near Exeter; 51. Earl of Leicester.

CLASS XI. *Devon Cows*.—101. and S.M., Abraham Umbers, Weston Hall.

CLASS XII. *Devon Heifers*.—101. and S.M., Abraham Umbers; 51. Earl of Aylesford.

CLASS XIII. *Long-horn Cows or Heifers*.—101. and S.M., R. H. Chapman, Upton, near Nuneaton; 51. R. H. Chapman.

CLASS XIV. *Fat Oxen*, other Pure Breeds, and Cross-bred Animals.—101. and S.M., Duke of Beaufort, Badminton; 51. R. H. Chapman, Nuneaton.

CLASS XV. *Fat Cows*.—No entry.

CLASS XVI. *Fat Heifers*.—101. and S.M., George Worth, King's Newnham, near Rugby; 51. George Worth.

CLASS XVII. *Scotch or Welsh Oxen or Steers*.—101. A. Campbell, Esq., Monzie Castle, Crieff, N.B.; 51. the Duke of Beaufort.

CLASS XVIII. *Scotch or Welsh Heifers*.—51. R. Berkeley, Esq., Worcester.

#### EXTRA CLASSES.

CLASS XIX. *Oxen or Steers*.—S.M., T. Walker, Newbold-on-Avon, near Rugby.

CLASS XX. *Cows or Heifers*.—S.M., Lord Berwick, Shrewsbury.

#### SHEEP.

CLASS XXI. *Leicesters*, Fat Wethers under 22 months old.—101. and S.M. as breeder, and also S.M. as exhibitor of the best pen in Classes 21, 22, 23, and 24, Marquis of Exeter; 51. Lawrence Willmore, the Newark, Leicester.

CLASS XXII. *Leicesters*, Fat Wethers, between 22 and 34 months old.—101. and S.M., George Turner, Barton; 51. J. H. Lees, Bacon's End, near Birmingham.

CLASS XXIII. *Long-woolled Sheep not Leicesters*, Fat Wethers, under 22 months old.—101. and S.M., Robert Beman, Moreton-in-the-Marsh.

CLASS XXIV. *Long-woolled Sheep, not being Leicesters*. Fat Wethers, between 22 and 34 months old.—101. and S.M., Robert Beman, Moreton-in-the-Marsh.

CLASS XXV. *South and other Down Sheep*. Fat Wethers, under 22 months old.—101. and S.M., J. Williams, Buckland, Faringdon; 51. Lord Walsingham, Bedford.

CLASS XXVI. *South and other Down Sheep*. Fat Wethers, between 22 and 34 months old.—101. and S.M. best pen in Classes 25, 26, 27, and 28, Sir R. Throckmorton, Bart., Farringdon; 51. Viscount Hill, Shropshire.

CLASS XXVII. *Shropshire, and other Black or Grey-Faced Short-woolled Sheep*, under 22 months old.—101. and S.M., Stephen Mathews, Mountford, near Shrewsbury; 51. T. C. Whitmore, Apley, Shropshire.

CLASS XXVIII. *Shropshire, &c.* Fat Wethers between 22 and 34 months old.—101. and S.M., Hon. R. Curzon, Rugeley, Staffordshire; 51. Earl of Aylesford.

CLASS XXIX. *Cross-bred Sheep*. Fat Wethers under 22 months old.—101. and S.M., J. B. Twissell, Wilby, Northamptonshire; 51. William Gillet, South Leigh, Oxfordshire.

CLASS XXX. *Cross-bred Sheep*. Fat Wethers, between 22 and 34 months old.—101. S.M., also silver medal as exhibitor of the best pen in Classes 29 and 30, Thomas Hemming, Coldcote, near Moreton-in-the-Marsh; 51. Thomas Walker, Newbold-on-Avon.

#### PIGS.

CLASS XXXI. *Fat Pigs*, under 10 months old.—101. and S.M., H.R.H. Prince Albert; 51. William Beach, Monument Lane, Birmingham.

CLASS XXXII. *Fat Pigs*, under 15 months old.—101. and S.M., W. J. Sadler, Swindon; 51. J. Wyley, jun., Rugeley.

CLASS XXXIII. *Fat Pigs*, over 15 months old.—101. and S.M., L. B. Hill, Rach Hall, Chester; 51. Duke of Sutherland.

CLASS XXXIV. *Breeding Pigs* of a large breed, between 3 and 6 months old.—101. W. J. Sadler, Swindon; 51. W. Endall, Henley-in-Avon.

CLASS XXXV. *Breeding Pigs* of a small breed, between 3 and 6 months old.—101. and S.M., S. Wiley, Bradsley, near York; 51. C. Leigh Clare, Hindley House, Liverpool.

**JUDGES OF CATTLE.**—Mr. John Booth, Killybeg, Catterick, Yorkshire; Mr. Philip Halse, Molland, near South Molton, Devon; Mr. Henry Chamberlin, Desford, near Leicester.

**JUDGES OF SHEEP.**—Mr. William Sanday, Holme Pierrepont, Nottinghamshire; J. Valentine Barford, Foscoate, near Towcester; Mr. John Meire, Newport, Salop.

**JUDGES OF PIGS.**—Mr. John Moore, Kelland Barton, near Crediton, Devon; Mr. William Torry, Aylesby Manor, Great Grimsby; Mr. J. C. Etches, Harley Thorn, near Stone, Staffordshire.

**COLLECTIONS OF ROOTS.**—The prizes for roots were awarded as follows:—The Light Hon. the Earl of Aylesford, Silver Medal; the Light Hon. the Earl of Howe, Silver Medal; Mr. Samuel Druce, Eynsham, near Oxford, Silver Medal; Mr. George Turner, Barton, near Exeter, Silver Medal; the Hon. and Rev. W. C.

Talbot, Ombersley, near Droitwich, 11.; Mr. John Lowe, Bull Ring, Birmingham, 11.; E. Holland, Esq., Dumbelton Hall, near Evesham, 10s.; Mr. T. Burbridge, High Street, Birmingham 10s.; Mr. R. Gunter, Earl's Court, Old Brompton, London, 10s.; Mr. Edward Freer, Castle Bromwich, 10s.; Mr. Palmer, Spireal Street, Birmingham, 10s. The judges pronounced the collection of roots to be highly creditable to the growers.

[We shall, next week, give in a tabular form the Comparative Weights and Measures of the Animals exhibited at the two great Shows—Baker Street and Birmingham.]

#### POULTRY.

**BIRMINGHAM.**—In treating of the fifth exhibition of fat cattle, pigs, and poultry, in Bingley Hall, Birmingham, we have only to repeat an admitted fact, that proper and well-directed exertion must meet with success; and also, that where the arrangements are such as to deserve the support and confidence of exhibitors, that it is difficult to fix any limit or boundary to it. The original space enclosed was an acre and a quarter of land, and since the Exhibition of 1852 a further portion, above a quarter of an acre, has been added to the building. When the immense value of land in the heart of Birmingham is considered, some idea may be formed of the enterprise of those who originated and carried out this society. The public has responded to their call, and the success of which we are about to speak has been the result. Persons who have not seen it cannot imagine the effect of nearly two acres of land covered with a light glass and slate roof, and filled with all that the United Kingdom can produce in fat cattle, pigs, and poultry of the choicest character. The loftiness and scientific ventilation of the place carry off any dust that may arise, and even the crowing of 2000 cocks it partially lost in the vast space over-head. Nothing is here neglected, that can minister either to the comfort of the visitors or the well-doing of the birds and animals; and a most important feature in the arrangements of the Bingley Hall exhibition, is, that gentlemen of known practical ability, and of reputed judgment, undertake the offices of stewards and superintend the feeding of the stock. The uprightness and straightforward dealing of the committee, and the liberality of their arrangements, have met a rich reward, not only in the complete success of their undertaking, but in the great and continuous increase of their entries. Thus last year the number of competing pens was 1223, whereas this year they are increased to 2278; and this, exclusive of more than 600 pens entered too late, and consequently rejected. Had all been in time the number would have reached the unparalleled amount of 3000. If the committee had not adopted the salutary rule of restricting exhibitors to six pens each it is difficult to imagine the space required for all the poultry that would be sent, as at many local shows a quarter of the pens are often found to belong to two, or at most four exhibitors.

The practical results are immense, and it also belongs to this committee to claim for itself the merit of having been the pioneer of the many shows now in progress, of having originated a new and lucrative calling, and of having afforded to professional men and tradesmen a delightful recreation, and at the same time that novelty a self-supporting and, more than that, a remunerating hobby.

We will here conclude our introductory remarks, and at once go to the consideration of this most beautiful and interesting show. We will however add, that the amount of money circulated by the purchase of pens, and the increased value of a yard which produces prize birds, has been in some cases a welcome assistance, and in others a justifiable cause of pride.

The Spanish stood first in rank, and here the numbers formed an ordinary show, comprising 103 pens. Many unsuccessful birds would, two years since, have carried off easy prizes, but now perfection is required. Captain Hornby, as usual, took two first and one second prize in the Classes I. and II. The first prize in Class III. went to another successful exhibitor, Mrs. Stow, of Bredon, who also had second in Class II. Messrs. John Harrison, Eden, Mapplebeck, and Bell, also took prizes; and commendations were awarded to Messrs. Poole, Cox, Simons (2), Winder, and Plummer. The attraction, and we believe the salutary direction of such societies, were never more manifested than in the increase in Dorkings, which showed the marvellous number of 432 pens. Perfection was here an ordinary occurrence, and the task of the judges was indeed a hard one. Captain Hornby (4), Rev. John Hill (2), the Rev. T. Downe, the Countess of Chesterfield, Mr. Finch Noyes, Mr. James Drewry (2), Mr. Henry Smith were among the principal prize takers; and the commendations, well deserved, were too numerous to find space, save in a prize-list. The white Dorkings continue a poor class. Lord Dartmouth, Mr. Jenners, Messrs. Sutton, Edwards, and Elmboist, took all the prizes. We now approach that which has been heretofore the leviathan class—we mean the Cochins Chinas; 518 pens were competing in the different classes. It is doubtful whether there was not a decided falling off in the quality of these birds. In the first class of them, the judges were bound to withhold the first prize. It may be difficult to assign the cause, but in all the adult classes the birds were evidently very late in moult—later than usual. First prizes were gained by Lord Berwick, Mr. Punched (2), and Mr. Smith, of Bridgenorth; second by Messrs. Steggall, J. Harrison Fairlie (2), and Gwynne; third and fourth by Messrs. Fairlie, Punched (2), Lowe, and Mapplebeck. The commendations were numerous.



The great difficulty in the white classes is still to get pens with uniform yellow legs; Mr. Hewitt, of Sharkbrook, had first prize in one class, Mrs. Herbert, of Powick, in the other. Second and third prizes were taken by Misses Holmes and Graham, Messrs. Peters and Haslewood. It is an anomaly in the history of black Cochins, that while good pullets are plentiful, it appears an impossibility to get a purely black cock. This has been the remark at every succeeding show, and it holds good here. There was not a perfectly black cock. The pens were, nevertheless, meritorious, and prizes were taken in order by Mrs. Hosier Williams and Mr. Valentine Blake, Mr. Henry Parker, and Mrs. Gervase Oldham. Messrs. Tunally and Charles Ballance, Gervase Oldham, and Manfield, took the Malay prizes. The excellence of this class will be apparent to connoisseurs, when it is seen the latter gentleman, notorious for his excellence and success, took but a second prize. An excellent lot, exhibited by Mr. Shackel, of Blenheim House, was much admired.

[The remainder must be put off till next week, owing to the length to which the other parts of our report has run.]

### Miscellaneous.

*Supply of Peruvian Guano.*—We have been favoured with copies of the following despatches, forwarded to the Admiralty by the admiral commanding in the Pacific, containing most interesting and important information relative to the quantity of guano remaining on the Chincha Islands.

Portland, at Sea, Sept. 9, 1853. Sir.—The enclosures referring to the Chincha Islands may possibly be acceptable to her Majesty's Government, when confidence in Peruvian securities has suffered from the circumstances which have taken place at Lima. I request you will submit them for their lordships' notice. I have confidence in the data given by Mr. McIntosh, his education and practical experience being a guarantee for correctness. From the northern or principal island more than one-third of the guano has been removed; the remainder may be divided into three portions and qualities:—1st, That termed English guano, as formerly, alone selected for the English market. 2d, That exported by foreign ships to America and elsewhere. 3d, Inferior guano, reserved for the coast trade. Of the first quality there remains on the north island about 3,500,000 tons; of the second, about 1,500,000 tons; of inferior, about 500,000 tons. I have no data on which to report the shipment of guano in 1852, but I have ascertained that within the last eight months about 300,000 tons of guano have been shipped from the north island. A loss of 12 per cent. occurs from the rude manner of its working and conveyance, daily observed in the dense cloud of pulverised guano blown seaward, and correctly ascertained by the shipping dockets at the centre island. I enclose a statement of that shipped in 1850 and 1851:—

*A Statement of the Quantities of Guano exported from the Chincha Islands during the years 1850–51.*

In British ships.	Register tons.	In foreign ships.	Register tons.	Tons of Guano sent to					Will yield at the Queen's beam.
				England.	France.	United States.	China.	Total.	
169	88,822	45	13,599	1850, 102,421	1429	14,250	252	118,352	157,800
268	138,197	36	12,456	1851, 150,853	...	38,371	...	189,024	252,032*

\* Allowing one-third more than the register tonnage. There were at the Chincha Islands on our departure 100 vessels, capable of exporting nearly 100,000 tons of guano. The Americans exceeded in amount of tonnage. I enclose a list, showing that between July 1st and September 30, 1853, there had been loaded, were loading, or waiting their turn to load, 65 American ships, carrying a gross amount of 61,982 tons. Other American ships were daily arriving, and they now take the superior quality. On the centre island there may be about 800,000 tons of guano of the first quality, and 700,000 tons of the second. This island is worked entirely by Chinamen; they dig and wheel daily about 1200 tons, of which 1100 appear in the shipping dockets. The southern and smallest island has not yet been worked; from its windward position the guano is inferior, and has no great depth. A commission, consisting of the Peruvian Minister of the Interior, with a numerous staff, as per enclosed list, are occupied in surveying the island. A clerk belonging to the house of Gibbs & Co. was the only person that had availed himself of the permission given to accompany the commission; in fact, the notice was short for others to avail themselves of the offer. From the plans and elevations of Mr. McIntosh, from my personal examination and information, gathered from those on the islands conversant with the working, I am of opinion that, at the present average rate of exportation, the islands would be exhausted of the guano that would pay freight or be saleable in the English market, in eight or nine years.—I have the honour to be, Sir, your most obedient servant,

FAIRFAX MORESBY,  
Rear-Admiral and Commander-in-Chief.

*Enclosure in Admiralty Letter from Rear-Admiral Moresby.*

Sir.—I have the honour to submit, for your information, the result of the calculations respecting the amount of guano now remaining on the Chincha Islands. The examination—for I cannot call it survey—taken by your order, was necessarily exceedingly rough and imperfect, both by reason of shortness of time, and the want of proper instruments, as well as a desire not to excite observation. To avoid the possibility of underrating the quantity, I have estimated at the rate of 40 cubic feet per ton, and have allowed a considerable excess on the measurement given by the plans and sections. In laying this result before you, I have the honour to state that, though no claim to great accuracy is made, I have no hesitation in pledging myself that the quantity here specified is greater than that absolutely remaining on the islands.—I have, &c., W. H. MCINTOSH, Naval Instructor.

Rear-Admiral Fairfax Moresby, C.B., Commander-in-Chief, &c.

Quantity remaining on northern islands ... 5,500,000 tons.

on centre island ... 1,500,000 "

on southern island ... 1,600,000 "

Total ... 8,600,000

—Abridged from the Shipping and Mercantile Gazette.  
*Improvements in Mould for the Manufacture of Bricks.* By Charles Baker, of Southampton, merchant. Patent dated March 8, 1853. (No. 583.)—This invention relates to the manufacture of hollow bricks, and consists in forming the bottom of the mould with upright projections of the form it is intended to give to the perforations or hollows in the brick. The other part of the mould is placed on to this bottom. Claim: The described improvements in moulds for the manufacture of bricks. *Mechanics' Magazine.*

### Calendar of Operations.

DECEMBER.

SOUTH DEVON, Dec. 12.—We are still going on steadily with the Wheat sowing, the frosts as yet not having been sufficient to check it; the season, however, is now drawing to a close. The Mangold Wurzel crop has been well secured. There are various modes in this district of securing the roots—some put them in long cones by the side of one of our high hedges or banks, thatching the side and ends exposed to the weather with reed; others pile them up similar to Potato cones, and thatch them all over with reed; in either case, if properly packed the root will keep healthy until May. Feeding bullocks are now housed and fed on hay and common Turnips, but the mild weather as yet has delayed in many cases the taking of young bullocks into houses by night. Sheep are now on common Turnips, and doing well. Prices still continue well up. Fat bullocks from 56s. to 63s. per cwt., according to the quality; wether sheep from 64d. to 7d. per lb.; ewes 6d. per lb.; wool (unwashed), 11d. per lb. offered freely, holders, however, requiring the 1s. to spare cattle, and cows and calves, as high in proportion. Cider being more plentiful than first anticipated, has dropped to 25s. per hoghead. Wheat, 72s. per qr.; Barley, 36s.; and Oats, 26s. to 28s.

### Notices to Correspondents.

BOOKS: *Juvenis*. Prof. Low's work on the "Management of Landed Property."

GORSE COVERT: *F O X*. If the land is a sandy soil, dig the turf and take a crop of Potatoes, and then hoe in the seed just as Wheat is hoed in—in shallow drills about 2 feet or 18 inches apart, early in October or in early spring.

LEAVES: *X Y Z* will be glad of the experience of any of our readers who have tried whether Grass swept in autumn is any better next spring than Grass on which the leaves are allowed to lie. Leaves in a heap and soaked with liquid manure are doubtless useful as a sponge for holding it, and to some extent useful for their own substance, but they certainly are not worth the labour of sweeping a lawn of 100 acres several times during the autumn.

\* We have to beg pardon of our correspondents for the delay attending the publication of their communications. We have in type—Notes of an Agricultural Tour in Ireland, by Martin Doyle; Grain Fallows, by J. M. Goodiff; Purposes of Ammonia in Vegetable Economy, by J. H. H.; On the Curing of Bacon and Pork, by C.; Covered Yards for Manure, by Major M'Inroy; On Labourers' Friends Societies, by Clathrus celatus; On Gorse, by the Newcastle Farmers' Club; Sewage as Manure, by J. T.; Cod-liver Oil as Food for Animals, by Dr. Pollock in "The Lancet"; Profitableness of Cattle Feeding, by Y.; Loil-Weedon Cultivation, by Rev. S. Smith; all of which shall appear as soon as possible. We have also received the following communications:—Loil-Weedon Culture, by J. Goodiff; Application of Manure, by P. H.; Receipts for Cottage Cookery, by W. Lott; Land Drainage, by S. Johnson, P. Mitchell, A. Draining Engineers and J. Trimmer; Formation of Ammonia, by J. H. H.; Breeding and Management of Pigs, by C.; Liquid Manure and Irrigation, by J. Goodiff; and many others.

### Markets.

COVENT GARDEN, December 17.

Notwithstanding the unfavourable change which has taken place in the weather, Vegetables are quite sufficient for the demand, and the same may be said of Fruit. Late Grapes are very good, more especially West's St. Peter's and Muscats. Pears still consist of Glout Morcean, Crassane, Chaumontel, Winter Nelis, Beurre d'Hiver, Monsieur le Curé, and Beurre d'Arenberg. The demand for Cobs is rather better than it was last week. Chestnuts are plentiful. Potatoes continue to arrive from Scotland. Asparagus is coming in from 8s. to 10s. per hundred, and Sea-kale at from 3s. 6d. to 4s. 6d. per punnet. Carrots and Turnips fetch from 2d. to 4d. per bunch. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

### FRUIT.

Pine-apples, per lb., 3s to 5s  
Grapes, hothouse, p. lb., 3s to 6s  
— Portugal, p. lb., 6d to 1s 6d  
Apples, per bush, 4s to 8s  
— dessert, p. h. sieve, 2s to 4s  
Pears, per doz., 2s to 5s  
Lemons, per doz., 1s to 2s  
Oranges, per 100, 4s to 10s

### VEGETABLES.

Cabbages, per doz., 9d to 1s  
Cauliflowers, each, 6d to 8d  
Greens, per doz., 1s 6d to 3s  
Brussels Sprouts, do., 1s 6d to 2s  
Rhubarb, per bundle, 1s to 1s 6d  
Potatoes, per ton, 50s to 150s  
— per cwt., 5s to 7s  
— per bush, 2s 6d to 5s 6d  
Turnips, per doz., 2s to 3s  
Cucumbers, each, 6d to 1s  
Celery, per bundle, 6d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 1s to 1s 6d  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
— per bushel, 2s 6d to 3s  
Leeks, per bunch, 1d to 2d  
Shallots, per lb., 6d to 8d

HAY.—Per Load of 36 Trusses.

SMITHFIELD, THURSDAY, December 15.  
Prime Meadow Hay 85s to 105s  
Inferior do. ... 50 70  
Rowen ... 45 65  
New Hay ... .. E. J. DAVIS.

CUMBERLAND MARKET, THURSDAY, December 15.  
Prime Meadow Hay 105s to 112s  
Inferior do. ... 40 90  
New Hay ... 126 132  
Old Clover ... .. JOSHUA BAKER.

WHITECHAPEL, THURSDAY, December 15.  
Fine old Hay ... 95s to 100s  
Inferior do. ... 85 90  
Fine new Hay ... 75 80  
Inferior do. ... 30 45  
Fine old Clover ... 115 120  
Inferior do. ... 100 110

POTATOES.—SOUTHWARK, MONDAY, December 12.  
The Committee report that during the past week the arrivals, both coastwise and by rail, have been very limited, which enabled salesmen to effect a clearance of what were left on hand at a slight advance on last week's prices, but a very considerable fleet arrived on Saturday, coastwise, from the Rhine, Sweden, and Denmark. The following are this day's quotations:—York Regents, 110s. to 140s.; East Lothian do., 100s. to 130s.; Perthshire do., 90s. to 110s.; Forfarshire do., 100s. to 115s.; Fifeshire do., 90s. to 110s.; Reds and Cups, 90s. to 100s.; Rhensish whites, 65s. to 95s.

HOPS.—BOROUGH MARKET, FRIDAY, December 16.

Messrs. Pattenden and Smith report that the Hop market is very quiet, with prices about the same as for some time past.

COAL MARKET.—FRIDAY, December 16.  
Wallend Haswell, 30s.; Wallend South Hartlepool, 30s.—Ships at market, 16.

WOOL.—BRADFORD, THURSDAY, December 15.

WOOL.—Rather more wool has come to town this week, and prices are a little higher. The prices demanded in the country have tended to stiffen the current rates here, which were previously too high to induce the spinners to buy freely; and the stocks in their hands may be considered as unusually light, which encourages the staplers to hold firm for the prices now sought. Noils and brokes command better prices, and are not made, except in limited quantity.

SMITHFIELD.—MONDAY, December 12.

This being the Annual Great Market, we have a large collection of good Beasts. The number is larger than on former occasions; however, the demand is good, owing to the favourable weather, and consequently a large proportion is sold at advanced rates. Although the supply of Sheep is not very large, it exceeds the demand. Trade is dull, and only the choicest kinds met a ready sale. Good Calves are freely disposed of at late rates. From Germany and Holland there are 1177 Beasts, 4890 Sheep, and 227 Calves; from Scotland, 700 Beasts; from Norfolk and Suffolk, 500; from the northern and midland, 3600; and 400 from the western counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c., ... 4 8 to 5 0	Best Long-wools... 4 6 to 4 10
Best Short-horns 4 6 4 8	Do. Shorn ... 0 0 0 0
2d quality Beasts 3 6 4 0	Ewes & 2d quality 3 8 4 2
Best Downs and Half-breeds ... 4 10 5 2	Do. Shorn ... 0 0 0 0
Do. Shorn ... 0 0 0 0	Lambs ... 0 0 0 0
Beasts, 7037; Sheep and Lambs, 25,830; Calves, 263; Pigs, 295	Calves ... 3 8 5 0
	Pigs ... 3 8 5 0

FRIDAY, December 16.

The number of Beasts is large, and although the weather is favourable they cannot all be sold at our quotations. The supply of Sheep is but moderate, still it exceeds the demand. A few of the choicest qualities make nearly as much as on Monday, but inferior are very unsaleable. Good Calves are readily disposed of at fully late rates. From Germany and Holland there are 132 Beasts, 820 Sheep, and 124 Calves; from Norfolk and Suffolk, 300 Beasts; 1000 from the northern and midland, and 85 Milch Cows from the home counties.

Best Scots, Herefords, &c., ... 4 6 to 4 10	Best Long-wools... 4 6 to 4 8
Best Short-horns 4 4 4 8	Do. Shorn ... 0 0 0 0
2d quality Beasts 3 4 4 0	Ewes & 2d quality 3 8 4 0
Best Downs and Half-breeds ... 4 10 5 0	Do. Shorn ... 0 0 0 0
Do. Shorn ... 0 0 0 0	Lambs ... 0 0 0 0
Beasts, 2628; Sheep and Lambs, 5770; Calves, 198; Pigs, 185	Calves ... 3 8 5 0
	Pigs ... 3 8 5 0

MARK LANE.—MONDAY, December 12.

The supply of Wheat from Essex this morning was small, but good from Kent, and taken upon the terms of this day's night. There was a numerous attendance of country buyers, and those factors who were willing to accept last week's prices for foreign did a good business, but the majority held for 1s. to 2s. per qr. advance, at which sales were restricted. There were several Continental buyers, and a good extent of business was done for export, chiefly in Petersburg qualities. For Barley there is a very slow sale, and rather cheaper; white unaltered in value. Oats are in fair demand at last week's prices. In Flour there is but little doing.

PER IMPERIAL QUARTER.

Wheat, Essex, Kent, & Suffolk ... White	s. 8.	6. 8.
— fine selected runs ... ditto	68—70	Red ... 80—70
— Talavera ...	70—80	Red ... 68—76
— Norfolk ...	70—82	Red ... ..
— Foreign ...	58—59	Red ... ..
Barley, grind. & distil. 34s to 35s. Cheviot ...	38—41	Malt ... 36—40
— Foreign, grinding and distilling ...	26—35	Malt ... 38—40
Oats, Essex and Suffolk ...	26—28	Feed ... ..
— Scotch and Lincolnshire ... Potatoes	27—30	Feed ... 24—29
— Irish ... Potatoes	25—29	Feed ... 25—28
— Foreign ... Poland and Brew	26—29	Feed ... 20—28
Rye ...	29—44	Foreign ... ..
Rye-meal, foreign ...	38—44	Harrow ... 38—44
Beans, Mazagan ... 36s to 42s ... Tick	50—62	Longpod ... 40—46
— Pigeon ... 48s—54s ... Winds	52—58	Egyptian ... 48—50
— Foreign ... Small	60—63	Suffolk ... 61—65
Peas, white, Essex and Kent ... Boilers	40—44	Suffolk ... 40—60
Maple ... 43s to 47s ... Grey	40—44	Yellow ... ..
Maize, best marks delivered ... per sack	65—70	Country ... 50—60
— 2d ditto ... ditto	50—60	Country ... 50—60
— Foreign ... per barrel	35—42	Per sack ... 58—65

FRIDAY, December 16.

Although the arrivals of foreign Wheat this week are large, there has been little addition since Tuesday. The attendance at this morning's market was good, both of town and country buyers. The English Wheat was cleared at an improvement of 1s. per qr. upon the prices of Monday. We experienced a very large sale of foreign, at an advance of fully 2s. upon our quotations of that day. Floating cargoes from the South are held 2s. per qr. higher. For Barley there is a good trade at an advance of 1s. per qr. Beans and Peas are fully as dear. Oats sell at 6d. to 1s. per qr. more money. Barrel Flour is 1s. dearer.

ARRIVALS FROM THE 12TH TO 16TH DECEMBER.

English ...	Wheat.	Barley.	Oats.	Flour.
1860 qrs.	5470 qrs.	2910 qrs.	1630 sacks	
Irish ...	400 "	1510 "		
Foreign ...	30840 "	4650 "	20380 "	5950 brls

LIVERPOOL, TUESDAY, Dec. 13.—At this morning's market there was a tolerably good attendance of the town and country trade and of millers and dealers from a distance, and an extensive demand was experienced for American white Wheat and Flour, chiefly for consumption, and a large business done, at an advance of fully 4d. per 70 lbs. and 2s. per barrel; 10s. 6d. to 10s. 9d. per 70 lbs. being obtainable for best white American, and 10s. 4d. to 10s. 6d. for mixed and Canadian W heats; 8s. 9d. to 8s. 7d. per barrel for Western Canal, and 8s. 7d. to 8s. 7d. for Baltimore and Philadelphia Flour. Red W heats not having been so much depressed, cannot be quoted more than 2d. per 70 lbs. dearer. Oats and Oatmeal met with a very slow sale, and last Tuesday's prices could not be exceeded for either article. Barley and Beans were without alteration in value, and only in limited request. The price of Indian Corn remained as last week. Arrivals into Liverpool and Runcorn from the 6th to the 12th Dec, inclusive:—Wheat, 9989 qrs.; Barley, 334; Malt, 176; Oats, 7988; Beans, 1745; Peas, 20; Indian corn, 5647; Oatmeal, 17,527 sacks; Flour, 440 sacks and 3076 barrels.

AVERAGES.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Nov. 5 ...	71s 9d	41s 3d	25s 5d	43s 0d	45s 10d	53s 3d
— 12 ...	73 7	42 2	25 5	42 7	49 9	56 7
— 19 ...	72 9	42 3	26 0	43 11	52 6	56 7
— 26 ...	70 2	41 9	26 0	43 7	50 11	54 9
Dec. 3 ...	72 7	40 9	26 3	43 5	52 0	53 5
— 10 ...	71 11	39 9	25 4	43 3	50 6	51 5
Agg. Aver.	72 5	41 4	25 9	43 3	50 9	54 4

FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Nov. 5.	Nov. 12.	Nov. 19.	Nov. 26.	Dec. 3.	Dec. 10.
73s 7d	...	...	...	...	...	...
72 9	...	...	...	...	...	...
72 7	...	...	...	...	...	...
71 11	...	...	...	...	...	...
71 9	...	...	...	...	...	...
70 2	...	...	...	...	...	...



WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

Those who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides. The same preparation makes first-rate paving for BARNs, CATTLE-SHEDs, FARM-YARDs, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer. Manufacturers of the Cement, J. B. WHITE & BROTHERS, Filkbank Street, Westminster.

**THE VINE DISEASE EFFECTUALLY CURED** BY WATSON'S BLIGHT EXTERMINATOR AND PREVENTIVE. For present application to Grape Vines, Fruit Trees, &c.—Price 2s. 6d. per bottle. Sold by H. WATSON, 198, Shoreditch; W. DEXTER, 82, Gracechurch Street; and by all Florists and Seedsmen.

**BAKER'S POULTRY RESTORATIVE.**—A certain cure for all diseases of Poultry, Pheasants, &c., most especially as a preventative, and for imparting vigour and high condition. Messrs. BAKER have long used the "Restorative" with the most beneficial results, and are confident it has only to be known to be fully appreciated for its wonderful preventative and curative power. It will be found invaluable to birds during the period of Poultry Exhibitions, when so many suffer from change and confinement. The "Restorative" also strongly recommends itself for the easy manner in which it is administered, it being only necessary to put a few drops of the liquid in the water they drink.—Price 2s. 6d. each, in Bottles and Pills, with directions for Roup, &c. Messrs. BAKER, 3, Half-moon Passage, City, and the Phessantry, Beaufort Street, Chelsea.

**FIRE ANNIHILATOR, OR VAPOUR FIRE ENGINE.**—Its practical value proved incontestably by 23 remarkable cases of successful use. See "Bradshaw" of this month, p. 132. Engines for Dwelling-houses, 31 to 41.—Office of the Fire Annihilator Company, 105, Leadenhall Street, London.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d. Patent Pump ... .. 1 15 0 Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0 Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

**JOHN WARNER & SONS,** 8, CRESCENT, JEWIN STREET, LONDON. Every description of Machinery for Raising Water; Fire Engines, &c. An Illustrated Book sent on application post free.

REDUCTION IN PRICE. WEIR'S IMPROVED GALVANISED WROUGHT-IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

THE COMFORT OF A FIXED WATERCLOSET

for 11.—Places in gardens converted into comfortable water-closets by the PATENT HERMETICALLY-SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Hermetically-sealed Inodorons Chamber Commodes, 14s., 2l. 6s., and 3l. and Improved Portable Waterclosets, with pump, cistern, and self-acting valve. Articles forwarded by railway, carriage paid. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FRY & CO.'S, 26, Tavistock Street, Covent Garden, London.

WARMTH AND VENTILATION. THE PATENT PORTABLE SUSPENSION STOVE

will warm and ventilate at the same time, and is recommended by eminent medical men as the only stove suitable for the chamber of the invalid. It is made in sizes suited for the largest building or the smallest office. To those who study health, comfort, and economy, it offers advantages which no other possession. No 3, price 20s., will burn 10 hours without attention, at a cost of three farthings. Prospectus, with prices and instructions, post free. In operation daily at DEARE, DEAY, & CO.'S show-rooms, &c., London Bridge.

**PIGGOTT'S GALVANIC BELT**, without any fluid, for the Cure of Disease. See the Treatise, sent free, for one stamp.—Mr. W. P. PIGGOTT, Medical Galvanist, 523c, Oxford Street, London.

DAMAGED WHEAT AND RICE MEAL FOR FOOD.

It is now acknowledged to be the best and cheapest FOOD. It is now being extensively used by all the large Pig breeders in the Kingdom. In order that small consumers may test the merits of each, JAMES MAY and Co. will send 1 quarter of Wheat and 2 cwts. of Rice Meal for Post-office order of 2l. 10s., including sacks.

**DAMAGED WHEAT** ... .. 33s. per qr. **RICE MEAL** ... .. 9l. per ton. **INDIAN CORN** ... .. 47s. per qr. **LENTILS** ... .. 50s.

JAMES MAY & Co., Finsbury Wharf, City Road Basin, London. Delivered free to any Railway in London. 1s. 6d. each charged for Sacks.

SEASON, ON THE SOUTH COAST OF DEVON.

**TO BE LET**, for a term of years, from Lady-day, 1854, a compact FARM, comprising a Capital House, Convenient Offices, and 201a., 2r., 36 p., Arable, Meadow, Pasture, and Orchard Land.—To view, apply to Mr. AXMLEY, at the Farm, and for particulars to Mr. BADGER, Nettlecombe, Taunton.

**TO BE DISPOSED OF**, DENYER'S NURSERY, celebrated for Roses, Fruit Trees, &c. Established 26 years, with a first-rate connection; consisting of 5 acres of land, Cottage and Seed Shop attached, of which 14 years' lease will be granted. The Proprietor being about to retire is desirous of offering the above; no goodwill is expected; the Stock, &c., to be taken at valuation.—Apply to Messrs. PROTHEROE & MORRIS, Leytonstone, Essex, or Mr. E. DENYER, on the premises, Loughborough Road, Brixton, within 3 miles of London.

TO NURSERYMEN AND GARDENERS.

**TO BE DISPOSED OF** immediately, in consequence of the death of the proprietor, a good NURSERY BUSINESS, which has been established upwards of a century in a flourishing market town in Hampshire; there is also a good Seed Business connected. For further particulars, apply to Mrs. SUTTON, Andover, Hants.

**FOR SALE**, A PERSIAN CAT, two pairs of rare and curious Arabian Laughing PIGEONS, good talking PARROTS, Foreign and British SINGING BIRDS, CAGES, &c. &c.—Apply to Mr. WHITAKER, 90, Charlotte Street, Fitzroy Square, London.

**SILVER SPANGLED HAMBURGH.**—An Amateur, who for some years has been a successful competitor in this class at the Principal Poultry Shows, is desirous of disposing of his whole stock, comprising about 50 birds, either in one or more lots.—Apply to Mr. FREEMAN, Lullington, Burton-on-Trent.

**SILVER SPANGLED HAMBURGHs.**—Fine well bred BIRDS of the above breed, 8 months old, to be disposed of, at from 10s. to 15s. per pair, enquire of Mr. CANTRELL, Surgeon, Wicksforth; or the parties would be willing to exchange some of them for the White-faced Spanish of a good sort.

Sales by Auction.

COCHIN CHINA & OTHER CHOICE FANCY POULTRY.

**MR. J. C. STEVENS** will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, December 27th, at 12 o'clock precisely, 150 LOTS of COCHINS, the property of Mr. A. Reynolds, of Boston, bred from North Lincolnshire Show Prize Birds of 1852, very heavy, and of good quality. Also 60 LOTS from the Stock of a Norfolk Amateur, Bantams, Malays, Spanish and Cochins of good quality. Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

CONSIGNMENT FOR ABSOLUTE SALE.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed to Sell by Auction, at the Auction Mart, Bartholomew Lane, on WEDNESDAY, December 21st, 1853, at 12 o'clock, 400 Common Yews, 50 Irish ditto, 100 Arbor-vitae, 50 Laurestinus, 100 Tree Box, 50 Variegated Holly, 50 Portugal Laurels, 50 Aucuba japonica, 200 Standard Roses; also a select assortment of Dutch Bulbs.—May be viewed the morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

**MESSRS. PROTHEROE AND MORRIS** are instructed by Mr. Turner to Sell by Auction, on the premises, Maids Vale, Edgeware Road, Paddington, on MONDAY, December 13, at 11 o'clock, in consequence of the Land being let for building, the whole of the GREENHOUSE PLANTS, consisting of 2000 Fancy and other Geraniums, Callas, Hydrangeas, 40 Moss, Provence, Fabvier, Fairy and other Roses, in pots; six Capital Greenhouses; nine 2 and 3-light Boxes; a useful Pony; Tumbrel Cart; a quantity of Flooring Boards, Joists, Counter; the Erection of Brick Cottage; a 20-inch Iron Roller, and sundry effects.—May be viewed prior to the Sale. Catalogues may be had 6d. each (returnable to purchasers), on the premises; or the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO MARKET GARDENERS, NURSERYMEN, & TURNERS.

**MR. W. T. ATWOOD** will Sell by Auction, on the ground near the Victualling Office, on TUESDAY, the 20th of December, at 12 o'clock, the STOCK of about 5000 large roots of Linnaeus, Mitchell's Albert, and Royal Victoria Rhubarb, a small quantity of young Asparagus, Horse Radish, and other crops; about 100 Pear Trees (timber size), and young Fruit Trees; 250 Ash Van Tilts, a Light Cart, two Pumps, and Sundries.—May be viewed till day of sale. Catalogues to be had of the Proprietor, Mr. MASON, Lower Road, Deptford; WAY'S Coffee House, Covent Garden; and Mr. ATWOOD, Mortlake, Surrey.

MATHAM MANOR HOUSE, EAST MOULSEY, SURREY.

**MESSRS. DAVIS AND VIGERS** having sold the above Estate, are directed by the Proprietor to Sell by Auction, without reserve, on the premises, at East Moulsey, Surrey, near the Church, and about a quarter of a mile from the Hampton Court railway station, on THURSDAY, December 22d, at 11 o'clock, the LIVE and DEAD STOCK, consisting of 2 Cart Horses, 2 Short-bred Cows in full milk, Heifer, 4 Store Pigs, 2 Market Carts, Double-shaft Van, Narrow-wheel Wagon, Excellent Brick Cart, Chaff-cutting Machine, Bean Mill and Oat Crusher by Chamberlain, for working with one or two horses, 3 Turnip-cutting Machines, Winnowing Machine, and numerous Implements, &c., together with a small quantity of Furniture of the usual description. May be viewed the day prior, and morning of Sale. Catalogues may be had on the premises; the King's Arms Hotel, Hampton Court; the Lion, Hampton; and of the Auctioneers, 3, Frederick's Place, Old Jewry.

MR. R. G. CRASKE is instructed by the Executors

of the late Mr. NATHANIEL BLOWERS to sell by Auction, on TUESDAY, WEDNESDAY, and THURSDAY, January 3d, 4th, and 5th, 1854, on the premises at Weoley, near Colchester, without reserve, the whole of the valuable Nursery Stock of EVERGREENS, FRUIT, FOREST, and ORNAMENTAL TREES, consisting of fine Aucubas, Arbusts, Chinese Arbor-vitae, Sweet Bay, Phillyrea, Holly, Eonymus, Privet, Laurestinus, Alaternus, Rhododendron, Kalmia, Azaleas, Cotoneaster, Clematis, Jasmine, Virginian Creepers, Irish Ivy, Herbaceous Plants, &c. &c. &c. Laburnum, Poplars, Weeping Ash, Lime, Elm, Lilac, Thorns; and Cherry, Apple, and Pear Trees; Gooseberries, Currant, Rhubarb, &c. And a very extensive stock of Larch, Scotch and Spruce Fir, Beech, Spanish Chestnut, Ash, and Oak; also a large quantity of fine strong Quick. This sale offers an excellent opportunity to Gentlemen and Landscape Gardeners to furnish themselves with very fine and healthy Shrubs, varying from 3 ft. to 10 ft. in height. The soil is of such a nature that the Trees rise with abundance of fibrous roots, incurring little or no risk of loss by removal.—May be viewed prior to the sale. Catalogues may be had, at 6d. each, of Mr. Edward Blowers, Weoley; of Mr. Nathaniel Blowers, Tendring; and of the Auctioneer, Observatory House, Colchester. Sale to commence each day punctually at 11 o'clock.

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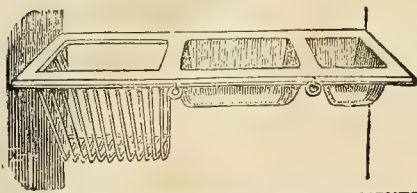
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A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 52.—1853.]

SATURDAY, DECEMBER 24.

[Price 6d.]

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STANDISH and NOBLE'S CATALOGUE for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Dec. 24.

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## BAKER'S FOUNTAINS.

THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA. MESSRS. BAKER can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

SLATE WORKS, ISLEWORTH, MIDDLESEX. EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

MAW'S ENCAUSTIC TILE PAVEMENTS. MAW & CO. send for six stamps their NEW BOOK OF DESIGNS (with prices), adapting this most durable, economical, and decorative production of Mediaeval Art to Entrance Halls, Passages, Conservatories, Verandahs, and every description of modern and ancient Building. Specimens at 11, Aldersgate Street, City.

Benthall Works, near Broseley, Shropshire.

BIRD NETS, SHEEP NETS, RABBIT NETS, BAT FOLDING NETS with Bamboo Poles, 14 feet long, 10s. each; Partridge Nets, 2d. per square yard; Rabbit Nets, 4 feet wide, 14d. per yard; Cocoa Nut Fibre; Sheep Folding Nets, 4 feet high, 4d. and 6d. per yard.—At W. CUTTING'S Manufactory, 1, Edmund Terrace, Ball's Pond Road, Islington (late of Strathmore Terrace, Shadwell), London.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combined ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

GLASS FOR CONSERVATORIES, &c. HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILLS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London. See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

JAMES PHILLIPS and Co. have the pleasure to hand their present prices of Glass for Cash:—

SHEET SQUARES.		CROWN SQUARES.	
In Boxes of 100 feet.		In Boxes of 100 feet.	
	£ s. d.		£ s. d.
Under 6 by 4	...	10, 14 by 10	...
6 by 4, and 64 by 44	...	16 oz. from 3d. to 5d. per square foot, according to size.	...
7 " 5, — 74 " 54	...	21 oz. " 34d. to 5d. " " " "	...
8 " 6, — 84 " 64	...	26 oz. " 34d. to 74d. " " " "	...
9 " 7, — 10 " 8, 12 by 9, 12 by 10	...		...

Larger Sizes, not exceeding 40 inches long. 16 oz. from 3d. to 5d. per square foot, according to size. 21 oz. " 34d. to 5d. " " " " 26 oz. " 34d. to 74d. " " " "

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO MR. RIVERS, and of various dimensions, always on hand. London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Cases of Sheet-Glass, about 40 by 30, 16 oz. to the foot, 2l. 2s. per Case of 200 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, &c.

ESTABLISHED MORE THAN ONE HUNDRED YEARS. THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares under 6 inches by 4	...	8s. 6d.
" 6 by 4 and 64 by 44	...	12 0
" 7 by 5 and 74 by 54	...	13 6
" 8 by 6 and 84 by 64	...	18 0
" 9 by 7 and 10 by 8	...	18 0
" 12 by 10 to 15 by 10	...	18 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 18, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 20s. per 100 feet.

200 feet cases at 12s., and 300 feet case 63s., in large sheets. Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

CHELTHAM GREAT EXHIBITION, of 1854, of HORTICULTURE, the Arts and Sciences connected therewith, and Designs taken therefrom. To open on the 1st June, 1854. Programmes are now ready, containing Rules, Regulations, Schedules of Prizes, &c. &c., and may be obtained on applying to the Secretary, Mr. HENRY S. COCHRANE, 128, High-street, Cheltenham.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given that the ANNUAL GENERAL MEETING of the Subscribers to this Society will be held at the Horticultural Society's Rooms, No. 21, Regent Street, on WEDNESDAY, the 15th January, for the purpose of receiving the Report of the Committee and the Accounts of the Society for the past year, and electing Officers for the ensuing year.

An Election of Two Pensioners will afterwards take place from among the following Candidates:

Application.	Age.	Application.	Age.
E. MARSHALL ... 13th	73	C. CHARLTON ... 2d	68
J. APLEY ... 9th	61	E. CURTIS ... 2d	69
C. ROBINSON ... 7th	76	E. HEATH ... 2d	71
H. SCHNEIDER ... 6th	58	J. JENNEY ... 2d	61
W. CARTER ... 6th	73	J. KENT ... 2d	71
J. BLAKE ... 3d	79	G. KIDD ... 2d	68
S. LAWRENCE ... 3d	65	J. LAWSON ... 1st	75
R. OLIVER ... 3d	71	J. SMITH ... 1st	68
W. THACKER ... 3d	66		

No person will be allowed to vote whose subscription for 1853 is unpaid on the day of election.

Any Subscriber not having received his polling paper is requested to apply for one immediately.

By order, E. R. CUTLER, Sec. 97, Farringdon Street, Dec. 24.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—TO THE SUBSCRIBERS.—My LORDS, LADIES, and GENTLEMEN: I beg to offer my humble thanks for the kind support, by your Votes and Interest, which I have hitherto received; and, at the same time, may I solicit their kind continuance at the forthcoming Election. My eligibility as a Candidate continues unimpaired, though I am now entering on the 90th year of my age, and once more hope, by your kind assistance, to be more successful than I have hitherto been. I am, my LORDS, Ladies, and Gentlemen, your humble servant, H. SCHNEIDER. Ford, Chippingham, Wilts.

SEEDS DIRECT FROM THE GROWERS. GARDENERS and others requiring REALLY GENUINE NEW SEEDS, true to their kinds, are respectfully recommended to apply early to the undersigned.

The New Early Peas, Radish, French Horn Carrot, and other seeds for early sowing are now ready.

Sutton & Sons, Seed Growers, Reading, Berks.

NEW SEEDS FOR 1854.

SUTTON'S NEW SEEDS are all now ready for delivery, and early orders are requested and respectfully advised, as, owing to the short crops this season, some sorts are scarce.

SUTTON'S NEW PRICED SEED LIST is also ready, and will be sent post free on receipt of one penny stamp. Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

THE FINEST BALSAMS IN EUROPE, in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across; the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

FIVE SHILLINGS PER POUND FOR GOOD PINES.

WANTED IMMEDIATELY. Weight from 2 lbs. to 4 lbs. each.

Forward on or before the 31st of December, 1853, To GEORGE TAYLOR, JUN., FRUIT SALESMAN, St. John's Market, Liverpool.

CASH ON RECEIPT OF GOODS.

CHARLWOOD and CUMMINS beg to announce that they have just received an importation, in good condition, of Acorns, of the four following varieties, of American Oaks, which they offer at—

	Per bushel.	Per peck.	Per quart.
Quercus alba	25s. 6d.	4s. 6d.	1s. 3d.
" Banisteri	45s. 6d.	13s. 6d.	1s. 9d.
" obtusiloba	35s. 6d.	10s. 6d.	1s. 6d.
" nigra	...	...	2s. 0d.

14, avistock Row, Covent Garden, London.—Dec.



BY HER  
MAJESTY'S



ROYAL  
LETTERS PATENT.

## E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super, which are superior to all others for price with quality, and if known would supersede all others. A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardener's Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardener's Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

## HORTICULTURE IN ALL ITS BRANCHES.



J. WEEKS & Co., King's Road, Chelsea,



### HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUS (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.

### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

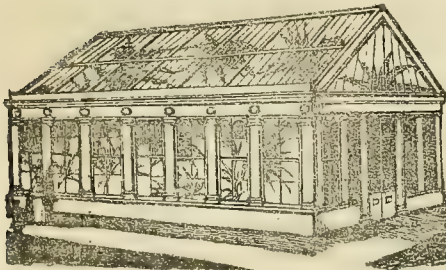
EDWARD AND A. WEEKS (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above work, in the very best possible manner, and at a reduced price. Materials and workmanship warranted best quality.

EDWARD & A. WEEKS beg most respectfully to invite the attention of the Nobility, Gentry, and Nurserymen, to their superior application of Hot-Water for the heating of all kinds of Horticultural Buildings, Churches, Halls, Offices, Warehouses, &c. Their upright tubular Boilers will be found to be the most powerful and economical of any extent, of which they have always a stock in readiness. Plans and Estimates for any of the above forwarded on application. One, two, and three-light Boxes, Hand Glasses, &c., always on hand.

EDWARD & A. WEEKS, Park Cottage, Chelsea.

### HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



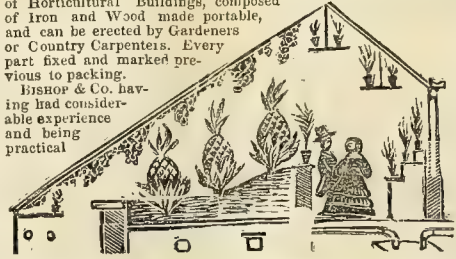
GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

## BISHOP AND Co., City Road (near the Toll Gate),

London, beg to announce to the Nobility and Gentry that they have introduced quite a new style of Horticultural Buildings, composed of Iron and Wood made portable, and can be erected by Gardeners or Country Carpenters. Every part fixed and marked previous to packing. BISHOP & Co. having had considerable experience and being practical



working men, are now prepared to execute orders at the lowest possible price consistent with their style of workmanship, which can be well recommended. Heating by Hot Water or Air on the most improved and scientific principles. Manufacturers of Photographic Houses, and the Portable Model Cottage suitable for Gardeners or Emigrants. Plans and Estimates forwarded on application to Bishop & Co., City Road, London.

### WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNs, CATTLE-SHEDs, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

PROTODICE ANTI-CORROSION PAINT, at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it.—Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

FIRE ANNIHILATOR, OR VAPOUR FIRE ENGINE.—Its practical value proved incontestably by 23 remarkable cases of successful use. See "Bradshaw" of this month, p. 132. Engines for Dwelling-houses, 3l. to 4l.—Office of the Fire Annihilator Company, 105, Leadenhall Street, London.

### WARMTH AND VENTILATION.

THE PATENT PORTABLE SUSPENSION STOVE will warm and ventilate at the same time, and is recommended by eminent medical men as the only stove suitable for the chamber of the invalid. It is made in sizes suited for the largest building or the smallest office. To those who study health, comfort, and economy, it offers advantages which no other possesses. No 3, price 20s., will burn 10 hours without attention, at a cost of three farthings. Prospectuses, with prices and instructions, post free. In operation daily at DEANE, DEAY, & Co.'s show-rooms, &c., London Bridge.

### LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by unpractised persons. PRICE ONE PENNY PER SQUARE FOOT. Croggon's Patent NON-CONDUCTING FELT for steam-boilers and Pipes, saves 25 per cent. of fuel.—Samples and testimonials sent by post on application to CROGGON & Co., 2, Dowgate Hill, London, who also supply SHIP-SHEATHING FELT and INODOROUS FELT for damp walls, and lining iron houses, to equalise the temperature.

THE COMFORT OF A FIXED WATERCLOSET for 1l.—Places in gardens converted into comfortable water-closets by the PATENT HERMETICALLY-SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Hermetically-sealed Inodorously Chamber Commodes, 1l. 4s., 2l. 6s., and 3l.; also Improved Portable Waterclosets, with pump, cistern, and self-acting valve. Articles forwarded by railway, carriage paid. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FRYE & Co.'s, 26, Tavistock Street, Covent Garden, London.

### CHRISTMAS HAMPERS.

FINDLATER, MACKIE, AND CO., WINE AND SPIRIT MERCHANTS (Agents for Guinness's Extra Stout), 1, Upper Wellington Street, Strand, make up HALF-DOZEN HAMPERS for TWENTY SHILLINGS, bottles and hamper included, containing:

- One Bottle finest French Brandy.
- One do. best Scotch or Irish Whiskey.
- One do. Old Jamaica Rum.
- One do. best and strongest Gin.
- One do. finest old Port.
- One do. do. Sherry

Delivered free within five miles of their Establishment.

### DAMAGED WHEAT AND RICE MEAL FOR

FOOD. It is now being extensively used by all the large Pig feeders in the kingdom. To whom references can be given. In order that small consumers may test the merits of each, JAMES MAY and Co. will send 1 quarter of Wheat and 2 cwt. of Rice Meal for Post-office order of 2l. 16s., including sacks.

DAMAGED WHEAT ... 33s. per qr.  
RICE MEAL ... 9s. per ton.  
JAMES MAY & Co., Finsbury Wharf, City Road Basin, London. Delivered free to any Railway in London. 1s. 6d. each charged for Sacks.

### SEATON, ON THE SOUTH COAST OF DEVON.

TO BE LET, for a term of years, from Lady-day, 1854, a compact FARM, comprising a Capital House, Convenient Offices, and 201 a., 2r., 36 p., Arable, Meadow, Pasture, and Orchard Land.—To view, apply to Mr. ATMLEY, at the Farm, and for particulars to Mr. BABBAGE, Nettlecombe, Taunton.

TO BE LET, with immediate possession, the old-established SEED BUSINESS, 181, High Street, Southampton, comprising a front shop, with a large range of Greenhouses, Hothouses, Cold and Forcing Pits, together with the Stock of Plants, Seeds, Fixtures, &c., &c. The above to be disposed of in consequence of the proprietor, Mr. Rogers, sen., finding the demand for Nursery Stock at his grounds at Red Lodge so great, that he is unable to superintend the Seed Department.—For particulars and to treat for the same, apply to Mr. RICHARD BELL, 2, Clifford Street, Southampton.

TO BE DISPOSED OF, DENYER'S NURSERY, celebrated for Roses, Fruit Trees, &c. Established 26 years, with a first-rate connection; consisting of 5 acres of land, Cottage and Seed Shop attached, of which a 14 years' lease will be granted. The Proprietor being about to retire is desirous of offering the above; no goodwill is expected; the Stock, &c., to be taken at valuation.—Apply to Messrs. PROTHROBE & MORRIS, Leytonstone, Essex, or Mr. E. DENYER, on the premises, Loughborough Road, Brixton, within 3 miles of London.

### TO NURSERYMEN, GENTLEMEN, GARDENERS, AND OTHERS.

TO BE DISPOSED OF, an Excellent old Established NURSERY BUSINESS, in one of the best localities in the West of England, where it has been successfully carried on for the last 50 years. The reason for the present occupier giving it up is ill health. Coming in about 800l.—All letters to be addressed, A. B. care of Messrs. Hurst & Co., 6, Leadenhall Street, London.

FOR SALE, 200 good young WELSH EWES; also 200 good young DOWN EWES; both forward in lamb, and warranted sound.—Apply to THOMAS TURNER, Esq., Hoff Hall, Uppingham, Essex; or HENRY BOGGER, Romford, Essex.

FOR SALE, a PERSIAN CAT, two pairs of rare and curious Arabian Laughing PIGEONS, good talking PARROTS, Foreign and British SINGING BIRDS, CAGES, &c. &c.—Apply to Mr. WHITTAKER, 90, Charlotte Street, Fitzroy Square, London.

FANCY POULTRY AND EGGS.—Buff and Cinnamon Cochins, feathered legs and very good, 15s. and 30s. a pair; White ditto from birds that have taken prizes at Hitchin, Doncaster, and Leeds, 3 guineas per pair; a few Black ditto, at 1 guinea each; Spanish white-faced, at 30s. a pair; a few Gold and Silver Polish, from prize birds at Birmingham, Hitchin, and Leeds, at 2 guineas the pair; a pair of white crested Gold Polish, imported, at 30s. the pair; white Polish from imported, and Hitchin and Leeds prize birds, at 20s. each; White-crested Black Polish, at 30s. each, first rate; a few Silky Fowls at 15s. a pair; Gold-laced Bantams, at 25s. for one cock and two hens; two Cocks of that very rare and curious breed of fowls, "the Barbary," at 1 guinea each. EGGS of the following varieties can be supplied any time. Buff Cochins China at 10s. and 21s. a doz.; White ditto, from above-mentioned prize birds, at 2 guineas a dozen; Eggs from Hitchin, &c., prize Black Cochins, at 2 guineas a dozen; from Prize Spanish at Hitchin and Doncaster, at 30s. a dozen. Eggs of the following varieties, supplied in the spring. Orders received now, and the eggs supplied according to priority of application. From prize Gold, Silver, Blue, and Grey Polish, prizes at Hitchin, Doncaster, &c., 30s. a dozen; from White-crested, Black Polish, at 1 guinea a dozen; from prize and medal White Polish, at 2 guineas a dozen; also, from those rarest of all poultry, the Black Polish, with black crest, beard, at 3 guineas a dozen. These birds have only been exhibited three times, and have taken three first prizes, and a first medal. Barbary at 30s. a dozen; Silky (from prize birds), at 21s. a dozen; also from Gold and Silver Bantams, at 1 guinea per dozen (from prize birds). Post-office orders made payable to GEORGE BOOTBY, Louth, Lincolnshire.

### WHITE COCHIN CHINA AND BLUE ANDA-

LUSIAN FOWLS.—For Sale, a Cock and Hen of the former variety for 7l. 7s.; also a Cock and three Hens of the beautiful and scarce Blue Andalusian Fowls, price 5l. 5s. A large assortment of Buff Cochins China Fowls at a low price.—Apply to Mrs. STEDDEN, Linkfield Place, Isleworth, Middlesex, N.B.—Mrs. S. is willing to dispose of her stock of Poultry, consisting of about 150 Cochin China, Andalusian, and Spanish, together with two good Fowl-houses, and a quantity of wirework, for 60 guineas.

MR. ANDREWS'S

### CELEBRATED COCHIN CHINA FOWLS.

MR. J. C. STEVENS begs to announce for sale by Auction, at his Great Room, 38, King Street, Covent Garden, on THURSDAY, 5th January, 1854, the RENOWNED COCHIN CHINA FOWLS, the property of G. J. Andrews, Esq., of Dorchester, all closely bred from chickens of his far-famed imported Hen, mother to "Phoenix" and the three Pullets that took the first of the first prizes in Class 10, and an extra medal for unusual merit at Birmingham, 1851, by "Nankin and Pekin," two Cocks bred by himself. Catalogues are preparing, and may be had shortly, by inclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

### MR. STURGEON'S COCHIN CHINA FOWLS.

MR. STRAFFORD has received instructions to Sell by Auction, at the Baker Street Bazaar, on MONDAY, the 9th of January next, these extraordinary BIRDS. Mr. Sturgeon has not parted with a bird this season, and will not do so until the day of sale, when every Bird offered will be of his own breeding, and sold without reserve; they will be sold as could only be produced from his own yard. Also, will be sold, on the following day, the justly-celebrated Stock of WHITE and other COCHINS, the property of Mrs. Herbert, of Powick, near Worcester.—Catalogues, with particulars, will shortly be issued, and may be had upon application to Mr. STRAFFORD, 89, Guildford Street, Russell Square, London.

### MR. R. G. CRASKE is instructed by the Executors

of the late Mr. NATHANIEL BLOWERS to sell by Auction, on TUESDAY, WEDNESDAY, and THURSDAY, January 3d, 4th, and 5th, 1854, on the premises at Wexley, near Colchester, without reserve, the whole of the valuable Nursery Stock of EVERGREENS, FRUIT, FOREST, and ORNAMENTAL TREES, consisting of fine Aucubas, Arbutus, Chinese Arbor-vita, Sweet Bays, Phillyrea, Holly, Euonymus, Privet, Laurestinus, Alaturus, Rhododendron, Kalmia, Azaleas, Cotoneaster, Clematis, Jasmine, Virginian Creepers, Irish Ivy, Herbaceous Plants, &c. &c. &c. Laburnum, Poplars, Weeping Ash; Lime, Elm, Lilac, Thorns; and Cherry, Apple, and Pear Trees; Gooseberries, Currant, Rubarb, &c. And a very extensive stock of Larch, Scotch and Spruce Firs, Beech, Spanish Chestnut, Ash, and Oak; also a large quantity of fine strong Cuckoo. This sale offers an excellent opportunity to Gentlemen and Landscape Gardeners to furnish themselves with very fine and healthy Shrubs, varying from 3 ft. to 10 ft. in height. The soil is of such a nature that the Trees rise with abundance of fibrous roots, incurring little or no risk of loss by removal.—May be viewed prior to the sale. Catalogues may be had, at 6d. each, of Mr. Edward Blowers, Weeley; of Mr. Nathaniel Blowers, Tendring; and of the Auctioneer, Observatory House, Colchester. Sale to commence each day punctually at 11 o'clock.



# JUDSON'S RICHMOND VILLA BLACK HAMBURG VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.

N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

## YORK NURSERIES.

**JAMES BACKHOUSE AND SON** respectfully inform their friends and the public that they have erected new and much more commodious PREMISES, near the Village of Holdgate, on the west side of the City, and will henceforth carry on their business of NURSERYMEN and SEEDSMEN in all its branches there. The situation is very superior to that formerly occupied in Fishergate, and the distance from the Railway Station nearly the same—about one mile. A large tract of ground being now devoted to the cultivation of Horticultural Seeds, Ornamental Forest Trees, &c. &c., under their immediate superintendence, they believe that they will thereby be enabled more successfully than ever to supply articles of the best quality to all who favour them with their orders.

## NEW SEEDS—GROWTH OF 1853.

**RENDEL'S COLLECTION OF GARDEN SEEDS,** FOR ONE YEAR, will be sent out as usual by the Subscribers.

The collections have given universal satisfaction, and they will be found sufficient to supply a garden during the whole of the 12 months.

No. 1.—A complete Collection to supply a large garden £ s. d.  
for 12 months, including 20 quarts of the newest and most approved Peas, for early, medium, and late crops;  
10 quarts of Beans, and full quantities of all other kinds of vegetable seeds ... 3 0 0  
No. 2.—A complete Collection, in reduced quantities, for a smaller garden ... 2 0 0  
No. 3.—A complete Collection do. ... 1 5 0  
No. 4.—A small and choice Collection ... 0 15 0  
The quantities are stated in full in RENDEL'S NEW PRICE CURRENT AND GARDEN DIRECTORY, now in the press.

All orders above 20s. carriage free (see PRICE CURRENT), and all orders above 5l. delivered carriage free to every Railway Station in England and Wales, and to every Steam Port in England, Wales, Ireland, and Scotland.

WILLIAM E. RENDEL & CO.,  
Seed Merchants,  
Plymouth.

For description of our NEW PRICE CURRENT FOR 1854, see back page of last week's Number.

**SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS FOR ONE YEAR'S SUPPLY** contain all the best sorts of Vegetable Seeds for sowing, from January to December, to stock the garden throughout the year, with descriptions and instructions.

No. 1.—A complete Collection of Garden Seeds for one £ s. d.  
year's supply, including 20 quarts of the best Peas for succession, 10 quarts of Beans, and full quantities of French Beans, choice sorts of Broccoli, Cucumbers, Melons, Lettuces, Cauliflowers, and every other sort of Vegetable required, in full quantities ... 3 0 0  
No. 2.—A complete Collection, in quantities proportionately reduced ... 2 0 0  
No. 3.—A complete Collection, equally choice sorts ... 1 5 0  
No. 4.—A small and very choice Assortment ... 0 15 0

If some kinds of Seeds are already possessed, purchasers are requested to name them, that increased quantities of others may be sent in lieu of them.

As some sorts are very short in crop this year, purchasers are respectfully recommended to send their orders early.

CARTRIDGE FREE, from JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**JAMES MELDRUM, NURSERYMAN, Kendal, Westmoreland,** begs to announce that he has a very large stock for sale, of fine one-year Seedling ASH, and one-year Seedling OAKS, also a quantity of fine TRANSPLANTED OAKS, 2 to 3 feet. Prices very moderate; may be obtained on application.

**LARCH, 2½ to 3½ feet, or 3 to 4 feet, fine, 15s. per 1000;** Raspberry, Rivers' Autumn-fruited Red, 15s. per 100; Raspberry, Imrie's Large-fruited White, 15s. per 100; Boxwood, dwarf, 4d. per yard as it grows, each yard being sufficient to relay four yards. Delivered in London, Birmingham, or Liverpool, if a large quantity is ordered.—Apply to Mr. JOHN DICKIE, Seedsman, Kilmarnock, Trustee on Lang's sequestrated estate.

**LIME TREES, 12 to 14 feet, 42s. per 100.—SPRUCE FIRS, 2 to 3 feet, 6s. per 100.—LAURUSTINUS, very fine, 30s. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.**

**FRUIT TREES, &c.**—The following are very strong, and finely grown:—Dwarf-trained Moor Park Apricots, and other sorts, 42s. per dozen; Standard trained Peaches and Nectarines, 60s. to 80s. per dozen; Dwarf trained Green-gage Plums, 30s. per dozen; Prince Albert Rhubarb, strong to force, 6s. per dozen.

Berberis aquifolium and Berberis pinnatifida.—These beautiful shrubs are 1 to 2 feet high; 8s. per 100, 60s. per 1000.—Usual discount to the Trade.—JOHN JEVES, Nurseryman, Northampton.

**KILMARNOCK WEeping WILLOW, OR SALIX CAPREA PENDULA.**—The Trustees on the sequestrated estate of Thomas Lang, Nurseryman, Kilmarnock, intimates that he is now ready to supply plants of this beautiful new Willow. Mr. Lang has received numerous testimonials as to its being a new, distinct, and interesting addition to our Ornamental Trees, from Professor Lindley, of London; Mr. MacNab, Royal Botanic Gardens, Edinburgh, and others; but the following letter from Sir William Jackson Hooker, Director of the Royal Gardens, Kew, is of itself sufficient both as a description and a recommendation of the plant.

"Royal Gardens, Kew, Sept. 29, 1853.

"Sir,—The *Salix caprea pendula*, or Kilmarnock Weeping Willow, is doing well with us, and is much admired for its decidedly weeping character. It bears the same relation to the ordinary *Salix caprea* that the Weeping Ash does to the Common Ash, and I need say nothing more in its favour. Every branch is gracefully curved downwards, and the great breadth of the foliage and its dark colour give it a totally different character from the common Weeping Willow, *Salix Babylonica*. I think very highly of it as an ornamental small tree.

"I am, &c. (signed) W. J. HOOKER."

Prices.—Planted Plants, on own roots, treated to one stem, 2s. 6d. each; do. do. extra fine, 3s. 6d. each; a few plants, grafted on tall stems, 5s. each.

Plants will be delivered in London for 6d. each additional, and despatched from thence to any address. Orders to be addressed to Mr. JOHN DICKIE, Seedsman, Kilmarnock, the Trustee, who will also forward, on application, a printed list of the General Nursery Stock, which is now being sold off at extremely low prices. The Trade supplied on favourable terms.

## WAITE'S NEW EARLY PEA.

**DANIEL O'ROURKE.**—The earliest and best Pea in cultivation: a week earlier than the Emperor, longer pods, and a much better cropper; height 2½ to 3 feet. If this Pea does not give general satisfaction the money charged will be returned.

Trade price to be had on application to J. G. WAITE, Seed Merchant, 181, High Holborn, London.

## SUPERB LATE WHITE BROCCOLI—"EMPEROR."

**EDMUND PHILIP DIXON** having purchased the entire stock of the above Broccoli of Messrs. Elliston, Market Gardeners, Thorgumbald, near Hull, begs to announce that on and after the 1st of January next he will be prepared to send it out in sealed packets at 2s. 6d. each. This Broccoli has been raised by the Messrs. Ellistons, the raisers of the Mammoth, sent out some time ago, who state that the EMPEROR, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'ULLEN, 6, Leadenhall Street, London. Also of the Advertiser, 57, Queen Street, Hull.

**JOHN HARRISON**, having a large stock of the undermentioned, begs to offer them to the Trade at the under-named very low prices:—  
Fastolf Raspberry, 8s. per 100, 70s. per 1000.  
Rivers' Double Bearing Raspberry, 10s. per 100.  
Victoria Currants, strong, 12s. 6d. per 100.  
Houghton Castle Currant, 15s. per 100.  
Manetti Rose Stocks, 1 year transplanted, 8s. p. 100, 70s. p. 1000.  
2 years ... extra strong, 12s. per 100, 5s. per 1000.  
Standard Roses, extra fine, 5s. to 7l. 10s. per 100.  
Dwarf Hybrid Perpetuals, extra fine, 60s. to 5l. per 100.  
new varieties, 2s. 6d. to 7s. 6d. each.  
Cypress Funebis, in pots, fine, 1 foot to 15 inches, 5s. per 100.  
Transplanted Oaks, 2, 3, 4, and 5 feet, 15s. to 25s. per 1000.  
Victoria and Albert Rhubarb Roots, strong, 30s. per 100.  
Nursery, Darlington, Dec. 24, 1853.

**BENJAMIN R. CANT** begs to offer the following in extra strong plants:—  
NEW SHOW GERANIUMS.  
Hoyle's Astrea, 5s.; Basilisk, 3s. 6d.; Butterfly, 3s. 6d.; Leonora, 5s.; Oscar, 5s.; Zaria, 5s. Foster's Eleanor, 3s. 6d.; National, 3s. 6d.; Optimum, 7s. 6d.; Rachael, 5s. Dobson's Gertrude, 5s.; Harriet, 3s. 6d.; Jupiter, 3s. 6d.; Pasha, 5s.; Spot, 5s.; Vulcan, 5s. The above 16 for 56s.; any 12 for 48s., or 12 of my own selection for 36s.

Any 12 of the following first-rate varieties may be selected for 20s., or 12 of my own selection for 16s.:—

Arethusa	Exhibitor	Ocellatum
Ajax	Incomparable	Purple Standard
Alibi	Lavinia	Plantagenet
Butterfly	Magnet	Silk Mercer
Commissioner	Mochanna	Tyrian Queen
Diana	Major Domo	Village Maid
Enchantress	Nepaulense Prince	
Good older sorts 6s., 9s., and 12s. per dozen.		

**FANCY GERANIUMS.**  
Purchasers may select any 12 of the following for 12s., or my own selection 9s. per dozen:—

Anais	Fleur d'Marie	Miss Sheppard
Albion	Hero of Surrey	Pelopides
Beauté	Jehu Improved	Purity
Belle Marie	Little Wonder	Prince Albert
Diana Vernon	Mulberry	Prima Donna
Delicate	Marion	Queen Victoria
Exquisite	Madame Mieliez	Statiuski
Fairy Queen		

**NEW CINERARIAS.**—The set of 8 for 18s.  
Charlotte, 2s. 6d.; Charles Dickens, 2s. 6d.; Conspectus, 2s. 6d.; Kate Kearney, 3s. 6d.; Loveliness, 3s. 6d.; Marguerite d'Anjou, 3s. 6d.; Prince Arthur, 3s. 6d.; Rosalind, 3s. 6d.

Purchaser's selection from the following, 9s. per dozen; my own, 6s. per dozen:—

Annie	Effie Deans	Mr. Sidney Herbert
Adela Villiers	Experimental Blue	Nymph
Angelique	Flora M'Ivor	Nonsuch
Agnes Wakefield	Fornosa	Othello
Bessy	Lady Hume Campbell	Prima Donna
Catherine Hayes	Lady Gertrude	Rosy Morn
Catherine Seaton	Madame Cerito	Resplendens
Carminata	Madame Sontag	St. Clair of the Isles
David Copperfield	Mazzini	Susie
Eleanor	Marianne	

Carriage paid to London and Norwich, and all intermediate Stations. A liberal discount for cash, and the usual allowance to the trade.—St. John's Nursery, Colchester.

## TO NOBLEMEN, GENTLEMEN, AND COMPANIES PLANTING.

**THOMAS JACKSON AND SON** respectfully invite an inspection of their extensive and fine collection of ORNAMENTAL SHRUBS and TREES; they are of fine growth, and in excellent condition for planting for immediate effect. To the undernamed T. & S. especially desire attention. Prices may be obtained by letter or personal application.

American Arbor-vite, 2 to 10 ft.	Deutzia gracilis, 1 to 2 feet, fine
Chinese do., 2 to 8 feet, fine	Pinus excelsa, 3 to 8 feet, fine
Arbutus, 2 to 5 feet	Pinus insignis, 3 to 5 feet
Aucubus, 2 to 4 feet, very bushy	Cryptomeria japonica, 2 to 6 ft.
Cedar, Deodar, 2 to 12 feet, fine	Taxus pyramidalis, 2 to 6 feet, fine
Cedar of Lebanon, 2 to 9 ft., fine	Laurustinus, 1 to 3 feet, very bushy
Variegated Hollies, 2 to 9 feet	Evergreen Oaks, 2 to 7 feet, fine
Green do., 2 to 9 feet	Portugal Laurels, 2 to 5 feet
Weeping do., 5 feet stems, fine	Magnolia acuminata, 4 to 10 ft.
Berberis aquifolium, 2 to 3 feet, bushy	Do. grandiflora Exmouth, 2 to 5 feet, fine
Taxodium sempervirens, 3 to 12 feet, fine	Tree Peonies, 1 to 3 ft., bushy
English Yews, 2 to 9 feet	Chinese Junipers, 2 to 3 ft., fine
Irish do., 2 to 8 feet, very fine	Upright Cypress, 5 to 8 ft., fine
Tree Box, 2 to 5 feet	Forstya viridissima, 2 to 4 ft.
Arancaria imbricata, 1 to 5 feet, fine	Red Cedars, 3 to 5 feet, fine

T. J. & S. having added to their previously good stock of American Plants, about one-third of the entire stock of the Norbiton Nursery, so long famed for its collections of Hybrid Rhododendrons, Azaleas, &c., can now offer on most advantageous terms—

Rhododendron ponticum, 1 to 5 ft., in great variety.
Do. aureum, and the varieties of yellows, 1 to 7 ft.
Do. Smilth, tigrinum, and other scarlets, 1 to 9 ft.
Do. campanulatum and light varieties, 1 to 7 ft.

Azaleas, Indian, American, and Ghent varieties, 1 to 6 ft.  
Kalmia latifolia and others, 4 to 4 ft.  
T. J. & S. have a splendid healthy stock of the Sikkim Rhododendrons, of which they will furnish the 12 following fine kinds, in pots, for 6s., viz., Thompsoni, fulgens, glaucum, glaucum anuum, nivolum, Falconeri, ciliatum, Edgeworthii, loricifolium, cinnabarinum, ferrugineum, and caleyatum.

Fine Fruit and Forest Trees; strong Quick for Fences, and all other kinds of Nursery Stock.  
Nurseries, Kingston, near London.

## SUPERB DOUBLE HOLLYHOCKS.

**WILLIAM CHATER** has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.  
Saffron Walden Nursery, December 24.

## AMERICAN PEACHES FOR CHRISTMAS.

This excellent fruit, perfectly fresh, and of the finest flavour, we are now importing from the United States, "hermetically sealed," in jars and cans. Those in jars, preserved in brandy, at the reduced price of 5s.; fresh Peaches, in cans, 4s.; spiced, 3s. They will be forwarded to all parts of the country on a Post-office order for the amount.—Sold, with every variety of American goods, at the American Warehouse, by ROGERS & Co., 540, New Oxford Street, London.

## HUNTER'S LONG PROLIFIC CUCUMBER.

which have been awarded more Prizes than any other variety in cultivation. Gentlemen, Amateurs, and others desirous of successfully competing at the Exhibitions of 1854, can be furnished with the above first class variety, "improved, if anything," in packets at 1s. and 2s. Fine Seeds, from fruit running from 30 to 37 inches.—JAMES G. BENWICK, Seed Warehouse, 107, St. John Street, London.

**AQUILEGIA GLANDULOSA** (flowers 4 inches in diameter, blue and white).—To insure a vigorous display of this, the handsomest of early summer flowers, the Subscribers will, on receipt of a Post-office order for 20s., forward free to London or Edinburgh a dozen strong flowering roots in balls, of a congenial soil, plants such as those for which they received the Honorary Premium of the Royal Caledonian Horticultural Society at the Exhibition in Edinburgh in May last. These roots are suitable for the open ground, but they are also well adapted for being forced into bloom early in spring.

Professor Lindley has said, "This plant is perhaps the handsomest hardy perennial in cultivation."  
JOHN GRIGOR AND CO., Nurseries, Forres, N.B.

## SUTTON'S LETTUCES AND CUCUMBERS.

**JOHN SUTTON AND SONS, SEED-GROWERS, Reading,** Berks, have much pleasure in referring to the following extract from a letter received:—

"Messrs. SUTTON AND SONS.—Gentlemen,—I have grown all the sorts of Cucumbers which I have seen advertised, but the 'Conqueror of the West' is far before any other in my estimation. I have now grown it for several years, and intend to grow none other this season. Your Lettuce, too, is excellent, and certainly I have never seen any sort so large. I have observed that it is not so apt to run to seed as others, which renders it very valuable in hot dry summers, and for autumn use."—From Mr. Smithers, late Head Gardener to the Earl of Carnarvon, High Clere, near Newbury.

N.B. These Lettuce Seeds will be sent free by post on receipt of postage stamps in payment, in good sized packets, at 1s. each; but the stock having become very short, they cannot now be sold by the ounce.

THE CONQUEROR OF THE WEST CUCUMBER is 2s. 6d. per Packet, or three seeds for 1s.

We have also Hunter's Prolific, Tiley's Phenomenon, Constantine's Incomparable, and Cutbill's Black Spice Cucumber Seed, true, direct from the growers, price 1s. per packet. The Lettuces above referred to are Sutton's Superb White Cos, and Sutton's Superb Green Cos.

## The Gardeners' Chronicle.

SATURDAY, DECEMBER 24, 1853.

WHEN the unfortunate DOUGLAS was last in California he wrote thus in a letter to Sir Wm. Hooker, of a CONIFEROUS TREE inhabiting that country. "But the great beauty of Californian vegetation is a species of *Taxodium*, which gives the mountains a most peculiar, I was almost going to say awful appearance—something which plainly tells us we are not in Europe. I have repeatedly measured specimens of this tree 270 feet long and 32 feet round at 3 feet above the ground. Some few I saw upwards of 300 feet high, but none in which the thickness was greater than those I have instanced." What was that tree? No seeds or specimens ever reached Europe, although it appears that he possessed both.

The late Professor ENDLICHER referred DOUGLAS's plant to *Sequoia*, calling it *gigantea*, and framing his distinctive character upon the representation of a supposed *Taxodium sempervirens*, figured in Hooker's "Icones," t. 379, from DOUGLAS's last collections. But that plate, although with neither flowers nor fruit, represents beyond all question a branchlet of *Abies bracteata*. It is therefore evident that no materials exist for determining what DOUGLAS really meant by his "*Taxodium*," which may or may not have belonged to that genus, or, as ENDLICHER conjectured, to *Sequoia*. But species in natural history cannot be founded upon conjecture.

The other day we received from Mr. VEITCH branches and cones of a most remarkable Coniferous tree, also Californian, seeds and a living specimen of which had just been brought him by his excellent collector Mr. Wm. Lobb, who, we are happy to say, has returned loaded with fine things. Of that tree Mr. Lobb has furnished the following account:—

"This magnificent evergreen tree, from its extraordinary height and large dimensions, may be termed the monarch of the Californian forest. It inhabits a solitary district on the elevated slopes of the Sierra Nevada, near the head waters of the Stanislaus and San Antonio rivers, in lat. 38° N., long. 120° 10' W., at an elevation of 5000 feet from the level of the sea. From 80 to 90 trees exist, all within the circuit of a mile, and these varying from 250 feet to 320 feet in height and from 10 to 20 feet in diameter. Their manner of growth is much like *Sequoia* (*Taxodium*) *sempervirens*, some are solitary, some



are in pairs, while some, and not unfrequently, stand three and four together. A tree recently felled measured about 300 feet in length, with a diameter, including bark, 29 feet 2 inches, at 5 feet from the ground; at 18 feet from the ground it was 14 feet 6 inches through; at 100 feet from the ground, 14 feet; and at 200 feet from the ground, 5 feet 5 inches. The bark is of a pale cinnamon brown, and from 12 to 15 inches in thickness. The branchlets are round, somewhat pendent, and resembling a Cypress or Juniper. The leaves are pale Grass green; those of the young trees are spreading, with a sharp acuminate point. The cones are about 2½ inches long, and 2 inches across at the thickest part. The trunk of the tree in question was perfectly solid, from the sap-wood to the centre; and judging from the number of concentric rings, its age has been estimated at 3000 years. The wood is light, soft, and of a reddish colour, like redwood or *Taxodium sempervirens*. Of this vegetable monster, 21 feet of the bark, from the lower part of the trunk, have been put in the natural form in San Francisco for exhibition; it there forms a spacious carpeted room, and contains a piano, with seats for 40 persons. On one occasion 140 children were admitted without inconvenience. An exact representation of this tree, drawn on the spot, is now in the hands of the lithographers, and will be published in a few days."

What a tree is this!—of what portentous aspect and almost fabulous antiquity! They say that the specimen felled at the junction of the Stanislaus and San Antonio was above 3000 years old; that is to say, it must have been a little plant when SAMPSON was slaying the Philistines, or PARIS running away with HELEN, or ÆNEAS carrying off good *pater Anchises* upon his filial shoulders. And this may very well be true if it does not grow above two inches in diameter in 20 years, which we believe to be the fact.

At all events, we have obtained the plant. The seed received by MESSRS. VEITCH has all the appearance of vitality, and since the tree is hardy and evergreen, it is a prodigious acquisition. But what is its name to be?

Are the plants of LOBB and DOUGLAS identical? Possibly, no doubt; for DOUGLAS reached lat. 38° 45' N., and therefore was within the geographical range of LOBB's discovery. But it is quite as possible that he meant some other tree, also of gigantic dimensions; and it is hardly to be imagined that so experienced a traveller would have mistaken a tree with the foliage of a Cypress and the cones of a Pine for a *Taxodium*, and still less for the species *sempervirens*. Besides, the slenderness of the specimens he saw is greatly at variance with the colossal proportions of the plant before us. That, at all events, the latter cannot be regarded as a *Sequoia* we have explained in another column; and we think that no one will differ from us in feeling that the most appropriate name to be proposed for the most gigantic tree which has been revealed to us by modern discovery is that of the greatest of modern heroes. WELLINGTON stands as high above his contemporaries as the Californian tree above all the surrounding foresters. Let it then bear henceforward the name of WELLINGTONIA GIGANTEA. Emperors and kings and princes have their plants, and we must not forget to place in the highest rank among them our own great warrior.

We have very great pleasure in announcing that our invaluable correspondent, the Rev. M. J. BERKELEY, whose residence in the country and high scientific attainments give him peculiar facilities for investigating the diseases of plants, has undertaken, at our request, to take up, methodically, the whole subject of VEGETABLE PATHOLOGY, and to publish the result of his researches in our columns. His papers will begin to appear on the first Saturday in January next, and will be continued weekly as nearly as circumstances will permit.

How well this eminent mycologist can conduct such inquiries our readers well know. It is not, indeed, too much to say that he is the only person in these kingdoms really capable of grappling with a subject, of which the importance is only equalled by the difficulties which surround it. Mr. BERKELEY's success will, however, depend in a great measure upon the assistance he may receive from those whose opportunities give them facilities for collecting evidence; upon which point we venture to quote a passage from a letter now before us:—

"It would be a great help to the undertaking if you would ask those upon whom you can best depend to send good specimens of diseased structures, even of the common types from time to time as they may occur, marking the name by which they are generally known to gardeners. And for this purpose, if a few slips of paper were printed in the following form, 'Name, of Disease, supposed Cause, General Remarks,' one of these could always be inserted with the

specimen, and would convey much valuable information. My best direction for little parcels by rail is,

"King's Cliff,  
"Wansford.

"By London and North-Western Railway.

"Many of the common forms of disease it would be desirable to examine microscopically, and many are local, even when not rare. In all cases the grand point is to send one or two well-selected specimens rather than a great mass, taking care to pack each specimen separately in thin paper, and secure the whole by firm packing. For want of such precaution, specimens which would otherwise be interesting, arrive in a state quite unfit for investigation.

"As instances of the local nature of diseases, I may mention that the 'curl' is unknown in this neighbourhood; nor is Wheat, as far as my experience goes, ever affected by 'vibrio' in this district.

"It is most desirable to ascertain what particular diseases are called by gardeners, to prevent misunderstanding."

Printed forms, such as Mr. BERKELEY recommends us to adopt, are preparing, and will be sent free to any intelligent correspondent who may express a desire to receive them. And we confidently believe that if the public should take a real interest in this undertaking a mass of trustworthy evidence will by degrees accumulate, which will place the Pathology of plants in at least as satisfactory position as that of the animal kingdom.

ONE of the greatest desiderata in horticulture is undoubtedly the CULTIVATION OF TRUFFLES. Success would be sure of ample remuneration; and if the reproduction at will of such an inferior species as the common *Tuber aestivum* of our markets were once achieved, there is little doubt that superior species, such as *Tuber melanosporum*, or even *T. Magnatum*, would soon be inhabitants of our gardens. Indeed, except success extended to the production of *T. melanosporum* (the Truffle of the Paris markets), the sale would not be probably increased to as great a degree as might be implied from the quantities consumed in France; for the flavour of the English Truffle is so poor in comparison that it is only suited to very delicate palates, whereas the Paris Truffles, when fresh, are beyond all controversy a great improvement to almost every entrée of which they form an ingredient, not to mention their own intrinsic excellence when dressed in a simpler form.

Our cultivators, indeed, are quite alive to the importance of the subject as regards the interests of their calling; and accordingly many attempts have been made, from time to time, to accomplish the desired end. Such attempts, however, have at present met with no success, except, perhaps, in a solitary instance, and that not strictly relating to horticulture, as it was simply purposed to multiply Truffles in localities where they already grew naturally. One of our correspondents, a year or two since, was very sanguine on the point, and thought that he had succeeded in getting the spawn to run in soil properly prepared, and he even talked of being in a condition to send out Truffle bricks with as complete certainty as to the result, as in the case of the common Mushroom. Nothing more has, however, been heard of the matter. We have indeed now before us, from JOHN DISNEY, Esq., of the Hyde, near Ingatesone, something a little more promising. During the earlier researches of the Messrs. TULASNE they had been unable to procure the mycelium of any true species of *Tuber*, nor could they get their sporidia to vegetate, though they were more successful with a species of *Balsamia*. Later researches, however, in the Truffle layers of Vienna, and elsewhere, furnished them with the mycelium of the Paris Truffle,\* and enabled them to give a figure of

\* By Paris Truffle, the species usually sold in the markets at Paris is meant. Young *Tuber aestivum*, in which the fructification is still imperfect, and the flavour in consequence undeveloped, is sometimes known under the name of French Truffles by the Truffle hunters in the South of England.

it in their magnificent work. From this it is clear that the little brown threads, found by ourselves some 25 years since in the cracks of the bark of *T. aestivum*, were truly the remains of the mycelium from which the Truffle had been produced. Though, therefore, the greater part of the component threads are white, and probably all when young, the older threads acquire a golden brown tint, very different from anything which occurs in the spawn of most Hymenomycetes. One may, therefore, with some certainty pronounce as to a mycelium, produced in the shape of delicate white branched strings amongst the decayed Oak leaves and other matters of which Mr. DISNEY formed the soil where decaying Truffles were placed, and composed of threads passing from white to golden brown, being in reality the mycelium of the Truffle. And since the true spawn has thus been made to run, we may hope that pursuance of the experiment under varied forms may be crowned with success. We have subjoined a figure of one of the branched strings slightly magnified, and of the structure of the mycelium under a power of 250 diameters. It must be remembered, on comparison of the latter with TULASNE's figure, that it belongs to a different species of *Tuber*, and that the spawn was in a far earlier stage; antecedent, indeed, to the production of new individuals. The figure is taken from the end of one of the little strings. The minute granules which accompany the threads were endowed with very active molecular motion, but whether they are essential to the mycelium or not we are unable to say. They are not mentioned by the great French mycologists. M.J.B.

#### SEASON GARDENING.

"I do hold it in the Royal ordering of gardens," says Lord Bacon, "there ought to be gardens for all the months in the year, in which, severally, things of beauty may be seen in season. For December and January and the latter part of November, you must take such things as are green all winter, Holly, Ivy, Bays, Juniper, Cypress tree, Yew, Pine-apple trees, Fir trees, Rosemary, Lavender, Periwinkle, the white, the purple, and the blue; Germander, Flag, Orange trees, Lemon trees, and Myrtles, if they be stored, and Sweet Marjoram, warm set. These followed for the latter part of January and February, the Mezereon tree, which then blossoms; Crocus vernus, both the yellow and the grey, Primroses, Anemones, the early Tulip, the Hyacinths, Orientales, Chamairis fritellaria. For March, then come Violets, especially the single blue, which are the earliest; the yellow Daffodil, the Daisy, the Almond tree in blossom, the Peach tree in blossom, the Cornelian tree in blossom, Sweetbriar. In April follow the double white Violet, the Wallflower, the Stock Gilliflower, the Cowslip, Fleur-de-luces, and Lilies of all natures; Rosemary flowers, the Tulip, the double Pæony, the pale Daffodil, the French Honeysuckle, the Cherry tree in blossom, the Damascene and Plum trees in blossom; the white Thorn in leaf, the Lilac tree. In May and June come Pinks of all sorts, especially the bluish Pink; Roses of all kinds, except the Musk, which comes later; Honeysuckles, Strawberries, Bugloss, Columbine, the French Marigold, Flos Africanus, Cherry tree in fruit, Ribes, Figs in fruit, Raspberries, Vine flowers, Lavender in flower, the sweet Satyrion with the white flower, Herba muscaria, Lillium consallium, the Apple tree in blossom. In July come Gilliflowers of all varieties, Musk Roses, the Lime tree in blossom, early Pears and Plums in fruit, Genittings, Codlings. In August come Plums of all sorts in fruit, Pears, Apricots, Berberries, Filberts, Musk Melons, Monk-hoods of all colours. In September come Grapes, Apples, Poppies of all colours, Peaches, Melacotones, Nectarines, Cornelians, Wardens, Quinces. In October and beginning of November come Services, Medlars, Bullaces, Roses cut, or removed to come late, Hollyhocks, and such like. These particulars are for the climate of London; but my meaning is perceived, that you may have *Vere perpetuum* as the place affords."

This extract, while it affords a curious record of the resources of English gardens at the close of the 16th century, when Bacon published his essays, is also suggestive of much that is worthy of being adopted in the gardens of the present day. Except in the gardens attached to large mansions, and not these always, a great want of variety is a strong feature in their arrangement. The same kinds of plants, mingled in the same heterogeneous manner, make up the masses of shrubbery from one end of the ground to the other; an uniformity of scene is everywhere manifest, and a square rod taken from any one part is but a sample of a like space from any other part. It is but just, however, to say that there are some exceptions; a dreary waste of empty beds, in which the massing system has been perpetrated during the summer, may, in most gardens, be found disfiguring the lawn for 8 months out of 12.

Now, without following Lord Bacon's royal ordering of gardens to the letter, by having a garden for every month of the year, much may be effected, even in the smallest gardens, by setting apart different portions, in which should be collected plants that are most attractive at a given season. Such departments, though necessarily detached from each other indirectly, would



SPAWN OF TRUFFLES.



not be so directly; but each would form a feature of itself, subordinate to the general whole.

So rich now are our collections in every requisite kind of plant that no difficulty could be experienced, either as regards number or variety, in selecting the necessary specimens for decorating a garden that should be most attractive in autumn, in mid-winter, or in early spring, as the case may be. To render the general garden attractive in summer is another matter, and belongs not to this inquiry. Yet, as regards the comfort of a garden, apart from the mere feature of decoration, much remains to be added, even at that season. Few small gardens have a really graceful summer walk within their boundaries—yet all might have.

In the list of plants given by Bacon, it will be perceived that a large number is fruit trees, and no one will question the beauty of many of them when in blossom, or deny that great pleasure is experienced in looking at them in the early spring, when the garden flowers are scarcest; but modern taste will scarcely allow one to intrude beyond the boundaries of the kitchen garden—Why is this? Surely the association of a future usefulness cannot mar the pleasure of a present gratification. At least it ought not to do so.

A broad gravel walk at the foot of a south wall may be made a delightful adjunct to a garden; a sort of transition link between the purely useful and the avowed ornamental. On the wall itself, the Peach, the Nectarine, and the Apricot, would at their particular season of flowering, produce a glow of beauty; and, on either side of the walk, numerous early flowering plants may be arranged to decorate the scene, and give it something more than a culinary character. To give it a still more ornamental character, the wall may be more neatly executed than is usual in a mere kitchen garden, and alternate spaces may be set apart for mere flowering plants. Here, under the influence of the earliest spring sun, a delightful promenade would be formed, and the scattered beauties of the garden at this season would, in combination, render it highly attractive.

How much may be done, too, in rendering a portion of a garden more than ordinarily attractive in winter, by the judicious use of evergreens, and such plants as are most attractive at that season. Such a spot, except to the north, should not have a preponderance of large shrubs or masses of shrubbery. It should be open and cheerful; the walks broad, the Grass closely shorn, and the shrubs and trees neat and trim. Here all our berry-bearing plants, if not evergreens themselves, may be beautifully arranged in combination with those that are. But, indeed, it is not necessary that all should be evergreen. The disposition of the branches of many deciduous trees, when seen against a clear winter sky, form beautiful objects, and such as every eye of taste must admire. I am far from believing, with a late writer on evergreens, that the only deciduous tree worth growing is the Purple Beech.

In such a garden, or part of a garden, as I have attempted to describe, flowers would, of course, form no part of the decoration. About the single specimens, and in the masses, the bare earth should be seen as little as possible; and the whole should be kept in the neatest order.

Many of the Thorns, which are conspicuous for the abundance and rich colour of their fruit, would find appropriate situations in such a garden. This beautiful genus is not nearly so well known as it should be.

It is evident, I think, that a garden, however small, may be rendered more interesting, and as such a source of great pleasure, by concentrating the attractions of particular seasons, than by frittering them over the whole space; the general beauties would still remain, while the particular points of interest would be heightened tenfold. *Crayon.*

#### VERONICA ANDERSONI.

This handsome Speedwell is certainly one of the most useful plants we have for autumn and winter decoration. It blooms very freely, its long spikes of charming flowers afford a long succession, and it is as easily cultivated as any of the older species.

Cuttings of firm pieces of the young wood root very freely, and if taken off the plants early in summer, inserted in sandy soil, placed in a shady part of a moderately warm house, and after potting singly, afforded a cold frame, they will make nice plants in 6-inch pots in course of the season. The young plants may be wintered either in the greenhouse, in a cold frame, or wherever they can be protected from frost, and afforded all the light and air possible; beyond which, and a proper supply of water, they will require very little attention at this season. When growth commences, which will probably be the case about the middle of March, give a liberal shift—say into pots two sizes larger than those in which the plants have been wintered, and place them in the closest part of the house or pit, to encourage the roots to strike into the fresh soil. If the plants are bushy, with several shoots each, as they should be, do not stop at present, but peg or tie out the stronger branches in a regular manner, bringing them down as near the surface of the soil as can well be done with safety when the points of the shoots will turn up, giving air freely on fine days, and maintaining a moist atmosphere, syringing over-head on the mornings and evenings of fine days, which will be of great service towards inducing the production of short-jointed healthy wood. If in good health, and making vigorous growth, the plants will soon fill their pots with roots, and as soon as this may be the case they should be repotted, giving

a liberal shift—say into 12 inch pots, in which size large handsome specimens may be produced. Use good strong fibrous loam, with a liberal admixture of sharp sand and lumpy bits of charcoal or potsherds, which being more retentive of moisture, and this plant being a somewhat gross feeder, and apt to suffer if allowed to become over dry at the root, either during the growing season or while in bloom, is more suitable than a lighter compost.

In summer a pit which can be kept rather close and moist, and where the plants can be placed near the glass, will form a very suitable situation in which to obtain active vigorous growth. During the early part of the season keep the branches tied out so as to admit light and air, and stop the shoots regularly over as often as may be necessary to maintain a close bushy habit; but stopping must be regulated according to the time at which it may be desired to have the specimen in bloom. Plants intended for blooming in autumn and early winter should not be stopped later than the end of June, for there is no possibility of securing a fine display of blossom except by allowing the plants to make a regular growth after stopping and getting this well-ripened up, then affording a short period of rest; and I have no doubt that neglect of this has been the great cause of the want of success in the culture of this fine subject, of which so many amateurs have complained. By attending to this little peculiarity of the plant there will be no difficulty in securing a fine display of blossom at any period of the season when it may be most desirable, whereas if this is neglected the finest grown specimens will only produce a few straggling heads of blossom. When good sized specimens are obtained they should be removed to a dry airy situation, where they will be fully exposed to sun and air, giving a sparing supply of water at the root to ripen up the wood. If not wanted for early flowering they may be allowed to remain during winter in a warm part of the greenhouse, giving very little water to the soil, and guarding the foliage from damp while the plants are in a dormant state. Treated in this way it will be easy, by merely removing the specimens to a moist warm temperature, to throw them into bloom at almost any season, and they will remain some three months in beauty if afforded a moderately warm temperature and guarded from damp. When the beauty of the flowers is over the strongest shoots may be cut back, the plants turned out their pots and disrooted so as to allow of repotting them in the same sized pots, or if large sized specimens are desired, a moderate shift should be given and then grown as directed for last season. Managed in this way the plants will last in good health for several seasons, but old specimens should be liberally supplied with manure-water both during the growing season and while in blossom. *Alpha.*

#### NITRIC ACID A SOURCE OF NITROGEN IN PLANTS.

THE source from which plants obtain nitrogen, which is now recognised as one of their most important elements, has, from the first recognition of its importance, been matter of dispute. Latterly, however, chemists and physiologists have pretty unanimously come to the conclusion that a large (perhaps the largest) part of the nitrogen of vegetables is derived from ammonia; whilst much discussion has been carried on as to the question, Is any part of their nitrogen yielded by nitric acid?

Firstly. The production of nitric acid in the atmosphere during thunder-storms is a certain, not a questionable fact; and the scale on which it is produced is such as to necessitate its recognition as a portion of the azotised food of plants. That this should have been questioned is perhaps not strange, for the newly-discovered truth that ammonia is generally present in the air could scarcely fail to throw into temporary oblivion the equally important truth that nitric acid is generally present there also. The name of the great living chemist Liebig is identified with the one discovery, and the name of the great dead chemist Cavendish with the other; and we must not grudge that greater interest should be felt by most in the doings of the living philosopher. But assuredly it is not necessary to set the two truths against each other, as if they were mutually incompatible, or in any respect contradictory. On the other hand, I believe that they are complementary, and form an essential and manifest part of that harmonious adjustment which we everywhere perceive guarding plants and animals against imperfect nourishment or decay.

Secondly. As for the proposition that the ammonia of the atmosphere is converted by simple oxidation, as in the process of nitrification at the surface of the earth, into nitric acid, I might leave it unconsidered, for my concern is simply with nitric acid, not with its source. I am quite prepared to admit the probability of atmospheric ammonia undergoing conversion into nitric acid; for although one condition essential to nitrification in the soil, namely, the presence of alkali or alkaline earth, is wanting, yet, from what is known of the intense oxidising power of ozone, we may well believe that when it is developed in the air, as it so certainly and frequently is, it will compel the conversion of ammonia into nitric acid. It will presently, indeed, appear that, from the recent researches of Barral, it is probable that nitric acid is generated in the atmosphere at the expense of ammonia. If this, however, be the case, then we must acknowledge that, in addition to thunder-storms, a force is constantly at work in the air producing nitric acid; and further that this force is constantly removing from

the atmosphere the ammonia on which plants are supposed to be solely dependent for nitrogen.

Thirdly. Rain-water is often found to contain nitric acid in combination with different bases.

Fourthly. It has been known for more than a century that many springs contain nitrates.

Fifthly. It is now universally admitted, that wherever nitrogenous vegetable or animal matter is exposed to the air along with alkaline bases, ammonia is developed, and then oxidised into nitric acid, which combines with the bases. Now, those conditions are extensively realised all over the globe, both in cultivated and uncultivated tracts of land; and in the warmer regions of the earth, where decomposition proceeds with the greatest rapidity, the production of nitre in the soil is constant and immense. India alone furnishes Great Britain with all the nitre needed for her gunpowder.

Sixthly. The most marked nitrous districts of India are celebrated for their fertility, provided a due supply of water is furnished to them.

Seventhly. The alkaline nitrates dissolved in water, and not employed in too strong solutions, have been found greatly to quicken the growth of plants; and the nitrate of soda which, from its cheapness, is the most accessible, is daily coming into greater use among our farmers. In the current number of the Journal of the Royal Agricultural Society will be found the last of a series of papers on this subject, in which the virtues of nitrate of soda in increasing the amount of Wheat yielded by a field manured with it, are placed by Mr. Pusey above those of ammonia.

Whatever else, however, is doubtful, this is certain, and is acknowledged by chemists of every school, viz., that a plant is like a blast-furnace, which the sun kindles every day into full action; and that no oxide can pass through such an apparatus without risking the loss of all its oxygen. With what consistency, then, can it be contended that water, carbonic acid, and sulphuric acid, cannot pass through a plant in the presence of sunshine, without being deprived in whole or in part of their oxygen, but that the much more easily deoxidised nitric acid, in the same circumstances, will not suffer deoxidation? It might as well be affirmed that a blast-furnace may be competent to reduce the refractory oxide of iron, and yet be incompetent to reduce the easily reducible oxide of lead.

Teachers of chemistry appear to be reluctant to admit two sources of nitrogen for plants, because it complicates their statements, and multiplies their formulæ; but the partial representations of truth, to which all teachers are compelled, however catholic in spirit, can never justify the expression of one-sided views, as the counterpart of the multifarious unity of Nature. Those, moreover, who have been accustomed to trace back all azotised vegetable compounds to ammonia, need only postulate that nitric acid having been deoxidised into nitrogen, that element unites with hydrogen to form ammonia before any organic compound is developed; and thereafter they may carry out the ammonia theory as before. Such a conversion of nitric acid into ammonia is not hypothetical, for it can be readily effected by diluting the acid largely with water, and dissolving zinc in it.

It would more consist with the modesty of true science to be less dogmatic than we generally are on the phenomena which occur within the inscrutable recesses of a living plant; and to admit the probability of its being able to employ as food various azotised as well as other compounds. If, however, we are required to reduce to its simplest chemical expression the conclusion which our present science warrants regarding the inorganic origin of the nitrogen so essential to plants, we must not say that only ammonia, or only nitric acid, is its source, but that both are; or, in a word, that the chief mineral or inorganic representative and parent of the nitrogenous constituents of plants and animals is the nitrate of ammonia. *Extracts from a Paper by Dr. Wilson, in Transactions of the Royal Society of Edinburgh.*

#### Home Correspondence.

*Botanical Inaccuracies at Flower Shows.*—The practice of disqualifying stands of flowers, and collections of plants, for specified defects, might with benefit be extended to the incorrect spelling of their names; it often happens, especially at provincial shows, that beautiful specimen stove and greenhouse plants are exhibited, which, while they demonstrate the skill of the cultivator, impart, through errors in the names affixed to them, a poor opinion of his botanical acquirements. This detracts in no small degree from whatever merit might belong to them, even more so perhaps than the exhibitor is often aware of. The following examples occurred at the Chepstow flower show, held on the 20th of September last, and are selected from names attached to the finest plants exhibited there, viz., *Rondicellia speciosa*, *Tetrathia cæcia vicetia* (data), *Dendrobium chrysanthæum*, *Catleya Harrisonia*, *Geissleria longiflora*, *Leptospermum bulbosum*, and *Clerodendron fragarum*. Errors such as these might be considered slight, but still they are errors which the botanist would never countenance, and from the circumstance of being publicly exhibited, are calculated to mislead the local press as well as visitors, whose motives for attending horticultural shows are as much to obtain information as to enjoy the gratification which these exhibitions afford. There was shown by Mr. Nelson a collection of *Calceolarias*, and another of *Fuchsias*, which, in addition to the name,



had the natural order and Linnæan classification to which each plant belonged, specified in this way:—

NAT. ORD. ONAGRIÆ.

FUCHSIA

DUCHESS OF LANCASTER.

Linnæan Classification,

OCTANDRIA MONOGYNIA.

This botanical effort attracted "great attention," excited the envy of some, and will I hope emulate others to go and do likewise. *R. Miles, Kingsdown, Bristol.* [We agree with our correspondent in thinking that it is desirable for plants to be correctly named at flower-shows, and that their names should also be spelt correctly. The manner in which they are sometimes named is, in fact, disgraceful to exhibitors. At the same time we must observe that accuracy is not so easily attained as Mr. Miles supposes; of which this letter is good evidence. He criticises *Chrysanthemum*, and thinks it should be spelt *Chrysanthamum*, which is equally wrong; the word is *Chrysanthum*. As to the ticket, which is so much admired by our correspondent, we venture to think it an instance of very useless pedantry.]

*Vine Mildew.*—I remember an instance where, on one occasion, mildew set in in a late Vinery; on being discovered a solution composed of soft soap and sulphur was applied along the pipes, and on the walls and crevices near the boiler; then a brisk temperature was produced by artificial means during the day. Plenty of air was given, so as to keep the house cool throughout, the consequence was that the mildew was subdued, and red spider was not found very troublesome. *P. Deane, Houghton, Dec. 19.*

*Ice Stacks.*—In many localities where ice cannot be conveniently procured for storage for summer, other modes must be resorted to, and residing in such a part of the country, I therefore had recourse to the following expedient:—Having a good fall of snow about the end of January last, I selected a cool shaded spot for the erection of a circular snow stack, and taking advantage of this fall (about 6 inches in depth), I had 12 men and three horses set to work, in carting, rolling, and building the stack, making it about 30 feet in diameter, having it watered and firmly trodden under foot; the former is necessary when the weather is frosty, to ensure the firm-treading (a great essential) being properly done. Thus, at the end of three days, we had erected an artificial mound, about 18 feet in height. I then had a strong wooden frame put round it, about 2 feet distant from the stack, well packing betwixt the snow and frame with straw, and regularly thatching the whole with 1 foot of the same material; finishing by making a ditch outside the frame, in order to carry off water or melted snow. A small door thatched the same as the frame is required for ingress; of course this frame will answer for many years without being removed. Many may be surprised at the size of my stack, but allowances must be made for waste (nearly one-half); and yet I may remark that part of the stack described above still remains, and always will until the expiry of one year from the time of its erection. *A. B. A.*

*Annual Root-Pruning and Lifting of Trees.*—Where these are carried out to extremes, as is the case in some places, the results are not unfrequently an unhealthy tree, which for seasons afterwards may be without fruit. I have frequently heard complaints that the flowers and sometimes the fruit have fallen off root-pruned trees just after setting, indicating that the tree was too weak to carry them. In some cases, however, root-pruning can be effected with good results, but this delicate operation very often falls into unskilful hands, and therefore it may or may not be favourable. This depends entirely on what parts are cut off, and whether the roots left have a tendency or not to throw out fibres early after pruning. Having had a great many Apple and Pear trees to root-prune during the last five years, I venture to give your readers the benefit of my experience. In the first place the age of the tree, together with its tendency to make fibrous roots, should always determine the amount of roots to be cut off; and, as some kinds are more inclined to make spurs than others, this should also be a consideration before cutting. Among the cases I have tried, I find that trees ready to make spurs are also ready to make small roots near the stem; and one operation, when the tree has been about 8 or 10 years planted, appears to be sufficient for several years, if not altogether. This holds good with such kinds as the Bedfordshire Foundling, Green Balsam, Hawthornden, Gloria mundi, and many others. Among those that require more caution in root-pruning, are the Alfriston, Cat's-head, Emperor Alexander, and most of the very strong growing sorts. In order to secure a good supply of fruiting spurs, these should be pruned at a greater distance from the stem unless they have been repeatedly root-pruned in previous years. Four years ago I root-pruned some very strong growing Apple trees which had never borne any fruit. In the following summer the shoots were weak and few, with only a third of the number of fruit spurs that would have been required for a good crop, and to allow sufficient spurs for the next season. This might, however, have been obviated in a great measure by cutting half the roots one season, and the other half the following; thus preventing such a sudden check at once, and enabling the tree to carry a better crop the two following seasons after the first operation. The tree being now furnished with fruiting spurs, and bearing a crop each year, is not likely to get into such vigorous growth as before. In the cider countries, Apples naturally have a good crop every alternate year, and in such clusters that the fruit spurs are so completely covered up that it takes another summer to develop blossom-buds

on the spurs. In gardens this habit may be altered, and a regular supply every season ensured, by carefully thinning the crop and exposing the spurs to sun and air. The same may be said with respect to some kinds of Pears; others require no pruning at the roots for the production of spurs, such as Easter Beurré, Hacon's Incomparable, Ne Plus Meuris, and many others that make spurs freely without it. At p. 758 your correspondent speaks of root-pruning a Peach tree, and of its being covered with red spider, and I will venture to predict that unless precautions are taken early in spring, the same will be the result next summer. In my opinion, the roots of the Peach should not be meddled with in any way, as they dislike being cut or bruised; the remedy ought to be worked out by equalising the flow of sap in the branches. Again, at p. 773, a correspondent writes that the Peach may be annually lifted; meaning, I presume, that a young tree may be lifted; or what advantage is to be gained after the trees have once got into a bearing state? The lifting of an old tree after bearing a crop must surely lessen the size and beauty of the fruit next year. At least this is the result of an experiment of the kind tried here. *Thorp Perrow.*

*Cultivation of Cape Heaths.*—Having procured some nice bushy plants of the sorts intended to be grown, which had better be done early in the spring, and having prepared sufficient good fibry peat, by breaking it to pieces and mixing with it a liberal quantity of silver sand, and some lumps of charcoal or small pebbles, proceed to shift the plants from 3-inch to 5-inch pots, or from 5-inch to 7 or 8-inch pots, and so on, as the case may be, using the peat coarser for the large sizes than for the small ones, and employing clean well drained pots. Press the mould firmly round them; if the peat is light it must be pressed till it is quite firm, or the plants will probably grow very freely for a time, and then suddenly die. When they are shifted place them in a cold frame and keep them rather close and shady for a few days, but do not go to extremes either way. Gradually increase the air and reduce the shading till in fine days the lights are left off entirely. As the weather becomes warm leave air on all night, and in hot June, July, and August days shade them in the middle of the day, and leave the lights off all night. Many of them would, no doubt, bloom; but if they are slow growing kinds, and specimens are required, I would prefer stopping them all over as soon as they get into good growth. When they require it pass a strong band of matting or string round the pot, and with some fine matting draw the shoots regularly towards the edge of the pot, in order to allow the air to pass freely through them. Any fine woolly growth they may make in the centre had better be cut out, for it only turns yellow and unsightly if allowed to remain. Some of the free flowering kinds may be allowed to bloom, and all those of a straggling habit should be cut back directly after, while those of more dwarf habit may merely have the extreme points pinched off some of them as soon as they can be caught peeping through the flowers; others may be pinched back on the top only, to allow weak side shoots to acquire strength before the leading ones break. The plan of merely taking out the point as it peeps through the flowers will be found useful in regard to some of the late blooming kinds, for by the time the flowers fade the plant will be found to have broken a crop of buds just behind them. Some of the earliest stopped plants will probably require another stopping by the middle of July, while others will be found breaking freely of their own accord. Those that require it had better be stopped, and as they grow the shoots must be carefully regulated by drawing them out with fine matting, and perhaps a fine stick or two. Some of the free growing kinds may be shifted again about the same time, if rapid progress is required; but as a rule I do not think it advisable to do so, for very quickly grown plants are mostly short-lived. I prefer placing the plants on inverted pots or pans, and in hot weather keeping the bottom of the pit moist, so as to maintain a healthy atmosphere round them. If the plants are much exposed to the sun the front of the pot must be shaded, and any of them that do not shade the soil in the pot had better have a few pieces of crock placed on its surface. In wet weather the lights should be kept over the plants, but they must either be propped up by pots at the corners, or tilted by placing a block or pot under one edge. Heaths will take a great deal of water if properly treated; for instance, if a plant is allowed to get quite dry and is then well watered, the pot being filled up 2 or 3 times, it will absorb more moisture than one that is watered a little every day, and the soil will keep sweeter; care must however be taken not to let them get so dry as to make their very delicate roots shrivel, or the result will be the loss of the back foliage, if not of the plant. As the winter draws on, if there is no proper house for them, with a little care they will winter very well in pits; if by chance they should get frozen hard, if they are allowed to stand in the dark they will take no harm, and if the weather should be damp and close, a few lumps of lime placed here and there between them will tend to keep them free from mildew, which, however, should be carefully watched for at all seasons, and as soon as it is perceived the parts must be dusted with black sulphur; by following the same course of treatment the next year some very nice specimen plants may be grown, and by persevering with them they will become noble plants, amply repaying the care bestowed upon them. *J. B.*

*Ripening the Fruit of the Cavendish Musa.*—Allow me to inform Messrs. Weeks and Co., that the fruit of this Plantain may be successfully ripened, even at this dull season of the year, supposing the plants are in boxes or tubs, and over a warm tank, or planted out in a pit and bottom-heat available, and the aspect south. The leaves should be carefully tied from the fruit, in order to admit as much light as possible. Air should be freely given whenever practicable, and as soon as the fruit shall have attained its full size cease watering at the roots. The day temperature may range from 64° to 68°, and that at night from 60° to 62°. But during severe frost, a lower temperature by 4° would be preferable. I have ripened bunches of this fruit upwards of 60 lbs. in weight, and even sometimes as much as 90 lbs. *J. C.*

*Rhododendron javanicum.*—Two plants of this handsome species, growing in the open border here, have been killed by frost, although we have had only four degrees of it. They were planted out in August last (merely to test their hardiness) in a compost of leaf mould and loam. One was in a sheltered situation, the other in a dry open one, yet both have equally suffered. *F. Symons, Carclew, Cornwall, Dec. 20.*

## Foreign Correspondence.

LEAVES FROM MY CHINESE NOTE BOOK.—No. III.

*Method of Taking Honey from Beehives.*—I am staying at present (August 16th) in a Buddhist Temple, situated in a most romantic and beautiful spot amongst the Tea hills in the province of Chekiang. Some of the priests in this temple are fond of bees, or it may be they are fonder of the honey, and keep a number of hives. The Chinese hive is a very rude affair, and a very different looking thing from those we are accustomed to use in England, and yet I suspect were the bees consulted in the matter they would prefer the Chinese one to ours. It consists of a rough box, sometimes square and sometimes cylindrical, with a moveable top and bottom. When the bees are put into a hive of this description it is rarely placed on or near the ground, as with us, but is raised 8 or 10 feet, and generally fixed under the projecting roof of a house or outbuilding. No doubt the Chinese have remarked the partiality which the insects have for places of this kind when they choose quarters for themselves, and have taken a lesson from this circumstance. My landlord, who has a number of hives, having determined one day to take some honey from two of them, a half witted priest who is famous for his prowess in such matters was sent for to perform the operation. This man, in addition to his priestly duties, has the charge of the buffaloes which are kept on the farm attached to the temple. He came round in high glee, evidently considering his qualifications of no ordinary kind for the operation he was about to perform. Curious to witness his method of proceeding with the business, I left some work with which I was busy, and followed him and the other priests and servants of the establishment to the place where the hives were fixed. The form of the hives, in this instance, was cylindrical, each was about 3 feet in height, and rather wider at the bottom than the top. When we reached the spot where the hives were placed, our operator jumped upon a table placed there for the purpose, and gently lifted down one of the hives and placed it on its side on the table. He then took the movable top off, and the honey-comb, with which the hive was quite full, was exposed to our view. In the meantime an old priest having brought a large basin, and everything being ready, our friend commences to cut out the honey-comb with a knife made apparently for the purpose, and having the handle almost at right angles with the blade. Having taken out about one-third of the contents of the hive, the top was put on again, and the hive elevated to its former position. The same operation was repeated with the second hive, and in a manner quite as satisfactory. But it may be asked, "Where were the bees all this time?"—and this is the most curious part of my story. They had not been killed by the fumes of brimstone, for it is contrary to the doctrines of the Buddhist creed to take away animal life—nor had they been stupefied with a fungus, which is sometimes done at home, but they were flying about above our heads in great numbers, and yet, although we were not protected in the slightest degree, not one of us was stung; and this was the more remarkable as the bodies of the operator and servants were completely naked from the middle upwards. The charm was a simple one;—it lay in a few dry stems and leaves of a species of *Artemisia* which grows wild on these hills, and which is largely used to drive that pest the mosquito out of the dwellings of the people. This plant is cut early in summer, sun-dried, then twisted into bands, and it is ready for use. At the commencement of the operation I am describing, one end of the substance was ignited and kept burning slowly as the work went on. The poor bees did not seem to know what to make of it. They were perfectly good-tempered and kept hovering about our heads, but apparently quite incapable of doing us the slightest injury. When the hives were properly fixed in their places, the charm was put out, and my host and his servants carried off the honey in triumph. "Come," said he to the operator and us who were lookers on, "come and drink wine." "Aye," said the half-witted priest, "drink wine, drink wine," so we all adjourned to the refectory, where wine in small cups was set before us. *R. F.*



## Societies.

CALEDONIAN HORTICULTURAL, Dec. 1.—On this occasion office-bearers for 1854 were elected. For the prize offered for the best four sorts of Dessert Pears, there were no fewer than 14 competitors. The prize was gained by Mr. Lockhart, [with Brown Beurré, Bezi de Quesnois, Beurré d'Arenberg, and Marie Louise; 2d, Mr. Calder, with Marie Louise, Glout Moreau, Winter Nelis, and Hacon's Incomparable; 3d, Mr. Addison, with Winter Nelis, Beurré d'Arenberg, Bezi de Quesnois, and Beurré Diel. Dessert Apples: 1st, Mr. Calder, with Ribston Pippin, Blenheim, Ross's Nonpareil, Royal Pearmain, and King of Pippins; 2d, Mr. Morrison, with Blenheim, Paradise, Ribston, Cellini, Reddill Pippin, and Scarlet Nonpareil. Retarded Grapes: 1st, Mr. Crockett, with Muscat of Alexandria; 2d, Mr. Morrison, with the same variety. Chrysanthemums: 1st, Mr. Young, with the following varieties—Beauty, Queen of England, William Tell, Duke, Salter's Annie, Lycius, Triumphans, Warden, Dupont de l'Eure, Deffiance, Plutus, and Vesta; 2d, Mr. Laing, with Queen of England, Nonpareil, Vesta, Leon Laquay, Campestroni, Duke, Salter's Annie, Beauty, Plutus, Rebecca, Versailles Deffiance, and Fleur de Marie. Finest Chrysanthemums in pots: 1st, Mr. Laing, with Queen of England; 2d, Mr. Reid, with Salter's Annie. Pompones in pots: 1st, Mr. Laing, with Sacramento; 2d, Mr. Reid, with Madame Hardy; 3d, Mr. Young, with Solferino. Leeks: 1st, Mr. Pousty, with Pousty's Giant, weighing (four heads) in all 9½ lbs. One of the Leeks weighed upwards of 2½ lbs., was 7 inches in circumference, and blanched to the extent of 11 inches; 2d, Mr. Henry, with Scotch Hybrid, weighing in all 7½ lbs. Celery, two red and two white: 1st, Mr. Thompson, with Dwarf Red, and Godall's Flat White; 2d, Mr. Godall, with Godall's Broad White, and Cole's Red. Onions: the best was disqualified; the 1st prize was therefore awarded to Mr. Vair, who produced Blood Red, New White Globe, Reading, and Strasburg; 2d, Mr. Calder, for Brown Portugal, James's Keeping, Deptford, and Strasburg. The prize (Silver Medal) offered by the Society for the best Herbarium of British Plants, collected from native stations, between 1st January 1852, and 10th November, 1853, by a journeyman or apprentice gardener, was gained by Mr. William Dow, journeyman, Royal Botanic Garden, Edinburgh, with a collection containing 622 species, which were generally well named, and the specimens carefully selected and neatly prepared. A second premium was voted to Mr. William Collie, journeyman, Experimental Garden, whose collection contained 427 species, which were in general well named, and the specimens very characteristic, and, in many cases, from different localities. The list accompanying this collection was marked as displaying more than ordinary care, the characters of the principal divisions of the vegetable kingdom, &c., being given. Mr. Thomson, gr. to L. Buchan, Esq., sent six bunches of well retarded Grapes, and a seedling Apple raised from the Cambusnethan Pippin, to which it was not considered equal. From Mr. Thomson, Woodburn, there were good Altringham Carrots, from ground that had borne the same crop for 30 years; and from Mr. Melville, gr. to the Earl of Rosebery, heads of a new Cabbage raised from seed saved from the Cabbage Borecole crossed with McEwan's Early Dwarf Cabbage, which was stated to be very hardy, resisting severe winters without injury, and valuable as an intermediate sort between the winter and spring Cabbages. Mr. Alexander, West Register Street, exhibited Parkes' Steel Digging Forks.

BOTANICAL OF EDINBURGH, Nov. 10.—The President in the chair. A new part (concluding Volume IV.) of the Society's Transactions was placed on the table. Among donations presented to the Museum of Economic Botany at the Royal Botanic Garden were wove paper made from strips of the leaves of Bamboo; a section of a Sycamore tree with a horse-shoe imbedded in its tissue—the shoe had been hung over a young branch about 11 or 12 years previously; and specimens of an anomalous Pear, with a thickened Pear-like peduncle bearing calycine leaves, which surrounded a succulent mass in which the carpels were embedded. Dr. Balfour read a note from Professor Gregory, in which he stated that he had continued the examination of the Mull deposit of Diatomaceous lorice, which he described last winter, as containing 60 species of Diatoms, and that he had now found in it upwards of 140 species, which beats all the richest deposits known. Even at 60 it was far the richest. Besides the new species doubtfully indicated in his former paper, which Smith had named *Eunotia incisus*, he had found another and a very beautiful species, new not only to him but to all those who had yet seen it or a figure of it. It is a Pinnularia, which, provisionally, he had named *P. hebridensis*. It is but scarce in the deposit, a large and populous slide rarely yielding more than one specimen, and often none at all; and as yet he has not been able to find a trace of it in any other deposit within his reach, nor is there anything like it in any work he had seen. As to *Eunotia incisus*, it occurs in a deposit from Lapland, in that from Luneberg, and in one from the banks of the Spey, and it seems remarkable that it has been so long overlooked. *P. hebridensis* is small, its length from .00125 to .0026 inch, and it has, like *P. latia*, *P. alpina*, and *P. distans*, only 9 or 10 costae in .001 inch. But all these are three or four times larger, and all on the side view are widest in the middle, whereas *P. hebridensis* is slightly contracted there. But it has

the general characters of these three species from the fewness and thickness of the costae. The following papers were read:—1. Account of a Botanical Trip to the Grampian Mountains in August, 1853; by Prof. Balfour. 2. Notes of a Tour on the Hartz Mountains. Part II.; by Dr. Lindsay. 3. Note on a Vegetable Substance formed in a water pipe at Hafton, Argyleshire; by J. Hunter, Esq. Communicated by H. Paul, Esq. About 12 months ago, having occasion to bring in an additional supply of water for the use of Hafton House, I had formed a small reservoir, or fountain head, as it is called, from which to lead the water to the then only existing fountain head, so as to increase the supply in the latter. The connection between the two was by means of a burnt clay pipe, 2 inches in diameter, and in length 36 inches, securely fastened at the joinings with Roman cement or mastic, the total length of the piping, being 320 yards, secured at each end by zinc roses 4 inches in diameter, in order to prevent any impurities passing through the pipe. When the work was finished the supply of water was very good, and it continued so until a fortnight ago, when the running of the water through the tile piping gradually diminished, and at last almost entirely ceased, a mere dribble, indeed, finding its way into the old fountain head. Upon examination, as to the cause of this change, by raising a considerable portion of the piping, there was found, about half way between the two fountain heads, the vegetable substance herewith sent. It was firmly lodged in one length of the piping and projected an inch or so into another. It is very curious to observe that the colour of the water pressed out of this substance when first taken out of the pipe and saturated as it was, was deep brown, whereas the water itself flowing through the pipe to the very last was as pure as crystal. [It does not appear that any explanation was given of the nature of this vegetable substance.]

## Notices of Books.

*Flora of New Zealand.* Part 4. Reeve & Co. 4to.

THIS new number of Dr. Hooker's completes the first volume of his excellent "Flora of New Zealand," and brings the flowering plants to a conclusion. As usual, the plates are among the happiest specimens of modern art, and make us look back with shame upon English illustrations not yet 20 years old. On this occasion the whole of the plates consist of Glumaceous plants, of which the Grasses have been determined with the assistance of Lieut.-Col. Munro, of the 39th Regiment, whose acquaintance with that order is, we believe, unrivalled.

A very important feature in the present part is an elaborate introductory essay upon the progressive advances made by Europeans in acquiring a knowledge of New Zealand vegetation; upon the limits, affinities, distribution, dispersion, &c., of plants in general; and upon the illustration of the author's views afforded by the ascertained facts belonging to the New Zealand flora. A philosophical treatise of this kind—and a most important treatise Dr. Hooker's "Essay" is—cannot be dealt with by a cursory notice. It demands the most careful study; and we are sure that it will receive, from all who are interested in such high matters as the origin of species and their dispersion, that deliberate attention to which its high scientific merit so fully entitles it. For ourselves, we hope to have many future opportunities of touching upon the topics which it embraces, although not upon the present occasion. The tendency of Dr. Hooker's views upon one of the many points embraced in his Essay may be in the meanwhile judged of from the following paragraph, in every word of which we most heartily concur:—"In working up incomplete floras especially, I believe it to be of the utmost importance to adopt such a course (that of taking enlarged views of the range and variation of species, and of weighing characters not only *per se*, but with reference to those which prevail in the order to which the species under consideration belong), and to resist steadily the temptation to multiply names; for it is practically very difficult to expunge a species founded on an error of judgment or observation. The state of the British flora proves not only this, but further, that one such error leads to many more of the same kind: students are led to over-estimate inconstant characters, and to take a narrow view of the importance and end of botany, and to throw away time upon profitless discussions about the difference between infinitely variable forms of plants, of whose identity really learned botanists have no doubt whatever."

AMONG the Almanacs on our table, are the *Angler's*, especially devoted to the Rod and the Net; Harrison's *Gardener's*, with illustrations of the seasons taken from the Anglo-Saxon Calendar, and some woodcuts of flowers; and the *Family Friend*, which professes to be a house-keeper's guide.

*Sir Philip Sidney and the Arcadia.* Chapman and Hall's Reading for Travellers.—This is a less happy subject than those which have been hitherto selected by the publishers, and we fear will find little favour in the eyes of travellers. All we can say about it is that Mr. Crossley has made the most of his matter.

*Little Plays for Little People. Beauty and the Beast.* Dean and Son.—A familiar story dramatised and illustrated by clever woodcuts. It is well suited for Christmas presents for children.

## New Plants.

## 33. WELLINGTONIA GIGANTEA.

GEN. CHAR. *Strobilus* oblongus, ligneus; squamis numerosis, cuneatis, truncatis, per apophysis transversè (ob bracteam aequilongam omnino adnatam) sulcatis, mucrone in medio. *Semina* 7 cuicque squamæ, supra medium pendula, compressa, utrinque alata. —*Folia alterna, juniperina.*

In another column will be found an account of this extraordinary tree, divested of mere botanical considerations. Let us now endeavour to show upon what technical grounds we conceive that the genus *Wellingtonia* is satisfactorily established.

*Wellingtonia* is a tree with the imbricated scale-like leaves of some *Junipers*, attached to the branch by a broad base, and when, as happens in the more vigorous shoots, the leaves acquire unusual development, they still are sessile bodies with a triangular section, and no tendency whatever to form a flat lamina. But they are *alternate*, not *opposite*. In *Sequoia* and *Sciadopitys*, genera also having alternate leaves, the leaves acquire the expansion of a *Taxus* or *Podocarp*.

The cones are like those of *Sciadopitys* in size and form, but the bracts, instead of being half free, are so completely consolidated with the strobilar scales, as to form but one body, the double nature of which is only discoverable by a transverse furrow along the middle of the truncated terminations, by a mucro evidently belonging to a bract, situate in the centre of the furrow, and by the double plate of woody matter of which each scale is found to consist when divided longitudinally. In this respect indeed, *Wellingtonia* corresponds with *Sequoia*; but the strobilar scales in the latter are few, unguiculate, almost peltate, and attached slightly to a weak axis; whereas, in *Wellingtonia* the scales are mere wedges, whose double woody interior communicates with an axis so hard and stout, that a sharp chisel and a forcible blow are necessary to separate them.

The seeds of *Wellingtonia* correspond with Zuccarini's figure and description of those of *Sciadopitys*, both in form, number, and place of insertion upon the scales. *Sequoia* is different, having seeds far less thin, with a corky rather than a membranous wing, fewer in number, and originating just within the edge of the unguiculate scales.

These considerations seem to leave no room for doubt that *Wellingtonia* is an entirely new coniferous form; and possibly, when its male flowers shall have been seen, still further distinguished by the structure of those parts. In a horticultural point of view, it is impossible to over-estimate the value to Great Britain of such a tree, perfectly hardy as it is, fast growing no doubt when young, evergreen, and of a most imperial aspect.

## FLORICULTURE.

THE CHRYSANTHEMUM may be propagated either by dividing the roots, by suckers, or by cuttings; for general purposes I prefer cuttings, which should be taken off early in March, and should consist of the upper parts of the shoots of last year's growth. They should be about 3 inches long, cutting them off just below a joint, and trimming the leaves from the lower end of the shoot. When you have prepared your cuttings they should be planted in small thumb-pots, in a compost consisting of turfy loam and half decayed leaf-mould, with a small quantity of peat and river sand, carefully attaching the name to each variety as you proceed. When they are planted give them a gentle watering with a fine rosed watering-pot, in order to settle the earth about the cutting. At the first the pots should be placed in artificial heat, keeping the lights close down, and allowing very little air until they have taken root. They should also be kept in a moist state, and shaded from bright sunshine. When the plants have become established, and the roots have reached the sides of the pots, they should be repotted immediately; for if the roots get cramped in the small pots, it will prove greatly injurious to the future prosperity of the plants. The soil now to be used will require to be somewhat stronger than that recommended for the cuttings, as Chrysanthemums, being luxurious growers, require a rich compost; let it consist of rich turfy loam, rotten cow-dung, and decomposed vegetable mould; in this they will grow strong and bloom well. When the plants get established they should be placed in an open situation on a bed of gravel or coal ashes, where they may remain until the cold nights and heavy rains of autumn set in. About the middle of July they should be finally shifted into the pots in which they are intended to bloom, observing that the size of the pot corresponds with the size of the plant and the habit of the variety about to be potted. At every potting stop all the shoots, in order to cause them to throw out side branches, and to form dwarf compact bushes at all times. During the season of growth they will require a good supply of water, and in dry weather they will be greatly benefited by being watered overhead every day. They should be watered with manure-water twice a week, in order to have the plant strong, and to secure



a good display of flowers. About the beginning of October they should be removed into a cool house or frame (previously moving the surface of the soil and giving them a top-dressing of rotten cow-dung) where they will be protected from dashing rain and severe frosts, and removed into the conservatory or greenhouse as they come into bloom. After the blooming season is over, the flower-stems should be cut down (?), and the plants placed in a situation where they will be protected from frost. No further care will be necessary during winter, except occasionally watering until the propagating season has arrived. The old plants may be planted out among the shrubs, or in any warm sheltered situation, and in mild seasons they will make a fine display in October and November. *J. F.*

**THE NEAPOLITAN VIOLET.**—This delightful little favourite is one of the most interesting of our winter flowers, and amply repays every attention bestowed upon it. Nevertheless, I fear that of late years it has not been so extensively cultivated as it deserves, more especially when we bear in mind that it has no equal with respect to fragrance. If the side shoots are taken off early in April, and planted under a south wall in a mixture of leaf-mould, loam, and sand, slightly shaded from the mid-day sun, and occasionally watered overhead with a fine rose, they will be found to root quickly. As soon as they are sufficiently established the best plants should be selected and planted on a piece of ground previously prepared for their reception. A mixture of leaf-mould and fibrous loam suits them perfectly. The plants should be placed 12 inches from row to row, and 6 inches apart in the rows. The giving them sufficient room prevents their drawing or becoming weak. All runners should be pinched off as soon as produced. Water frequently, especially over-head, by which they will be greatly benefited, and it will also keep in check the red spider. Occasional waterings of soft-water will be found to produce a beautifully dark green foliage. Keep the soil round the plants frequently stirred. Check all runners as soon as they appear, and, if convenient, give them a slight protection from the mid-day sun. Beyond watering and weeding, little more will be required until the end of August, when the best plants should be taken carefully up for potting, using 6 or 8-inch pots, which will be found sufficiently large for the purpose, and employing the same soil as recommended above. As this Violet is very impatient of stagnant water about its roots during the winter season, the pots should be thoroughly drained, placing a small portion of moss over the crocks, to keep the soil from mixing with them. After being potted they should be placed on a bed of coal-ashes, kept shaded for a short time, and never allowed to suffer for want of water. To cultivate this Violet successfully in pots during winter, it should be slightly plunged in bottom-heat, by which a succession may easily be kept up all through the winter months. After being placed under glass, air should be admitted on every favourable opportunity, and an atmosphere sufficiently moist kept up. Spot is very apt to appear on the foliage, and when this happens the diseased portions should be immediately removed, or the evil will speedily spread over the whole of the plants. Over-watering, without sufficient ventilation, is generally the cause of this disease. Few plants please more in a drawing-room than Violets, with their pots nicely mossed, filling as they do the whole house with their fragrance. In addition to those grown in pots, I have generally had two three-light boxes placed in the framing ground, facing full south, planted with Violets. Some loose rubbish is put in the bottom of the frame in order to secure perfect drainage, after which they are filled with soil to within about 6 inches of the glass; the same soil as recommended for potting may be used, mixing with it a portion of old tan. The frame being ready, the plants may be transferred to their new abode at once, and well watered, after which they should be kept close for a few days, and slightly shaded; afterwards, in mild weather admit air freely, on fine days removing the lights altogether to dry the foliage, and prevent spot. Protection should be afforded on frosty nights; if mature or leaves are plentiful, a good lining put round the boxes will be beneficial, and this extra trouble will be repaid by thousands of blossoms during the whole winter and spring months. *E. B.*

### Calendar of Operations.

(For the ensuing week.)

#### PLANT DEPARTMENT.

WHEN Gloxinias, Achimenes, Gesneras, and other stove-plants of like habit are wanted to bloom early, a few of each kind may be plunged in a mild bottom-heat and have water occasionally, to start them previous to potting; a few pots of Amaryllis may be added, as these useful plants may be brought into bloom at any season. Unless the general stock of stove-plants is wanted to bloom early, they should remain in a dormant state for some time longer; such, however, as grow through the winter should have the warmest and lightest situation in the house. Stove and conservatory creepers should now be reduced within the narrowest limits by cutting out exhausted shoots, and tying the remainder close together; they may be shortened back in the spring, as cutting them back at this time might induce some kinds to break at an unfavourable time. *Bignonia venusta*, and some kinds of Passion-flowers, *Ipomoeas*, and anything which flowers at this season, must of course be excepted, as the beauty of their flowers will make more attractive features in the

stove at this dull time of the year, when so many summer favourites are at rest, and others out of bloom; where grown, a selection of Ferns and Lycopods may be introduced to occupy vacant spaces in the stove with the best effect. These delightful families of plants are now more than ever interesting from the comparative absence of gayer things.

#### FORCING DEPARTMENT.

Nothing undergoing forcing can be hurried on in the absence of light, and therefore the degree of heat (artificial) applied to plants forced at this season (when we seem to have more than our ordinary share of gloomy days), must be entirely regulated by the amount of light each day brings with it—if bright and sunny, a push may be made, and an additional 10° or 15° of temperature permitted; on the contrary, on dull, dark days, patience will be necessary, for where fruits are required early a pretty considerable share of the above virtue had need be possessed by the gardener, who, anxious to meet the expected demand, cannot advance as he would wish in the absence of the best friend to his exertions—an unclouded sun; in this respect our continental brethren have a good deal the advantage of us, and their forced productions, especially in winter, are greatly superior to our own. It appears, then, we must proceed with caution, taking advantage, like a wise general, of circumstances as they arise; however, one thing must be attended to, which is, the outside border of forcing houses at work must be effectually protected from sudden declensions of heat; and such things as Pines, &c., grown by fermenting materials, must likewise be kept both dry and warm, by timely additions made to the linings as they require it. Protect well by night, should frost be severe. Give air moderately, but sufficient to change it daily, to pits, frames, &c. Straw-berries for forcing, protect from heavy rains and frosts.

#### FLORISTS' FLOWERS.

As the weather has given way various floricultural pursuits may be now engaged in; for instance, the *Ranunculus* bed should claim attention. If not composed satisfactorily, excavate it to the depth of 18 inches or 2 feet; place at the lower part at least 6 inches thick of very decomposed cow manure; on dry soils this will be found of very great importance. Do not let the bed be higher than the surrounding soil, because *Ranunculuses* do not like drought at any time of their growth. This, for their successful cultivation, must always be borne in mind. A free style of growth must be adopted for Carnations and Auriculas; plenty of air, with an occasional watering. This freedom of style must not, however, embrace anything stimulating—both will soon begin to move; and it is a hardy system of growth which we wish to inculcate. Hardy plants ought never to be treated like tender ones, and well do we know that too much care has been the ruin of many a collection. Should the ensuing weather be mild, a casual survey of the stock after dark will be advisable. To the observant florist there will be abundant instruction and experience to be obtained by noticing what insects are at this season more particularly detrimental.

#### HARDY FRUIT GARDEN.

When the weather is too cold for tying in and nailing, other work should be forwarded; in most places something requires either to be new done or amended every year, and a considering mind will adapt different works to suit the weather and local circumstances. Look to the fruit-room: Apples often want examining; such as get specky should be put on one side for present use; this will be better than allowing them to get too far gone, whereby they are sure to spoil their neighbours. The choicer kinds of Pears and table Apples, if they do not ripen kindly, will be improved by being placed in a moderately warm room for a few days before using them. Keep the fruit-room dry without raising the temperature very much, as the safe keeping of fruit depends on maintaining a uniform temperature of 40° or thereabouts.

#### KITCHEN GARDEN.

Any Cauliflowers or Broccoli which will now be coming in may be removed from the ground, and laid in dry earth, in a shed or out-house; of course frames would be better, but as these have generally full duty to do just now, and as we have kept the above in good condition for several weeks by this plan, we recommend it, as they will be safe from wet, and can easily be kept from frost. Parsley and other herbs in pots will be under glass; the front of a Peach house or Vinery will give them a little warmth, with the advantage of light. Lettuce and Endive must be carefully kept from damp; the former must have the protection of glass to have it in perfection in winter; the latter, when fully grown, may be preserved for a considerable time in any dry place. Some strong roots of Chicory may now be taken up and planted thick in boxes, for forcing; this useful winter salad answers well in a dark cellar or the Mushroom-house. Protect winter Spinach, Parsley, young Lettuces, &c., by covering them with branches of evergreens in frosty weather.

#### COTTAGER'S GARDEN.

At this season, when there is little to be done in the way of cropping, everything around the cottage should be made clean and neat; all vegetable refuse should be collected to rot for manure, nothing of this kind should be lost. While the weather is favourable, a sowing of Marshall's Dwarf Prolific or Mazagan Beans may be made. They may be sown in drills about 18 inches apart, and planted about 3 inches apart zig-zag in a broad drill. A sowing of the Early Frame Pea, if not already done, may also be made on a warm border.

For this crop the seeds may be sown pretty thickly, and in case of hard frost they should be protected by Fern or Furze, &c., and some of the latter chopped may be put in the drills to prevent the ravages of mice. As autumn is the best time for pruning all kinds of fruit trees, even the Peach, every opportunity that occurs should be embraced for performing the operation. Gooseberries and Currants, if not already pruned, may now be done, so as to allow the ground to be dug amongst them; and all vacant ground, as formerly directed, should be turned up rough as early as possible, in order that it may receive the benefit of the winter frosts.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.  
For the week ending Dec. 22, 1853, as observed at the Horticultural Gardens:

Dec.	Moon's Age.	BAROMETRES.		TEMPERATURE.					Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean.	Of the Air.	Of the Earth.		
Friday 16	17	29.56	29.21	33	7	20.0	38	41	N.	.50
Satur. 17	18	29.69	29.67	36	22	29.0	37	40	N.	.00
Sunday 18	19	29.66	29.56	34	26	30.0	37	40	S.E.	.00
Mon. 19	20	29.68	29.83	35	31	33.0	36	40	N.	.00
Tues. 20	21	29.83	29.74	37	34	35.5	36	40	N.E.	.01
Wed. 21	22	29.95	29.96	36	33	34.5	37	40	N.E.	.01
Thurs. 22	23	30.06	29.07	37	29	33.0	37	40	N.E.	.01
Average.		29.72	29.61	35.4	25.5	30.5	36.8	40.8		0.23

Dec. 16—Overcast; clear, bright sunshine; severe frost at night.  
17—Severe frost; overcast; frosty.  
18—Clear; uniformly overcast; slight frost.  
19—Uniformly overcast; clear and fine; cloudy; slight frost.  
20—Overcast; hazy and drizzly; cloudy.  
21—Cloudy; densely clouded; cold N.E. wind.  
22—Boisterous; densely overcast.

Mean temperature of the week 75 deg. below the average.

STATE OF THE WEATHER AT CHISWICK.  
During the last 27 years, for the ensuing week, ending Dec. 31, 1853.

Dec.	Average Height of Therm.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23	43.00	29.35	36.12	5	0.22 in	2	5	3	1	2	6	6	3
Mon. 24	42.95	32.22	37.59	10	0.39	1	4	3	2	1	4	1	3
Tues. 25	42.81	30.44	36.62	9	0.40	3	3	4	1	5	6	6	1
Wed. 26	41.77	29.70	35.73	9	0.46	1	3	3	3	2	7	4	4
Thurs. 29	43.11	34.78	38.90	12	0.17	1	4	1	3	4	5	4	4
Friday 30	44.68	33.11	38.89	10	0.30	1	5	2	1	5	5	1	1
Satur. 31	43.88	33.25	38.56	8	0.44	2	1	1	5	8	4	1	3

The highest temperature during the above period occurred on the 25th, 1857—therm. 58 deg.; and the lowest on the 25th, 1830—therm. 12 deg.

#### Notices to Correspondents.

**ARNICA: H. M. M.** The gentleman who writes sparkling but prosy novels under the name of B. Disraeli is a literary pyrotechnist, not a naturalist. The mountain Arnica is a herb, not a shrub; its flowers are yellow, not white and yellow, and it is unknown in Arabia. All the truth contained in the passages you quote consists in the plant being a narcotic.

**BOOKS: A Young Reader.** There is no good book on Greenhouse and Stove Ferns. But we believe such a work to be in the hands of a very competent person.—*John Snow*. The "Vegetable Kingdom"—*Deodora*. There is no separate publication upon the formation of a Pinetum, although Horticultural publications abound in memoranda relating to such a subject. In the "Journal of the Horticultural Society" will be found the most exact catalogue of Conifers yet published. Perhaps Barron's "British Winter Garden," a good practical book, approaches nearest to your desideratum. The great points of all to observe in forming a Pinetum are, 1st, never to buy at any price a grafted plant; and 2d, not to buy the same thing over and over again under different names.

**EMIGRATION: Irish Gardener.** You are very likely to be eligible Apply to the Government Emigration Commissioner, 8, Park Street, Westminster.

**FRUIT TREES: Woglog.** We have had no experience of Hutchings' Champion Peach, therefore we cannot say whether it is better than the Bellegrape or Gallande, Royal Kensington, or Grosse Mignonne, or the Red Magdalen. For an opinion of the Plums you mention, see our Number for September 17th, 1853, p. 600.

**GRAPES: H. W. A.** Ripe Grapes may be had every succeeding month in the year, where there is sufficient accommodation. The other part of your question we do not understand.

**INSECTS: C. F.** The little animals found under the bark of a tree are the bark mite, *Acarus geniculatus*, Linn. Should they occur in such profusion as to be troublesome, they may be destroyed by washing the bark with a mixture of Tobacco liquor, sulphur and turpentine, or gas tar water. *W.*

**NAMES OF FRUITS: H. J. O. 1.** Beat's Pippin; 3, Braddick's Nonpareil; 4, Carlisle Codlin; 5, Reinette du Canada; 6, Golden Noble; 7, Beauty of Kent; 8, London Pippin; 9, Court of Wick; 10, Dutch Mignonne; 12, Mère de Menage.—*Sub.* 1, Passe Colmar; 2, Bezi de Montigny; 4, Winter Crassane; 6, 7, Glout Morceau; 8, Uvedale's St. Germain.—*N. H.* Beurré Diel.—*H. J. O. 1.* Probably Gravenstein; 2, 6, Dumelow's Seedling; 3, Northern Greening; 4, Kerry Pippin; 9, Golden Pippin; 10, Fear's Pippin. Pears: 1 (decayed); 2, Crassane; 3, St. Germain; 4, Bishop's Thumb; 5, Duchesse d'Angoulême.

**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*F. S. S.* It is the Sapucaia, a Brazilian nut, the seed of *Lecythis ollaria*. Not half so good as the Saouari, but quite wholesome.—*Constant Reader*. 1, Goniphebiu distans; 2, Nephrodium molle; 3, Lastrea dilatata in a small state. *S. Reader*. 1, Asplenium Adnigrum; 2, Polystichum vulgatum; 3, *S. A. S.* We cannot undertake to name Cryptogamic plants, having no relation to gardening.—*Erserum*. Many thanks for your letter just received. The packet will no doubt soon follow, when it shall be acknowledged here.—*Messrs. Rolissons*. Your plants are neither numbered nor accompanied with the slightest information as to their origin. There is one of the endless varieties of *Mormodes cactoni*; a *Pholidota* which does not seem different from *P. undulata*, but shrivelled up from want of packing; *Oncidium hastatum*; and what looks like a bit of *Cattleya luteola*.

**SILVER FIRS: W. C.** If your Silvers like their soil you need do nothing to them at present, except very gradually remove the lower tiers of boughs—one tier a year—till the clear stem is as high as you desire, or as may be necessary to enable your coppice to grow freely among them. They are fond of silver sand, and you might use it, if you have it, as a slight top-dressing; but if they grow well already we should let them alone.

**THE VINEGAR PLANT: Isabella.** This is nothing more than the spawn of a fungus or mould plant called *Penicillium glaucum*. It is of the same nature as those cloths and seams which, in the language of housekeepers, render many kinds of fluid "mothy." It undoubtedly has the property of converting sugar and water into vinegar.



## TO AGRICULTURAL IMPLEMENT MAKERS.

**THE DIRECTORS of the CRYSTAL PALACE** COMPANY having now determined the disposition of EXHIBITORS' SPACE, and fixed the Rent to be charged for the same, are prepared to arrange with Agricultural Implement Makers for the Exhibition of Implements and Machines in motion or otherwise.—Particulars may be had at the Company's Offices, Agricultural Department, 3, Adelaide Place, London Bridge.

December 24.

G. GROVE, Secretary.

## PERUVIAN GUANO.

**CAUTION TO AGRICULTURISTS.**—It being notorious that extensive adulterations of this MANURE are still carried on,

## ANTONY GIBBS AND SONS,

AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be careful on their guard.

The character of the parties from whom they purchase will of course be the best security, and in addition to particular attention to that point, ANTONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

## PERUVIAN GUANO, the guaranteed import of

Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—WM. INGLIS CARNE, 10, Mark Lane, London.

## MANURES.—The following Manures are manu-

factured at Mr. LAWES' Factory, Deptford Creek:—  
Turnip Manure ... .. per ton £7 0 0  
Superphosphate of Lime ... .. " 7 0 0  
Sulphuric Acid and Coprolites ... .. " 5 0 0

Office, 69, King William Street, City, London.  
N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

## THE LONDON MANURE COMPANY'S WHEAT

MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec. Bridge Street, Blackfriars.

## ARTIFICIAL MANURES, &amp;c.—Manufacturers

and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

## GUTTA PERCHA BOOTS FOR SHEEP, for the

Cure and Prevention of FOOT-ROT (price 4d., 5d., and 6d. each). Price of the Powder, in tin cases, sufficient for 100 sheep, 2s. 6d.—Address JOHN JONES and Co., Patent Works, Sheffield. London Agent, Mr. F. HAINES, 22, Lime Street, City.

## WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.  
Patent Pump ... .. 1 15 0  
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... .. 3 0 0

Larger sizes if required.  
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

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8, CRESCENT, JEWIN STREET, LONDON.  
Every description of Machinery for Raising Water; Fire Engines, &c.

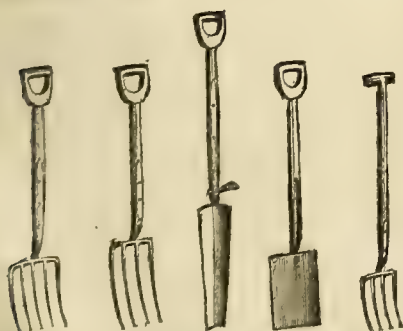
An Illustrated Book sent on application post free.



## PRIZE CHURN.

**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BUNNELL & KEY, Agricultural Implement Warehouses, 110, Newgate Street, and 52, Little Britain, London.

## WINTON'S PARKES' STEEL DIGGING FORKS.



**I HEREBY GIVE NOTICE** that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. BUNNELL & KEY, of 110, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.

20th Sept., 1853.

Signed, FRANCIS PARKES.

## AGRICULTURAL INSTRUCTION.—The late

Manager of the Royal Agricultural College Farm, now farming on his own account in Buckinghamshire, has a Vacancy for a few PUPILS, who may require instruction in PRACTICAL AGRICULTURE, according to the best modern system of improvement, combined always with a view to profit and utility.

Instruction will also be given to such as desire it in Land-Surveying, Book-Keeping, &c. The Advertiser has ample testimonials of being qualified to impart Agricultural Instruction, &c., to such as are really desirous of improving themselves; and none but those whose aim it is to be steady, studious, and devoted to their profession, can be treated with. Periodical examinations will take place of such matters as are brought before the notice of Pupils, in order that inattention may be checked, and the state of progress be fully ascertained and promoted.—For terms, and other particulars, as to soil and situation of Farm, &c., apply to R. VALENTINE, Burcott Lodge Farm, Wing, Bucks.

## COLLEGE OF AGRICULTURE AND CHEMISTRY,

AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.  
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.



## WEIR'S DRAINING LEVEL,

PRICE 30s.

These DRAINING LEVELS have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, 6 Doors West of the Hampstead Road, Removed from Oxford Street.

## LAND DRAINAGE.

**MR. BAILEY DENTON'S TABLES OF COST,**

&c., price 1s. 4d. Sold by METCHIN, Parliament Street.  
**MR. BAILEY DENTON'S WORKMAN'S A LEVEL,** price 12 10s. Sold by JONES & Co., High Holborn, London.

## LAND DRAINAGE.

**MR. JOHNSON** (several years principal Assistant to Mr. Josiah Parkes, C.E.) will undertake the Supervision of Land Drainage at a charge of Five Shillings per acre; or if under 30 acres, three guineas per day, for setting out the Drains, taking Levels, &c. No objection to Drain by Contract. Offices, 12, Abingdon Street, Westminster.

## DRAINAGE AND IRRIGATION.

**HENRY WEBBER** begs to inform Landowners and the Public, that having had several years' practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by Contract or on Commission. Reference given.

H. W. wishes particularly to call attention to his improved and inexpensive method of Irrigation, whereby, at an outlay of a few pounds an acre, he can convert land having a sufficient quantity of water at command into water meadow, which may be mown every year without the application of manure. Any further information will be given on application.—Halberton Court, near Tiverton, Devon.

**THE GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY**,—Incorporated by special Act of Parliament.—Offices, 52, Parliament Street, London.

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This Company executes Works of Land Improvement, viz., Draining, Irrigation, Roadmaking, Enclosing, Reclaiming, and the Erection of Farm Buildings, on advantageous terms; the amount of the outlay being repaid by annual instalments, varying according to the number of years over which Landowners may determine the repayment shall extend.

WILLIAM CLIFFORD, Secretary.

## TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

**THE LANDS IMPROVEMENT COMPANY**, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.

The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.

The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements.

The Agricultural Works of Improvement particularly specified in the Company's Act, are:—

1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Watercourses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.

In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Sheds, Tanks, and Reservoirs, Pipes, Conduits, and Watercourses, for Irrigation, Farm-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatchways.

For Forms of Application and further Information apply to the Hon. W. NAHER, Managing Director, 2, Old Palace Yard, Westminster, London.

## MANCHESTER POULTRY EXHIBITION.—An

Exhibition will be held in the Free Trade Hall, on the 24th and 25th of January, the entries must be made with the Secretary on or before the 10th of January; the entrance money must be paid before pens can be entered for competition. One Hundred and Fifty Pounds will be given in Prizes; Poultry not in the Prize List can be Exhibited as Extra Stock. The Judges will be instructed to award prizes to such as they consider deserving.—For further particulars, see Regulations and Prize List, to be had from the Honorary Secretary, Mr. GEORGE POTTER, 13, Cooper Street, Manchester.

## THE GREAT METROPOLITAN EXHIBITION

OF POULTRY, PIGEONS, and RABBITS will be held at the Bazaar, Baker Street, and King Street, Portman Square, London, on the 10th, 11th, 12th, and 13th January, 1854. Entries close 28th December.  
WILLIAM HOUGHTON, } Secs.  
JAMES HENRY CATLING, }

Offices at the Bazaar.

## The Agricultural Gazette.

SATURDAY, DECEMBER 24, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Dec. 29.—Agricultural Imp. Society of Ireland.  
THURSDAY, Jan. 5.—Agricultural Imp. Society of Ireland.

There is not a better illustration of the advantage of banishing political subjects from agricultural discussions, to which we referred last week, than is presented to our hands in the previous Saturday's columns of the *Wiltshire and Gloucestershire Standard*. The annual dinner of the Cirencester Agricultural Society, like all such yearly meetings, might very well have been made the occasion for political harangues; or if those were forbidden, the ordinary toasts would have furnished scope enough for the expression of political sympathies; for, if there was no other method, "the members for the borough," in severally rising to acknowledge his compliment, and the candidates for the county, both of whom were present, would have been received with applause adapted with sufficient significance to their political leanings, to arouse feelings altogether apart from and opposed to those which the society had been established to excite. Fortunately the chairman, and the gentlemen by whom he was supported, confidently as they might hold their several political sentiments, saw that to encourage the expression of them there was to discourage the consideration of topics coming more properly within the scope of the Society's operations; and, instead of having to flatter the prejudices of "party," or to submit to the exchange of personal compliments, the speakers were put in charge of toasts which led them into strictly agricultural discussion. It is the principle of abstinence from political disputation—from political advocacy of any kind, that is the point we contend for as the true policy of agricultural societies and farmers' clubs; and that our readers may see its fruits in the instance before us, we give a short abstract of the proceedings on the present occasion.—Mr. LAWRENCE responded to the toast of "The Royal Agricultural Society of England." He referred to the success of the Gloucester meeting, and enlarged on the great advantages which had accrued to agriculture from the Society's encouragement and guidance of machine makers.—The Rev. J. S. HART, in acknowledging the toast of the "Royal Agricultural College," bore a high testimony to the qualifications and the cordial labours of the professors with whom he was associated, and to the excellent conduct and good principles of the young men over whom he had to preside. He assured his audience that he would not exchange the situation he there held for any other of a similar character in the kingdom.

We extract further the following passage on a point of practice:—

Mr. DAVID BOWLY agreed with the noble Lord BATHURST, that it would be very advantageous if, at their meetings, they could converse upon some subject interesting to themselves as agriculturists. The last hay-making season was very unfortunate, and there was a great deal of hay spoiled, and he should be glad to hear some remarks on the subject. He had read that spoiled hay could be improved by steaming. As a "manufacturer" of corn, beef, and mutton, it was, of course, important to him whether he had good or middling hay. The *Agricultural Gazette* said, that if, after the hay had been cut up into chaff, it was steamed, the cattle would eat it readily, and even prefer it to anything else. Perhaps Mr. LAWRENCE would be kind enough to state his opinion as to whether steaming was so successful as he had heard.

Mr. LAWRENCE said he was perfectly acquainted with the steaming process, and it certainly did improve the hay very much, but very few persons, comparatively speaking, would be enabled to use the remedy, from their not having the means at hand. He had himself used a more simple method of recovering spoiled hay. Four or five years ago he had to make his hay in very bad weather, and when the ricks were cut he found the hay was matted together, and a kind of fungus on it. The plan he adopted was to pour boiled oil-cake on the hay, in layers, and after well saturating it for about two hours the fungus was wholly destroyed, and the hay came out as sweet as any hay that had been made at a more favourable time.

Dr. VOELCKER, professor of chemistry at the Royal Agricultural College, remarked that while he had no doubt in his own mind that the steaming process rendered the hay more palatable to the animals, and that they would eat a larger quantity, he felt convinced that when hay had once lost its nutritious power that no steaming would restore it. The oil-cake would doubtless very materially improve the quality of the hay. Very little consideration would convince them that hay after lying on the ground for some time in bad weather, would lose a great deal of its nutritive qualities. The sugary juices have been washed out by the rain, and they would find that it fermented very rapidly. Last winter some experiments were tried at the College with their sheep, the food employed being badly-made hay, and they



hardly kept a sheep in good condition. Now, well-made hay should, if he was not mistaken, keep the sheep in good condition. Not one of their sheep increased a pound in weight for some months. Hay would improve the condition of the sheep, it was well known to every farmer, if it was properly made. In unfavourable seasons hay was made at a great loss. The rain washed out the sugar, and then by fermentation the nutritive particles are destroyed.

Mr. BUCKMAN, professor of botany at the Royal Agricultural College, in a very lucid manner, then explained the means by which the "flesh-forming principles" of the hay were destroyed, and its nutritive properties consequently lost.

Another subject—the period at which Grass should be cut—then came under discussion, and Dr. VOELCKER spoke of the possibility of erring on either side of the right time—"they might cut it down too soon and lose in quantity, or too late and lose in quality." He referred also to the early cutting of Oats as favourable to the quality of the straw as fodder. Various other subjects of practical importance succeeded one another in the course of the discussion or conversation which ensued, for a report of which unfortunately we have not room. We refer to the whole thus generally, as it furnishes, in our opinion, a valuable example to other societies, and a good illustration of the policy of avoiding political discussions at these meetings.

Perhaps the most important testimony elicited at the meeting was that of Mr. HAYGARTH to the present standing of the Agricultural College. We hear less about it now-a-days than we used to do; but though quietly it is efficiently at work, preparing the leaven which will, by-and-by, we doubt not, influence and raise the general agricultural status of the country. Even now the effect of its teachings may be seen in individual instances of success. Mr. TANNER, one of the earliest of its pupils, the author of the Prize Essay on the agriculture of Devonshire, has again distinguished himself by a report on the condition of the Dartmoor district. His is but one of the many cases, we are persuaded, in which the teachings of the College, besides their influence on the general level of agricultural intelligence, will raise the more talented and industrious of its pupils to distinction amongst their fellows.

The measurements, in an adjoining column, of the cattle exhibited at Birmingham and Baker Street respectively, are of less use directly than for comparison with those of future years. An annual series of such figures for the past 20 years would furnish interesting data in reference to the improvement of breeds during that period. The weights, too, calculated from the measurements, are not to be taken positively, but only for purposes of comparison. In all probability all these weights are below the truth—the scale from which the measurements were made to indicate the weight was constructed for a much less degree of fatness than the animals exhibited. If we should be able, therefore to obtain the actual carcase weights of any of these animals, it is probable that they will much exceed the weights here given. Perhaps for purposes of comparison some of our readers may take some interest in the following measurements of the prize animals shown at Edinburgh during last week, at the winter exhibition of the Highland Society, for a report of which, successful as we are glad to learn that it has been, we have unfortunately no space. We take the following figures from the columns of the *North British Agriculturist* :—

#### SHORT-HORNS.

Oxen over two years old.					Heifers over two years old.				
PRIZE.	AGE.	LENGTH.	GIRTH.	WEIGHT.	PRIZE.	AGE.	LENGTH.	GIRTH.	WEIGHT.
1	yrs. mo.	ft. in.	ft. in.	stn.	1	yrs. mo.	ft. in.	ft. in.	stn.
2	2 7	5 2	3 3	84	2	5 5	7 6	73	73
3	...	5 11	7 11	88	3	5 1	7 1	61	61
One year old Oxen.					One year old Heifers.				
PRIZE.	AGE.	LENGTH.	GIRTH.	WEIGHT.	PRIZE.	AGE.	LENGTH.	GIRTH.	WEIGHT.
1	yrs. mo.	ft. in.	ft. in.	stn.	1	yrs. mo.	ft. in.	ft. in.	stn.
...	...	5 3	6 9	60	2	1 7	4 8	6 8	50
					3	1 9	5 0	7 0	58

The Hereford and Devon breeds were not represented; West Highlands and Aberdeens (polled and horned) making up the rest of the show, and of these it is needless to furnish the measurements, as we have none of the corresponding breeds to compare with them.

If we do not at present enter upon any critical examination of Mr. MECHI'S BALANCE SHEET, which, with the accompanying essay, is published in another page, it is not because it is not open to criticism. It is the unfortunate result of autumnal valuations, that so much comes within their scope—the balance sheet of a period closing in spring would bear much less the character of an estimate, and much more that of a simple record. In the present

instance, we have credit taken for 1880Z. worth of live stock, which is easily and, therefore, we have no doubt, correctly valued; but there is nearly 900Z. worth of corn in the rick, about which any one may entertain just what doubts he pleases. Very probably portions have been threshed, and whatever guides to a valuation were attainable have been honestly used; but where the produce of a farm is still in the rick, no one can say that the farmer knows with any certainty how much he has lost or gained by his year's proceedings.

It is, however, to the accompanying essay that we would direct attention at present, and especially to that part of it which describes the liquid manuring operations which have been successfully carried out at Tiptree during the past year. Without at all entertaining the opinions suggested rather than asserted by Mr. MECHI on the relationship of liquid manure in the ground to the temperature of the soil, or to the development or excitement of electricity there—without supposing that increased fertility in the case of Tiptree, or in any other case whatever, is anything more than the simple consequence of increased quantity and accessibility of food for plants—there can be no doubt that the argument and the facts together clearly demonstrate the superiority of the application of manure in the liquid form. This was simply but forcibly put by Dr. PLAYFAIR, at the close of the lecture—"the more the manure was diluted the better, as plants live by suction, and not from solid food." And the facts, as described by Mr. MECHI, are of course still more conclusive. The field in front of the house has, under the influence of the jets, changed its suit of drab for one of spring green, and arguments addressed to the eye are generally more conclusive than those addressed to the ear. The differences between the present and former balance sheets are attributed almost wholly to the power now possessed of irrigation—almost wholly to the larger produce of green food, and the cheaper and more productive live stock account, which occupies so large an influence now-a-days on all agricultural balance sheets. We do not suppose even now that we can congratulate Mr. MECHI on the £ s. d. results of his career as an agriculturist from its beginning up till Oct. 31, 1853, the date of the balance sheet before us; but we are quite sure that we may congratulate ourselves upon that career, and that the essay just published, and the experiments and their results which it records, are additional reasons for acknowledging the public spirit and patriotism which are so usefully in exercise at Tiptree.

The Society of Arts, before whom Mr. Mechi's paper was read, has recently been more than usually occupied with agricultural questions. A paper on Fish Guano was read last Wednesday; but we must postpone reference to it till next Saturday.

#### LABOURERS' FRIEND SOCIETIES.

PERMIT me to express my concurrence in the animadversions on Agricultural Associations contained in the *Gazette* for Oct. 29. As you invite discussion of the subject, I am emboldened to transmit to you a few thoughts upon it which I had committed to paper a few days before the article in question had come beneath my notice. Allowing, to the full, the praiseworthy character of the motive which prompted the establishment of such societies, and which urges many to support them, I must still be permitted to express my conviction that in action they fall short of accomplishing that good which their promoters designed them to achieve. I would say to such, "You desire to recognise and to reward good servants, to make good labourers, and promote prudence and morality among the poor; it is a good desire, and, could it be carried out to its legitimate issues, would be worthy of the heartiest support; but I think you are mistaken in the means, and spending your strength for naught."

It appears to me that two great objections to the operation of these societies arise from the following considerations. First, that from circumstances so difficult to overcome as almost to amount to a necessity, the less praiseworthy often bear away the spoils, whilst many of the more deserving remain unnoticed in obscurity; and also—although I am aware this argument will be rebutted by association men—that there is apparently too great an aspect of charity and patronage about the matter for it to have the influence most desirable upon those whom it seeks to benefit. All real worth of character, in any sphere of life, is based upon the sentiment of self-respect, a sentiment which withers when its subject has to seek his guerdon from the smiles of patronage, rather than expect it as an inalienable right, the title to which is derivable from the broadest principles which regulate the doings of humanity.

If I make mention of a law in connexion with this subject it shall be to consider, not its political, but its social influence. How can our village poor be expected to become good labourers when the very spring of enterprise and healthy emulation, an unrestricted competition, has not only been paralysed, but killed, by the Law of Settlement—a law which hangs like a dead weight upon the heels of industry, and spreads its sombre

wings over the heads of the devoted ratepayers. What are the influences which this law has disseminated among our rural population? Has it not made them feel that labour is not paid for according to its worth, but that the standard of its remuneration is a fraction over what it would cost the parish to support the man and family in idleness?—in fact, just as much, or rather just as little, as he can live upon? How this must of necessity crush all desire in the men to become good workmen, seeing that all, or nearly all, are paid at the same rate; and how it enables the idle or the vicious, with a cool effrontery, to cast in the master's teeth, "You must either employ me or support me!"

Let but the restrictions be removed which this obnoxious law entails; let the poor man be free to take his only saleable commodity—his labour—to an unrestricted market, and there would be at once created a healthy stimulus to an honest emulation; ground would at once be given for a desire to excel; then would the indolent and unskilful be urged by necessity's sharp spur, and feel the truth of the inspired sentence, "If any man will not work neither shall he eat!"

And let not the masters fear this influence; for though, like all transitions, it might occasion perplexity and even suffering at the first, it would soon be found by them, as it has been by masters in other departments of our nation's industry, that skilled and well remunerated labour is far more productive than that which is done with a blunted intelligence and with half a heart. I yield to none in the desire of seeing large improvement in the well-doing and well-being of the labourer, and as I conceive the latter to depend mainly on the former, I cannot but consider him his greatest benefactor, who, instead of investing him with the smiles of patronage and patting his back with a premium, provides fair honest work, and plenty of it—work, not by the day, but by the piece, giving the man his own interest in the labour, and promoting that honourable feeling of self-respect, both in the procuring and enjoyment of domestic comforts, which is one of the greatest safeguards of character, and very conservative of whatever is "true and honest and of good report!"

It will thus be seen that others have had similar thoughts to those expressed in the leader to which I have referred, and though the writer of that article and myself may have gone through a different process of reasoning, we have arrived at a somewhat similar result, and, certainly, have been actuated by the same spirit. Should these remarks of mine (provided they find a place in your paper) provoke consideration of the question by an abler pen than mine, they will not have been useless; and, as a parting word, may I not suggest that the energies of those who have at heart the trust and most permanent interests of the labourers, would be more efficiently employed in seeking a wider field for their exertions, and a better mode of remuneration for their toil, than in bolstering up the faulty action—practically considered—of Agricultural Associations. *Clathrus celarius.*

#### COMPARISON OF CATTLE

BAKER STREET					AT BIRMINGHAM.				
CLASS I.—DEVON STEERS (not 3 years old).					DEVON OXEN (under 3½ years old).				
No.	AGE.	LENGTH.	GIRTH.	WEIGHT.	No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
1	yrs. mo.	ft. in.	ft. in.	stn.	85*	yrs. mo.	ft. in.	ft. in.	stn.
2	2 11	4 11	8 1	77	86*	2 6	4 6	6 11	52
3	2 10	5 1	7 10	75	88	2 8	4 8	7 0	54
4	2 7	4 8	7 9	68	87*	2 11	4 9	7 1	57
5	2 11	4 8	7 1	56	3 animals averaging 54				
6	2 5	4 9	7 0	60					
7	2 11	4 11	7 1	72					
8	2 11	4 8	7 9	65					

\* Received 1st Prize. — Received 2d Prize.  
† The weights are given in imperial stones.

CLASS II.—DEVON STEERS (over 3 years old).					DEVON OXEN (over 3½ years old).				
No.	AGE.	LENGTH.	GIRTH.	WEIGHT.	No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
9†	yrs. mo.	ft. in.	ft. in.	stn.	80	yrs. mo.	ft. in.	ft. in.	stn.
10	4 3	5 4	7 9	78	81	4 2	4 11	8 2	78
11	3 10	5 2	8 3	84	82*	4 2	5 1	7 11	77
12	4 8†	5 4	8 5	90	83*	3 10	4 8	7 5	62
13	4 0†	4 11	8 2	78	84*	4 7	5 0	7 6	67
14	4 11	5 2	8 0	79	84*	4 8	5 3	8 8	97
15	4 2	4 11	8 1	76	5 animals averaging 76				
16	4 10	5 1	8 6	88					
17	3 9	5 0	7 6	81					
18	4 9	5 9	8 10	110					

CLASS III.—DEVON HEIFERS (not 4 years old).					DEVON HEIFERS (under 4 years old).				
No.	AGE.	LENGTH.	GIRTH.	WEIGHT.	No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
20	yrs. mo.	ft. in.	ft. in.	stn.	89*	yrs. mo.	ft. in.	ft. in.	stn.
21*	3 10	4 11	7 6	67	90*	4 2	4 9	7 0	56
22	3 10	5 0	7 3	60	91*	3 10	4 9	7 5	63
23	3 5†	4 9	7 5	62	92*	4 6	4 4	7 0	51
24	3 10	5 9	7 9	62	93*	3 7	4 5	6 8	48
4 animals averaging 64					94	3 8	4 6	7 0	53

5 animals averaging 54



## CLASS IV.—DEVON COWS (over 4 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
25	5 9	4 9	7 3	63
26	9 7	5 3	8 3	85
27	14 8	4 9	7 3	58
28	4 10	4 11	7 9	70

4 animals averaging 69

## CLASS V.—HEREFORD STEERS (not 3 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
30	2 11	5 3	7 3	66
31	2 11	5 0	7 10	70
32	2 11	5 0	7 10	60
33	2 10	4 9	6 10	73
34	2 8	5 0	6 0	50

5 animals averaging 74

## CLASS VI.—HEREFORD OXEN (over 3 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
35	3 11	5 3	8 5	89
36	3 11	5 3	8 10	107
37	3 11	5 3	8 11	100
38	3 10	5 10	8 6	101
39	4 9	5 0	8 4	114
40	4 0	5 0	8 5	93
41	4 0	5 0	8 5	94
42	4 0	5 0	8 5	92
43	4 3	5 7	8 6	97
44	3 4	5 5	8 5	92
45	3 0	5 5	8 9	101
46	3 9	5 5	8 9	98

12 animals averaging 96

## CLASS VII.—HEREFORD HEIFERS (not 4 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
47	2 7	4 10	7 3	61
48	3 8	4 9	7 8	70

2 animals averaging 65

## CLASS VIII.—HEREFORD COWS (over 4 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
49	5 1	5 3	7 6	78

## CLASS IX.—SHORT-HORNED STEERS (not 3 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
51	2 9	5 3	8 0	81
52	2 10	5 2	8 4	90
53	2 10	5 2	8 7	93
54	2 11	5 1	7 9	73
55	2 11	5 1	8 1	91
56	2 7	5 5	8 1	85
57	2 11	5 5	8 2	88
58	2 7	5 4	7 10	78

8 animals averaging 84

## CLASS X.—SHORT-HORNED STEERS (over 3 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
59	3 11	5 7	9 1	110
60	4 4	5 9	9 1	114
61	3 9	5 5	8 5	92
62	3 9	5 5	8 10	101
63	4 5	5 9	8 10	97
64	3 9	5 6	8 7	97
65	3 9	5 6	8 11	143
66	3 9	5 4	8 7	91
67	3 11	5 4	8 5	96
68	3 9	5 4	8 4	92
69	3 8	5 2	8 4	92
70	3 10	5 7	8 4	96
71	5 5	5 10	9 5	121
72	4 5	6 0	9 5	141

14 animals averaging 105

## DEVON COWS (over 4 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
59	9 9	4 10	7 4	58

## HEREFORD OXEN (under 3½ years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
10	3 1	4 7	7 10	68
11	3 1	4 9	7 10	70
12	3 2	4 11	7 10	73
13	3 2	4 8	7 9	67
14	3 0	5 2	8 4	86
15	2 10	5 4	7 7	74
16	3 2	4 10	7 4	63
17	3 2	4 10	7 8	68
18	3 2	4 10	7 8	68
19	3 0	5 2	8 4	86

9 animals averaging 73

## HEREFORD OXEN (over 3½ years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
1	3 6	4 7	8 2	73
2	3 7	4 8	8 2	74
3	4 2	4 10	8 0	74
4	3 11	4 10	8 5	92
5	5 0	5 1	8 8	92
6	4 10	5 10	9 1	115
7	3 11	5 0	9 0	116
8	4 6	5 0	9 4	84
9	3 10	5 3	8 2	83

9 animals averaging 88

## HEREFORD HEIFERS (under 4 years).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
25	4 11	5 2	8 1	81
26	3 8	4 9	7 7	68
27	4 2	4 11	7 4	63
28	3 11	4 11	8 5	90
29	3 10	5 0	8 1	78
30	3 7	4 0	7 5	66
31	2 7	4 7	7 11	69

7 animals averaging 72

## HEREFORD COWS (over 4 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
20	5 6	5 0	7 9	72
21	5 0	5 2	7 10	76
22	7 4	4 11	7 8	69
23	5 1	5 1	7 7	70
24	8 10	5 5	7 1	65

5 animals averaging 70

## SHORT-HORNED OXEN (under 3½ years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
42	2 10	5 2	8 4	90
43	3 1	5 0	7 6	87
44	3 0	5 0	8 1	85
45	2 10	5 0	7 6	87
46	2 11	5 0	8 3	81

5 animals averaging 78

## SHORT-HORNED STEERS (over 3½ years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
33	3 9	5 5	8 10	101
34	3 4	5 6	8 7	97
35	3 7	5 0	8 4	83
36	3 11	5 3	8 7	93
37	3 9	5 3	8 3	86
38	3 7	5 6	8 5	93
39	3 7	4 10	8 4	80
40	4 6	5 8	8 11	108
41	3 8	5 6	8 2	89

9 animals averaging 92

## CLASS XI.—SHORT-HORNED HEIFERS (not 4 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
73	3 8	5 1	7 4	66
74	3 7	5 5	8 5	86
75	3 11	5 4	9 0	123
76	3 7	5 1	8 4	85
77	2 3	5 5	7 10	80
78	3 5	5 1	8 2	81
79	3 7	5 4	8 3	87

7 animals averaging 87

## CLASS XII.—SHORT-HORNED COWS (over 4 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
81	5 8	5 6	9 1	114
82	10 1	5 3	8 0	80
83	6 0	5 7	8 2	98
84	4 8	5 5	8 2	87
85	8 10	5 7	8 2	97
86	6 8	5 6	7 9	98
87	9 7	5 1	7 9	73
88	9 8	5 5	7 5	87
89	4 10	5 7	8 4	91
90	4 8	5 5	8 4	91
91	5 9	5 5	7 11	78
92	7 5	5 9	8 0	87
93	12 0	5 3	8 2	84
94	7 5	5 4	8 4	89

14 animals averaging 90

## SHORT-HORNED HEIFERS (under 4 years).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
63	4 11	5 1	8 0	78
64	4 6	4 11	8 0	76
65	3 11	5 6	8 0	84
66	3 11	5 4	9 0	104
67	4 11	5 6	8 9	100
68	3 8	5 2	7 10	77
69	4 0	5 0	7 11	78
70	4 10	5 0	7 8	74
71	4 4	5 0	7 9	75
72	3 5	5 5	8 0	83
73	4 2	5 5	8 2	83
74	3 11	5 4	7 7	72
75	3 5	5 4	8 0	92
76	3 5	5 4	8 0	85
77	3 4	5 5	8 0	82
78	3 7	5 5	8 0	85

16 animals averaging 83

## SHORT-HORNED COWS (over 4 years old).

No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	YRS. MO.	FT. IN.	FT. IN.	STN.
5	5 4	5 0	8 0	77
6	8 7	5 7	7 9	99
7	9 9	5 1	7 9	73
8	5 0	5 7	8 2	89
9	7 11	5 5	8 3	88
10	5 7	5 5	8 5	92
11	5 3	5 4	7 10	78
12	4 9	5 0	7 10	74
13	5 9	5 6	9 1	114
14	5 6	5 6	8 10	103
15	3 10	5 0	8 5	85
16	6 6	5 6	8 1	86

12 animals averaging 88

## PROFITABLENESS OF CATTLE FEEDING.

HAVING given my attention to various statements in your columns, and in other publications, on the feeding of cattle and its profitableness, I draw the conclusion that the data before the public are not altogether satisfactory. There are considerations affecting this subject which I have not yet seen properly noticed; one of these is advantage derived from locality. Your correspondent "S.," at page 731, says, "the experience of feeders, Mr. Mechi included, is that lean stock cost as much, or more, per stone, than when fattened." In the district in which I am situated it is certainly otherwise; being near the great manufacturing towns we sell our fattened cattle, chiefly direct to the butchers; we are also near a breeding district, which sells off its stock to be fed elsewhere. On comparing the price of my lean purchased cattle with the top price of fat on the same day, I usually find them lower in price by 8d. to 1s. per stone; that this advantage cannot appertain to other localities is clear, not only from what "S." says, but also from what comes under my own observation. My competitors for lean stock in the neighbouring markets are frequently dealers, who carry their purchases a distance of 200 miles to the great Turnip districts of the north; whilst from the same districts great numbers of fattened stock are brought for sale to the towns in my neighbourhood. The cost of transport to and from, with the dealer's commission on profit in buying and selling, will, probably, account for the difference in "S.'s" purchases as compared with my own, making lean stock as dear per stone as fat; to my district, this advantage represents 30s. to 40s. per head, or 1s. 6d. to 2s. each per week—no inconsiderable item in a feeder's reckoning. There is likewise a great discrepancy in the data on another important item of cattle feeding—the quantity, quality, and value of the excrement or manure. Sprengel, whose treatise is published in the Journal of the Royal Society, gives the yield of ammonia in the urine of a cow during 12 months, at about 200 lbs., representing a computed value of 5l.; whilst Professor Johnson, in his Elements of Chemistry, states, according to the practice of Flanders, the value of a cow's urine at 2l. a year.

It requires but little acquaintance with the subject of cattle feeding, to know that the value of the excrement is, in a great degree, dependent upon the food supplied; there is another consideration which I feel persuaded has an influence—the comparative stage of fatness of the animal. I have for some time held the opinion that the disposition of cattle, generally speaking, is in the early stage more to increase of layer or muscle (lean beef), whilst in the later or riper stage it is to increase of fat, in support of which I may state that cattle in a lean state consist of a greater proportion of layer or muscle than when fat. I am by no means sure that in a very advanced or over-fat state the increase is not wholly to fat; if this be at all correct, the same quantity of nitrogenous food continued through a long course of feeding would give in the later stages an excrement richer in nitrogen than in the earlier, and if so the practice of giving a greater quantity of Beans or other nitrogenous food in the advanced stage is erroneous; the same remark applies to Linseed and Rape cake, as far as their nitrogen is concerned, but does not apply to their oil which administrators to fat.

With the view of informing myself, and for the better understanding of my own practice, I have had

recourse to the following experiments:—the first was tried in April and May, during six weeks, on eight heifers; these consumed per week 72 stones of Oat straw, shells of Oats, and a small proportion of Bean straw, 10 stones of Bean meal, and 7 stones of Rape cake, together 89 stones of dry fodder; being 22½ lbs., 18 of straw, and 4½ Bean meal and Rape cake for each per day, with which they drank of water, given separately or mixed with their mess, nearly 70 lbs. per day each. The yield in excrement from this food was found to be for every 100 lb. fodder and water, 72½ lbs. solid and liquid together. A small portion of this was sent to Professor Way for analysis, from which it appeared that the water supplied diminished one-fifth, or 100 lbs. to 80 lbs.; whilst the dry fodder had diminished one-half, or 100 lb. to 50 lb. I give the analysis:—

Moisture	...	...	...	81.77
Organic matter, with ammoniacal salts, sand, and silica	...	...	...	15.51
Alkaline sulphates, muriates, &c.	...	...	...	1.12
Phosphate of lime	...	...	...	.65
Substances undetermined	...	...	...	.95

100.00

Nitrogen 4½, equal to ammonia .54 per cent.

(Signed) J. THOMAS WAY.

This yield of excrement is about 10 tons each animal per year, the value in ammonia, 6s. 6d.; and of phosphate of lime, 1s. per ton, or about 1s. 6d. per week, leaving out the other ingredients. The cattle being visited with the foot distemper, this experiment was not continued further.

The next eight cattle on which experiment was tried were bought in September, their live weight being about 7½ cwt. each on the average, and were in fair store condition. When tied up they were supplied with mown Grass, together with 4 lbs. of Rape-cake and 2 lbs. of Bean-meal each per day. During the month of October the Grass was by degrees changed for chopped straw, a little hay, and Swedish Turnips, of which they ate about 60 lbs. each per day. This food, with the same allowance of 4 lbs. of Rape-cake and 2 lbs. of Bean-meal, was continued till the 20th of December, from which time till the close of January 3 lbs. each per day of Rape-cake was given in addition, making 7 lbs. of Rape-cake and 2 lbs. of Bean-meal per day for each. The weighings were made once every four weeks; in one they had made but little progress, the change of food being attended with a state of relaxation. With this exception their gain was steady. At the close of the experiment, 19 weeks, they averaged 9½ cwt., being 22½ lbs. for each, allowing three weeks for habituating them to change of abode and diet; they gained during the remaining sixteen weeks, on the average, 14 lbs. per week each. I give in a tabular form the amount and description of food supplied to the eight heifers during 21 days in January:—

		Water.	Organic.	Ash.
	lbs.	lbs.	lbs.	lbs.
Rape-cake	1176	86	1001	94
Bean-meal	336	48½	275½	83
Shells of Oats	1260		1162	98
Swede Turnips	10080	9067	987	73½
Meadow hay, inferior quality	1176	164½	949½	61½
Water alone, and with shells of Oats	846	846		
	14874	10205½	4325	335½
Excrement	9600	8152	1163½	284½
Deficiency	5274	2053	3161½	51½



shells of Oats and steamed Bean-straw, in about equal proportions, together with 30 lbs. of Swedes per day, and with as much water as they would drink. As extra food they were supplied with 4 lbs. of Rape-cake, 1 lb. of Bean-meal,  $\frac{1}{2}$  lb. of Linseed, and  $\frac{1}{2}$  lb. of Wheat, ground together. On this food two of the heifers had gained in the month's weighing in March 9 lbs. a week each, the other six 16 lbs. to 18 lbs. each, weighing the average gain somewhat more than 14 lbs. per week each. A sample of the excrement was sent on the 26th of March for analysis, the result of which I give.

Moisture	83.81
Organic matter and salts of ammonia	13.44
Sand, &c.	.93
Phosphate of Lime	.64
Common salt	.18
Sulphate of potash and soda	.95

100.00

Nitrogen .51, equal to ammonia .62 per cent.

(Signed) J. THOMAS WAY.

The yield of excrement is about  $9\frac{1}{2}$  tons per year for each; the value in ammonia, 7s. 6d., and in phosphate of lime, 1s., making together 8s. 6d. per ton—about 1s. 7d. per week for each animal. Taking the excrement as dry, free from moisture, its value is about 53s. per ton.

My Turnips being exhausted with March, an additional quantity of steamed Bean-straw (a very palatable and nutritious food, to which I may at some time more especially draw attention), was substituted for the Swede Turnips; with this, the same allowance of 4 lbs. of Rape-cake, 1 lb. of Bean-meal,  $\frac{1}{2}$  lb. of Linseed ground with  $\frac{1}{2}$  lb. of Wheat, was continued till near the close of May. On this the cattle thrived satisfactorily, their gain in weight throughout being fully 14 lbs. each per week on the average. On the 24th of May a portion of Meadow Grass was mixed with their straw; this was by degrees increased till the whole of their bulky food consisted of Grass, with the like allowance of extra food, 4 lbs. Rape, 1 lb. of Bean-meal,  $\frac{1}{2}$  lb. Linseed, and  $\frac{1}{2}$  lb. of Wheat, ground together. At the close of June the lot was of prime quality, and sold at 6½d. per lb., the then top price of the market. Their gain during June was scarcely equal to the average, being something under 14 lbs. each per week. A sample of the excrement sent to Professor Way on June 29, was found to consist of—

Moisture	84.90
Organic matter, or salts of ammonia	11.94
Sand	.86
Phosphate of lime	1.33
Common salt	.24
Sulphate of soda and potash	.73

100.00

Nitrogen .94, equal to 1.14 ammonia

The yield of excrement being at the rate of nearly  $9\frac{1}{2}$  tons from each animal per year, the value of ammonia may be computed at 13s. per ton, the phosphate of lime at nearly 2s., making together 15s. per ton, being at the rate of 2s. 10½d. per week in manure for these two ingredients only: reckoned free from moisture, 5½d. per ton, to which the sulphate of potash and other mineral ingredients will be an appreciable addition.

It will be observed that the bulky food supplied, when this sample of excrement was sent for analysis, was rich Meadow Grass, at the season it is found to contain the greatest per centage of nitrogen, and that this would materially affect the proportion of nitrogen in the excrement. It would have afforded a more satisfactory test of the correctness of my views as to the disposition of the animals to use or assimilate more nitrogen in the early, and more of fat in the later, stage of feeding, if the same bulky and extra food had been continued throughout. My ordinary practice being to feed off two sets of cattle during the year—one beginning with Grass, and finishing with Turnips (for sale in December and January); the other with Turnips, or other winter food, and finishing with Grass (for sale in July and August)—does not afford me an opportunity of trying this; still, when I find from the analysis of the excrement in the two instances of advanced stage of feeding doubly rich in nitrogen without any perceptible increase in its weight, these experiments tend to confirm this impression.

When it is considered that nitrogen or ammonia costs in food (take, for example, Beans at the moderate price of 7½d. per ton, or 31s. 6d. per quarter), more than 1s. per lb., whilst its value as manure is usually computed at only 6d. per lb., the desirableness of limiting the supply to what is requisite for assimilation in the maintenance and increase of the animal, will be evident. The feeder may calculate that if he go beyond this, his 20s. for such extra supply will diminish to less than 10s., even with Beans at the moderate price I have quoted, 31s. 6d. per quarter; at the present high rates the 20s. so used would diminish to one-third, or 6s. 8d.

My cattle are on boarded floors. The whole of the excrement, solid and liquid, passes into a tank, under the tails of the animals. When filled, the contents are emptied into a mud cart, and during the experiment each load is weighed on a machine. On sending a sample for analysis, the excrement, solid and liquid, shed during 24 hours, is carefully stirred about and blended for some time to insure an average sample. Y.

### Home Correspondence.

*Does Live Stock Pay?*—Having waited for some time in vain expectation of a criticism on the analysis given by "S." under the above heading (p. 730), of Mr. McCulloch's experiments, I venture to make a few remarks on the subject. The general question of the

profitableness of live stock, a most important one in itself, was not the one which Mr. McCulloch by these experiments sought to determine; his object was to find out the comparative feeding properties of certain kinds and combinations of cattle food. He is consequently not to be blamed for using money values as a means of comparison, or for setting his experiments in that light in which under the influence of certain favourable exceptional circumstances they appeared to him as a commercial transaction. When we make use of them to throw light on the general question of the profit which attends or should attend the fattening of live stock, we must, of course, strip them of these exceptional circumstances, we accordingly do not object to the deductions for interest, &c., made by "S." and accept without demur his statement that the exuvie of the cattle cost 112l. 12s. 11d., or, including the litter, 158l. 5s. 5d. The question of profit or loss depends on the value of the manure produced; and not being satisfied with the method adopted by "S." for ascertaining this, by calculating its weight and valuing at a certain arbitrary rate, I have made the following calculation in a way that does not seem to be so liable to objection. I first computed the quantity of nitrogen in the food consumed, and the live weight produced, and subtracted the latter quantity from the former, which gave me, after deducting one-tenth for loss in passing through the animal organism, the amount of nitrogen in the exuvie; and by adding to this the quantity contained in the litter, I had in like manner the amount contained in the whole of the manure.

FOOD CONSUMED.	NITROGEN.	
	Percent.	Amount in pounds.
4306.5 cwt. of Swedes	0.217	1046.6
1566.75 do. Mangold Wurzel	3	526.4
225 do. Carrots	.25	63
51600 lbs. Oat-straw	.25	129
6300 do. Hay	1.	63
14911 do. Bean-meal	4.	5964.6
1136 do. Oilcake	4.6	52.25
9155 do. Rape-cake	5.	457.75
Deduct one-tenth for loss		8302.6
		830.2
Deduct likewise the nitrogen contained in 90 cwt. live weight produced, which, at 2 per cent., amounts to		7472.4
We have in the exuvie		7270.8
Add the nitrogen contained in the litter, 36½ tons		104.4
And we have in the whole manure		7375.2

Equal to 8955.6 lb. of ammonia, which at 6d. per lb. is worth 223l. 17s. 9d., at the cost, according to "S." of 158l. 5s. 5d. making the profit on the transaction 65l. 12s. 4d., or to state the matter in another way, obtaining the ammonia at the rate of 4½d. per lb. And it is noticeable that if we leave out of view the litter consumed, the profit is much greater, or in other words the cost of the ammonia is reduced considerably. The exuvie of the cattle contain 8828 lbs. of ammonia produced at a cost of 112l. 12s. 11d., and worth at 6d. per pound, 220l. 14s. 3d., the resulting profit being 108l. 1s. 4d., or the ammonia being obtained at a cost of 3d. per pound. From this will be seen the correctness of the views expressed by your correspondent "T." and by Mr. McCulloch in his report, that litter absorbs profit as well as urine. I have only to add that the amount of nitrogen in the different articles of food is taken from analyses by Professor Anderson, published in the Transactions of the Highland Society, with the exception of the second and third, which are calculated from the analyses given in Morton's "Cyclopaedia." Aliquis.

*Rotation of Crops in Ayrshire.*—In the *Agricultural Gazette* of November 26th, a statement of the rotations of cropping usually followed in a number of English and Scotch counties was extracted from "Morgan's Essay on Caermarthenshire Agriculture." The Ayrshire rotation is there said to be:—"1st, Oats; 2d, Turnips; 3d, Barley; 4th, Grass seeds to remain for three years." This is incorrect. There are not a dozen entire fields of Barley grown in one season in the whole of Ayrshire. The usual rotation on good soils, where the altitude is not above 400 feet, is a five years' course, consisting of, 1st, Oats; 2d, Turnips, or other drilled green crop; 3d, Wheat, or Oats, sown with Clovers and Rye-grass; 4th, Hay or Pasture; 5th, Pasture. At a higher elevation, Oats are the general crop the third year, and the rotation is lengthened by one or two years of additional pasturage. The heavy nature of the soil, particularly in the districts of Kyle and Cunningham, and the humidity of the climates, have made Barley to be generally regarded as an unprofitable crop. Formerly it must have been a common crop, as the stipends of nearly the whole of the established clergy are payable partly in Barley, or its price for the year, as fixed in the fiar's court. J. D. H.

*Agricultural Progress.*—The following paragraph, taken from the *Hampshire Telegraph*, will, no doubt, be pleasing to those who wish improvements in farming to keep pace with those of other trades:—"Romsey: Steam Threshing.—A trial was made on a farm near this town on Tuesday, of threshing some Wheat by steam, belonging to Mr. Jefferies, corn dealer. The experiment proved very successful." Now, what more can the most go-ahead amateur wish for?—here was threshing by steam tried, and with such effect that it is published as very successful. Now, when I came upon this astounding information I could hardly get myself to understand it.

I read it over and over again, to see what it could mean. I had made up my mind that steam had been proved successful long ago, at least I had seen it often doing duty to the satisfaction of its employers. But it seems not to have been settled here until now; that is to say, until it was tried. Surely Mr. Mechi's opinions respecting steam are spreading when we have such an admission of its utility; and perhaps we shall hear before the season is over of another trial, and sincerely do we hope that it will be as successful! But do the enlightened chroniclers of this event really think that Englishmen are so doubtful of the merits of steam as to need such assurance? Can they not suppose that the power that drives the ponderous railway engine with all its train 50 or 60 miles an hour, and propels the leviathan ship of 2000 or 3000 tons, will be able to drive a threshing-machine? G. S.

*Shed-feeding Sheep.*—Your correspondent George W. Fowler, Prince Hall, Dartmoor, referring to a paper which I read to the Fettercairn Farmers' Club, and of which an extract is given in your *Gazette* of 26th November, enquires what kind of sheep I alluded to? I answer that my ewes were half-breds, Cheviot and Leicester, and tugged by a pure Southdown; and the result, which compared with his own he considers a miserable one, I think may be fairly attributed to the soil and climate, and not to the indifference of the breed. My address was prepared for a local club, and as the members were all well acquainted with the character and climate of my farm, I did not think it necessary more particularly to advert to its very poor quality, which I might have done had I anticipated that any part of it would find a place in your columns. The fact of your having introduced an extract from my paper in your *Gazette*, and two letters referring to it, leads me to the conclusion that you attach (or consider that your readers attach) some importance to the subject, and I, therefore, am encouraged to trespass on your time with a few observations which may probably satisfy your correspondent that the breed is not to blame for any want of success in my results. I may remind him that this is not the climate of Dartmoor, and that ewes do not drop their lambs here, till about the end of March. My hogs were, therefore, only 13 months old when brought to market. In this district (all under alternate husbandry), we seldom have any Grass upon two and three years old pasture, until late in May or beginning of June; and our sown Grass of the first year offers rarely a full bite for cattle before the second week of May, and is not fit to carry sheep until the 1st of May. Contrast this with the early lambing and rich Grass of the south of England, for which disadvantage no after care or artificial food can compensate, and which alone is quite sufficient to account for the difference of weight in our respective produce. Your Dartmoor correspondent has stated the mode of feeding he adopted, and the general result in a price of 43s. 10½d. per hog; but to have enabled your readers to contrast the great difference of profit (on the feeding from December 4th, which he leads them to infer) as compared with mine, he would have required to state the market value of his hog on the 4th December, and put a price upon the subsequent care and feeding. The average value of the 240 acres, constituting my farm, and upon which these hogs were bred, is 16s. per acre. I should probably not have troubled you with any observations upon this subject, did it not afford me the opportunity of remarking that there is no more common mistake made by agriculturists, or one more injurious in its effects, than that of fancying that their particular practice may be generally adopted advantageously, and their results form a rule and standard for the guidance of others, without sufficiently considering the all important differences which exist in soil, climate, and locality. I have to thank your other correspondent, "J. R. W. Gilgarran, Cumberland," for his obliging recommendation of roofed stack yards, and, if not too much trouble, should feel greatly obliged by his favouring me with a description of those which he has adopted, so much to his satisfaction, with particulars as to expense. William McInroy, the Burn, Brechin, N.B.

### Societies.

SOCIETY OF ARTS, Dec. 14.—"A Third Paper on British Agriculture," by Mr. I. J. Mechi, was read this evening before the Society of Arts. The paper has since been published \* in the form of a pamphlet; and our report of it will be an abstract of the paper as it has since appeared. Mr. Mechi commences with a comparison of the present period with that of his last publication, more especially in their political aspects, and congratulates his readers that we "can now breathe freely, and discourse about the strength or weakness of agriculture, unbiassed by political asperities." He then speaks of his own position in agricultural progress:—

"Mr. Mechi is a most inconvenient person—he can't let old things or old prejudices alone; he is always agitating, and lets all the world know it too. The old flail was superseded by the horse gear threshing machine, and now the horse-gears are 'trembling in the balance,' by that inconvenient new comer, Steam. Then there's the new American threshing machine—why, by Mr. Mechi's saying so much about it, it has suspended all the orders and bargains that were about to be made in old threshing machines all over the kingdom."

And again—

"I little thought, seven years ago, that I should outlive the storm of ridicule and censure poured upon me by my practical friends. But it is gratifying to me, on personal and public grounds, to find the Mechan medicine gradually taking effect."

\* Printed by Darling &amp; Son, 81, Leadenhall Street.



I have often to 'congratulate' my neighbours with sly gravity on their steam-engines, Garrett's horse-hoes, covered yards, boarded floors, and drainage of tenacious clays; waggon, and board and thatched buildings, are still clung to with considerable affection, but with a rather doubtful and half-calculating glance at my new-looking brick and slated buildings, although erected 10 years since. If I meet the strong tea half a mile in advance of the farm, after a heavy rain, and make some inquiries as to the condition of the tea leaves in the yards, glancing at the untroughed eaves, I am told 'my landlord ought to do this;' and sometimes I say, 'I suppose you would repay him interest for it?'

In reference to the American threshing machine, he condemns the horse-power by which it was intended to work it; and, passing to English agriculture generally, he is concerned to see that still so little steam is used:

"Every farmer, with 200 to 300 acres, who has not an engine, has a great lesson to learn, and I would have him to understand that a strong four-horse-power steam-engine, worked at 70 lbs. to 90 lbs. to the inch, will tire any 16 real horses he can find, the comparative cost being 150*l.* against 600*l.*, besides eating nothing when not at work, occupying less space, and economising an immense outlay in casualties by disease, cost of attendance, and daily food—6 cwt. to 7 cwt. of coal versus 32*s.* horse feed."

The following is Mr. Mechi's balance sheet for the period between October 31, 1852, and October 31, 1853. He introduces it with the remark—

"I will say nothing of a further sum I ought to claim for improved condition of soil, owing to my having purchased for consumption by my live stock 700*l.* worth of corn, oilcake, &c. I shall have the benefit of this in next year's crop."

To valuation, October 31, 1852—  
Horses ... .. £86 0 0  
Pigs... .. 117 2 6  
Sheep ... .. 203 6 0  
Cattle and cows ... .. 347 0 0  
Implements ... .. 396 12 0  
Tillages, hay, &c. ... .. 620 10 0

Rent of chapel land ... .. 45 0 0  
Tithes, rates ... .. 69 0 0  
Labour, including engineer, bailiff, &c. ... .. 407 0 0  
Guano, bones, and superphosphate of lime ... .. 95 0 0  
Seed corn and seeds ... .. 45 0 0  
Live stock bought ... .. 1280 0 0  
Corn and cake bought for feeding purposes, horses' keep, &c. ... .. 648 0 0  
Coals for engine, tradesmen's bills, &c. ... .. 130 0 0

My improved rent, 36*s.* per acre ... £240 0 0  
Profit ... .. 343 16 3  
583 16 3

By valuation, October 31, 1853—  
Horses ... .. £74 0 0  
Pigs, &c. ... .. 255 6 0  
Sheep ... .. 448 0 0  
Cattle and cows ... .. 239 10 0  
Implements ... .. 390 19 0  
Tillages, hay, &c. ... .. 471 11 9

Wheat, 3½ quarters per acre, 50 acres ... 630 0 0  
Barley, 5 quarters per acre, 11 acres ... 114 0 0  
Beans, 5 quarters per acre, 13 acres ... 145 0 0  
Oats ... .. 10 0 0  
Produce of cows and poultry ... .. 50 0 0  
Hay sold ... .. 55 0 0  
Horse work, labour, hay, manure, &c., for private establishment ... .. 60 0 0  
Live stock and wool sold ... .. 2002 0 0  
Three stacks of old straw ... .. 30 0 0

£4975 6 9  
Cr.

The following, again, is the live-stock account:  
Dr. LIVE STOCK ACCOUNT.

To valuation, 1852 ... .. £753 8 6  
Corn, cake, and feeding stuffs bought ... .. 648 0 0  
Live stock bought ... .. 1280 0 0

£2681 8 6  
Profit, or rather price paid for produce of farm, in roots, green crops, and straw consumed ... .. 337 7 6

£3018 16 0  
Cr.  
By valuation, 1853... .. £1016 16 0  
Live stock and wool sold ... .. 2002 0 0

£3018 16 0  
The quantity of green and root food consumed by the stock is estimated as follows (this includes the keep of farm horses):—20 acres of Mangold Wurzel, about 600 tons; 6 acres of Italian Ryegrass, well irrigated, and five times cut or fed (a very heavy crop); a good second growth of Clover, irrigated, about 16 acres; 13 acres of very heavy Tares and winter Oats; 50 tons of Swedes; 30 tons of Cabbage; the Wheat straw of the farm."

The remainder of the paper is a comparison of the present and former balance-sheets, and a vindication, or rather commendation, of the plan of liquid manuring adopted at Tiptree, as lying at the foundation of the difference between the two:

"Nearly the whole difference between this balance sheet and the former one arises in the live stock account. By irrigation I am enabled to double, if not triple, my green and root crops, and thus render them profitable instead of unprofitable. It is quite clear that if I can double my stock, I also double the quantity of my manure, and thus affect importantly the cereal crops. If I double my green and root crops, I diminish their cost one-half. This is actually the fact, and therein is my present and most agreeable position. Every practical farmer knows that the losing part of his farm is the root crop (I mean in the Midland, Southern, and Eastern Counties, where we have hot summers and little rain). That root crop costs him more than the animals repay, and leaves a heavy charge on the ensuing grain crops. Irrigation changes all this, and permits each crop to be responsible for its own annual charge, thus rendering them all remunerative. I am forcibly and frequently reminded of the truth of this statement by a five-acre pasture opposite my residence. Vainly did I try, by solid manures, to render this vile plastic clay into a useful pasture. It was like bird-lime in winter, and cast-iron in summer—poor, indigestible, and drab-coloured Grasses choked and eradicated the finer kinds I had sown; and the animals wandered about hollow and dissatisfied. In the space of 18 months irrigation has changed all this; new, fine, and fattening Grasses have clothed the field with perpetual verdure; it keeps three times as many animals, and the close and heaven pasture indicates their affection for it. Butter, milk, and cream, alike testify by their richness to the fertility of irrigation, whilst the animals are improved in their condition. Professor Way, in his recent valuable analysis of Grasses, in the Royal Agricultural Society's Journal, has revealed the astounding truth, that irrigated Grasses contain 25 per cent. more meat-making matter than those not irrigated. We all know that Grasses are voracious sinkers; they cannot stand drowning on undrained land in

stagnant water, from which their roots soon extract all the oxygen, but see how prim and green they look beside any trickling rivulet."

"The effects of liquefied manure are so striking in improving our crops, that the cause is worth tracing. We know that there is nothing of which a farmer is so much afraid as the subsoil 6 or 7 inches below the surface; if he brings this at once to the surface, he will grow nothing for some time. This proves clearly that that dreaded subsoil has never received or been improved by the solid manure ploughed into the surface soil, but by applying the solid manure in a liquefied form, it sinks deeply into the subsoil, saturating every granule, and by a thousand affectionate affinities improves its chemical condition, rendering its particles available and agreeable to the fibres of plants. Change of air and change of water are as necessary to roots of plants as to living animals; all this is effected by drainage and irrigation. It is no uncommon thing for us to saturate the soil to the depth of 5 feet in the very strongest clays, making the drains run with the precious fluid, diminished of course in strength and value. The specific gravity and temperature of liquefied manure are much higher than those of ordinary water, thereby warming the cold and inanimate subsoil; we know the effect of bottom heat in our gardens. It is a significant fact that the liquid excrement of animals in dry weather destroys vegetation; dilute it well, as in our sewers, then it stimulates and fertilises."

After a remark or two on the cost of irrigation—the importance of economy of home manures, as enforced by recent reports from the guano islands, and as enforcing the need of improved agricultural education—after a short allusion to the subject of drainage—Mr. Mechi speaks of the steam-cultivator:

"I place before you the model of a steam cultivator,\* which I think is about to introduce a new economy in British Agriculture. I have become as it were a parent to it against my inclination. Mr. Romaine, the intelligent inventor, was consigned to me by the Agricultural Department of the Canadian Government, who had a high opinion of it. After trying in vain to interest some of our implement makers in this invention, I found that it would be lost to agriculture unless I advanced the necessary funds for its manufacture, and for the securing of the various patents. On public grounds I did this, and happy I am to say that its success promises all that the inventor anticipated. If with the assistance of a pair of horses and 5*s.* worth of coke we can effectually cultivate and cultivate 10 acres per day, we may bid farewell to the whole tribe of tormentors, scarifiers, grubbers, harrows, broadshares, and clod-crushers, that consume, through our horses, so much of the food of this country. If it does not supersede the plough, it will limit its operations. When once the steam cultivator is shown to answer, no doubt many others will appear, and I venture to predict, that within seven years, steam will become the grand motive cultivating power. I also exhibit drawings of Mr. Usher's steam-plough; great credit is due to that gentleman, and I trust and believe it will answer his expectation, and be a great agricultural economy, on level land. You will perceive by the models and drawings, that each of these implements may be compared to a steam-vessel on land instead of water. The internal steam-power causes the paddles or wheel-cultivators to revolve against the earth, and the resistance offered by the latter to the power exerted, causes the machine to be propelled. You will also see, that Mr. Romaine's machine will, if required, deposit the seed and roll the land at one and the same time. These may be called dry-weather implements. Every heavy-land farmer will easily appreciate the advantage of being able to complete his cultivation during the long and bright days, when the land works and admires well. Steam, which never tires, will enable him to do this; and he will no longer be pained by seeing his exhausted horses brought home at two or three o'clock in the day, deferring his cultivation until the rains and fogs of November convert his aluminous clays into putty or birdlime. \* \* \* To appreciate the great advantage of steam over horse power, we must reflect that an express engine weighing 38 tons, represents the power of 1000 real horses, which would weigh 750 tons."

The paper concludes with an apt illustration of the need of a "thorough reform of our present absurd, clumsy, dilatory, and costly mode of transferring land."

"I purchased the other day three acres of land that intersected my fields, and was highly amused at the production of as many parchments and documents, as, when spread out, would cover the great charity-dinner table at the London Tavern. After travelling back 75 years to trace the enclosure or kidnapping of this piece from a heath, it traced the death of the parties, their wills, and successors' wills, three or four mortgages several times transferred, and masses of writing out of which any clever lawyer could I should think, extract fifty objections. Apply the same principle to our funded, and every other description of property, and we should come to a dead fix like the Irish encumbered estates. Like those, the very absurdity of the evil will, I fancy, some day work its cure. It certainly keeps down the price of land, by greatly diminishing the competition for it. If, as I believe, such meetings as these tend to reflection, comparison, and amendment, for the general welfare, I retire from you, satisfied with having contributed my mite towards the good cause of agricultural improvement."

#### POULTRY.

BIRMINGHAM.—[We continue our report of this Exhibition from page 814.]—There were 218 pens of game fowls, comprising all the varieties of this beautiful and old English favourite; black-breasted reds, duck-wings, brassy wings, piles, greys and blues, here delighted their respective admirers, and the most determined critic was obliged to admit numbers of pens were faultless. One thing in this class will strike the most careless observer of prize lists, that the same names constantly appear, proving that good birds will always take a good position. Thus in these classes Mr. Wilson, of Redditch, took four prizes, Mr. Felthouse two, Roscoe one. The others went to Messrs. Dummeler, Cox, Lowe (two), Arnold, Avery (two), Hopkins, Leester, Field, Wilson, Parkes, Smith, and Cherrington.

We now come to the Hamburg classes, and while the numbers were good, we cannot, as honest chroniclers, speak in praise of the pencilled classes. The manner in which, in most cases, the pens were made up of three good, and one indifferent, birds, not only entails immense labour on the judges, but also places them in the unpleasant position of being obliged either to withhold all prizes, or to award them to numbers where one bird is so manifestly inferior that the veriest tyro is justified in

\* Mr. Mechi here pointed to the drawings and diagrams of Mr. Romaine's and Mr. Usher's steam cultivators, and being asked how they were to be got over the land, he explained that they were much lighter, in proportion to their power, than horses, for a horse weighed 15 cwt., or more, and a dynamometer showed that he could only exert a force of 2 cwt. In drawing the plough or other implement, the remainder of his power being absorbed in moving his own body. A horse carrying on his back a man of 16 stone weight for eight hours, would find it to be a day's work.

calling attention to it. Very little painstaking would rectify this. So much for the pencilled birds, which as a class were anything but meritorious. The prizes were taken by Messrs. J. Lowe, James Drewry, J. Pearson, and Edward Archer; Messrs. W. Tyler, Pearson, Mousley, Tyler (two), McCann (two), G. C. Adkins, Chime, Taverner, and Miss Tuley. The golden-spangled were an excellent class, and while we should be sorry to be thought severe, or needlessly critical on these classes, we must say many of these birds recently exhibited show evident marks of crossing with laced bantams. The prize pens, however, were free from this defect, and those of Mr. Adkins, who took two prizes, were unusually good. Others went to Lady Calthorpe, Messrs. Tuley, Hill, Throop, Clapham, McCann, Davenport, Beach; and Miss Simmons took the others.

The Poland fowls numbered 70 pens, and many specimens were very beautiful. First prizes in the black with white crests were taken by Mrs. Adkins and Mr. Edwards; second and third by Mr. Guest (two), Messrs. Collis and Edwards. The first in golden Poland went to Messrs. Bush and Winter, second and third to Master Horner, Messrs. Vivian, Mapplebeck, and Winter. The silver were admirable; Messrs. Vivian and Cox took first prizes, and Messrs. Adkins, Rawson, Breavington, and Cyrus Clark took the others. All various classes are alike, and present the same anomalies, and we hope we shall be excused the term, when we say "monsters," beautiful on account of their ugliness. There was, however, one novelty in the shape of a class of Brahma Pootras. Here a second prize was awarded to John Fairlie, Esq., and the first was withheld. Mr. Kettle took two prizes for cuckoos, Messrs. Vivian and Dutton for Poland. There were some beautiful black moss pheasants belonging to Messrs. Brown and Jordan; also some Anconas belonging to Mr. E. Simons. Silkies, rumpless, Andalusians, and frizzled, all took prizes. Two Rangoon fowls, belonging to Mr. Shackel, were of astonishing weight and beauty; they took first prize, and were immediately claimed at the price put upon them. The Sebright bantams were more numerous and of higher merit than common. Mr. Adkins took two prizes, both first, Mr. Hewitt and Mrs. Hosier Williams two each. The blacks and whites were beautiful. The Rev. John Hill, and Mr. G. F. Hodson took both prizes in the latter, and Mr. Moss, of Liverpool, both prizes for black. There were many and deserved commendations in this class. In the other variety of bantams there were some old-fashioned, crested, feathered-legged, and speckled birds, of marvellous beauty; also some game bantams, which we are glad to see on the increase. The geese were a capital class, and the two first prizes were taken by Mrs. Hill, of Stretton Grandison; the third by Lord Hill. The weights were very great, and the prize pen weighed 57 lbs. The Toulouse were again lighter than the English and cross-bred birds.

Perhaps such a pen of Aylesbury ducks as that which took the first prize, and belonging to Lord John Scott, has been seldom seen. They were immediately claimed, and would have made three times the amount without difficulty; Mr. Breavington, and Mr. Weston, of Aylesbury, took second and third. This class was very numerous and excellent. The Rouen ducks were of great size and beauty. Mr. Woolral took first and third prizes, and the Duke of Sutherland the second. In the various classes of ducks, Miss Clifton, Miss Steele Perkins, and Mr. Shackel, took the prizes. The turkeys were beautiful and heavy; the first prize went to Mr. Harrison, of Market Bosworth, and both the others to Miss Fairlie, of Cheverly, a name familiar to poultry prize takers.

So far as regards the prizes, our task is ended. A few remarks only remain to be made. The thanks of the poultry world are due to the originators and managers of this exhibition, and those who are concerned in others will do well to imitate them in many respects—indeed in all. The care taken of the birds, and the liberality shown in feeding was beyond praise, and carried on under the able superintendence of Mr. Hewitt, the well-known judge. A great improvement was also manifest in the poultry stewardship. The acting stewards were Messrs. Shaw, Ward, Taverner, Choyce, Burman, Whittle, Harrison, and Viner. Mr. Hubert Luckcock, who managed one principal department of it, was as successful as his indefatigable exertions deserved.

Thus ended this great Exhibition for 1853. We are enabled to present our readers with some statistics which may be interesting, merely observing that subscribers are not included in these numbers, as they go in and out at will, with their tickets:—

	Receipts.	Visitors.
Tuesday ... ..	£460 15 0	1,843
Wednesday ... ..	681 1 0	12,621
Thursday ... ..	767 18 6	15,359
Friday ... ..	360 1 0	7,201

Two thousand pounds' worth of Poultry was sold in the Show. Nearly 1000 children from the Ragged, Blue-coat, and Deaf and Dumb schools were admitted gratis.

The principal merit of this successful Exhibition is due to Messrs. Wright, Lowe, and Shackel; also Messrs. Luckcock and Matthews. The poultry world is deeply indebted to Mr. Wright, who first conceived this, the parent society of all others. A committee was formed to present him with a testimonial in acknowledgment of his great services in the cause. We trust, and indeed we doubt not, those who have derived pleasure and profit from these friendly competitions will come forward



to testify their esteem and respect for him. The Mayor of Birmingham is chairman of the committee.

One principal topic of conversation was, the decline in Cochon China fowls. We believe they are now as much over-abused as they were before over-praised. They have their valuable properties of laying and domesticity. They will ever be the favourite fowl of the amateur confined to a town; and we are not at all sure that the extravagant prices given for these birds have been of any real benefit to breeders generally. A good, wholesome, and continuous demand will do more real good than the feverish excitement they have caused in past years. The judges were—The Rev. W. W. Wingfield, Gulval, Penzance; the Rev. R. Pulliense, Kirby Wisk Rectory, York; G. J. Andrews, Esq., of Dorchester; W. Symonds, Esq., of Weymouth; Mr. John Baily, of London; Mr. Challoner, of Whitwell, near Workshop.

### Calendar of Operations.

#### DECEMBER.

WEST SUSSEX, Dec. 13.—We may now look forward to a higher average produce of Wheat next year, if the season be at all favourable, for it has been got in well. On every hand we hear the exclamation, What a fine season we have had! And now the Wheat stubbles are ploughed up, and will receive the benefit of the winter frost, which in our heavy lands will be of great advantage. And to counteract the bad effects arising from deficient drainage we think it a good plan to lay the ridge well up, throwing out the last furrow as deep as possible, and bringing up the old clay subsoil in it, because this cold subsoil, unfit to grow anything at present, will be improved by the winter's exposure; and if we are to have the land flooded by winter rains it will find its way off by the deep channels, and if it wash away a little of this subsoil there will not be much loss. But at the best this can by no means remove the necessity for efficient subsoil drainage, which we hope to see more highly appreciated and more generally adopted; and we hope to see the propelling power of the "New Cultivator" applied for the purpose of opening drains, as it cannot be difficult to provide an implement for the purpose, provided we can get a moving power sufficient for it; and well do our implement makers deserve the thanks of the agricultural community, and of the nation at large, for the spirit that they display in contriving articles to meet, and even anticipate, the wants of farmers; and should the steam cultivator succeed, it will open quite a new era in our annals, and upset many of our most cherished opinions. The season has been very favourable for the lambing of early ewes. Those of the horned breed are nearly all in—I mean the old ones, which are the only ones of the breed that are kept on our heavy lands, being bought in every year about harvest time. The lambs are doing well, and promise to be strong. Cattle are doing well; they have up to this time had enough in the fields, but are now getting hay at night, as the weather has now changed from more than usual mildness to be very cold. The most common employment for us will now be to get dung and other manure prepared for the spring corn and root crops, and applying chalk when the state of the land will allow us to get upon it. G. S.

THE LAMMERMOOR DISTRICT.—The weather has been uncommonly favourable for the last month or two, and hill stock is now in good condition to stand the winter. In this respect the past autumn contrasts favourably with the preceding one. The long course of incessantly wet weather then reduced sheep so much in condition that they were very ill prepared to stand the severe spring storming that followed. The bathing season is now over, and the weather having been dry this operation has been satisfactorily executed. It is of the utmost importance that this should be done in dry weather, as much of the material used is in heavy rains washed out of the fleece before it has time to dry on the animal. There are now so many different compositions and preparations for dipping and salving sheep thrust upon public notice, that flockmasters would do well to exercise caution in risking the health and comfort of their flocks upon any new material, except on a small scale, and by way of experiment, however cheap it may profess to be. The point aimed at in bathing or dipping is not attained by merely plunging the animal into a tub and thoroughly wetting it in any of these many compositions, or running into the fleece the required quantity of the favoured material, at the small cost of a halfpenny or a penny each. There have been many instances of death caused by the use of such preparations, composed of improper material; but very many of them are excessively harmless, killing the vermin perhaps, but altogether useless for the prevention or eradication of skin diseases, to which there is always more or less tendency in all flocks, according to their pasturage, and having no pretension whatever to forming a comfortable winter's great-coat for the sheep. In this respect nothing has as yet equalled the application of tar and butter, but the wool is so much discoloured and stained by its use as to be very materially reduced in value, besides inducing a slow market. The additional weight of the fleece compensates in some measure for this. It is also a very expensive application in comparison with others, being done at the cost of 4d. to 5d. a sheep. There is yet abundant scope for invention in the production of material for bathing, combining the essential qualifications of killing the vermin, preventing skin disease, and, not least important, the protection of the sheep in winter. The jacketing of hogs is also executed at bathing-time, but this practice, with so much to commend it, is only very partially carried out. Those hogs which are to be partially fed on Turnips during the winter were put on in the end of last month. The farms in this locality are generally partly arable, and the hogs are allowed to remain on the Turnips for four or five hours in the middle of the day, and then removed to the heather, where they remain all night. There has been a very considerable fall of hogs this autumn, from sickness, termed in this neighbourhood "Grass-ill." *Lammermoor, December 9.*

WESTER ROSS, Dec. 15.—Our season for Wheat sowing has this year been particularly favourable, and the farmers, as if calculating on the present high prices continuing, have taken advantage of the fine season, and have sown a greater breadth than ordinary. There is still a good deal to do, the greater part of which will now be over until spring. The kinds of Wheat more ordinarily sown in this quarter are Essex, a kind which, although perhaps not yielding such a large return, is of fine quality, weighs heavy, and is not particularly liable to deteriorate by repeated sowing; red-strawed Wheat, a kind which, although not ordinarily such a fine sample, yields perhaps a larger return; and red Wheat, a still coarser kind, which never fetches the top price, but which yields a large acreable produce, and suits well for spring sowing. I heard a farmer say that he had this season a return of from 6 to 7 quarters per acre of this last named Wheat. Before it is out it looks short and thin, but when put through the mill, the head being thick set, it is always found to thresh out remarkably well. Having had occasion to pass through Morayshire lately, I was surprised with the appearance of the stack-yards, there being a fourth, and in some cases a third, of the usual number of stacks wanting. Straw is selling unusually high, the straw of a quarter of grain fetching 20s. and upwards, the usual price being 9s. or 10s. Wheat threshed out is worse even than was anticipated, and the high prices will have much to do in making up the deficiency arising from a bad crop. The Turnip crop in Morayshire, however, is about an average one. Prizes were this year given for the best fields of Turnips, and from the report published by the valuers, it would appear that the average

weight of Swedes, per imperial acre, is 21 tons 11½ cwt., of yellow 18 tons 2 cwt., and of common 22 tons 13 cwt.; whilst the highest weight of Swedes, being those that gained the prize, was 27 tons 16 cwt., of yellow 25 tons, and common 27 tons. The farmers in the far north, although a steadily progressing class, are not much tainted as yet with that go-a-head mania which seems to possess our southern agriculturalists, and by which they are driven at more than railway speed along courses which often lead to disappointment and loss, and under the influence of which even sensible men are led to express opinions utterly at variance with all northern agricultural experience, such as that "stock is a necessary evil;" hence, although we have our steam mills which at one and the same time thresh out the grain, dress, elevate, and measure it over into the granary, and that at the rate of 5 or 6 quarters an hour, and although we have taken advantage of every substantial invention and improvement down to the improved rope-making machine, there is little anxiety evinced to have our land turned over by steam, our manure conveyed to the fields through pipes, our cattle fed on wooden floors, or our corn cut with reaping machines. We have had a fair trial of these machines, but as they are at present constructed they do not bid fair to come speedily into general use, for out of a pretty large number who supplied themselves with them, one only managed to cut down his whole crop, and that upon a second year's trial; whilst the others, after repeated failures, cast them aside, and allow them now to lie by dyke-sides rotting. The successful experimenter says that he succeeded because his crop was light, and adds that should his crop be an ordinarily heavy one he would not depend upon it. Such as yet is our experience of reaping machines.

### Notices to Correspondents.

CHALK: *Saturday.* Chalk is a good coating and bedding for dung-heaps. It is an absorbent, and will act as a stopper in the smelling bottle.

GORSE COVER: *F O X* asks how a gorse covert is to be got up on stiff, retentive, but well-drained clay.

PEAT-CHARCOAL: *The Writer* will be obliged to any of the readers of the *Agricultural Gazette* for a description of the manufacture of peat-charcoal, as practised on an extensive scale.

ROOFED STACK-YARDS: *A Welsh Farmer* says "Will your correspondent 'J. R. W.' Gilgarran, Cumberland," have the kindness to give some particulars of the construction of his roofed stack-yards alluded to in his letter published by you on the 10th inst."

\* \* \* We have to beg pardon of our correspondents for the delay attending the publication of their communications. We have in type—Notes of an Agricultural Tour in Ireland, by Martin Doyle; Grain Fallows, by J. M. Goodfif; Purposes of Ammonia in Vegetable Economy, by J. H. H.; On the Curing of Bacon and Pork, by C.; Covered Yards for Manure, by Major M'Inroy; On Gorse, by the Newcastle Farmers' Club; Sewage as Manure, by J. T.; Cod-liver Oil as Food for Animals, by Dr. Pollock, in "The Lancet;" Profitableness of Cattle Feeding, by Y.; all of which shall appear as soon as possible. We have also received the following communications:—Lois-Weedon Culture, by J. Goodfif; Application of Manure, by P. H.; Receipts for Cottage Cookery, by W. Lort; Land Drainage, by S. Johnson, P. Mitchell, A. Draining Engineer, and J. Trimmer; Formation of Ammonia, by J. H. H.; Breeding and Management of Pigs, by C.; Liquid Manure and Irrigation, by J. Goodfif; and many others.

### Markets.

#### COVENT GARDEN, December 24.

Vegetables are quite sufficient for the demand, and the same may be said of Fruit. Late Grapes are very good, more especially West's St. Peter's and Muscats. Pears consist of Glout Moreau, Chaumontel, Winter Nellis, Beurré d'Hiver, Monsieur le Curé, and Beurré d'Aremberg. Chestnuts are plentiful. Potatoes continue to arrive from Scotland in large quantities. Asparagus is coming in at from 8s. to 10s. per hundred, and Seakale at from 3s. 6d. to 4s. 6d. per punnet. Carrots and Turnips fetch from 2d. to 4d. per bush. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Fuchsias, Roses, Mignonette, and tree Carnations.

#### FRUIT.

Pine-apples, per lb., 3s to 5s  
Grapes, hothouse, p. lb., 5s to 8s  
— Portugal, p. lb., 1s to 2s  
Apples, per bush, 4s to 8s  
— dessert, p. hf sieve, 2s to 4s  
Pears, per doz., 2s to 5s  
Lemons, per doz., 1s to 2s  
Oranges, per 100, 4s to 10s

#### VEGETABLES.

Cabbages, per doz., 9d to 1s  
Cauliflowers, each, 6d to 8d  
Broccolis, per doz., 3s to 4s  
Brussels Sprouts, doz., 2s 6d to 3s  
Rhubarb, per bundle, 1s to 1s 6d  
Potatoes, per ton, 60s to 160s  
— per cwt., 5s to 7s  
— per bush., 2s 6d to 5s 6d  
Turnips, per doz., 3s to 4s  
Cucumbers, each, 6d to 1s  
Celery, per bundle, 6d to 1s 6d  
Carrots, per doz., 4s to 6s  
Spinach, per sieve, 2s 6d to 3s  
Beet, per doz., 1s to 1s 6d  
Onions, Spanish, p. doz., 1s to 3s  
— per bushel, 2s 6d to 3s  
Leeks, per bunch, 3d to 4d

#### COAL MARKET.—FRIDAY, December 23.

Hollywell, 33s.; Eden Main, 33s.; Wallsend Riddell, 33s. Wallsend Stewarts, 35s.—Ships at market, 27. No market for Monday next. Very few ships at sea.

#### POTATOES.—SOUTHWARK, MONDAY, December 19.

The Committee report that during the past week the arrivals have been considerable both coastwise and foreign, but limited by rail, and trade heavy for most sorts, except for the best samples of Regents, which were rather scarcer than for some time past. The following are this day's quotations:—York Regents, 110s. to 140s.; East Lothian do., 100s. to 130s.; do. reds, 110s. to 120s.; Perthshire Regents, 100s. to 120s.; Forfarshire do., 100s. to 120s.; Fifehire do., 100s. to 120s.; Reds and Cups, 80s. to 100s.; Rhenish, 70s. to 95s.; Norway and Swedish, 60s. to 80s.

#### HAY.—Per Load of 36 Trusses.

##### SMITHFIELD, THURSDAY, December 22.

Prime Meadow Hay 85s to 105s  
Interior do. ... 50 70  
Rowen ... 45 65  
New Hay ... — —  
E. J. DAVIS.

##### CUMBERLAND MARKET, THURSDAY, December 22.

Prime Meadow Hay 110s to 155s  
Interior do. ... 40 88  
New Hay ... — —  
Old Clover ... 120 132  
JOSHUA BAKER.

##### WHITEHALL, THURSDAY, December 22.

Fine old Hay 100s to 105s  
Interior do. ... 90 95  
Fine new Hay 70 75  
Interior do. ... 36 50  
Fine old Clover 120 123  
Interior do. ... 90 100

HOPS.—BOROUGH MARKET, FRIDAY, December 23.  
Messrs. Pattenden and Smith report that there is little more inquiry for Hops; prices about the same.

#### WOOL.—BRADFORD, THURSDAY, December 15.

WOOL.—The near approach of Christmas, when a general holiday is observed, and many being engaged in stock-taking, tends to keep the buyers from the market, and there is only a limited business doing. The stocks held are certainly less than usual at this period, and the prices demanded by the growers are such as prevent staplers coming to the seat of consumption. Noils and brokes are not abundant, and prices firm.

YARNS.—The demand is somewhat improved, but no inducement in price to bring unemployed machinery into operation.

Prices.—There is no material business doing, except for next year's account, and the curtailment of the last three months must tell favourably, on the opening of the new year. Prices may be quoted firmer, with an upward tendency.

#### SMITHFIELD.—MONDAY, December 19.

There is, for the day, a large number of Beasts, and most of the butchers having bought liberally on Monday last—the great market-trade today is very slow. Choice descriptions, however, are disposed of at full rates. Although the supply of Sheep appears small, it is adequate to the demand. There is a considerable inquiry for choice Downs, and being scarce they are rather dearer. There is a small advance in good Calves. From Germany and Holland there are 660 Beasts, 830 Sheep, and 8 Calves; from Scotland, 120 Beasts; from Norfolk and Suffolk, 400; and 2000 from the northern and midland counties.

Per st. of 8 lbs.	s	d	s	d	Per st. of 8 lbs.	s	d	s	d
Best Scots, Here-	4	6	to	4	Best Long-wools...	4	6	to	4
fords, &c.	4	6	to	4	Do. Shorn	0	0	0	0
Best Short-horns 4	2	4	to	4	Ewes & 2d quality 3	8	4	0	0
2d quality Beasts 3	6	4	to	0	Do. Shorn	0	0	0	0
Best Downs and	4	10	to	5	Lambs	0	0	0	0
Half-breds	4	10	to	5	Calves	4	0	5	2
Do. Shorn	0	0	0	0	Pigs	3	8	4	8

Beasts, 3550; Sheep and Lambs, 15,950; Calves, 69; Pigs, 285.

#### FRIDAY, December 23.

This is almost a holiday market, both as respects supply and demand. The few things on offer cannot all be sold. Some of the most saleable descriptions, both Beasts and Sheep, meet with purchasers at about 2d. per 8 lbs. reduction; but in other descriptions there is scarcely anything doing. Trade is also very dull for Calves; they are, however, disposed of at a slight reduction. Foreign supply is 145 Beasts, 910 Sheep, and 17 Calves. Milch Cows, 80.

Per st. of 8 lbs.	s	d	s	d	Per st. of 8 lbs.	s	d	s	d
Best Scots, Here-	4	6	to	4	Best Long-wools...	4	6	to	4
fords, &c.	4	6	to	4	Do. Shorn	0	0	0	0
Best Short-horns 4	2	4	to	4	Ewes & 2d quality 3	8	4	0	0
2d quality Beasts 3	6	4	to	0	Do. Shorn	0	0	0	0
Best Downs and	4	10	to	5	Lambs	0	0	0	0
Half-breds	4	10	to	5	Calves	4	0	5	2
Do. Shorn	0	0	0	0	Pigs	3	8	4	8

Beasts, 551; Sheep and Lambs, 2370; Calves, 56; Pigs, 140.

#### MARK LANE.—MONDAY, December 19.

The supply of Wheat from Essex and Kent to this morning's market was small, the best parcels of which were taken at an advance of 3s. to 4s. per qr. upon the terms of this day's evening, whilst the secondary and inferior were a difficult sale at 2s. to 3s. per qr. The trade for foreign was confined to retail purchases, and the sales made were at an advance of 3s. to 4s. per qr. Barley brings an advance of 2s. per qr. Beans and Grey Peas are the turn dearer; white sell at an improvement of 1s. per qr. For Oats there is a fair trade at an advance of 1s. to 2s. dearer. Christmas Flour meets with more inquiry, and is 1s. to 2s. dearer. Christmas Fall falling on a Sunday, there will be no market held on Monday, Dec. 24.

	s.	d.	s.	d.	s.	d.	s.	d.
Wheat, Essex, Kent, & Suffolk ... White	76	50	Red	83	76	50	Red	83
— fine selected runs ... ditto	74	82	Red	82	70	80	Red	80
— Talavera	70	84	Red	80	70	84	Red	80
— Norfolk	60	82	Red	80	70	84	Red	80
— Foreign	60	82	Red	80	70	84	Red	80
Barley, grind. & distil., 34s to 40s ... Chev.	38	48	Malt	38	42	38	48	Malt
— Foreign, grinding and distilling	26	38	Malt	38	42	26	38	Malt
Oats, Essex and Suffolk	26	38	Feed	24	29	26	38	Feed
— Scotch and Lincolnshire ... Potato	27	30	Feed	24	29	27	30	Feed
— Irish	25	29	Feed	25	28	25	29	Feed
— Foreign ... Poland and Brew	26	30	Feed	25	28	26	30	Feed
Rye	29	44	Foreign	29	44	29	44	Foreign
Rye-meal, foreign	38	44	Harrow	38	44	38	44	Harrow
Beans, Maragan ... 35s to 45s ... Tick	51	62	Longpod	40	46	51	62	Longpod
— Pigeon ... 48s — 54s ... Winds	52	58	Egyptian	43	50	52	58	Egyptian
— Foreign ... Small	60	63	Suffolk	61	65	60	63	Suffolk
Peas, white, Essex and Kent ... Boilers	40	44	Foreign	40	42	40	44	Foreign
— Maple ... 43s to 47s ... Grey	40	44	Yellow	40	42	40	44	Yellow
Maize ... White	65	70	Country	50	60	65	70	Country
Flour, best marks delivered ... per sack	50	60	Per sack	58	68	50	60	Per sack
— 2d ditto ... ditto	50	60	Per sack	58	68	50	60	Per sack
— Foreign ... per barrel	35	44	Per sack	58	68	35	44	Per sack

#### FRIDAY, December 23.

The arrivals of grain, either English or foreign, have been moderate. The attendance at this morning's market was pretty good, and a fair business transacted in both English and foreign Wheat at the full prices of Monday. Some sales of floating cargoes from the south have been effected at 69s. to 70s. for Taganor Ghirka, 69s. for Galatz, 64s. for Ibrailo, to the U. K., and 53s. for Egyptian to the Continent. 2s. per qr., c. & f. and the value of all descriptions of spring corn is unaltered. Flour is held firmly at the extreme prices of Monday.

#### ARRIVALS FROM THE 19TH TO 23D DECEMBER.

	Wheat.	Barley.	Oats.	Flour.
English	760 qrs.	1890 qrs.	770 qrs.	1920 sacks
Irish	—	2880	15730	—
Foreign	28,920	1850	19580	10,120 brls

LIVERPOOL, TUESDAY, Dec. 20.—There was a pretty good attendance of millers and dealers at this morning's market, who bought to a moderately fair extent of Wheat and Flour for present consumption, paying an advance on the prices of Tuesday last of 4d. to 6d. per bushel on Wheat, and 6d. to 1s. per barrel and sack on Flour. One large parcel of choice Michigan white Wheat changed hands at 11s. 3d. per 70 lbs. The demand to-day was scarcely so active as during the present week. The demand for Indian Corn revived, and several purchases were made for Ireland, at full prices: 44s. 6d. to 45s. per 480 lbs. were made for fine, yellow, round corn. In Oats no change. Oatmeal 6d. per load dearer. Barley, Beans, and Peas unchanged in value. Arrivals in Liverpool and Runcorn from the 13th to the 19th of Dec, inclusive:—Wheat, 6272 qrs.; Barley, 673; Malt, 92; Oats, 4508; Beans, 73; Peas, 749; Indian corn, 6085; Oatmeal, 6774 sacks; Flour, 586 sacks and 13,619 barrels.

	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Nov. 12	73s 7d	42s 2d	26s 5d	42s 7d	49s 9d	56s 7d
— 13	73 7	42 3	26 0	43 11	52 6	58 7
— 16	70 2	41 9	26 0	43 7	50 11	54 9
Dec. 3	72 7	40 9	26 3	43 5	52 0	53 5
— 10	71 11	39 9	25 4	43 3	50 6	51 5
— 17	70 9	38 9	24 11	44 7	48 10	51 10
AGE. AVER.	72 3	40 11	25 8	43 6	50 9	54 1

#### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

	Nov. 12.	Nov. 19.	Nov. 26.	Dec. 3.	Dec. 10.	Dec. 17.
73s 7d	—	—	—	—	—	—
72 9	—	—	—	—	—	—
72 7	—	—	—	—	—	—
71 11	—	—	—	—	—	—
70 9	—	—	—	—	—	—
70 2	—	—	—	—	—	—



**FENDERS, STOVES, AND FIRE-IRONS.**

Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY, as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 21. 14s. to 51. 10s.; ditto, with ornate ornaments and two sets of bars, 51. 10s. to 121. 12s.; Bronzed Fenders complete, with standards, from 7s. to 31s.; Steel Fenders from 21. 15s. to 61s.; ditto, with rich ornate ornaments, from 21. 15s. to 71s.; Fire-irons from 1s. 9d. the set to 41. 4s. Sylvester and all other Patent Stoves, with radiating heating plates. All which he is enabled to sell at these very reduced charges,

1st.—From the frequency and extent of his purchases; and, 2dly.—From those purchases being made exclusively for cash.

**DISH COVERS AND HOT-WATER DISHES**

In every material, in great variety, and of the newest and most *recherché* patterns. Tin Dish Covers, 6s. 6d. the set of six; Black Tin, 12s. 3d. to 28s. 9d. the set of six; elegant modern patterns, 34s. 0d. to 58s. 6d. the set; Britannia Metal, with or without silver-plated handles, 76s. 6d. to 110s. 6d. the set; Sheffield Plated, 101. to 161. 10s. the set; Black Tin Hot-water Dishes, with wells for grates, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Sheffield plated, full size, 111. 11s.

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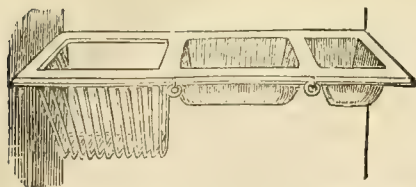
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# THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 53.—1853.]

SATURDAY, DECEMBER 31.

[PRICE 6d.

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**CHELTEMHAM GREAT EXHIBITION, of 1854.**  
OF HORTICULTURE, the Arts and Sciences connected therewith, and Designs taken therefrom. To open on the 1st June, 1854. Programmes are now ready, containing Rules, Regulations, Schedules of Prizes, &c. &c., and may be obtained on applying to the Secretary, Mr. HENRY S. COCHRANE, 128, High-street, Cheltenham.

## DOUBLE ITALIAN TUBEROSES.

**DAWE, COTTRELL, and BENHAM, Successors**  
to FREDERICK WARNER, have just received their supply of the above, in excellent condition, price 3s. 6d. per dozen. The usual allowance to the Trade.  
Their Wholesale Lists of Garden, Agricultural, and Flower Seeds are now ready, and will be forwarded, post free, on application.—3, Laurence, Pountney Lane, and 36, Moorgate Street London. (Established in Cornhill 1720.)

## WAITE'S NEW EARLY PEA.

**DANIEL O'ROURKE.**—The earliest and best Pea in cultivation; a week earlier than the Emperor, longer pods, and a much better cropper; height 2½ to 3 feet. If this Pea does not give general satisfaction the money charged will be returned. Trade price to be had on application to J. G. WAITE, Seed Merchant, 181, High Holborn, London.

## SUPERB NEW APPLE.

**BRADLEY'S GOLDEN PEARMAIN.**  
**RICHARD BRADLEY** begs to inform Nurserymen and the Public generally, that he is again prepared to send out this very excellent New Apple. Fine healthy plants at the following reduced prices:—Dwarfs, 2s. 6d. each; Half Standards, 3s. each; Full Standards, 3s. 6d. each; with the usual discount to the trade when three plants are ordered. For full particulars of its excellent qualities see *Gardeners' Chronicle* of October 9th, 16th, and 23d, 1852.—Halam Nursery, Southwell, Notts.

## JUDSON'S

**RICHMOND VILLA BLACK HAMBURG VINE.**  
**ARTHUR HENDERSON and CO.** have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.  
N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

**SUTTON'S COLLECTIONS OF GARDEN SEEDS.**  
—In consequence of the numerous applications for the particulars of sorts and quantities contained in these Collections, Messrs. SUTTON present a List in another column of this paper, being the "CONTENTS of the NUMBER ONE COLLECTION," which they have no doubt will be generally and highly approved.

Gardeners and others who may prefer making their own selection are recommended to apply for our **GENERAL PRICED CATALOGUE**, which will be sent prepaid on receipt of one penny stamp.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**AMERICAN PEACHES FOR CHRISTMAS.**  
—This excellent fruit, perfectly fresh, and of the finest flavour, we are now importing from the United States, "hermetically sealed," in jars and cans. Those in jars, preserved in brandy, at the reduced price of 5s.; fresh Peaches, in cans, 4s.; spiced, 3s. They will be forwarded to all parts of the country on receipt of a Post-office order for the amount.—Sold, with every variety of American goods, at the American Warehouse, by ROGERS & CO., 646, New Oxford Street, London.

## DILCOCK'S BRIDE BROCCOLI.

**BAINBRIDGE and HEWISON** (late Jas. Edward), have the pleasure of again offering to their friends and the public their **DILCOCK'S BRIDE BROCCOLI**, at 2s. 6d. per packet, each containing 1200 seeds; and while returning their thanks to their numerous patrons of last season, they beg to refer them to the following extract, taken from the *Yorkshireman* newspaper of the 30th of April last, when it was exhibited at York, for the fourth time:—"Mr. Dilcock deservedly obtained all the three prizes for Broccoli with his seedling—the 'Bride.' Taking the season into account, those vegetables were really remarkable specimens." It was equally successful the two previous years.

B. & H. will be prepared to send out their Catalogues of Kitchen Garden and Flower Seeds for 1854, early in January, post free, on application, and also their Catalogue of Plants early in March, containing Stoves, Grapes, &c., including many of the newest and choicest of the season. Their seed will be of the very best quality, and in the greatest possible variety.

Sold Wholesale by Messrs. COOPER, & BOLTON, Fleet Street; Greenhouse & Garden, Covent Garden; and by all respectable seedsmen in town and country.—7, Bridge Street, York, Dec. 31.

## PRICES AT MARK LANE.

**IN ACCORDANCE** with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition of the **AGRICULTURAL GAZETTE AND GARDENERS' CHRONICLE** will be published every Monday Afternoon, in time for post, commencing with the New Year. The Monday's Edition will, in addition to the usual markets, contain a full report of the Mark Lane and Smithfield Markets of the day.—May be ordered of any News-agent. Price 6d.

## SUPERB DOUBLE HOLLYHOCKS.

**WILLIAM CHATER** has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp. Saffron Walden Nursery, December 31.

**GENTLEMEN'S GARDENERS** should apply for **FAIRBANK'S EARLY CONQUEROR PEA**, as the best and earliest variety out. To be had of CLARK & CO., Seedsmen, Borough.

**THE FINEST BALSAMS IN EUROPE, in Six**  
Classes; Seed saved by Mr. GLENNY from flowers three inches across; the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

**JAMES MELDRUM, NURSERYMAN, Kendal, West-**  
moreland, begs to announce that he has a very large stock for sale, of fine one-year Seedling ASH, and one-year Seedling OAKS, also a quantity of fine TRANSPLANTED OAKS, 2 to 3 feet. Prices very moderate; may be obtained on application.

**LIMETREES, 12 to 14 feet, 42s. per 100.—SPRUCE**  
FIRS, 2 to 3 feet, 6s. per 100.—LAURUSTINUS, very fine, 30s. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

**FRUIT TREES, &c.**—The following are very strong, and finely grown:—Dwarf-trained Moor Park Apricots, and other sorts, 42s. per doz.; Standard trained Peaches and Nectarines, 60s. to 80s. per dozen; Dwarf trained Green-gage Plums, 30s. per dozen; Apple Albert Rhubarb, strong to force, 6s. per dozen. Berberis aquifolium and Berberis dulcis.—These beautiful shrubs are 1 to 2 feet high; 8s. per 100, 60s. per 1000.—Usual discount to the Trade.—JOHN JEVES, Nurseryman, Northampton.

**BASS and BROWN'S ASSORTED COLLECTIONS.**  
OF VEGETABLE SEEDS, comprising the best in cultivation, including several new sorts of excellent quality. £ s. d.  
No. 1.—Collection for a large garden, containing 20 quarts Peas, in 20 best sorts, and all other vegetable seeds in proportion, for one year's supply..... 3 0 0  
No. 2.—Collection in smaller proportions..... 2 0 0  
No. 3.—Collection do. do..... 1 5 0  
No. 4.—Collection of good kinds for a small garden..... 0 15 0  
Our New Seed Catalogue is in the press, and will shortly be ready. Copies of the Autumn Catalogue may still be had for three penny stamps.

Goods (not under 20s.) carriage free to all stations in London. Seed and Horticultural Establishment, Sudbury, Suffolk.

**SUTTON'S COMPLETE COLLECTIONS OF**  
**KITCHEN GARDEN SEEDS FOR ONE YEAR'S**  
SUPPLY contain all the best sorts of Vegetable Seeds for sowing, from January to December, to stock the garden throughout the year, with descriptions and instructions.

No. 1.—A complete Collection of Garden Seeds for one year's supply, including 20 quarts of the best Peas for succession, 10 quarts of Beans, and full quantities of French Beans, choice sorts of Broccoli, Cucumbers, Melons, Lettuces, Cauliflowers, and every other sort of Vegetable required, in full quantities..... 3 0 0  
No. 2.—A complete Collection, in quantities proportionately reduced..... 2 0 0  
No. 3.—A complete Collection, equally choice sorts..... 1 5 0  
No. 4.—A small and very choice Assortment..... 0 15 0

If some kinds of Seeds are already possessed, purchasers are requested to name them, that increased quantities of others may be sent in lieu of them.

As some sorts are very short in stock this year, purchasers are respectfully recommended to send their orders early. CARRIAGE FREE, from JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

**NEW SEEDS—GROWTH OF 1853.**  
**RENDLE'S COLLECTION OF GARDEN SEEDS,**  
FOR ONE YEAR, will be sent out as usual by the Subscribers.

The collections have given universal satisfaction, and they will be found sufficient to supply a garden during the whole of the 12 months.

No. 1.—A complete Collection, to supply a large garden £ s. d.  
for 12 months, including 20 quarts of the newest and most approved Peas, for early, medium, and late crops; 10 quarts of Beans, and full quantities of all other kinds of veg. table seeds..... 3 0 0  
No. 2.—A complete Collection, in reduced quantities, for a smaller garden..... 2 0 0  
No. 3.—A complete Collection do. do..... 1 5 0  
No. 4.—A small and choice Collection..... 0 15 0

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WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

ESTABLISHED 1796.  
The New Price Current for 1854 is just published, and can be had from the Proprietor, or through any Bookseller from the LONDON OFFICE, 294, STRAND.

**RENDLE'S NEW PRICE CURRENT AND**  
**GARDEN DIRECTORY** is now published, and can be obtained from Messrs. WM. E. RENDLE & CO., Seedsmen, Plymouth, or from any Bookseller, through the LONDON OFFICE, 294, STRAND.

Price Sixpence. For description see another page.

## TO THE SEED TRADE.

**ABRAHAM HARDY and SON, SEED-GROWERS**  
and SEEDSMEN, Maldon, Essex, beg respectfully to inform the Trade that their Wholesale Priced List of Vegetable and Flower Seeds for January 1854 may be had on application.

## NURSERIES, SLEAFORD.

**JOHN and CHARLES SHARPE, SEED GROWERS**  
and NURSERYMEN, beg to state that their Wholesale Priced List of Seeds and Nursery Stock is now ready, and may be had on application.

**DAWE, COTTRELL, and BENHAM** (successors to FREDERICK WARNER), beg to inform their Friends and the Trade that their Wholesale List of Prices is now ready and may be had on application.—3, Laurence Pountney Lane, and 3 Moorgate Street, London.

**STANDISH and NOBLE'S CATALOGUE** for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Dec. 31.

## AMERICAN PLANTS.

**JOHN WATERER** begs to announce that his new CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management. The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment. The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

**GEORGE BAKER** begs to say that his **DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c.** may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high. G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

**GARDEN SEEDS and IMPLEMENTS.**—The Subscribers respectfully intimate that their **PRICED CATALOGUE OF VEGETABLE and FLOWER SEEDS, and GARDEN IMPLEMENTS**, for 1854, is now published, and will be forwarded on application.

EDWARD SANG & SONS, Nurserymen and Seedsmen, Kirkealdy.

**TROPÆOLUM AZUREUM**... 42s. per dozen.  
" **BRACHYSERAS**... 18s. "  
" **TRICOLORUM**... 24s. "

The above are very strong sound roots just commencing their growth, and might with safety be transmitted through the Post Office. Usual discount to the trade when ordered by the dozen. HUGH LOW & CO., Clapton Nursery, London.—Dec. 31.

**HUGH LOW and CO.** have the pleasure to announce to their Friends and the Public that they have now received the greater part of their Stock of Vegetable and Flower Seeds, selected with considerable care from the best growers. They would more particularly recommend their collections of German Flower Seeds, consisting of Stocks, Asters, Larkspurs, Balsams, Zinnias, &c., all which are of the best quality, and imported direct from Erfurth.—Clapton Nursery, London, December 31.

## NEW DAHLIAS—1854.

**E. SPARY, NURSERYMAN, Florist, &c., Queen's**  
Graperies, and 176, Western Road, Brighton, begs to call the attention of Florists, &c., to the following new Seedling Dahlias; as show-flowers, are warranted first-rate, having obtained First-class Certificates:—

**ARIEL** (ALEXANDER'S), shaded peach-blossom, fine form and habit, height 3 feet; 10s. 6d.

**GLORY** (SPARY'S), dark scarlet, first quality, 3 to 4 ft.; 10s. 6d.

For further description, vide "Glenney's Almanack," and "Turner's Florist," where they are recommended in the list of new flowers for 1854. E. S. having purchased the entire stock, can ensure extra fine plants; his pot-roots of select older varieties are fine.

Vines in pots, from his celebrated Graperies; best sorts of Chrysanthemums, select sorts, best adapted for his new mode of training; extensive stock of Geraniums, Fuchsias, Verbenas, Greenhouse and Bedding Plants, Shrubs, Seeds, &c. Choice Flowers and Bouquets cut to order.—Brighton, December 31.

## SUPERB LATE WHITE BROCCOLI—"EMPEROR."

**EDMUND PHILIP DIXON** having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Th-ringbald, near Hull, begs to announce that after the 1st of January next he will be prepared to send it out in sealed packets at 2s. 6d. each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, who state that the **EMPEROR**, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'GILL, 6, Lendenhall Street London. Also of the Advertiser, 57, Queen Street, Hull.



## POMPION CHRYSANTHEMUM.

**J. ROBINSON**, with a desire to respond to the many applications for hints on the cultivation of Pompions, takes this the most public means of informing such applicants and Florists in general, that with the January Number of the "Florist, Fruiter, and Garden Miscellany" will be given, by the kind permission of Mr. C. Turner, such practical hints on the propagation, growth, and blooming of this FAVOURITE AUTUMNAL FLOWERING PLANT, as from actual experience he is enabled to offer in detail. J. R. would therefore direct attention to the medium referred to, and trusts that his inquiring friends will accept his brief treatise as a general response.—December 31.

**HAWKES' CHAMPAGNE RHUBARB.**—This most desirable variety is now for the first time offered to the public. It has stood the severest test that can be applied, and has beaten everything in Covent Garden and other London Markets in realising higher prices, from its magnificent colour and size. It has been seen by the very highest authorities and pronounced to be a most valuable introduction. In earliness it equals the Prince Albert, but of a deeper colour, and much greater beauty. It forces remarkably well, and is very hardy out of doors. Mr. HAWKES has placed the entire sale in the hands of Duncan Haits. One-year-old plants, strong, 5s. each. A few two years old, very strong, for sale.

**LAING'S MAMMOTH RED CELERY.**—This is considered the largest yet grown, attaining the extraordinary weight of from 10 to 12 lbs., and at the same time perfectly solid. It is nearly perennial in its habit, as it will not, under any circumstances, run to seed the first season, and it is difficult sometimes the second when planted out for that purpose. In colour it is a bright red. In flavour unsurpassed if equalled.

It has been seen growing by many practical gardeners, who deem it a new feature in the garden, from the fact that it may be had nearly all the year. Packets 2s. 6d. each.

**MITCHELL'S HARDY EARLY CAULIFLOWER.**—This is grown precisely as the handglass variety, but when removed from the frame does not require the same protection, and comes in immediately after. This is particularly recommended for gentlemen's establishments. The head is not large, but handsome and compact, and is so firm that you may let them stand from 10 days to a fortnight and they will not get frothy or loose. This is quite a distinct variety. Packets 2s. 6d. each.

**DUNCAN HAITS**, Seedsman, 109, St. Martin's Lane. Post Office orders to be made payable at Charing Cross.

**BENJAMIN R. CANT** begs to offer the following in extra strong plants:—

## NEW SHOW GERANIUMS.

Hoyle's Astrea, 5s.; Basilisk, 3s. 6d.; Butterfly, 3s. 6d.; Leonora, 5s.; Oscar, 5s.; Zaria, 5s.; Foster's Eleanor, 3s. 6d.; National, 3s. 6d.; Optimum, 7s. 6d.; Rachael, 5s.; Dobson's Gertrude, 5s.; Harriet, 3s. 6d.; Jupiter, 3s. 6d.; Pasha, 5s.; Spot, 5s.; Vulcan, 5s. The above 16 for 55s.; any 12 for 48s., or 12 of my own selection for 36s.

Any 12 of the following first-rate varieties may be selected for 20s., or 12 of my own selection for 16s.:

Arethusa	Exhibitor	Ocellatum
Ajax	Incomparable	Purple Standard
Alibi	Lavinia	Plantagenet
Butterfly	Magnet	Silk Mercer
Commissioner	Moechna	Tyrian Queen
Diana	Major Domo	Village Maid
Enchantress	Nepaulse Prince	

Good older sorts 6s., 9s., and 12s. per dozen.

## FANCY GERANIUMS.

Purchasers may select any 12 of the following for 12s., or my own selection 9s. per dozen:—

Anais	Fleur d'Marie	Miss Sheppard
Albion	Hero of Surrey	Pelopides
Beauver	Jehu Improved	Purity
Belle Marie	Little Wonder	Prince Albert
Diana Vernon	Mulberry	Prima Donna
Delicate	Marion	Queen Victoria
Exquisite	Madame Mieliez	Statuick
Fairy Queen		

## NEW CINERARIAS.—The set of 8 for 18s.

Charlotte, 2s. 6d.; Charles Dickens, 2s. 6d.; Conspicua, 2s. 6d.; Kate Kearney, 3s. 6d.; Loveliness, 3s. 6d.; Marguerite d'Anjou, 3s. 6d.; Prince Arthur, 3s. 6d.; Rosalind, 3s. 6d.

Purchaser's selection from the following, 9s. per dozen; my own, 6s. per dozen:—

Annie	Effie Deans	Mr. Sidney Herbert
Adela Villiers	Experimental Blue	Nymph
Angelique	Flora M'vor	Nonsuch
Agnes Wakefield	Fornosa	Othello
Bessy	Lady Hume Campbell	Prima Donna
Catherine Hayes	Lady Gertrude	Rosy Morn
Catherine Seaton	Madame Cerito	Resplendens
Carminata	Madame Sontag	St. Clair of the Isles
David Copperfield	Mazzini	Susie
Eleanor	Marianne	

Carriage paid to London and Norwich, and all intermediate Stations. A liberal discount for cash, and the usual allowance to the trade.—St. John's Nursery, Colchester.

## TO NOBLEMEN, GENTLEMEN, AND COMPANIES PLANTING.

**THOMAS JACKSON AND SON** respectfully invite an inspection of their extensive and fine collection of ORNAMENTAL SHRUBS and TREES; they are of fine growth, and in excellent condition for planting for immediate effect. To the undersigned T. J. & Son especially desire attention. Prices may be obtained by letter or personal application.

American Arbor-vita, 2 to 10 ft.	Deutzia gracilis, 1 to 2 feet, fine
Chinese do., 2 to 8 ft., fine	Rhus eximia, 3 to 8 feet, fine
Arbutus, 3 to 5 feet	Pinus insignis, 3 to 5 feet
Aucubas, 2 to 4 feet, very bushy	Cryptomeria japonica, 2 to 6 ft.
Cedar, Decid., 2 to 12 feet, fine	Taxus pyramidalis, 2 to 6 feet, fine
Cedar of Lebanon, 2 to 9 ft., fine	Laurustina, 1 to 3 feet, very bushy
Variegated Hollies, 2 to 9 feet	Evergreen Oaks, 2 to 7 feet, fine
Green do., 2 to 9 feet	Portugal Laurels, 2 to 5 feet
Weeping do., 5 feet stems, fine	Magnolia acuminata, 4 to 10 ft.
Berberis aquifolium, 2 to 3 feet, bushy	Do. grandiflora Exmouth, 2 to 5 feet, fine
Taxodium sempervirens, 3 to 12 feet, fine	Tree Pæonies, 1 to 3 ft., bushy
English Yew, 2 to 9 feet	Chinese Junipers, 2 to 8 ft., fine
Irish do., 2 to 8 feet, very fine	Upright Cypress, 5 to 8 ft., fine
Tree Box, 2 to 7 feet	Forsthia viridis, 2 to 4 ft.
Araucaria imbricata, 1 to 5 feet, fine	Red Cedars, 3 to 5 feet, fine

T. J. & Son having added to their previously good stock of American Plants, about one-third of the entire stock of the Norbiton Nursery, so long famed for its collections of Hybrid Rhododendrons, Azaleas, &c., can now offer on most advantageous terms—

Rhododendron ponticum, 1 to 5 ft., in great variety.  
Do. aureum, and the varieties of yellows, 1 to 7 ft.  
Do. Smithii, tigrinum, and other scarlets, 1 to 9 ft.  
Do. campaulatum and light varieties, 1 to 7 ft.  
Azaleas, Indian, American, and Ghent varieties, 1 to 6 ft.  
Kalmia latifolia, and others, 1 to 4 ft.

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"Royal Gardens, Kew, Sept. 29, 1853.

"Sir,—The Salix caprea pendula, or Kilmarnock Weeping Willow, is doing well with us, and is much admired for its density weeping character. It bears the same relation to the ordinary Salix caprea that the Weeping Ash does to the Common Ash, and I need say nothing more in its favour. Every branch is gracefully curved downwards, and the great breadth of the foliage and its dark colour give it a totally different character from the common Weeping Willow, Salix Babylonica. I think very highly of it as an ornamental small tree.

"I am, &c. (signed) W. J. HOOKER."

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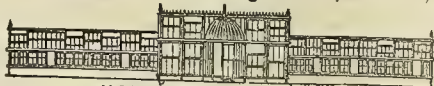
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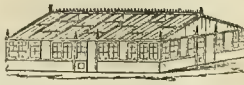
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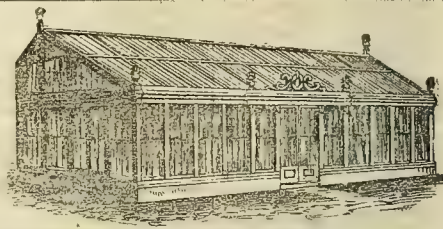
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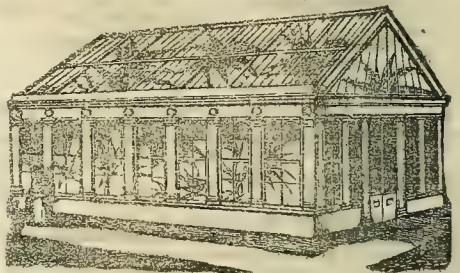
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education now given to the industrial classes, for, unfortunately, their attention is turned to literary acquirements, instead of to what would be useful either to the wife or to the servant. As to indolence, this should not be imputed to them, until they have the means of cooking economically with a coal fire. In most receipts for cheap food, injunctions will be found to "boil slowly," or to "simmer gently," for two, three, or more hours, but this cannot be done on a coal fire without constant attention to it, and this though the stove, or grate, be any of the improved ones.

What is wanted by cooks in a small way is a stove which, like the embers of a wood fire, will enable a housewife to leave it to itself for several hours together, cooking her dinner the while. The French woman, whether cottager or professed cook, sets her stew-pan or soup-pot amongst wood embers mixed with ashes, and leaves it to itself for hours; the English woman might easily be enabled to do the like, though her fuel be coal, all that is wanting being a properly constructed stove. The Arnott stove affords an example of the principle upon which a good cooking stove might be devised—this principle is simply that of surrounding the fire with materials that conduct heat slowly—sand, for instance—at the same time at pleasure regulating the quantity of air that passes through the fire, thereby commanding the degree of heat it gives out. For a cooking stove on this principle it would be desirable to have one aperture, at least, in the upper plate, for the purpose of boiling fluids gently, a moveable non-conducting cover being provided for each aperture. An ARNOTT'S stove is found to heat an apartment at a very small cost for fuel, and so much is it under command that the fire may be kept alight in it during the whole of a winter's night without the least attendance. That a cooking stove on this principle might be devised is undoubted, and a prominent advantage of it would be that the housewife at breakfast time could set on her pot, leave it to itself, go about other business than cookery, and at dinner time find the family meal hot and nicely cooked. Some five-and-twenty years ago a young student of mechanical engineering, who afterwards became one of our most renowned engineers, contrived for his own use a tiny tin apparatus of the kind; it was heated by a lamp—he put his dinner into it early in the morning, and at one o'clock found it ready for his table. It is true that a hot-plate affords means of stewing and simmering gently, but in this case the fire must be kept burning equally. So it must if an oven be employed for soups, stews, or other comestibles, otherwise the contents of the oven are sometimes but half cooked, at others burnt even to a cinder.

We really think this a subject very well deserving the attention of inventors, who would most certainly find their account in constructing a cottager's cooking stove upon the principles above explained, namely: 1, composed of some durable non-conducting material; 2, capable of being carefully regulated, without a risk of the explosions or other inconveniences to which ARNOTT'S stoves are liable with ignorant or negligent persons; 3, to burn, without feeding, for many hours; 4, to be very inexpensive. It strikes us that something like a very common, cheap French stove or *poêle*—chiefly made of fire-brick, like PEARCE'S cottage stoves, and with no more metal than is required to hold it together—would be very likely to answer the end proposed. At all events, without such an apparatus, good economical cookery is impossible.

#### DEVELOPMENT OF LEAVES.

THE late Professor De Candolle first suggested that leaves are developed from above downwards; this idea was adopted by M. Steinheil, but he admitted that compound leaves are exceptions to the law. M. Mercklin denies the existence of these exceptions. He maintained that the upper leaflets are produced before the lower ones, and that the stipules are formed not only after the base of the blade, but also after the upper extremity of the petiole. M. Ad. de Jussieu, after examining the leaves of *Guarea*, has admitted that compound leaves may very well be developed from above downwards. We shall shortly perceive that the opinions of MM. Ad. de Jussieu and Steinheil are correct as regards a certain number of leaves, but that there are many exceptions.

The stem terminates in a very delicate cellular tumour, from the sides of which the leaves are developed; these first present themselves in the shape of still smaller tumours, alternate, opposite, or verticillate. When opposite or verticillate leaves are to be united at the base, a circular struma precedes them on the axis; when they are not confluent the tumours are isolated; lastly, when alternate leaves are sheathed, the sheath either takes its rise from a circular eminence or struma round the stem, or else the rudimentary tumour which first shows itself, enlarges, and finally embraces the stem.

Leaves which all originate in a primary cellular eminence, with or without a basal struma, according as

they are to have sheaths or not, are developed after four principal types, which I shall call the centrifugal formation (from below upwards), the centripetal formation (from above downwards), the mixed formation, and the parallel formation. In the centrifugal formation all the parts are formed from below upwards. If it is a pinnate leaf that we examine, and it be furnished with stipules (*Galega officinalis*, *Gleditschia ferox*, &c.), the petiole (rachis) first makes its appearance; on its sides come the stipules, then the lower pair of leaflets, then the second pair, then the third, fourth, and so on. In the *Galega* the extremity of the petiole becomes a leaflet, in the *Gleditschia* this change does not take place, in the genera *Lathyrus*, *Vicia*, &c., the petiole is prolonged into a tendril. If the leaf is supra-decompound the primary tumour or rachis in growing throws out secondary petioles, and these latter tertiary ones, &c., according to the composition of the leaf at the extremity of which the leaflets form.

The development of simple leaves is frequently as complicated. I will here explain succinctly the development of the leaves of the Lime tree. It will give an idea of the way in which the nervures and toothings are formed, on which subject incorrect opinions have been given by some. The leaf commences with a rudimentary tumour at the apex of the stem. This tumour lengthens and enlarges, leaving at its base a contraction which represents the petiole. The blade, at first entire, is soon divided from side to side by a sinus. The lower lobe is the first secondary nervure; the upper part is subdivided in the same manner five or six times, in order to form as many nervures of the same sort.

About the time that the third or fourth upper lobe makes its appearance, the lower one, which was formed first having also extended, becomes sinuous at its edges. These sinuosities are the indications of the origin of five or six ramifications of the lower nervure. At this period the leaf is furnished with as many toothings as there are nervures. But in a short time fresh toothings appear between those first formed, these correspond with the development of as many secondary nervures. The nervures which unite transversely with the adjoining nerves are produced at the same time. The hairs which cover the under surface of the leaf are also formed from below upwards. Thus the various kinds of nerves in the leaf of a Lime tree develop like the different sorts of shoots in the tree that bears them, and the toothings do not arise from cells specially adapted for that purpose in the edge of the leaf, as M. Mercklin has supposed.

Leaves developed centripetally are equally numerous with the preceding; of this sort are the leaves of the *Sanguisorba officinalis*, *Rosa arvensis*, *Cephalaria prosera*, &c. In these plants the terminal leaflet is produced before all the others, the pair of leaflets nearest the apex of the leaf next make their appearance, then the second pair, the third, and so on, from the apex to the base. When the leaf is furnished with stipules, they are produced before the lower leaflets. I have been unable to ascertain their existence before the upper ones. All digitate and radiate leaves belong to the centripetal mode of formation as regards their digitate nervures (*Carolina*, *Trifolium lupinaster*, *Geranium*, *Helleborus*, *Tropæolum*, &c.).

In the *Potentilla reptans*, &c., not only do the leaflets grow from the top downwards, but their secondary nervures and toothings appear in the same way.

There are some plants in which the two preceding modes of development are combined. The lobes of the leaves of the *Acer platanoides*, &c., and the midribs of those lobes which are digitate, form from above downwards; the lower lobes are produced last, but the secondary nervures and the toothings are developed like those of the Lime tree. The *Acer* is one of the types of the mixed formation. The *Centaurea scabiosa* furnishes us with another equally curious example; the lobes of the upper half of the leaf are formed from below upwards, those in the lower half from above downwards. Some other composites (*Barkhausia taraxacifolia*, *Leontodon Taraxacum*, &c.) belong to this type, but it would be more difficult to describe it in them than in the *Centaurea scabiosa*.

The parallel formation is common to many monocotyledonous plants. All the nervures are formed in a parallel manner; but in this, as well as in the case of dicotyledonous plants, the sheath is the first that makes its appearance (*Carex riparia*, &c.). The leaf lengthens more especially by the base of the blade, or that of the petiole when it exists (*Chamærops*, &c.); the sheath, often extremely small, does not increase in growth till a later period; the same holds true with regard to dicotyledonous plants, when they have a sheath. In some monocotyledons with parallel nervures I have found that the midribs are older than the lateral nervures, this would ally the parallel formation to the centripetal; but I have proved that they are distinct; for instance, in the *Arundo donax* between the nervures that were formed first others develop at the base of the sheath, according as the sheath itself increases in size.

I will only add a few words on the growth of leaves, which has been confounded with their mode of formation. All leaves which are furnished with sheaths, or those which are very much protected by having their lower portions enveloped with other organs, grow most by the base; on the other hand, those of which the whole petiole is exposed to the air at a very early period, in consequence of the stem lengthening, grow much more towards the upper part of the petiole (*Tro-*

*pæolum majus*, *Nelumbium speciosum*, &c.; *Galega*, *Æsculus*, &c.) Nevertheless, there is a short space near the insertion of the petiole in the blade where the increase in length is less than a little lower down. This influence of the sheath, or of a protection which acts in the same manner, is such in the pinnate leaves of the *Chamædorea maritima*, the leaflets of which make their appearance about the same time, that although the upper ones are the youngest they are more than 20 centimetres long ( $7\frac{3}{8}$  inches), when the lower ones are only 3 or 4 millimetres ( $\frac{1}{8}$  to  $\frac{1}{4}$  of an inch). *Trécul*, in *Comptes Rendus*, May 2, 1853.

#### STYPHELIA TUBIFLORA.

PLANTS which bloom in winter and early spring, if but of ordinary merit, must be set down as valuable, inasmuch as they assist in furnishing a supply of cut bloom, and keeping the flower-house gay at a season when blossoms are scarce, and therefore more prized than at other periods of the year. But the fine habit, the elegantly-shaped and variously-coloured blossoms with which this plant is covered for some two months together, would render it a favourite, even if it could be had in bloom only at the season when blossoms are most plentiful. Although not difficult to propagate, like most hard-wooded plants this roots but slowly, and as good plants may be purchased from the nursery for a trifle, perhaps its propagation had better be left to the trade. In choosing, be careful to select healthy dwarf, bushy plants; winter them in a light, airy part of the greenhouse, giving a careful supply of water, beyond which they will require very little attention at this season. About the middle of March turn them carefully out of their pots, and if the balls are well filled with healthy, active roots, shift into pots two sizes larger than those in which they have been growing.

After potting place them in the warmest end of a greenhouse or in an intermediate house where the night temperature may range about 50° or 55°, and where a moist growing atmosphere can be maintained to promote a vigorous root action and a free growth. The shoots should be nicely tied out, bending down the points so as to regulate the flow of the sap, and prepare the buds on the lower part of the shoots for starting into growth. Having given a liberal shift, there will be some danger for a time, of over-watering the soil, or allowing it to become too dry, either of which errors would greatly injure if not ruin the specimen. These dangers, however, are easily avoided by having the soil and the ball in a nice moist healthy state at the time the operation is performed, making the fresh soil pretty firm about the old ball, and syringing the plants overhead morning and evening until the roots get hold of the fresh soil, after which they will require a liberal supply of water at the roots. When free growth commences any over strong shoot should be cut back if necessary, to secure a close bushy form of growth; but if the shoots are tied out as directed, cutting back will hardly be necessary in the case of well-grown young plants.

A higher temperature than that already directed should not be maintained by means of fire heat, and when free growth has commenced air should be freely admitted on every favourable occasion.

In summer this plant enjoys a moist atmosphere, slight shade from the mid-day sun, and a free circulation of air, without exposure to drying winds; and perhaps a cold frame affords the most convenient situation for securing these conditions. By placing a stratum of small coal ashes, 6 inches deep, in the bottom of the frame, water is absorbed, and given off in the form of atmospheric moisture whenever the air becomes dry, and by raising the lights on the sheltered side, a circulation of moist air is secured, which is of the greatest consequence towards obtaining rapid growth; and shading, &c., is more conveniently effected here than elsewhere. During the early part of summer, the sashes should be shut down early in the afternoon after moistening the specimens over-head with the syringe, raising them late in the evening; and on soft, warm nights after the middle of July, the sashes may be left off for the night, exposing the plants to the night dews. A second shift will probably be required about the end of June; this, however, will depend upon the health of the specimens, &c., and should be given as soon as the pots may be filled with roots, both to prevent any check of the growth at this season, and also to get the pots moderately well filled with roots previous to winter. In September, the plants should be gradually inured to full exposure to sun and air, removing them on the occurrence of cold damp weather or drenching rains, to a light airy part of the greenhouse, and supplying them very carefully with water, especially any recently potted specimens. If the young wood has been properly ripened, an abundant display of blossoms may be obtained at almost any time after November, by removing the plants into a gentle moist heat, but unless the wood has been well matured it will be better to leave them to bloom in the greenhouse. After blooming, cut back the shoots pretty closely and allow the plants a fortnight's rest in a cool house, giving very little water to the soil; then remove them to a moist growing temperature, and as soon as they start into growth shift into pots a size larger, observing the same caution in watering, &c., as directed for last year. As soon as active growth commences give air more freely, and gradually prepare the plants for removal to the greenhouse, from which they should be removed to a sheltered place out of doors



for the summer, but care must be observed not to suddenly expose them to bright sunshine; indeed a situation shaded from the forenoon sun should be afforded them during summer. By using means to check the growth early in autumn, and to get the wood well ripened in September, the plants may be had in bloom most of the winter.

The *Styphelia* requires a soil composed of prime rich fibry peat with a sufficient admixture of sharp silver sand to ensure the rapid percolation of water through the mass after the decay of the fibre, and a sprinkling of lumpy charcoal or small potsherds is also useful. *Alpha.*

#### COMPOSITION OF PEAT SOILS.

THE necessity of knowing by strict analysis the chemical composition of soils intended for the growth of ornamental plants has been long felt. In fact it is often desirable to ascertain in what proportions and in what form, sand, clay, lime, and organic matter are present. It is more especially in the soils intended for the growth of delicate plants that this knowledge becomes valuable; and the simplification of the processes for separating the various substances may be of considerable service. Having had occasion to examine four different sorts of peat-earths, in order to ascertain their composition, we have obtained very satisfactory results indeed by merely adopting the following entirely mechanical mode of proceeding.

1. *Separation of the Water.*—This operation is performed by the ordinary means, that is to say, by exposing a known weight of soil in a water-bath, maintained at the boiling point, and keeping the soil there till it undergoes no further diminution in weight. The difference between the weights before and after drying is the proportion of water.

2. *Separation of the Coarse Sand.*—Five grammes of peat soil were mixed with water, so as to be of the consistency of a thick soup. This was then carefully squeezed between the fingers, so as to break all the lumps. This rather tedious operation is of great importance; it might be rendered shorter by triturating the soil in a mortar; but by that method the quantity of sand could not be determined, as the stony parts would be divided as well as the lumps. The mixture having been sufficiently squeezed, more water was added, and the whole stirred briskly. After having settled for a few seconds, the sand fell to the bottom, and the lighter matter remained in suspension. The latter portion was poured upon a fine piece of cloth, held over a vessel intended to receive the thinnest parts carried down by the water. The sand was thus washed several times, and the water used successively filtered through the cloth. When washed till the water remained clear on being agitated, the sand was carefully collected, dried by the fire, and weighed.

3. *Separation of the coarser remains of Organic Matter.*—The matter deposited on the cloth was shaken under a small stream of water, which carried off the more finely divided portions. This operation was continued until the water passing through the cloth remained clear. The coarser deposits remaining on the cloth were then carefully removed, dried in a water bath, and weighed.

4. *Separation of finely divided Organic Matter known by the name of Humus.*—The water of these washings was allowed to rest till next day. When the deposit had collected, most of the clear liquid was poured off, and the remainder, after having been stirred, was passed through a paper filter in order to collect the solid matters. The filter having been well drained was exposed to the air to dry; it was then dried in a water bath. In order to guard against any loss, the dried filter and humus were weighed together, and the weight of the paper before the process commenced deducted.

5. *Separation of the Fine Sand.*—As the humus carries with it the finer parts of the earthy matters, it was incinerated in a platina capsule; by this means the organic matter was dissipated and a very fine sand remained, which was weighed, and its exact nature examined.

6. *Separation of Soluble Matter of Organic and Inorganic Origin.*—In order to ascertain the proportion of soluble matter, it was necessary to make a separate analysis. Ten grammes of peat soil were macerated for 24 hours in 100 grammes of distilled water. The substance was squeezed and the liquid filtered. Fifty grammes of the limpid infusion were then taken, that quantity representing the amount of soluble matter contained in five grammes of soil. The liquid was then evaporated, and the residue burnt in a platina capsule, which had been weighed beforehand. The weight after combustion represents that of the soluble inorganic matter. The proportion of soluble organic matter was not specially ascertained. We contented ourselves by subtracting the sum of all the products obtained, from the quantity of soil experimented on, the remainder was the soluble organic matter and loss.

7. *Chemical Nature of the Earthy Matters separated by the preceding processes.*—The chemical nature of the earthy substances was determined by means of hydrochloric acid. In the case of the siliceous sand it has no action; but with the calcareous matter it causes a brisk effervescence. The argillaceous matter, or clay, which could only exist in the fine sand, was recognised by the property which it possesses of remaining a long time suspended in water. This method, although empirical,

appeared sufficient in an analytical process which it was our wish to render as simple as possible.

*Results obtained by the above mode of proceeding.*

M. Van Houtte's Camellia earth, from Ghent, in Belgium:—	
Water .....	9.00
Siliceous sand .....	45.50
Finer sand, somewhat calcareous, with traces of argillaceous earth .....	3.10
Coarse remains of organic matter .....	33.50
Humus .....	7.00
Soluble inorganic matter .....	0.20
Soluble organic matter and loss .....	1.70
	100.00

Peat soil from Angers (Maine-et-Loire):—	
Water .....	10.00
Siliceous sand .....	42.50
Finer sand, somewhat calcareous, with traces of argillaceous earth .....	4.70
Coarse remains of organic matter .....	32.00
Humus .....	9.50
Soluble inorganic matter .....	0.60
Soluble organic matter and loss .....	0.70
	100.00

Peat soil from the Epinettes, Commune de Pontlieux (Sartre):—	
Water .....	6.00
Siliceous sand .....	46.00
Finer sand, not calcareous, but with traces of argillaceous earth .....	6.50
Coarse remains of organic matter .....	23.50
Humus .....	10.00
Soluble inorganic matter .....	0.20
Organic matter of gelatinous appearance, and loss .....	7.80
	100.00

Peat soil from the Hunaudières, Commune de Mulsanne (Sartre):—	
Water .....	30.50
Siliceous sand .....	10.25
Finer sand, calcareous and very argillaceous .....	6.00
Coarse remains of organic matter .....	26.00
Humus .....	25.50
Soluble inorganic matter .....	0.20
Soluble organic matter .....	1.55
	100.00

8. *Remarks on the Products of the Analysis.*—It is to be remarked that water was found to a certain extent in proportion to the organic matter of every kind. In the soil from the Hunaudières it reached the unusual proportion of 30 per cent. This extraordinary quantity is far from being advantageous for the cultivation of plants, because soil that contains so much water hardens and cracks by drought; and when then applied, the water passes through without thoroughly moistening it. To improve peat soils of this description, they require to be mixed with sand, and it is very difficult to make this mixture complete, on account of the hard lumps contained in this sort of soil, and which cannot be sufficiently divided to amalgamate properly. The form and proportion of siliceous sand is not a matter of indifference. This element of the soil greatly contributes to its porosity, an important property which prevents the retention of water, and allows the air to penetrate to the roots, there to carry on its beneficial action. The sand which has been designated siliceous sand, is found in Van Houtte's Camellia soil in nearly equal fragments; it appears as if it had been passed through a sieve. That in the other three sorts of soil is round, unequal, and larger in size than in the preceding. In soil from the Hunaudières this substance is in too small a proportion.

The occurrence of fine sand is entirely accidental, and its presence in a larger proportion would be injurious by diminishing the porosity of the soil. The remains of organic matter, together with the siliceous sand, greatly contribute to this porosity; by their hygro-metric properties they retain part of the water which they may receive; and further, by changing into humus, the organic remains become food fit for the support of plants. This is, in our opinion, one of the most beneficial elements of a peat soil; we find it in large quantities in Van Houtte's soil and in that of Angers; on the other hand it is in small proportion in those of the Epinettes, and of the Hunaudières.

The humus may be said to be the natural food of those plants which grow in peat soils, to which a manure containing too great a quantity of nitrogen would prove fatal. The most advantageous proportions of humus appear to be those shown in the three first analyses, but when it reaches so high a proportion as in the soil of the Hunaudières it becomes ineligible on account of the property which it has of hardening and cracking, and when once dry of not retaining the water, as has been previously stated.

The part which the soluble inorganic substances play in vegetable nutrition not being well known, we abstain from all comment on that subject.

The soluble organic matter is most frequently nothing but humus in a very advanced state of decomposition, and so reduced as to be easily absorbed by the spongioles, and distributed to the organs by which the food of plants is elaborated.

In examining the soil from the Epinettes, we remarked with astonishment the abundance of soluble organic matter it contained. *Guérranger and Bonhomel, Rev. Hort.*

#### Home Correspondence.

*Gesnera zebрина.*—The capabilities of this splendid and useful plant for winter blooming are not generally known and appreciated; indeed with a little care masses of this rich velvety-leaved plant may be had in perfection when other flowers are scarce, and in a warm conservatory all the winter. It will succeed admirably under the following treatment. About the middle of February plant the scaly bulbs singly in 3-inch pots, in a compost of two parts fibry peat, one part turfy loam, and one part charcoal and silver sand, incorporating the whole well together. Place them in a frame or pit in a gentle bottom-heat, and when the atmospheric heat is

about 60°. When the plants have reached between 2 and 3 inches in height they may be transferred at once to the pots in which they are intended to flower. Collect the desired number of 14-inch pots, taking care to secure good drainage by using plenty of crocks and charcoal, and employing the compost as before, only in as rough a state now as possible. Place five plants in each 14-inch pot; but for the sake of variety and convenience for the drawing-room, &c., some may be planted singly in 9-inch pots. When the operation of potting is completed re-arrange as before, watering well to settle the soil about the roots of the plants; afterwards a sprinkling will be sufficient for some time, shutting up early in the afternoon. A slight shading will also be necessary in bright sunshine. As the plants advance in growth they will require more water, and occasionally weak manure-water may be used, particularly when they show signs of blooming; they will also require to be staked; and when five are in a pot to be tied out, in order to make fine specimens. As they come into bloom they should be removed to the conservatory, which will require to be kept rather close for a few days. Afterwards more air can be given; but always avoid cold currents. The following plan, which is simpler, I have found to succeed equally well as the above. Start the bulbs in pans, and after they have attained the proper size plant and treat them in every respect as before. By putting in a succession a month later, these early plants can be had in full flower all the winter; and indeed I may say all the year. After they have done flowering, and the leaves have begun to shrivel, they may be gradually dried off and allowed a season of rest. *J. Russell.*

*Weather in Dorset.*—We have very sharp frosts here; Saturday night 25°, last night 22°, or lower. Sunday last, the 18th, which was a hard dry frost in London, it rained here all day, but Thursday previous, the 15th, the thermometer was at 22° at night. The frost has not been off the hills at all during the two or three days' relaxation in the general weather last week. *S.*

*McGlashen's Tree Transplanter.*—As requested in your Number of Dec. 10th (see p. 789), I have much pleasure in forwarding for your inspection a Scotch Fir tree in two parcels, viz., the root carefully removed from the soil, and the tree itself. The specimen sent is an average one in height and growth among the 35 referred to in my previous communication to you as having been removed by my apparatus. It formerly grew on the sloping bank of a railway, which the adjoining proprietor had thickly planted with Scotch Firs, Pines, &c. He having considered it advisable to thin the slope, the trees referred to were marked by him to be cut down, to give freedom to the growth of the others, but instead of being thus wasted, they were removed by my apparatus to a piece of ground in an adjoining cemetery, and planted in March last in soil somewhat similar to that from which they had been removed. The dimensions of the tree now sent are as follows:—Height 8 feet 2 inches, circumference of branches 17 feet, girth of stem 10 inches, average length of rootlets made from those parts cut by my apparatus 1 foot 4 inches, but a number of the longest were broken off in the removal, and the length of shoot made last season, since removal, 1 foot 5 inches. I beg your special attention to the main root, which measures 3½ inches in circumference at the part cut; you will please observe that it has there made good rootlets, but several are wanting, having also been broken off in removal. The size of ball when transplanted was 2 feet 1 inch square at the surface, 1 foot 6 inches at the bottom, and 1 foot 5 inches deep. It may also be proper to state that the time taken to apply the apparatus and lift the tree with its ball to the surface did not exceed 10 minutes. Since I wrote to you, I have carefully examined the roots of many other trees, and those of various sorts transplanted by my apparatus, and I find the rootlets in them much in the same state as the one now sent. I have only to say, in conclusion, that I court examination as to the merits of my patent, and it will afford me much pleasure to produce any further evidence within my power to remove doubts as to the expedition and success of my mode of transplanting. *Stewart McGlashen.* [We have received the specimens announced in this communication. They entirely confirm Mr. McGlashen's statement, to which we shall refer more particularly on an early occasion.]

*American Money.*—As regards the statement about the relative values of the different currencies, my friend, who wrote about gardeners' wages at New York, has been very explicit. He distinctly states that he receives 10s. 6d. of American money per day, "which" says he, "is equal to 5s. 3d. sterling," and that he pays for bed, board, and washing, 25s. a week, "which" he repeats, "is equal to 12s. 6d. of your money." *J. W.* [The following extract from a Canadian letter, dated Dec. 10, from a gentleman seeking an English gardener, will probably assist in settling this dispute. "The salary generally given here is 40l. currency, for the first year, and board and lodging; 5l. additional in each year thereafter, and 10l. allowed for the passage out."]

*Steam Scratching.*—I take for granted that all schemes for ploughing land by steam are by this time consigned to the tomb. The inventive genius of mechanists is, at least, turned for the present to steam scratching; and there is no doubt that machines may be easily enough constructed for such a purpose. But if cultivation by steam is to have any real value, all such implements will disappoint expectation; for, as a gardener, I take leave to say that scratching is not digging, nor anything like it. Surely it is a waste of such a power as steam to apply it to so mean and barbarous a use, nothing sub-



stantial being gained over shallow ploughing. What is wanted is a deep cultivator, something that will dig or trench land as well as a spade, and more speedily as well as economically. What would the skilful husbandman at Lois Weedon say to a steam scratcher? I much suspect that he would hesitate before he paid the carriage of it from London to Twocaster, even were it a free gift. It seems to me that all cylinders, be they armed as they may, will prove ineffective; they may cast earth backwards, as a rabbit when he burrows, but there can be no evenness in the work, nor any such depth attained as really good husbandry—like that of Mr. Smith, for instance—demands. Three nouns describe well enough the action that a good machine must possess, and these are—a lift, a plunge, and a jerk: the lift to gain impetus, the plunge to enter the soil, and the jerk to cast it forwards or backwards. Such is the action of the human powers employed in digging, and to this alone should mechanics limit their attention. We have seen the movements of the human hand wondrously imitated in manufacturing processes, and it will be discreditable to implement-makers if they fail to imitate the human frame. *Cepurus*.

*Misnomers*.—I think all the misnomers of plants in your last paper are beaten by one I can vouch for. Many years since a gardener, one of the old school, was given seeds of *Amirys polygama* from Italy, which he gravely showed (not however in a public exhibition), to strangers as *Amorous Polygamy*. S.

*Rhododendron javanicum*.—I am not surprised at the ascertained tenderness of this plant, even at Carolew, which Mr. Symons has kindly recorded. It blossomed with me for the first time last June, producing eight heads of flower upon wood which had been formed during the previous winter, and it has not yet begun to grow again. Its habits differ altogether from any other species with which I am acquainted, as it grows in winter, forms its flower-buds soon after the growth is completed, and flowers immediately; it then goes to rest for six months. I have tried many experiments on it, and twice nearly killed it by keeping it in the greenhouse in autumn. I now keep it in a cool Orchard-house from September till May or June, and in the greenhouse from June till September; but it looks sickly before it returns to the stove. I allowed one head of flowers to remain till the seed ripened, which it did about six weeks ago, and I have hundreds of plants coming up from the seed, which was sown merely to ascertain if it was perfect. The seed-vessel has the peculiarity of possessing an external husk or coat, not unlike that of a Walnut, which falls off almost entire some days before the dehiscent capsule opened. *J. Rogers, Sevenoaks*.

*Grapes—the Barbarossa, &c.*—In some MS. notes on Wortley Hall gardens, written in November, 1839, I find the following:—"In one of the Vineries some unripe fruit of the Wortley Hall Grape was hanging, which in every respect very closely resembled Money's 'Eshcollata Superba,' as seen growing at Thorpe Perrow, as well as the Black Raisin at Kiplin. The wood and leaves are also like those of the Black Muscadell at Hornby Castle." This remark recalled to my mind a suspicion I have for some time entertained, that the Barbarossa Grape, which has been so highly extolled as a late variety, is not unlikely to prove an old acquaintance with a new name. Will any one who has fruited the Barbarossa Grape, favour the readers of the *Gardeners' Chronicle* with a description of it—fruit, foliage, and wood; and likewise tell us something about its origin? If it is really superior as a late sort to Oldaker's St. Peter's, it cannot be too extensively grown; if inferior, the fact cannot be too generally known. The "Trebbiana" Grape is highly spoken of in Rivers's "Fruit Catalogue;" has any gardener fruited it? I should also be glad of any information concerning the "Mill Hill Hamburg." Some superb Grapes were exhibited at Brighton under that name (I believe by Mr. Fleming), which appeared to me to be quite distinct from the Black Hamburg. *J. B. W.* [We know that the Barbarossa Grape was brought from Como by Mr. Mark Phillips.]

*Gooseberries in Fruit*.—The enclosed [bits of branches, with small fruit on them without leaves] have been gathered to-day (Dec. 26th) from several Gooseberry bushes growing in the open gardens here. I have sent them as a remarkable instance of the mildness of the season. I discovered upwards of two dozen with more or less fruit upon them, and even some with it as large as peas. The weather has been very mild until this date. We have many half-tender flowers still gay, and I observe the Chinese *Jasminum nudiflorum* just expanding its flowers, on a wall with a southern aspect. *John Webster, Gordon Castle, Fochabers*.

*Orchard Houses*.—I am glad to see these contrivances again noticed in your columns. Mr. Russell seems inclined to substitute them for walls for Peaches, Nectarines, Apricots, Cherries, Plums, Figs, &c. Your Thorpe Perrow correspondent thinks that an orchard house would be a great acquisition to a garden, but he would not condemn walls, although he is in favour of orchard houses. The question therefore seems to me to be, to what extent ought orchard houses to be substituted for walls? It is clear that this can only be answered satisfactorily by each individual in his own respective locality, for everything depends on latitude, altitude, soil, situation, &c.: certainly no one would build them to the same extent at Arundel Castle and at Lambton Castle. I conceive, however, as a general rule, that they ought to be largely substituted for walls; by Mr. Russell's calculations the cost of erection would be

the same, crops would be certain, there would be perfect control over insects, and comfort and economy as regards pruning and training, and with the addition of hot-water pipes the season of each sort of fruit might be prolonged to an extent perhaps we little think of, to say nothing of superiority in size and flavour; these, then, are matters not to be lightly passed over. Walls I have always looked upon as rude contrivances for bringing to perfection the fruits or vegetables of warmer climes, and I do not hesitate to believe that if they were totally disregarded other and better appliances would soon be devised. We grow better Pines than those of the West Indies, and better Grapes than those of the Continent; why then should we not surpass the Apples of America and the Pears of Jersey? *J. Stevenson, gardener to the Earl of Durham, Lambton Castle*.—

I was in hopes of seeing the opinion of other gardeners on the plan I suggested for the better management of fruit and kitchen gardens, as a little correspondence would tend to draw out the experience of others, and lead to a thorough knowledge of the subject. In reply to "Thorpe Perrow," I would remark that I am perfectly aware that in some favoured spots, and under some circumstances, such as soil, situation, management, &c., Peach and Nectarine trees will do well, and bear good crops; but is this a general thing? How many can bear testimony to the contrary, who, after exhausting all their skill, fail in their attempts to produce a crop. The Pear trees mentioned as ripening their fruit, and being quite at home on a wall in the North Riding of Yorkshire, ripen in many places on standards and espaliers; indeed, I have seen the Marie Louise particularly fine on standards, and better flavoured than those of the same sort on the south side of a wall. "Thorpe Perrow" thinks a Pear tree out of place under glass, and that artificial means must be used to render it fruitful; then this may be said of any fruit tree under glass. Respecting root pruning, I would only say that unless it is perfectly understood how to operate on the roots of a tree to advantage, it had much better be left alone. "Thorpe Perrow" inquires, where are we to find shelter for early vegetables, winter Salads, &c., if we dispense with walls? I would say that orchard houses are just the places for winter Salads, &c., and as for early Cauliflowers, Peas, &c., I would sooner plant them in an open quarter of the garden, provided the ground is properly prepared for them. In my opinion a north wall only breaks the wind from a quarter that does less injury to vegetation than that from any other quarter. Walls are only a one-sided protection, a harbour for filth and vermin. Your correspondent thinks it difficult to condemn his fine Peach and Nectarine trees, I am quite of his opinion on that point; it would be unwise to destroy existing trees and walls simply to make a change, at the same time the plan suggested is worth the consideration of those who contemplate alterations. *James Russell, Exotic Nursery, King's Road, Chelsea, October 5*.

*Truffles*.—In consequence of your notice, at p. 820, of my having tried to cultivate Truffles, I send the particulars of our proceedings last (?) October, in 1852. For a compost, we took two parts good garden mould; one part two-year-old leaf-mould, principally Oak and Beech leaves; one part pit sand (such as is used in household matters), or silver sand. As to situation and planting: In a rough Oak plantation we took off the turf half spit thick, and removed the soil 18 inches deep; filled this place with the compost, and made drills 9 inches apart and 4 inches deep. In these drills we planted the rotten Truffles 6 inches from each other, covering each plant with Oak saw-dust, and then covered the whole with compost, replacing the turf, leaving little furrows to act as drains and carry off water. This produced what is figured in the *Gardeners' Chronicle*. *John Disney, the Hyde, Dec. 26, 1853*.

*Transplanting with Frozen Balls*.—It may be of use to some of your readers to know that large trees may be removed with facility and without injury, by first digging the soil away near the stems, leaving a ball sufficient for the roots, and allowing it to become frozen. The tree may then be removed entire without injury. I have myself many times pursued this plan with perfect success, but the seasons of late years have been too mild for it, and I have therefore had no opportunity of practising it till this year; and last night the ball of earth, left only yesterday round a large Pear tree, became so completely frozen as to enable me to remove it with the earth round it (near 2 bushels) without difficulty or accident. *George Wood, Rochford, Dec. 28*.

*Veronica Andersoni*.—I beg to say that this Veronica as well as the *V. Lindleyana* and *V. speciosa* blossom freely in the open air in Dorset and Somerset. I brought three plants to my place in December last year, when they were in full blossom. They are now beautiful specimen plants in full blossom against a wall. I am told that they will succeed as standards as well. These observations have been called for by the remarks of "Alpha" (see p. 821), who speaks of *V. Andersoni* as a greenhouse plant. I wrote of the *Brugmansia* being a shrub in my garden last year; this year it has been magnificent, and was not affected by frost till about a month ago, when it was hung with hundreds of flowers. I cut it down every year, and it wants no care. *Jack, Castle Cary, Somerset*.

*Neapolitan Violets*.—The Neapolitan Violet, single, is much cultivated in Italy, and at Naples is called Portuguese Violet. It grows strong, with shining leaves, flowering in autumn and spring. At Florence it is used for edgings. S.

## Societies.

LINNEAN, Dec. 20.—Professor BELL in the chair. John Dickinson, Esq., was elected a fellow. The following papers were read:—1. Notes regarding a Weevil of the Vine and its Parasite, by J. Curtis, Esq. It appeared, however, from an Italian pamphlet, some passages of which were translated by Mr. Bennett, that the supposed parasitism was in fact a remarkable case of what is called the "alternation of generations." 2. Notes on the Natural Order *Crescentiaceae*, by Dr. Berthold Seeman. It was stated that Dr. Gardner had the credit of having first distinguished *Crescentiaceae* as a separate order, and his views were adopted by Dr. Lindley in the "Vegetable Kingdom" (ed. 1). The diagnosis there given was, however, drawn up from one species only, *Crescentia Cujete*, L. (*C. cuneifolia* Gardn.) and did not therefore comprise the chief feature of the entire group; it moreover assigned to all *Crescentiaceae* single leaves, and a hard-shelled, woody fruit, characters which are found only in one species of *Crescentia*. Dr. Seeman then gave a revised and detailed technical character of the order; and remarked further, that the *Crescentiaceae* chiefly occur in the tropical and sub-tropical regions of America and Africa, one species being found in Asia, and none in Europe or Australia. Several species are however cultivated, and have become naturalised in different parts of the Old World. The order comprises about 30 species, distributed under nine genera, which Dr. Seeman proposed to arrange in two sectional groups; the first tribe, *Tanæceae*, including those genera with a persistent, regular, five-cleft calyx, namely, *Colea*, *Pariblenia*, *Phyllarthron*, *Tanæcium*, *Tripinnaria*, and, perhaps, *Sotor*; the second, *Crescentieae*, comprising those having a deciduous, irregular, spathaceous, or bipartite calyx, namely, *Parmentiera*, *Crescentia*, and *Kigelia*. It was observed that all the plants belonging to the order had a tendency to four-winged petioles, and it was considered not at all unlikely that the simple-leaved *Crescentieae* would in future be looked upon as plants with abortive leaflets and highly-developed petioles or phyllodes. All the *Crescentiaceae* have a parietal placentation, and a truly unilocular fruit, as an examination of the ovary will show; but when the placentas meet, as they generally do when the fruit approaches maturity, the placentation appears to be axile, and the fruit two or four celled. In the course of his paper, referring to the genus *Oxyciadus* (Miers), which Mr. Miers associates as a distinct tribe—*Oxycleadeae*—with the *Bignoniaceae*, the latter including, according to Mr. Miers's views, both true *Bignoniaceae* and *Crescentiaceae*, Dr. Seeman stated that after a critical investigation of Mr. Miers' paper, he felt convinced that the tribe *Oxycleadeae* was not tenable, "because the genus *Oxyciadus* (Miers) has nothing to do with *Bignoniaceae* even in the widest sense, but belongs to *Myoporaceae*, being allied to *Stenochilus* of Brown, and *Bontia* of Plumier." 3. Remarks on the so-called Eye-spot in the Infusoria and Microscopic Algae, by A. Henfrey, Esq. In the course of observations on the microscopic Algae, especially in investigations of the effects of reagents on the tissues and cell-contents, Mr. Henfrey had felt much uncertainty as to the real existence of the colours exhibited by the objects, notwithstanding that Ross's lenses of excellent defining power had been used. The decomposition of light taking place in these minute bodies, under high-magnifying powers, is such that much doubt must always exist as to whether or not the phenomena of colour arises from refraction. The principal object of the paper now read was to direct attention to the doubt experienced by the author, as to the nature of the red spot, described by Ehrenberg as an 'eye,' in the Infusoria. This object had been observed by him, chiefly in the unicellular Algae and zoospores; and he was first led to suspect that the red colour depended on unequal refraction in examining the cells of *Chlamidomonas pulvisculus*, in which he had frequently found several red spots in an individual cell, all of which, however, could not be brought into focus at one time. He had decidedly observed that when these spots were brought into clear and well-defined focus they appeared as bright colourless granules. Recently he has found that the crimson colour could be brought out most beautifully in the central spot or "hilum" of starch granules; with the lens a little too distant the hilum appears a minute black spot; a little nearer it comes out as a beautiful crimson spot, exactly like an 'eye-spot;' then bringing the lens still nearer, and adjusting the focus with exactness, the hilum is seen as a bright well-defined spot devoid of prismatic colour. It was suggested that other microscopists, working with different lenses, should direct their attention to the supposition which he had been thus led to form.

## Notices of Books.

*A Narrative of Travels on the Amazon and Rio Negro, with an Account of the Native Tribes, and Observations upon the Climate, Geology, and Natural History of the Amazon Valley*. By A. R. Wallace. Reeve and Co., 8vo, pp. 541.

Those who like good gossip about small personal adventures, wild animals shot or observed, insects captured and then lost again, the domestic manners of colonists, and the general aspect of a country, as it strikes a not over-well trained eye, will we think find Mr. Wallace's new book quite to their taste—as it is to



our own, in the sense in which we have taken it. But we fear it cannot claim in any sense a higher character. It is clear that the author's knowledge of natural history is superficial, and that of botany, in particular, excessively narrow; and hence his narrative often loses its value, as well as much of its interest, from the absence of precision in the facts recorded. For example, we are told that near Para, a tree which is very plentiful produces a substance intermediate between camphor and turpentine; that it is called white pitch, and when melted up with oil is used for pitching boats. But the use of the information falls to zero, when we find that the author omits to state the scientific name of the tree in question. So again we are told that in the "Campos" occur low branching trees, bearing a profusion of yellow flowers; a piece of information which we must take leave to say is worthy of a school-boy. The same remark applies to such events as the author having found, near Barra, by the water-side, "a small fruit about the size of a Cherry, of an acid taste," which an umbrella bird he had with him swallowed whole. How extremely interesting!

Surely Mr. Wallace can do something better than this. If not he must be contented to have his travels, however much admired by indulgent friends, disregarded by the public, and soon consigned to oblivion. The volume is, however, agreeably written, and the very thing for a book-club, which is perhaps, after all, as much as its author intended it for. We must, however, in common fairness give an extract, in order to show Mr. Wallace's style of painting men and things; for which purpose we select a few paragraphs from his account of the Uaupés Indians.

"The principal food of these Indians is fish, and when they have neither this nor any game, they boil a quantity of peppers, in which they dip their bread. At several places where we stopped this was offered to our men, who ate with a relish the intensely burning mess. Yams and sweet Potatoes are also abundant, and with Pacovas form a large item in their stock of eatables. Then they have the delicious drinks made from the fruits of the Assai, Baccaba, and Patawá Palms, as well as several other fruits.

"The large saúbas and white ants are an occasional luxury, and when nothing else is to be had in the wet season they eat large earth-worms, which, when the lands in which they live are flooded, ascend trees, and take up their abode in the hollow leaves of a species of *Tillandsia*, where they are often found accumulated by thousands. Nor is it only hunger that makes them eat these worms, for they sometimes boil them with their fish to give it an extra relish.

"They consume great quantities of *Mandiocca* in making caxiri for their feasts, which are continually taking place. As I had not seen a regular dance, Senhor L. asked the Tushaú to make some caxiri and invite his friends and vassals to dance, for the white stranger to see. He readily consented, and, as we were to leave in two or three days, immediately sent round a messenger to the houses of the Indians near, to make known the day and request the honour of their company. As the notice was so short, it was only those in the immediate neighbourhood who could be summoned.

"On the appointed day numerous preparations were taking place. The young girls came repeatedly to fill their pitchers at the river early in the morning, to complete the preparation of the caxiri. In the forenoon they were busy weeding all round the malocca, and sprinkling water, and sweeping within it. The women were bringing in dry wood for the fires, and the young men were scattered about in groups, plaiting straw coronets or arranging some other parts of their ornaments. In the afternoon, as I came from the forest, I found several engaged in the operation of painting, which others had already completed. The women had painted themselves or each other, and presented a neat pattern in black and red all over their bodies, some circles and curved lines occurring on their hips and breasts, while on their faces round spots of a bright vermilion seemed to be the prevailing fashion. The juice of a fruit which stains of a fine purplish black is often poured on the back of the head and neck, and, trickling all down the back, produces what they no doubt consider a very elegant dishabille. These spotted beauties were now engaged in performing the same operation for their husbands and sweethearts, some standing, others sitting, and directing the fair artists how to dispose the lines and tints to their liking."

*Edwards's National Garden Almanac* abounds in copious notices of florists' flowers; this forms its distinctive character. It is not, however, destitute of the other kinds of information looked for in an Almanac, and is neatly got up, and we dare say is suited to the wants of those for whom it is intended.

### New Plants.

34. *CENTRADENIA FLORIBUNDA*. Planchon in *Flore des Serres*, No. 453.

The *Centradenia rosea*, a little Mexican *Melastomad*, is well known in gardens, where it is valued as a useful winter and spring flowering shrub, although its blossoms are diminutive, fugacious, and unwilling to open except in the sun. Like it, but better adapted to gardening purposes, because the flowers are larger and more lasting, is the *Centradenia floribunda*, first made known by Mr. Van Houtte. This forms a dwarf shrub, with

rich deep green leaves stained with purple on the under side, and distinctly 3-ribbed in all except the youngest. The flowers are purplish violet, and appear in great profusion. In any great nursery the species may be obtained, and it certainly ought to expel the *C. rosea* from select gardens. The accompanying cut represents



a small piece of it when going out of flower. The lateral ribs of the leaves were so delicate as to have escaped the notice of the artist.

### Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN. —The object of by far the greatest interest here at present is the noble plant of *Lælia superbiens*, which is blossoming magnificently in the curvilinear stove. This fine specimen, which measures nearly 6 feet across, has annually blossomed most beautifully for these last three or four years, producing on most occasions as many as nine flower-stems upwards of 6 feet long, with clusters of blossoms varying from 8 to 14 on each spike, the total number of blooms on the various stems sometimes amounting to 90. This year it has eight flower-stems, about the same length of those of previous years, and the number of flowers in each cluster varies from 10 to 12, producing altogether an effect such as one seldom has the good fortune to witness. The plant itself is in the most robust health, and if we may judge from what it has already done, its flowering every year may now be looked forward to as a matter of certainty. In another stove a small plant of Barker's *Lælia anceps* was in bloom, one spike being furnished with four flowers. This we need scarcely say is a very handsome variety of this fine species, although not to be compared with the fine plant just mentioned. *Barkeria Skinneri*, which we noticed last month as being in flower, is still in perfection, the charming purple blossoms with which the spikes are densely clothed being almost as fresh and beautiful as when they first opened. As an Orchid for winter decoration this, therefore, certainly deserves especial attention.

In a warm pit was a number of plants of *Gesnera zebрина* coming beautifully into bloom. These are brought on in succession for the decoration of the stoves, in which few plants make a more brilliant display during winter.

As regards ground-work little can be said, the arrival of frost and snow having put a stop to most operations out of doors. As respects in-door alterations we may mention that a new brick flue is being introduced into the early Vinery, in the room of the hot-water tanks, which were removed from there some time ago.

In the orchard and kitchen garden there is necessarily little to mention at present. Two sorts of Leek, however, in the latter department struck us as being worthy of notice. The first is named *Poireau d'été Petit de Brabant*, an early sort, with very long narrow leaves, of a dark green colour. This kind is not so well adapted for a principal crop as the large Rouen Leek and some others, because, if sown at the same time, it is more apt to run to seed; but a little of it might be sown with advantage for early use. The second is named *Poireau Jaune de Poitou*, and is a very large sort, some of the leaves being more than 6 inches in breadth and 5 feet in length, measuring from the lower part of the stem; they are of a yellowish green. The stem blanches yellowish white, and it is more tender than most other varieties. It requires to be planted further apart than usual, owing to the size of its leaves; this sort is well worthy of extensive cultivation, which it will doubtless receive when it shall have become better known. Both varieties were received from M. Vilmorin, of Paris.

### FLORICULTURE.

THE HYDRANGEA.—Although this must be admitted to be one of the most showy plants we have, it has

certainly been very much neglected of late years. It is, however, still prized by a few, who find it particularly useful for greenhouse and conservatory decoration, displaying its enormous heads of pink and blue flowers in abundance, and remaining a long time in perfection. Few, I imagine, will have forgotten the fine specimens of this plant that were exhibited in the Horticultural Society's Gardens by Mr. Hill in 1852. These were in small pots, and were certainly excellent examples of skilful cultivation. The following hints will enable all who practise them to have large heads of blossom from plants in small pots. If cuttings are taken off in August, and potted in a mixture of leaf-mould, loam, and sand, in a well drained pot, and placed in an old Cucumber or Melon frame, they will root freely, and should be potted into 4-inch pots as soon as they have become sufficiently rooted. The plants should be kept to one leader, the top bud of which should not be pinched out, but all lateral or side shoots should be removed as soon as they appear. When sufficiently established in their pots, move them to the greenhouse, where they should be wintered. Early in spring shift them into 5 or 6-inch pots, as may best suit your convenience, and as soon as they have commenced growth liberally supply them with water, using the syringe freely at all times. Perhaps the most convenient place for them at this season is a Vinery, which I find suits them well, and brings them on gently until the blossoms make their appearance. Water at this stage must on no account be neglected. If large specimen plants are required they should be grown another season, when they will form a fine bush and produce many heads of blossoms, although inferior in size to those on plants kept to one leader. I have grown the same plants for years; in this way they have made huge specimens, and amply paid me for my trouble; but if small plants with large heads are preferred, they should be grown from cuttings every season. I have also struck cuttings in February, and grown them on until the following season, using a slight bottom-heat, and disbudding the useless eyes; such plants have produced enormous heads, superior in size to those struck in August, but then the plants are longer in hand, which, in many cases, is a consideration. The soil best suited for their culture is equal portions of cow-dung, leaf-mould, fibrous loam, peat, and sand, well mixed in a rough state. The pots should be thoroughly drained, and, during their blooming season, the plants will be benefited by being placed in a pan of water. Manure-water may be used freely while the plants are in bloom. In order to change them from pink to blues of different shades, pot them in Norwood loam, or common red sand; potting in peat and watering with alum-water will also produce the same effect; but the two former kinds of material are the best. If planted on well-drained ground, and slightly protected in winter, the *Hydrangea* will form an ornament in the flower-garden such as few can equal; but it must be liberally supplied with water during the blooming season. E. B.

AURICULA SEED.—The early part of January is the proper time for sowing the seed of the Auricula; and it should not be allowed to pass without this part of the business being attended to. The pots or boxes intended for this purpose may be filled to the depth of 2 inches with pieces of garden-pots broken small; then filled to within an inch of the top with good compost, rubbed or sifted moderately fine. This may be made with two parts sandy loam, and one of old cow or horse manure. Shake the above well down, that it may not sink after the seed is sown, and level the surface. On this must be placed the compost for the seed to be sown in, which should be composed of three parts leaf-mould and one part silver-sand, sifted fine. The leaf-mould of Oak is best for the purpose, if it can be procured. Fill the box or pot with this compost within a trifle of the top; care fully level, and slightly press into a smooth surface; then sprinkle the seeds regularly over, and gently press them into the soil; this done, sift, through a hair or other fine sieve, some of the leaf-mould and sand over the seeds, but no more than will hide the face of white paper; this will be sufficient covering, and quite as much as they are able to lift when they begin to germinate. The seeds of Auriculas are extremely small, and require a soft, fine soil, of an open quality; for their tender roots cannot penetrate compost of a close texture. Thousands of Auricula seedlings are lost for want of this precaution. The boxes or pans must be wintered in as cool a place as possible, and the soil must be kept moist. About the second week in February, or when the foliage of the old plants is observed to expand, the young seedlings will make their appearance; and at this time they may be removed to a southern aspect, but must be carefully shaded from the sun. A. A.

PANSIES: A. H. Those in frames must be looked over often. Clean them of dead leaves, and stir the surface of the soil; give as much air as possible on all favourable occasions, and keep them moderately dry. Those intended for blooming in pots under glass should be repotted finally about the 1st of February. When repotting, remove the top part and outside of the ball of earth from the plants, and shake down the new soil firmly by striking the pot on the bench; but it should not be pressed so hard by the hand as when potting Carnations. Finish with the fine sifted mould on the top. Water sparingly for a fortnight or three weeks, and then only when the weather is mild. Give all the air possible, as before, and keep the plants close to the glass. Turn them round occasionally; in fact, do everything that will help to keep them dwarf, and of a good dark green colour.

### Miscellaneous.

Monstrosity of a Rose.—With few exceptions the flowers on a standard Rose, growing on a lawn, faded this summer to exhibit good blooms, and presented



various degrees and forms of monstrosity. This occurrence may be attributed to the wet season stimulating the tree to the production of wood instead of flowers. It should, however, be noted, that neighbouring Rose trees, growing under precisely the same circumstances, but of different species, produced their proper flowers; with, however, a prevailing tendency to abortive petal growth, and the production of the condition known as the "green eye." In the tree in question the most remarkable example was that of a flower which was repeated three times on the same axis, each time exhibiting sepals, petals (coloured and scented), perfect stamens with pollen, and imperfect semi-leafy carpels. The stem expanded into its usual rounded receptacle, fringed by the free portion of the calyx of its general character, and supporting on its discoid margin the petals, and within these numerous stamens. Some of the innermost petals were not well coloured, nor well developed, but small and greenish. From the sides of the cup-like receptacle sprang several hairy styles crowned by their stigmas, of much the usual form, but still not well formed; and along with these imperfect carpels of a green colour, and having the form of narrow leaves folded longitudinally on themselves, and many of them terminating in a fringed process or awn. Neither the normal styles nor the leafy carpels had ovules. The centre of the cup exhibited a larger carpellary leaf so folded as to inclose one or more similar though more delicate leaves and a growing point, representing a continuation of the stem. This point, gradually elongated, developed towards one side two lanceolate decurrent leaves or bracts, which, like itself, assumed a reddish colour. Having acquired about an inch in length, it shot out five ovate-lanceolate acuminate sepals, confluent at their base and decurrent, not on the same plane but spirally arranged, and also tinged red. Thus, a second flower grew in all respects like the first, except that it had a very indistinct receptacle. During the development of the second, the first flower withered, its petals falling away. The axis of the second inflorescence, ended with the like powers of growth, extended itself, produced a sheathing bract, then swelled into a half-globular receptacle, with five sepals as in the last, but here set in a regular whorl on the same plane, and having two bracts, like themselves, immediately external to them. The petals of this third flower were numerous, small indeed, but sweet-scented; the stamens numerous, containing pollen; whilst a few very rudimentary, slender, carpellary leaves and styles surrounded a larger involuted one containing a growing point along with two or three pistils terminated by stigmas. In this terminal inflorescence (examined whilst actually flowering), the carpellary leaves were smallest, and the leaf-like character most lost; whilst many styles, hairy and delicate, occupied the concavity of the receptacle, and apparently had perfect carpels at their base. The production of these three flowers in sequence occupied two months. On a longitudinal section the growing point in each flower was seen not to have proceeded from the exact centre or actual axis of the receptacle, but rather from one side. Hence, both the irregular peduncles curved so as to maintain the flower in the same line with the original stem. In another monstrosity, in which two flowers were produced on the same continuous axis, the sepals exhibited a tendency to be compound, by developing imperfect leaflets. In a third example the sepals had grown into large compound leaves, having two leaflets on each side the petiole, and a very large terminal one. In this case, too, where but one flower formed, the growing point started at nearly a right angle to the original peduncle, and then, curving to bring itself into the same straight line, grew into a strong shoot, forming at its apex a good bud (flower) for the winter. A similar growth of the calyx into actual leaves occurred in another case. The last irregularity to which I shall refer is, where the axis of a flower grew into a strong leafy shoot. In this case, no cup-like receptacle existed, but the carpels were placed on a disk-like expansion surrounding the stem, which appeared little more than a large node from which the leaves had fallen. The carpels here extended upwards in a green, leafy form, and were deficient of ovules. Eight such, with dilated capsule-like bases, were found in a whorl on the same plane; and within these two close together, longer, and of a more leaf-like character. Above these last, five more evident leaves, four of which were actually trifoliate, were disposed in a spiral manner around the axis, for the space of an inch above the carpellary whorl. Then a node occurred, surrounded by six pinnate leaves, not quite on the same plane, and yet not in opposite pairs, nor clearly spiral in position. Three-quarters of an inch from these leaves the shoot ended by a terminal bud (winter) surrounded by three pinnate leaves of unequal size. These instances of monstrosity well illustrate the morphology of carpels—their origin from leaves, and their tendency to take on the form, and along with this the spiral arrangement of the latter. The perfect pinnate leaves of a shoot proceeding from the centre of a Rose we must suppose to be morphologically the same with the small folded carpellary leaf; the last instance cited shows the grades of development between the two. The production of the shoot causes the abortion of the flower and its ovules; hence the size and vigour of the shoot afford a measure of the vital vegetative force expended in the formation of a flower, and mainly of its ovules. I am inclined to believe with Schleiden, that the ovule is a product of the axis and not of the carpellary leaves; that indeed it is a bud growing from the axis in the axil of a leaf—i. e., the carpel. *Arlidge, in Annals of Natural History.*

## Calendar of Operations.

(For the ensuing week.)

### PLANT DEPARTMENT.

The severity of the present weather will render fires necessary to every description of house plants. We have in late Calendars adverted frequently to the extent fire-heat should be carried, and therefore need not again allude to it, but merely remind our readers to economise its use as much as possible with hard-wooded greenhouse plants, by covering the roof with mats or some protecting material. Although outdoor gardening is at a dead lock, not so within, and there does not appear anything like a real holiday in the gardeners' almanac; for air, water, and temperature require constant watching and management in their application to the wants of plants, which, if left to shift for themselves in these particulars, even for a day, will soon show how incompatible holiday-keeping is with good cultivation. Attention should now be paid to various things, which will keep all hands employed at this inclement season, and will forward work onwards when the busy time arrives. Soils and manures should be spread out, so as to get frozen through, which will not only sweeten them but help to destroy the larvae of insects lodged in them. Pots should be washed and stowed away. Tallies and labels cut and tied up ready for use; training sticks got in order and painted, as likewise wires, trellises, &c. List of plants made out, as well as of plants wanted; charcoal, bone-dust, crocks, &c., got ready. All these minor details, when duly prepared in bad weather, will much facilitate after labour. Pits and frames, cover securely from frost, but give air occasionally.

### FORCING DEPARTMENT.

**EARLY VINERY.**—Much caution must be exercised in admitting air to Vines breaking during severe weather, which, if possible, should not come in immediate contact with the tender leaves. Keep the temperature steady; but as the Vines break the humidity may be somewhat lessened, or possibly some damage may occur to the embryo bunches, which in very damp houses are apt to rot at the end. The succession houses will want the usual damping with a temperature ranging agreeably with their respective stages of growth. Above all, guard against any sudden change in the material heating the border; the present storm will in all likelihood affect this, and no time should be lost by timely additions of fresh dung or leaves, in keeping a uniform steady heat. **PEACH HOUSE.**—Be very moderate in the use of fire-heat, except by day. The thermometer may fall by night to 38° without doing any injury to the trees; syringe gently, but only on the mornings of bright days, sprinkling the heating apparatus will suffice to keep the air moist enough with the present low external temperature. The remarks we made on Vinery borders will apply here also, and every description of fruit-house borders should be protected from snow by some means or other; for if suffered to thaw on them, the temperature is greatly lowered in consequence, besides an excess of water is added at a season when fruit trees under glass should, if possible, be kept dry. Bring on Strawberries gently; these will require air daily, and to be kept near the glass.

### FLORISTS' FLOWERS.

Whilst we are writing the snow falls heavily, and severe frosts appear set in: now will be the time to attend to compost heaps; each morning the hard frozen crust should be removed and laid aside, so as to allow another portion of the heap to be similarly exposed. Should the cold weather last sufficiently long, so that the whole may have been thoroughly frozen, it will be a great point gained as far as the sweetening of the soil and the destruction of insects go. By no means shut down Auricula frames close, at all times give an inch or two of space. It must not be supposed that these descendants of Alpine flowers are by any means tender. A close damp atmosphere is far more injurious to them than several degrees of frost. The same remarks will apply to the Carnation and Picotee. As for the Pink, it is hardier still, and, when well established, appears to be able to withstand any amount of cold. Give all stock within doors an overhaul. Dahlia and Ranunculus roots, for instance, should be examined. Look to broken hand-glasses, paintless flower-sticks, &c. &c. The amateur will find plenty to do.

### FLOWER GARDEN.

Nothing beyond prosecuting any earth-work which may be in hand can be attempted in this department. In most places there are generally trees and shrubs of recent introduction of which doubts exist of their hardiness, and which in very severe weather should be accommodated with some slight protection; such, however, should be removed directly the weather alters, as if continued when the weather is only ordinarily cold, it will do more harm than good; the great object in managing rather tender things is to expose them as much as possible, under certain conditions, necessary to ensure a hardy habit; for as protection can only be given for a few years, an over degree of protection is calculated to defeat, rather than otherwise, the object in view. Beds of Tulips, Anemones, and other spring bulbs should be covered with old tan or dry leaf-soil, to exclude frost.

### KITCHEN GARDEN.

We told our readers not long since not to dig ground in a wet state, and we now say, by no means dig it with snow on it; for snow buried will chill the soil for a long

time. Dung, and materials for manuring, &c., can, however be wheeled on to vacant ground, composts turned over, and where draining, road-making, or other ground-work is in progress, let it be forwarded during frost, that more time may be allowed for kitchen garden operations when a change takes place. Attend to covering every description of vegetables under glass, allowing them air at all opportunities.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.  
For the week ending Dec. 29, 1854, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	BAROMETER.		TEMPERATURE.					Wind.	Rain.
		Max.	Min.	Of the Air.	Of the Earth.	1 foot deep.	2 feet deep.	3 feet deep.		
Friday 23	1	29.921	29.793	41	29	35.0	37	40	N.	34.00
Satur. 24	2	30.227	30.065	38	21	26.0	37	40	N.E.	30.00
Sunday 25	3	30.201	30.139	36	14	25.0	37	40	N.E.	30.00
Mon. 26	4	30.125	30.125	36	13	24.5	37	40	N.E.	30.00
Tues. 27	5	29.972	29.873	33	22	27.5	33	39	N.	30.00
Wed. 28	6	30.083	29.902	34	8	21.0	36	39	N.	30.00
Thurs. 29	7	30.291	30.161	32	15	23.5	35	38	N.E.	30.00
Average.		30.117	30.001	36.00	17.1	26.5	36.00	39.35		30.00

Dec. 23—Densely overcast; cloudy; clear at night.  
24—Cloudy; clear and frosty at night.  
25—Frosty; hazy; clear and frosty.  
26—Sharp frost; fine; overcast; sharp frost.  
27—Clear and frosty; hazy; clear and frosty.  
28—Frosty; bright sun in forenoon; snow in afternoon; severe frost at night.  
29—Intense frost; clear and frosty at night.  
Mean temperature of the week, 104 deg. below the average.

STATE OF THE WEATHER AT CHISWICK.

During the last 25 years, for the ensuing week, ending Dec. 31, 1853.

Jan. 1854.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 1	42.67	30.85	26.76	8	0.70 in	5	3	2	3	5	3	4	4
Mon. 2	41.92	30.07	35.99	10	0.21	1	1	1	1	1	1	1	1
Tues. 3	42.53	31.21	36.87	14	0.55	1	1	1	1	1	1	1	1
Wed. 4	42.53	31.46	36.99	12	0.35	3	3	4	2	3	2	3	3
Thurs. 5	41.82	30.42	36.12	9	0.40	6	2	3	1	1	1	1	1
Friday 6	41.50	30.14	35.82	10	0.33	2	6	3	1	1	1	1	1
Satur. 7	41.22	30.00	35.16	10	0.34	3	4	3	1	1	1	1	1

The highest temperature during the above period occurred on the 1st, 1851, and the 6th and 7th, 1845—therm. 54 deg.; and the lowest on the 7th, 1841—therm. 6 deg.

### Notices to Correspondents.

**CUCUMBERS: Amateur.** A 4-inch flow and return hot-water pipe will be ample for your purpose. The stage of the bed should be from 4 to 6 inches from the pipes. Whenever a certain amount of bottom-heat is recommended for Cucumbers, it is the heat of the soil that is meant.

**GLUMACEOUS PLANTS: St A.** We think you must admit that we eschew technical expressions wherever possible; perhaps we do so to too great an extent. Some are, however, inevitable. We cannot undertake to explain such terms when they occur any more than we could unusual English words. In the latter case you could consult Johnson or Richardson. In the case of botanical words, you should look to Professor Lindley's Glossary of Botanical Terms or his "Vegetable Kingdom."

**GOLD FISH: Reader.** Certainly, give them air by breaking the ice on your pond as often as it shall have become frozen over.

**INSECTS: Anon.** Dr. Nylander's papers on Ants are published in the Transactions of Helsingfors. Our copy of his detached Memoirs was obtained by Messrs. Williams & Norgate for a few shillings.—**J.T.A.** The insects found in the decomposed Tomato are the fringed larvae of a species of fly (Anthemophilus canicularis, or an allied species), very like the common house fly. It is this larva which is occasionally very troublesome in the human intestines, so you must take care to use none of the injured fruit.

**NAMES OF FRUITS: E.E.L.** A. Beurdiel; B. Bequene Monique; C. Beurdiel; D. Bishop's Thumb; E. G. Knight's Monarch; H. Kerry Pippin; K. Dumelow's Seedling; L. Cornish Aromatic; M. Alexander; N. Golden Russet; O. Royal Russet; 5. Old thorned; 6. Lamb Apple Pearmain; 4. Royal Crab; 7. Braddick's Nonpareil; 8. Easter Pippin; 9. French Crab; 10. Pippin; 11. Napoleon; 12. Passe Colmar. Nos. 1, 8, 10, 15 were detached; and the Apples found without numbers were the Margil, King of the Pippins, Golden Pippin, and Sops of Wine.

**NAMES OF PLANTS.** We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to help them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—**A.B.** The plant figured in the "Botanical Register," under the name of Vanda violacea, is not now referred to Vanda. It is more probably a Saccolabium, as that genus is at present constituted; but the 19-20th of January, 1838, it was observed that on the night of the 19-20th of January, 1838, a thermometer facing the west, 6 inches above the ground, and 20 yards from the house and from any body which could radiate heat, fell to 13° below zero; consequently 45° below the freezing point. At Walton, three miles from Claremont, the thermometer was said to be, at the same time, as low as 46° below freezing.—**F.D.** At Chiswick, according to thermometers placed in an open space, so as not to be affected by the radiation of heat from walls, houses, or trees, the temperature on the night of the 16th December was 7° Fahr., or 25° below the freezing point.

**TRANSPLANTING: J. Abell.** You may safely remove your old double yellow Rose, by cutting round a ball of earth to the roots, and throwing water upon it in frosty weather, so as to take it up with a ball for transplantation, as you say you did successfully to some Pinuses a few years ago.

**WOODS AND FORESTS: A Constant Reader.** We cannot publish anonymous communications upon this subject.



## PERUVIAN GUANO.

## CAUTION TO AGRICULTURISTS.—

It being notorious that extensive adulterations of this MANURE are still carried on,  
**ANTHONY GIBBS AND SONS,**  
 AS THE ONLY IMPORTERS OF PERUVIAN GUANO, Consider it to be their duty to the Peruvian Government and to the Public, again to recommend Farmers and all others who buy to be carefully on their guard.

The character of the parties from whom they purchase will of course be the best security, and, in addition to particular attention to that point, ANTHONY GIBBS AND SONS think it well to remind buyers that—

The lowest wholesale price at which sound Peruvian Guano has been sold by them during the last two years is 9l. 5s. per ton, less 2½ per cent.

Any resales made by dealers at a lower price must therefore either leave a loss to them, or the article must be adulterated.

**PERUVIAN GUANO**, the guaranteed import of Messrs. ANTHONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—Wm. Inglis Garne, 10, Mark Lane, London.

**MANURES.**—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—  
 Turnip Manure ... .. per ton £7 0 0  
 Superphosphate of Lime ... .. " 7 0 0  
 Sulphuric Acid and Coprolites ... .. " 5 0 0  
 Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

**THE LONDON MANURE COMPANY'S WHEAT MANURE**, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. — EDWARD PURSER, Sec. Bridge Street, Blackfriars.

**SEWAGE CHARCOAL MANURE.**—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the **SEWAGE MANURE WORKS**, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt., for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.

It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly, Agricultural Seedsman, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

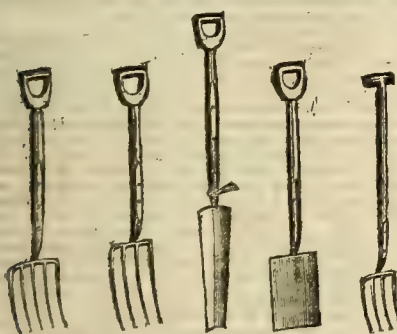
**ARTIFICIAL MANURES, &c.**—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Manser, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanoes, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

## PRIZE CHURN.

**ANTHONY'S PATENT AMERICAN.**—The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BURGESS & KEY, Agricultural Implement Warehouse, 103, Newgate Street, and 52, Little Britain, London.

## WINTON'S PARKES' STEEL DIGGING FORKS.



**I HEREBY GIVE NOTICE** that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. BURGESS & KEY, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.  
 29th Sept., 1853. Signed, FRANCIS PARKES.

## WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

**THOSE** who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path last present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARN, CATTLE SHEDS, FARM YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in water equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

**DO YOU BRUISE YOUR OATS YET?**—New Oat Crushers, 2l. 15s. 6d.; ditto, 4l. 5s. 6d.; Chaff Cutters, 1l. 7s. 6d.; ditto, 2l. 19s. 6d.; Mangles, 2l. 10s. 6d.; Flour Mills, 4l. 10s. 6d.—MARY WEDLAKE & Co., 118, Fenchurch Street.

**AGRICULTURAL INSTRUCTION.**—The late Manager of the Royal Agricultural College Farm, now farming on his own account in Buckinghamshire, has a Vacancy for a few PUPILS, who may require instruction in PRACTICAL AGRICULTURE, according to the best modern system of improvement, combined always with a view to profit and utility.

Instruction will also be given to such as desire it in Land-Surveying, Book-Keeping, &c. The Advertiser has ample testimonials of being qualified to impart Agricultural Instruction, &c., to such as are really desirous of improving themselves; and none but those whose aim it is to be steady, studious, and devoted to their profession, can be treated with. Periodical examinations will take place of such matters as are brought before the notice of pupils, in order that intimation may be checked, and the state of progress be fully ascertained and promoted.—For terms, and other particulars as to soil and situation of Farm, &c., apply to R. VALENTINE, Burcott Lodge Farm, Wing, Bucks.

**COLLEGE OF AGRICULTURE AND CHEMISTRY,** AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

## NEW FOREST.

## TO LAND DRAINERS.

By ORDER OF THE COMMISSIONER IN CHARGE OF HER MAJESTY'S WOODS AND ROYAL FORESTS.

**NOTICE** is hereby given that Tenders at per rod are required for Under-Draining with Pipes and Collars about 93 Acres of Land on New Park Farm, three miles from Lyndhurst, and 1½ mile from Brockenhurst, in the New Forest.

The supply of pipes and collars to be drawn from the Victoria Tillery in the New Forest, from 2½ to three miles distant from the land to be drained.

Plans, Specifications, and Particulars of the Drainage, and of the price at which pipes can be obtained at the Victoria Tillery, may be seen on application to Mr. L. H. Cumberbatch, at the Queen's House, Lyndhurst, Hants.

Persons tendering are required to state their qualifications for the undertaking, and will be required to be bound themselves in the sum of 100l. and two sureties in the sum of 50l. each for the due performance of their contract to the satisfaction of Mr. L. H. Cumberbatch, the Deputy Surveyor of the New Forest, and Mr. William Dickinson, the lessee of New Park Farm.

Sealed tenders, to be headed "Tender for New Park Drainage," will be received by the Right Hon. T. F. KENNEDY, Office of Woods, &c., 2, Whitehall Place, London, until 12 o'clock at noon on Friday, the 13th of January, 1854.

The lowest tender will not necessarily be accepted.

## DRAINAGE AND IRRIGATION.

**HENRY WEBBER** begs to inform Landowners and the Public, that having had several years' practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by Contract or on Commission. Reference given.

H. W. wishes particularly to call attention to his improved and inexpensive method of Irrigation, whereby, at an outlay of a few pounds an acre, he can convert land having a sufficient quantity of water at command into water meadow, which may be mown every year without the application of manure. Any further information will be given on application.—Halberton Court, near Tiverton, Devon.

## THE LANDOWNERS' DRAINAGE AND INCLOSURE COMPANY.

INCORPORATED BY SPECIAL ACT OF PARLIAMENT.

Tenants for Life, Trustees, Mortgagees, Incumbents of Livings, &c., can have all works of Draining, Warping, Irrigating, Inclosing, and every other improvement to land, executed by the LANDOWNERS' DRAINAGE COMPANY, either by Contract or on Commission. They will provide the money by a permanent charge on the inheritance, or repayable by instalments. They are also ready to undertake the Drainage of Towns, and all works incident to such improvements. This Company having been engaged in extensive works for many years in most of the Counties in England, and having in their employ the largest Practical Staff in the United Kingdom, whose sole attention is devoted to such improvements, is the best guarantee for the success of their works.

Every information will be given at the Offices of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter.

THOMAS MAX, Secretary.

## TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

**THE LANDS IMPROVEMENT COMPANY**, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.

The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.

The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements.

The Agricultural Works of Improvement particularly specified in the Company's Act, are:—

1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Water-courses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.

7. Clearing Land.

8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.

In effecting the above Improvements there may be erected any English, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Water-courses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.

For Forms of Application and further Information apply to the Hon. W. NAPEL, Managing Director, 2, Old Palace Yard, Westminster, London.

**RENDLE'S NEW PRICE CURRENT AND GARDEN DIRECTORY** is now published, and can be obtained from Messrs. WILLIAM E. RENDLE & Co., Seedsman, Plymouth, or from any Bookseller, through the LONDON OFFICE, 294, STRAND.

Price Sixpence. For description see another page.

**MANCHESTER POULTRY EXHIBITION.**—An Exhibition will be held in the Free Trade Hall, on the 24th and 25th of January; the entries must be made with the Secretary on or before the 10th of January; the entrance money must be paid before pens can be entered for competition. One Hundred and Fifty Pounds will be given in Prizes; Poultry not in the Prize List can be Exhibited as Extra Stock. The judges will be instructed to award prizes to such as they consider deserving.—For further particulars, see Regulations and Prize List, to be had from the Honorary Secretary, Mr. GEORGE POTTER, 13, Cooper Street, Manchester.

**THE GREAT METROPOLITAN EXHIBITION** of POULTRY, PIGEONS, and RABBITS, will take place at the Bazaar, Baker Street and King Street, Portman Square on Tuesday, the 10th, Wednesday, the 11th, Thursday, the 12th, and Friday, the 13th of January, 1854. Admission—Tuesday, 2s. 6d., Wednesday, Thursday, and Friday, 1s. each day.

## The Agricultural Gazette.

SATURDAY, DECEMBER 31, 1853.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Jan. 5—Agricultural Imp. Society of Ireland.  
 THURSDAY, — 12—Agricultural Imp. Society of Ireland.

Our readers will probably have noticed the advertisement of our intention to issue a second edition of this Paper in time for Monday evening's post, containing a full report of the Monday markets, both in Mark Lane and Smithfield, and of Newgate and other metropolitan markets during the week, with an account of some of the principal country markets, and of the corn trade generally since the preceding Number. The four or five columns thus occupied will be placed in the middle of the Newspaper, where the sheet, as folded, at once opens, so that the intelligence they convey will be at once accessible. No explanation of our object in this will be needed by agricultural readers. The publication of the *Agricultural Gazette* exclusively on a Saturday has hindered it hitherto from reporting the markets as fully and immediately as was desirable. This difficulty is now removed, and the larger space which we shall be able to devote to the purpose in our Monday's edition, will enable the publication in large and readable type of the latest news from the most important markets in the kingdom.

THERE is embodied in the Report of the Council of the English Agricultural Society, which we published lately, a schedule of the distribution of the membership of the Society over the counties of England and Wales, and of the corresponding representation of the several counties in the membership of the Council. The importance of a satisfactory relationship—a perfect sympathy—between the Council and the Society is unquestionable; and we are glad that it is perceived by the former, for we shall thus be the surer of their attention to a remonstrance in which many of the members will join.

The general meeting of the Society on this day fortnight accepted the report to them which was then read, and it passed without criticism; but this is not the treatment it will receive at the hands of the members generally, and we are sure that in the following remarks we shall give expression to both the feeling and the judgment of very many beside ourselves. It is not on questions of representation or finance—of practical operation or relationship to science, all of which are discussed in it—that the preparers of this report have failed; it was an opportunity offered them for rebutting the charges of blindness and of prejudice, to one of which they have hitherto been obnoxious, and they have failed to make use of it. An association professing to be in the van of agricultural progress has failed to recognise the leading agriculturalist of the day—a national agricultural society has, it may be said, hitherto ignored the efforts, though they have been of national value, of one of the most prominent of its members—a society professing political impartiality has been obviously influenced by the party prejudices either of its own members or of agriculturists generally—a body whose constitution would lead it carefully in the steps of precedent has in this particular instance disregarded it—for the habit of that indifference towards the first agriculturalist of England, with which he had been treated during his life,\* seems to have overborne every other influence even since his decease.

Let any one look at the list of appointments to

\* On the death of the late Earl of Duncraig the *Mark Lane Express* spoke with regret of the want of cordial sympathy with which he himself and his agricultural labours had been regarded by farmers generally during his life. This must be taken as true only of those to whom his lordship was personally unknown or with whom he had never come in contact.



the Presidency of the Society since its commencement, and read the reports of the Council meetings of Nov. 5, 1845, and July 8, 1846, and then of July 9, and Aug. 3, 1863, and say if either justice or precedent has been observed. Let him do this with a full knowledge of the agricultural and political history of the period, and say if our alternative of agricultural blindness or party feeling does not apply to those responsible for the conduct of the Society during the period in question. The Report read on Dec. 10th might have wiped out the impression that had obtained up till then; it did not do so. Those of 1845 and 1846 furnished precedents just and most praiseworthy in themselves, but they have been disregarded, and a passing reference to our loss is all that the Council of the Royal Agricultural Society of England thinks due to the memory of him who has of late years laboured most usefully, and stood most prominently amongst the agriculturists of this country.

We do not write for the information of our readers here; all this has long since been apparent to dispassionate men. But elsewhere—in America, where the name of the late Earl of DUNELM is as well known as here—and in other countries where agriculturists read and speak in the English tongue—it may be useful to put on record this protest against an injustice and indifference which agricultural history will no doubt ultimately rectify, but which ought not on that account to be borne in silence by contemporaries.

THE English reader of the agricultural literature of America is not surprised to find in it frequent reference to the farm practice and the agricultural proceedings of this side of the Atlantic. Our climate corresponds with sufficient nearness to that of the northern States to make the experience acquired in our fields useful in theirs: and so it comes that there, as here, the "proper names" in agriculture are those of English localities. The "Norfolk" rotation of crops is discussed, advocated, or rejected on both sides of the Atlantic. The merits of "Devon," "Hereford," and "Teeswater" stock have their American as well as their English partisans, and cattle of all these breeds retain their names as well as their characters after transportation as before. The names of our leading agriculturists, too, are known by American farmers as by English. Professor Low has as large a circle of readers and admirers there as here; Mr. STEPHENS' "Book of the Farm" holds as undisputed and well-earned a place on the shelves of American libraries as it does upon our own; Mr. CAIRD's contributions to the history of English agriculture, through the columns of the *Times*, have been read in the States as in every other place where the English tongue is spoken; and all the advocates of so called high farming among ourselves are quoted by the movement party yonder.

We are not now about to inquire which side of the Atlantic has most benefited by the agricultural commerce which has crossed it. We have of late years had from it much, in the way of useful impulse as well as actual receipt, to diminish the balance we may have hitherto imagined in our favour; and we doubt not that, with farmers as with merchants, commercial intercourse has been all along attended with a pretty even share of profit. It is to another lesson from the columns of American periodicals that we would now direct attention.

Distance is generally an advantage to the spectator; the general elevation, outline, and appearance of a building cannot be judged of from within, nor by a person just outside its walls. This distance may, however, be too great; and when the ocean rolls between it may happen that only the high and ornamental parts are seen: the flag telling that the owner is at home and living, the index fixed upon the turret, and, it may be, the vane shifting with the wind, alone are visible, while the useful and substantial portions of the building lie below the line of vision; and the doorways, buttresses, and windows—the thoroughfares and strength and light—making up the substance and the value of the structure, are unseen. The breadth of the Atlantic seems to have some such influence as this upon the aspect of the edifice of British Agriculture. The list of names generally selected by writers on the other side as characteristic of the farming interest here, strikes one as being due to some such imperfect view as we have described. We do not speak of those already named, and others who have long achieved their rightful place of honour, and whose claims are now admitted everywhere, but rather of our current representatives—those who, year by year, are quoted as authorities. Mr. MECH, whose name in America is generally put at the head of the representative few, is looked upon by us rather as the flag indicating the life and activity within, than as a corner-

stone or pillar of the edifice itself; and his colleagues quoted yonder, though well known here as men of intelligence and energy, do not strike the English farmer as furnishing the real measure of himself. No one is more desirous than ourselves to acknowledge the value of their services; but though among the foremost, they are not our real guides and leaders, nor our most important benefactors. American ignorance, however, on such points as these is not to be wondered at, when so much prevails amongst ourselves. Residence within the house would seem as unfavourable to a knowledge of its structure as too much distance is. And, excepting one or two whom everybody knows, agriculturists are puzzled, even here, to name the few who have laid them under greatest obligation. Let us try to help their choice.

It would be a tedious task, needing wide acquaintanceship as well as clear discrimination, to indicate but few of the many occupying the front rank among British agriculturists, as their guides by way of example. Large intelligence combined with practical ability is not unfrequent among our tenant-farmers, and how much the influence of these characteristics is increased by their co-existence with long experience, whether in field or market, in the management of large invested capitals, may be easily conceived. Just as in other walks teachers and authors are often mortified to find their "originalities" and "novelties," combined with much beyond their powers of competition, in works already published—so our most active teachers and advisers in agriculture, if they would look about them, might often see their ideas and conceptions developed skilfully and for many years in extensive practice, by men known only to their neighbours. The counties of Sussex, Norfolk, Lincoln, Berwick, York, East Lothian, furnish the names of many such, and other counties no doubt do the same—men respected out of their profession as well as in it, and whose intelligence, the result of long experience as well as study, makes their practice useful all around. These are the "leading British agriculturists;" it is no wonder that they are not known in America, because in many instances they are known only in their own immediate circles; but it is they who especially deserve our professional respect, and in cases where through societies and their journals they have described their experience for the instruction of others, it is they especially who deserve our gratitude.

It is to others, however, who have more actively laboured for the common good that we have more particularly to refer. Among these every one will admit that the foremost place is worthily occupied by the President, for the year, of the Royal Agricultural Society of England. If we do not now at any length describe what he has done, it is because that is already known, and the high respect in which Mr. PUSEY is so justly held by English farmers renders it unnecessary. They already know how, in Parliament and out of it, he has laboured cordially and wisely in their service. No one in the Society can be named who is so really its President—the leading man, not by mere rank or insignia of office, but by the reasonable and grateful homage of its members.

The names of many others will suggest themselves, to whom the agriculture especially of England is indebted, but we can refer just now to only two, occupying widely different spheres as regards the services they have rendered, but both certain to receive due honour from the historian of these years hereafter, and both deserving it now for the unobtrusive but laborious zeal they have displayed. We have not seen their names in American periodicals, and they are so seldom seen in the columns of our own agricultural journals that even to some of our readers they may be new; they will be familiar enough, we may be sure, when the certain and abundant fruits of their labours have ripened and been reaped.

Among the institutions which have of late years risen in connection with agriculture, we know none of greater importance than the college at Cirencester. We have strong confidence in the benefits which are yet to appear from the instruction annually received within its walls. An extensive farm and an able body of professors—constant information thus through eye as well as ear—accommodation for 200 students, young men of the higher agricultural ranks—the annual or biennial distribution of that number of thoroughly accomplished agriculturists over the country—this was an ideal worth any amount of labour and of effort, and as such it was hailed and patronised by nearly all who were distinguished in the agricultural world—from the Prince, its early and present patron, through a long list of noblemen and Presidents of the Royal Agricultural Society, to numerous distinguished agriculturists and tenant farmers; still, if the prospect of the entire realisation of this ideal is now brighter than ever

it was—and this we know to be the case—we owe it to the wise, benevolent, and disinterested conduct of Mr. HOLLAND, of Dumbleton, near Evesham. We know no one who has juster claims, especially upon the agriculturists of England. A landlord who, by personal example of judicious cultivation shown on farms in hand, and more especially by the offer of liberal conditions of tenancy to intelligent agriculturists, has doubled the value of his estate since it has come into his hands, at the same time that it has been cultivated by a wealthy and prosperous tenantry, is worthy of our gratitude for the value of his merely passive example to other owners. But to this, in Mr. HOLLAND's case, is added laborious activity and the acceptance of hazardous responsibility for the attainment of a strictly public good. Our readers know that the Agricultural College at Cirencester has not always been in its present prosperous condition; but through ill report, as well as good report, Mr. HOLLAND has been its active friend. At the critical moment when the share capital was exhausted, and the early difficulties and disappointments (arising especially, we believe, from agricultural mistakes,) had disgusted many of its original supporters, Mr. HOLLAND made the noble offer to find the funds for the completion and continuance of the undertaking. His guarantee alone has raised the many thousand pounds needed for the thorough equipment and conducting of so large an establishment; and, what is more, it has raised the energy and spirits of many other friends, so that noble lords and others have now joined him in his responsibility. But that the Institution is now confessedly the most efficient of its kind that has yet been known is due to his patriotism in the beginning, and to his control and guidance ever since. Future writers will, we are sure, acknowledge the large debt of gratitude due by English agriculturists to Mr. HOLLAND of Dumbleton.

We conclude with reference to another instance of disinterested unobtrusive labour in an altogether different sphere. Probably the most efficient of the many influences for good exerted in the course of the year upon English agriculture, is the country meeting of the English Agricultural Society. And in connection with it we name the present and former directors of the show yard, Mr. BRANDRETH GIBBS, and Mr. HUMPHRY BRANDRETH. It is to the labours and ability of the latter gentleman in devising and maturing the arrangements of these country meetings, and to the able management of the former, who has now succeeded his brother in the direction both here and at the meeting of the Smithfield Club, that the usefulness of both these shows is greatly owing. They have thus therefore a large share in the credit of recent agricultural progress. We are not now referring to the leading agriculturists of the country, but to the men who by their labours have benefited English agriculturists; and among the crowd of well-known names constantly before us, by the prominent positions which they have either earned or taken, justice requires that the useful unobtrusive labours of such men as Mr. GIBBS, should be borne in mind.

How many others might be named, everybody knows. We have not room for the merest list, and must be satisfied with selecting the few characteristic of the different classes of men amongst us, who deserve respect and gratitude for their personal qualifications and useful labours.

On the last day of the year it is well to acknowledge the debt they have laid us under during the course of it, and during many previous ones.

#### COVERED YARDS FOR MANURE.

THE following is an extract on the subject from Major M'Inroy's Paper on feeding sheep, the greater part of which we published last week:—

"When I express my own opinion so decidedly in favour of covered courts for manure, I do not wish to lose sight of the fact, that many differ from the views which I entertain—men of practical experience, and having much capital invested in agricultural pursuits. I am not in the least surprised that cautious men should doubt whether expensive premises, when applied only to the production of manure, can afford a reasonable per centage for their erection, and this can only be proved by experience; but I think it is clearly open to proof, and could be readily tested by experiments instituted for the purpose. I admit that if it will not pay, it is a foolish thing to do—it may be an amusement for a laird, but it will not do for a tenant to undertake or encourage. While I say I am not surprised that doubts should be entertained of 'covered courts' paying, I certainly am astonished to find that parties deny the advantage to be derived from them, irrespective of their paying altogether. On what are such objections based? On the one hand, can it be maintained that the moisture from the cattle, unaided by the elements, is insufficient properly to prepare the straw for decomposition? or on the other, that cattle under cover must consume more straw in absence of sun, and a free circulation of air, and consequent evaporation? To the first, I would say



—increase your head of stock, give them less for litter, and more to eat, and no fear of your manure being too dry: Were it necessary (which it will not be found to be), it would be better to introduce moisture artificially than to allow the clouds to be 'aye tooming themselves on your middens.' Think of this last month of October—a fall of upwards of 7 inches of rain, not one drop of which, I believe, would be required in a court-yard receiving the liquid contributions of the stock. To the other objectors I would reply—what could the last six weeks do in the way of evaporation? or what has the freest circulation—done to dry up exposed open courts?—which I venture to say have been either a swim, and losing some of their most valuable contents, or swallowing stacks of fodder in the vain attempt to keep them decently dry! What a miserable substitute for a well-aired covered court is the hole usually employed to save the outpourings of the court, filled with weeds, to collect, in so far as may be possible, the valuable escaping matter. True, it is better than nothing; but what is a cart-load of manure worth thus filtered away? I ask our 'open-court friends' what is the market value of a sucked orange? I drove out my manure, or at least a part of it, last winter, and the preceding one, from my covered courts, without the loss of a drop of liquid, yet the manure was quite sappy; what was the state of my neighbours' carts similarly employed? Streaming with the liquid the whole way to the 'midden!' Who can estimate the annual loss from such a course, irrespective of the great additional cartage entailed by the superabundance of moisture?

"But granting, for the sake of argument, that the evaporation of sun and wind dries up our courts in proportion to the fall of rain; or, to put it more correctly, that a covered court, without sun or wind, from October to the end of April, will be, with the same number of cattle, wetter, and consequently require more straw, than an open court exposed to the action of wind, sun, and rain,—I say, granting this position (which I utterly deny to be correct), what advantage do we derive from this valuable evaporation? Do the sun and wind, in drying up our courts, after such a precious soak as they have had this last month, most kindly and considerably, and with a touching sympathy for distressed agriculturists, remove nothing but what the rain contributed? Mere useless liquid, no more! Is no ammonia extracted? Does no bleaching process take place? And without giving the farmer the least trouble, do sun and wind evaporate exactly the superabundant moisture, leaving nothing more than what is absolutely necessary for the proper preparation of the manure? Amiable and innocent unconsciousness! A man is not properly robbed unless he knows it! One word for the poor stock—what a pleasure to see stock thriving under shelter in such pitiful weather as has been of late, compared with them plunging up to their bellies in slush and filth, the strong driving the weaker from the limited shelter which these open courts afford. But the animals taken from these courts are far the best thrivers, it is said, and are bought up most readily in the market. I can believe that, if a man is buying an animal, one which has been badly used may possibly appear to thrive most rapidly under improved and generous treatment; but I have yet to learn that such rough usage pays the breeder and seller. It reminds me of the story of an English lady who had a delicate family, and, coming down to the Highlands, was delighted to see sturdy little rascals running about in the apology for dress which is called 'kilt.' On her return home, she consulted her medical man upon the adoption of such a limited extent of clothing for her children, to which she attributed the noble health of the young Celts; but she gave up the idea on his assuring her ladyship that only the sturdy ones survived such treatment.

Now, I suspect that there is an immense loss of health, at least time, growth, and food, as a consequence of the limited accommodation for feeding stock. We may persevere with it for want of a better, but I marvel at any one being long to defend the practice, when we remember our long winter and uncertain and changeable climate. In reality, from the end of October till March, the period of our greatest consumption of straw, and when our greatest number of stock are feeding, we have comparatively little sun, or evaporating or drying weather—nothing compared with the drought which could be necessary to neutralise the quantity of rain that falls during that period, even were the evaporating process not in itself a very great evil.

## THE ROYAL AGRICULTURAL COLLEGE.

RESULTS OF THE SEMESTRAL EXAMINATION.—The semestral examination at the Royal Agricultural College, Cirencester, terminated on Tuesday, the 20th inst., and on vacation commenced on the following day. The following is the result of the examination in the various departments:—

### PRACTICAL AGRICULTURE.

#### First Class.

Barker	Willis	D. Davies
Barnard	Wells	Waldman
Armitage Leigh	Skidder	Le Feuvre
Jago	Palmer	Maid
J. M. Davies	Hester	Coppage
Fuller	Widdowson	Stephens
Chancellor	Moss	Braunwood
Beckett	Woodley	Broughton
White	Lacey	Chaslen

#### CHEMISTRY.

First in Organic and Agricultural Chemistry	J. M. Davies
Second do.	T. H. Barker

### VETERINARY MEDICINE AND SURGERY.

First	F. W. B. Louch
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### BOTANY AND VEGETABLE PHYSIOLOGY.

First	C. D. Barstow	equal
	F. W. B. Louch	

### SURVEYING AND CIVIL ENGINEERING.

First	T. H. Barker	equal
	J. M. Davies	

#### ESSAYS.

The First Prize for an Essay on an Agricultural Subject, chosen by the writer, and submitted to the Principal for approval	Charles D. Barstow
The second ditto	Charles H. Inge
The Prize for the best Essay on a Botanical Subject	Lonsdale Bradley
The Prize for the best Journal of Cases at the Veterinary Hospital	Horatio Chancellor
Second ditto	C. D. Barstow
Third ditto	Henry St. Leger
Prizes for the best Laboratory Books	1st Class—T. Nicholas
Ditto	2d Class—T. H. Barker
Highly Commended—W. St. Leger and Hamilton A. Moore	3d Class—Broughton
Ditto	3d Class—Broughton
Highly Commended—Halliday, Cuppage, and Brickwood.	

## Home Correspondence.

*The Keythorpe Drainage.*—I am quite willing to allow Mr. Denton to fire a few parting shots at the Keythorpe system, particularly if they are as harmless as the last, without considering it an infraction of the armistice and without being drawn into a breach of it myself. There is one observation, however, in his last letter which I cannot allow to pass unnoticed. He speaks of the Keythorpe drains crossing the fall of the ground ("modified by Mr. Trimmer into crossing it obliquely"). If by this he means that I have made any modification of my first published statement on the subject, I must refer him to the "Journal of the Royal Agricultural Society," vol. xiv., p. 100, line 5. The obliqueness of the parallel drains to the line of greatest descent is there expressly stated; though, in the impetuosity of his first onslaught on the Keythorpe system, Mr. Denton overlooked this fact. The admissions, half admissions, and doubts contained in his last letter, have laid him open to many questions which he would find it difficult to answer in a manner satisfactory even to himself. He might be asked, for instance, why drainage engineers cut sub-mains across their minor drains, if, by virtue of the new law of gravity, drainage water, like everything connected with agriculture, becomes so unwilling to abandon old habits that it is difficult to induce it to quit its accustomed channels? If they can coax water into leaving minor drains of their own construction, which run with the fall of the ground, in order to enter sub-mains which cross it, why cannot they do the same with respect to the drains which nature has laid along the line of greatest descent. Perhaps, in the case of their own drains, they take the water in the nick of time, in the nascent state, as chemists would say, before it has run sufficiently long in one channel to have acquired an engineering affinity for it. Again, in whatever direction Mr. Denton may lay his drains, he will find the same difficulty in drawing water from those occasional holes deeper than the average depth of the subterranean furrows which he anticipates from crossing them. Whenever he can show a field suffering from inefficient drainage (its inefficiency arising from this cause), it will be time enough to endeavour to devise a remedy. I might ask many more questions, and make many more observations, but I refrain; because I am unwilling to break the armistice—because I know the difficulty of convincing a man against his will, and because Mr. Denton appears to have many private correspondents, whom he represents as taking my views about the laws of gravity and the influence of subterranean furrows. To them therefore I leave the task of his conversion, with this prediction, that two years will not have elapsed before he will be laying his minor drains obliquely across these furrows. I can see that since his eyes have been opened to their existence they haunt him night and day, and that he is labouring to devise some means of taking advantage of them without crossing them. There are but "three courses open to us" with respect to them. We can only lay our drains between them, along them, or across them. Mr. Denton is too good a judge to attempt the first. The second will be beset with the difficulties which he ascribes to the third, together with others peculiar to itself. It will require even more experimenting and more probing of the soil. To the third, then, he must come, if he would drain cheaply, and at the same time efficiently. He must, in each field he is about to drain, determine by plenty of trial holes the existence of these furrows and their direction, and having found this, he must lay his drains obliquely across them. If he will not give in to this system he will find himself anticipated by other draining engineers. One fact is worth volumes of controversy. The Keythorpe estate has been drained in this way. It has been drained cheaply and I say efficiently. If any gentleman doubt the latter assertion, or if they doubt that its soil is equally tenacious with those in which drainers on the gridiron system lay their drains at intervals of 8 and 10 yards, I am authorised by Lord Berners to say, that by addressing a private communication to me, they may have an opportunity of satisfying their doubts from personal inspection. All that is asked of them is that they will not scruple to find fault openly with anything which they may consider defective; Lord Berners will be much obliged by their criticisms. The contradictory opinions and practices which prevail among drainers, and their contradictory statements as to facts, prove that we have yet much to learn in the art or science of land drainage. But the marvel of marvels is, that so many men who have attained

a high reputation as professional drainers should have drained millions of acres during the last 10 years, yet know so little about those furrows which I find very generally, though not universally distributed. They can neither affirm nor deny the fact of their existence, they can neither tell us their direction when they exist, nor the conditions under which they are absent, when absent. How is this? Can it be that they have been draining on what may be called the slap-dash system, and have based their operations on assumption, without sufficient investigation of the internal structure of the soil? J. Trimmer.

*Land Drainage.*—Your correspondent "J. R. B.," appears to have misunderstood the object and arguments of my communication, which you did me the favour to publish in your Number of the 19th ult. At least it was not my intention to insinuate that there was any secret in my possession, still less, any particular system of draining upon which I based "anticipations of a fortune looming in the future." On the contrary, the purpose of my paper was to condemn all empiricism in draining; and although I can conscientiously assure "J. R. B." that I have no desire to monopolise any of that little knowledge I may possess, yet I could not presume to advise him what course to pursue, unless I actually saw the field he describes, and could thoroughly investigate, for my own direct information, all the circumstances of the case. I do not take up this position because I wish to be professionally called in, in this instance, and for the sake of a fee, but because I know from experience that however clearly described the main features of such a case may be, still there may be some circumstances that escape the attention of a comparatively unpractised eye, and which might be very important in enabling a practitioner to arrive at a correct conclusion. I am not so pseudo-liberally inclined as to profess to give advice gratis upon such matters, because I think those who possess land ought to pay for the skill which not only produces them so great a return of profit, but often saves them from such serious loss, as judiciously conducted and efficient draining. I hold that those who have devoted their faculties to the acquirement of proficiency in the practice of such a useful profession, have an honest right to expect remuneration for their services. But, in this case, if "J. R. B." thinks my advice worth accepting, and will communicate to me, through you, his address, and the situation of the field in question, I will take the first opportunity of being near to it to inspect and give him my opinion upon it gratuitously. With respect to Mr. Trimmer's communication in your last Number, he states that himself and Mr. Denton have agreed to differ, and have entered into a disinterested compact not "to disturb the peace of the world." (!) I hope their co-operation may be productive of mutual advantage, and I doubt not their investigations will tend to the acquirement of a considerable stock of practical knowledge, which will eventually confirm them in the same general conclusion that I believe scientific practice will bring all to; namely, that it is impossible to lay down any general system for draining, but that every case should be dealt with unprejudicially, and after careful investigation of its peculiar circumstances, upon whatsoever principle, or combination of principles, may be found most efficacious, durable, and economical. I feel particularly obliged by Mr. Trimmer's offer of his assistance as a geological adviser, and none the less so because of his frank declaration that he does "not prescribe without a fee." I can assure him I am fully sensible of the great value of his assistance, and shall gladly avail myself of it on the first occasion of requiring it. *A Draining Engineer.*—My paper, setting forth the particulars of a field I wished drained, and seeking advice as to the proper direction to lay my drains, &c., and which found a place in the Gazette of the 3d inst., having failed in eliciting from any of your correspondents their experience—though I have still some hope, from observing among the "communications received" those of several on "Land Drainage"—I set about the drainage of it according to my own judgment; and though time alone will prove the efficiency of the plan, yet from the alteration already taken place upon it, I have the most sanguine expectations of being completely successful. For the benefit of my brother amateurs—for I dare not presume to talk of draining engineers—I shall detail my mode of procedure, in the hope that if it be nothing new to the many, it may have some novelty for a few. After cutting the drains, with the greatest fall of the ground, to the greatest possible depth, 3 ft 9 in., I got a piercer—an iron rod about 10 feet long, with a sharpened head about the length and diameter of a 1½ inch pipe—with which I had holes made in the bottom of the drain through the clay into the underlying stratum of gravel. Into the hole thus made I put a rod of wood, the same diameter as the bore of the pipe to be put down, and put 1½ inch pipes down the rod until they reached from the horizontal pipes in the bottom of the drain to the gravel: this done, immediately on drawing out the rod the water rushed up the pipes and was taken off in the drain. These holes varied from 3 to 9 feet deep, and were put in at irregular distances all along the bottom of the drain: each hole drew a quantity of water, and though the deepest ones did not always give out the greatest quantity, yet out of a few of these it rushed with considerable force. I am inclined to attach a great deal of importance to these holes, for I am convinced that, unless I had fallen upon such an Elkingtonian idea myself, or been advised by some three-guinea-a-day draining engineer to the same effect, the field never could have been dried, and I would have been doomed



to that disappointment which your correspondent "J. Johnson" says I would merit, if I took, by proxy, the advice of any draining engineer or practical person; and although he conceives he has discovered that I have "no practical knowledge of draining," yet had he given my paper anything like an impartial perusal, he would have perceived that I was aware of the fact myself, and unsatisfied with the knowledge I possessed, otherwise I would never have asked advice from any one. Albeit he may "have been several years principal assistant to Mr. Josiah Parkes, C.E.," and be qualified, for a "fair remuneration" of three guineas a day, to give advice to be depended upon, on all drainage matters; still, I think, for the benefit of his more ignorant and light-pursed fellow-creatures, he might have seasoned his otherwise unedifying paragraph by saying, "If J. R. B.'s field be as described, it may be thoroughly dried by the adoption of such and such measures,"—than which nothing could have been more easy, and nothing else was expected. J. R. B.

**Stoppage of Drains by the Roots of Trees.**—The most remarkable instance which I have ever seen came under my observation a few days ago in the Regent's Park. The drain in question was cut and the pipes laid only about this time last year; it was a main drain, formed at the point of obstruction with 6-inch pipes; for some considerable distance the side drains in connection with this main have a very slight inclination, and for the last six or eight weeks the part which these drains traverse, a distance of 500 or 600 yards, has indicated a want of activity which could not be satisfactorily accounted for. It occurred to me it was probable that a pipe had given way, and a partial stoppage had in consequence taken place, as I could see from the test-pot on this main that the current was not so copious as in another drain which runs parallel with it, and received about an equal amount of drainage. I consequently selected two points on the line of the suspected drain, and dug to the pipes in each case; at the one next to the test-pot I found the current perfect, but at the other the water rose 12 inches above the pipes. I then proceeded to ascertain the cause, which resulted in the discovery of an immense mass of roots which occupied the pipes for a continuous line of about 6 feet. The parent root where it entered the drain was only 3-8ths of an inch in diameter, and yet the whole volume of pipes nearest to the point of intrusion was completely filled with the fibrous growth from it, which gradually tapered off to a point. The stoppage had been so progressive, that the water had forced an imperfect course over the pipes, which prevented its rising to the surface, and at once indicating the mischief. The nearest tree was an Italian Poplar, standing at the distance of 76 feet, and which no doubt was the offending party. Here is an example of the necessity for avoiding trees in works of drainage, in a main drain above 4 feet deep formed of 6-inch pipes being rendered useless in 12 months by the roots of a tree standing 76 feet distant. Of course those trees whose roots have a natural tendency to seek water, and to increase rapidly when in contact with a running stream, are most to be guarded against. The Poplars, Willows, and Alders are particularly mischievous in this respect; but most trees will produce a great quantity of fibrous roots when in such a favourable position as is furnished by a rapid current of water in a close drain. This discovery (I allude more particularly to the distance from the tree, and rapidity of growth of the roots), gives rise to serious fears as to the durability of draining wherever trees are standing within a distance for their roots to reach the drains. What may be the extent necessary to place drains beyond the reach of free growing trees, I cannot venture to say; but from the rapidity with which, in this instance, so large a pipe has been choked up in a few months, and at a distance of 76 feet from the tree, it would appear that drains cannot be safe at a less distance than 100 feet; and even then it may be doubtful if in time the roots will not reach them at a greater distance. I shall be pleased to show to any one curious these roots, and the way they have filled the drains; also the effect of the draining in the progress of the work, if applied to whilst superintending the work now going on on Primrose Hill, Regent's Park. P. Mitchell, 62, Henry Street, Portland Town, London.

**Proper Place for Manure.**—If a barrowful of manure were put 3 to 4 inches under-ground, would it not have one-third more virtue in it than if spread upon the surface? I see in your recent journal one method of applying liquid manure to fruit trees, by making holes 18 inches deep round the tree, and partly filling them. It strikes me that the tree requiring fresh nourishment would more gratefully accept such favours if the surface round the tree was bared of its soil, and then sprinkled over, replacing the soil instantly after the operation. I have seen the beneficial effects of liquid manures in many ways, and yet hope to see it applied even in some better way than at present. All will admit, I should think, that by throwing over the surface only, much of its good qualities are weakened by evaporation. Peruvian guano is estimated beyond that coming from any other country. The original substance and matter, I apprehend, are the same, from the birds feeding all alike, but the essence in the Peruvian arises from no rain falling on it. This essence, the correspondents in your paper constantly tell its readers, is sadly wasted in our farm-yards, and I believe it. It would well pay the farmer to employ a person on his pastured land to collect and heap up all the droppings, and lay them in some corner of the field; but better still if he raised a rough covering over the heap, keeping it quite dry, allowing it

to get pulverised, and then using it as (but perhaps in greater doses than) guano or pigeons' dung. B. H.

**Lois-Weedon Culture.**—I have perused the several letters in your *Agricultural Gazette* on the subject of the Lois-Weedon system of growing Corn, and have certainly come to the conclusion, that if the system the Rev. Mr. Smith advocates, of producing crops without manure, be a sound one, the Royal Agricultural Society of England must be very much in the background, when they are at the present time offering a premium of 1000*l.* for a manure equivalent in fertilizing properties to Peruvian guano. This sum I would suggest, if applied to test Mr. Smith's system, would be the means of giving it a fair trial, and, if successful, we should not hear so much of the farmers being imposed upon with adulterated guano. I very much doubt whether ever manure will become *non est inventus*. Critic.

## Societies.

**BIRMINGHAM.**—We select from the addresses delivered at the annual meeting of the Midland Counties Society that delivered by Mr. Hoskyns, in giving "The Manufacturers of Agricultural Implements."

CHANDOS WREN HOSKYNs, Esq., said that he rejoiced to find in the list of toasts the one which had been committed to his charge. For the last 12 or 13 years, ever since the commencement of the Royal Agricultural Society, one of the happiest days the summer months brought him was that on which he was enabled to go through the admirable collection of implements which that society was the means of bringing together. If the manufacturers of England had been the means of raising this country to the greatest celebrity all over the world, he believed that the increasing splendour of its agricultural implements bade fair to establish as great fame in that as in any other department of national skill. (Hear, hear.) He always felt, in looking at a collection of implements as contrasted with stock, that it had this particular claim upon our regard, that whereas the stock was brought together by those who had an object in view with which they were themselves familiar, the implements were manufactured by those who were not agriculturists themselves, and who had to contend with the difficulties of an art in which they had never been trained. No one would deny that the aptitude exhibited in consulting the character of every particular soil by all the implements that were gathered together was really wonderful; for although they might seem at first sight confused, they were yet not so to those who knew how great the diversities of soil, and who knew how difficult a task it was to devise means for dealing with the eccentricities which the seasons and the climate produced upon mother earth. With regard particularly to the plough, everybody must have been struck by the immense number of them which had been invented, some for heavy soils, others for light soils, and others still for soils of a middle description. In looking at them he had often felt the truth of the motto—

"Facies non omnis una,  
Nec diversa tamen, qualis deest esse sororum."

They had a marvellous likeness, yet it was but the likeness of a family group; but when he had seen the words "Plough for heavy land" affixed to some of them, experience had made him doubt whether the title was not in some degree a misnomer, for admirable as the plough was as an implement for light soil, it was questionable whether it was ever intended to be the final cultivator of the clay soils which were so common in this kingdom. It was familiar knowledge that the plough owed its origin to Egypt—a country in which the Nile, by its periodical overflow, was the true cultivator, leaving little for the plough but to re-possess the sun-baked surface. From Egypt it went to Greece, Italy, the south of France, Spain, and the whole of the south of Europe, all of them countries in which the climate made it impossible that the soil could ever assume that plastic and glutinous quality which the English soil presented to the farmer. Accustomed to the light soil of the south of the County of Hereford, it was now his lot in North Warwickshire to find himself up to his neck in clay; and it was to the practical experience of the plough, watching it as it went along, tearing up the top soil and pressing down the bottom, kneading what it moved but squeezing what it did not move, that he was first led to believe that it could not be the final instrument for clay soil. He ventured to say this, because he felt that he was surrounded not only by those gentlemen who had been accustomed to farming, but by those who knew how much might be done by a little originality, and who would join with him in the regret that there was not a little more of that genius shown which ventured to leave the old path, and to adapt itself more to the spirit of the age. It was not by practising the old arts of war that Napoleon destroyed the armies of Austria and Italy; it was not by following in the ancient tracks of science that Copernicus, and Galileo, and Herschel, laid bare the great truths of astronomy. (Hear.) He held, that with regard to the application of steam to the cultivation of the soil, and more especially to clay soils, the attempt to unite it to the plough was erroneous. In tilling light soil, the object was to press it as much as possible, while with clay the object was to lift it as lightly as it could possibly be done; so that the more a plough was adapted to the former, the less it became an instrument adapted for following the required system in the latter. It was necessary that the soil in being pulverised, or comminuted, should be exposed to the atmosphere, or *aërata*; and he believed this would be accomplished by an instrument worked by steam power. (Hear, hear.) Steam was no longer an example to be taken from manufacturers as applicable to agriculture, but it was an argument which had only to be transferred from the farm-yard to the field, and he hoped that ere long they would witness that greatest triumph of the steam-engine which would adapt its power to the ever-varying necessities of the clay soils of England. Reverting to the toast, he would mention that their thanks were peculiarly due to the manufacturers of implements, because every implement they produced was an increase of power to the human hand, and thereby an extension of the power of the human brain, to which the hand was the minister. Its final uses were physical, but they knew that physical power was at the bottom of moral and intellectual nature, and was the foundation of the highest aims and the highest accomplishments of the human race. It was with much pleasure, therefore, that he gave "The Manufacturers of Agricultural Implements." (Cheers.)

**LONDON FARMER'S CLUB.**—After the annual dinner of this Club, a number of interesting addresses were delivered—Mr. Baker, Lord Berners, and Mr. Pusey, being among the speakers. We make room for Mr. Pusey's speech:—

Mr. Pusey said he had felt great pleasure in accepting the honour conferred upon him by the invitation to attend on that occasion; independently of which he should have felt it right, holding as he did the official situation of President of the Royal Agricultural Society, to attend the annual meeting of a sister society, which filled up a most important gap that would otherwise exist. In saying this, he recollected that while the Smith-field Club had for many years encouraged fat cattle, the Royal Agricultural Society proposed to encourage breeding cattle; though he confessed he could not see much difference between the cattle of July and the cattle of December. (Laughter.) Whether

in Parliament or elsewhere, he always felt more disposed to listen than to speak, and he had little to offer on that occasion. He cordially concurred in what had fallen from Mr. Baker and Lord Berners with regard to improvement. The three societies named in the toast had no doubt succeeded in greatly improving the agriculture of the country during the last 10 years; but there was still a great deal to be done. There was a great deal of discovery yet to be made, and a great deal to be done for the diffusion of the discoveries which had been made. There were still a large quantity of land to be drained. There were a great many hedges to be removed, or reduced in size, and a great deal of Couch to be rooted out. But a few years ago, foreign guano was shown in this country by a merchant as a great curiosity; they all knew to what an extent it was now used. He could not help expressing his cordial concurrence in the remark that, instead of importing foreign corn, they should import foreign manure. This appeared to him a singularly happy termination of the long differences between the protectionists and free-traders. (Laughter.) During the progress of the dispute, it so happened that a foreign manure came to light, which would enable farmers to grow a supply of corn for this country, that they otherwise could not have produced. The free-traders asked them to import corn; the farmers said, "No, we would rather import manure, and grow corn ourselves." The free-traders said, "By all means;" and so the question was settled honourably for all parties. (Laughter.) He cordially wished the supply of guano were not a monopoly. The Royal Agricultural Society was going to call upon the Government once more to use their influence with the Peruvian Government; but he feared that the task would be difficult. With regard to the supply of guano, he was not sure that the information which had lately reached the Admiralty might not lead to a wrong conclusion. He believed the report was confined to the Chincha Islands—that it was in reference especially to those islands, from which the chief supply had been lately derived, that the Admiralty said there was a supply for only nine years. He was strongly inclined to think that so far as those islands were concerned, the Admiralty was right. He (Mr. Pusey) had been told that an unfortunate Peruvian had been thrown into prison for saying that there was a supply for only about nine years; and the Peruvian government would probably not have been so sensitive had not this gentleman spoken the truth. (Laughter.) They should not lose sight, however, of the Lobos Islands, which the American government last year showed a disposition to appropriate, and from which he imagined a large supply could be obtained. He could not help observing, too, that in the same region of the world had been discovered nitrate of soda, the properties of which were such, that if a railway were constructed for its transit, it might come into important competition with guano. (Hear, hear.) He had to return thanks on behalf of the Highland Society of Scotland. This reminded him that on the last occasion of that kind, he indulged in a kind of challenge to the farmers of the East Lothian. He wished to take that opportunity of saying that he had not intended the slightest disrespect to the Scotch farmers. (Hear, hear.) All he wished to do was to discourage the prevalent disposition of Englishmen to decry their own countrymen, and to hold up the East Lothian farmers as superior to any English farmers. (Hear.) He should be exceedingly sorry to be supposed for a moment to depreciate the farmers of the East Lothian; he was quite ready to admit their high spirit and their equality with English farmers. (Hear, hear.) He was bound to acknowledge, too, that on the former occasion, he was mistaken in imagining that it was good land only that was so well farmed in the East Lothian. Having been there since, he had discovered that the Scotch farmers, like those of Lincolnshire, had in many instances improved and brought to a state of great fertility a very inferior soil. It was a little more difficult for him to return thanks for Ireland than for Scotland; not having visited that country, and not having heard hitherto of any signal instance of improvement there. But he really believed that Ireland was on the eve of improvement, and land which a few years ago, was selling for 10 years purchase was now selling for 20 years' purchase. (Hear.) He could not do better than invest it in land in Ireland; and he knew some persons, who, having bought land in that country four or five years ago, had lately been offered for it double what it cost them. In conclusion, he would remark that he did not look forward to a continuance of the present high prices. He trusted that the present prices would not lead any gentleman to relax in improvement; that they would not prevent landlords from draining their land, and getting ready for a rainy day or a fall of prices. Though they had reason to congratulate themselves on what had been done, they had also reason to continue their exertions in future.

**SOCIETY OF ARTS, Dec. 21.**—HARRY CHESTER, Esq., in the Chair.—The first paper read was "On Pettit's Fisheries Guano," by Mr. Horace Green. The paper commenced by stating that guano was generally understood to have been introduced to the notice of Europeans by Von Humboldt, in 1804. It was brought to England as an object of merchandise in 1839. It had been used in Peru for 600 years and upwards, and the island depositaries had been for ages under the management of the State. In 1841, Professor Johnson gave the price of guano as 25*l.* per ton in this country, and not more than 2*l.* 5*s.* to 3*l.* 10*s.* on the spot; and having made an analysis, and calculated the price at which the extreme amount of fertilising matter might be added to the soil from the manufactories of this country (say 9*l.* 10*s.*) he deduced that the British farmer should not be called upon to pay more than 20*l.* per ton for Peruvian Guano. Mr. Philip Pusey also gave the same opinion. Of the excrementitious matter voided by sea-birds, a very large proportion was decomposed before the guano of commerce was extracted from its beds, and more still before its arrival in this country. Proof of the rapid depreciation of guano in keeping might be found in the analyses of the dung of birds by M. de Coindor and Sir Humphry Davy. Coindor found in recent excrement 8.61 of pure ammonia, and of ammonia in the form of its equivalent of uric acid, 35.20, making a total of 43.81 per cent. Davy found that the soluble matter of the dung of pigeons decreased from 23 per cent. in the recent excrement to 16 per cent. in that of 6 months old, and to 8 per cent. after fermentation. It appeared that in five years (1845-50), nearly 650,000 tons of guano had been brought almost round the world for the stimulation of the soils of this country; but it was generally believed that the zenith of supply from Peru was past. From the means of many analyses of different varieties it was stated that the amount of ammonia was in Saldanha Bay 1.68 per cent.; in Patagonian, 2.55 per cent.; in Cape and Algoa Bay, 2.00 per cent.; and in the New Islands, 1.96 per cent.; but in phosphate of lime, which was the next most important element, these guanoes were richer as they were poorer in ammonia. The mean amount of phosphate of lime was in Saldanha Bay, 55.40 per cent.; in Patagonian, 44.00 per cent.; in Cape and Algoa Bay, 20.00 per cent.; and



in the New Islands, 6280 per cent. The question, however, arose, whether or not large quantities of such manures could be sold at a price which should not exceed the home cost of superphosphate of lime. Reference was then made to the guano-substitute prize of 1000*l.* and the gold medal, which were offered by the Royal Agricultural Society for the discovery of a manure equal in its fertilising properties to Peruvian guano, and which could be sold at a price not exceeding 5*l.* per ton; and it was contended that, as according to the composition of guano, as given by Professor Way, and the known value of these several articles in the markets of commerce, the value of a ton of such material would be upwards of 12*l.*, it was not at all probable that any one could dispose of it for 5*l.* The author then proceeded to describe the fisheries guano of Mr. Pettit, and gave the result of several analyses, from which it was deduced that according to the scale before alluded to, the mean value of the samples tested was 9*l.* 7*s.* 7*d.* per ton. The manufacture of this guano on a large scale would be carried on by a process of the following nature:—A given weight of fishy matter was placed in a large tank, and sulphuric acid of commerce added to the mass. The action of the acid was so powerful as speedily to reduce the organic matter to a soft pulpy consistency, resembling in appearance the fecal matter of birds. This pasty mass, being placed in a centrifugal drying machine, and the superabundant moisture forcibly driven off, the partially dry matter was now submitted to a heat not exceeding 212° Fah., and afterwards pulverised in a suitable manner. In this process the oily matter of the fish separated itself and swam upon the surface of the liquid, hence it could be easily separated and formed an important item in the economy of the manufacturer; since, taking all kinds of fishy matter, we obtained an average of 3 per cent. of oil, worth 25*l.* per ton, or three-fourths of the whole expense of the raw material. Another process might in some cases be adopted with advantage, especially with cartilaginous fish. As to the supply of the raw material, it was believed from the testimony of many persons on the coasts, as well as in the evidence in several blue books, that an ample supply of refuse fish would be obtained at an average price of 1*l.* per ton, and taking 60 tons of this weekly, the cost of manufacture and incidental expenses would be 10,643*l.* per annum. From this there would result 93 tons of oil, which at 25*l.* per ton, would give 2325*l.*, and 1653 tons of guano at 7*l.* per ton, or 11,571*l.*, making together 13,896*l.* as the amount of sales, or a profit of 3253*l.* The second paper was "On Fish Manure as a Substitute for Guano," by Mr. J. B. Lawes. He stated that some years ago an inquiry was instituted as to whether the offal and refuse fish of Newfoundland could not be prepared into a manure at a cheaper rate than that already in the market, when it was found that there were difficulties in the way which led to the abandonment of the idea.

**GUERNSEY AGRICULTURAL SOCIETY, Nov. 23.**—At the annual show of the society held this day, Mr. Le Beir, the secretary, gave a very interesting report of the doings of this society in the way of prizes, meetings, and competitions throughout the year. He referred to the competition at the summer show of cattle; it was pleasing to see so large a number—not fewer than 162 head—of their own good dairy cattle, after the great demand it had been their good fortune to get, and the good prices given for them. Still, it is the earnest wish of the committee, as it is the interest of the island, to encourage the keeping of good cows as a source of reproduction. To endeavour to effect this, it has been decided that the owner of the best cow, after receiving 2*l.* for the birth of her first calf after approval, will be entitled to a premium of 1*l.* at the birth of each of the two next calves—all these, of course, to be dropped in the island. While on this subject (said Mr. Le Beir), I may be pardoned for calling attention to one week's produce of a small four-year-old cow, belonging to Mr. Daniel Ozanne. The yield of milk was 104 quarts, producing in rich yellow butter 15 lbs. 12 ozs., English weight—less than 6½ quarts of milk to the pound; while the whole of one evening's milk showed 20° of cream by the lactometer!

**NEWCASTLE.**—On the Uses of Gorse.—At the late monthly meeting of this society, Mr. Burnett observed that it had often been to him a matter of great surprise that a plant like the Gorse, which was one of the most useful, should be so neglected by agriculturists generally. About 40 years ago, he was led to ride from Black Hedley to Mr. Thomas White, of Woodlands, who, he was informed, used Gorse for food for his stock; and soon afterwards, on a visit to that gentleman, he saw the whole process of cutting and grinding Whins to prepare them for food for the cattle, &c. Mr. White also detailed to him the advantages to be obtained from the use of this plant; but, notwithstanding, he left Woodlands under the same impression as most of his neighbours, that Mr. W. was an enthusiast; and, for a long time afterwards, he (Mr. B.) thought no more about the matter. Some years elapsed, when his attention was again drawn to the subject by reading an excellent article on the crushing and value of Whins, in "British Agriculture," Vol. I., and he was induced to make some experiments. He first requested a servant to cut him a quantity of last year's shoots, and put them into the threshing machine, but in this he was not successful. He next tried them through a powerful straw cutter, but he found the process so slow, that it would not do; and then, afterwards, he attempted to roll them, but he found that the thorny part was so

strong as to make them uneatable. After these failures, he still persevered, and, as an experiment, he sent two sacksful to Newcastle to a friend who had a pair of edge stones; but the motion was so slow that he abandoned this method also. In the year 1847 he found another article on Gorse in "British Agriculture," and after carefully perusing the article, he took one of his men, with a pair of garden shears, into the lanes on the highway, and set him to cut some of the last year's shoots. From the time the man was employed, he (Mr. B.) found that if he could get the plant manufactured as he wanted it, the expense would be trifling; and having a bone mill on his premises, which was worked by a small steam engine, he procured two horizontal fluted rollers, and introduced them into the mill; but, after working a short time, the rollers were clogged up. He then sent the rollers to Newcastle, and had them fluted perpendicular to the axis instead of horizontally; and he also contrived to make one roller revolve twice as quick as the other. On trying this experiment, he found that it answered remarkably well, and the following is the result of his labours:—In the first year, viz., 1847, he used 8 tons, which were given to the horses and cows for food. In 1848 he increased the quantity to 21 tons, and fed the sheep with it, in addition to the horses and cows. In 1849 he used 30 tons, and in the winter of 1850, 40 tons, and with the latter supply he fed 283 ewes with Gorse from the beginning of November to the latter end of February, besides his horses and cows. During the time he used the Gorse he never had a single complaint regarding his stock, and they never were more healthy. They ate it greedily, and threw well; and he was firmly persuaded that Gorse thus supplied to cattle was equal in value to the best hay that could be given; besides, he calculated that the plant did not cost him more than 2*d.* per stone, 14 lbs. to the stone, after cutting, carting, and grinding. He, however, found that the Gorse, after being ground, soon lost its freshness, and fermented and turned sour; therefore, the sooner it was given to the cattle the better, and it would be as well to grind it every day. In some instances, after being ground, and it had lain some time, he turned it over, and applied hot water to it, which revived it, and made it fit for use. The Gorse generally was fit for food from November to the 1st of May. After the plant flowered the cattle did not relish it. At the Royal Agricultural Society's Show held at York some years ago, a premium was offered for the best mill for crushing Gorse, but after examining it minutely, he thought it so deficient, that he would not have had it as a gift, as he felt convinced that nothing was equal to the stone and edge system. As an example, Mr. Moody, of Mill Shield, near Minsteracres, has a stone for crushing Gorse, which is worked by the water wheel, and it has been used with success for several years, and any party paying a visit to the farm may see and judge for themselves. In addition to this mill, there are five others at work in the vicinity of Black Hedley. Mr. Burnett concluded by stating that it was his belief that on poor land, if each farmer had 5 acres of it devoted to Gorse, it would be found in reality the most valuable part of his land, as it would yield him the most profit.—The Chairman said that, as usual, they always got something of value from Mr. Burnett. He must confess that he never thought that Gorse could be applied to the extent it had, until he heard the statements of Mr. Burnett, and that too at only 2*d.* per stone.—Mr. Glover, the secretary, thought there could be no question of the nutritious qualities of the Gorse, and, as a proof, instanced how the late General Napier contrived to feed his cavalry horses when other food was scarce. In the Royal Agricultural Society's proceedings there was a prize given to Mr. Roberts, of Bangor, for a paper showing how Gorse could be grown as a regular crop, and with great profit. If that were so, he did not see why it could not be produced either in Northumberland or Durham. *Abridged from Newcastle Courant.*

#### POULTRY.

**THE ISLE OF WIGHT SOCIETY for the Improvement of Domestic Poultry,** under the patronage of H.R.H. Prince Albert, held its first show in the Queen's Rooms, Newport, on the 6th and 7th inst. As a first show (taking into consideration the number of birds excluded by the competition for prizes in the chicken class being limited to birds hatched in the Isle of Wight), the exhibition in number and quality was highly creditable. On future occasions we anticipate this exclusive clause as to chickens will be rejected; and we may remark here (which applies to all shows) that the older birds having scarcely recovered from moult, the end of December or beginning of January would be better periods for exhibition. We also hope to see a cottager's prize given. His Royal Highness Prince Albert, having become the patron of the society, will give it that support which is so desirable to any similar undertaking. The Spanish birds were moderately good, Messrs. Locke, Meager, and Fielden, of Newport, taking the prizes. The Dorkings and cross-bred birds were decidedly good, Messrs. Lewry of Hand-cross, Saunders of Cowes, and Arnell of Newport, taking the Dorking prizes; Messrs. Bull and Cook those for cross-breeds. In Cochins of various colours and ages, some fine birds were shown, Messrs. Colenutt and Stevens, of Ryde, Messrs. Foquet, Frampton, Denyer, and Eatcourt, of Newport, and Messrs. Dawson, Morgan, and Saunders, of Cowes, taking the prizes in the several classes. The Isle of Wight being celebrated for game fowls, we had expected to have seen a larger entry; in this class only nine pens

were exhibited, and the prizes were awarded to Messrs. Chipp, Hall, Jacobs, and Way. Doubtless, on future occasions, farmers who have such facilities for breeding will show in the classes for game cross-breeds, turkeys, ducks, and geese, which three last were poorly represented. In Hamburghs and Polands the show was inferior. Two men of Cowes took the bantam prizes with very good birds; one prize only was awarded for distinct varieties, to Mr. Saunders, of Cowes, for white Spanish. The room, though most unfortunately lighted, was well arranged, and every care was taken by the committee to ensure the comfort of the numerous visitors and safety of the birds committed to their charge. The judges were the Rev. Mr. Nightingale and Mr. Higgs, of Southampton.

**LEEDS.**—The occasional delay in noticing some of the many shows that take place must be excused, owing to the number of them, and the impossibility of getting proper reports ready for our Saturday's Paper, when the show only closes on the Thursday previous. This will explain why the report of that held at Leeds last week does not appear until to-day. The spirit of enterprise that originates these exhibitions is daily acquiring strength, and it is no longer a cause for hesitation that a proper building does not exist. At Leeds one was erected, commodious and well contrived. The cattle occupied the centre, and the poultry was ranged in a single tier of commodious and well-contrived pens around it. In one place they were obliged to be double, on account of the numbers. There were 400 competing pens. Here, as elsewhere, the Spanish and Dorkings met the readiest sale. In Spanish, the first prize was taken by Mr. Smith, of Skelton, near York; the second, Mr. Dixon; and the third by Captain Hornby. In chickens of the same breed, Messrs. Ridgway and Rawson, of Walton-on-Thames, were successful. Messrs. Heaton and Stead took the prizes for cock and hen. The Dorkings were very good, and the prizes went to Captain Hornby, Messrs. Heaton and Stead. A splendid pen, belonging to the Hon. and Rev. S. W. Lawley, was disqualified, having a diseased hen; but for this they would have occupied a very different position. In the remaining Dorking classes, Captain Hornby and Mr. Ambler took first prizes; Messrs. Stephen Lawley (2), T. B. Stead, and Mark Stainby the others. The white Dorkings were a poor class, except a pen belonging to Mr. Ackroyd, of Denton Park. The adult class of Cochins was weak in numbers and quality, only one prize was awarded to Mr. Christopher Rawson. The next class of chickens produced 48 pens; and although there were none of startling merit, still there were enough above mediocrity to make the competition close and the class interesting. Mr. Simeon Woodhouse took second prize, and the first and third were awarded to Mr. Knotler, of Appleton. In the dark feathered classes, prizes were taken by Messrs. Rawson, Boothby, Jackson, Horner, and Newcome. In the classes for any colour, Captain Hornby and Mr. Ambler were successful. The Malays were above the average; Messrs. Hume and Boothby took the prizes. Game were numerous and good, especially Class 35, where Captain Hornby, Messrs. Hutchinson and Kendall, took prizes in order. Class 36 was again good; Messrs. Heaton and Craven took the prizes. Messrs. Armitage, Heaton, and Ludlam also figured in the prize list. Messrs. Heaton, Craven, and Ludlam were rewarded for exhibiting beautiful duck-wings. Strong Hamburgh classes were expected, and the public was not disappointed. The Rev. Mr. Pulleine exhibited two pens of remarkably good golden-pencilled Hamburghs, which took first and second prizes; Messrs. Goodman, Kendall, Eddison, Lord, Scriven, Mitchell, Craven, and Berry took prizes. Among the gold and silver-spangled there were pens of remarkable merit; and the other classes were good, more especially ducks, geese, and black bantams. Captain Hornby was again successful in ducks and geese; and the Rev. John Robinson also took a well-deserved prize for geese. The black bantams were beautiful, but the Sebrights were bad. Lord Wenlock took a prize for ducks. The thanks of all concerned in the poultry are due to the Rev. R. Pulleine for his attention to the birds and his urbanity to all who visited. A word of suggestion, offered in perfect kindness to the committee, will, we hope, be taken in good part. The secretary's office for the sale of poultry was away from the exhibition, and those who left for the purpose of purchase were not readmitted without paying admission money again: this is wrong. The judges were G. J. Andrews, Esq., of Dorchester; Mr. Baily, of London; and Mr. Trotter, of Hexham.

**Bearded Polands.**—I have some of the bearded Polands and find them as hardy as Mr. Baker represents; but I bred a few birds very late last year, and they do not moult their head feathers freely. Can he tell me of anything that will assist them? *An Admirer of Polands.*

**Birmingham Show.**—Like thousands of other poultry fanciers, I gave myself the pleasure last week of seeing the Birmingham show. Far be it from me to cavil at or impugn the judges' awards, but to one crying evil attention must be called. Bantams—little pretty, useless, fancy things—are divided into five or six classes, each with 1st, 2d, and 3d prizes; pigeons into 16 classes. Turkeys and geese, on the contrary, most important for their weight of valuable food, their hardiness and beauty, are allowed but one class, or at most a second for young birds. "The best cock and two hens." What can the judges do but give to the heaviest? There were in geese, avowedly, and in Turkeys, probably, mongrel, cross-bred birds. Every one will



endeavour to do the same—to cross and breed for weight; and where in a few years shall we find the black Norfolk, copper-coloured, white wild American, &c. &c. All undoubtedly distinct varieties, and any of them in a flock so magnificently ornamental on a lawn or park. I have before me the prize list of the Great Metropolitan, and will conclude with an extract from the classes and prizes offered. Bantams, five classes; amount in prizes, 64. 15s. Pigeons, 20 classes; amount in prizes, 34. 11s. Turkeys, one class; amount in prizes, 24. 6s. Geese, one class, 11. 11s. W.

**POULTRY.** C. H. Nothing can be better than your feeding, except the liver; discontinue that at once. Most hens will leave off laying in very cold weather. Throw down a basketful of bricklayer's rubbish, such as old ceilings, &c., in the yard. You may fairly expect your Spanish cock's faces will still improve, but you must not expect more than two first-rate fowls of that breed in a dozen. They will not increase much more in weight. J. C. H. You can wash the feathers of your fowls with soap and water, using a soft sponge, but you must wash only the outer part of the feathers, and must not wet the bird. It should then be put in a basket filled with clean soft straw, and put before a fire. Unless the bird is very dirty it is not worth doing. N. W. G. The change in the combs of your Spanish hens is a very common and natural appearance. When moulting they die away, become small, and apparently perish. As soon as the laying season returns they will come out red and large as ever. It is entirely a question of condition, and a bird is always more or less suffering during moult, especially Spanish fowl. W. L. I am glad to find you are an admirer of Black Cochins, as I quite agree with you. In my experience of them I find the cocks quite black till about five months old, when golden or grey feathers appear in the hackle or on the wing, and sometimes in both places. My experience in judging them, and I believe I shall be borne out by all other judges, has long led me to despair of a full-grown cock perfectly black. J. Bailey, 113, Mount Street.

### Miscellaneous.

**Cambrian Institute.**—We are much gratified to learn that this Association is at length duly organised, and one of its Sections devoted to Agriculture. We believe it is in contemplation to offer, as soon as a Local Committee can be formed in any town in the Principality or its Marches, "The Institute's" gold medal for the best cultivated farm, and a silver medal for the best garden. This must have a tendency to create a spirit of laudable emulation amongst our agriculturists, and all classes will be benefited by thus increasing the supply of food from our own soil, by this means lessening our dependence on foreigners for the first necessities of life. The assistant secretary, Mr. R. Mason, of Tenby, was the late secretary to the Leominster Farmers' Club.

### Calendar of Operations.

#### DECEMBER.

**BEEWICKSHIRE FARM, Dec. 26.**—A few days early in November allowed some progress to be made in sowing Wheat after Turnips. But the weather soon altered, and for a full month a rapid alternation of hard frost and sudden thaw (though with little rain), left very little chance of getting the land in condition to work. Any opportunities, however, of furthering operations were eagerly embraced, under a general and strong impression that too little had been already sown, excepting on bare fallows, which are far from common in our neighbourhood. The last frost we had was on the 13th inst., and very keen it was in the morning. At noon, however, we were surprised by a snow shower, just as our weekly corn market commenced, and in an hour it was a complete fresh and pouring rain. Since that day easterly winds have prevailed, accompanied by driving blasts, often heavy, so that Turnip land could not be touched, except on last Monday, which was much drier. Yesterday the wind became considerably colder, and the ground is dry enough to plough to-day; and, if it does not draw to frost, we shall probably sow a good deal this week. Fallow Wheat looks pretty well, and November sown breaks begin to point through. The breadth sown in this neighbourhood seems to be considerably under what is stated in reports of other localities, and, excepting on the south-eastern clay soils, is not large. Stubble ploughing has mostly come to a close, and something been done on less. But we are never over anxious to hurry the ploughing of the latter, so long as we can count upon open weather till the new year, for the ewes can generally pick a living off it, and thereby save a quantity of Turnips, which is a consideration of especial moment this year. Turnips prove, with some few exceptions, easily deficient in bulk, and are considered to stand a third part less eating in proportion to tonnage, than last year. Nevertheless, both cattle and sheep seem to be putting their food into a good skin; and, if they consume a large quantity of Turnips, they are certainly improving rapidly in condition. These facts are in striking contrast with our experience last winter, when Turnips were a remarkably good crop, but stock made little progress during the long-continued wet weather. Grain continues to thresh out pretty well; and even where it is deficient in quantity the renewed activity of markets, after a temporary re-action, gives farmers a prospect of being able to "make a new coat out of their land" this year. A new steam-plough, the invention of Mr. Usher, brewer in Edinburgh, is at present exciting much interest in the southern counties. It is propelled by a locomotive steam-engine, and mainly consists of a series of plough-shares, so placed on a revolving cylinder as to embrace, in successive lateral portions, a breadth of land equal to four ordinary plough furrows. The inventor calculates that it will plough at 2. 6d. per acre. In order to enable him to perfect his invention, Mr. Usher has invited the co-operation of the friends of agricultural improvement in raising capital to the amount of 1500. by 104 shares. A considerable number of these shares have been subscribed for by professional and amateur agriculturists in this country; and a general and decided opinion exists that Mr. Usher's idea is an advance in the right direction. J. T.

**SOUTH HANTS, Dec. 24.**—Wheat braids very slowly, and we observe in many places where it was sown forward, a nakedness, as if the slug had been busy. There is very little new Wheat left to thresh upon some farms, and in others actually none at all for sale. Much was used for seed, and the residue sold. An old Wheat-rick is so rare, it would be regarded more as a spectre than a reality; you may ride for miles and not see such a thing. Turnips in many places are a poor crop, in others tolerable. The early-sown have been fed off, and the land sown (though late) to Wheat. Wheat stubbles and tea ground are mostly ploughed, and ridged up till spring. Threshing Beans, Peas, and Barley, is the principal operation on the farm at present. It has been too wet and damp to take in a Wheat-rick; we wait for dry and frosty weather to thresh out this crop. Machines driven by horse and steam power are common now; the flail is a rarity. More attention has been paid of late years to cutting fences close down, and keeping them trimmed, and cleaning out of ditches. Landlords do not look out enough by their agents, as to the state of cottages, and supply of water for them.

### Notices to Correspondents.

\* One Shilling will be given for No. 35, 1853.  
**Books:** *Olericus.* The works on agriculture for a village library are—Atkinson on the Agriculture of Australia, Blacklock and Spooner on Sheep, Blacker on Small Farms; The Farmer, by J. Nicholls; Farming for Ladies, Farmers' Medical Dictionary, Hillyard's Practical Farmer and Grazier, Hannam on Waste Manures, Jackson on Agriculture and Dairy Husbandry, Tracts by C. W. Johnson, Dixon's Ornamental Poultry, Bailly on the Dorking Breed, Rham's Dictionary of the Farm, &c.; none of them costly.

**LIME:** A. E. Lime fresh from the kiln and gas lime are not capable of comparison. The latter is to be had cheapest (money value), and it is generally, we believe, intrinsically worth more than the other. Its value arises from a portion of it having been so acted upon, that by subsequent exposure to the air that portion becomes gypsum.

**MILLS, &c., SHOWN AT BAKER STREET:** D. Judd. Do you refer to White, of Holborn; he showed several? We do not know prices.

**OILCAKE:** O. C. F. M. Mr. Brown gives his oilcake, broken in the manger to his cows, without any attempt at mixing, soaking, grinding, or any previous preparation whatever. Frosted Mangolds will rot. They had better be kept frozen, and eaten as soon as possible. If only touched, keep them under cover and consume them as soon as you can.

**PLEURO-PNEUMONIA:** Mr. Whitcure. The paper by Prof. Simonds is a report illustrating the uselessness of inoculation as a remedy. We have taken the liberty of forwarding your letter.

**TURKISH GRASS:** G. B. We still retain our opinion that no one with any regard to the future value of his reputation, will assert his power to save 50 per cent. in feeding by the use of a grater in place of the ordinary cutters. Nevertheless, we cannot say now as we did the other week, that we are unacquainted with the implement in question; we learn from those who have employed it in Ireland that it is highly esteemed. We shall be happy to publish your article as soon as we can obtain room for it.

**ERRATA:** Some of the figures in our last week's comparison of cattle at Baker Street and Birmingham need correction, and those who are interested in this matter had better at once substitute the following for them, with pen and ink, in their copies of last week's paper:—

BAKER STREET.					BIRMINGHAM.				
No.	AGE.	LENGTH.	GIRTH.	WEIGHT.	No.	AGE.	LENGTH.	GIRTH.	WEIGHT.
	yrs. mo.	ft. in.	ft. in.	stn.		yrs. mo.	ft. in.	ft. in.	stn.
5	9	...	...	56	42	...	...	...	86
9	...	...	...	76	78	...	...	...	92
21	...	...	...	63	56	...	...	...	109
27	...	...	...	70					
31	...	...	...	77					
34	...	...	...	70					
38	...	...	...	112					
49	...	...	...	67					
50	...	...	...	72					
52	...	...	...	86					
74	...	...	...	92					
75	...	...	...	103					
81	...	...	...	109					

The following averages, too, need correction:—

Class III. Baker St.	66
Class V.	73
Class VII.	64
Class VIII.	72
Class XI.	85

\* This is printed 31 last week.

### Markets.

#### COVENT GARDEN, December 31.

Owing to the severity of the weather during the past week, the supply of Vegetables has become greatly diminished, and trade is dull. Late Grapes may still be obtained. Pears consist of Glout Morceau, Chaumontel, Winter Nelis, Beurre d'Hiver, Monsieur le Curé, and Beurre d'Arenberg. Chestnuts are plentiful. Potatoes of good quality continue to arrive from Scotland. Asparagus is coming in at from 8s. to 10s. per hundred, and Sea-kale at from 3s. 6d. to 4s. 6d. per punnet. Carrots and Turnips fetch from 2d. to 4d. per bunch. Mushrooms are scarce. Cut flowers consist of Pelargoniums, Lily of the Valley, Roses, Mignonette, and true Carnations.

#### FRUIT.

Pine-apples, per lb., 4s. to 7s.  
Grapes, hothouse, per lb., 5s. to 8s.  
Portugal, per lb., 1s. to 2s.  
Apples, per bush, 4s. to 8s.  
— dessert, p. h. sieve, 2s. to 4s.  
Pears, per doz., 2s. to 5s.  
Lemons, per doz., 1s. to 2s.  
Oranges, per 100, 4s. to 10s.

Almonds, per peck, 6s.  
sweet, per lb., 2s. to 3s.  
Chestnuts, per 100, 1s. to 2s.  
Filberts, per 100 lbs., 100s.  
Walnuts, dried, p. 100, 1s. 6d. to 2s.  
Nuts, Barcelona, per bush, 22s.  
— Spanish, per bushel, 24s.  
— Cobs, per 100 lbs., 140s.

#### VEGETABLES.

Cabbages, per doz., 9d. to 1s. 6d.  
Cauliflowers, each, 6d. to 8d.  
Greens, per doz., 4s. to 6s.  
Brussels Sprouts, doz., 2s. 6d. to 3s. 6d.  
Rhubarb, per bundle, 1s. to 1s. 6d.  
Potatoes, per ton, 60s. to 160s.  
— per cwt., 5s. to 7s.  
— per bush, 2s. 6d. to 5s. 6d.  
Turnips, per doz., 3s. to 4s.  
Cucumbers, each, 6d. to 1s.  
Celery, per bundle, 6d. to 1s. 6d.  
Carrots, per doz., 6s. to 8s.  
Spinach, per sieve, 2s. 6d. to 3s. 6d.  
— per doz., 1s. to 1s. 6d.  
Onions, Spanish, p. doz., 1s. to 3s.  
— per bushel, 2s. 6d. to 3s.  
Leeks, per bunch, 3d. to 4d.

Shallots, per lb., 6d. to 8d.  
Garlic, per lb., 6d. to 8d.  
Lettuce, Cab., p. score, 6d. to 8d.  
— Cos, per score, 9d. to 1s.  
Small Salads, p. pun., 2d. to 3d.  
Horse Radish, p. bundle, 2s. to 4s.  
Mushrooms, per pott., 9d. to 2s.  
— per bushel, 6s. to 8s.  
Sorrel, per h. f. sieve, 6d. to 1s.  
Artichokes, per doz., 3s. to 5s.  
— Jerus., p. h. f. sieve, 1s. to 1s. 6d.  
Fennel, per bunch, 2d. to 3d.  
Savory, per bunch, 2d. to 3d.  
Thyme, per bunch, 2d. to 3d.  
Farsley, p. 12 bunches, 1s. 6d. to 3s.  
Basil, do., per bunch, 4d.  
Watercresses, p. 12 bunch, 4d. to 6d.

#### COAL MARKET.—FRIDAY, December 30.

Wallend Riddell, 32s.; Wallend Lambton, 32s. 9d.; Wallend Tees, 34s.—Ships at market, 24d.

#### POTATOES.—SOUTHWARK, MONDAY, December 26.

The Committee report that during the past week, owing to contrary winds, there have been few arrivals coastwise, and salesmen have been enabled to effect a clearance of old stocks. The following are this day's quotations:—York Regents, 120s. to 160s.; East Lothian do., 120s. to 150s.; do. reds, 120s. to 130s.; Perthshire Regents, 110s. to 120s.; Forfarshire do., 110s. to 120s.; Fifehire do., 110s. to 120s.; Reds and Cups, 90s. to 110s.; Rhenish, 100s. to 120s.; Norway and Swedish, 60s. to 70s.

#### HAY.—Per Load of 36 Trusses.

**SMITHFIELD, THURSDAY, December 29.**  
Prime Meadow Hay 85s. to 100s.  
Interior do. ... 50 70  
Rowen ... 45 65  
New Hay ... 45 65  
CUMBERLAND MARKET, THURSDAY, December 29.  
Prime Meadow Hay 105s. to 115s.  
Interior do. ... 45 92  
New Hay ... 45 92  
Old Clover ... 118 130

**WHITECAPLE, THURSDAY, December 29.**  
Fine old Hay ... 100s. to 105s.  
Interior do. ... 90 94  
Fine new Hay ... 75 80  
Interior do. ... 36 55  
Fine old Clover ... 120 126  
Interior do. ... 110 115  
Fine old 2d cut Clover 100s. to 105s.  
Fine new 2d cut ... 75 80  
Interior do. ... 50 75  
Fine new Clover ... 100 105  
Interior do. ... 80 90  
Straw ... 40 40

#### WOOL.—BRADFORD, THURSDAY, December 29.

**WOOLS.**—This being the last week in the year, business has been quiet; but to-day there is more inquiry for both English and foreign, and prices are firm. Bright haired wools are still scarce in this market. Noils and brokes keep low in stock, and command full rates.

**YARNS.**—There is a greater disposition to buy yarns for distant delivery, but the altered price of wool compels the spinner to seek higher prices, which acts as a barrier to extensive operations.

**PRICES.**—The last Thursday in the year was formerly considered no market. Although business to-day is not particularly active, yet more has been done than on some market days in November—no doubt to assort up stocks, for perhaps at no period within the last 20 years have the merchants commenced a new year with less stock than they will begin 1854. This has been met by the manufacturers, who felt it unsafe to produce when the merchants were not buyers; and it is not improbable, with the seasonable weather we are now enjoying, and so suitable to the Bradford trade, that we shall have a more active, and we hope more profitable spring trade.

#### SMITHFIELD.—MONDAY, December 26.

The supply both of Beasts and Sheep is short, as is usual at the market following Christmas-day. Trade for each description is slow, but late prices for all kinds are fully maintained. Good Calves are in demand at a small advance. Our foreign supply consists of 287 Beasts, 2300 Sheep, and 114 Calves.

Per st. of 8 lbs.—a d s d	Per st. of 8 lbs.—a d s d
Best Scots, Here-	Best Long-wools—
fords, &c., ... 4 6 to 4 10	Do. Shorn ... 0 0 0 0
Best Short-horns 4 4 4 6	Ewes & 2d quality 3 10 4 2
2d quality Beasts 3 0 3 10	Do. Shorn ... 0 0 0 0
Best Downs and	Lambs ... 0 0 0 0
Half-breeds ... 4 10 5 2	Calves ... 4 4 5 2
Do. Shorn ... 0 0 0 0	Pigs ... 3 4 4 6

Beasts, 1443; Sheep and Lambs, 7100; Calves, 116; Pigs, 60.

#### FRIDAY, December 30.

The number of Beasts is small, fully adequate however to the demand. The choicest descriptions are readily disposed of at about late prices, but trade is by no means brisk for other kinds. The supply of Sheep is very small, and consequently meet with purchasers at Monday's quotations. Good Calves being scarce make rather higher prices, but the advance is scarcely quotable. From Germany and Holland there are 55 Beasts, 760 Sheep, and 21 Calves; from Spain, 240 Beasts, and 75 Milch Cows from the home counties.

Best Scots, Here-	Best Long-wools—
fords, &c., ... 4 6 to 4 8	Do. Shorn ... 0 0 0 0
Best Short-horns 4 4 4 6	Ewes & 2d quality 3 10 4 2
2d quality Beasts 3 0 3 8	Do. Shorn ... 0 0 0 0
Best Downs and	Lambs ... 0 0 0 0
Half-breeds ... 4 10 5 2	Calves ... 4 4 5 2
Do. Shorn ... 0 0 0 0	Pigs ... 3 4 4 6

Beasts, 780; Sheep and Lambs, 8740; Calves, 73; Pigs, 80.

#### MARK LANE.—WEDNESDAY, December 23.

Our market was not numerously attended this morning, and the supply of English Wheat was only moderate. The prices realised may be considered 1s. to 2s. per qr. above those of Monday, the 19th inst. Foreign Wheat was in fair request, and the turn in prices was against the buyer. Flour fully supported late rates. Barley was in short supply, and commanded quite as good terms as before. Oats were saleable at an enhancement of 6d. per qr. Beans were firm, and white boiling Peas were rather dearer.

PER IMPERIAL QUARTER.	s. s.	s. s.
Wheat, Essex, Kent, & Suffolk ... White	77—81	Red ... 64—77
— fine selected runs ... ditto	75—83	Red ... 71—81
— Talavera ...	70—85	
— Norfolk ...		Red ...
— Foreign ...	60—82	
Barley, grind. & distil., 34s. to 40s. ... Chaff	38—43	Malt ... 38—43
— Foreign, grinding and distilling	25—38	Malt ... 38—43
Oats, Essex and Suffolk ...	25—28	
— Scotch and Lincolnshire ... Potatoes	27—30	Feed ... 24—28
— Irish ...	25—29	Feed ... 25—28
— Foreign ... Poland and Brew	26—34	Feed ... 20—28
Rye ...	24—44	Foreign ...
Rye-meal, foreign ...	38—44	
Beans, Mazagan ... 36s. to 42s. ... Tick	51—62	Lopgood ... 40—44
— Pigeon ... 48s. — 54s. ... Winds	52—58	Egyptian ... 48—50
— Foreign ... Small	60—63	Suffolk ... 61—65
Peas, white, Essex and Kent ... Boilers	40—44	Foreign ...
— Maple ... 43s. to 47s. ... Grey	40—44	Yellow ...
Maize ...	65—70	
Flour, best marks delivered ... per sack	50—60	Country ... 50—60
— 2d ditto ... ditto	55—60	Per sack ... 58—60
— Foreign ... per barrel	35—44	

#### FRIDAY, December 30.

The Wheat trade has been generally very firm this week, and in some markets a rise of 1s. to 2s. per qr. has been established. The arrivals this week include 9760 barrels of American Flour, but those of all grain have been very moderate. This morning's market was fairly attended both by town and country buyers. Wheat was in good demand at Wednesday's prices, but being generally held for an advance of 1s. to 2s. per qr. the sale was much more restricted than it would otherwise have been. Some sales of floating cargoes from the South were made during the week, Berdianski reaching 73s. 6d. to 75s., Taganrog Ghirka, 71s. Beheira 51s., and Saidi 53s. per qr. The value of spring corn at all descriptions is fully maintained. For Flour there is a fair inquiry at an improvement of 1s. per barrel.

#### ARRIVALS FROM THE 26TH TO 30TH DECEMBER.

	Wheat.	Barley.	Oats.	Flour.
English ...	1110 qrs.	1720 qrs.	3240 qrs.	890 sacks
Irish ...	4570	1780	8250	9760 brls
Foreign ...				

**LIVERPOOL, THURSDAY, Dec. 27.**—At our market this morning the attendance of millers and dealers was fair, and we have to report not only a steady market generally, but that the drooping rates of Wheat on Friday have been recovered, and an advance of 2d. per bushel on the prices current on that day established. Flour, although not participating in the rise obtained in Wheat, is steady at last quotations. Indian Corn was in good request, and transactions in that article effected at an advance of 1s. per qr. Oats and Oatmeal maintain the higher price they fetched on last market day. Barley, Beans, and Peas still continue unchanged in value. Arrivals into Liverpool and Runcorn from the 26th to the 24th of Dec., inclusive:—Wheat, 29,014 qrs.; Barley, 228; Malt, 478; Oats, 2249; Beans, 1169; Peas, 22; Indian corn, 4634; Indian corn meal, 200 barrels; Oatmeal, 3816 sacks; Flour, 1326 sacks and 18,241 barrels.

AVERAGES.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Nov. 19 ...	72s. 9d.	42s. 3d.	26s. 0d.	43s. 11d.	52s. 6d.	56s. 7d.
— 26 ...	70 2	41 9	26 0	43 7	50 11	54 9
Dec. 3 ...	72 7	40 9	26 3	43 5	52 0	53 5
— 10 ...	71 11	39 9	25 4	43 3	50 6	51 5
— 17 ...	70 9	38 9	24 11	44 7	48 10	51 10
— 24 ...	70 0	37 11	25 0	44 4	46 10	49 6
Agg. Aver.	71 8	40 2	25 7	43 10	50 3	52 11

#### FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.

PRICES.	Nov. 19.	Nov. 26.	Dec. 3.	Dec. 10.	Dec. 17.	Dec. 24.
72s. 9d.						
72 7						
71 11						
70 9						
70 2						
70 0						



## GLASS FOR CONSERVATORIES, ETC.

**HETLEY AND CO.** supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & CO., 35, Soho Square, London.  
See *Gardener's Chronicle* first Saturday in each month.

## ESTABLISHED ABOVE SIXTY YEARS.

**ROBERT METTAM, BRITISH and FOREIGN** WHOLESALE WINDOW GLASS WAREHOUSE, 30, Princess-street, Leicester-square.

16oz. Sheet Glass in Boxes of 100 feet. Sheet Glass cut to size, not exceeding 40 inches.  
Under 6 ins. by 4 ... 11d. p. foot. 16 oz. ... 3d. to 3½d. per foot.  
6 by 6, under 8 by 6, 2d. ... 21 oz. ... 3½d. to 5d. ...  
8 by 6 ... 12 by 10, 2½d. ... 26 oz. ... 5d. to 7d. ...  
Foreign Sheet Glass, packed in boxes of 200 feet each, large sizes—thus, 2½d.; 3rds, 2½d. per foot net.

Hartley's Patent Rough Plate Glass, Glass Tiles and Slates, and every description of Glass now manufactured. Estimates and Price Lists forwarded post free.

## GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

**THOMAS MILLINGTON** requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares under 6 inches by 4	...	...	8s. 6d.
" 6 by 4 and 6½ by 4½	...	...	12 0
" 7 by 5 and 7½ by 5½	...	...	13 6
" 8 by 6 and 8½ by 6½	...	...	13 0
" 9 by 7 and 10 by 8	...	...	18 0
" 12 by 10 to 15 by 10	...	...	...

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet—20 inches by 12, 20 by 13, 30 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 20s. per 100 feet.

200 feet cases at 42s., and 300 feet case 63s., in large sheets. Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

**HARTLEY'S PATENT ROUGH PLATE GLASS,** Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

## JAMES PHILLIPS &amp; Co.,

116, BISHOPSGATE STREET WITHOUT.

PRICES OF

**HARTLEY'S PATENT ROUGH PLATE GLASS,** for CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTURES, SKYLIGHTS, &c.

Packed in Crates, for Cutting-up of the sizes manufactured.

30 inches wide and from 40 to 50 long	50 " 70 "	70 " 90 "
Or 20	50	70
" " above 70 "	0 6	0 7½

In Squares cut to the sizes ordered.	4th inch thick.	3rd inch thick.	1 inch thick.
Under 8 by 6	0 4	0 5	0 6
8 by 6 and under 10 by 8	0 4½	0 6	0 7
10 by 8 " 14 by 10	0 5	0 6½	0 8
14 by 10 " 1½ ft. sup. (if the length does not exceed 20 inches)	0 5½	0 7	0 8½

1½ ft. sup. " 8 ft. sup. or if above 20 inches long	4th inch thick.	3rd inch thick.	1 inch thick.
and not above 30 inches long	0 6	0 7½	0 9

3 " 4 " 5 " 6 " 8 " 10 " 12 " 15 " 20 " 25 " 30 "	4 " 5 " 6 " 8 " 10 " 12 " 15 " 20 " 25 " 30 "	3 " 4 " 5 " 6 " 8 " 10 " 12 " 15 " 20 " 25 " 30 "	1 " 2 " 3 " 4 " 5 " 6 " 8 " 10 " 12 " 15 " 20 " 25 " 30 "
30 " 35 " 40 " 45 " 50 " 55 " 60 " 65 " 70 " 75 " 80 " 85 " 90 " 95 " 100 " 105 " 110 " 115 " 120 "	4 " 5 " 6 " 8 " 10 " 12 " 15 " 20 " 25 " 30 "	3 " 4 " 5 " 6 " 8 " 10 " 12 " 15 " 20 " 25 " 30 "	1 " 2 " 3 " 4 " 5 " 6 " 8 " 10 " 12 " 15 " 20 " 25 " 30 "

There can be no question now that Rough Plate Glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of sheet or transparent glass, and it has many advantages peculiar to itself, without a single disadvantage as a set-off. — *Gardener's Chronicle*.

**JAMES PHILLIPS & Co., Horticultural Glass Merchants, 116, Bishopsgate Street Without, London.**

## MAW'S ENCAUSTIC TILE PAVEMENTS.

**MAW & CO** send for six stamps their NEW BOOK OF DESIGNS (with prices), adapting this most durable, economical, and decorative production of Medival Art to Entrance Halls, Passages, Conservatories, Verandahs, and every description of modern and ancient Building. Specimens at 11, Aldersgate Street, City.

Bentham Works, near Broseley, Shropshire.

## SLATE WORKS, ISLEWORTH, MIDDLESEX.

**EDWARD BECK** manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundries excepted.

Priced lists of plant tubs and boxes forwarded on application.

**HORTICULTURAL BUILDINGS, ROCK and RUSTIC WORK, ORNAMENTAL WATER, FOUNTAINS and FALLS, and LANDSCAPE GARDENING,** executed on the best principles; Estates Improved, Land laid out for Building, &c., by Mr. GLESSNY, Valuer, Estate and Horticultural Agent, 120, Strand.

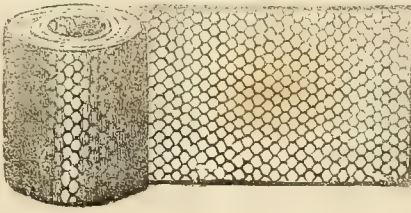
**"IRIDI DOMO,"** Patronised by Professor Lindley for the Royal Horticultural Society, the Royal Zoological Society, by His Grace the Duke of Northumberland at Syon House, and many cultivators of first class Horticultural and Floricultural produce.

"IRIDI DOMO" is a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all Horticultural and Floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and muzzling Frosts. To be had in any required length upwards of 2 yards wide, at 1s. 6d. per yard run of L. T. ALLEN, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

**GUTTA PERCHA BOOTS FOR SHEEP,** for the Cure and Prevention of FOOT-ROT (price 1½d., 5d., and 6d. each). Price of the Powder, in tin cases, sufficient for 100 sheep, 2s. 6d.—Address JOHN JONES and Co., Patent Works, Sheffield. London Agent, Mr. F. HAINES, 22, Lime Street, City.

**BIRD NETS, SHEEP NETS, RABBIT NETS, BAT FOLDING NETS** with Bamboo Poles, 14 feet long 10s. each; Partridge Nets, 2d. per square yard; Rabbit Nets, 4 feet wide, 1½d. per yard; Cocoa Nut Fibre; Sheep Folding Nets, 4 feet high, 4d. and 6d. per yard.—At W. CULLINGFORD'S Manufactory, 1, Edmund Terrace, Ball's Pond Road, Islington (late of Strathmore Terrace, Shadwell), London.

**GALVANISED WIRE GAME NETTING.**—7d. PER YARD, 2 FEET WIDE.

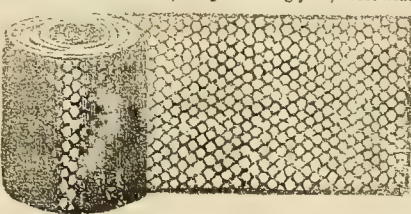


	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	7d. per yd.	5d. per yd.
2-inch " strong "	9 " "	6½ " "
2-inch " extra strong "	12 " "	8 " "
1½-inch " light "	8 " "	6 " "
1½-inch " strong "	10 " "	8 " "
1½-inch " extra strong "	14 " "	11 " "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasants, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

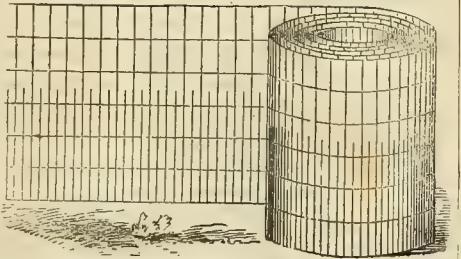
**CHEAP WIRE GAME & POULTRY NETTING,** 5d. per running yard. GALVANISED DITTO, 7d. per running yard, 2 feet wide.



	Galvanised.	Not Galvanised
24 in. wide, 2 in. mesh, 7d. per yard.	...	5d. per yard.
30 in. " 2 in. " 9d. "	...	6½d. "
36 in. " 2 in. " 10½d. "	...	7½d. "
48 in. " 2 in. " 1s. 2d. "	...	10d. "

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Daisies Rods, Garden Arches, Bording, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. FOX, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

## BY HER MAJESTY'S ROYAL LETTERS PATENT.



**BENJAMIN GREENING and Co's. PORTABLE WIRE FENCES,** Manufactured by Patent Machinery.

The new method of manufacturing Wire Fencing (which B. G. & Co. have invented and patented) makes it at once the cheapest, strongest, and most durable fence ever offered to the public. It is elegant in pattern and light in appearance, being also an entire fence in itself; it is much superior to the common Wire Netting Fence now in use. It can be fixed or removed by any labourer. It requires fewer supports than any other, and is infinitely cheaper than hand-made Fences.

**PORTABLE HORSE and CATTLE FENCE.—PORTABLE SHEEP and LAMB FENCE.—POULTRY-PROOF FENCING.—PORTABLE HARE and RABBIT-PROOF FENCING.**

Trainers for Peas, Garden Bording, Aviaries for Poultry, Pheasant Breeding Cages, Ornamental Varieties, Light and Cheap Kinds, Twisted Wire Strand Fence for the Colonies, &c.

For Prospectuses, Engraved Sheet of Patterns, and any other information, apply to Messrs. B. GREENING & Co., 1 and 3, Church Gates and 2 and 2A, Cateaton Street, Manchester.

**PROLIXIDE ANTI-CORROSION PAINT,** at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it.—Manufactured by CHARLES FRANKLIN and Sons, Cement Works, Nine Elms, London.

**STEPHENSON and PEILL, 61, Gracechurch Street,** London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron HOLLERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Surveyors to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

**DAMAGED WHEAT AND RICE MEAL FOR FOOD.** It is now being extensively used by all the large Pig feeders in the kingdom. To whom reference can be given. In order that small consumers may test the merits of each, JAMES MAY and Co. will send 1 quarter of Wheat and 2 cwt. of Rice Meal for Post-office order of 2l. 16s., including sacks.

**DAMAGED WHEAT RICE MEAL** ... 33s. per qr. ... 9l. per ton. JAMES MAY & Co., Finsbury Wharf, City Road Basin, London. Delivered free to any Railway in London. 1s. 6d. each charged for Sacks.

**TO BE LET,** with immediate possession, the old-established SEED BUSINESS, 181, High Street, Southampton, comprising a front shop, with a large range of Greenhouses, Hothouses, Cold and Forcing Pits, together with the Stock of Plants, Seeds, Fixtures, &c., &c. The above to be disposed of in consequence of the proprietor, Mr. Rogers, sen., finding the demand for Nursery Stock at his grounds at Red Lodge so great, that he is unable to superintend the Seed Department.—For particulars and to treat for the same, apply to Mr. RICHARD BELL, 2, Clifford Street, Southampton.

**FARM WANTED,** within 20 miles of London, of about 200 Acres of Land, calculated for the growth of Wheat, Turnips, and Barley, with comfortable Residence and suitable Farm Buildings. A 14 years' lease required, and a good rent will be given.—Address Mr. C. NICHOLSON, Land Agent, Nottingham.

**WANTED, 50 or 100 LARGE, COMMON, or VARIEGATED HOLLIES,** not less than 8 feet.—Address, with lowest cash price, Mr. H. LOXFORD, Mr. Thomas, 19, Catherine Street, Strand, London.

**WALNUT TREES WANTED; CHERRY or any other kind of Timber** bought immediately; ready money given. A quantity or a single tree no object.—E. S., 19, Pearson Street, Kingsland Road, London.

**TO BE DISPOSED OF, DENYER'S NURSERY,** celebrated for Roses, Fruit Trees, &c. Established 26 years, with a first-rate connection; consisting of 5 acres of land, Cottage and Seed Shop attached, of which a 14 years' lease will be granted. The Proprietor being about to retire is desirous of offering the above; no goodwill is expected; the Stock, &c., to be taken at valuation.—Apply to Messrs. PROTHEROE & MORRIS, Leytonstone, Essex, or Mr. E. DENYER, on the premises, Loughborough Road, Brixton, within 3 miles of London.

## CHELTENHAM EXHIBITION, 1854.

TO PARTIES ABOUT TO ERECT CONSERVATORIES OR PUBLIC EXHIBITION ROOMS.

**TO BE SOLD.**—At the end of July, the BUILDING now constructing in Cheltenham for the Crystal Palace Exhibition of Horticulture will be disposed of either in one or more Lots, to suit the convenience of Purchasers. It will comprise 20,000 superficial feet of Lights, in sizes suitable for Conservatories, Greenhouses, &c., made of the very best materials, and glazed with 16 oz. Sheet Glass. Parties contemplating the Erection of Exhibition Rooms or Greenhouses and other Garden Works, will find this a rare opportunity for providing themselves with the most expensive portions of such undertakings at a low price.—Applications to be made to Mr. G. PARSONAGE, Builder and Underwriter, Cheltenham.

**WHITE and JAVANESE PEA FOWLS.**—Wanted, a pair of each, or either, not exceeding four years old. Any person having such to dispose of at a moderate price, may hear of a purchaser by information being sent to J. R., care of W. Sawyer, at Mr. W. Rogers's, sen., Nurseryman, 181, High Street, Southampton.

**SPANISH FOWLS.**—Wanted, one or two Black Spanish Pullets, with full comb and with good white face.—Offers may be made to N. B. RANDE, Bookseller, Devizes, Wilts.

## Sales by Auction.

## FANCY POULTRY—PERIODICAL SALE.

**MR. J. C. STEVENS** begs to notify that his next Periodical Sale by Auction of CHOICE POULTRY will take place at his Great Room, 38, King Street, Covent Garden, on TUESDAY, the 3d of January, at 12 o'clock precisely. In it will be included first-class BUFF, WHITE, and BLACK COCHINS, COLOURED DORKINGS, &c., from the Yards of A. C. Sayer, Esq., of Andover; Mr. Hooper, of Hereford; the Rev. J. Herbert, of Leigh, and several other good breeders.—May be viewed the morning of sale, and Catalogues had by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

## MR. STURGEON'S COCHIN CHINA FOWLS.

**MR. STRAFFORD** has received instructions to Sell by Auction, at the Baker Street Bazaar, on MONDAY, the 9th of January next, these extraordinary BIRDS. Mr. Sturgeon has not parted with a bird this season, and will not do so until the day of sale, when every Bird offered will be of his own breeding, and sold without reserve; they are such as could only be produced from his own yard.—Catalogues may be had upon application to Mr. STRAFFORD, 89, Guildford Street, Russell Square, London.

## MRS. HERBERT'S COCHIN CHINA FOWLS.

**MR. STRAFFORD** will sell by Auction, at the Baker Street Bazaar, on TUESDAY, the 10th January next (being the first day of the Great Metropolitan Poultry Show), the justly-celebrated Stock of WHITE and other COCHIN CHINA FOWLS, the property of Mrs. E. Herbert, of Powick, near Worcester, whose Birds have taken the FIRST PRIZES at Birmingham for the last four years, as well as several other Shows.—Catalogues may be had upon application to Mr. STRAFFORD, 89, Guildford Street, Russell Square, London.

**MR. R. G. CRASKE** is instructed by the Executors of the late Mr. NATHANIEL BLOWERS to sell by Auction, on TUESDAY, WEDNESDAY, and THURSDAY, January 3d, 4th, and 5th, 1854, on the premises at Weeley, near Colchester, without reserve, the whole of the valuable Nursery Stock of EVERGREENS, FRUIT, FOREST, and ORNAMENTAL TREES, consisting of fine Aucubas, Arbutus, Chinese Arbor-vita, Sweet Bays, Phillyreas, Holly, Euonymus, Privet, Laurestinus, Alaternus, Rhododendron, Kalmia, Azaleas, Cotoneaster, Clematis, Jasmine, Virginian Creepers, Irish Ivy, Herbaceous Plants, &c., &c., &c. Laburnum, Poplars, Weeping Ash, Lime, Elm, Lilac, Thorns; and Cherry, Apple, and Pear Trees; Gooseberries, Currant, Rubarb, &c. And a very extensive stock of Larch, Scotch and Spruce Firs, Beech, Spanish Chestnut, Ash, and Oak; also a large quantity of fine strong Quick. This sale offers an excellent opportunity to Gentlemen and Landscape Gardeners to furnish themselves with very fine and healthy Shrubs, varying from 3 ft. to 10 ft. in height. The soil is of such a nature that the Trees rise with abundance of fibrous roots, incurring little or no risk of loss by removal. May be viewed prior to the sale. Catalogues may be had, at 6d. each, of Mr. Edward Blowers, Weeley; of Mr. Nathaniel Blowers, Tending; and of the Auctioneer, Observatory House, Colchester. Sale to commence each day punctually at 11 o'clock.



# THE FLORIST, FRUITIST, AND GARDEN MISCELLANY.

AN ILLUSTRATED MONTHLY PERIODICAL.

PRICE ONE SHILLING.

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